

REBUILDING FOR A BETTER TOMORROW



ANNUAL REPORT 2020

INDORAMA VENTURES PUBLIC COMPANY LIMITED

Vision Mission Value

Vision

To be a world-class chemical company making great products for society.

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Mission

We commit to be a responsible industry leader leveraging on the excellence of our people, processes, and technologies to create value for our stakeholders.

.....

Values

- **The customer is why we exist.**
We measure ourselves by our customers' success. Through unparalleled innovation and attention to quality we aim to exceed their expectations.
- **Our people make the difference.**
A company is its people and people provide the competitive advantage. We respect every voice and rely on one another to grow.
- **We see change as an opportunity.**
The business landscape is constantly evolving. We embrace the challenges of change to be world-class and maintain our differentiation.
- **Diversity is our strength.**
As a global company we value the variety of knowledge, perspectives and experiences in our organization, and draw strength from these to fuel our competitiveness.
- **We are safe and responsible.**
In our pursuit of business growth and profitability we do things the right way with regard to health and safety, socially, environmentally, and economically.

Industry Leading R&D

Our world-class research facilities are led by the best teams in the industry, enabling IVL to continuously innovate to provide solutions today to tomorrow's questions.





Table of Contents

01 Vision, Mission and Value	04 Performance Highlights	07 Financial Status and Performance
14 Message from the Chairman	18 Message from the Group Chief Executive Officer	24 Message from the Chief Executive Officer of Combined PET, IOD and Fibers Business
30 Message from the Chief Financial Officer	34 Message from the Chief Human Resources Officer	36 IVL Group Corporate Structure
38 General Information	39 Investments of the Company	60 Board of Directors
77 Management Structure	82 Major Shareholders	83 Strategy and Overview Business Operation
100 Nature of Business	112 Management Discussion and Analysis	127 Risk Factors
140 Risk Management	142 Internal Control and Risk Management	145 Connected Transaction
148 Dividend Policy	149 Corporate Governance Report 2020	179 Environment, Health and Safety (EHS)
181 Sustainability and Corporate Social Responsibility	192 The Audit Committee Report to the Shareholders for the year 2020	194 The Sustainability and Risk Management Committee Report for the Year 2020
196 The Nomination Compensation and Corporate Governance (NCCG) Committee Report for the Year 2020	198 Report of the Board of Directors's Responsibilities for the Financial Statements	200 Independent Auditor's Report and Financial Statement

Performance Highlights



Performance Highlights

US\$million (except where stated otherwise)	USD Million		
	2018	2019	2020
Production Volume (MMT)	10.42	12.34	13.72
Consolidated Revenue ¹	10,741	11,361	10,594
Core EBITDA^{2,3}	1,441	1,147	1,114
Combined PET	997	866	794
Integrated Oxides and Derivatives	232	75	105
Fibers	211	222	195
Core EBIT	1,000	598	459
Core Net Profit after Tax and NCI⁴	789	387	205
Core Net Profit after Tax and NCI (THBm)	25,488	12,002	6,430
Core EPS after PERP Interest (THB)	4.43	1.96	1.01
Core EBITDA/T (US\$)	138	93	81
Operating Cash Flow⁵	989	1,316	1,388
Net Operating Debt to Equity (times)⁶	0.60	1.30	1.24

* Integrated Oxides and Derivatives was previously called Olefins. The new nomenclature better reflects our sector following the consolidation of Spindletop assets.

** Combined PET includes Integrated PET, Specialty Chemicals and Packaging.

¹ Consolidated financials are based upon elimination of intra-company or intra-business segment transactions.

² Total of each segment may not always tally with consolidated financials due to holding segment.

³ Core EBITDA is Reported EBITDA less Inventory gains/(losses)

⁴ Core Net Profit is Reported Net Profit less Inventory gains/(losses) and one-time extraordinary items.

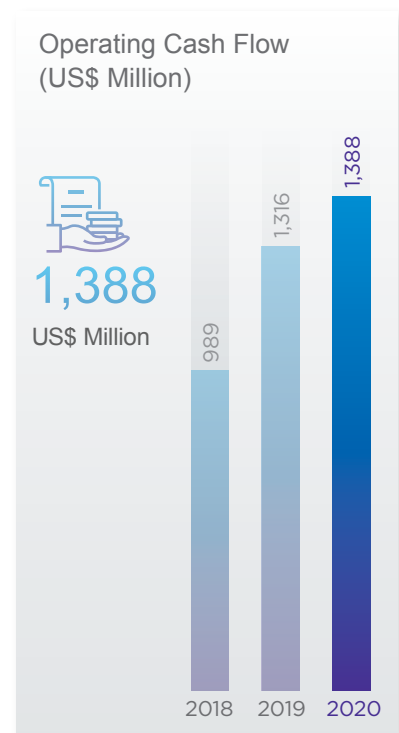
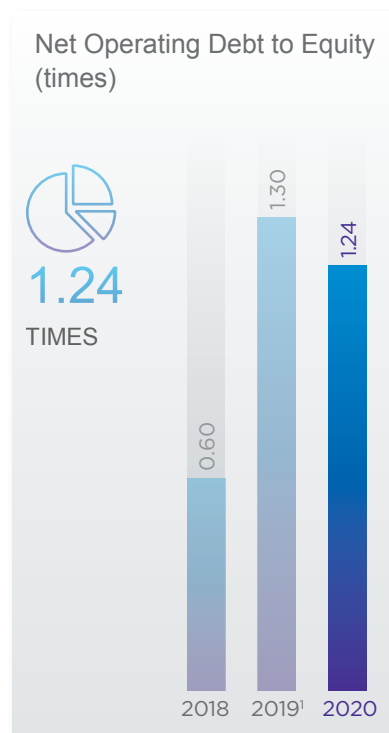
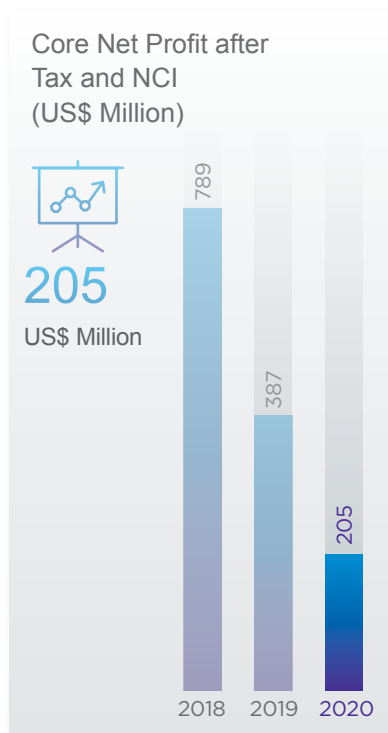
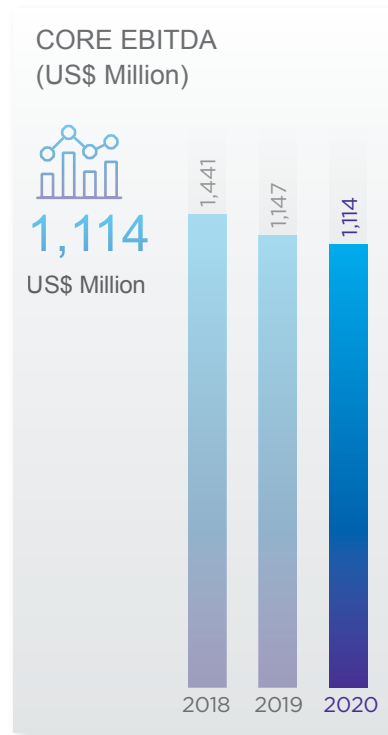
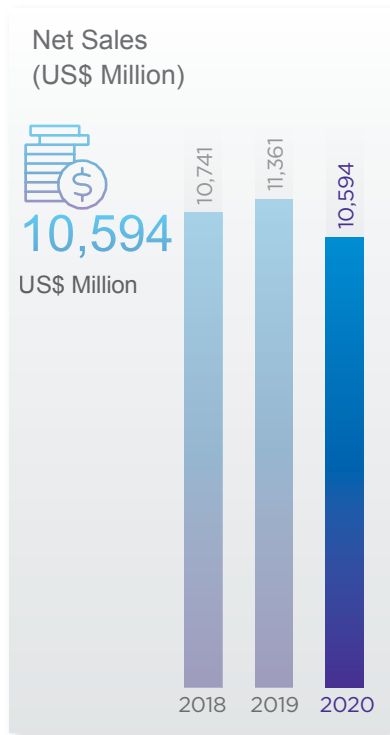
⁵ Operating Cash Flow is after changes in net working capital and cash tax, before maintenance capex.

⁶ Net operating debt of 2019 includes capex/acquisition of IVOL and Spindletop as they started/acquired in Jan20 itself.

US\$million (except where stated otherwise)	USD Million		
	2018	2019	2020
Core Net Profit after Tax and NCI	789	387	205
Inventory gains/(losses) and others	17	(215)	(173)
Total tax on Inventory gains/(losses)	(8)	21	42
Net profit, before extraordinary items	798	192	74
Add: Non Operational/Extraordinary income/(expense)	21	(23)	3
Acquisition cost and pre-operative expense	(35)	(26)	(32)
Gain on Bargain Purchases and impairments (Net) ¹	58	12	36
Other Extraordinary Income/(Expense)	(2)	(9)	(2)
= Net profit after tax and NCI	819	169	77

¹ A gain on bargain purchase needs to be accounted for on completion of any acquisition under Thai Accounting Standards.

Performance Charts



¹ Net operating debt of 2019 includes capex/ acquisition of IVOL and Spindletop as they started/acquired in Jan20 itself.

Financial Status and Performance

Financial Information

The consolidated and separate financial statements for the year ended December 31, 2018 was audited by Mr. Sakda Kaothanthong, Certified Public Accountant, with registration No. 4628 of KPMG Phoomchai Audit Ltd and for the year ended December 31, 2019 and 2020 were audited by Mr. Sumate Jangsamsee, Certified Public Accountant, with registration No. 9362 of KPMG Phoomchai Audit Ltd.

Summary of audit report of Certified Public Accountant of the Company

Financial statements for the year ended 31 December 2020

The auditor gave an opinion that the consolidated and separate financial statements present fairly, in all material respects, the financial position of the Group and the Company, respectively, as

at 31 December 2020 and their financial performance and cash flows for the year then ended in accordance with Thai Financial Reporting Standards.

The auditor has drawn attention to the consolidated financial statements to note 6 that, the materiality of the transaction and the significant judgement and complexities involved in determining the fair value of identifiable assets acquired and liabilities assumed. Note 15 that the materiality of the balances and the significant judgement and complexities involved in determining the future cash flows attributable CGUs, and Note 18 that, the materiality of the balances and the significant judgement and complexities involved in determining the future cash flows attributable to the individual CGU to which goodwill belongs. The opinion is not modified in respect of this matter.

The following table sets forth summary of the consolidated financial statements of Indorama Ventures Public Company Limited from 2018 to 2020

Statements of Financial Position (Consolidated Financial Statements)

Unit : Baht million	As of December 31					
	2018	%	2019 ¹	%	2020	%
Assets						
Current assets						
Cash and cash equivalents	5,578.4	1.5	10,446.7	2.7	18,948.5	4.2
Current investments ²	134.3	0.0	263.4	0.1	441.9	0.1
Trade accounts receivable	37,636.6	9.9	34,304.9	9.0	33,421.6	7.4
Other receivables	1,324.6	0.3	1,286.0	0.3	1,969.1	0.4
Short-term loans to related parties and interest receivable from related parties	170.9	0.0	174.3	0.0	126.7	0.0
Inventories	70,085.3	18.5	62,164.9	16.3	53,938.5	11.9
Other current financial assets ²	-	-	417.9	0.1	1,079.2	0.2
Other current assets ²	9,354.1	2.5	9,698.8	2.5	9,909.1	2.2
Total current assets	124,284.2	32.8	118,757.0	31.2	119,834.7	26.4
Non-current assets						
Other non-current financial assets ²	-	-	3,555.3	0.9	2,193.0	0.5
Investments in joint ventures	5,294.0	1.4	2,492.2	0.7	2,954.9	0.7
Other long-term investments	15.2	0.0	27.4	0.0	108.5	0.0

Unit : Baht million	As of December 31					
	2018	%	2019 ¹	%	2020	%
Long-term loans to related parties	42.6	0.0	28.3	0.0	165.9	0.0
Property, plant and equipment	205,182.4	54.1	212,422.9	55.8	264,290.9	58.3
Right-of-use assets	-	-	-	-	11,865.3	2.6
Goodwill	15,210.0	4.0	15,249.9	4.0	15,385.8	3.4
Intangible assets other than goodwill	25,139.3	6.6	24,165.1	6.3	31,230.6	6.9
Deferred tax assets	2,713.9	0.7	2,321.9	0.6	2,611.7	0.6
Other non-current assets ²	1,313.2	0.3	1,548.0	0.4	2,530.1	0.6
Total non-current assets	254,910.6	67.2	261,810.9	68.8	333,336.8	73.6
Total assets	379,194.8	100.0	380,567.9	100.0	453,171.5	100.0
Liabilities and equity						
Current liabilities						
Bank overdrafts and short-term loans from financial institutions	31,272.0	8.2	30,379.5	8.0	20,725.6	4.6
Trade accounts payable	54,564.8	14.4	57,172.9	15.0	57,782.6	12.8
Current portion of long-term loans from financial institutions	8,626.7	2.3	6,033.5	1.6	8,919.8	2.0
Current portion of debentures	3,013.1	0.8	4,107.8	1.1	7,583.6	1.7
Current portion of lease liabilities (2018, 2019: Current portion of finance lease liabilities)	110.2	0.0	130.0	0.0	1,713.6	0.4
Income tax payable	2,974.1	0.8	1,049.5	0.3	1,448.9	0.3
Other current financial liabilities	-	-	108.2	0.0	356.5	0.1
Other current liabilities	13,139.1	3.5	14,009.2	3.7	18,630.9	4.1
Total current liabilities	113,700.1	30.0	112,990.6	29.7	117,161.4	25.9
Non-current liabilities						
Long-term loans from financial institutions	34,640.0	9.1	42,551.2	11.2	99,448.0	21.9
Lease liabilities (2018, 2019: Finance lease liabilities)	498.1	0.1	689.2	0.2	8,944.5	2.0
Debentures	58,604.3	15.5	63,060.0	16.6	64,625.4	14.3
Deferred tax liabilities	15,788.5	4.2	17,010.0	4.5	16,685.9	3.7
Non-current provisions for employee benefits	2,327.2	0.6	4,696.2	1.2	7,658.5	1.7
Other non-current financial liabilities	-	-	145.0	0.0	1,485.7	0.3
Other non-current liabilities	1,781.3	0.5	1,258.4	0.3	1,554.4	0.3
Total non-current liabilities	113,639.4	30.0	129,410.0	34.0	200,402.3	44.2
Total liabilities	227,339.5	60.0	242,400.6	63.7	317,563.7	70.1
Equity						
Share capital:						
Authorised share capital	5,666.0	1.5	5,666.0	1.5	5,666.0	1.3
Issued and paid-up share capital	5,614.6	1.5	5,614.6	1.5	5,614.6	1.2
Share premium:						
Share premium on ordinary shares	60,331.4	15.9	60,331.4	15.9	60,331.4	13.3
Net gain (loss) on cash flow hedges	(157.2)	(0.0)	731.5	0.2	(400.8)	(0.1)
Exchange differences on translating financial statements	(6,638.2)	(1.8)	(16,674.5)	(4.4)	(16,361.9)	(3.6)
Excess of cost over book value of acquired subsidiaries	(2,973.7)	(0.8)	(3,778.1)	(1.0)	(3,758.3)	(0.8)
Differences arising from common control transactions	(1,235.6)	(0.3)	(1,235.6)	(0.3)	(1,235.6)	(0.3)

Unit : Baht million	As of December 31					
	2018	%	2019 ¹	%	2020	%
Retained earnings						
Appropriated						
Legal reserve	3,207.1	0.8	4,146.6	1.1	5,303.5	1.2
Unappropriated	71,815.3	18.9	66,350.0	17.4	62,257.3	13.7
Equity attributable to owners of the parent	129,963.7	34.3	115,486.0	30.3	111,750.2	24.7
Subordinated perpetual debentures	14,874.1	3.9	14,905.6	3.9	14,904.8	3.3
Subordinated perpetual debentures acquired by subsidiary	-	-	(679.6)	(0.2)	-	-
Equity attributable to owners of the parent	144,837.8	38.2	129,711.9	34.1	126,655.0	27.9
Non-controlling interests	7,017.6	1.9	8,455.4	2.2	8,952.8	2.0
Total equity	151,855.4	40.0	138,167.3	36.3	135,607.8	29.9
Total liabilities and equity	379,194.8	100.0	380,567.9	100.0	453,171.5	100.0

Statements of Income (Consolidated Financial Statements)

Unit : Baht million	For the year ended December 31					
	2018	%	2019 ¹	%	2020	%
Revenue						
Revenue from sale of goods	347,170.9	100.0	352,692.4	100.0	331,512.9	100.0
Net foreign exchange gain	586.2	0.2	-	-	119.4	0.0
Gains on a bargain purchases	1,928.5	0.6	805.5	0.2	1,806.4	0.5
Other income	1,952.6	0.6	2,183.7	0.6	3,031.5	0.9
Total revenue	351,638.2	101.3	355,681.6	100.8	336,470.2	101.5
Expenses						
Cost of sales of goods	289,232.0	83.3	309,344.5	87.7	287,802.9	86.8
Distribution costs	18,449.4	5.3	18,974.7	5.4	20,736.8	6.3
Administrative expenses	10,143.6	2.9	14,968.3	4.2	18,046.2	5.4
Management benefit expenses	190.8	0.1	307.1	0.1	309.3	0.1
Net foreign exchange loss	-	-	296.1	0.1	-	-
Total expenses	318,015.8	91.6	343,890.7	97.5	326,895.2	98.6
Profit from operating activities	33,622.4	9.7	11,790.9	3.3	9,575.0	2.9
Finance income	247.2	0.1	183.2	0.1	192.0	0.1
Finance costs	(4,227.4)	(1.2)	(5,615.1)	(1.6)	(7,673.9)	(2.3)
Impairment loss of property, plant and equipment and right-of-use assets	(78.0)	(0.0)	(374.9)	(0.1)	(624.9)	(0.2)
Impairment loss determined in accordance with TFRS 9, net (2019: Provision for bad and doubtful debts expense, net)	-	-	(91.6)	(0.0)	(54.1)	(0.0)
Share of net profit of joint ventures accounted for using equity method	585.9	0.2	5.3	0.0	142.8	0.0
Profit before tax expense (income)	30,150.0	8.7	5,897.7	1.7	1,556.9	0.5
Tax expense (income)	3,812.4	1.1	1,534.0	0.4	(1,243.1)	(0.4)
Profit for the year	26,337.6	7.6	4,363.7	1.2	2,800.1	0.8

Unit : Baht million	For the year ended December 31					
	2018	%	2019 ¹	%	2020	%
Attributable to:						
Owners of the parent	26,465.4	7.6	5,252.1	1.5	2,414.3	0.7
Non-controlling interests	(127.8)	(0.0)	(888.4)	(0.3)	385.8	0.1
Profit for the year	26,337.6	7.6	4,363.7	1.2	2,800.1	0.8
Earnings per share (in Baht)	4.61		0.76		0.30	
Core earnings per share (in Baht)*	4.43		1.96		1.01	

* Core financials are calculated as reported financials less Inventory gain/ (loss) and less extraordinary items, if any to reflect operations before any extraordinary items.

¹ Certain accounts in the 2019 financial statements have been reclassified to conform to the disclosure in the 2020 financial statements.

² 2018 financial statements have not been reclassified to conform to the disclosure in the 2020 financial statements.

Statement of Cash Flows (Consolidated Financial Statements)

Unit : Baht million	For the year ended December 31		
	2018	2019	2020
Cash flows from operating activities			
Profit for the year	26,337.6	4,363.7	2,800.1
<i>Adjustments to reconcile profit to cash receipts (payments)</i>			
Tax expense (income)	3,812.4	1,534.0	(1,243.1)
Finance costs	4,227.4	5,615.1	7,673.9
Depreciation	12,161.2	14,343.8	17,757.2
Amortisation of intangible assets and other assets	2,112.1	2,696.6	2,730.0
Impairment loss recognised in profit or loss determined in accordance with TFRS 9, net (2018, 2019: Provision for bad and doubtful debts expense, net)	23.9	91.6	54.1
Employee benefits expense related to defined benefit plans	397.0	510.5	623.5
Unrealised foreign exchange loss, net	39.7	237.7	219.4
Unrealised loss on fair value adjustment of commodity derivatives not qualified for hedge accounting, net	-	-	8.6
Share of net profit of joint ventures accounted for using equity method, net of tax	(585.9)	(5.3)	(142.8)
Provision for impairment on property, plant and equipment and right-of-use assets	49.8	374.9	624.9
Provision for losses on inventories devaluation, net	345.9	396.6	118.7
Gain on bargain purchases	(1,928.5)	(805.5)	(1,806.4)
Gain on disposal of property, plant and equipment, net	(6.5)	(181.1)	(32.9)
Loss on written-off of property, plant and equipment, net	28.1	29.3	161.3
Finance income	(247.2)	(183.2)	(192.0)
Gain on previously held interest in a jointly-controlled entity, net	(1.4)	-	-
	46,765.7	29,018.8	29,354.5
<i>Changes in operating assets and liabilities</i>			
Trade accounts receivable	(596.3)	9,825.4	4,631.4
Inventories	(18,054.9)	14,857.4	10,732.2
Other current assets	(818.0)	613.4	(155.1)
Other non-current assets	1,269.4	(3,162.5)	892.1
Trade accounts payable	8,149.8	(6,477.1)	(3,049.2)
Repayment of employee benefit related to defined benefit plans	(215.9)	(378.8)	(432.5)
Other current liabilities	(1,354.3)	447.5	2,390.2
Other non-current liabilities	20.6	(651.0)	386.1

Unit : Baht million	For the year ended December 31		
	2018	2019	2020
Net cash generated from operating	35,166.1	44,093.1	44,749.6
Taxes (paid) received	(3,185.5)	(3,248.1)	(1,313.6)
Net cash from operating activities	31,980.6	40,845.0	43,436.1
Cash flows from investing activities			
Net cash outflow on acquisitions of businesses	(26,191.2)	(7,018.6)	(59,942.1)
Net cash outflow on investment in joint operation	(11,535.3)	-	-
Net cash outflow on additional investment in joint ventures	(2,289.0)	(2,220.9)	(275.1)
Proceeds from sale (purchase) of other investments	2.3	116.3	(501.9)
Proceeds from sale of property, plant and equipment	78.4	441.1	49.2
Acquisition of property, plant and equipment	(16,353.0)	(16,673.9)	(16,788.8)
Proceeds from sale of intangible assets	0.2	6.4	7.8
Acquisition of intangible assets	(190.2)	(126.1)	(1,340.2)
Finance income received	250.6	177.4	189.0
Net cash used in investing activities	(56,227.3)	(25,298.2)	(78,602.1)
Cash flow from financing activities			
Proceeds from short and long-term loans	28,434.9	23,691.8	86,557.6
Repayment of short and long-term loans	(20,310.3)	(22,373.5)	(32,815.2)
Proceeds from debenture, net of debenture issuance costs	17,471.7	9,039.0	8,983.6
Proceeds from sale of subordinated perpetual debenture acquired by subsidiary	-	-	679.6
Payment of issuance expense of subordinated perpetual debentures	-	-	(0.8)
Repayment of debentures	(3,551.4)	(4,018.5)	(4,157.6)
Payment of lease liabilities (2018, 2019: Payment by a lessee for reduction of the outstanding liability relating to a finance lease)	(63.6)	(197.5)	(2,265.1)
Loans to joint ventures, net	(9.3)	(51.4)	(93.0)
Dividends paid to owners of the Company	(8,925.2)	(7,860.2)	(3,930.1)
Dividends paid to non-controlling interests	(67.3)	(199.7)	(186.0)
Finance costs paid	(5,141.6)	(6,641.9)	(7,549.4)
Deferred financing cost paid	(73.4)	(360.1)	(742.7)
Repayment of subordinated perpetual debentures	-	(15,000.0)	-
Issuance of subordinated perpetual debentures, net of issuance cost of Baht 94 million	-	14,905.6	-
Subordinated perpetual debentures of the Company acquired by subsidiary	-	(679.6)	-
Proceeds from issue of ordinary shares due to warrants exercised	15,852.4	-	-
Coupon payment on subordinated perpetual debentures	(1,050.0)	(1,050.0)	(743.8)
Net cash from (used in) financing activities	22,566.7	(10,796.1)	43,737.1
Net increase (decrease) in cash and cash equivalents, before effect of exchange rates	(1,680.0)	4,750.6	8,571.1
Cash and cash equivalents at 1 January	6,877.0	5,578.4	10,446.7
Effect of exchange rate changes on cash and cash equivalents	381.4	117.6	(69.2)
Cash and cash equivalents at 31 December	5,578.4	10,446.7	18,948.5

Key Financial Ratio

		For the year ended December 31		
		2018	2019	2020
Liquidity Ratio				
Current ratio	times	1.1	1.1	1.0
Quick ratio	times	0.4	0.4	0.5
Cash from operating ratio	times	0.4	0.4	0.4
Receivable turnover ratio	times	9.6	9.7	9.6
Collection days	days	37.3	37.2	37.5
Inventory turnover ratio	times	4.9	4.6	4.9
Average number of days sales	days	73.3	78.4	74.1
Account payable turnover ratio	times	6.2	5.5	5.0
Payment days	days	58.4	65.0	71.9
Cash cycle	days	52.2	50.5	39.6
Profitability Ratio				
Gross profit margin	%	16.7	12.3	13.2
Operating profit margin	%	8.4	2.6	1.4
Non-operating profit margin	%	1.3	0.8	1.5
Net profit margin	%	7.5	1.5	0.7
Return of equity (ROE)	%	20.2	3.8	1.9
Efficiency Ratio				
Return on asset (ROA)	%	8.0	1.1	0.7
Return on fixed asset	%	21.6	9.0	8.6
Asset turnover	times	1.1	0.9	0.8
Financial Policy Ratio				
Interest bearing debt to equity	times	0.9	1.1	1.6
Net interest bearing debt to equity	times	0.9	1.0	1.4
Interest coverage ratio (on Net Cash provided by operating activities)	times	7.6	7.3	5.7
Interest coverage ratio (on EBITDA)	times	11.1	5.1	3.8

THE WORLD'S SUSTAINABLE CHEMICAL COMPANY

Indorama Ventures PCL is honoured to be listed on the **Dow Jones Sustainability World Index** for the second consecutive year and the **Dow Jones Sustainability Emerging Markets Index** for the fourth consecutive year.



The Dow Jones Sustainability Indices are global benchmarks, looking at sustainability-driven companies. Companies are only listed if they are best-in-class within their industry for sustainability.

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C H E M I C A L S | P O L Y M E R S | F I B E R S

A professional portrait of Mr. Sri Prakash Lohia, an older man with short, dark hair, wearing a dark blue suit jacket over a light blue and white striped shirt. He is standing against a plain grey background. The image is framed by a dark blue vertical bar on the left and a grey horizontal bar at the bottom.

MR. SRI PRAKASH
LOHIA

Message from the Chairman

Dear Stakeholders,

I hope all of you remain safe and healthy.

With the end of 2020, we have completed a decade and are commencing our journey for the next decade, which looks brighter and even more promising. In fact, COVID-19 dominated the whole of 2020 and tested the resilience of our business model. This has given us greater confidence and pride in our people and processes. As an event of global scale, it also forced us to pause, review the emerging trends and prepare ourselves to build a future-ready organization.

Let me dwell on our journey over the past decade. We have seen tremendous growth and acquired many strategic and valuable assets to enrich our portfolio further, turning them around with the help of our competent and dedicated people, who always supported the management in achieving its vision of a world-class chemical company. These acquisitions have helped us in spreading our wings across geographies, new applications and new customers along with delivering enhanced earnings which have benefitted our shareholders.

We were listed in early 2010 and since then our business portfolio and geographical reach have expanded multifold and become more diverse and stronger than ever. In 2011, our presence was in 15 countries with roughly 6,000 employees and EBITDA of about US\$0.5 billion. Today we are present in 33 countries employing around 24,000 people with EBITDA of ~US\$1.1 billion, despite the pandemic and with a huge upside as we normalize.

In the past decade, we pursued our search for high value-adding applications with clear focus on our strategic goals for creating long-term value and maximizing total shareholder return. We have seen many ups and downs, but our resilience keeps us motivated and driven. Our organization has experienced continuous evolution, including a thrust on corporate governance, by increasing the number of independent directors, focusing on sustainability and recycling, as well as forming the Indorama Management Council (IMC), and Indorama Business Council (IBC) to give a fresh perspective of our business strategy and steering it forward.

After completing a decade, I can proudly say that we have transformed ourselves from an Asian polyester commodity player into a globally diversified chemical company through our strategic plans and organizational development. In 2014, we were number 47 in *Chemical & Engineering's* ranking of the world's 50 largest chemical producers. Now, we have moved sharply up to number 28.

Today, when I look back on the path we travelled, it gives me a sense of pride and confidence in our strong and diverse team, which is capable of handling any challenges under the leadership of the Group CEO. I would like to thank our customers, suppliers and other partners for their continued faith in our capability and helping us in improving our processes and in developing ourselves into a world-class company.

Resilience in the Pandemic Year

In 2020 we started on a good note after the lackluster performance in 2019. In early 2020, we initiated many company-wide transformational projects for bringing our vision of "One IVL" across the organization. The pandemic, in the form of COVID-19, struck the world and seriously afflicted the world economy. Most assumed that it would normalize in a few weeks, but it proved everyone's assumption wrong. Overall, most of our businesses performed better except some pieces like the automotive segment were impacted, while some like Packaging and Hygiene were actually accelerated.

COVID-19 brought new opportunities in the Hygiene area. We quickly adjusted our production capabilities for meeting the newly created demand, demonstrating the agility of the organization. We continued our pace on the transformation initiatives driven by the Group CEO and senior management team and kicked off various programs like Aligned System and Process (ASAP), Global Business Services (GBS), Accounting and Finance Excellence (A&FE), Asset Full Potential, Fibers Full Potential, Organize for Performance and Enabling Functions, across the organization for our vision of "One IVL". Some of the initiatives have started bearing fruit by optimizing resources and leveraging our scale.

The important point to be appreciated here is that all of these projects have progressed despite lockdowns and travel restrictions by adopting “virtual tools” at a fast pace, indicating the strong foundation of adaptability and change management culture in the organization. The entire credit goes to the leadership team and to the people working across different geographies and in different time zones for the smooth roll-out of these initiatives across the organization.

In our endeavor to organize for performance, we have created fully empowered 16 business units under three segments having clear roles and responsibilities. It will pave the way for greater autonomy across the organization.

In year 2020, we created centralized enabling functions like Sustainability, Environment, Health and Safety (EHS), Digital, Communications, BCM (Business Continuity Management) and Indorama Ventures Excellence. We are aligning these functions with our businesses to drive synergy, a culture of continuous improvement and to create effective compliance mechanisms.

Continued Thrust on Sustainability

During the last decade, we commenced numerous initiatives aimed at sustainability and our efforts were widely recognized by the industry. We were listed in the Dow Jones Sustainability Indices and we have been maintaining our ranking consecutively for the last four years. Besides many other recognitions, we received the best Environmental, Social and Governance (ESG) score from the FTSE4Good Index Series. We are now more focused on renewable energy continuing our commitment towards a sustainable environment by reducing our carbon footprint. Indorama Ventures has already adopted solar energy and biomass at some of our facilities.

We built our recycling footprint starting in Europe and extended globally to the Americas and Asia. We have also created partnerships with various key players in the industry, who are not only aligned with our sustainability goals but also want to make sustainable products for society. We have pledged to invest US\$1.5 billion, underlining our commitment towards recycling. We remain committed to help create a sustainable world, a prospering society and a responsible organization. These actions are a key step to steer further our aspiration of being a world-class chemical company making great products for society.

Corporate Governance

Over the past decade, we have strengthened our organization in corporate governance by introducing policies and procedures, more importantly inclusion of more and well-diversified independent directors who continuously guided us in our journey of excellence.

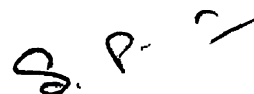
We have been recognized by the Stock Exchange of Thailand (SET) for the “Best Corporate Governance Report Award” and “CSR Recognition Award”. We have received an “Excellent 5 Star” rating for our Corporate Governance Report for the eighth consecutive year. This rating is a reflection of company’s effort to maintain the highest level of transparency and corporate governance, which are duly recognized by the Thailand Institute of Directors in conjunction with the Stock Exchange and Securities Exchange Commission of Thailand.

We regularly review our corporate governance policies, Code of Conduct and update our corporate governance manual. In 2020, DJSI World has placed IVL 3rd among 115 chemical companies assessed globally and 2nd in emerging markets among 23 chemical companies assessed. In 2020, we also won three awards in the area of best Investor Relations practices for the whole of South East Asia. This is a result of adopting best practices across the organization.

Extending Our Appreciation

I would like to thank my fellow Directors, our senior leadership team and stakeholders for their continued support and faith in our vision to be a world-class chemical company.

Be safe and healthy!



Sri Prakash Lohia
Chairman

A professional portrait of Mr. Alope Lohia, a middle-aged man with grey hair, wearing round glasses, a white shirt, a patterned tie, and a dark suit jacket. He is smiling slightly and looking towards the camera. The background is a plain, light grey. On the left side, there is a blue rectangular graphic element containing the text 'MR. ALOKE LOHIA' in white capital letters.

MR. ALOKE LOHIA

Message from the Group Chief Executive Officer

Dear Stakeholders,

2020 has been an unprecedented year as COVID-19 hit all of us hard, to say the least. At IVL, our leadership team formed the Business Continuity Plan to safeguard our employees, and support their families as well as the communities that we rely on, with timely advice and resources to tide over these difficult moments and work from home where possible. IVL is a manufacturing business and therefore it is with gratitude that I acknowledge the efforts of our front-line employees in 33 countries and 123 sites who relentlessly supported and successfully managed their operations to serve our customers. I am grateful to our supply chain partners for their support and alignment as we navigate through this crisis together.

IVL Remains Agile and Nimble to Steer Through the Pandemic

When COVID-19 started to spread outside of its epicenter, we quickly formed a Global Emergency Management Team (GEMT), consisting of 30 leaders across geographies and functions, to take swift and comprehensive measures with their first and foremost priority to ensure the well-being of our 24,000 employees. GEMT left no stone unturned in ensuring our 123 production units continued to operate with minimal disruption, kept our customers' supply chain running and provided support to our local communities. IVL continues to work with local hospitals in Thailand to transform and donate post-consumer PET bottles into much needed PPE suits.

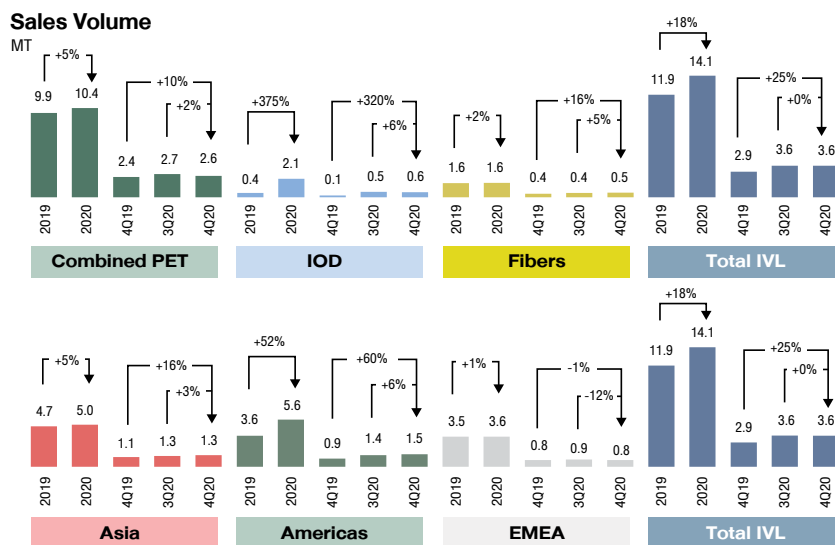
Indorama Management Council (IMC) met almost every day to take stock of the health of our employees, the health of our business and to take proactive steps to support GEMT with both resources and safety protocols. We continued to have our staff work from home as much as possible for all non-manufacturing roles with less than 25% of employees in office at any given time. Nevertheless, while our playbook during the crisis was to manage near term risks, we prepared ourselves for worldwide long term lockdown, made best possible efforts to maintain continuity of our supply chain and in the process also remained ready to serve our customers better through our integrated business model. We have effectively managed our finance by ensuring optimal liquidity position, tightening working capital with inventory optimization while maintaining our sales and re-enforcing credit discipline with our customers. We also

performed regular stress testing on our operational strategy as the crisis peaked and consolidated production across sites in order to optimize cost. With comprehensive measures, IVL operations remain intact to date and our leadership team remains focused on our risk management strategies.

Our Platform Has Proven Resilient to the Immense Challenges of Last Year

A diversified portfolio of end uses dampened the impact of COVID-19 on our businesses and our regional business model strategy has been well tested. Despite the downturn in global GDP, we achieved our highest-ever sales in 2020, with 5% year-on-year (YoY) volume growth on our legacy portfolio (18% including the Spindletop acquisition). These gains are expected to be structural and last beyond this pandemic. Our biggest acquisition to date, Spindletop, has been successfully integrated into the IVL portfolio and the newly-formed leadership team is working cohesively to drive synergies across the portfolio.

While our businesses have demonstrated resilience in volume terms, we did not escape the margin impact during the severe COVID-19 lockdowns and the significantly lower crude oil prices which affected our 2020 overall performance. The worldwide drop of 9% in polyester fibers demand led to significant drop in paraxylene (PX), PTA and MEG demand and hence led to both price and margin erosion. On the other hand, our PET, specialty polymers and Packaging verticals enjoyed both volume and margin enhancement in 2020. Within our Fibers segment, Mobility and Lifestyle fibers were negatively impacted while Hygiene fibers witnessed high margin and strong volumes throughout the crisis. Our recently expanded Integrated Oxides and Derivatives (IOD) portfolio was negatively impacted by weakened shale gas advantage and travel restrictions, especially on our commodity side of MEG and MTBE which represents ~60% of the volumes. The ~40% of volumes in HVA within IOD saw steady financial performance and contributed to 64% contribution margin. As the lockdown measure eases, both MEG and MTBE businesses are expected to return to the historical levels of performance.



Note: Total IVL sales volume excluding captive PX and Ethylene

IVL is a unique company with a global footprint. We have a strong, resilient and diversified business that is positioned to outperform competitors. While we do operate globally, our business remains region-centric which aligns very well with today's trend towards supply chain localization. This business model has proven to be highly resilient to the disruption of the global supply chain during COVID-19. Overall, core EBITDA is down by 3% for the year but we have demonstrated our strong financial prudence by delivering strong operating cash flows of ~US\$1.4 billion, driven by volume growth across segments and cash release from working capital management.

We are Ready for the Next Era of Growth with People Empowerment at the Core

We have completed two years since the inception of our two leadership forums i.e. Indorama Management Council (IMC) and Indorama Business Council (IBC). It has been a very satisfying experience for me personally to see their engagement and evolution during this period. With our continued focus on succession planning to make IVL a future ready organization, IMC took steps to re-organize the leadership teams for performance and empowerment to run their businesses independently. This has also enabled IMC to increase its focus on maximizing parenting advantage and preparing IVL for future growth.

I would mention that 2020 has been a most productive year for our company with several enablement steps towards its most valuable asset i.e. people. We have now combined all of our businesses under our "ONE IVL" CEO, D.K. Agarwal. This is sure to bring synergies across the group, strengthen our risk management with integrated business model and facilitate quick decision making. The new organization is simplified under the lead of three Chief Operating Officers (COOs), and their 16 business heads to collaborate, empower regional/vertical teams, cross-fertilize ideas and nurture our leaders with a growth mindset. At

IVL, we foresee the importance of a bottom-up approach and let this be the opportunity for our leadership teams across these 16 verticals to act spontaneously, yet with a long-term perspective, in this VUCA world. In addition, we have launched six new corporate enabling functions: Environment, Health, and Safety, Sustainability, Business Continuity Management, Lean Six Sigma, Digital and Communication. These functions will support the businesses in achieving their plans by virtue of working closely with leadership teams and focusing on driving plant uptime, efficiencies, augmenting digital opportunities, improving our risk management and supporting sustainability projects on our commitment to lowering our carbon footprint.

Doubling Down on Our Ambition without Apprehension, a Comprehensive Transformation Journey Has Begun with High Emphasis on Building Systems

Regardless of the extraordinary circumstances in 2020, our company achieved several key milestones during the year to build an agile operating model that can support both the existing complexities and future growth of the organization. Our "ONE IVL" ERP project, S4/HANA, has been initiated and is progressing well. The Global Business Solutions (GBS) for finance function is in its implementation stage. What is truly remarkable here is that these global projects have so far been executed completely through virtual collaboration among hundreds of team members working in different time zones across the world. One ERP will transform IVL's multi-system landscape into an integrated digital core platform that will simplify and standardize IVL's data, processes and practices globally, while GBS will enhance efficiencies and improve controls through consolidation and automation. During the year, we also undertook specific functional stand-up projects to build expertise in areas of excellence, such as Accounting & Finance Excellence (A&FE) wherein we have reorganized teams between statutory and business finance for better compliance and business partnering.

Our cost transformation program, Olympus, is off to a strong start achieving US\$92 million savings, exceeding our communicated target by 21%. The notable point is that this achievement has come during most unprecedented times and I would like to congratulate all our employees who have contributed to this milestone. In addition to this, our leadership teams across businesses worked tirelessly around the year to do a deep dive study into our business' full potential with the support of 11 world class consultants. Now, we are not only targeting cost improvements, but widening our scope to lift the full scale of commercial opportunities as well. Our goal has now expanded to a bolder ambition and broader pipeline of US\$610 million targeted savings by 2023. The multiplier impact of organic growth will be tremendous within three segments across 16 verticals through their coordinated efforts across functions, comprehensive changes to our operating model to further leverage on our integrated operations and also pursuing commercial opportunities in sales and procurement excellence.

We fully appreciate the challenge ahead of us as it will take more to deliver the next three years of Olympus than the first year. Yet our confidence remains high, with a clear and detailed plan developed by a bottom-up approach through several Project Management Offices (PMOs), consisting of IMC, CXOs and other senior leaders. Furthermore, we have established a Transformation Management Office (TMO), specifically designed for IVL and its DNA, but drawing from leading best practices. The TMO comprises of Chiefs of Staff to IMC members, supporting IMC and PMOs in their transformation journey. TMO has also adopted a world class tracking tool called "KEY" that has become a critical enabler and the backbone of our Olympus program. PMOs have further rolled out Result Delivery Offices (RDOs) for specific sites having significant transformative initiatives. This TMO, PMO and RDO structure and their enablement through leading consultants and resources are the critical capabilities that IMC has put in place for the success of our comprehensive transformation journey. Our leadership is capable of delivering on their strong ambition of value creation by deploying world class tools and practices, well supported by long-term incentive structures.

Our Path Towards a Circular Economy and Decarbonization

Amongst the ever-growing global concern regarding climate change, global warming and pollution, our journey towards circular economy initiatives is progressing with strong focus on both operational improvement and product offerings to customers. In 2020, IVL formed a new corporate function, Sustainability, to drive this agenda across our platforms with a single threaded effort. Our ESG target for 2025 is to reduce GHG intensity to 10%, energy intensity by 5% and expand our renewable electricity by 10%. This year, we have joined the 50 Climate Leaders campaign hosted by Bloomberg that demonstrates the desire, leadership and will of the members to take effective action in the fight against climate change. We have also joined World Economic Forum's Global

Plastic Action Partnership (GPAP) alliance that aims to reduce plastic leakage into the environment and is driving the transition to a circular economy for plastics.

In March 2020, IVL reached a major milestone by recycling our 50 billionth PET bottle since we started our circular journey in 2011. This global recycling feat saved three million barrels of crude oil and eliminated 1.65 million tons of carbon. In 2019, we had announced to invest US\$1.5 billion with a target of 750,000 metric tons recycling capacity by 2023. I would like to inform our stakeholders that we have made good progress despite the global crisis, with further expansion of our recycling portfolio in 2020. We remain committed to our circular economy and decarbonization initiatives to deliver more recycling infrastructure globally and our robust innovation pipeline will focus on sustainable materials, for all of our business segments.

During the year, IVL signed a JV agreement with one of our biggest global partners, Coca-Cola Beverages Philippines to establish PETValue, the country's largest bottle-to-bottle recycling facility, capable of processing almost 2 billion PET bottles per year. It will produce the Philippines' first ever beverage bottle made from 100% recycled PET. Furthermore, we have acquired three PET recycling facilities:

- AG Resinas Ltda. in Brazil with an rPET flake and pellet capacity of 9,000 tons per annum. The facility is in close proximity to a large supply of recovered PET bottles, which will create an immediate recycling presence for further expansion opportunity and also brings logistic advantages for IVL.
- IMP Polowat facility in Poland with approximately 27,000 tons per annum for both rPET flakes and pellets. This facility has added an attractive recycling platform for IVL in Eastern Europe.
- Our recycling facility in Verdun, France, which will provide 64,000 tons per annum after the expansion. Verdun will be commissioned in 4Q 2021 and enhance our packaging circularity in Europe.
- Indorama Ventures Sustainable Solutions Fontana, Inc. in California USA, with approximately 30,000 tons per annum of recycled PET flakes, provides IVL's first-ever manufacturing footprint on the West Coast of the USA.

Our commitment to ESG continues to be recognized and rewarded. We have once again been selected as a member of the FTSE4Good Index Series and included in the Dow Jones Sustainability Indices (DJSI) for the fourth consecutive year. In March 2020, we were granted the first sustainability-linked loan in Thailand, arranged by Mizuho Bank for US\$255 million, with linkage to the sustainability performance of IVL. In November 2020, International Finance Corporation (IFC), a member of the World Bank Group granted IVL the first ever Blue Loan of US\$300 million to support IVL's recycling capacity expansion and investment in

renewable energy and resource efficiency projects. Our company has cumulatively received loans of over US\$1 billion based on our ESG rating and our commitment towards the circular economy. Our management remains steadfast on our sustainability commitment to our investors.

Prepared to Execute on our Transformation and Five Strategic Priorities. Our People will Maximize the Performance of Our Platform, Supported by Systems

Following a period of rapid growth over last the two decades mainly through acquisitions, in this new decade, IVL is well placed to enhance quality of earnings across our three businesses of Combined PET, Fibers and IOD. We are a global leader with 20% market share in PET resin due to structural advantages from extensive integration, global footprint and overall superior scale, allowing us to have achieved consistently strong performance for the last few years. Looking forward, we firmly believe in the future of our PET business. We see demand continuing to grow in our key markets for virgin PET and rPET, driven by several robust macro trends, namely population growth, affluence and urbanization, health consciousness and concerns over sustainability. PX and PTA are already bouncing back as demand in polyester has shown strong signs of improvement in 4Q 2020. Our strategic focus for Combined PET would be to strengthen our cost position further through Olympus transformation, invest selectively in recycling, scale up our packaging platform by aggressively pursuing growth in frontier markets, unlock the next wave of value through a specialty business model and also create an empowered organization with the readiness to capture opportunities.

IOD is an attractive business offering strategic advantages to IVL in the form of vertical plus horizontal integration, HVA product development and a platform for future growth. PO/MTBE technology also makes IVL one of the most cost competitive PO producers in the world. With our strong portfolio mix and diverse customers from both internal (PET and polyester fiber) and prominent external global chemical and consumer companies, we are aspiring to be a leading integrated downstream producer in a high-growth market, leveraging low-cost feedstock. IOD's strategic priorities in the near term is to realize full potential savings through project Olympus, launching reliable and safe operations at our plants, scaling up business via organic and inorganic growth and developing projects to enhance a sustainable footprint.

Our Fibers business has laid down a significant cost and business full potential transformation agenda to lift up the earnings over the next three years and the new leadership team is fully geared to deliver on our ambition to return to double digit ROCE. The Fibers business has built a structurally advantaged global footprint in three attractive verticals supported by strong macro trends, with 42 production units across 18 countries that are serving customers

well with resilient regional supply chains. IVL has a substantial market share across all key segments that we are active in, with a significant "share of wallet" of the top players in the market. Additionally, our Fibers portfolio is protected with the right footprint, R&D relationships and customers' qualification requirements. With various market forecasts and analyses completed, we expect high-level drivers of fibers demand to pick up in the near future, such as the number of vehicle sales, tire replacement and growing number of airbags for the Mobility vertical. Our Fibers business will transform through three strategic imperatives: implementation of the Fibers Full Potential Plan, maximizing our "ONE IVL" advantage and lastly doubling down on game changing innovation.

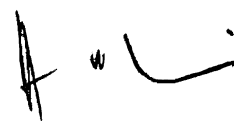
We have to enhance further our innovation capability across businesses by way of cross learning opportunities, cross selling strategy and enhancing our HVA products; this will be a focus area for IMC. Our businesses will be well-supported by the corporate enabling functions as well as the roll out of our ERP and GBS. IVL's core priorities regarding our cash deployment policy would focus on high impact projects e.g. SAP S4/HANA, transformation projects and inorganic opportunities that are a strategic fit for our integrated global portfolio. Our strong visibility of cash flows is expected to reduce our leverage and a healthy debt maturity profile will provide us enough headroom for future growth and regular dividend to our shareholders.

With our goal of double-digit ROCE and the doubling our EBITDA by 2023 at the top of our minds, we are investing in **People** to create strong leadership teams that are organized to perform and with the right experience and capabilities. We have also built a **Platform** of businesses that are resilient, sustainable and positioned for growth as well as a **System** of codified best practices, raising certainty, efficiency and institutional excellence. Our key success factors are our global scale with local presence, our leadership position in the market, our innovation and partnerships with customers, our high level of backward integration and lastly and importantly powered by our "ONE IVL" approach. All of these elements will lead our company to meet its commitment towards the three Ps of **people, planet, and prosperity. The growth mindset of all IVL employees across our organization will lead us in this new era!**

"The great thing in this world is not so much where we stand, as in what direction we are moving: To reach the port of heaven, we must sail sometimes with the wind and sometimes against it – but we must sail, and not drift, nor lie at anchor"

- Oliver Wendell Holmes Sr.

Sincerely,



Aloke Lohia
Group Chief Executive Officer



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Message from the Chief Executive Officer of Combined PET, IOD and Fibers Business



**MR. DILIP KUMAR
AGARWAL**

Dear Stakeholders,

2020 will be remembered as a year like no other as the global pandemic dominated both news and business. The safety of our employees and facilities has been at the forefront of our efforts and remains so today. We introduced strict operating measures across all units and offices to protect our employees, suppliers and contractors. This disciplined approach combined with the determination and passion of our team kept our platforms and plants running throughout the year. This in turn meant we were

able to adapt to an ever-changing environment and disruptive supply chain situations to support and meet the requirements of our customers continually. We appreciate and extend a note of gratitude to all our employees for their dedication, positive attitude and work commitment during these difficult times.

The COVID-19 pandemic has tested the resilience of our product portfolio and regions. The result being, approximately 80% of

our product portfolio saw resilient demand in 2020 primarily due to serving non-durable and inelastic market segments. This characteristic of our product portfolio proved to be an important strength during this past year.

The strong sales volume delivered by the Combined PET segment, cemented PET as the preferred polymer for hygiene, safety and recyclability. Although PET demand declined for on-the-go bottles in 2020, due to lockdowns, we have seen a stronger demand for home consumption, thermoforming and new applications like face shields and sanitizer packaging. We expect that this trend will continue.

The Fiber segment experienced mixed impacts across the three verticals. Hygiene products witnessed strong demand and margins due to the essential nature of the applications. Disinfecting wipes, personal hygiene awareness regarding facemasks and Personal Protective Equipment (PPE) have all been strong contributors to our performance.

Demand for Lifestyle products was severely impacted due to the lockdowns of "High Streets" across the world. Less consumer spending on polyester apparel and furnishing was also evident. With that said, demand returned to pre-COVID-19 levels by year-end and our robust regional supply chain proved valuable to our customers in high growth regions.

Demand in our Mobility segment reduced with the sale of light vehicles as well as a reduced need for replacement tires. This demand bounced back to pre-COVID-19 levels, which demonstrates strong organizational performance to adapt to such swings.

Our Integrated Oxides and Derivatives (IOD) segment's performance was severely impacted by the drop in crude oil prices, losing the shale gas advantage over crude and resulting in reduced demand due to COVID-19 and production disruption on account of unprecedented natural calamities on the US Gulf Coast. Our IOD HVA portfolio, comprising Purified Ethylene Oxide (PEO), Propylene Oxide (PO) and surfactants remained stable in both volumes and margins barring losses due to natural calamities. Our MEG and MTBE businesses under IOD was the hardest hit by the collapse of the oil price, resulting in compressed margins due to the erosion of the shale gas advantage over naphtha as well as lower demand due to COVID-19. However, we are seeing a strong recovery in our integrated MEG spreads in 2021 with the uptrend in the oil price (now reaching US\$63 per barrel), restoring shale gas advantage and demand recovery due to the global rollout of COVID-19 vaccines and fiscal stimulus measures increasing consumption. MTBE spreads are also on the path to recovery as gasoline demand increases after lockdowns and travel demand across the globe starts to ease and recover. We are confident

that the IOD segment will contribute a significant portion of IVL's total EBITDA following normalization of production and demand recovery.

2020 Earnings

Our total sales volume increased from 11.9 million metric tons to 14.1 million metric tons (plus 18% on YoY basis), which includes 1.6 million metric tons from the newly acquired IOD assets in 2020. However, we achieved a 5% increase in organic volume growth in 2020, which is quite encouraging, despite highly adverse situations due to the pandemic, a resulting global drop in demand for Lifestyle and Mobility fibers and production disruption driven by lockdowns or natural calamities across the globe, leading to unplanned shutdowns and plant closures.

We achieved total Core EBITDA of US\$1.11 billion in 2020 (minus 3% on a YoY basis). However, 2020 EBITDA was impacted by US\$116 million on account of onetime events, like a lightning strike at our IVOL cracker, losses from hurricanes and losses due to the PO/MTBE turnaround that occurs once every five years.

Next is a summary of the 2020 earnings performance by segment.

Combined PET Segment

Our Combined PET business remained robust in 2020, supported by higher volume and stable spreads. Total sales volume of Combined PET grew by 5% in 2020 on a YoY basis. Volumes grew, despite production losses of approximately 300,000 tons, mainly in India, due to stringent COVID-19 lockdowns, turnarounds and unplanned shutdowns due to reliability issue in some assets. We operated our PET plants globally at a high utilization in 2020, except in India for the aforementioned reasons. We proudly managed our supply chains efficiently and met our customers' demand effectively throughout the COVID-19 crisis.

Total revenue from the Combined PET segment in 2020 decreased by 20% to US\$8.5 billion, mainly due to lower price realizations caused by a steep decline in the crude oil price. Segment core EBITDA in 2020 was US\$794 million, down by 8% when compared to the previous year due to lower margins in feedstocks i.e. PTA and PX, particularly in Asia. Core ROCE improved from 13.5% in 2019 to 14.7% in 2020 due to efficient inventory and working capital management.

PTA demand reduced by 9% in 2020 due to drop in polyester fiber demand used in apparels, home furnishing and automotive etc. on account of worldwide high street lockdowns impacting the overall retail clothing and furnishing demand. PTA demand and its margins are on a path of recovery with increase demand of polyester apparels and furnishing as situation normalizes.

Our packaging business continued to perform well due to high capacity utilization and stable margins. This vertical has a very high growth potential.

Our specialty polymer business delivered strong results due to diversified portfolios and value-added products. Our dedicated R&D team continues to innovate, develop new products in specialty polymers and work closely with our customers on new developments.

Lower spreads in 2020 affected our PIA business due to a demand drop in the UPR and coating sectors linked to the slowdown of construction activities. However, we are seeing strong recovery in PIA margins on the back of growing PIA demand for low melt fiber, paints and coatings and other applications. We have converted one PIA line in Decatur (AL), USA, into a swing line between PIA and PTA in May 2020 for better asset utilization.

Our NDC business has been generating consistent returns over the years. NDC, predominately used for large display screens, iPhone screens and storage media, has shown strong growth potential in 2020.

Overall, the Combined PET segment delivered a strong performance despite the severe pandemic, proving the strong resilience of our business. Due to our unique structural advantage, better asset utilization and cost transformation projects i.e. Project Olympus. We expect that the Combined PET segment would achieve an EBITDA of US\$1.1 to 1.3 billion with a ROCE of 21 to 23% by 2023.

Integrated Oxides and Derivatives Segment (IOD)

We successfully integrated Spindletop assets in 2020, added 3.1 million tons per annum capacity to our total product portfolio and created a new product segment called "Integrated Oxides and Derivatives" (IOD). Our IOD segment comprises integrated EG, integrated Purified EO, PO/MTBE and surfactants.

Our IOD segment faced production losses in 2020 due to unplanned shutdowns caused by natural calamities on the gulf coast and planned PO/MTBE shutdown. A lightning strike affected our Lake Charles cracker operations. As we have comprehensive insurance coverage, damages including loss of profit are covered. The insurance claim will appear in 2021 on a receipt basis. We expect the Lake Charles cracker operations to be back online by Q2 2021. Total core EBITDA of our IOD segment in 2020 was US\$105 million, due to both production loss and lower product margins. Disruption by natural calamities and the planned turnaround of PO/MTBE (once every five years) affected the segment EBITDA by US\$116 million.

We expect that the IOD segment can deliver an EBITDA of US\$550 to 600 million at 10% ROCE by 2023, based on a widely-expected market recovery, thus regaining the shale gas advantage and supported by the cost excellence programs under the umbrella of Project Olympus. In parallel, we are exploring multiple opportunities to harness IOD's value and growth potential by creating value in adjacent, product line expansions and licensing.

Fibers Segment

The Fibers segment is an attractive downstream business of an integrated IVL, well positioned for growth. The macro trends support this view and the resilience, agility and recovery in 2020 across the three verticals – Mobility, Lifestyle and Hygiene – reinforce this confidence.

Our regional footprint was a major advantage to our global customers and regional customers alike. This, combined with a product portfolio that serves a variety of applications, such as essentials and non-durables for the Hygiene and Lifestyle verticals as well as high performance applications for Mobility, provided the overall segment with some stability within an unstable environment.

The Fibers segment faced challenges that forced closure at some of the plants, however we managed to produce volumes at 1.6 million metric tons, which is only 3% lower than 2019. Core EBITDA stood at US\$195 million in 2020, which is 12% lower on YoY basis. On a positive note Hygiene achieved 36% higher core EBITDA in 2020 over 2019. We managed our inventory during this period, which enabled the release of US\$167 million, converting to strong cash flow performance.

We have firm plans to cut costs aggressively over the next three years by 3% annually while maintaining COMA margins at over 28%. This will help to improve our core EBITDA margin from 7.2% in 2020 to 12.7% in 2023 and to enhance the segment ROCE further from 1.2% to more than 15% by 2023. We expect that our Fibers business will continue to grow and will generate an EBITDA of US\$550 million by 2023 supported by global market recovery, Olympus initiatives, market leading innovations and targeted investments.

Program Olympus (IVL Cost Transformation Program)

Our increased focus on cost excellence through Project Olympus resulted in savings of US\$92 million in 2020, coming from increased efficiencies that helped to reduce conversion costs across all regions.

Our initial earnings improvement target of Project Olympus was set at US\$350 million over the course of a three-year effort. As part of our transformation journey, we have spent considerable time

this year with the support of world-renowned consultants to take a deeper dive into our businesses and explore additional streams within Olympus. This has resulted in the identification of further initiatives in multiple areas so that we can achieve cost excellence. Based on this, we have revised our initial saving target of US\$350 million to over US\$610 million by 2023, with a total capex of US\$600 million under all corporate and business segments.

We have identified 2,500 cost excellence projects across IVL with clear ownership and execution timelines and plans.

To enable the organization to execute these plans to the highest level, we have and will continue to invest in our systems and our people. The Transformation Management Office (TMO) in Bangkok maximizes execution certainty and efficiency across all businesses. Furthermore, we will embed leading technologies into our business operations such as data analytics, artificial intelligence (AI), cognitive services and edge computing which will provide us with a competitive advantage. To this end, we have recruited Digital and Lean Six Sigma functional leaders in our enabling functions to support technological adaptation across the organization. Finally, we are embarking on our journey to create a strong IT platform by investing in SAP S4/HANA across our 123 sites globally with a capex commitment of over US\$200 million.

We are consistently and efficiently preparing ourselves for the next era of growth for IVL by setting up platforms, empowering our people and advancing our systems.

Strong Demand Visibility across All Product Verticals

After a major downturn of the global economy in 2020 caused by the COVID-19 pandemic, we expect the global economy to rebound strongly in 2021 with the widespread roll out of several vaccines and countries re-opening for travel. As countries gradually emerge from their lockdowns and increase spending from global stimulus packages, we expect global GDP to recover by 5% in 2021 driven by an increase in industrial production and consumer demand. We are anticipating a strong demand across all our product verticals being basic daily life products for consumers and increased hygiene awareness due to the pandemic.

Global PET resin market has witnessed a significant growth in the past few years majorly driven by the food and beverage packaging sector, as PET remains a preferred polymer due to its clarity, good barrier properties, recyclability and low carbon footprint. We expect that global consumption of PET resins would increase to 31 million tons by 2023, registering a CAGR of 4% to 5% from 2020 to 2023. Rising standards of living, growing urbanization, a developing retail infrastructure and the replacement of traditional pack types are the major growth catalysts for PET resins.

Our Packaging business will serve our brand owner requirement in the developing world, where growth is strong. We are market leaders in many emerging markets today and will continue to explore opportunities in more developing markets like Ethiopia, Vietnam and Morocco.

Within our specialty HVA PET products, we intend to expand our product offerings relentlessly, by leveraging our global intellectual property rights to expand business in new regions like Latin America and India. Our focus is to work closely with our partners and customers to develop the market of specialty polymer products for flexible and rigid packaging.

Though demand for PIA was impacted in 2020 due to a slowdown of construction, it has recovered to pre-COVID-19 levels in 4Q 2020 with a revival of demand for low melt fiber, paints and coatings and other applications, including PET. Furthermore, we enjoy a unique position in the PIA business being the sole producer in Europe and a leading producer in the Americas.

We plan to increase our NDC captive demand through a new in-house PNDA production facility, which will start commercial production in June 2021. We have also started producing new polymers like PEN and identified new markets for naphthalates, like superior flexible and rigid packaging, storage media, etc. Specialty PET and NDC provides us with the opportunities to capture growth in other industries like solar energy equipment, electronics, and medical applications.

In Lifestyle fibers, we anticipate a strong demand recovery in 2021 as we witnessed fiber demand in China rose by 11% in 4Q20 and 4% in 2020. Furthermore, there is no viable alternative to polyester in the Lifestyle segment based on both cost and performance. Natural fibers have a negative sustainability impact and limits on production. Growing affluence and urbanization are other macro factors that drive polyester demand.

In Mobility fibers, we saw a drop in demand for tires and reduced sales of light vehicles. However, we anticipate that light vehicle sales will rebound to 2019 levels by 2023. New vehicles tend to be equipped with higher safety measures e.g. airbags, which will also contribute to increased demand.

Hygiene fibers continue to see strong demand on a year-on-year basis with better hygiene consciousness among consumers and industrial facilities. Demand for wipes continues to be positive (+15 to 20% YoY), melt blown demand is good in EMEA and increasing in the Americas.

Overall, fiscal stimulus packages and the rebound of economy is going to create strong demand in our entire product portfolio in 2021. We are already witnessing early signs of better margins across the product portfolio

Sustainability and the Circular Economy

Strengthening our sustainability strategy and its alignment with our business strategy are ongoing activities. Our significant investments made towards creating PET recycling capacities demonstrates our efforts and determined actions to foster sustainability and to fulfill our Sustainable Development Goals and commitment to create a circular economy for plastics. We are on the right track to fulfill our global commitment to the Ellen MacArthur Foundation: to create an rPET capacity of 750,000 tons by 2025 with an investment target of US\$1.5 billion. We have made significant progress in 2020 by adding a recycling facility of 9,000 tons in Brazil and 23,000 tons in Poland. Recycling will be the future of our business, especially in mature markets. We are doubling down on our effort to become the leader in recycled PET over the next three years. Investment in recycling not only meets our sustainability objectives, but also we continue to remain committed to generate ROCE of 12 to 15%. Today, rPET commands a significant premium over virgin PET and we expect strong growth globally due to commitments made by brand owners to have more recycled content in PET packaging in the future. The pricing of rPET is linked to bale/flake prices, which protect margin volatility.

We have also increased our efforts to communicate the strengths of PET in terms of sustainability, such as 100% recyclability, highly sustainable and significantly lower carbon footprint than other packaging materials being lighter, besides being more resilient and affordable than glass and aluminum.

We will continue to promote these characteristics actively as part of our efforts related to product sustainability. In terms of reinforcing the sustainability of all our products, we will work with our clients to support their objectives. Our efforts include increasing our recycled content product offering and developing lighter-weight products, among others.

Green Loans from international institutions supporting industrial shifts recognized IVL's efforts towards circular economy and sustainability. These loans will further support our expansions, helping us to achieve our mid-term and long-term ambitions even faster.

Innovation

Innovation has been one of the key strategic priorities to strengthen our competitive position and offer greater value to our customers. Given our global scale and multi-regional footprint, customers expect us to lead the change, not just to follow. In 2020, we achieved a vitality index score of 22%, which signifies that 22% of revenue in the Fibers segment came from products introduced over the last five years. We are targeting to improve this to 25% by 2023. In order to grow our new revenue streams continuously through

innovative offerings, we have focused our development activities on creating a robust pipeline of products within existing businesses and supporting adjacency growth using state-of-the-art technologies and new materials. These have the potential to generate new revenues of US\$1 billion in the Fibers segment, backed by our proprietary recipes and technologies. Product innovation in fibers is not just about R&D, it is equally about investment in technology and mastering startup collaborations.

In the IOD segment, we have a pipeline of high value-added products in specialty surfactants used for agrochemicals, oil fields and personal and home care. We are also expanding our downstream product portfolio leveraging our PO and EO capability.

Empowering Leadership and Human Capital Development

At IVL, we believe that our people are the most important asset of all.

In 2020, we have simplified our organization through the creation of three independent businesses (segments) led by a Chief Executive Officer (CEO) and enabled by Chief Operating Officers (COOs) for each segment. We have been delighted to appoint Alastair Port, who joined us with the Spindletop acquisition, as our COO for the IOD segment and Chris Kenneally as our COO for the Fibers segment, assisted by three CEOs for each Fibers vertical.

To ensure focus, we also reorganized our businesses into 16 verticals across our three core segments, creating independent business teams fully empowered to deliver our ambitious growth targets.

We are continuously developing a new generation of leaders through real-life learning assignments and leadership development, a curriculum supported by exceptional education experts and renowned institutions, such as INSEAD.

We believe that sound succession plans for the senior leadership is very important for creating a sustainable future for the Company. We have worked along with the Human Resources team to define robust leadership succession plans and to execute bespoke development actions to prepare the next generation of leaders for our future challenges.

Moreover, on our journey to become a world-class chemical company, we have invested heavily to be a future-ready organization, focusing not only on Sustainability, EHS, Digital, Business Continuity, Lean Six Sigma and Communications but also on Finance Excellence, Procurement and Supply Chain. These enabling functions with state-of-the-art processes and tools will be delivering services and expertise support to all verticals across the IVL Group, striving for further operational excellence and leveraging on its multidimensional strengths and potential synergies.

We are tirelessly conducting leadership development programs to build strong leaders in all of our verticals and we are continually investing in new skills, promoting diversity and international exposure for all our talents across the globe.

Finally, we are aligning the organization around a sound set of goals and performance mechanisms that drive our people to make good decisions fast, preparing the company for the next era of growth.

Our Strategic Priorities Going Forward

We remain focused on our financial objective for 2023, to achieve double-digit ROCE in each of our core businesses. To achieve these objectives, our priorities going forward include:

1. Cost transformation via the Olympus program, leading to more than US\$600 million run-rate savings by 2023
2. Asset full potential with strong revenue and margin growth across PET, IOD and Fibers through commercial excellence
3. Adjacency growth to develop new growth engines for IVL
4. Circular economy and carbon neutrality being the no.1 player in recycled PET and fostering a circular economy pillar
5. Leadership development with a bench of leaders and talent management systems that is recognized as best-in-class

Acknowledgements

Through constant efforts and financial support including a donation of US\$2.5 million to our facilities to assist in minimizing the effects of COVID-19 on the communities around us, very sadly, IVL together with many families and organizations is grieving for some of our colleagues or their family members who were lost due to COVID-19. We would like to pay tribute to those who passed away during 2020. Our thoughts are with their families.

We would like to place on record our gratitude to all our partners and associates, shareholders, investors, lenders, suppliers and customers who have bravely stood with us during these difficult times. We take pride in our dedicated and committed talents, who have left no stone unturned to take the company to greater heights despite being constrained by tough circumstances. The consistent growth of the company is only possible due to their hard work, solidarity, cooperation and support.



Dilip Kumar Agarwal
Chief Executive Officer of
Combined PET, IOD and Fibers Business

Message from the Chief Financial Officer



MR. SANJAY AHUJA

Dear Stakeholders,

IVL added two million tons of high quality IOD assets at the beginning of 2020. As the year progressed, it became quite evident that the significant margin impact due to COVID-19 was going to offset the volume increase. The volume resilience gives us confidence as we move into the next year with economies looking to open up and positive macro-economic factors, which should result in margin normalization for our products.

With a sales volume of 14.1 million tons in 2020 (11.9 million tons in 2019), IVL delivered a core EBITDA of US\$1.11 billion, 3% lower than US\$1.14 billion in 2019. Core ROCE of 5% in 2020 (8% in 2019) reflected the weak margin environment due to COVID-19, as also did Hurricane Laura and lightning impact on our IOD business in the USA.

A “One IVL” team has used 2020 to work with a number of domain experts on our five strategic priorities announced at the beginning of 2020. This is on track to utilize our assets to their full potential in an efficient manner. A significant improvement in performance should manifest itself, not only through product margin normalization but also from the empowerment that comes to the whole IVL ecosystem through the “full potential” studies performed in our Fibers and IOD segments in 2020.

Operating Cash Flows

Our operating cash flows are undoubtedly the unseen benefit in a year of challenges. Team IVL’s agility was at the forefront as we moved away from our conventional wisdom of “made to stock” to a “made to order” policy. The reduction in inventory complimented by efficiency in receivables and payables provided for an operating cash flow of US\$1.4 billion, which was 5% higher than the US\$1.3 billion achieved in 2019. Net cash cycle reduction in 2020 was more than 20 days. The high operating cash flows led to positive free cash flows and debt increase for the year was lower than the US\$2 billion spent on Spindletop assets at the beginning of the year.

Working capital optimization, mainly reduction in inventory, did not come with any pain to our customers. All customer orders were met on time. Our teams worked with the best consultants to formalize, standardize and use tools to evaluate the inventory thresholds for each product based on our previous history. They have planned and documented the processes through standard operating procedures.

The focus on working capital will remain as a commitment going forward.

Changes in Accounting Standards and Accounting Policy

2020 saw the introduction of new accounting standards, most importantly TFRS 9 (Financial instruments) and TFRS 16 (Leases). IVL adopted and successfully implemented these in 2020. The impact was in our financial statements. There was also a revision in the residual life of our operating plants necessitated in a review done by our technical team and reconfirmed by external appraisers. The impact of this revision appears in our financial statements. Implementing these changes in a difficult global environment reflects the capability of our people.

Capital Allocation and Balance Sheet Strength

With our largest acquisition until date, the IOD segment was the beneficiary of a significant portion of our capital outlay in 2020. We announced a pause on acquisitions (with the exception of one PET recycling plant) post the closing of the Spindletop asset deal. Additionally, all business segments saw a performance drop due to COVID-19 accompanied by some incremental prudence on capex. Certain spending, which could be pushed back without any impact on risk profile of the assets, was deferred.

Commitments to sustainability progressed well, with PET recycling acquisitions completed in the USA, Brazil, Poland and a joint venture created in the Philippines with Coca-Cola.

Our total capex spend over the year was US\$2.63 billion, which included US\$2.3 billion on organic and inorganic growth (primarily the Spindletop asset acquisition) as well as US\$0.33 billion on reliability and turnaround capex.

Going forward, we will prioritize investments in high impact, fast payback projects, which includes capex required by our transformation plan to deliver Project Olympus savings as well as projects linked to corporate initiatives like the single, integrated ERP system, which will help IVL become a more sustainable organization.

Our rating agency appreciated our prudent efforts on capex by maximizing operating cash flows. They believe our business profile has strengthened with the acquisition of Spindletop from Huntsman as we now have three sizeable business segments with good diversity within these segments. Our rating of AA- was reaffirmed by TRIS, our rating agency, albeit with a change in outlook from Stable to Negative as the delivery on financial performance lagged due to COVID-19 and one-off factors.

Financing – Our Focus on Sustainability Financing

Our strong balance sheet, our rating affirmation and our sustainability focus have helped us diversify our debt profile as well as lower our costs of financing.

IVL firmly believes in the circular economy. In the first quarter of 2020, we tapped the Tokyo institutional market to raise a 5-year Ninja loan with bullet maturity and at an attractive pricing based on the ESG score in our DJSI report card.

The International Finance Corporation (IFC) also recognized our efforts on the sustainability front. IFC collaborated with the Asian Development Bank (ADB) and German development Bank (KfW-DEG) to extend an eight year US\$300 million Blue Loan focused on addressing marine plastic pollution. The funds will help increase IVL's recycling capacity and investment in renewable energy and resource efficiency projects in emerging markets.

Beyond sustainability financing, we also took advantage of lower benchmark rates and raised THB 9 billion from our loyal bond holders in the Thai market. These funds came with an average maturity of seven years.

Earlier in the year, aggressive actions taken by the FED to counter COVID-19 impact on the US economy resulted in a significant decrease in US dollar benchmark rates. We made use of the opportunity to enter interest rate swaps to fix benchmark rates at low levels for outstanding debt with tenors up to five years. At the end of 2020, 70% of our total outstanding debt is at fixed interest rates.

The new financing of 2020 at attractive pricing, as well as interest rates swaps, helped reduced the overall cost of debt by around 60 bps when compared to 2019.

Our net debt at the end of 2020 is a good mix of commercial bank loans, sustainability-linked financing in the form of Green and Blue Loans, debentures in the local market as well as overseas markets.

ESG related financing and disclosures will be on the top of our agenda in 2021 and beyond.

Risk Management

The business landscape is becoming more volatile, uncertain, untrusting, complex and ambiguous (VUUCA); change cycles are shorter, digital disruption and emerging risks are evolving business risks at a pace never seen before. The changing business landscape has the potential to affect our brand value, competitive advantage and shareholder value.

In 2020, the Indorama Management Council (IMC) decided to invest in putting together a platform and people to ensure sustainable risk management. IVL has set up six enabling functions at the corporate level (Communication, Digitalization, EHS, Sustainability, Business Continuity Management and Crisis Management and Operational Excellence through Lean Six Sigma) to prepare a future ready organization and support the businesses in achieving their plans. Experts for these diverse fields are hired internally and

externally to set up standard procedures for risk assessment, risk evaluation and risk mitigants.

Our new risk-operating model aims to integrate an enterprise risk model, crisis management and business continuity management to realize synergies across the increasingly interconnected, integrated and interdependent business value chain, reduce redundancies, drive consistency, compliance and effectiveness to accelerate risk maturity across the company. Effective risk management will ultimately help create a new competitive advantage through value protection and value creation.

Insurance Risk Management

We procure adequate insurance cover for all our assets, covering property and equipment damage while in operation or in construction, business interruption, public or third party product liability marine risks, credit risks, D&O covers and others

2020 was a year where we enhanced our existing risk management framework of identifying, managing, mitigating and transferring risk on our assets to ensure sustainable growth. The newly enabled functions of Corporate EHS, Business Continuity and Crisis Management will help to improve the risk profile of our assets and reliability of our operations. This in turn provides assurance to our underwriters to increase coverage on our assets with competitive premiums.

With significant challenges faced by the chemical sector due to a number of incidents, we have revisited our insurance strategy and operating model. Having run a tender process, we have now brought in internationally renowned brokers to run a global program. Their digital tools analysis and wide coverage of underwriters, benchmarks us with our peers. They have conducted their own risk surveys that will help us place the risk in a more cost-efficient manner. We will see the benefits of this affiliation over the next few years.

Forex Risk Management

The finance organization has re-evaluated its procedures to prioritize forex risk management, due to the forex exposures that we carry for our net working capital and long term investments. Over the years, with business growth and global diversification, we need to manage forex exposure of more than 30 cross-currency pairs in the developed markets and emerging markets. The objective is to minimize any risk to EBITDA.

There is a defined policy for reviewing, monitoring and hedging of forex risks. Through the initiative taken up in 2020, the effort has been towards streamlining the process, developing standard operating procedures and an efficient forex hedging structure. Also, to develop requisite people skills at entity level, regional level and corporate level.

The outcome has been favorable with regular assessment, monitoring, actions and reporting taken for hedging forex risks. The hedge coverage ratio has increased. There were actions taken to hedge long term investments for tenors of 3-5 years to minimize translation gains/losses in the shareholders equity.

Further, the endeavor will cover tools for reporting and analytics, to take timely action and maintain a balance between risk and value. We are also trying to develop a team of individuals with specialized skills in treasury and forex risk management.

Finance Transformation Initiatives

We embarked on a finance transformation journey at the beginning of the year. This journey of two to three years will help the finance function become a true partner to the business.

The initiatives undertaken in 2020, working capital optimization and forex management, have shown encouraging results in the first year. By reducing inventory, we have reduced the volatility of our earnings arising from changes in the crude price, hence lowering our carrying costs.

We will achieve automation of transactions, standardization of processes and cost optimization in the finance organization through the deployment of the Global Business Solutions model.

Deployment of a single ERP platform, SAP S4/HANA, will strengthen IT and systems. On completion, this will bring in a "single source of truth" and efficient processes for a leaner organization.

The people aspect in the finance organization is seeing development through defined roles and responsibilities, skill improvement and the development of requisite specialized roles. A Finance Council has been set up across to cover corporate and business segments to work towards meeting the Finance Vision 2023, a vision which covers large scale initiatives like digitalization, ESG reporting and a finance maturity framework; all with the objective of becoming a best-in-class function driving efficiency, effectiveness and satisfaction to all stakeholders

My sincere gratitude to all my colleagues across the globe. Amidst the pandemic and global scenarios that we have not witnessed ever before, I salute the dedication all these colleagues who have demonstrated in adapting to the new normal of working from home yet with delivered results. It has been an overwhelming experience for me to witness the continuous tireless efforts of "One IVL".

Thank you.



Sanjay Ahuja
Chief Financial Officer

Message from the Chief Human Resources Officer



MR. ROBERTO BETTINI

Dear Shareholders,

2020 has been a year with many steps forward in our HR modernization journey, and those encouraging results have given us comfort that we can bring acceleration from now on. The plan is to continue to act on several aspects that are linked to one another, to make our improvements routed and sustainable; in other words we are simultaneously improving all people-related processes, technology and capabilities.

On **Leadership Development**, we built upon the Leadership Skill Profile, defined as the qualities we need from our leaders to take IVL into the future, which we branded under the three categories: Drive Results, Champion Change and Energize Others. In 2020, despite the restrictions brought by the COVID-19 pandemic, we involved 200 of our leaders in leadership training and implemented our new Mentoring and Coaching Program. In 2021 we are accelerating all these activities and we will reach full leadership training capacity, to

the order of 750 leaders trained per year. This is a very ambitious journey that will continue for the next three years, resulting in all 3,500 “IVL Leaders” trained.

Regarding **Succession Planning**, 2020 has been the year when we have been able to foster a more robust business, from a people perspective, by validating 380 internal successors for the 200+ more important roles in the Group. An individual development plan is in place for each one of these successors, aimed to improve their readiness by the time they are expected to take over.

While what we have achieved is already remarkable, we will extend the scope of this process gradually over the next three years with a target of covering, approximately, the top 1,000 roles in the group and 2,000 successors under development. From 2021 we are also leveraging on the new SAP HR module, as part of the new ERP project, to manage the succession-planning process, which is becoming demanding from an administrative point of view considering its large scope.

On **Performance Management** we implemented the IVL global process for all senior management roles and, to a large part, middle management, over the last two years. In total, 300+ of the most important roles in the group have been covered. This is already providing good alignment of all units and functions towards the IVL Group goals overall. The plan is to extend this process to all management roles and further; as the first step in 2021, we will involve over 500 managers across the Group. We will also start in 2021 to administer goals and individual performance results with the new SAP/SF ERP tool.

By progressively rolling out this common way of setting goals and measuring achievements, we are building the basis to reward performance in a consistent and professional way across all businesses and geographies. Moving to a common **Incentive System** within the IVL Group that is the result of many acquisitions concluded in a relatively short period of time, is by any means a challenge, as the different individuals who are joining the group are bringing along very different habits to be rewarded for achievements. Nevertheless, it is an important objective for IVL to manage performance-based compensation in a professional, transparent and consistent manner.

Currently we have the top 180 leaders in the Group eligible for a common and consistent short term incentive system and policy. IVL's short term incentive is based on three components:

- 1) Linked to Individual KPIs
- 2) Linked to Business Segment KPIs
- 3) Linked with IVL Group KPIs

This Incentive system will be gradually implemented throughout the organization over the next few years.

From an **Organization** design perspective, in 2020 we introduced six new functions with overall group responsibilities:

- Environment, Health & Safety (EHS)
- Sustainability
- Business Continuity Management
- Lean Six Sigma (IVEX)
- Digital
- Communications

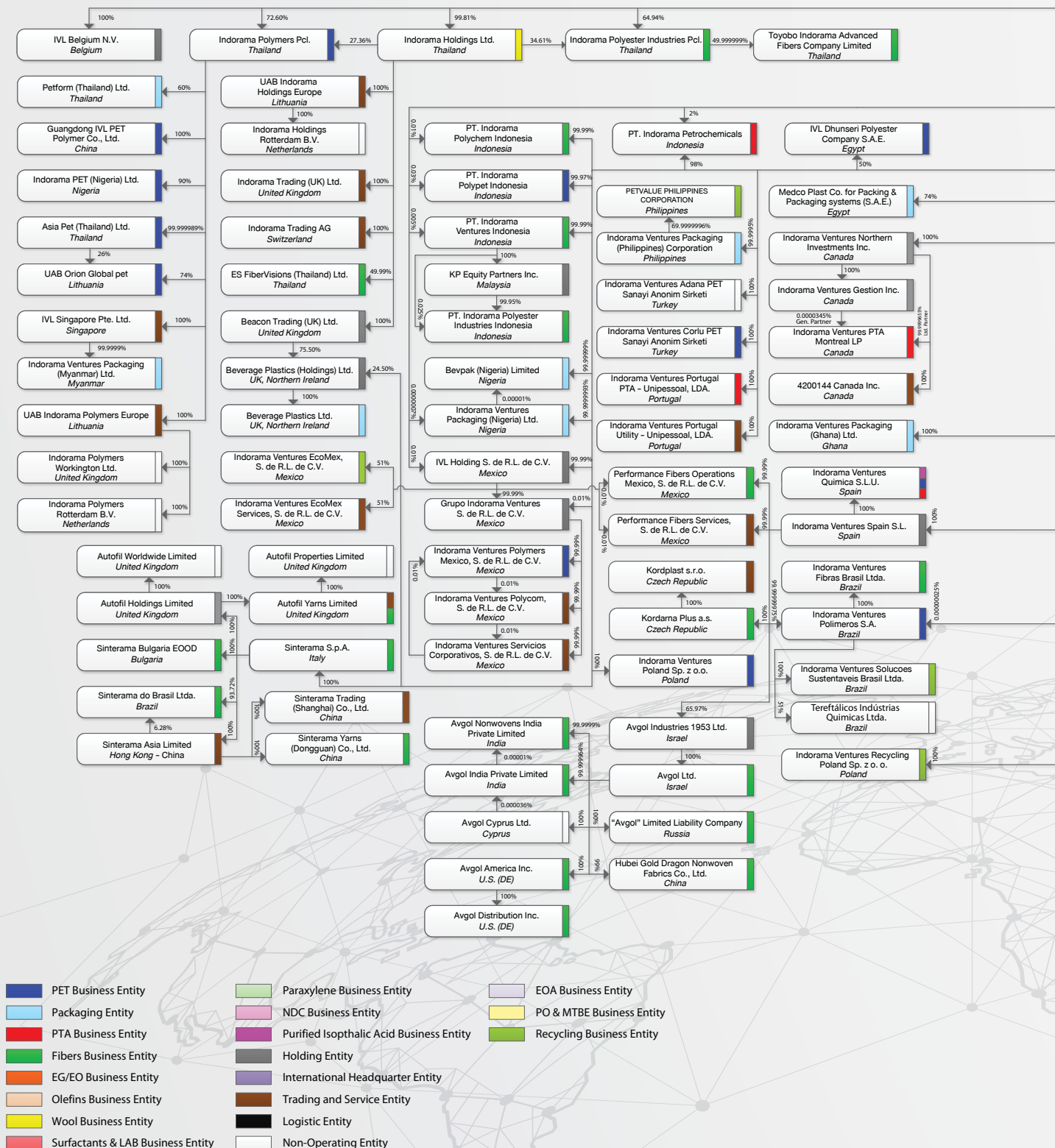
IVL performed activities in these areas previously, but lacking a true group approach. From now on, these functions operate as truly global functions, providing first class expertise support to all IVL businesses and geographies; ensuring resource optimization; aligning efforts towards common objectives and generating impactful innovation by joint investments. These functions are expected to act as enablers for future profitable growth and to provide an important support for business segments in delivering the next three-year business plan.

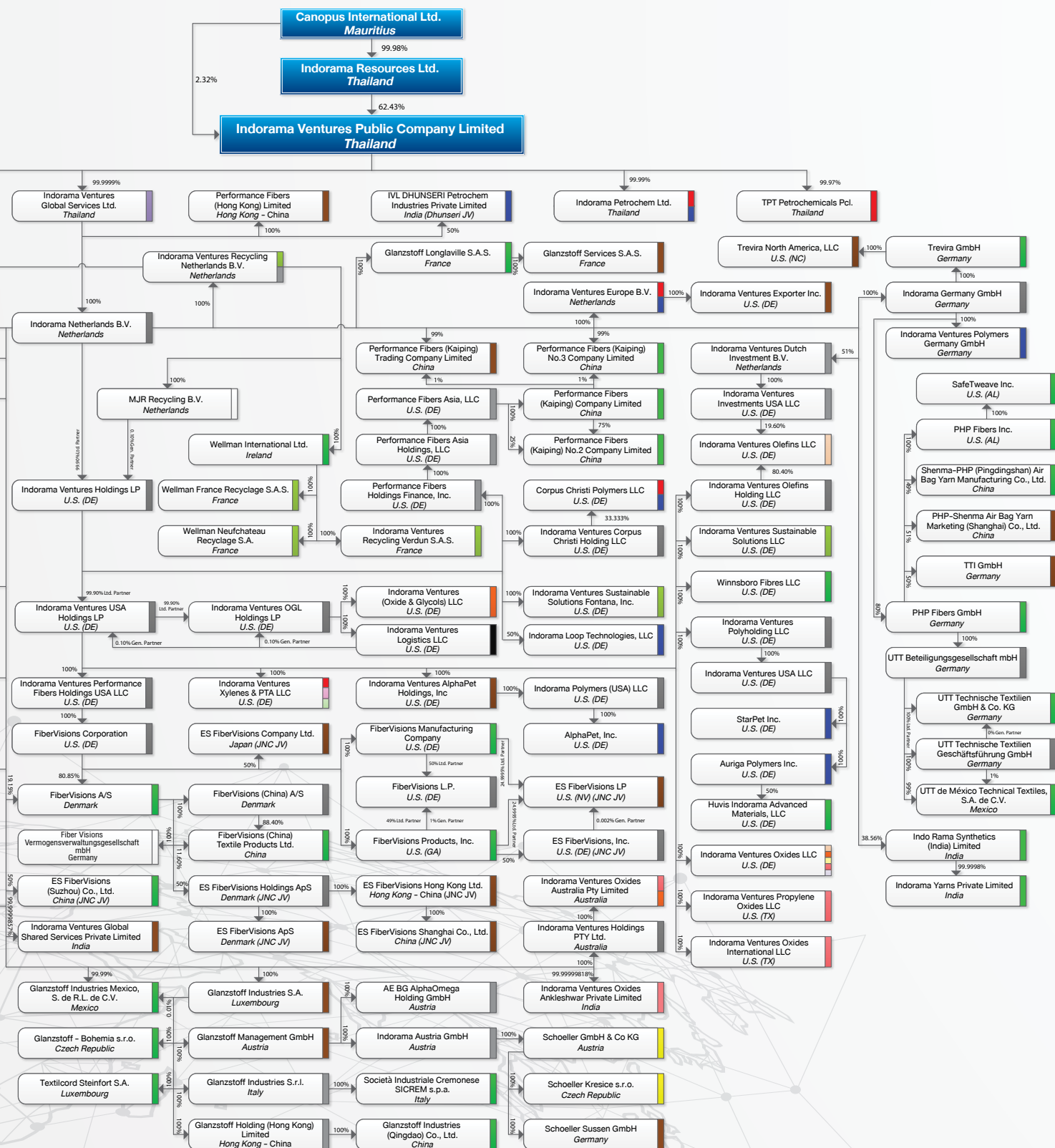
The heads of these new functions have all been recruited, with a good mix between internal promotions and senior external additions. These heads are already working on engaging in the staffing of additional resources and competences, as well as anchoring prioritized projects. While these changes are never quick fixes and require good preparation and change management acumen, we already experiencing good momentum. Their road maps is expected to generate substantial innovation in all these areas from now and for the years come.



Roberto Bettini
Chief Human Resources Officer

IVL Group Corporate Structure

As of 31st December 2020



General Information and Other Information

General Information

Name	: Indorama Ventures Public Company Limited
Symbol	: IVL
Head Office	: 75/102 Ocean Tower 2, 37 th Floor, Soi Sukhumvit 19 (Wattana), Asoke Road, Klongtoey Nua, Wattana, Bangkok 10110, Thailand Tel: 0-2-661-6661 Fax: 0-2-661-6664-5 www.indoramaventures.com
Type of Business	: Holding Company
Company Registration No.	: 0107552000201
Registered Capital	: Baht 5,666,010,449 divided into 5,666,010,449 common shares of par value at Baht 1
Paid-Up Capital	: Baht 5,614,551,908 divided into 5,614,551,908 common shares of par value at Baht 1

References

Share Registrar	: Thailand Securities Depository Company Limited 93 Ratchadapisek Road, Dindaeng, Dindaeng, Bangkok 10400, Thailand Tel: 0-2-009-9999 Fax: 0-2-009-9991
Debenture Registrar	: Bangkok Bank Public Company Limited 333 Silom Road, Silom, Bangrak, Bangkok 10500, Thailand Tel: 0-2-230-1136 Fax: 0-2-626-4545-6
Debenture Registrar (For IVL Debenture No. 1/2015 Tranche 1 & 2)	: Siam Commercial Bank Public Company Limited 1060 SCB Chidlom Tower 2, 3 rd Floor, New Petchburi Road, Makkasan, Ratchathewi, Bangkok 10400, Thailand Tel: 0-2-256-2339 Fax: 0-2-256-2406
Debenture Registrar (For IVL Debenture No. 2/2015)	: Krungthai Bank Public Company Limited 35 Sukhumvit Road, Klongtoey Nua, Wattana, Bangkok 10110, Thailand Tel: 0-2-298-0830 Fax: 0-2-298-0835
Debenture Registrar and Debenture Holders' Representative (For IVL Debenture No.1/2020)	: Bangkok Bank Public Company Limited 333 Silom Road, Silom, Bangrak, Bangkok 10500, Thailand Tel: 0-2-230-1136 Fax: 0-2-626-4545-6
Debenture Holders' Representative	: Bank of Ayudhya Public Company Limited 1222 Rama III Road, Bang Phongphang, Yannawa, Bangkok 10120, Thailand Tel: 0-2-296-3582 Fax: 0-2-296-2202
Debenture Holders' Representative (For Subordinated Perpetual Debentures of Indorama Ventures Public Company Limited No.1/2019)	: Bangkok Bank Public Company Limited 333 Silom Road, Silom, Bangrak, Bangkok 10500, Thailand Tel: 0-2-230-1136 Fax: 0-2-626-4545-6
Auditor	: KPMG Phoomchai Audit Limited 1 Empire Tower, 48 th – 50 th Floor, South Sathorn Road, Yannawa, Sathorn, Bangkok 10120, Thailand Tel: 0-2-677-2000 Fax: 0-2-677-2222
Legal Advisor	: The Capital Law Office Limited 44 Smooth Life Tower, 18 th Floor, North Sathorn Road, Silom, Bangrak, Bangkok, 10500, Thailand Tel: 0-2-633-9088 Fax: 0-2-633-9089

Investments of the Company

As of 31st December 2020

EG&EO Business

No.	Company Name/Address	Country	Type of Shares	Shares Issued	Shareholding
1	Indorama Ventures (Oxide & Glycols) LLC Corporation Service Company, 251 Little Falls Drive, Wilmington, Delaware 19808, USA Tel: +1 847 943 3100 Fax: +1 847 943 3196	USA	(Membership Interest)	-	99.99%

Olefins Business

No.	Company Name/Address	Country	Type of Shares	Shares Issued	Shareholding
1	Indorama Ventures Olefins LLC Corporation Service Company, 251 Little Falls Drive, Wilmington, Delaware 19808, USA Tel: +1 337 502 4678 Fax: N/A	USA	(Membership Interest)	-	90.40%

PTA Business

No.	Company Name/Address	Country	Type of Shares	Shares Issued	Shareholding
1	TPT Petrochemicals Public Company Limited 75/116-117, Ocean Tower 2, 41 st Floor, Soi Sukhumvit 19 (Wattana), Sukhumvit Road, Klongtoey Nuer, Wattana, Bangkok 10110, Thailand Tel: +66 2 661 6661 Fax: +66 2 661 6664 – 5	Thailand	Common Share	492,500,000	99.97%
2	PT. Indorama Petrochemicals Graha Irama, 16 th Floor, Jalan H R Rasuna Said, Blok X-1, Kav. 1-2, Kuningan Timur, Setiabudi, Jakarta Selatan 12950, Indonesia Tel: +62 21 526 1555 Fax: +62 21 526 4436	Indonesia	Common Share Class A Class B Class C Class D Class E Class F	2,521,500 1,833,743 166,257 50,000 200,000 250,000 21,500	99.99%
3	Indorama Ventures PTA Montreal LP. 10200 rue Sherbrooke E., Montreal-Est, Quebec H1B 1B4, Canada Tel: +1 514 645 7887(229) Fax: +1 514 645 9115	Canada	(Partnership Interest)	290,000,000	99.99%
4	Indorama Ventures Portugal PTA - Unipessoal, LDA. ZILS Zona 2, Lote 2E1, Monte Feio, 7520-064 Sines, Portugal Tel: +351 269 189 000 Fax: +351 269 189 099	Portugal	Quota	1	99.99%

PTA & PET Business

No.	Company Name/Address	Country	Type of Shares	Shares Issued	Shareholding
1	Indorama Ventures Europe B.V. Markweg 201, 3198NB Europoort Rotterdam, The Netherlands Tel: +31 181 285 400 Fax: +31 181 285 405	Netherlands	Common Share	100	99.99%
2	Indorama Petrochem Limited 75/93, Ocean Tower 2, 35 th Floor, Soi Sukhumvit 19 (Wattana), Sukhumvit Road, Klongtoey Nuer, Wattana, Bangkok 10110, Thailand Tel: +66 2 661 6661 Fax: +66 2 661 6664 – 5	Thailand	Common Share	1,014,616,651	99.99%
3	Corpus Christi Polymers LLC Corporation Service Company, 251 Little Falls Drive, Wilmington, Delaware 19808, USA Tel: +1 320 6365401 Fax: N/A	USA	(Membership Interest)	-	33.33%

PTA & PET & Purified Isophthalic Acid Business

No.	Company Name/Address	Country	Type of Shares	Shares Issued	Shareholding
1	Indorama Ventures Quimica S.L.U. Poligono Industrial Guadarranque, S/N, 11360 San Roque, Cadiz, Spain Tel: +34 956 671 000 Fax: +34 956 671 127	Spain	Common Share	6,000	99.99%

PTA & Paraxylene & NDC Business

No.	Company Name/Address	Country	Type of Shares	Shares Issued	Shareholding
1	Indorama Ventures Xylenes & PTA LLC Corporation Service Company, 251 Little Falls Drive, Wilmington, Delaware 19808, USA Tel: +1 302 636-5401 Fax: +1 302 636-5454	USA	(Membership Interest)	-	99.99%

PET Business

No.	Company Name/Address	Country	Type of Shares	Shares Issued	Shareholding
1	Indorama Polymers Public Company Limited 75/102, 103 Ocean Tower 2, 37 th Floor, Soi Sukhumvit 19 (Wattana), Asoke Road, Klongtoey Nuer, Wattana, Bangkok 10110, Thailand Tel: +66 2 661 6661 Fax: +66 2 661 6664 – 5	Thailand	Common Share	1,382,197,870	99.91%
2	Asia Pet (Thailand) Limited 75/102 Ocean Tower 2, 37 th Floor, Soi Sukhumvit 19 (Wattana), Asoke Road, Klongtoey Nuer, Wattana, Bangkok 10110, Thailand Tel: +66 2 661 6661 Fax: +66 2 661 6664 – 5	Thailand	Common Share	45,000,000	99.90%
3	Guangdong IVL PET Polymer Co., Ltd. No.1 Meihua Road, Shuikou Town, Kaiping City, Guangdong, People's Republic of China Tel: +86 750 220 9680 Fax: N/A	China	(Capital Contribution)	-	99.91%

PET Business					
No.	Company Name/Address	Country	Type of Shares	Shares Issued	Shareholding
4	UAB Orion Global pet Metalo G.16, Klaipeda, Republic of Lithuania, LT-94102 Tel: +370 46 300749 Fax: +370 46 314323	Lithuania	Common Share	776,880	99.91%
5	Indorama PET (Nigeria) Limited East West Expressway, Eleme, Port Harcourt, Rivers State, Nigeria Tel: +234 (1) 2793841 Fax: +234 (1) 2793842	Nigeria	Common Share	450,000,000	89.92%
6	PT. Indorama Polypet Indonesia JL. Raya Anyar Km.121, Kel. Kepuh, Kec. Ciwandan, Cilegon 42445 (Banten), Indonesia Tel: +62 254 602300 Fax: +62 254 602940	Indonesia	Common Share	3,500	99.99%
7	Indorama Ventures Corlu PET Sanayi Anonim Sirketi Karamehmet Mahallesi, Avrupa Serbest Bölgesi, 3. Sokak No: 2 Ergene/Tekirdag - 59860, Turkey Tel: +90 282 691 1100 / 207 Fax: +90 282 691 1008	Turkey	Common Share	16,217,649	99.99%
8	Indorama Ventures Poland Sp. z o.o. ul. Krzywa Gora 19, 87-805 Wloclawek, Poland Tel: +4854 416 6442 Fax: +4854 416 6449	Poland	Common Share	993,988	99.99%
9	Indorama Ventures Polymers Mexico, S. de R.L. de C.V. Avenida Prolongación Paseo de la Reforma 1015, Torre A piso 2, Colonia Santa Fe Cuajimalpa, CP 05348, Delegación Cuajimalpa de Morelos, Ciudad de México, México Tel: +52 55 9177 5700 Fax: +52 55 5292 4919	Mexico	Equity Quota Class I	2	99.99%
10	Alphapet, Inc. Corporation Service Company, 251 Little Falls Drive, Wilmington, Delaware 19808 USA Tel: +1 256 308 1180 Fax: +1 256 341 5926	USA	Common Share	4,400	99.99%
11	Auriga Polymers Inc. Corporation Service Company, 251 Little Falls Drive, Wilmington, Delaware 19808 USA Tel: +1-877-738-7527 Fax: +1-980-233-6602	USA	Common Share	5,000	99.99%
12	Starpet Inc. Corporation Service Company, 251 Little Falls Drive, Wilmington, Delaware 19808 USA Tel: +1-336-672-0101 Fax: +1-336-672-0904	USA	Common Share	5,000	99.99%
13	IVL Dhunseri Petrochem Industries Private Limited Dhunseri House, 4A, Woodburn Park, Kolkata- 700020, P.S. Bhawanipur, India Tel: +91 33 2283 6128 – 33 Fax: +91 33 2283 6056	India	Equity Share	42,500,000	50.00%

PET Business

No.	Company Name/Address	Country	Type of Shares	Shares Issued	Shareholding
14	Indorama Ventures Polimeros S.A. Rod. PE-60, Km 10, s/nº - Engenho Massangana, TDR - Sul. Complexo Industrial Portuário Suape. 'CEP: 55590-000 - Ipojuca – PE, Brazil Tel: +55 11 2111-1388 Fax: +55 11 2111-1470	Brazil	Common Share	1,578,454,842	99.99%
15	IVL Dhunseri Polyester Company S.A.E. Sector 2 of the Southern region of the Economic and Industrial Zone North West of the Gulf of Suez, Egypt. Tel: +202 225 88 991 Fax: +202 225 88 945	Egypt	Common Share	8,990,000	49.99%
16	Indorama Loop Technologies, LLC Corporation Service Company, 251 Little Falls Drive, Wilmington, Delaware 19808 USA. Tel: N/A Fax: N/A	USA	(Membership Interest)	-	50.00%
17	Indorama Ventures Polymers Germany GmbH Philipp-Reis-Straße 4, 65795 Hattersheim am Main, Federal Republic of Germany Tel: +49 69 305 6025 Fax: N/A	Germany	(Capital Contribution)	-	99.99%

Packaging Business

No.	Company Name/Address	Country	Type of Shares	Shares Issued	Shareholding
1	Petform (Thailand) Limited 85 Moo 11, Bangnga-Thaklong Road, Khao Samorkorn Sub-district, Thawung District, Lopburi Province, 15180 Thailand Tel: +66 36 489 116 Fax: +66 36 489 115,117	Thailand	Common Share	7,500,000	59.94 %
2	Beverage Plastics Limited Silverwood Business Park, 70 Silverwood Road, Lurgan, Craigavon, County Armagh, BT66 6LN, Northern Ireland Tel: +44 283 831 1800 Fax: +44 283 831 1888	Northern Ireland	Common Share	600,000	99.86%
3	Indorama Ventures Packaging (Nigeria) Limited Eleme Petrochemicals Complex, East-West Expressway, Eleme, Rivers State, Nigeria Tel : +234 (1) 2793841 Fax: +234 (1) 2793842	Nigeria	Common Share	150,000,000	99.99%
4	Indorama Ventures Packaging (Ghana) Limited Plot 234 Meridian Rd. COMM.2 Accra, Greater Accra, BOX CO PMB 350 TEMA GA/R, Ghana Tel: +233 266082249 Fax: N/A	Republic of Ghana	Common Share	4,649,215	99.99%
5	Indorama Ventures Packaging (Philippines) Corporation Building 1, Southern Luzon Complex, Barangay Batino, Calamba City, Laguna, Philippines Tel: +63 495 303 592 / +63 495 340 036 Fax: N/A	Philippines	Common Share	1,075,005	99.99%

Packaging Business

No.	Company Name/Address	Country	Type of Shares	Shares Issued	Shareholding
6	Indorama Ventures Packaging (Myanmar) Limited Lot No. A11-1, Thilawa Special Economic Zone A, Yangon Region, Myanmar Tel: +95-12309022 Fax: N/A	Myanmar	Common Share	3,516,322	99.91%
7	Medco Plast Co. for Packing & Packaging systems (S.A.E.) 6 October City Blots No. 189-190-191 at the Second Industrial Zone, Egypt Tel: +202 37481730 Fax: +202 37499685	Egypt	Common Share	4,950,000	73.99%
8	Bevpak (Nigeria) Limited Km 3, Ibadan-Lagos Expressway Sanyo Ibadan Oyo State Nigeria Tel: +234 - 8151100040 Fax: N/A	Nigeria	Common Share	10,000,000	99.99%

Fibers Business

No.	Company Name/Address	Country	Type of Shares	Shares Issued	Shareholding
1	Indorama Polyester Industries Public Company Limited 75/92, Ocean Tower 2, 35 th Floor, Soi Sukhumvit 19 (Wattana), Asoke Road, Klongtoey Nuer, Wattana, Bangkok 10110, Thailand Tel: +66 2 661 6661 Fax: +66 2 661 6664 – 5	Thailand	Common Share	2,202,850,000	99.49%
2	ES Fibervisions (Thailand) Company Limited 75/64, 65 Ocean Tower 2, 28 th Floor, Soi Sukhumvit 19 (Wattana), Asoke Road, Klongtoey Nuer, Wattana, Bangkok 10110, Thailand Tel: +66 2 661 6661 Fax: +66 2 661 6664 – 5	Thailand	Common Share	41,000,000	50.00%
3	PT. Indorama Polychem Indonesia JL. Desa Kembang Kuning, Kecamatan Jatiluhur, Purwakarta (Jawa Barat), Indonesia Tel: +62 264 207727 Fax: +62 264 211260	Indonesia	Common Share	70,000	99.99%
4	PT. Indorama Ventures Indonesia Desa Cihuni, RT/RW 002/004, Cihuni, Pagedangan, KAB.,Tangerang, Banten, 15332 Indonesia Tel : +62 215 371111 Fax : +62 215 378811	Indonesia	Series A Shares Series B Shares	80,000 2,812,500	99.99%
5	PT. Indorama Polyester Industries Indonesia JL. Surya Lestari Kav. 1-16A, Kawasan Industry Surya Cipta, Desa Kutamekar, Kec Ciampel, Karawang, 41361, Jawa Barat, Indonesia Tel: +0267-440501 Fax: +0267-440764	Indonesia	Common Share	20,000	99.98%

Fibers Business

No.	Company Name/Address	Country	Type of Shares	Shares Issued	Shareholding
6	Trevira GmbH Max-Fischer-Strasse 11, 86399 Bobingen, Federal Republic of Germany Tel: +49 8234 9688 2100 Fax: +49 8234 9688 5355	Germany	Common Share	25,300	99.99%
7	PHP Fibers GmbH Industrie Center Obernburg, 63784 Obernburg, Federal Republic of Germany Tel: +49 6022 81 2552 Fax: +49 6022 81 31 2552	Germany	Common Share	25,001	79.99%
8	Shenma-PHP (Pingdingshan) Air Bag Yarn Manufacturing Co., Ltd. Pingdingshan City, Henan Province, People's Republic of China Tel: +49 6022 81 2552 Fax: +49 6022 81 31 2552	China	(Capital Contribution)	-	39.20%
9	PHP Fibers Inc. 641 South Lawrence Street Montgomery, AL 36104 USA. Tel: +1-256-218-4000 Fax: +1-256-218-4062	USA	Common Share	1,000	79.99%
10	SafeTweave, Inc. 641 South Lawrence Street Montgomery, AL 36104 USA. Tel: +1-256-218-4000 Fax: +1-256-218-4062	USA	Common Share	1,000	79.99%
11	FiberVisions A/S Engdraget 22, Varde Denmark, DK-6800, Denmark Tel: +45 7994 2200 Fax: +45 7994 2201	Denmark	Class A Class B	122,949,441 29,117,600	99.99%
12	FiberVisions (China) Textile Products Ltd. No. 29 Hengshan Rd. Suzhou New District 215011 People's Republic of China Tel: +86 512 6823 1099 Fax: +86 512 6823 0021	China	(Capital Contribution)	-	99.99%
13	ES FiberVisions (Suzhou) Co., Ltd. No. 29 Hengshan Rd. Suzhou New District 215011, People's Republic of China Tel: +86 512 6823 1099 Fax: +86 512 6823 0021	China	(Capital Contribution)	-	50.00%
14	FiberVisions Manufacturing Company Corporation Service Company, 251 Little Falls Drive, Wilmington, Delaware 19808 USA Tel: +1 302 658-7581 Fax: +1 302 655-2480	USA	Common Share	100	99.99%
15	FiberVisions Products, Inc. Corporation Service Company, 40 Technology Pkwy South, #300, Norcross, GA 30092 USA Tel: +1 800 241 8922 Fax: +1 404 888 7795	USA	Common Share	25,000	99.99%

Fibers Business

No.	Company Name/Address	Country	Type of Shares	Shares Issued	Shareholding
16	Wellman International Limited Mullagh, Kells, Co.Meath, A82 NN93, Ireland Tel: +353 46 9280200 Fax: +353 46 9280300	Ireland	Common Share	1,100,850	99.99%
17	Performance Fibers (Kaiping) Company Limited 3 Hongqiao Road, Changsha, Kaiping, Guangdong Province, People's Republic of China Tel: +86 750 2278000 Fax: +86 750 2218093	China	(Capital Contribution)	-	99.99%
18	Performance Fibers (Kaiping) No.2 Company Limited 1 Huan Cui Road West, Cuishan Lake New Region, Kaiping, Guangdong Province, People's Republic of China Tel: +86 750 2278000 Fax: +86 750 2218093	China	(Capital Contribution)	-	99.99%
19	Performance Fibers (Kaiping) No.3 Company Limited Land Lot JCR2016-57(Kaiping 14)B, west of Die Cui Da Road , north of Huan Cui West Road, Cuishanhu New District, Kaiping, Guangdong, People's Republic of China Tel: +86 750 2201707 Fax: +86 750 2218093	China	(Capital Contribution)	-	99.99%
20	Glanzstoff Industries (Qingdao) Co., Ltd. • No.1735 Maoshan Road, Sino-German Ecopark, Huangdao District, Qingdao, Shandong Province, People's Republic of China • Room 299, No.2877 Tuanjie Road, Huangdao District, Qingdao City, Shandong Province, People's Republic of China Tel: +86 532 80987237 Fax: +86 532 80983559	China	(Capital Contribution)	-	99.99%
21	Glanzstoff Longlaville S.A.S. Pôle Europeen de Développement, 54810 Longlaville, France Tel: +33 3 82 44 80 00 Fax: +33 3 82 44 56 82	France	Common Share	3,037,323	99.99%
22	Società Industriale Cremonese SICREM s.p.a. Pizzighettone, Via G.B. Pirelli, 56, Italy Tel: +39 0372 738011 Fax: +39 0372 730001	Italy	Common Share	9,180,000	99.99%
23	Textilcord Steinfert S.A. Rue Schwarzenhof, 34 L-8452 Steinfert – GD, Luxembourg Tel: +352 399 8811 Fax: +352 399 881 213	Luxembourg	Common Share	1,000	99.99%
24	Glanzstoff - Bohemia s.r.o. Terezińska 60, 41002 Lovosice, Czech Republic Tel: +420 416 575 111 Fax: +420 416 575 107	Czech Republic	Common Share	750	99.99%

Fibers Business

No.	Company Name/Address	Country	Type of Shares	Shares Issued	Shareholding
25	Winnsboro Fibres LLC Corporation Service Company, 251 Little Falls Drive, Wilmington, Delaware 19808, USA Tel: +(256) 218-4006 Fax: +(256) 218-4017	USA	(Membership Interest)	-	99.99%
26	Performance Fibers Operations Mexico, S. de R.L. de C.V. Av. de la Luz 77 Zona Industrial Benito Juárez, CP 76120, Querétaro, Qro., México Tel: +52 442 211 3000 Fax: N/A	Mexico	Equity Quota Class I	50,000	99.99%
27	Huvis Indorama Advanced Materials, LLC Corporation Service Company, 251 Little Falls Drive, Wilmington, Delaware 19808, USA Tel: N/A Fax: N/A	USA	(Membership Interest)	-	50.00%
28	Hubei Gold Dragon Nonwoven Fabrics Co., Ltd. 236 Xinlong Road, High-Tech Industrial Development Zone, Jingmen, Hubei, 448000, People's Republic of China Tel: 86 724 650 3034 Fax: N/A	China	(Capital Contribution)	-	65.30%
29	Avgol India Private Limited Plot No. 184, Part of Plot No. 183 & 185, Sector -A, Mandideep Industrial Area, Mandideep, Dist. -Raisen – 462046, Madhya Pradesh, India Tel: 91 748 066 6602 Fax: N/A	India	Common Share	2,746,449	65.96%
30	“Avgol” Limited Liability Company Building 1 Druzhby Street, town of Uzlovaya, Tula Region, 301605, Russian Federation Tel: 74 872 710 653 Fax: N/A	Russia	(Membership Interest)	-	65.96%
31	Avgol America Inc. 178 Avgol Drive Mocksville, NC, 27028-2558, USA Tel: +1 336 936 2503 Fax: N/A	USA	Common Share	150,000	65.96%
32	Avgol Distribution Company Inc. 178 Avgol Drive Mocksville, NC, 27028-2558, USA Tel: +1 336 936 2503 Fax: N/A	USA	Common Share	3,000	65.96%
33	Avgol Ltd. 9 Shimshon st., 7 th Floor, Lexus House, Petah Tikva, 4952707, Israel Tel: 972-3-906-1555 Fax: 972-3-936-4376	Israel	Common Share	82,941,411	65.96%
34	KORDANA Plus a.s. No. 890, 696 74 Velká nad Velickou, Czech Republic Tel: N/A Fax: N/A	Czech Republic	Common Share	248,409,200	99.99%

Fibers Business

No.	Company Name/Address	Country	Type of Shares	Shares Issued	Shareholding
35	Glanzstoff Industries Mexico, S. de R.L. de C.V. Av. de la Luz 77 Zona Industrial Benito Juárez, CP 76120, Querétaro, Qro. Mexico Tel: +52 442 211 3000 Fax: N/A	Mexico	Equity Quota Class I	50,000	99.99%
36	UTT Technische Textilien GmbH & Co. KG Robert-Steiger-Straße 111, 86381 Krumbach, Federal Republic of Germany Tel: +49 (0) 82 82 – 8 97-0 Fax: +49 (0) 82 82 – 8 97-100	Germany	(Partnership Interest)	-	79.99%
37	UTT de México Technical Textiles, S.A. de C.V. Circuito Esteban de Antuñano N° 12 MANZANA 3 Parque Industrial Ciudad Textil Huejotzingo, Puebla C.P. 74160, Mexico Tel: +52 (0) 222 454 3660 Fax: N/A	Mexico	Equity Quota Series A	100	79.99%
38	Indorama Ventures Fibras Brasil Ltda. Rodovia BR 101 Sul, no. 2426, Distrito Industrial, Cabo de Santo Agostinho-PE, 54500-000 Brazil Tel: +55 11 2111-1388 Fax: +55 11 2111-1470	Brazil	Common Share	218,393,287	99.99%
39	Indo Rama Synthetics (India) Limited A-31, MIDC Industrial Area, Butibori, Nagpur - 441122, Maharashtra, India Tel: 07104 - 663000 / 01 Fax: 07104 - 663200	India	Common Share	261,113,151	38.56%
40	Sinterama Yarns (Dongguan) Co., Ltd. East Jinsha Avenue, Shajiao Village, Shipai County, Dongguan City 523348, Guangdong Province, People's Republic of China Tel: +86 769 8136 0800 Fax: +86 769 8136 0900	China	(Capital Contribution)	-	99.99%
41	Sinterama Bulgaria EOOD Industrial zone, 8900 Nova Zagora, Bulgaria Tel: +35944612800 Fax: +35945762850	Bulgaria	Common Share	750,000	99.99%
42	Sinterama S.p.A. Sandigliano, Via Gramsci 5, 13876, Italy Tel: +39 015 24951 Fax: +39 015 2495301	Italy	Common Share	86,937,487	99.99%
43	Sinterama do Brasil Ltda. Av. Alberto Vieira Romao, 1650 CEP 37135-516 - Distrito Industrial, Zip Code 37135-516, Alfenas, Minas Gerais, Brazil Tel: +55 353 299 1950 Fax: N/A	Brazil	Common Share	1,630,277,567	99.99%

Fibers Business

No.	Company Name/Address	Country	Type of Shares	Shares Issued	Shareholding
44	Indorama Yarns Private Limited A-31, MIDC Industrial Area, Butibori, Nagpur - 441122, Maharashtra, India Tel: 07104 - 663000 / 01 Fax: 07104 - 663200	India	Common Share	3,000,000	38.56%
45	Toyobo Indorama Advanced Fibers Company Limited 75/92 Ocean Tower 2, 35 th Floor, Soi Sukhumvit 19 (Wattana), Asoke Road, Klongtoey Nuer, Wattana, Bangkok 10110, Thailand Tel: +66 (0) 2661 6661 Fax: +66 (0) 2661 6664 – 5	Thailand	Common Share	78,606,164	49.75%
46	Avgol Nonwovens India Private Limited 212, Haregovind Complex, 1st Floor, Zone-1, MP Nagar Bhopal Bhopal MP, 462011 India Tel: +91 7480 666666 Fax: N/A	India	Common Share	10,000,000	65.96%

Fiber Business and Trading & Services Business

No.	Company Name/Address	Country	Type of Shares	Shares Issued	Shareholding
1	Autofil Yarns Limited Unit 3, Orchard Court, Nunn Brook Road, Sutton- in- Ashfield, Nottinghamshire, NG17 2HU, United Kingdom Tel: +44 7909 746641 Fax: +44 (0) 1623 426 101	United Kingdom	Common Share	1	99.99%

Wool Business

No.	Company Name/Address	Country	Type of Shares	Shares Issued	Shareholding
1	Indorama Holdings Limited 75/64, 65 Ocean Tower 2, 28 th Floor, Soi Sukhumvit 19 (Wattana), Asoke Road, Klongtoey Nuer, Wattana, Bangkok 10110, Thailand Tel: +66 2 661 6661 Fax: +66 2 661 6664 – 5	Thailand	Common Share	77,446,800	99.81%
2	Schoeller GmbH & Co KG Politischer Gemeinde Hard, Austria Tel: 0043 5574 609 0 Fax: N/A	Austria	(Capital Contribution)	-	99.99%
3	Schoeller Kresice s.r.o. Prazska 98, 41148 Kresice, Czech Republic Tel: N/A Fax: N/A	Czech Republic	(Capital Contribution)	-	99.99%

Holding Company Business

No.	Company Name/Address	Country	Type of Shares	Shares Issued	Shareholding
1	Indorama Netherlands B.V. Markweg 201, 3198NB Europoort, Rotterdam, The Netherlands Tel: +31 181 285 400 Fax: +31 181 285 405	Netherlands	Common Share	18,000	99.99%

Holding Company Business					
No.	Company Name/Address	Country	Type of Shares	Shares Issued	Shareholding
2	Beacon Trading (UK) Limited 23 Northiam, Woodside Park, N12 7ET, London, United Kingdom Tel: N/A Fax: N/A	United Kingdom	Common Share	320,000	99.81%
3	Beverage Plastics (Holdings) Limited Silverwood Business Park, 70 Silverwood Road, Lurgan Craigavon, County Armagh, BT 66 6 LN, Northern Ireland Tel: +44 2838311800 Fax: +44 2838311888	Northern Ireland	Common Share Class A Class C	10,000 7,550 2,450	99.86%
4	KP Equity Partners Inc. Level 5 (A), Main Office Tower, Financial Park Labuan Complex, Jalan Merdeka, 87000 Federal Territory of Labuan, Malaysia Tel: +087 414 073 Fax: +087 413 281	Malaysia	Common Share	10,000	99.99%
5	Indorama Germany GmbH Philipp-Reis-Str. 4, 65795 Hattersheim, Federal Republic of Germany Tel: N/A Fax: N/A	Germany	Common Share	25,000	99.99%
6	Indorama Ventures Holdings LP Corporation Service Company, 251 Little Falls Drive, Wilmington, Delaware 19808, USA Tel: +1-847-943-3100 Fax: +1-847-943-3196	USA	(Partnership Interest)	-	99.99%
7	Indorama Ventures USA Holdings LP Corporation Service Company, 251 Little Falls Drive, Wilmington, Delaware 19808, USA Tel: +1-847-943-3100 Fax: +1-847-943-3196	USA	(Partnership Interest)	-	99.99%
8	Indorama Ventures Performance Fibers Holdings USA LLC Corporation Service Company, 251 Little Falls Drive, Wilmington, Delaware 19808, USA Tel: +1 302 636-5401 Fax: +1 302 636-5454	USA	(Membership Interest)	-	99.99%
9	FiberVisions Corporation Corporation Service Company, 251 Little Falls Drive, Wilmington, Delaware 19808 USA Tel: +1 678 578 7240 Fax: +1 678 578 7276	USA	Common Share	1,000	99.99%
10	FiberVisions (China) A/S Engdragnet 22, Varde Denmark, DK-6800, Denmark Tel: +45 7994 2200 Fax: +45 7994 2201	Denmark	Common Share	100,000	99.99%
11	ES FiberVisions Holdings ApS Engdragnet 22, Varde Denmark, DK- 6800, Denmark Tel: +45 7994 2200 Fax: +45 7994 2201	Denmark	Common Share	48,500	50.00%

Holding Company Business

No.	Company Name/Address	Country	Type of Shares	Shares Issued	Shareholding
12	Indorama Ventures OGL Holdings LP Corporation Service Company, 251 Little Falls Drive, Wilmington, Delaware 19808, USA Tel: +1-847-943-3100 Fax: +1-847-943-3196	USA	(Partnership Interest)	-	99.99%
13	FiberVisions, L.P. Corporation Service Company, 251 Little Falls Drive, Wilmington, Delaware 19808 USA Tel: +1 302 658-7581 Fax: +1 302 655-2480	USA	(Partnership Interest)	-	99.99%
14	ES FiberVisions, Inc. Corporation Service Company, 251 Little Falls Drive, Wilmington, Delaware 19808 USA Tel: +1 302 636 5401 Fax: +1 302 636 5454	USA	Common Share	100	50.00%
15	IVL Holding, S. de R.L. de C.V. Avenida Prolongación Paseo de la Reforma 1015, Torre A piso 2, Colonia Santa Fe Cuajimalpa CP 05348, Delegación Cuajimalpa de Morelos, Ciudad de México, México Tel: +52 55 91775700 Fax: +52 55 52924919	Mexico	Equity Quota Series A	2	99.99%
16	Grupo Indorama Ventures, S.de R.L. de C.V. Avenida Prolongación Paseo de la Reforma 1015, Torre A piso 2, Colonia Santa Fe Cuajimalpa CP 05348, Delegación Cuajimalpa de Morelos, Ciudad de México, México Tel: +52 55 91775700 Fax: +52 55 52924919	Mexico	Equity Quota Class I	2	99.99%
17	Indorama Ventures Polyholding LLC Corporation Service Company, 251 Little Falls Drive, Wilmington, Delaware 19808, USA Tel: +1 256 308 1180 Fax: +1 256 341 5926	USA	(Membership Interest)	-	99.99%
18	Indorama Polymers (USA) LLC Corporation Service Company, 251 Little Falls Drive, Wilmington, Delaware 19808 USA Tel: +1 256 308 1180 Fax: +1 256 341 5926	USA	(Membership Interest)	-	99.99%
19	Indorama Ventures USA LLC Corporation Service Company, 251 Little Falls Drive, Wilmington, Delaware 19808, USA Tel: +1 256 308 1180 Fax: +1 256 341 5926	USA	(Membership Interest)	-	99.99%
20	IVL Belgium N.V. Jules Bordetlaan 160, 1140 Evere, Belgium Tel: N/A Fax: N/A	Belgium	Common Share	30,615	99.99%

Holding Company Business					
No.	Company Name/Address	Country	Type of Shares	Shares Issued	Shareholding
21	Performance Fibers Holdings Finance, Inc. Corporation Service Company, 251 Little Falls Drive, Wilmington, Delaware 19808 USA Tel: +1 678 578 7240 Fax: +1 678 578 7276	USA	Common Share	1,000	99.99%
22	Performance Fibers Asia Holdings, LLC Corporation Service Company, 251 Little Falls Drive, Wilmington, Delaware 19808 USA Tel: +1 678 578 7240 Fax: +1 678 578 7276	USA	(Membership Interest)	-	99.99%
23	Performance Fibers Asia, LLC Corporation Service Company, 251 Little Falls Drive, Wilmington, Delaware 19808 USA Tel: +1 678 578 7240 Fax: +1 678 578 7276	USA	(Membership Interest)	-	99.99%
24	Indorama Ventures Northern Investments Inc. 10200 rue Sherbrooke E., Montreal-Est, Quebec H1B 1B4, Canada Tel: +1 514 645 7887 Fax: +1 514 645 9115	Canada	Class A Class B Class C	10,401 149,889,750 256,766,500	99.99%
25	Indorama Ventures Gestion Inc. 10200 rue Sherbrooke E., Montreal-Est, Quebec H1B 1B4, Canada Tel: +1 514 645 7887 Fax: +1 514 645 9115	Canada	Common Share	100	99.99%
26	Indorama Ventures Dutch Investments B.V. Markweg 201, 3198NB Europoort, Rotterdam, The Netherlands Tel: +31 181 285 400 Fax: +31 181 285 405	Netherlands	Common Share	8,914,320	51.00%
27	Indorama Ventures Investments USA LLC Corporation Service Company, 251 Little Falls Drive, Wilmington, Delaware 19808, USA Tel: +1 302 636 5401 Fax: +1 302 636 5454	USA	(Membership Interest)	-	51.00%
28	Indorama Ventures Olefins Holding LLC Corporation Service Company, 251 Little Falls Drive, Wilmington, Delaware 19808, USA Tel: +1 302 636 5401 Fax: +1 302 636 5454	USA	(Membership Interest)	-	99.99%
29	Glanzstoff Holding (Hong Kong) Limited Unit 1301, 13/F. Chung Nam Building, 1 Lockhart Road, Wanchai, Hong Kong Tel: +852 2153 9718 Fax: +852 2117 1879	Hong Kong- China	Common Share	100	99.99%
30	Glanzstoff Industries S.r.l. Pizzighettone, Via G.B. Pirelli, 56, Italy Tel: +39 0372 738011 Fax: +39 0372 730001	Italy	Quota	10,000	99.99%

Holding Company Business

No.	Company Name/Address	Country	Type of Shares	Shares Issued	Shareholding
31	Indorama Ventures Spain S.L. Poligono Industrial Guadarranque, S/N, 11360 San Roque, Cadiz, Spain Tel: N/A Fax: N/A	Spain	Common Share	10,000	99.99%
32	Indorama Ventures Corpus Christi Holding LLC Corporation Service Company, 251 Little Falls Drive, Wilmington, Delaware 19808, USA Tel: N/A Fax: N/A	USA	(Membership Interest)	-	99.99%
33	Avgol Industries 1953 Ltd. 9 Shimshon st., 7 th Floor, Lexus House, Petah Tikva, 4952707, Israel Tel: 972-3-9061555 Fax: 972-3-9364376	Israel	Common Share	304,221,602	65.96%
34	Indorama Austria GmbH Politischer Gemeinde Hard, Austria Tel: N/A Fax: N/A	Austria	(Capital Contribution)	-	99.99%
35	AE BG AlphaOmega Holding GmbH Politischer Gemeinde Hard, Austria Tel: N/A Fax: N/A	Austria	(Capital Contribution)	-	99.99%
36	UTT Beteiligungsgesellschaft mbH Robert-Steiger-Straße 111, 86381 Krumbach, Federal Republic of Germany Tel: +49 (0) 82 82 – 8 97-0 Fax: +49 (0) 82 82 – 8 97-100	Germany	Common Share	100,000	79.99%
37	UTT Technische Textilien Geschäftsführung GmbH Robert-Steiger-Straße 111, 86381 Krumbach, Federal Republic of Germany Tel: +49 (0) 82 82 – 8 97-0 Fax: +49 (0) 82 82 – 8 97-100	Germany	Common Share	50,000	79.99%
38	Indorama Ventures Holdings PTY Ltd 61 Market Road, Brooklyn, Victoria, 3012 Australia Tel: N/A Fax: N/A	Australia	Common Share	10	99.99%
39	Autofil Holdings Limited Unit 3, Orchard Court, Nunn Brook Road, Sutton- in-Ashfield, Nottinghamshire, NG17 2HU, United Kingdom Tel: +44 7909 746641 Fax: +44 (0) 1623 426 101	United Kingdom	Common Share	594,090	99.99%

International Headquarter Business

No.	Company Name/Address	Country	Type of Shares	Shares Issued	Shareholding
1	Indorama Ventures Global Services Limited 75/80-81 Ocean Tower 2, 32 nd Floor, Soi Sukhumvit 19 (Wattana), Asoke Road, Klongtoey Nuer, Wattana, Bangkok 10110, Thailand Tel: +66 2 661 6661 Fax: +66 2 661 6664 – 5	Thailand	Common Share	4,275,791,662	99.99%

Trading & Services Business					
No.	Company Name/Address	Country	Type of Shares	Shares Issued	Shareholding
1	IVL Singapore Pte. Ltd. 9 Raffles Place, #27-00 Republic Plaza, Singapore 048619 Tel: N/A Fax: N/A	Singapore	Common Share	19,000,000	99.91%
2	UAB Indorama Polymers Europe Metalo G.16, LT-94102 Klaipeda, Republic of Lithuania Tel: +370 46 300 749 Fax: +31 181 285 405	Lithuania	Common Share	725,088	99.91%
3	UAB Indorama Holdings Europe Metalo G.16, LT-94102 Klaipeda, Republic of Lithuania Tel: +370 46 300749 Fax: +370 46 314323	Lithuania	Common Share	1,173,952	99.81%
4	Indorama Trading (UK) Limited 23 Northiam, Woodside Park, N12 7ET, London, United Kingdom Tel: N/A Fax: N/A	United Kingdom	Common Share	10,000	99.81%
5	Indorama Trading AG c/o RA Mauro Locarnini, Anwaltsbüro Locarnini, Talstrasse 39, CH-8001 Zürich, Switzerland Tel: N/A Fax: N/A	Switzerland	Common Share	100	99.81%
6	PHP-Shenma Air Bag Yarn Marketing (Shanghai) Co., Ltd. China Merchants Plaza, East Building, Room 1107, No. 333 Cheng Du Road (North), Shanghai 200041, People's Republic Of China Tel: +49 6022 81 2552 Fax: +49 6022 81 31 2552	China	(Capital Contribution)	-	40.80%
7	ES FiberVisions Shanghai Co., Ltd. Room 2401-B, Manpo Plaza, 500 Yan An West Road, Shanghai, People's Republic Of China Tel: +86-(0)21-6212-5877 Fax: +86-(0)21-6226-8829	China	(Capital Contribution)	-	50.00%
8	Performance Fibers (Kaiping) Trading Company Limited No.3 Hongqiao Road Kaiping, Guangdong Province, People's Republic of China Tel: +86 750 2201707 Fax: +86 750 2218093	China	(Capital Contribution)	-	99.99%
9	TTI GmbH Kasinostr. 19 – 21, 42103 Wuppertal, Federal Republic of Germany Tel: +49 6022 81 2552 Fax: +49 6022 81 31 2552	Germany	Common Share	25,100	40.00%

Trading & Services Business

No.	Company Name/Address	Country	Type of Shares	Shares Issued	Shareholding
10	Trevira North America, LLC 5206 Leonardslee CT, Charlotte, Mecklenburg County, North Carolina, 28226, USA Tel: +1-704-910-0970 Fax: +1-704-496-2157	USA	(Membership Interest)	-	99.99%
11	ES FiberVisions Co., Ltd. 3-3-23 Nakanoshima, Kita-Ku, Osaka 530-0005, Japan Tel: +81 6 6441 3307 Fax: +81 6 6441 3347	Japan	Common Share	200	50.00%
12	ES Fiber Visions Limited Partnership Corporation Service Company, 112 North Curry Street, Carson City, Nevada, 89703, USA. Tel: +706 357 5100 Fax: +706 966 4247	USA	(Partnership Interest)	-	50.00%
13	Indorama Ventures Alphapet Holdings, Inc. Corporation Service Company, 251 Little Falls Drive, Wilmington, Delaware 19808 USA Tel: +1 256 308 1180 Fax: +1 256 341 5926	USA	Common Share	100	99.99%
14	ES FiberVisions ApS Engdragnet 22, Varde Denmark, DK- 6800 Tel: +45 7994 2200 Fax: +45 7994 2201	Denmark	Common Share	10,000	50.00%
15	Indorama Ventures Ecomex Services, S. de R.L. de C.V. Carretera Libre a Colotlan 6800. Colonia Extramuros, C.P. 45200, Zapopan, Jalisco, Mexico Tel: +52 33 1561-3732 Fax: N/A	Mexico	Equity Quota Class I	2	51.00%
16	Indorama Ventures Polycom, S. de R.L. de C.V. Avenida Prolongación Paseo De La Reforma 1015 , Torre A piso 2, Colonia Santa Fe Cuajimalpa CP 05348, Delegación Cuajimalpa de Morelos, Ciudad de México, México Tel: +52 55 91775700 Fax: +52 55 52924919	Mexico	Equity Quota Class I	2	99.99%
17	Indorama Ventures Servicios Corporativos, S. de R.L. de C.V. Avenida Prolongación Paseo de la Reforma 1015, Torre A piso 2, Colonia Santa Fe Cuajimalpa CP 05348, Delegación Cuajimalpa de Morelos, Ciudad de México, México Tel: +52 55 91775700 Fax: +52 55 52924919	Mexico	Equity Quota Class I	2	99.99%
18	Performance Fibers (Hongkong) Limited Room 3B, 22 nd Floor, 148 Electric Road, North Point, Hong Kong Tel: +852 2566-1918 Fax: +852 2110 0033	Hong Kong- China	Common Share	1,000	99.99%

Trading & Services Business					
No.	Company Name/Address	Country	Type of Shares	Shares Issued	Shareholding
19	ES FiberVisions Hong Kong Limited Unit No. 2810, 28/F, The Metropolis Tower, 10 Metropolis Drive, Hunghom, Kowloon, Hong Kong Tel: +852 2970 5555 Fax: +852 2970 5678	Hong Kong-China	Common Share	616,010	50.00%
20	4200144 Canada Inc. 3400 First Canadian Centre, 350 - 7 th Avenue SW, Calgary, Alberta T2P 3N9, Canada Tel: +1 (514) 645 7887 (229) Fax: +1 (514) 645 9115	Canada	Class A	100	99.99%
21	Indorama Ventures Exporter Inc. Corporation Service Company, 251 Little Falls Drive, Wilmington, Delaware 19808, USA Tel: +1-864-579-5750 Fax: +1-964-579-5166	USA	Common Share	2,500	99.99%
22	Glanzstoff Services S.A.S. Pôle Européen de Développement, 54810 Longlaville, France Tel: +33 3 82 44 80 00 Fax: +33 3 82 44 56 82	France	Common Share	82,195	99.99%
23	Glanzstoff Industries S.A. Rue Schwarzenhof, 34 L-8452 Steinfort - GD Luxembourg Tel: +352 399 881 1 Fax: +352 399 881 213	Luxembourg	Common Share	960,000	99.99%
24	Glanzstoff Management GmbH Technologiezentrum, Haus C, Technopark 1, 3430 Tulln, Austria Tel: N/A Fax: N/A	Austria	Common Share	500	99.99%
25	Indorama Ventures Portugal Utility - Unipessoal, LDA. ZILS Zona 2, Lote 2E1, Monte Feio, 7520-064 Sines, Portugal Tel: +351 269 189 000 Fax: +351 269 189 099	Portugal	Quota	1	99.99%
26	Performance Fibers Services, S. de R.L. de C.V. Av. de la Luz 77 Zona Industrial Benito Juárez, CP 76120, Querétaro, Qro., México Tel: +52 442 211 3000 Fax: N/A	Mexico	Equity Quota Class 1	50,000	99.99%
27	Schoeller Süssen GmbH Bühlstrasse 14, 73079 Süssen, Federal Republic of Germany Tel: +43 5574 609 1124 Fax: N/A	Germany	(Capital Contribution)	-	99.99%
28	KORDPLAST s.r.o. No. 897, 696 74 Velká nad Velickou, Czech Republic Tel: N/A Fax: N/A	Czech Republic	Common Share	200,000	99.99%

Trading & Services Business

No.	Company Name/Address	Country	Type of Shares	Shares Issued	Shareholding
29	Indorama Ventures Global Shared Services Private Limited The Metropolitan, 6 th Floor, C-26/27, Bandra Kurla Complex, Bandra East, MUMBAI, Mumbai City, Maharashtra, 400051, India Tel: 033-68259500 / 033-6825980 Fax: N/A	India	Common Share	7,000,000	99.98%
30	Sinterama Trading (Shanghai) Co., Ltd. 1804 Zheng Da Cube Edifice, 58 Changliu Road, Rudong New Area, Shanghai 200 135, People's Republic of China Tel: +86 21 6854 4230 Fax: +86 21 6854 4230	China	(Capital Contribution)	-	99.99%
31	Sinterama Asia Limited Unit B 5/F, Max Share Centre, 373 King's Road, North Point, Hong Kong Tel: +86 21 6854 4232 Fax: +86 21 6854 4230	Hong Kong-China	Common Share	14,286	99.99%

Logistic Business

No.	Company Name/Address	Country	Type of Shares	Shares Issued	Shareholding
1	Indorama Ventures Logistics LLC Corporation Service Company, 251 Little Falls Drive, Wilmington, Delaware 19808, USA Tel: +1-847-943-3100 Fax: +1-847-943-3196	USA	(Membership Interest)	-	99.99%

Surfactants & LAB Business

No.	Company Name/Address	Country	Type of Shares	Shares Issued	Shareholding
1	Indorama Ventures Oxides Ankleshwar Private Limited The Metropolitan, 6 th Floor, C-26/27, Bandra Kurla Complex, Bandra East, MUMBAI, Mumbai City, Maharashtra, 400051, India, Tel: 022-26571234 Fax: N/A	India	Common Share	55,010,000	99.98%
2	Indorama Ventures Propylene Oxides LLC 211 E. 7 th Street, Suite 620, Austin, Texas, 78701 USA Tel: N/A Fax: N/A	USA	(Membership Interest)	-	99.99%
3	Indorama Ventures Oxides International LLC 211 E. 7 th Street, Suite 620, Austin, Texas, 78701 USA Tel: 936-257-4207 Fax: N/A	USA	(Membership Interest)	-	99.99%

Surfactants & LAB Business and EG/EO Business

No.	Company Name/Address	Country	Type of Shares	Shares Issued	Shareholding
1	Indorama Ventures Oxides Australia PTY Ltd. 61 Market Road, Brooklyn, Victoria, 3012, Australia Tel: +61 3 9933 6666 Fax: +61 3 9933 6000	Australia	Common Share	105,893,449	99.99%

Olefins Business, Surfactants & LAB Business, EG/EO Business, EOA Business and PO & MTBE Business					
No.	Company Name/Address	Country	Type of Shares	Shares Issued	Shareholding
1	Indorama Ventures Oxides LLC 251 Little Falls Drive, Wilmington, New Castle Country, Delaware 19808, USA Tel: 630-818-7816 Fax: N/A	USA	(Membership Interest)	-	99.99%
Recycling Business					
No.	Company Name/Address	Country	Type of Shares	Shares Issued	Shareholding
1	PETVALUE PHILIPPINES CORPORATION Wilkins Plant, Gateway Business Park, General Trias, Cavite, 4107, Philippines Tel: +6349 572 0379 Fax: +6349 572 0387	Philippines	Common Share	1,000,000,000	69.99%
2	Indorama Ventures Recycling Verdun S.A.S Zone Industrielle De Regret, 55100 Verdun, France Tel: (33) 329843232 Fax: (33) 329843104	France	Common Share	10,000	99.99%
3	Indorama Ventures Solucoes Sustentaveis Brasil Ltda. Rua Jovino Antônio da Silva 250, Building C, Distrito Industrial, in the city of Juiz de Fora/MG 36092-007/ Brazil Tel: +55 11 2111-1388 Fax: +55 11 2111-1470	Brazil	Common Share	47,099,747	99.99%
4	Wellman France Recyclage S.A.S. Zone Industrielle de Regret 55100 Verdun, France Tel: +33 (0) 971 002 005 Fax: +33 (0) 329 843 104	France	Common Share	500	99.99%
5	Wellman Neufchateau Recyclage S.A. Chemin de Gretty 88300 Rebeuville, France Tel: N/A Fax: N/A	France	Common Share	320,866	99.99%
6	Indorama Ventures Ecomex, S. de R.L. de C.V. Carretera Libre a Colotlan 6800. Colonia Extramuros. Zapopan, Jalisco, Mexico Tel: +5233 1561 3732 Fax: N/A	Mexico	Equity Quota Class I	2	51.00%
7	Indorama Ventures Sustainable Solutions Fontana, Inc. Corporation Service Company, 251 Little Falls Drive, Wilmington, Delaware 19808 USA. Tel: (951) 332-4660 Fax: (951) 332-4661	USA	Common Share	1,000	99.99%
8	Indorama Ventures Sustainable Solutions LLC 251 Little Falls Drive, Wilmington, New Castle Country, Delaware 19808 USA Tel: 256-308-1180 Fax: 256-341-5926	USA	(Membership Interest)	-	99.99%
9	Indorama Ventures Recycling Poland Sp. z o.o. Ul. Konwojowa 96, 43-346 Bielsko Biala, Poland Tel: +48334974300 Fax: +48334974303	Poland	Common Share	19,000	99.99%

Recycling Business and Holding Business

No.	Company Name/Address	Country	Type of Shares	Shares Issued	Shareholding
1	Indorama Ventures Recycling Netherlands B.V. Markweg 201, 3198 NB Europoort, Rotterdam, The Netherlands Tel: +31 181 285 400 Fax: N/A	Netherlands	Common Share	18,000	99.99%

Non-Operating Business

No.	Company Name/Address	Country	Type of Shares	Shares Issued	Shareholding
1	Indorama Polymers Rotterdam B.V. Markweg 201, 3198 NB, Europoort, Harbour No.6347, Rotterdam, The Netherlands Tel: +31 181 285 400 Fax: +31 181 285 405	Netherlands	Common Share	18,002	99.91%
2	Indorama Holdings Rotterdam B.V. Markweg 201, 3198 NB, Europoort, Rotterdam, The Netherlands Tel: +31 181 285 400 Fax: +31 181 285 405	Netherlands	Common Share	18,002	99.81%
3	MJR Recycling B.V. Tengnagelwaard 5, NL-6917 AE Spijk(Gld), The Netherlands Tel: +31 656 6250 Fax: +31 656 6251	Netherlands	Common Share	18,100	99.99%
4	FiberVisions Vermögensverwaltungsgesellschaft mbH Local Court of Dusseldorf, Werdener Straße 1, 40227 Düsseldorf, Federal Republic of Germany Tel: +49 211 8306-0 Fax: +49 211 87565 116-0	Germany	Common Share	3,000,000	99.99%
5	Indorama Ventures Adana PET Sanayi Anonim Sirketi Karamahmet Mahallesi, Avrupa Serbest Bolgesi, 3. Sokak No:2 Ergene/Tekirdag – 59860, Turkey Tel: +322 441 0253-226 Fax: +322 441 0110	Turkey	Common Share	5,489,505,865	99.99%
6	Indorama Polymers Workington Limited Finsgate, 5-7 Cranwood Street, London, EC1V 9EE, United Kingdom Tel: +31 181 285 440 Fax: +31 181 285 400	United Kingdom	Common Share	1	99.91%
7	Tereftálicos Indústrias Químicas Ltda. Fazenda São Francisco, s/nº, CEP: 13140-971 - Paulínia - São Paulo - SP/ Brazil Tel: +55 11 2111 1388 Fax: +55 11 2111 1470	Brazil	Common Share	37,573,293	51.00%
8	Avgol Cyprus Ltd. Arch. Makariou III, 284 FORTUNA COURT, BLOCK B, 2 nd floor P.C. 3105, Limassol, Cyprus Tel: N/A Fax: N/A	Cyprus	Common Share	1,000	65.96%

Non-Operating Business					
No.	Company Name/Address	Country	Type of Shares	Shares Issued	Shareholding
9	Autofil Properties Limited Unit 3, Orchard Court, Nunn Brook Road, Sutton- in-Ashfield, Nottinghamshire, NG17 2HU, United Kingdom Tel: +44 7909 746641 Fax: +44 (0) 1623 426 101	United Kingdom	Common Share	2	99.99%
10	Autofil Worldwide Limited Unit 3, Orchard Court, Nunn Brook Road, Sutton- in-Ashfield, Nottinghamshire, NG17 2HU, United Kingdom Tel: +44 7909 746641 Fax: +44 (0) 1623 426 101	United Kingdom	Common Share	250,002	99.99%

Board of Directors



Mr. Sri Prakash Lohia

Chairman of the Board

Director Type: Non - Executive Director

Age: 68



Appointment Date of Directorship

19 September 2009

Education

- Bachelor of Commerce, Delhi University, India

Training Program

- Role of the Director and the Board Program 2017, Institute of Directors (IOD), London, UK

Working Experience (during the recent 5 years)

Other Listed Companies in SET

-None-

Other Companies and/or Organizations: 13 companies (as of 31 December 2020)

- President Commissioner of other subsidiaries of Indorama Ventures Public Company Limited (5 companies)
- Chairman, President Commissioner, Commissioner and Director of Indorama Corporation Pte. Ltd. and its subsidiaries (7 companies)
- Commissioner, PT. Irama Unggul

% of shareholding in IVL

As of 31 December 2020

-None-

Mr. Alope Lohia

Vice Chairman of the Board, Chairman of the Sustainability and Risk Management Committee and Group Chief Executive Officer

Director Type: Executive Director

Age: 62



Appointment Date of Directorship

19 September 2009

Education

- Honorary PhD Degree of Business Administration, Rajamangala University of Technology Thanyaburi, Thailand
- Bachelor of Commerce, Delhi University, India

Training Program

- Director Accreditation Program (DAP) Class No. 65/2007, Thai Institute of Directors, Thailand

Working Experience (during the recent 5 years)

Other Listed Companies in SET

-None-

Other Companies and/or Organizations: 16 companies (as of 31 December 2020)

- Chairman, Director and Commissioner of other subsidiaries of Indorama Ventures Public Company Limited (6 companies)
- Director, Canopus International Limited
- Chairman, Indorama Resources Limited
- Director, Viraa Limited
- Director, Capialla Limited
- Director, Aurelius Holdings Limited
- Director, Vega Aviation Limited
- Director, Brookgrange Investments Limited
- Director, Auctus Holdings Limited
- Chairman, Beacon Chemicals Ltd.
- Director, VOX Investment Limited

% of shareholding in IVL

As of 31 December 2020

1,000,010 shares or 0.018%

Mrs. Suchitra Lohia

Chairperson of the Corporate Social Responsibility Committee
and Deputy Group CEO

Director Type: **Executive Director**

Age: **56**



Appointment Date of Directorship

19 September 2009

Education

- Bachelor of Commerce, Delhi University, India
- Owner President Management Program, Harvard Business School

Training Program

- Capital Market Academy Leadership Program, Capital Market Academy (Class 14), Thailand
- Director Accreditation Program (DAP) Class No. 108/2014, Thai Institute of Directors, Thailand

Working Experience (during the recent 5 years)

Other Listed Companies in SET

-None-

Other Companies and/or Organizations: 19 companies (as of 31 December 2020)

- Director and Commissioner of other subsidiaries of Indorama Ventures Public Company Limited (6 companies)
- Director, Canopus International Limited
- Director, Indorama Resources Limited
- Chairperson, IVL Foundation
- Director, Volta Circle Limited
- Director, Viraa Limited
- Director, Capialla Limited
- Director, QAMA Investments Limited
- Director, Aurelius Holdings Limited
- Director, Vega Aviation Limited
- Director, Brookgrange Investments Limited
- Director, Auctus Holdings Limited
- Director, Beacon Chemicals Ltd.
- Director, VOX Investment Limited

% of shareholding in IVL

As of 31 December 2020

-None- (held by her spouse 1,000,010 shares or 0.018%)



Mr. Amit Lohia

Director

Director Type: Non - Executive Director

Age: 46

Appointment Date of Directorship

19 September 2009

Education

- Bachelor of Economics and Finance, Wharton School of Business, USA

Training Program

-None-

Working Experience (during the recent 5 years)

Other Listed Companies in SET

-None-

Other Companies and/or Organizations: 12 companies (as of 31 December 2020)

- Commissioner of other subsidiaries of Indorama Ventures Public Company Limited (5 companies)
- Vice Chairman, Vice President Commissioner and Director of Indorama Corporation Pte. Ltd. and its subsidiaries (7 companies)

% of shareholding in IVL

As of 31 December 2020

-None-

Mr. Yashovardhan Lohia

Member of the Sustainability and Risk Management Committee
and Chief Sustainability Officer

Director Type: Executive Director

Age: 33



Appointment Date of Directorship

24 April 2019

Education

- Bachelor of Engineering Business Management, Warwick Business School, Warwickshire, UK

Training Program

- Director Certification Program (DCP), Class 214/2015, Thai Institute of Directors Association (IOD), Thailand

Working Experience (during the recent 5 years)

- 2015 - Present **Thai Plaspac Public Company Limited**
Director

*Other Companies and/or Organizations: 8 companies
(as of 31 December 2020)*

- Director of other subsidiaries of Indorama Ventures Public Company Limited (5 companies)
- Director, Indorama Resources Limited
- Director, Beacon Chemicals Limited
- Director, Aurus Speciality Company Limited

% of shareholding in IVL

As of 31 December 2020

-None-

Mr. Dilip Kumar Agarwal

Member of the Sustainability and Risk Management Committee and Chief Executive Officer of Combined PET, IOD and Fibers Business

Director Type: Executive Director

Age: 63



Appointment Date of Directorship

27 April 2010

Education

- Bachelor of Science, University of Udaipur, India
- Chartered Accountant, The Institute of Chartered Accountants of India, India
- Cost Accountant, Institute of Cost & Management Accountants of India, India
- Company Secretary Program
The Institute of Company Secretaries of India (ICSI), India

Training Program

- Director Accreditation Program (DAP), Class No. 65/2007, Thai Institute of Directors, Thailand
- Director Certification Program (DCP), Class No.182/2013, Thai Institute of Directors, Thailand

Working Experience (during the recent 5 years)

Other Listed Companies in SET

-None-

Other Companies and Organizations: 54 companies (as of 31 December 2020)

- Chairman, Vice Chairman, Vice President, Director, Managing Director and Manager of other subsidiaries of Indorama Ventures Public Company Limited

% of shareholding in IVL

As of 31 December 2020

439,981 shares or 0.008%

Mr. Udey Paul Singh Gill

Member of the Sustainability and Risk Management Committee
and Chief Strategy Business

Director Type: Executive Director

Age: 67



Appointment Date of Directorship

27 April 2011

Education

- MBA (Marketing Management), College of Basic Sciences, PAU, Ludhiana, Punjab, India
- International Trade, Fulbright Scholar, University of California, USA
- Bsc. (Hons.), PAU, Ludhiana, Punjab, India

Training Program

- Director Accreditation Program (DAP) Class No. 95/2012, Thai Institute of Directors, Thailand
- Director Certification Program (DCP) Class No. 182/2013, Thai Institute of Directors, Thailand

Working Experience (during the recent 5 years)

Other Listed Companies in SET

-None-

Other Companies and/or Organizations: 22 companies (as of 31 December 2020)

- Chairman, President Director, Director and CEO of other subsidiaries of Indorama Ventures Public Company Limited (20 companies)
- Board Member, International Textile Manufacturers Federation (ITMF)
- Advisory Board, "BIOTEXFUTURE" Research Project of RWTH Aachen University and Adidas AG

% of shareholding in IVL

As of 31 December 2020

141,949 shares or 0.003%

Mr. Sanjay Ahuja

Chief Financial Officer

Director Type: Executive Director

Age: 52



Appointment Date of Directorship

13 November 2015

Education

- Chartered Accountant, The Institute of Chartered Accountants of India, India

Training Program

- Director Certification Program (DCP) Class No.175/2013, Thai Institute of Directors, Thailand
- E-learning CFO Refresh, Training for Continuing Accounting Knowledge (CFO's Refresh Course), Thailand Securities Institute (TSI), Stock Exchange of Thailand (SET) in 2020
- E-learning CFO Orientation, Accounting and Financial Preparation (CFO's Orientation Course), Thailand Securities Institute (TSI), Stock Exchange of Thailand (SET) in 2020

Working Experience (during the recent 5 years)

Other Listed Companies in SET

-None-

Other Companies and/or Organizations: 11 companies (as of 31 December 2020)

- Director of other subsidiaries of Indorama Ventures Public Company Limited

% of shareholding in IVL

As of 31 December 2020

101,033 shares or 0.002%

Mr. Rathian Srimongkol

Vice Chairman of the Board, Chairman of the Audit Committee and
Member of the Sustainability and Risk Management Committee

Director Type: **Lead Independent Director**

Age: 61



Appointment Date of Directorship

19 September 2009

Education

- Master of Business Administration, Thammasat University, Thailand
- M.P.A. (General Administration), Suan Sunandha Rajabhat University, Thailand
- Medical Degree, Faculty of Medicine Siriraj Hospital, Mahidol University, Thailand
- Bachelor's degree in Medical Science, Mahidol University, Thailand

Training Program

- Certificate in Politics and Governance in Democratic Systems for Executives Course (Class 9), King Prajadhipok's Institute, Thailand
- Diploma, National Defence College, The Joint State Private Sectors Course Class No. 51/21, National Defence College of Thailand, Thailand
- Capital Market Academy Leadership Program (Class 11), Capital Market Academy, Thailand
- Thai Institute of Directors (IOD), Thailand
 - Director Certification Program (DCP), Class No. 8/2001
 - Role of the Chairman Program, Class No. 19/2008
 - Financial Statements Demystified for Director Program, Class No.1/2009

Working Experience (during the recent 5 years)

Other Listed Companies in SET

- 2018 – Present **Raimon Land Public Company Limited**
Independent Director, Vice Chairman of the Board of Directors, Chairman of Audit Committee and Member of Nomination and Remuneration Committee
- 2012 – Present **Krungthai Card Public Company Limited**
Director, President and Chief Executive Officer

Other Companies and/or Organizations

(as of 31 December 2020)

- 2019 – Present Chairman
Islamic Bank of Thailand
- 2018 – Present Chairman
Tobacco Authority of Thailand
- 2015 – Present Vice President
Thai Listed Companies Association

% of shareholding in IVL

As of 31 December 2020

991,400 shares or 0.018%

Mr. William Ellwood Heinecke

Member of the Nomination, Compensation and Corporate Governance Committee

Director Type: Independent Director

Age: 71



Appointment Date of Directorship

19 September 2009

Education

- Honorary Doctoral Degree of Business Administration in Management, Yonok University, Lampang, Thailand
- International School of Bangkok, Thailand

Training Program

- Director Certification Program (DCP) Class No.64/2005, Thai Institute of Directors, Thailand

Working Experience (during the recent 5 years)

Other Listed Companies in SET

- Present **Minor International Public Company Limited and its subsidiaries**
Chairman of the Board and Chairman of Executive Management Committee

Other Companies and/or Organizations (as of 31 December 2020)

- Present Chairman
Minor Corporation Public Company Limited and its subsidiaries
- Present Chairman
The Minor Food Group Public Company Limited and its subsidiaries
- Present Director
Rajadamri Hotel Public Company Limited and its subsidiaries
- Present Director
Pacific Cross International Ltd.
- Present Director
NH Hotel Group S.A.

% of shareholding in IVL

As of 31 December 2020

4,534,932 shares or 0.081%

Dr. Siri Ganjarerndee

Member of the Audit Committee and Member of Nomination, Compensation and Corporate Governance Committee

Director Type: Independent Director

Age: 72



Appointment Date of Directorship

27 April 2010

Education

- Ph.D. Monetary Economics and Econometrics & Operations Research, Monash University, Australia
- M.Ec. Economic Statistics and Monetary Economics, University of Sydney, Australia
- B.E. (Hons.) Economic Statistics, University of Sydney, Australia

Training Program

- Thai Institute of Directors (IOD), Thailand
 - Director Accreditation Program (DAP) Class No. 4/2003
 - Director Certification Program (DCP) Class No. 60/2005
 - Audit Committee Program Class No. 6/2005
- Capital Market Academy Leader Program Class No.5/2007, The Stock Exchange of Thailand
- Advanced Management Program (AMP) Class No. 113/1995, Harvard Business School

Working Experience (during the recent 5 years)

Other Listed Companies in SET

- 1999 – Present **Bangkok Life Assurance PCL**
Chairman of the Board of Director,
Chairman of Nomination and Remuneration Committee, Chairman of Investment Committee and Chairman of Performance Assessment and Evaluation Committee

Other Companies and/or Organizations

(as of 31 December 2020)

- 2019 – Present Chairman of Board of Director and Chairman of Executive Committee Navavej International PCL
- 2018 – Present Member of University Council and Chairman of Finance Committee Sukhothai Thammathirat Open University
- 2016 – Present Chairman of the Board of Director and Chairman of Compensation and Nomination Committee TRIS Rating Ltd.
- 2010 – Present Member of the Public Sector Development Sub-Commission in Finance and Budgetary System The Officer of Public Sector Development Commission
- 2003 – Present Director, Member of Audit Committee, Member of the Remuneration Committee and Chairman of Nomination Committee TRIS Corporation Co., Ltd.
- 2003 – Present Member of Sub-Committee for Evaluation of State Enterprises State Enterprise Policy Office, Ministry of Finance

% of shareholding in IVL

As of 31 December 2020

-None-

Mr. Chakramon Phasukavanich

Member of the Nomination, Compensation and Corporate Governance Committee

Director Type: Independent Director

Age: 72



Appointment Date of Directorship

13 November 2015

Education

- M.A. (Economics), California State University, Northridge, USA.
- Bachelor's Degree in Economics, Chulalongkorn University, Thailand

Training Program

- The National Defense College of Thailand (Class 39), Thailand
- Thai Institute of Directors (IOD), Thailand
 - Certificate, Senior Executive Development Program Class 12
 - Director Accreditation Program (DAP) Class No. 20/2004
 - Finance for Non-Financial Director Class No. 13/2004
 - Audit Committee Program Class No. 14/2006
 - Director Certification Program (DCP) Class No. 71/2006
 - Role of the Chairman Program Class No. 20/2008
 - Current Issue Seminar Class No. 1/2008
 - Director Forum Class No. 1/2009
 - Monitoring the System of Internal Control and Risk Management Class No. 9/2010
 - Advanced Audit Committee Program Class No. 3/2010
 - Financial Institutions Governance Program Class No. 2/2011
 - Board Matters and Trends Agenda Class No. 6/2018
- Certificate, Senior Executive Development Program Class 11 (2011), Capital Market Academy, Thailand

Working Experience (during the recent 5 years)

Other Listed Companies in SET

- 2015 – Present **P.C.S. Machine Group Holding PCL**
Chairman of the Board and Independent Director

Other Companies and/or Organizations (as of 31 December 2020)

- Present President
Investor Club Association
- 2004 – Present Member
Office of the Council of State
(5th Law Committee)

% of shareholding in IVL

As of 31 December 2020

-None- (held by his spouse – 102,354 shares or 0.002%)

Mr. Kanit Si

Member of the Nomination, Compensation and Corporate Governance Committee and Member of the Sustainability and Risk Management Committee

Director Type: **Independent Director**

Age: **70**



Appointment Date of Directorship

27 April 2010

Education

- MBA, Finance & Quantitative Method University of New Orleans, USA.
- Bachelor of Engineering (Honor & Gold Medal) Chulalongkorn University, Thailand

Training Program

- Director Certification Program (DCP) 2003, Thai Institute of Directors, Thailand
- Global Leadership Development Program (GLDP) 2004, International Centre for Leadership in Finance (ICLIF), Thailand
- Capital Market Academy Leadership Program, (Class 9) 2009, Capital Market Academy, Thailand
- Ethical Leadership Program (class 16) 2019, Thai Institute of Directors, Thailand
- Advanced Audit Committee Program (AACP) Class 36/2020, Thai Institute of Directors (IOD), Thailand

Working Experience (during the recent 5 years)

Other Listed Companies in SET

- 1998 - Present **Bangkok Bank Public Company Limited**
Senior Executive Vice President

Other Companies and/or Organizations (as of 31 December 2020)

- 2000 – Present Director
HMC Polymers Company Limited
- 2000 – Present Director
Indorama Polyester Industries Public Company Limited
- 1999 – Present Director
TPT Petrochemicals Public Company Limited

% of shareholding in IVL

As of 31 December 2020

300,000 shares or 0.005%

Mr. Russell Leighton Kekuewa

Chairman of Nomination, Compensation and Corporate Governance Committee and Member of the Sustainability and Risk Management Committee

Director Type: Independent Director

Age: 66



Appointment Date of Directorship

20 October 2014

Education

- Master of Science Industrial Engineering and Engineering Management, Stanford University, Stanford, California, USA.
- Bachelor of Science Civil Engineering, University of the Pacific Stockton, California, USA.

Training Program

- Thai Institute of Directors (IOD), Thailand
 - Director Certification Program (DCP) Class No. 196/2014
 - Strategic Board Master Class (SBM) Class No. 3/2018

Working Experience (during the recent 5 years)

Other Listed Companies in SET

- 2016 – Present **Bangkok Post Public Company Limited**
Independent Director and Chairman of the Risk Management Committee
- 2015 – Present **Boutique Corporation Public Company Limited**
Independent Director, Member of Audit and Corporate Governance Committee and Chairman of Nomination and Remuneration Committee

Other Companies and/or Organizations (as of 31 December 2020)

-None-

% of shareholding in IVL

As of 31 December 2020

750,000 shares or 0.013%

Mr. Tevin Vongvanich

Member of Audit Committee and Member of the Sustainability and Risk Management Committee

Director Type: Independent Director

Age: 62



Appointment Date of Directorship

24 April 2019

Education

- Honorary Doctorate Degree, Faculty of Engineering, Chulalongkorn University, Thailand
- Honorary Doctorate of Philosophy, Civil Engineering Department, Faculty of Industry and Technology, Rajamangala University of Technology Isan, Thailand
- M.Sc. (Petroleum Engineering), University of Houston, USA
- M.Sc. (Chemical Engineering), Rice University, USA
- B.Eng. (Chemical Engineering) (Hons.), Chulalongkorn University, Thailand

Training Program

- Thai Institute of Directors Association (IOD)
 - Director Certification Program (DCP), Class 21/2002
 - Financial Statements for Directors (FSD), Class 6/2009
 - Role of the Compensation Committee (RCC), Class 13/2011
 - Anti-Corruption for Executive Program (ACEP), Class 15/2015
 - Ethical Leadership Program (ELP), Class 7/2017
- Senior Executive Program (SEP), Class 7, Sasin Graduate Institute of Business Administration, Chulalongkorn University
- Program for Global Leadership (PGL), Class 3, Harvard Business School, USA
- Democratic Politics and Governance for High-Level Administrators Program, Class 10, King Prajadhipok's Institute
- Capital Market Academy Programs, Class 6, Stock Exchange of Thailand
- Diploma, National Defence College, the Joint State-Private Sector Course, Class 22.
- Program for Senior Executives on Justice Administrative, Class 16, Office of the Judiciary
- Corporate Governance for Directors and Senior Executives of State Enterprises and Public Organizations, Class 7, Public Director Institute (PDI), King Prajadhipok's Institute
- Certificate in Top Executive Program in Energy Literacy for a Sustainable Future (Class 3/2013), Thailand Energy Academy (TEA)

Working Experience (during the recent 5 years)

Other Listed Companies in SET

- 2019 – Present **Berli Jucker Public Company Limited**
Vice Chairman of the Board and Chairman of the Nomination and Remuneration Committee
- 2019 – Present **Amata Corporation Public Company Limited**
Independent Director, Chairman of Risk Management Committee and Member of the Corporate Governance Committee

Other Companies and/or Organizations (as of 31 December 2020)

- 2020 – Present Committee
BCG Economy Committee
- 2020 – Present Committee
Chulalongkorn University Council
- 2020 – Present Committee and Chairman of State Enterprise
Development Planning
State Enterprise Policy Office
- 2019 – Present Chairman of the Board
- InnoSpace (Thailand) Co., Ltd.
- 2019 – Present Council Committee and Chairman of
Sub-Committee on National Competitiveness
National Economic and Social Development
Council
- 2019 – Present Chairman of Sub-Committee on Capital Market
Competitiveness Development
The Securities and Exchange Commission
- 2019 – Present Chairman of Committee for Fund Management in
National Competitiveness
The National Higher Education, Science,
Research and Innovation Policy Council
- 2014 – Present Director to the Board of Trustees,
Thailand Management Association (TMA)
- 2011 – Present Fellow Member
Thai Institute of Directors Association (IOD)

% of shareholding in IVL

As of 31 December 2020

-None-

Mrs. Kaisri Nuengsigkapan

Director

Director Type: Independent Director

Age: 59



Appointment Date of Directorship

30 June 2020

Education

- Master of Business Administration, Thammasat University
- Bachelor of Accounting, Thammasat University

Training Program

- Capital Market Academy Leadership Program (Class 3), Capital, Market Academy, Thailand
- Thai Institute of Directors (IOD), Thailand
 - Directors Certification Program (DCP) 0/2000
 - The Role of The Chairman Program (RCP) 30/2013
 - The Role of The Compensation Committee Program (RCC) 16/2013
 - Advanced Audit Committee Program (AAP) Class 36/2020

Working Experience (during the recent 5 years)

Other Listed Companies in SET

- 2019 – Present **SCG Packaging Public Company Limited**
Independent Director and Chairman of Audit Committee
- 2016 – Present **Mc Group Public Company Limited**
Chairman of the Board of Directors/
Chairman of Executive Committee

Other Companies and/or Organizations

(as of 31 December 2020)

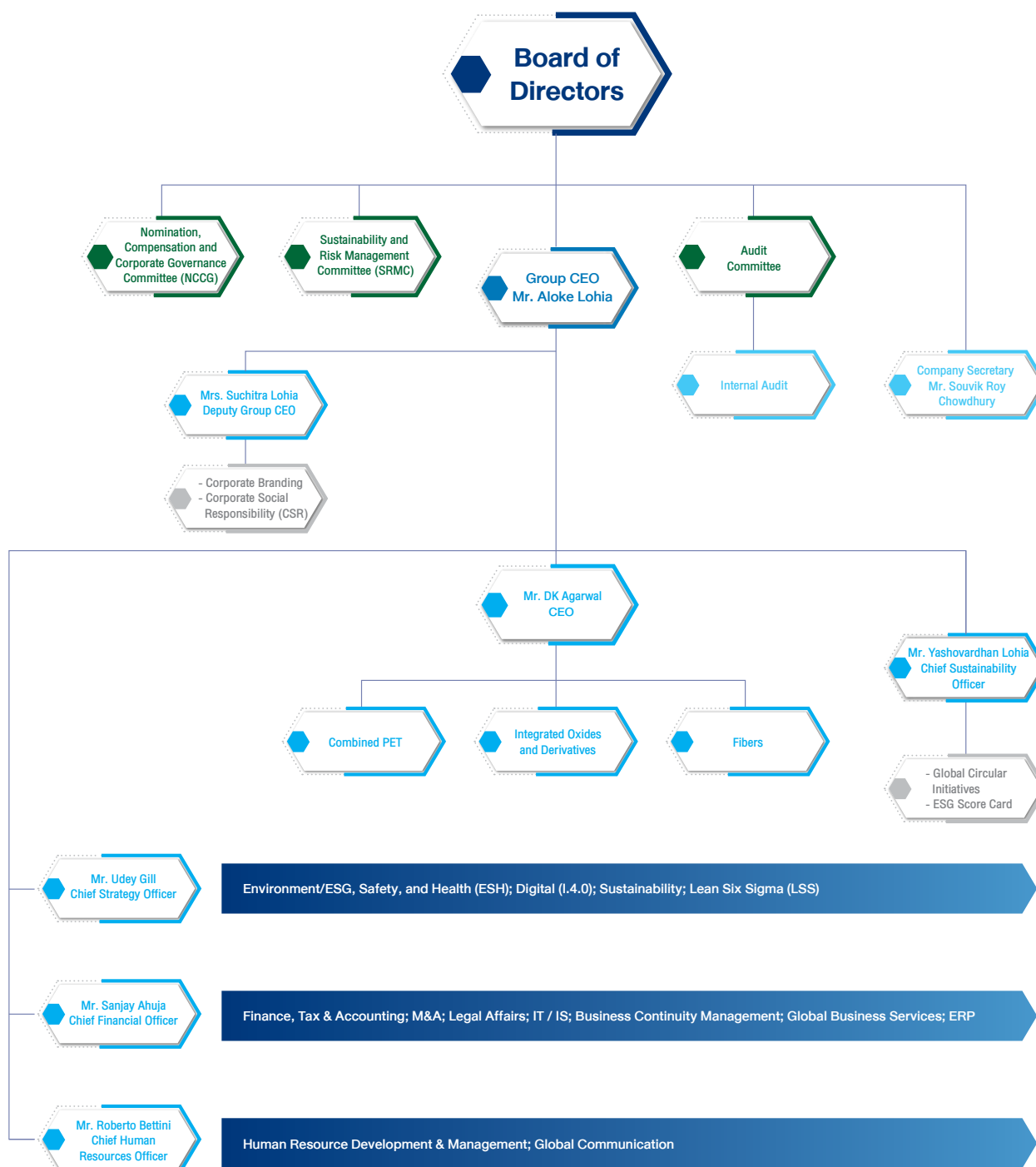
- 2019 – Present Chairman of the Board of Directors
Buono (Thailand) Public Company Limited
- 2018 – Present Director
Thai Institute of Directors
- 2016 – Present Director
TOP T 2015 Company Limited
- 2016 – Present Director and Treasurer
Rakkaew Foundation
- 2016 – Present Member of Corporate Governance
Committee
Bank of Thailand

% of shareholding in IVL

As of 31 December 2020

-None-

Management Structure



The Board of Directors

As of 31st December 2020, IVL's Directors are:

Name	Position	Appointment Date of Directorship
1. Mr. Sri Prakash Lohia	<ul style="list-style-type: none"> Chairman of the Board Non-Executive Director 	19 September 2009
2. Mr. Alope Lohia	<ul style="list-style-type: none"> Vice Chairman of the Board Executive Director Chairman of the Sustainability and Risk Management Committee Group Chief Executive Officer 	19 September 2009
3. Mrs. Suchitra Lohia	<ul style="list-style-type: none"> Executive Director Chairperson of the Corporate Social Responsibility Committee Deputy Group CEO 	19 September 2009
4. Mr. Amit Lohia	<ul style="list-style-type: none"> Non-Executive Director 	19 September 2009
5. Mr. Yashovardhan Lohia	<ul style="list-style-type: none"> Executive Director Member of the Sustainability and Risk Management Committee Chief Sustainability Officer 	24 April 2019
6. Mr. Dilip Kumar Agarwal	<ul style="list-style-type: none"> Executive Director Member of the Sustainability and Risk Management Committee Chief Executive Officer of Combined PET, IOD and Fibers Business 	27 April 2010
7. Mr. Udey Paul Singh Gill	<ul style="list-style-type: none"> Executive Director Member of the Sustainability and Risk Management Committee Chief Strategy Officer 	27 April 2011
8. Mr. Sanjay Ahuja	<ul style="list-style-type: none"> Executive Director Chief Financial Officer 	13 November 2015
9. Mr. Rathian Srimongkol	<ul style="list-style-type: none"> Vice Chairman of the Board Lead Independent Director Chairman of the Audit Committee Member of the Sustainability and Risk Management Committee 	19 September 2009
10. Mr. William Ellwood Heinecke	<ul style="list-style-type: none"> Independent Director Member of the Nomination, Compensation and Corporate Governance Committee 	19 September 2009
11. Dr. Siri Ganjarende	<ul style="list-style-type: none"> Independent Director Member of the Audit Committee Member of the Nomination, Compensation and Corporate Governance Committee 	27 April 2010
12. Mr. Kanit Si	<ul style="list-style-type: none"> Independent Director Member of the Nomination, Compensation and Corporate Governance Committee Member of the Sustainability and Risk Management Committee 	27 April 2010
13. Mr. Russell Leighton Kekuwa	<ul style="list-style-type: none"> Independent Director Chairman of the Nomination, Compensation and Corporate Governance Committee Member of the Sustainability and Risk Management Committee 	20 October 2014
14. Mr. Chakramon Phasukavanich	<ul style="list-style-type: none"> Independent Director Member of the Nomination, Compensation and Corporate Governance Committee 	13 November 2015

Name	Position	Appointment Date of Directorship
15.Mr. Tevin Vongvanich*	<ul style="list-style-type: none"> Independent Director Member of the Sustainability and Risk Management Committee Member of the Audit Committee 	24 April 2019
16.Mrs. Kaisri Nuengsigkapan**	<ul style="list-style-type: none"> Independent Director 	30 June 2020

* Mr. Tevin Vongvanich was appointed as a member of Audit Committee in place of Mr. Maris Samaram who has retired by rotation at Shareholders Meeting no.1/2020, effective from 30th June 2020.

** Mrs. Kaisri Nuengsigkapan was appointed as an IVL Director in place of Mr. Maris Samaram who has retired by rotation at Shareholders Meeting no.1/2020, effective from 30th June 2020.

The Authorized Directors

The Authorized Directors who sign on behalf of the Company can be any two of the following directors: Mr. Alope Lohia, Mrs. Suchitra Lohia, Mr. Dilip Kumar Agarwal, Mr. Sanjay Ahuja, and Mr. Yashovardhan Lohia, together with the Company's affixed seal.

Phasukavanich, (7) Mr. Tevin Vongvanich, and (8) Mrs. Kaisri Nuengsigkapan, in addition to two non-executive directors, (1) Mr. Sri Prakash Lohia and (2) Mr. Amit Lohia.

Composition of the Board of Directors

There are six executive directors, (1) Mr. Alope Lohia, (2) Mrs. Suchitra Lohia, (3) Mr. Dilip Kumar Agarwal (4) Mr. Udey Paul Singh Gill (5) Mr. Sanjay Ahuja, and (6) Mr. Yashovardhan Lohia.

There are eight independent directors, (1) Mr. Rathian Srimongkol, (2) Mr. William Ellwood Heinecke, (3) Dr. Siri Ganjarende, (4) Mr. Kani Si, (5) Mr. Russell Leighton Kekuewa, (6) Mr. Chakramon

Roles, Duties and Responsibilities of the Board

Please see the details under "Corporate Governance Report"

Sub-Committees

Indorama Ventures Public Company Limited consists of 3 sub-committees, namely, the Audit Committee, the Nomination, Compensation and Corporate Governance Committee and the Sustainability and Risk Management Committee. The details of each sub-committee are provided under the topic of "Corporate Governance Report".

Board Meetings

Name	Meetings in 2020					
	Board of Directors (7 times)	Audit Committee (6 times)	Nomination, Compensation and Corporate Governance Committee (3 times)	Sustainability and Risk Management Committee (3 times)	Independent Directors (1 time)	AGM 2020
1. Mr. Sri Prakash Lohia*	5/5	-	-	-	-	-
2. Mr. Alope Lohia	7/7	-	-	3/3	-	1/1
3. Mrs. Suchitra Lohia	7/7	-	-	-	-	1/1
4. Mr. Amit Lohia*	4/5	-	-	-	-	-
5. Mr. Yashovardhan Lohia	7/7	-	-	3/3	-	1/1
6. Mr. Dilip Kumar Agarwal	7/7	-	-	3/3	-	1/1
7. Mr. Udey Paul Singh Gill*	6/6	-	-	3/3	-	1/1
8. Mr. Sanjay Ahuja	7/7	-	-	-	-	1/1
9. Mr. Rathian Srimongkol	7/7	6/6	-	3/3	1/1	1/1
10.Mr. William Ellwood Heinecke	7/7	-	3/3	-	1/1	1/1
11.Mr. Maris Samaram**	5/5	3/3	-	-	1/1	1/1

Meetings in 2020						
Name	Board of Directors (7 times)	Audit Committee (6 times)	Nomination, Compensation and Corporate Governance Committee (3 times)	Sustainability and Risk Management Committee (3 times)	Independent Directors (1 time)	AGM 2020
12.Dr. Siri Ganjarende	7/7	5/6	3/3	-	1/1	1/1
13.Mr. Kanit Si	7/7	-	3/3	3/3	1/1	1/1
14.Mr. Russell Leighton Kekuewa	6/7	-	3/3	3/3	1/1	1/1
15.Mr. Chakramon Phasukavanich	7/7	-	3/3	-	1/1	1/1
16.Mr. Tevin Vongvanich***	7/7	3/3	-	3/3	1/1	1/1
17.Mrs. Kaisri Nuengsigkapan**	2/2	-	-	-	-	-

* In the first part of the year 2020, before online meetings for overseas directors were allowed, directors (*) residing outside the country could not physically travel to Thailand due to an international travel ban on account of COVID-19 pandemic. Their absence from meetings during this period has not been considered for attendance purpose.

** Mrs. Kaisri Nuengsigkapan was appointed as an IVL Director in place of Mr. Maris Samaram who has retired by rotation at Shareholders Meeting no.1/2020 on 30th June 2020.

*** Mr. Tevin Vongvanich was appointed as a member of the Audit Committee in place of Mr. Maris Samaram who has retired by rotation at Shareholders Meeting no.1/2020, effective from 30th June 2020.

Executives

As of 1st January 2021, IVL's executives are:

Name	Position
1. Mr. Aloke Lohia*	Group Chief Executive Officer
2. Mrs. Suchitra Lohia*	Chairperson of Corporate Social Responsibility Committee and Deputy Group CEO
3. Mr. Yashovardhan Lohia	Chief Sustainability Officer
4. Mr. Dilip Kumar Agarwal*	Chief Executive Officer of Combined PET, IOD and Fibers Business
5. Mr. Udey Paul Singh Gill*	Chief Strategy Officer
6. Mr. Sanjay Ahuja*	Chief Financial Officer
7. Mr. Roberto Bettini*	Chief Human Resources Officer
8. Mr. Manoj Kumar Sharma	Head of Account
9. Mr. Souvik Roy Chowdhury	Company Secretary and Head of Corporate Compliance

* Members of Indorama Management Council (IMC)

The Company Secretary

The Board of Directors of the Company has appointed Mr. Souvik Roy Chowdhury as the Company Secretary effective from 15th February 2010.

Education

- Chartered Accountant, The Institute of Chartered Accountants of India, India
- Chartered Institute of Management Accountants London – Intermediate
- Bachelor of Commerce, University of Calcutta, India

Working Experience

- 2010 – Present: Indorama Ventures PCL

Duties and Responsibilities of the Company Secretary

The Company Secretary must perform the duties as prescribed in Section 89/15 and Section 89/16 of Securities and Exchange Act (No.4) B.E.2551, effective 31st August 2008 with responsibility, care and integrity and must comply with the laws, objectives, Articles of Association, resolutions of the Board of Directors as well as resolutions of Shareholders. The duties of Company Secretary prescribed by the laws are as follows:

1. Preparation and maintenance the following documents:
 - a. Registration of Directors
 - b. Notice of Board of Directors' Meetings, Minutes of Board of Directors' Meetings and annual reports
 - c. Notice of the Shareholders' Meetings and Minutes of Shareholders' Meetings
2. Keeping reports on interest filed by Directors or Executives and submitting a copy of such report on interest under Section 89/14 to the Chairman of the Board and Chairman of Audit Committee for acknowledge within 7 business days from the date on which the Company has received such report;
3. Performing any other acts as specified in the notification of the Capital Market Supervisory Board.

In addition, the Company Secretary has the following additional duties as assigned by the Company:

- Providing basic advice pertaining to the securities laws and regulations and Articles of Association, monitoring compliance on a regular basis, and reporting any significant changes to the Board.
- Arranging Shareholders' Meetings and Board of Directors' Meetings in accordance with the laws, regulations and related best practices.
- Preparing minutes of the Shareholders' Meetings and the Board of Directors' Meetings, and monitoring subsequent compliance with the resolutions of those Meetings.

- Preparing and maintaining registrations of directors, annual reports, Notice of the Shareholders' Meetings, Notice of Board of Directors' Meetings, Minutes of the Shareholders' Meeting and the Board of Directors' Meetings.
- Maintaining reports of interest filed by directors and executives, and presenting such reports as specified by the relevant laws.
- Ensuring statutory compliances across all subsidiaries.
- Ensuring that corporate information disclosures to regulatory agencies are in accordance with the laws and regulations (both in Thai and English).
- Timely reporting of all necessary disclosures to the Securities and Exchange Commission (SEC) and Stock Exchange of Thailand (SET).
- Assisting with board activities including provide preliminary advice and recommendations pertaining to legal, regulatory, corporate governance issues and best practices related to the board and committees.
- Supporting directors to ensure that they all have sufficient information and knowledge to effectively fulfill their roles and responsibilities and reporting on these developments in the annual report.
- Frequently develops and updates the information relating to company secretary's duties.

Remuneration of Directors and Management

Please see the details under "Corporate Governance Report"

Personnel

• Number of Employee

As of 31st December 2020, the Company, including its affiliates and in accordance with its business structure, has total 23,903 employees as outlined below:

Type of Businesses	Numbers of Employees
Combined PET	8,128
Fibers (including Wool)	14,102
Integrated Oxides and Derivatives	1,275
Corporate Supports	398

• Employee Benefits paid out in 2020

Items	Amount (in Million Baht)
Wages, Salaries, Bonuses and Staff Welfare	29,743
Provident Funds	37
Long-term Employee Benefits	2,822
Other Long-term Benefits (EJIP)	19

For further details, please see the details under "Corporate Governance Report".

Shareholders

Indorama Ventures Public Company Limited

Major Shareholders of IVL

(as of November 24, 2020)¹

Top Ten Major Shareholders

No.	Shareholders	No. of Shares	%
1.	Indorama Resources Ltd. ²	3,504,991,318	62.427
2.	Thai NVDR Ltd.	314,019,609	5.593
3.	Bangkok Bank Public Company Limited	270,905,264	4.825
4.	Mr. Sataporn Ngamruengphong	83,658,700	1.490
5.	Social Security Office	79,352,900	1.413
6.	Credit Suisse AG, Singapore Branch	75,297,500	1.341
7.	South East Asia UK (Type C) Nominees Limited	62,558,647	1.114
8.	Canopus International Limited ²	55,000,000	0.980
9.	State Street Europe Limited	40,083,866	0.714
10.	Vayu 1 by MFC	25,257,400	0.450
11.	Vayu 1 by KTB	25,257,400	0.450

Remarks: ¹ The Company Secretary has updated the list of major shareholders of the Company to the Board of Directors and senior managements every quarter.

² Group of Lohia Family	No. of Shares	%
• Indorama Resources Ltd.*	3,504,991,318	62.43
• Canopus International Limited**	130,000,000***	2.32
• Mr. Aloke Lohia****	1,000,010	0.02
• Mr. Anuj Lohia	10	0.00

* Owned by Canopus International Limited 99.98%

** Mr. Aloke Lohia and his immediate family jointly hold voting rights of 76% and an equity interest of 50% in Canopus, while the remaining voting rights of 24% and 50% of the equity interest of Canopus are ultimately controlled by a Trust in which Mr. Sri Prakash Lohia and his immediate family members are the discretionary beneficiaries.

*** 75,000,000 shares out of 130,000,000 shares are in the custodian of Credit Suisse AG, Singapore Branch.

**** Mr. Aloke Lohia's shareholding in the Company, through his family holding in Canopus International Limited, is more than 25 times of his annual base salary.

Business Operations

Strategy and Overview of Business Operations

Group Strategy

Indorama Ventures Public Company Limited, listed in Thailand, is one of the world's leading petrochemicals producers, with a global manufacturing footprint across Africa, the Asia-Pacific, Europe and the Americas. Our portfolio comprises Integrated PET, Integrated Oxides and Derivatives, Fibers, Packaging and Specialty Chemicals. Indorama Ventures products serve major FMCG and automotive sectors, i.e., beverages, hygiene, personal care, tires and safety segments. Indorama Ventures has over 24,000 employees worldwide and consolidated revenue of US\$10.6 billion in 2020. We were listed in the Dow Jones Sustainability World Index (DJSI World) for the second consecutive year and Dow Jones Sustainability Emerging Markets Index (DJSI Emerging Markets) for the fourth consecutive year.

IVL's vision is to be a world-class chemical company making great products for society. With our clear strategy, we will succeed and continue to grow in any challenging environment by leveraging our unique differentiators – global scale, local presence, and integration across the value chain with a diversified source of earnings and M&A capabilities. Our enduring approach is to generate strong returns for our stakeholders through the ups and downs of the chemical cycle.

By 2030, the world population is expected to reach over 8.4 billion people (according to third party sources). This surge in population growth will present global challenges, but we see this as an opportunity for increased demand across all our markets. With the fast-paced evolution of technologies, innovation will also play a key role in the chemical industry creating a market that is sufficiently sustainable in balancing the environment, resources, climate, food and nutrition, and quality of life.



Strategic Priorities

Going forward, IVL will pursue five strategic themes:

- **Cost transformation** to accelerate performance through cost optimization.
- **Full asset potential** to focus on commercial excellence, and grow revenues and margins.
- **Adjacency growth** to pursue organic and bolt-on growth in attractive adjacencies.
- **Recycling leadership** to build a leading recycled polyethylene terephthalate (rPET) business, setting a new bar for sustainability.
- **Leadership development** to invest in and develop the best management team in the industry.

Cost Transformation

Execution of the Company's cost saving and business transformation project, named "Project Olympus," comprises 2,400+ Cost Transformation and Business Full Potential initiatives. In 2020, IVL was ahead of the 2019 plan by 21%+ in cost savings. Encouraged by our internal assessment and outperformance, we increased our Project Olympus ambition to deliver US\$610M extra EBITDA on an annual basis by 2023 over 2019.

Full Asset Potential

We are maximizing the growth and margin potential of each of our businesses through the following activities:

- Combined PET (a grouping of Integrated PET, Packaging and Specialty Chemicals segments)
 - Enhancing the existing product portfolio to be better aligned with customers' needs.
 - Expanding our packaging business in new geographies or segments.
 - Building a leading recycling business.
- Integrated Oxides and Derivatives
 - Integrating and growing the recently acquired integrated oxides and derivatives businesses of Huntsman Corporation.
 - Capturing backward integration benefits from IVOL's gas cracker.
 - Expanding into high value-added segments such as surfactants.
- Fibers
 - Increasing market share in fast-growing segments.
 - Strengthening collaborations and long-term agreements with key customers in mobility and hygiene.
 - Investing in R&D to strengthen the HVA portfolio with high barriers to entry.

Adjacency Growth

We will monitor adjacent growth opportunities that could be value accretive to IVL's stakeholders. For the Integrated PET segment, we aim to expand applications of our resins in food and homecare,

substituting other rigid plastics. We also see that beverages, food, homecare and pharma are attractive markets for PET packaging. Within the Integrated Oxides and Derivatives space, we intend to expand geographic adjacency to high-growing emerging markets and product adjacency in specialty surfactants. For Fibers, we identified new applications for polyester and nylon, and the potential to leverage our composite fibers innovations such as Enka TecTape in mobility fibers.

Recycling Leadership

Growing concerns about plastic waste have led to legislation on several single-use plastic products. This creates opportunities for us as PET is 100 percent recyclable, making it a packaging material of choice. PET also has several environmental advantages, being a lightweight material that allows for lower transport costs and reduced fuel emissions.

IVL developed a strategy to be the leader in recycled PET, leveraging our number one position in PET. We aim to serve the recycling needs of our customers by building a leading, differentiated and economically attractive recycling business. Our target is to scale up capacity to 750 kt, with an ROCE of around 13-15% by 2025.

We have five key areas of differentiation that underpin our ambition. First, IVL's scale virgin PET business is a big advantage in the recycling business. It gives us both an extensive local footprint and distribution in many markets. Second, we have the ability to leverage the relationships and trust that we have developed with global brands. Third, we have acquired proprietary knowledge on mechanical recycling through our Wellman asset. Fourth, we have developed partnerships with innovative players to develop and test next-generation chemical recycling technologies. Lastly, we are proactively building the circular ecosystem for PET across technology owners, packaging players or converters, beverage companies and waste management players.

Leadership Development

IVL recognizes the importance of leadership development and we are putting in place a structured and formalized talent management system. We are focusing on three priorities: structure and succession, performance management, and leadership development. In 2019, we set up two councils – the Indorama Management Council (IMC) and Indorama Business Council (IBC). Both act as forums to discuss and deliberate on future opportunities and challenges for our company.

Changes and Important Developments

Company Overview

Formerly known as Beacon Global Limited, the Company was established on February 21, 2003 and renamed Indorama Ventures Public Company Limited on March 19, 2009. Indorama Ventures

Public Company Limited is a holding company with investments in companies operating in the intermediate petrochemicals industry in Thailand and globally.

Company Background

We commenced business operations in 1994 with the incorporation of Indorama Holdings Ltd., which was the first worsted wool yarn producer in Thailand.

Entry into the Integrated PET Business

This segment includes businesses in the Aromatics and PET value chain, including PX, PTA and PET. Given PET's unique properties of 100% recyclability, reporting under this segment will also include IVL's recycling initiatives across the polyester value chain.

In 2003, we expanded our PET production footprint internationally into North America, with the acquisition of the StarPet facility, and in Europe in 2006, with the commencement of our Orion Global PET facility.

In the first half of 2011, IVL had completed major acquisitions of PET plants in China, Indonesia, Mexico, Poland and the US, which resulted in the company becoming the world's largest PET producer and the largest player in Europe.

We also expanded our PET production footprint in Africa with the opening of a new solid state polymerization (SSP) plant in Nigeria, which started commercial operations in 2012. In 2015, we entered the Middle East following the acquisition of a PET plant in Turkey. In 2018, we acquired a PET plant in Egypt, the largest in the Middle East and Africa, and PET plant in Brazil in order to further extend our market position, and expand our global footprint in key markets with high growth potential. This strategic position allows us to deliver products to key customers in Brazil and elsewhere in South America in a cost-effective and efficient manner.

We entered the purified terephthalic acid (PTA) business in Europe with the acquisition of a PTA facility located in the Netherlands in 2008. In the same year, we also acquired two PTA facilities in Thailand – TPT Petrochemicals and Indorama Petrochem.

In 2016, we entered the paraxylene (PX) business in the US with the acquisition of BP Amoco Chemical Company (BP) which manufactures PTA and PX and provides raw materials to AlphaPET Inc., a co-located business operation and to external customers worldwide.

We entered the recycling space in November 2011 with the acquisition of the polyester fibers recycling businesses of Wellman International in Europe, which is comprised of three production facilities in the Republic of Ireland, the Netherlands, and France. At the beginning of 2014, we extended the know-how we obtained from the Wellman International purchase and commenced production of our recycled PET and fiber facility in Nakhon Pathom, Thailand.

We expect to further leverage Wellman's bottle to flake technology on a global scale. We also integrated three production sites in the US and Mexico with recycled PET, and our objective is to continue to increase the use of recycled PET in our operations. In 2018, we acquired Sorepla, a European non-integrated plastics recycler based in France which helped to enhance our recycling portfolio with food grade rPET.

In 2019, we acquired PET recycling facilities in the US states of Alabama and California, in line with our commitment to long-term sustainability and also meeting the circular economy objectives of packaging and consumer product manufacturers.

In 2020, IVL entered into a Joint Venture Agreement with Coca-Cola Beverages Philippines, Inc. (Coca-Cola Philippines) to form a 70:30 joint venture corporation in the Philippines, by the name of PETValue Philippines Corporation (PVPC). The JV will set up a greenfield integrated recycling plant and operate using state of the art technologies and industry-leading best practices to employ the safest and most advanced recycling process for plastic bottles made from PET.

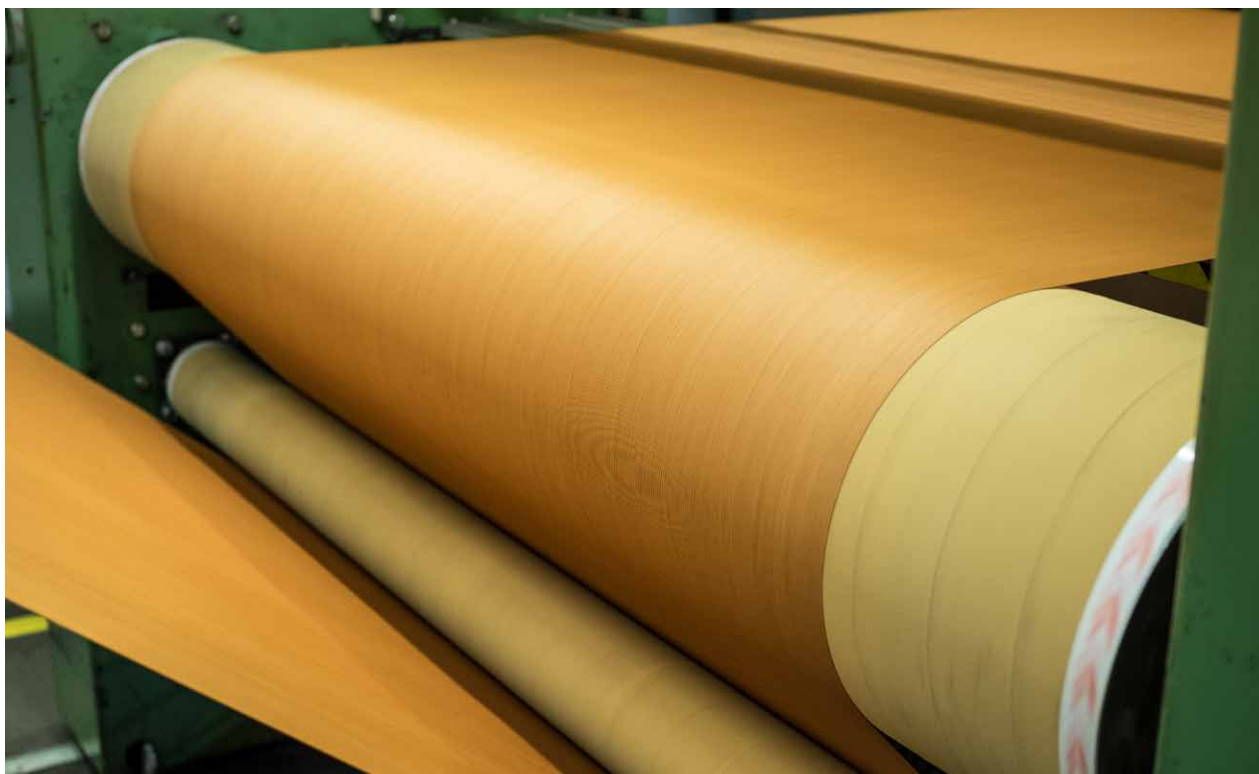
In addition, we also acquired PET recycling facilities in Brazil and Poland. AG Resinas is a PET recycling facility in Juiz de Fora, Brazil and IMP Polowat in Bielsko-Biala and Leczyca, Poland. Both process post-consumer PET into rPET flakes and pellets. Brazil's facility is in close proximity to a large supply of recovered PET bottles, bringing benefits through a logistics advantage while Poland's facility is an attractive recycling platform in Eastern Europe, and will open up new opportunities to meet the increasing rPET demand for more sustainable packaging solutions.

Entry into the Packaging Business

From 1996 onwards, we grew our packaging business by engaging in the downstream production of PET preforms, bottles and closures. IVL's first expansion globally was through the acquisition of Beverage Plastics in Northern Ireland (UK) in 2012. Then in 2013, we stepped into Africa with the acquisition of Aurus in Nigeria, in the belief that Nigeria has considerable potential for further growth. In 2018, IVL acquired Medco Plast for Packing and Packaging Systems S.A.E. in Egypt. This acquisition provided IVL with exposure to the East African PET packaging market, complementing our existing footprint in West Africa, where we have a presence in Nigeria and Ghana. In 2019, IVL acquired Bevpak, a facility in Nigeria, to expand our global footprint.

Entry into the Specialty Chemicals Business

IVL entered this segment in 2011 with the acquisition of Auriga Polymers in South Carolina, which owns the Crystal Clear Oxygen Barrier Resin technology, OxyClear® and Polyshield®. We supplemented our presence in this segment in 2016 by acquiring the world's only naphthalene dicarboxylate (NDC) facility in Alabama and isophthalic acid (PIA) facility in Cadiz, Spain.



In 2018, IVL further grew this portfolio by expanding its PIA production in Spain and additionally converted a PTA line to PIA in Alabama, thereby becoming the world's second largest producer. In 2019, IVL completed the acquisition of Invista's assets in Germany resulting in IVL possessing the IP for Polyshield® and Oxyclear® resins, together with Invista's barrier technology in all markets globally.

Entry into the Integrated Oxides and Derivatives Business

We entered this segment by acquiring an MEG and PEO facility in the state of Texas in 2012. This facility is in the process of further enhancing its capacity as an ethylene cracker in the neighboring state of Louisiana and will shortly commence production. This cracker will mainly support the captive EO-EG facility providing a unique integration advantage and the ability to capture the entire value chain margin.

In January 2020, we completed the acquisition of IVOX, investing in the Integrated EO and PO derivatives business, which is fully integrated downstream in surfactants (used in personal and home care) and in propylene oxides (used in insulation and foam materials).

Entry into the Fibers Business

This segment includes all our offerings in the mobility (automotive and tires), personal hygiene and lifestyle domains. Each of these domains continue to grow at a rate of 6-7% annually offering the potential to become multi-billion dollar businesses individually. Growth in the Fibers business comes as a result of trends towards lightweighting, use of sustainable materials, increasing attention

being paid to personal hygiene and changes in the choice of personal wear, especially by the younger generation.

The Group's Fibers business segment comprises the manufacture and sale of a variety of polyester and other types of fibers and yarns (which are also used in the Group's HVA products, particularly in personal care, automotive and industrial applications). Polyester is one of the most widely used synthetic fibers in the world and is a versatile material with wide-ranging textile and industrial applications. The development of our polyester business has been achieved through the acquisition of distressed assets and organic growth through debottlenecking and asset optimization. We entered the polyester business in 1997 with the acquisition of Indo Poly, a polyester fiber plant in Thailand. In 2008, we acquired Tuntex Thailand, the country's largest polyester fiber producer. Both of our polyester facilities were acquired as distressed assets at a discount to their replacement cost and have been successfully turned around. In 2009, Indo Poly transferred all of its assets to, and all of its liabilities were assumed by Tuntex Thailand, which was subsequently renamed Indorama Polyester Industries. Further expansions subsequently took place at this site.

In the first half of 2011, we expanded our polyester production footprint internationally. We entered the US market with the acquisition of Invista US.

In 2019, we completed the acquisition of UTT, an airbag yarns business in Germany and Mexico, which provided an opportunity for IVL to further expand its portfolio in the airbag sector and become an integrated manufacturer of airbag yarns and textiles globally.

We also completed the acquisition of Sinterama, a polyester staple fiber producer in Brazil providing an opportunity to establish a global footprint in the Fibers business in South America's largest economy and its specialty fibers business in four countries: Italy, Brazil, China and Bulgaria. Sinterama was vertically integrated from chips to yarns offering a vast range of colored polyester yarns for automotive, furnishing, apparel and technical applications.

In 2020, IVL entered into a Joint Venture Agreement with Toyobo Co., Ltd. (Toyobo), Japan to form a 50:50 joint venture limited liability company in Thailand. A new joint venture company by the name of Toyobo Indorama Advanced Fibers Company Limited (TIAF) plans to build a new plant on the IPI factory site in Rayong for the production of PA66 airbag yarns.

Success in Raising Capital

Our Initial Public Offering

Indorama Ventures became a public company on September 25, 2009. In January, 2010, IVL completed an initial public offering of 400,000,000 ordinary shares at an offering price of THB 10.20 per ordinary share. The total amount raised in cash from the initial public offering of shares totaled THB 4,080 million. Simultaneously, the minority shareholders of Indorama Polymers Public Company Limited, a subsidiary of IVL listed on the Stock Exchange of Thailand were offered under an exchange offer, 582,727,137 ordinary shares of Indorama Ventures Public Company Limited. The ordinary shares of Indorama Ventures Public Company Limited were listed and commenced trading on the Stock Exchange of Thailand (SET) on February 5, 2010 under the ticker symbol IVL. The company soon became a member of the major indices, the SET 50 Index, FTSE SET Large Cap Index, and MSCI.

Rights Offering

In November, 2010, the Board of Directors passed a resolution to increase the authorized share capital from THB 4,334,271,047 to

THB 4,815,856,719 and to reserve the increase in the authorized share capital of THB 481,585,672 for the exercise of Transferable Subscription Rights (TSRs). The Board approved a rights issue of TSRs to existing shareholders at the ratio of one TSR for every nine existing ordinary shares held of IVL. The conversion ratio was 1:1. One TSR to one ordinary share and the exercise price of the TSR to ordinary shares was THB 36 per ordinary share. On December 17, 2010, at the extraordinary general meeting of shareholders (EGM), the shareholders approved the issue, allocation and the terms and conditions of the TSRs. On February 24, 2011, the subscription of TSRs was completed with 99.67% of TSRs being exercised into shares. A total of 479,986,198 new shares started trading on the SET on March 3, 2011. The total amount raised in cash from this rights issue totaled THB 17,280 million.

Tender Offer

Our PET business was listed on the SET as Indorama Polymers Public Company Limited (IRP) in 2005. On December 24, 2009, IVL offered to purchase up to 100% of IRP through a tender offer whereby IRP shareholders (other than IVL and its subsidiaries) were offered IVL shares in exchange for IRP shares. The said tender offer was completed on February 1, 2010 which resulted in IVL holding directly and indirectly (through its subsidiary Indorama Holdings [Thailand] Limited) around 99.08% of the issued and paid-up capital of IRP. IRP shares were delisted from the SET on February 5, 2010.

Warrants IVL-W1 Exercised

Upon conversion of IVL-W1 until the last exercise date which took place on 24 August 2017, the paid-up capital of the Company increased to THB 5,244,965,472 representing 5,244,965,472 ordinary shares.

Warrants IVL-W2 Exercised

Upon conversion of IVL-W2 until the last exercise date which was on 24 August 2018, the paid-up capital of the Company increased to THB 5,614,551,908 representing 5,614,551,908 ordinary shares.

Changes and Important Developments

We have completed a comprehensive assessment of our portfolio, identified areas for synergies and natural alignment, and report our timeline and segments as follows:

Year	Event	Location	New Segments
1994	Incorporation of Indorama Holdings Ltd.	Thailand	Fibers
1995	Established Indorama Polymers PCL's PET resin plant in Lopburi, Thailand.	Thailand	Integrated PET
1996	Established Petform (Thailand) Ltd., a joint venture with Sermisuk PCL.	Thailand	Packaging
2002	Completed various expansion projects leading to increased capacity in Thailand.	Thailand	Integrated PET & Fibers
2003	• Incorporation of Beacon Global Limited (subsequently renamed Indorama Ventures PCL in 2008).	Thailand	Integrated PET
	• First major international expansion with the acquisition of StarPet PET plant in Asheboro, North Carolina.	US	Integrated PET

Year	Event	Location	New Segments
2006	Acquisition of a 94.57% interest in Indorama Holdings Ltd. from an entity controlled by Mr. Aloke Lohia.	Thailand	Fibers
	Second major international expansion in Europe with the launch of Orion Global PET plant in Klaipeda, Lithuania.	Lithuania	Integrated PET
2007	Completed various expansion projects leading to increased capacity.	US/Thailand	Integrated PET & Fibers
March 2008	UAB Indorama Polymers Europe, IRP Rotterdam and IRP Workington acquired the net assets (property, plant and equipment, and working capital) and the operations of two PET production facilities located in the Netherlands and the United Kingdom, previously owned and operated by subsidiaries of Eastman Chemical Company.	the Netherlands/ UK	Integrated PET
	UAB Indorama Holdings Ltd. Europe and IRH Rotterdam also acquired the net assets (property, plant and equipment, and working capital) and the operations of a PTA production facility located in the Netherlands, previously owned and operated by a subsidiary of Eastman Chemical Company.	the Netherlands	Integrated PET
June 2008	Indorama Holdings Ltd. sold its shares representing 89.71% of Indo-Rama Chemicals (Thailand) Ltd., to an entity controlled by Mr. Aloke Lohia and his immediate family.	Thailand	Chemicals
August - October 2008	Acquired a 50.56% equity interest in TPT Petrochemicals PCL from various parties.	Thailand	Integrated PET
September 2008	Acquired a 65.81% equity interest in Tuntex (Thailand) pursuant to Tuntex (Thailand)'s bankruptcy rehabilitation plan.	Thailand	Fibers
	Acquired an additional 44.38% of the outstanding shares of Indo Poly (Thailand) Ltd. from Indorama International Finance PCL. As a result of the acquisition, the Company increased its direct and indirect shareholdings of Indo Poly (Thailand) Ltd. to 98.85%.	Thailand	Fibers
September - October 2008	Acquired a 100% equity interest in Indorama Petrochem Ltd. from various parties.	Thailand	Integrated PET
October 2008	Acquired an additional 3.94% of the outstanding shares of Indorama Polymers PCL from DEG, thereby increasing the direct and indirect holdings of Indorama Polymers PCL to 69.29%.	Thailand	Integrated PET
December 2008	Acquired an additional 31.20% of the outstanding shares of Tuntex (Thailand) PCL (re-named Indorama Polyester Industries PCL).	Thailand	Fibers
July 2009	Indo Poly (Thailand) Ltd. transferred all of its assets and businesses to Indorama Polyester Industries PCL. (In August 2009, Indo Poly [Thailand] Ltd. commenced action to liquidate itself, a process which was completed in August 2011)	Thailand	Fibers
	Acquired an additional 2.08% of the outstanding shares of TPT Petrochemicals PCL from International Finance PCL, thereby increasing the direct and indirect holdings of TPT Petrochemicals PCL to 52.64%.	Thailand	Integrated PET
August 2009	Jointly made a tender offer to purchase all outstanding shares of Indorama Polyester Industries PCL that were not already owned. After the tender offer, the Company and Indorama Holdings Ltd. increased our shareholdings of Indorama Polyester Industries PCL to 99.55% and delisted Indorama Polyester Industries PCL from the SET effective November 9, 2009.	Thailand	Fibers
October 2009	Startup of the AlphaPet PET plant in Decatur, Alabama.	US	Integrated PET

Year	Event	Location	New Segments
November 2009	TPT Utilities Co., Ltd. transferred all of its assets to TPT Petrochemicals PCL and subsequently completed the liquidation on October 29, 2011.	Thailand	Others
December 2009	<ul style="list-style-type: none"> Acquired an additional 1.96% of the outstanding shares of TPT Petrochemicals PCL from International Finance PCL, thereby increasing the direct and indirect holdings of TPT Petrochemicals PCL to 54.60%. Announced a tender offer on December 24, 2009 to purchase up to 100% of the shares of Indorama Polymers Public Company Limited (IRP) with an intention to delist the shares of IRP from the Stock Exchange of Thailand. A total of 424,480,300 shares of IRP were purchased through an exchange offer whereby IRP shareholders received IVL shares. 	Thailand	Integrated PET
		Thailand	Integrated PET
February 2010	IVL shares were listed and began trading on the Stock Exchange of Thailand after completion of an initial public offering of 400 million new shares at THB 10.20 and completion of an exchange offer to minority shareholders of Indorama Polymers Public Company Limited (IRP). IRP shares were simultaneously delisted from the SET on the first day of trading of IVL.	Thailand	Corporate
July 2010	Acquired a 50% equity stake in a joint venture company, UAB Ottana Polimeri Europe, for the purpose of acquiring an integrated PTA and PET plant in Ottana, Italy from Equipolymers. The joint venture partner, PCH Holdings, is in the power and utilities business and holds the remaining 50% stake.	Italy	Integrated PET
August 2010	<ul style="list-style-type: none"> Announced the establishment of a greenfield project for PET polymers in Port Harcourt, Nigeria with an installed capacity of 75,000 tpa. Announced capacity expansion by 190,000 tpa for PET through a new production line at an existing site in Rotterdam, the Netherlands. Europe is a net importer of PET resins and the expansion has helped to reduce imports and growth in demand. In addition, the PET expansion will result in full captive consumption of PTA produced onsite and cost benefits from economies of scale. 	Nigeria	Integrated PET
		the Netherlands	Integrated PET
October 2010	Acquired additional shares in TPT Petrochemicals PCL from Tuntex Taiwan and other shareholders to increase the Company's equity stake from 54.60% to 99.96%.	Thailand	Integrated PET
November 2010	<ul style="list-style-type: none"> Announced the approval of an acquisition to make PET resins and Polyester polymers for fibers and yarns in Kaiping City, Guangdong Province, from Guangdong Shinda UHMWPE Company Limited. The total installed capacity of the plant is 406,000 tpa. The acquisition allows the Company to expand its global footprint and enter the high-growth market in China. The acquisition was completed in January, 2011. Announced the signing of a definitive agreement with INVISTA S.a.r.l. to acquire their PET resins and Polyester staple business located in Spartanburg, South Carolina (US) and Queretaro, Mexico. The total installed capacity at the Spartanburg site is 470,000 tpa and 535,000 tpa at the Queretaro site. The acquisition will allow the Company to build on its expanding global platform making IVL the world's largest PET producer and providing access to new markets in Central and South America. The acquisitions were completed in March 2011. The Board of Directors Meeting No. 8/2010 on 10 November, 2010 approved the issuance of 481,585,672 free Transferable Subscription Rights (TSRs) to the company's existing shareholders and with an allocation ratio of nine existing shares to one new TSR. The conversion ratio of one TSR entitled the TSR holder to purchase one newly issued share of the Company. The exercise price of the TSR into ordinary shares was determined prior to the extraordinary general meeting of shareholders to approve the rights issue. 	China	Integrated PET & Specialty Chemicals
		US/Mexico	Specialty Chemicals
		Thailand	Corporate

Year	Event	Location	New Segments
December 2010	<ul style="list-style-type: none"> Announced the signing of a definitive agreement with SK Chemicals and SK Syntec to acquire their Polyester Filament yarns and PET resins business in Indonesia and PET resins business in Poland. The total installed capacity in Indonesia is 196,000 tpa and 140,000 tpa in Poland. The acquisition allowed the Company to expand its global platform and reinforce our focus on the polyester value chain. It provided important access to the growth markets of Indonesia and Poland. The acquisitions were completed in March 2011. Board of Directors Meeting No. 9/2010 on 16 December, 2010 approved an exercise price of THB 36 per share to subscribe to newly issued shares by each TSR holder. Extraordinary General Meeting of Shareholders No. 1/2011 approved the resolution of a rights issue and allocated an issue of TSRs at a ratio of 9 existing shares to 1 TSR to existing shareholders. 	Indonesia/ Poland	Fibers & Integrated PET
March 2011	<ul style="list-style-type: none"> A total of 479,986,198 new IVL shares were listed and began trading on the Stock Exchange of Thailand after completion of the TSR subscription at an exercise price of THB 36 per share. Announced capacity expansion by 300,000 tpa for PET at an existing site in Purwakarta, Indonesia. 	Thailand Indonesia	Corporate Integrated PET
April 2011	Announced a brownfield expansion of PET polymers production with a capacity of 220,000 tpa at the existing site in Poland.	Poland	Integrated PET
May 2011	Announced a brownfield expansion of PTA production at the Rotterdam plant, with a new production line with an annual PTA capacity of 250,000 tpa. This expansion enhanced the Company's business integration with a key raw material for production of PET polymers in Europe.	the Netherlands	Integrated PET
June 2011	The IVL Board approved the acquisition of a 50% stake in PT Polyprima Karyesreska (PT Polyprima), a PTA producer located in Cilegon, West Java, Indonesia which has an installed capacity of 465,000 tpa.	Indonesia	Integrated PET
July 2011	Acquired a 75% equity stake in a joint venture company, Trevira Holdings GmbH, for the purpose of acquiring a polyester fiber plant in Germany and Poland with a capacity of 120,000 tpa. The acquisition of Trevira GmbH facilitated IVL's entry into the branded specialist filament business and provided access to an outstanding research and development facility with the accompanying intellectual property.	Germany/ Poland	Fibers
August 2011	The Board approved investments in a new recycling plant in Thailand (now complete) and a high technology business in Polyester fibers and yarns in Thailand and Indonesia. These projects have higher value addition and margins to leverage our existing assets.	Thailand/ Indonesia	Fibers
November 2011	The Board approved the acquisition of a 100% equity stake in the recycling business of Wellman International in Europe from WIT Beteiligungs GmbH and Wellman International Trading which is a subsidiary of Aurelius AG. This business consists of three plants, a polyester plant in Mullagh, Ireland with an installed capacity of over 80,000 tons, and recycling plants in Spijk, the Netherlands with an installed capacity of over 45,000 tons, and Verdun, France with an installed capacity of 28,000 tons.	Ireland/ France/ the Netherlands	Integrated PET
January 2012	The Board approved the acquisition of 100% of FiberVisions Holdings LLC, a global manufacturer of specialty mono and bi-component fibers based in Duluth, Georgia (US), with a total global capacity of 221,000 tpa of specialties, with 117,000 tpa capacity in the United States, 90,000 tpa capacity in Europe and 14,000 tpa capacity in China.	US	Fibers

Year	Event	Location	New Segments
February 2012	<ul style="list-style-type: none"> The Board of Directors approved the acquisition of a 100% partnership interest in Old World Industries I Ltd., and Old World Transportation Ltd., (collectively called Old World), located in Clear Lake, Texas (US). Old World is the largest single EO/EG production facility in the US with a Crude EO capacity of 435,000 tpa (which is the equivalent to 550,000 tpa of equivalent MEG capacity). 	US	Integrated Oxides & Derivatives
	<ul style="list-style-type: none"> Acquisition of a 51% stake in a packaging business. Beacon Trading (UK) Limited acquired a 51% stake in Beverage Plastics (Holdings) Limited (BPL) in Northern Ireland, United Kingdom. 	UK	Packaging
March 2012	Acquisition of 100% of the PET resin assets of PT Polypet Karyapersada. The PET facility is located in Cilegon, Indonesia with a production capacity of 100,800 tpa.	Indonesia	Integrated PET
April 2012	Acquisition of a 100% partnership interest in Old World Industries I, Ltd. and Old World Transportation, Ltd. in the US. Old World is involved in the production and sale of ethylene oxide (EO) and derivative products from ethylene oxide: purified ethylene oxide (PEO), mono ethylene glycol (MEG), diethylene glycol (DEG), and triethylene glycol (TEG).	US	Integrated Oxides & Derivatives
July 2012	Start-up of a solid-state polymerization (SSP) plant in Nigeria at a capacity of 84,000 tpa. This is IVL's first PET investment in Africa and establishes its foothold in the estimated 450,000 ton PET market for the African continent which currently has only one other PET producer.	Nigeria	Integrated PET
August 2012	Completed the acquisition of the PET resin assets through wholly-owned subsidiary, PT Indorama Polypet Indonesia, with a capacity of 100,800 tpa in Cilegon.	Indonesia	Integrated PET
November 2012	<ul style="list-style-type: none"> Announced the greenfield expansion of PET production in North America with the establishment of a new plant with a capacity of 540,000 tpa. 	US	Integrated PET
	<ul style="list-style-type: none"> With respect to the announced PET expansion at its Polish site, the Board decided to carry out a significant debottlenecking instead of setting up a new line as it would be more value accretive. This has now been completed. 	Poland	Integrated PET
February 2013	Acquired a 100% stake in a packaging company, which produces PET preforms, in Nigeria. This acquisition will be a forward integration for the PET segment which set up a PET bottle resin manufacturing unit in Nigeria. All of the closing formalities were completed and the plant was taken charge of effective April 3, 2013.	Nigeria	Packaging
May 2013	<ul style="list-style-type: none"> The Board of Directors approved the formation of a 50:50 Joint Venture Company with a global producer of non-woven fibers to set up a 14,500 tpa Bicomponent Fiber Plant at IPI in Rayong, Thailand. The plant started operations in Q2 2015. 	Thailand	Fibers
	<ul style="list-style-type: none"> The Board also approved expanding the current Bicomponent Fiber capacity by 10,800 tons at the Covington, Georgia (US) unit of wholly-owned FiberVisions Manufacturing Company. 	US	Fibers
October 2013	<ul style="list-style-type: none"> Established Indorama Ventures Packaging (Philippines) Corporation to start a new packaging business in the Philippines. 	the Philippines	Packaging
	<ul style="list-style-type: none"> Established new subsidiaries: <ul style="list-style-type: none"> Indorama Ventures USA Holdings LP 	US	Holding Company
	<ul style="list-style-type: none"> Indorama Ventures AlphaPet Holdings, Inc. Indorama Ventures Europe B.V. <p>The three holding companies were formed as part of a restructuring exercise.</p>	US the Netherlands	

Year	Event	Location	New Segments
November 2013	Announced the mothballing of our PET plant at Indorama Polymers Workington Ltd., in the UK, as part of our business improvement plan and restructuring strategy of our European businesses.	UK	Integrated PET
December 2013	Established a new subsidiary: <ul style="list-style-type: none"> Indorama Ventures Global Services Limited. Signed a joint venture agreement for Aromatics production in Abu Dhabi to develop the Tacaamol Aromatics Plant on Madeenat ChemaWEyaat Al Gharbia's (MCAG) site in the Western Region of Abu Dhabi. The plant is expected to have an annual capacity of about 1.4 million tons of paraxylene and 0.5 million tons of benzene. 	Thailand UAE	Corporate Integrated PET
February 2014	<ul style="list-style-type: none"> Acquired PHP Fibers GmbH and its subsidiaries (PHP), where IVL holds 80% of PHP while the remaining 20% is held by Toyobo Co., Ltd., a leading Japanese manufacturer of high function products, including among others, automotive products. The acquisition was completed on April 30, 2014. Established a new indirect subsidiary company in the Republic of Ghana. 	Germany/ US/ China Ghana	Fibers Packaging
March 2014	Established a new joint venture company in Thailand, 50% owned by Indorama Holdings Ltd., a subsidiary company of IVL, and 50% owned by JNC Fibers Corporation of Japan.	Thailand	Fibers
June 2014	Acquisition of 100% of Artenius TurkPET A.S. (Artenius) in Adana, Turkey. Artenius is a PET producer in Turkey with a capacity of 130,000 tpa. The acquisition was completed on June 2, 2014.	Turkey	Integrated PET
October 2014	Reorganized the Company's subsidiaries in the Netherlands and the US to improve operational and fiscal efficiencies, business workflows and to pool common resources, and some of the businesses of its subsidiaries.	the Netherlands /US	Corporate
November 2014	Established two new joint venture companies: <ul style="list-style-type: none"> Indorama Ventures EcoMex, S. de R. L de C.V. Indorama Ventures EcoMex Services, S. de R. L de C.V. 	Mexico	Integrated PET
December 2014	Announced the signing of a share purchase agreement to acquire a 100% equity stake in Performance Fibers Asia (PF Asia). PF Asia is a leading producer of premium polyester tire cord fabric in Asia. PF Asia's plants are located in Kaiping, Guangdong Province, China, with an annual capacity of 41,000 tons of Polyester Tire Cord Fabric and 48,000 tons of Polyester Tire Cord Yarn. All of the closing formalities were completed and the plants were taken charge of effective April 1, 2015.	China	Fibers
January 2015	Established a new indirect subsidiary company in Myanmar, Indorama Ventures Packaging (Myanmar) Limited, with a 100% investment by a wholly-owned subsidiary, IVL Singapore Pte. Ltd.	Myanmar	Packaging
March 2015	<ul style="list-style-type: none"> Completed the acquisition of a 100% stake in Polyplex Resins San. ve Tic. A.S, Turkey. Polyplex Turkey owns a newly set-up greenfield PET plant with a planned capacity of 252,000 tpa located in Corlu, close to Istanbul. Acquired a 100% stake in the PTA business of CEPESA Chimie Montréal s.e.c in Montreal, Canada. CPESA is the largest and the only PTA manufacturing facility in Canada with a capacity of 600,000 tpa and is one of three merchant PTA producers in North America. 	Turkey Canada	Integrated PET Integrated PET
May 2015	Completed the acquisition of a 94.91% stake in a PET business in Thailand, Bangkok Polyester PCL (BPC). BPC is a producer of PET polymers in Rayong, Thailand, with a capacity of 105,000 tpa. Further shares were also acquired from the minority shareholders, thereby taking the Company's total shareholding in BPC to 98.97%.	Thailand	Integrated PET

Year	Event	Location	New Segments
June 2015	Completed the acquisition of CEPSA Chimie Montréal s.e.c in Montreal, Canada, including all of the closing formalities. The plant was taken charge of effective June 1, 2015. IVL renamed the companies as Indorama Ventures Gestion, Inc., Indorama Ventures Northern Investments and Indorama Ventures PTA Montreal, respectively.	Canada	Integrated PET
September 2015	The establishment of three new subsidiaries: <ul style="list-style-type: none"> Indorama Ventures Dutch Investments B.V. Indorama Ventures Investments USA LLC Indorama Ventures Olefins LLC 	the Netherlands US US	Holding Company Holding Company Integrated Oxides & Derivatives
November 2015	<ul style="list-style-type: none"> Acquired 100% of CEPSA's business in Spain. CEPSA Spain is Europe's largest producer of PIA (isophthalic acid) and is the second largest producer in the world, with a capacity of 220,000 tons of PIA, 175,000 tons of PET, and 325,000 tons of PTA. Established a new indirect subsidiary company in the US: Indorama Ventures Olefins Holding LLC 	Spain US	Integrated PET & Specialty Chemicals Holding Company
December 2015	Completed the acquisition of a 100% stake in the polyethylene terephthalate (PET) business of MICRO POLYPET Private Limited (MicroPet) and its two subsidiaries, Sanchit Polymers Private Ltd., and Eternity Infrabuild Private Ltd. in India, effective December 23, 2015. MicroPet, located in Panipat district in the northern Indian state of Haryana, has a PET capacity of 216,000 tpa and has virtual integration with a major refinery for its PTA and MEG feedstocks.	India	Integrated PET
January 2016	Acquired a 100% stake in BP Amoco Chemical Company (BP)'s chemical complex in Decatur, Alabama (US). BP's integrated facility is located adjacent to IVL's PET manufacturing subsidiary, AlphaPet, Inc. and has a combined capacity of approximately 1.8 million tons of which PX capacity is 720,000 tons, PTA capacity is 1,020,000 tons, and NDC (naphthalene dicarboxylate). The acquisition was completed and effective March 31, 2016.	US	Integrated PET & Specialty Chemicals
February 2016	Formation of an equal joint venture in India with Dhunseri Petrochem Limited. IVL will divest its 50% equity stake in its indirect, fully-owned PET manufacturing company - Micro Polypet Private Limited, India to Dhunseri Petrochem Limited. IVL will also acquire a 50% equity stake in a new carved-out entity from Dhunseri Petrochem Limited. The new entity will own the 480,000 ton PET manufacturing facility of Dhunseri Petrochem Limited located in the port city of Haldia in the eastern Indian state of West Bengal.	India	Integrated PET
March 2016	The establishment of a new indirect subsidiary in India, Indorama Ventures Packaging (India) Private Limited.	India	Packaging
April 2016	Completed the acquisition of 100% of Compañía Española de Petróleos S.A.U. (CEPSA Spain)'s PIA, PET and PTA business in Guadarranque-San Roque, Cadiz, Spain. The operation was effective April 7, 2016. The company was renamed Indorama Ventures Química S.L.U.	Spain	Integrated PET & Specialty Chemicals
July 2016	The establishment of a subsidiary company and a joint venture company in China. The new indirect subsidiary: <ul style="list-style-type: none"> Performance Fibers (Kaiping) No. 3 Company Limited The new Joint Venture Company: <ul style="list-style-type: none"> ES FiberVisions Shanghai Co., Ltd. 	China China	Fibers Trading Business

Year	Event	Location	New Segments
August 2016	<ul style="list-style-type: none"> Name change of a subsidiary company in the US. Polyamide High Performance, Inc., an 80% indirect subsidiary of IVL in the US changed its name to "PHP Fibers Inc." 	US	Fibers
	<ul style="list-style-type: none"> The merger of two indirect subsidiaries in Germany. PHP Overseas Investments GmbH, a non-operating entity merged into PHP Fibers GmbH, an operating Fibers business entity. The new merged entity is known as "PHP Fibers GmbH." 	Germany	Fibers
September 2016	<ul style="list-style-type: none"> Completed the formation of an equal joint venture in India with Dhunseri, effective September 12, 2016. The joint venture company in India was also renamed. Dhunseri Petglobal Limited was changed to "IVL Dhunseri Petrochem Industries Limited." 	India	Integrated PET
	<ul style="list-style-type: none"> The establishment of a new indirect subsidiary company in China: Performance Fibers (Kaiping) Trading Company Limited 	China	Fibers
December 2016	The establishment of a new indirect subsidiary company in Mexico, Indorama Ventures Mexico Assets, S. de R.L. de C.V., which is 99.99% held by Grupo Indorama Ventures, S. de R.L. de C.V., a wholly-owned indirect subsidiary company of IVL.	Mexico	Service Company
May 2017	Acquisition of a 100% stake of Glanzstoff Group (Glanzstoff), a tire cord business in Luxembourg, Italy, the Czech Republic and China. The Glanzstoff acquisition provides a strategic fit to the automotive segment in the HVA portfolio with a capacity of 36,300 tpa.	Luxembourg/ Italy/ Czech Republic/ China	Fibers
May 2017	Acquisition of the remaining 25% stake in Trevira Holdings GmbH (Trevira) in Germany. With this acquisition, IVL holds 100% of Trevira, a leading brand of specialty polyester fibers globally.	Germany	Fibers
September 2017	Acquisition of a 100% stake of DuraFiber Technologies México Operations, S. A. DE C. V. (DuraFiber), a tire cord business with a capacity of 22,400 tpa.	Mexico	Fibers
October 2017	Acquisition of a 100% stake of DuraFiber Longlaville, France, a tire cord business with a capacity of 35,000 tpa.	France	Fibers
November 2017	Acquisition of the PTA assets of Artlant PTA S.A. and the adjacent utility assets of Artelia Ambiente, S.A. in Portugal.	Portugal	Integrated PET
March 2018	Acquisition of a 100% stake of M&G Polimeros Brazil S.A. in Ipojuca, Brazil, the largest PET facility in the country with a capacity of 550,000 tpa. (Completed all closing formalities and took charge of the operations effective May 24, 2018.)	Brazil	Fibers
March 2018	Formation of an equal joint venture company, namely Corpus Christi Polymers LLC (CC Polymers), with Alpek and Far Eastern, and entered into an asset purchase agreement with M&G USA Corp. and its affiliated debtors (M&G) to acquire the integrated PTA-PET plant currently under construction in Corpus Christi, Texas. The plant is expected to be the largest single line vertically integrated PTA-PET production facility in the world and the largest PTA plant in the Americas with a capacity of 1.1 million tpa of PET and 1.3 million tpa of PTA.	US	Integrated PET

Year	Event	Location	New Segments
May 2018	Acquisition of a 65.72% equity stake in Avgol Industries 1953 Ltd., with a capacity of 203,000 tpa. Avgol Industries is a global manufacturer of non-woven fabric and hygiene products with six sites located in Israel, the US, Russia, China and India. (Completed all closing formalities of the transaction on July 25, 2018.)	Israel/US/ Russia/ China/ India	Fibers
June 2018	Formation of a joint venture in Egypt with Dhunseri Petrochem Limited, namely Egyptian Indian Polyester Company S.A.E. (EIPET) with a capacity of 540,000 tpa. EIPET is one of the largest PET producers in the Middle East and Africa.	Egypt	Integrated PET
June 2018	Formation of a 50:50 joint venture limited liability company in the US with Huvis Global Corporation named Huvis Indorama Advanced Materials, LLC. (HIAM) with a capacity of 60,000 tpa. HIAM is a manufacturer of low melting fiber (LMF) used as a binder fiber in core-sheath constructions to produce HVA applications for automotive and industrial composites.	US	Fibers
June 2018	Acquisition of an equity stake of 100% of KORDARNA Plus a.s. (Kordarna) in the Czech Republic with a capacity of 57,000 tpa. Kordarna is the largest producer of tire cord fabrics in Europe, having one production site in the Czech Republic and another in the Slovak Republic. (Completed all closing formalities and took charge of the operations effective October 30, 2018).	the Czech Republic/ the Slovak Republic	Fibers
July 2018	Acquisition of 74% of the share capital of Medco Plast for Packing and Packaging Systems S.A.E., Egypt (MEDCO) with a production capacity of 70,000 tpa of PET preforms. MEDCO is the largest PET convertor in Egypt with market share of approximately 25%. (Completed all closing formalities of the transaction on November 13, 2018).	Egypt	Packaging
July 2018	Acquisition of 100% of the share capital of Sorepla Technologie S.A. and its subsidiary, namely Société de Recyclage de Matières Plastiques (Sorepla Industrie) S.A., in France (Sorepla). Sorepla is one of the largest plastics recyclers in Europe with a capacity of 52,000 tpa.	France	Integrated PET
September 2018	Agreed to form a 50:50 joint venture limited liability company in the US with Loop Innovations, LLC named Indorama Loop Technologies, LLC. (ILT).	US	Fibers
October 2018	Acquisition of a 100% equity stake in Schoeller Group in Europe, with operating plants in Austria, the Czech Republic and Germany. Schoeller Group is a leading European producer of pure wool and wool blend worsted yarns, with one dyeing facility in Austria and one spinning facility in the Czech Republic, with a total production capacity of 3,600 tpa. (Completed all closing formalities of the transaction on November 23, 2018.)	Austria/ the Czech Republic/ Germany	Fibers
October 2018	Established a new indirect subsidiary company and merged indirect subsidiaries in Mexico. Set up a new indirect subsidiary: • Glanzstoff Industries Mexico, S. de R.L. de C.V.	Mexico	Fibers
	The merger of indirect subsidiaries: • Indorama Ventures Mexico Assets, S. de R.L. de C.V. (IVMA)	Mexico	Service Business
November 2018	Acquisition of a 100% equity stake in M&G Fibras Brasil S.A. in Brazil. The site produces polyester staple fiber, with a capacity of 75,000 tpa.	Brazil	Fibers

Year	Event	Location	New Segments
December 2018	<ul style="list-style-type: none"> Acquisition of a 100% equity stake in UTT Beteiligungsgesellschaft mbH (UTT), Germany, one of the leading suppliers of airbag fabrics and other highly specialized solutions in the field of technical textiles, with two manufacturing sites located in Germany and Mexico with capacity of approximately 12,000 tpa. 	Germany/ Mexico	Fibers
	<ul style="list-style-type: none"> Acquisition of a 100% equity stake in the PET business of INVISTA Resins & Fibers GmbH, Germany (IRFG); and certain intellectual property rights of INVISTA Textiles (UK) Limited with regards to its barrier technology. PolyShield® PET and OxyClear® Barrier PET are well-known brands in oxygen barrier packaging. The IRFG plant is located in Gersthofen, Germany and manufactures high value-added PET with a combined capacity of 282,000 tpa. 	Germany	Specialty Chemicals
	<ul style="list-style-type: none"> Signed a definitive asset purchase agreement with Custom Polymers PET, LLC, to acquire their PET recycling facility in Alabama. The facility consists of two production lines: rPET flakes and food-grade rPET pellets, with a combined capacity of 31,000 tpa. 	US	Integrated PET
	<ul style="list-style-type: none"> An integrated PTA-PET asset at the Corpus Christi joint venture received all regulatory clearances required from the United States Federal Trade Commission for the proposed acquisition on December 21, 2018. (Completed the acquisition on December 28, 2018.) 	US	Integrated PET
December 2018	Commercial production start-up at Indorama Ventures Xylenes & PTA, LLC's PIA plant in Decatur, Alabama on December 23, 2018. This plant complements IVL's existing PIA plant at IVL Quimica in Spain. The two PIA plants have a combined name plate capacity of 440,000 tpa.	US	Specialty Chemicals
January 2019	<ul style="list-style-type: none"> The Board of IVL resolved to approve the purchase by its indirect subsidiary Indorama Netherlands B.V. (INBV) of 83,000,000 newly issued shares in Indo Rama Synthetics (India) Limited (IRSL), equaling to approximately 31.79% of IRSL's enlarged share capital, at the price of INR 36 per share, equaling to the total investment amount of INR 2,988.00 or equivalent to approximately THB 1,442.31 million. IRSL is a listed company on the National Stock Exchange of India Limited (NSE) and the Bombay Stock Exchange Limited (BSE) and is the leading manufacturer of a wide range of polyester products in India. The share purchase formalities were completed on April 3, 2019. 	India	Fibers
	<ul style="list-style-type: none"> Completed the acquisition of PET Recycling facility in Alabama from Custom Polymers PET, LLC. The acquisition was completed on January 15, 2019. 	US	Integrated PET
February 2019	<ul style="list-style-type: none"> Acquisition of a 100% equity stake in the Packaging business of Bevpak. Bevpak is one of the largest manufacturers of PET preforms in West Africa and is located in Ibadan, Nigeria, with a production capacity of 18,000 mts. per annum. The acquisition was completed on October 2, 2019. 	Nigeria	Packaging
	<ul style="list-style-type: none"> Completed the acquisition of a 100% stake in M&G Fibras Brasil Ltda. located in Cabo de Santo Agostinho from M&G Fibras Holding S.A., M&G Fibras Participações Ltda., and M&G Fibras e Resinas Ltda. The acquisition was completed on February 22, 2019. 	Brazil	Fibers
March 2019	<ul style="list-style-type: none"> Completed the acquisition of a 100% stake in UTT Beteiligungsgesellschaft mbH (UTT), Germany. The acquisition was completed on February 28, 2019. 	Germany/ Mexico	Fibers
	<ul style="list-style-type: none"> Completed the acquisition of a 100% stake in the PET business of INVISTA Resins & Fibers GmbH, Germany (IRFG); and certain intellectual property rights of INVISTA Textiles (UK) Limited with regards to its barrier technology. The acquisition was completed on March 4, 2019. 	Germany	Specialty Chemicals

Year	Event	Location	New Segments
July 2019	Acquisition of a 100% equity stake of Sinterama S.p.A. and its subsidiaries (Sinterama). The acquisition of Sinterama comprises five production sites in four countries: Italy, Brazil, China and Bulgaria, with a combined capacity of approximately 30,000 tpa. Sinterama is vertically integrated from chips to yarns and offers a vast range of colored polyester yarns for the automotive, furnishing, apparel and technical applications. The acquisition was completed on November 19, 2019.	Italy/Brazil/ China/ Bulgaria	Fibers
August 2019	The Board of IVL passed a resolution to approve the acquisition of certain integrated oxides and derivatives businesses/assets from Huntsman Corporation, a listed entity on the New York Stock Exchange and/or its wholly-owned subsidiary(ies) (whether directly or indirectly) located in Texas, US/ New South Wales, Australia and Ankleshwar, India which manufacture the following key products: ethylene oxide (EO), propylene oxide (PO), glycols, ethanalamines (EOA), surfactants, linear alkylbenzene (LAB) and methyl tertiary-butyl ether (MTBE), including certain R&D centers, patents and technology. The acquisition was completed on January 3, 2020.	US/Australia/ India	Integrated Oxides & Derivatives
December 2019	Acquisition of a 100% equity stake of Green Fiber International Inc. (GFI), a US company with a plastics recycling facility in Fontana, California. The facility primarily produces rPET flakes with a combined capacity of 40,000 tpa. This acquisition is strategically in line with IVL's long-term sustainability objectives and part of the Company's stated plan to invest significantly in recycling over the next five years. This transaction was completed on December 3, 2019.	US	Integrated PET
March 2020	Formation of a 70:30 recycling joint venture with Coca-Cola Philippines, by the name of PETValue Philippines Corporation (PVPC). This JV will set up a greenfield integrated recycling plant, located near Manila and operated using state of the art technologies and industry-leading best practices to employ the safest and most advanced recycling process for plastic bottles made from PET.	the Philippines	Integrated PET
June 2020	Acquisition of a 100% equity stake of AG Resinas Ltda. (AG Resinas), a limited liability company incorporated under the laws of Brazil, which was completed on June 8, 2020. AG Resinas is a PET recycling facility in Juiz de Fora and processes post-consumer PET into rPET flakes and pellets. The facility is in close proximity to a large supply of recovered PET bottles, bringing benefits through a logistics advantage.	Brazil	Integrated PET
August 2020	Acquisition of a 100% equity stake of Industrie Maurizio Peruzzo Polowat spółka z ograniczoną odpowiedzialnością (IMP Polowat), consisting of two production sites located in Bielsko-Biala and Leczyca, Poland. IMP Polowat processes post-consumer PET into rPET flakes and pellets. This facility is an attractive recycling platform for IVL in Eastern Europe and will open up new opportunities to meet the increasing rPET demand for more sustainable packaging solutions. This transaction was completed on October 29, 2020.	Poland	Integrated PET
October 2020	Entered into a new joint venture agreement with Toyobo Co., Ltd in Thailand by the name of Toyobo Indorama Advanced Fibers Company Limited (TIAF). The JV plans to build a new plant on the IPI factory site at Rayong for the production of PA66 airbag yarns with an annual production capacity of 11,000 Mts.	Thailand	Fibers

In August, 2014, IVL's Board of Directors passed a resolution to increase the Company's share capital and issue warrants through a rights issue to existing shareholders. Furthermore, the Extraordinary General Meeting of Shareholders No. 1/2014 held on August 6, 2014 considered and approved the rights issue of warrants to existing shareholders, terms of the warrants, and the increase in registered share capital and allocation of share capital for the exercise of the warrants. The key terms of the issued warrants are:

Warrant	IVL W1	IVL W2
Term	3 Years	4 Years
Exercise Ratio	1 unit of warrant for 1 share	1 unit of warrant for 1 share
Exercise Price	THB 36 per share	THB 43 per share
Issue Date	25 August 2014	25 August 2014
Expiry Date	24 August 2017 3 years from the issue date	24 August 2018 4 years from the issue date
Warrant Issue Price	THB 0 (at no cost)	THB 0 (at no cost)
Allocation	To existing shareholders at the ratio of 10 IVL existing shares to 1 IVL-W1	To existing shareholders at the ratio of 13 IVL existing shares to 1 IVL-W2
Exercise Period	Last business day of each month for every three months starting from October 31, 2014. The last exercise date is the third anniversary from the issue date.	Last business day of each month for every three months starting from October 31, 2017. The last exercise date is the fourth anniversary from the issue date.

As of August 31, 2014, the Company increased its registered share capital from THB 4,815,856,719 to THB 5,666,010,449 in ordinary shares with a par value of THB 1 per share. The increase in registered share capital by THB 850,153,730 is reserved for the exercise of IVL-W1 and IVL-W2 warrants into ordinary IVL shares. As per the terms of the issue, if all warrants are exercised by the warrant holders into ordinary shares, IVL will raise, with the exercise of all IVL-W2, up to THB 15.9 billion by September 2018.

In October 2014, the Company successfully completed the offering of Subordinated Perpetual Debentures No. 1/2557 for THB 15 billion. The perpetual debentures carry a fixed rate coupon of 7.0% per annum for the first five years, after which the coupon will be adjusted every five years as per the stated terms and conditions. The issuance has strengthened IVL's capital structure, and improved the liquidity and flexibility of the Company.

In October 2015, the Company successfully issued its first overseas Senior Unsecured Bond in the amount of SGD 195 million to institutional investors in Singapore through its wholly-owned subsidiary, IVL Singapore PTE Ltd. The Bond was rated AA (Stable) by Standard and Poor's with a tenure of 10-years at an interest rate of 3.73 percent per annum. It is guaranteed by the Credit Guarantee & Investment Facility (CGIF), a trust fund of the Asian Development Bank and listed on the SGX-ST.

In 2017, the total number of IVL-W1 exercised from October 2014 until the last exercise on 24 August 2017 was 430,708,227 warrants, representing 89.47% of the total warrants issued. The unexercised (IVL-W1) warrants have expired and were delisted

on August 25, 2017. The Company will use this inflow of funds to reduce its debt and pursue future growth opportunities.

In 2018, the total number of IVL-W2 exercised from October 2017 until the last exercise on August 24, 2018 was 369,586,436 warrants, representing 99.80% of the total warrants issued. The unexercised (IVL-W2) warrants expired and were delisted on August 25, 2018. The Company will use this inflow of funds to reduce its debt and pursue future growth opportunities.

In October 2018, TRIS Rating (a strategic partner of S&P Global) ascribed the Company's rating at "AA-." They also upgraded the outlook of IVL to "AA-" from "A+" reflecting the Company's successful strategy and future potential.

In September 2019, TRIS Rating affirmed the Company's rating at "AA-" with a "stable" outlook. This rating reflects the Company's leading position in the polyester value chain. IVL has a competitive edge stemming from its vertical integration of production, and diversification of production locations and customers across Asia, North America, South America, Europe, and Africa.

In November 2019, the Company issued and offered Subordinated Perpetual Debentures of Indorama Ventures Public Company Limited No. 1/2019 for THB 15 billion. The perpetual debentures carry a coupon of 5.0% per annum for the first five years, after which the coupon will be adjusted every five years as per the stated terms and conditions. The Debentures were assigned a credit rating of "A" with a "Stable" outlook in accordance with the report publish on September 26, 2019 by TRIS Rating Company Limited.

In October 2020, TRIS Rating affirmed the company's rating at "AA-" with a "negative" outlook and also affirmed IVL's subordinated capital debentures at "A." The "AA-" rating continues to reflect the Company's leading position in the polyester value chain. IVL has a competitive edge stemming from its vertical integration of production, and diversification of production locations and customers across Asia, North America, South America, Europe, and Africa. The ratings also take into consideration the management team's capability and experience, as well as IVL's access to key technologies. However, the ratings are constrained by the volatile nature of the petrochemical industry.

In November 2020, the Company issued and offered Unsubordinated and Unsecured Debentures with a Debenture holders' Representative in the Name-Registered Certificate of Indorama Ventures Public Company Limited No. 1/2020 for THB 9 billion.

- Tranche 1 Due B.E. 2568 with a tenure of 5 years for a principal amount of 4,000,000,000 baht with a fixed coupon rate of 2.78 per cent per annum.
- Tranche 2 Due B.E. 2570 with a tenure of 7 years for a principal amount of 1,990,000,000 baht with a fixed coupon rate of 3.15 per cent per annum.
- Tranche 3 Due B.E. 2573 with a tenure of 10 years for a principal amount of 3,010,000,000 baht with a fixed coupon rate of 3.42 per cent per annum.

The purpose of the debenture issuance is for investment and/or use as working capital and/or to support the business expansion of the issuer and/or to refinance the issuer's existing debts on or prior to the relevant due date, which may include the repayment of the loan to the underwriters on or prior to the relevant due date and/or the repayment of the debentures of the issuer on the maturity of such debentures.



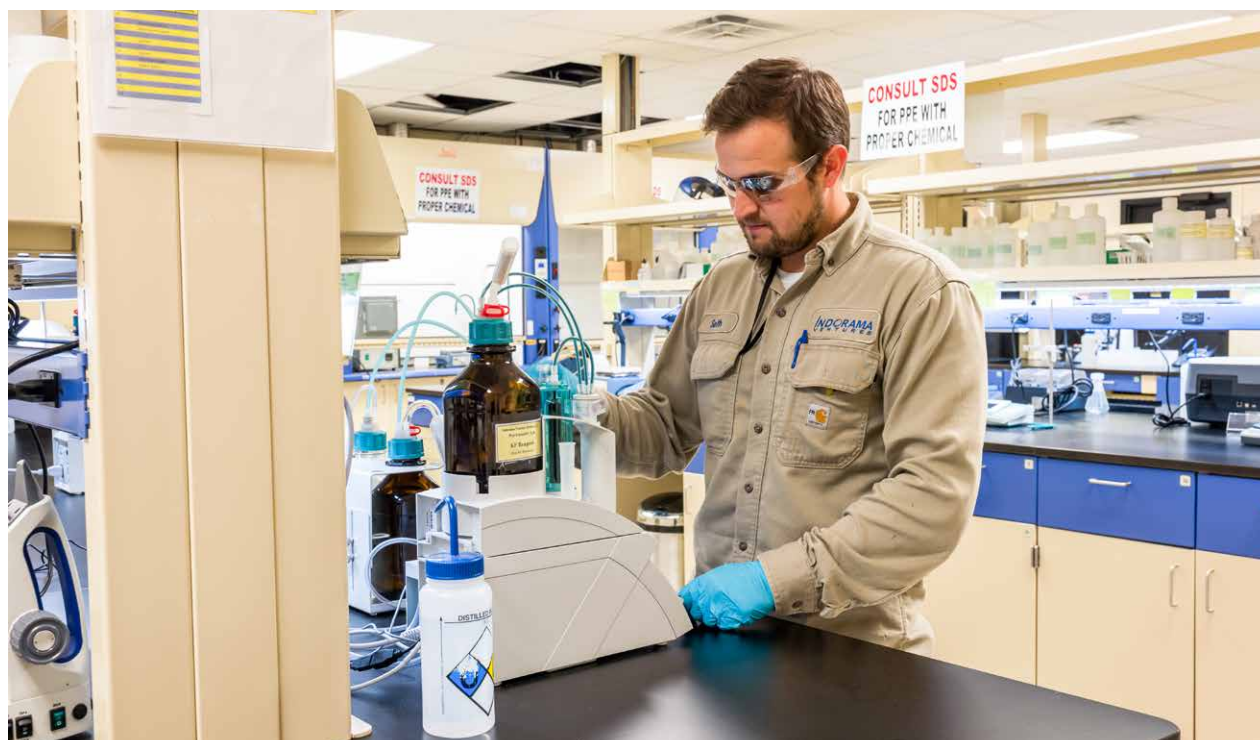
Nature of the Business

Revenue Structure

The details of the reportable segment of our sales revenue structure applicable from 2019 onwards according to our consolidated financial statements for the year ended December 31, 2020 are as follows:

Details	Year Ended December 31, 2020			
	External (Bt million)	Inter-segment (Bt million)	Total (Bt million)	%
Revenue breakdown by 5 Segments				
Integrated PET	166,911	18,287	185,197	56
Packaging	9,182	280	9,463	3
Specialty Chemicals	25,334	2,585	27,919	8
Integrated Oxides and Derivatives	46,148	2,404	48,553	15
Fibers	83,938	420	84,358	25
Elimination		(23,976)	(23,976)	(7)
Consolidated revenue from sale of goods	331,513	-	331,513	100

Source: The Company's consolidated financial statements.



Business Overview

Indorama Ventures (SET: IVL) is a major global intermediate and downstream petrochemicals producer with 123 sites in 33 countries around the world (as of December 31, 2020) providing value-added and differentiated products and services to several diversified consumer goods industries which serve common consumer needs in hygiene, improved lifestyles and safety.

IVL has integrated businesses which are aligned to create a sustainable value proposition. Our customer orientation, global reach and scale allow us to benchmark ourselves globally to enhance operational excellence, while our industry leading ESG initiatives make us a sustainable global producer.

Additional factors that help us in providing a broader portfolio of products for our customers are innovation, high value-added products and recycling, which enhance earnings growth and the sustainability of the business. Ongoing investments in research and development provide customers with new products and services that improve our offerings and complete our positioning as a one-stop center for their global requirements.

Business Description

The term polyester can be broken into poly, meaning many, and ester, a basic organic chemical compound. The principle ingredients used in the manufacture of polyester are purified terephthalate acid, derived from paraxylene, a part of the aromatics chain leading backwards to crude oil, and monoethylene glycol, part of the olefins chain that leads backward to crude oil or natural gas. The chemical process that produces the finished polyester is polymerization. IVL

is one of the world's foremost-integrated producers in the polyester industry and the largest producer of PET.

We act as a bridge connecting the oil and gas industry with consumer goods producers. There is constant demand growth from downstream customers, as they are mostly consumption-oriented FMCG companies, and this demand grows at a higher rate than global GDP.

The industry norm is to have long-term volume contracts with customers, normally one to three years in certain geographies like the US and Europe. However, the pricing is adjusted monthly as per benchmark prices in the industry and according to an agreed mechanism. The system indicates IVL's ability to pass through price movements to end customers (not always contractually).

This mechanism implies that crude oil and its derivative raw materials used to produce PET and fibers have a low-impact on the business except in the event there is a sharp rise or fall in the price of such materials within a short period, entailing an adjustment in the cost of inventory to reflect market prices. This mark-to-market effect is termed "inventory gains" or "inventory losses".

However, there could be volatilities in the spread when there is an oversupply or tight supplies in the industry in the short-term.

Portfolio Development

We continue to consolidate and gain leadership in our existing businesses while continuing to diversify our portfolio in adjacent business opportunities in a disciplined manner. Fundamental



shifts in the portfolio, both in its existing shape and form, and, as it evolves over the medium-term, necessitate the need to review the way we analyze and report our segments.

To this extent, we have completed a comprehensive assessment of our portfolio, identified areas of synergies and natural alignment, and recalibrated our future capital deployment strategies. All of this is in-line with our imperatives towards becoming a world-class, well-diversified, growth-oriented, sustainable global chemical company.

Going forward, each of our segments necessitates differentiated investment and growth strategies depending on the role they play in our existing portfolio. Each segment is either already delivering or is capable of delivering double-digit ROCE through its business cycles. These segments, described below, are also poised for healthy growth momentum and thereby support IVL's overall growth strategy.

These new segments are as follows:

1. Integrated PET

This segment includes businesses in the aromatics and PET value chain, including PX, PTA and PET. Given PET's unique property of 100% recyclability, reporting under this segment also includes IVL's recycling initiatives across the polyester value chain.

PX Business Overview

Paraxylene (PX) is used in the polyester chain, mainly in the production of fiber, film and polyethylene terephthalate (PET) bottle resins, via an intermediate product – purified terephthalic acid (PTA). A small amount of PX is used in solvents and to produce di-paraxylene and herbicides.

PTA Business Overview

Terephthalic acid is an organic compound and a colorless solid. It is a commodity chemical, used principally as a precursor to polyester PET, which in turn, is used to make clothing and plastic bottles. IVL entered the PTA business in 2008 with a strategy to develop raw material integration ensuring an uninterrupted supply of raw materials and better integration in the polyester value chain. This provides a cost competitive edge in the PET and Fiber businesses. Our PTA assets are strategically co-located with downstream facilities in many countries including Thailand, Indonesia, Spain, the United States and the Netherlands. As of December 31, 2020, we were a globally integrated PET producer with a total PTA capacity of around five million tons per annum.

PET Business Overview

Our PET business is part of our core polyester value chain business and comprised 39% of our production volumes in 2020. Beginning with one manufacturing plant, we have continued to expand and now have operations across five continents – North America, South America, Europe, Africa, and Asia, and our PET business includes the production and sale of PET resin. As of December 31, 2020, we were the largest PET resin producer in the world with an aggregate installed production capacity of around six million tons per annum.

Recycling Business Overview

In response to the needs of customers and tackling the global challenges of resource scarcity and waste, IVL began to explore the recycling business as part of our corporate sustainability program and also to meet growing demand from our customers. Our decision to execute the recycling project was based on the growth of PET used in a number of industries, the opportunities available in recycling PET and the increased attention being paid to developing a circular materials economy. We started producing PET flakes from discarded PET bottles in 2011 following our acquisition of Wellman Group, with flake processing facilities in Spijk, the Netherlands and Verdun, France. These two bottle recovery plants process discarded PET bottles to produce recycled PET flakes to serve the facility in Ireland. Recycled PET flakes are then converted into both food-grade and fiber-grade materials.

This PET recycling project complements IVL's existing capabilities and serves as a way to gain access to new markets and product lines. Over the past several years, we continued to expand our PET recycling facilities in Thailand, the United States, Mexico, France, Philippines, Brazil and Poland. These expansions have strengthened our business and reflect our desire to continue to build a more sustainable business while enhancing our ESG priorities.

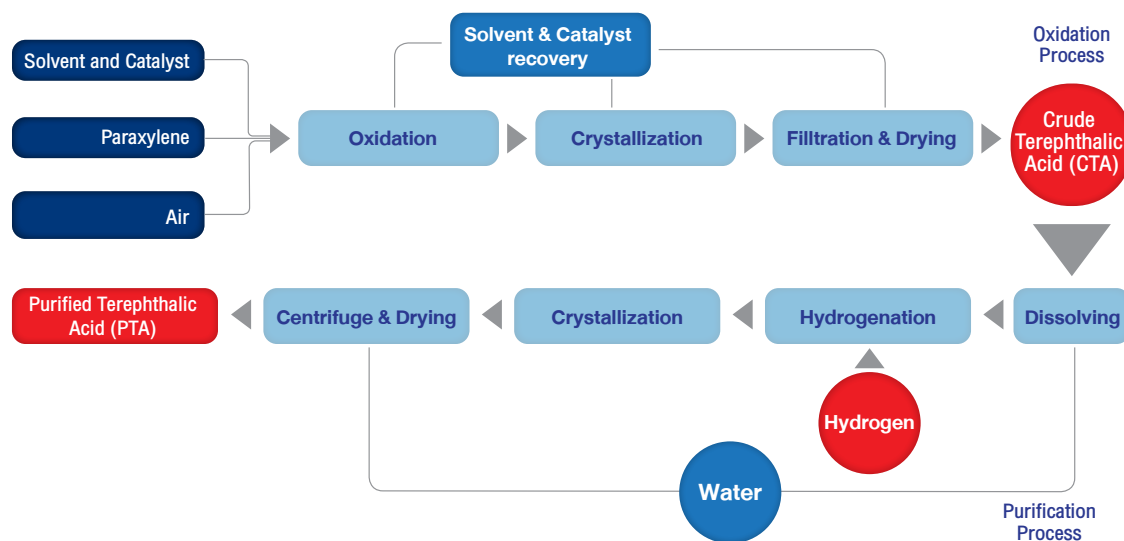
Integrated PET Production Process

PTA production process

Terephthalic acid (TA) is the result of the oxidation of paraxylene (PX). The commercial process utilizes acetic acid as a solvent together with a catalyst composed of cobalt and manganese salts, with a bromide promoter.

A radical chain reaction occurs in a series of intermediates, starting with the oxidation of paraxylene and finally to terephthalic acid. It is then further purified to make PTA.

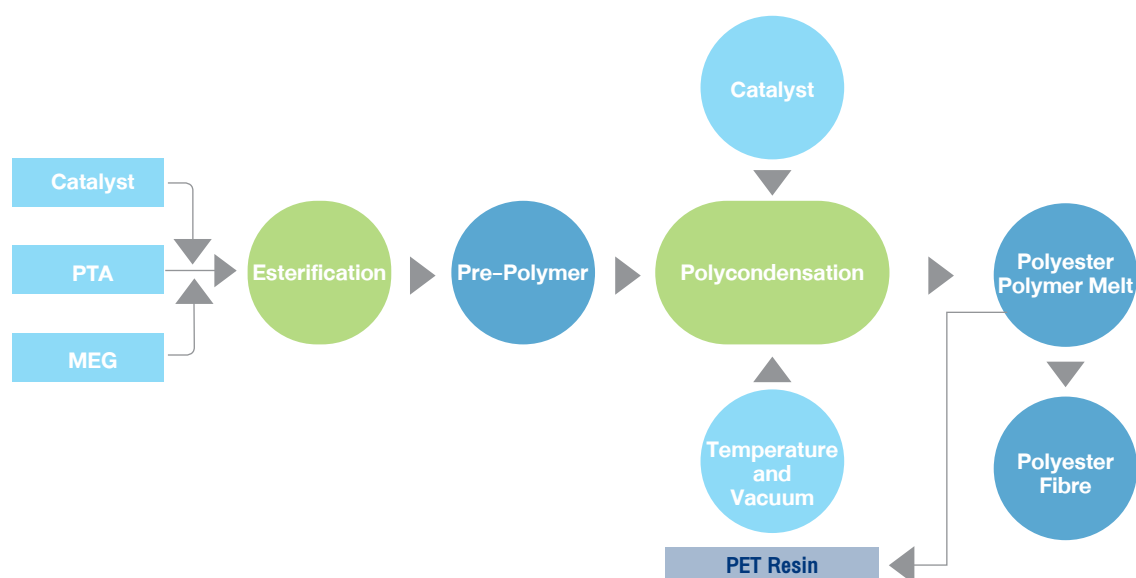
The chart below shows the PTA production process.



PET production process

PET resin comes from polyester polymer melt. The melt is converted into PET resin, either through a conventional solid-state process or through a newer technology melt-to-resin process. Under the conventional solid-state polycondensation process, the melt is extruded into strands, which are quickly cooled down by water. After solidification, the strands are cut into small pellets, dried and further crystallized by being heated in a reactor under a specific temperature and pressure conditions under a nitrogen flow. Under the melt-to-resin process, the polycondensation process is completed during the melt phase, resulting in the formation of pellets without going through the solidification process. We have plants that use both of these technologies.

The chart below summarizes the PET production process.



Integrated PET Products and Markets

We have sales and marketing teams in each of the regions where we operate, which are overseen strategically by our sales and marketing head office in Thailand. Our marketing activities include regular meetings with our customers to understand their requirements, maintain good relationships as well as provide first-rate customer service.

Most of our PX production is used for internal consumption to produce PTA at our plant in Alabama, in the United States. Our main customers for PTA are PET resin and polyester producers. Our downstream PET and polyester production facilities use a significant proportion of our PTA production. We sell the remaining PTA that we do not use within the group to third-party customers. In, 2018, 2019 and 2020 62%, 70% and 68% respectively, of our PTA was sold to the group.

We classify our PET customers into four main groups:

- Well-known brand name beverage companies with their own conversion plants to produce PET bottles;
- Well-known brand name beverage companies who subcontract the production of PET bottles to converters using PET resin purchased by such beverage companies;
- PET resin traders; and
- PET converters who use PET resin to manufacture preforms, bottles, sheets and other PET packaging to service the needs of end users.

We sell our PET resin primarily through direct sales to end-use customers. A small proportion of our sales take place through agents and traders.

Integrated PET Competition

IVL is the world's largest PET producer with a number one or number two position at over 90% of our manufacturing locations. We have a strong presence in the Americas and Europe, the Middle East, and Africa (EMEA), and a high level of feedstock integration (PTA to PET in key markets and PX integration in North America), all of which position us as the global leader in this 100% recyclable business.

We are an integrated PET producer, where we manufacture and use PX and PTA for our own captive consumption partially or fully. Currently in China, there are many new plants, especially PTA plants, using the latest technology and having lower conversion costs than previously. However, there are other competitors in Europe and North America. For PET competitors, Equipolymers and Neo Group are the main competitors in the European market; Alpek (DAK Americas LLC) and the Far Eastern Group are the principal competitors in the US market; while Thai Shinkong Industry Corp. and PTTGC. are the main competitors in the Thai market. Although PET technology is available through commercial licenses, we believe the capital investment required to achieve

profitability through economies of scale may inhibit new entrants to the market.

Integrated PET Production Facilities

The following table sets out the key figures for our integrated PET production facilities as of December 31, 2020:

Production Facilities/ Location	Nameplate Capacity ⁽¹⁾ ('000 tons per annum)
PTA	
Europe	1,768
Indonesia ⁽²⁾	509
Americas	1,643
Thailand	1,377
PET	
China	544
Europe	1,403
Indonesia	209
Middle East and Africa	641
Americas	1,679
India	699
Thailand	491
Recycling facilities	273
Total	11,237

⁽¹⁾ The capacity of plants has been re-rated to reflect the de-bottlenecking projects taken-up by the various plants from time-to-time. However, the capacity does not include a non-operating site: Ottana Polimeri S.R.L., IRP Workington, Ottana Polimeri S.R.L. and Adana TurkPET.

⁽²⁾ From October 1, 2018, Polyprima was fully consolidated due to a revision in terms with the JV partner.

2. Packaging Packaging Business Overview

IVL has been involved in this business for the past two decades, first through a joint venture with Sermisuk PCL in Thailand and thereafter expanding our facilities to PET under penetrated but high-growth countries in Southeast Asian and African markets including the Philippines, Nigeria, Myanmar and Ghana. The current portfolio consists of plastic polymer resins primarily used for beverage and food packaging, and packaging of pharmaceutical and household products. Currently, our main products are preforms, bottles and closures at 16 production facilities in seven countries. An aggregate production quantity of 0.3 MMt makes this IVL's smallest business segment.

Our focus is on developing a sustainable packaging business, and not competing with PET, by broadening the production footprint around the world through M&A and a greenfield expansion led growth strategy.



In the fourth quarter of 2019, we acquired Bevpak, a facility in Nigeria, to expand our global footprint.

The overall global packaging industry is valued at around USD 1 trillion and is growing at 5% per annum. This is a high growth segment, especially in olefins-based sustainable packaging materials, that serves the key needs of the FMCG and pharmaceutical industries.

This downstream business provides tremendous scope for reducing earnings volatility, margin enhancements through segment integration into the olefins chain, and increased diversification.

Packaging Products and Markets

Our main customers are reputable global beverage and FMCG companies such as L'Oréal, Pepsi, Coca Cola and P&G. We can produce clear and colored preforms, bottles, and closures. We have been regularly working on lightweighting as per the requirements of our customers. Through superior engineering, technology, plus reliable customer service and delivery, we provide our customers with packaging solutions that help them build the value and volume of their brands. Similar to other segments, we have sales and marketing teams in each of the regions where we operate, which are overseen strategically by our sales and marketing head office in Thailand.

Packaging Competition

The global beverage packaging market is extremely competitive due to the presence of many vendors involved in the packaging of soft drinks. Though many new vendors are regularly emerging in the market, it is difficult for them to compete with international vendors, including IVL, in terms of features, functions, and services. The key players in the global market are Alpla, Ball Corporation, Crown Holdings, and Amcor.

In response to the increasing needs of our customers, we have also invested in high speed bottling lines. In the near future, we plan to expand our product portfolio to pharmaceutical healthcare, personal care and home care packaging products with enhanced functionality and sustainable materials.

Packaging Production Facilities

The following table describes our packaging production facilities as of December 31, 2020:

Production Facilities/ Location	Nameplate Capacity ('000 tons per annum)
Packaging – various sites	279

3. Specialty Chemicals

Specialty Chemicals Business Overview

IVL entered this segment in 2011 with the acquisition of South Carolina-based Auriga Polymers, which owns the technology for the Crystal Clear Oxygen Barrier Resin, OxyClear® and Polyshield®. We supplemented our presence in this segment in 2016 by acquiring the world's only naphthalene dicarboxylate (NDC) facility in Alabama, and a PIA facility in Cadiz, Spain.

In 2018, we grew this portfolio by expanding our PIA production in Spain and additionally converted a PTA line to PIA in Alabama, thereby becoming the world's second largest producer.

In 2019, we completed the acquisition of Invista's assets in Germany resulting in IVL possessing the intellectual property for Polyshield® and Oxyclear® resins, together with Invista's barrier technology in all markets globally.

Specialty Chemicals Products and Markets

Our main customers for specialty PET resins are manufacturers of medical applications, premium bottles, film and textile specialties. IVL continues to innovate our products in order to maximize differentiation, increase customer loyalty and enter new markets. We are moving closer to customers, offering both customer-tailored products and customer-specific service arrangements. Increasing consumer preference for eco-friendly substitutes also benefits us as we are the leading global solutions provider of barrier resins, which come from renewable feedstocks and offer a minimal carbon footprint. For PIA, we manufacture and mostly sell to third party customers. In 2020, we sold 76% of PIA sales to outside customers who manufacture PET resins as well as paints and coatings.

We sell NDC to outside customers who manufacture new-generation polyesters and resins to make items such as LCD flat panel displays and ultra-thin data storage tapes. We have sales and marketing teams in each of the regions where we operate, which are overseen strategically by our sales and marketing head office in Thailand.

Specialty Chemicals Competition

IVL is the only commercial producer of NDC in the world. Since there are no other commercial producers, there is no direct competition, however, products made from NDC monomers do have competition from products such as modified PET, PI and PC. NDC is used in markets such as films for optical displays, insulation for motors, flexible circuits for harnesses, industrial and pharmaceutical packaging containers, industrial fibers and tire cords, among others.

Close to 40% of PIA demand is concentrated in domestic markets in Europe (where we are the only producer) and North America. Global PIA demand is close to 1.1 million tons with China being the largest consumer as PET is the main application for PIA. Apart from PET, the main applications are coatings and unsaturated polyester resins (UPRs). We are the second largest producer of PIA worldwide and our main competitors are Lotte, FCFC, Ineos and MGC.

Specialty Chemicals Production Facilities

The following table describes our specialty chemical production facilities as of December 31, 2020:

Production Facilities/ Location	Nameplate Capacity ⁽¹⁾ ('000 tons per annum)
Specialty PET - various sites	588
PIA – Spain	267
NDC - USA	27
Total	882

(1) The capacity of plants has been re-rated to reflect the de-bottlenecking projects taken-up by various plants

4. Integrated Oxides and Derivatives

IVL began in this segment by acquiring a MEG and PEO facility in the US state of Texas in 2012. In 2015, we acquired an ethylene cracker site in Lake Charles, Louisiana, which is currently offline due to a lighting strike, through a subsidiary, Indorama Ventures Olefins LLC, and commenced commercial operations on January 31, 2020. The site is highly integrated with the US Gulf Coast ethylene pipeline infrastructure for efficient distribution.

In 2019, we invested in the integrated ethylene oxide (EO) and propylene oxide (PO) derivatives business of US\$2-Billion-valued Huntsman Corporation, which was completed in January 2020. Not only had the acquisition reinforced the continual growth of IVL's Integrated Oxides and Derivatives segment, but also included Ethylene Oxides Derivatives and Propylene Oxides (PO) Derivatives in our product portfolio, each coming with its own strong market position.

The acquisition will provide unprecedented entry into global niche markets and industries serving consumer's daily needs with a sustained growth rate of ~5%. These products are used in home and personal care consumer goods, such as detergents, cleansers, shampoo, furniture applications, automotive parts fuels and lubricants. IVL has significant understanding of some of these end markets through its Fibers and PET businesses. New and exciting businesses include agrochemicals such as herbicides and unsaturated polyester resins for coatings, particularly in marine use.

Integrated Ethylene Oxide Business Overview

Monoethylene Glycol (MEG)

The other major feedstock produced by Indorama Ventures is monoethylene glycol (MEG), which is an organic compound. In its pure form, it is an odorless, colorless, syrupy, sweet-tasting liquid. MEG comes from ethylene via intermediate ethylene oxide. Ethylene oxide reacts with water to produce ethylene glycol.

The major end uses of ethylene glycol are in the polyester industry and in anti-freeze for automobile radiators. Besides automobiles, MEG is a medium in liquid-cooled computers, chilled water air-conditioning systems and geothermal heating/cooling systems.

Diethylene Glycol (DEG) and Triethylene Glycol (TEG)

Diethylene glycol (DEG) is a by-product made together with MEG through the processing of EO. DEG has broad applications and is used to manufacture polyester polyols, unsaturated polyester resins, buffet heaters, production, paints and coatings, plasticizers, liquid laundry detergents, cement grinding and as an intermediate for polyethylene glycol.

Triethylene glycol (TEG) is a by-product of the EO process and is mainly used for natural gas dehydration. The other applications are air sterilizers, resin for windshield plate glass and as an intermediate for polyethylene glycol. It is used as a plasticizer for vinyl as well as

in air sanitizer products. When aerosolized, it acts as a disinfectant. It is an additive for hydraulic fluids and brake fluids and is used as a base for “smoke machine” fluid in the entertainment industry.

Integrated Purified Ethylene Oxide Business Overview

Purified Ethylene Oxide (PEO)

Purified ethylene oxide (PEO) comes from the direct oxidation of ethylene in the presence of a silver catalyst.

PEO is used in the production of detergents, thickeners, solvents, plastics and various organic chemicals such as ethylene glycol, ethanolamines, simple and complex glycols, polyglycol ethers and other compounds. PEO is a disinfectant that is widely used in hospitals and the medical equipment industry to replace steam in the sterilization of heat-sensitive tools and equipment, such as disposable plastic syringes. PEO derivatives are used to manufacture various products such as soaps, detergents, brake fluids, weed killer and urethane foam.

EO is one of the most important raw materials used in large-scale chemical production. Most EO is used for the synthesis of ethylene glycols, including diethylene glycol and triethylene glycol, which account for up to 75% of global consumption. Other important products include ethylene glycol ethers, ethanolamines and ethoxylates. Among glycols, ethylene glycol is used as antifreeze, in the production of polyester and PET, liquid coolants and solvents. Polyethylene glycols are used in perfumes, cosmetics, pharmaceuticals, lubricants, paint thinners and plasticizers. Ethylene glycol ethers are used in brake fluids, detergents, solvents, lacquers and paints. Other products of EO include

ethanolamines, which are used in the manufacture of soaps and detergents and for the purification of natural gas. Ethoxylates are reaction products of EO with higher alcohols, acids or amines. They are used in the manufacture of detergents, surfactants, emulsifiers and dispersants.

Propylene Oxide and MTBE Business Overview

Propylene Oxide is a synthetic, highly-flammable, volatile, colorless liquid that is soluble in water and miscible with many organic solvents. Propylene oxide is used primarily as a chemical intermediate in the production of polyether polyols for use in making polyurethane plastics and propylene glycol. These are used in daily consumptions and various industry applications. Other major products are polypropylene glycol, propylene glycol ethers, and propylene carbonate.

Tertiary butyl alcohol (TBA) is produced as a co-product of propylene oxide in dedicated plants. TBA is dehydrated into isobutylene to produce Methyl Tertiary-Butyl ether (MTBE). It can also be sold directly as an octane-enhancing component for gasoline.

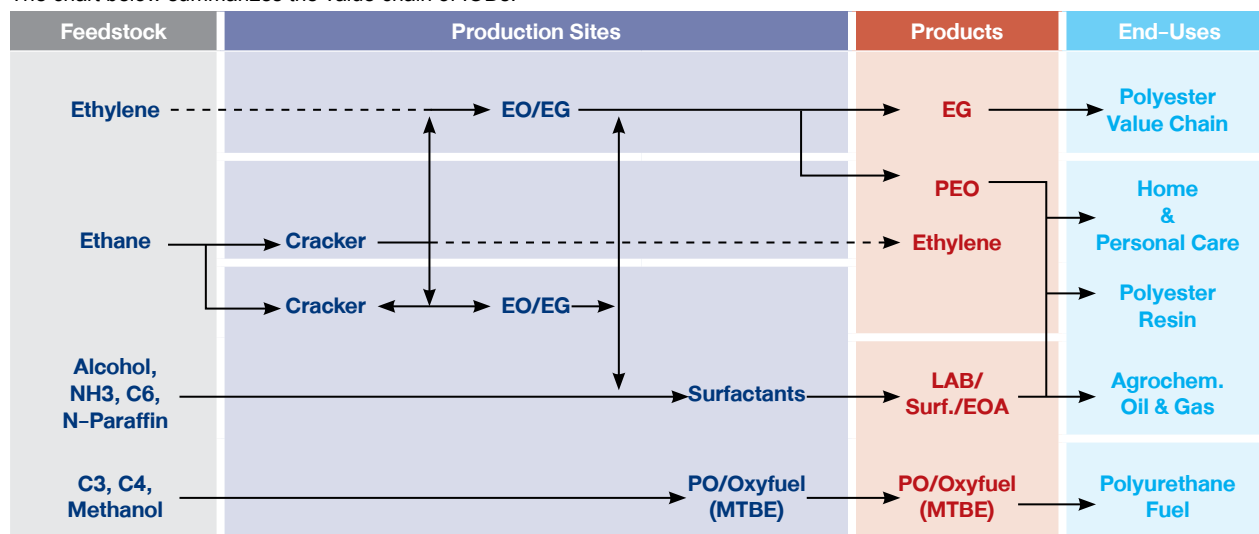
Integrated Surfactants Business Overview

Surfactants, LAB and Ethanolamines (EOAs) are chemical substances derived from EO, which are mainly used in the manufacture of hygiene products, including detergents, homecare products, soaps, toothpastes, shampoos, hair conditioners, and other foaming products. In addition, they are the components of various consumer products, such as beauty and personal care, cosmetics, sunscreens, herbicides, emulsifiers, and unsaturated polyester resins for coatings of materials, such as films, mirrors, and others.



Integrated Oxides and Derivatives (IODs) Value Chain

The chart below summarizes the value chain of IODs.



Products and Markets

The majority of our sales are in North America, except for those of MTBE, which are generated from markets in Mexico and South America as an additive mixture for benzene/gasoline to increase the octane level.

Purified ethylene oxide (PEO) is sold exclusively in the US merchant market. PEO is used as a chemical intermediate in the manufacturing of PEO derivatives such as ethanolamines, polyols, ethers and surfactants, which are in turn used in the manufacture of agricultural chemicals, rigid and flexible foams, cleaning solvents and the personal care and beauty care industries, respectively.

There are currently many pure merchant consumers of PEO in the United States and IVOG supplies many of these companies, a testimonial to our reliability and service excellence. IVOG has approximately 30% of the US merchant market share of PEO sales.

Monoethylene Glycol is used as feedstock in the production of PET and polyester fibers.

PO is consumed as the raw material of various consumer products, including polyurethane plastics, thermal insulator, solvents, preservatives in cosmetic, polyurethane resin for gravure ink, and cleaners.

Surfactants, LAB and Ethanolamines (EOAs) are used in the manufacture of hygiene products, including detergents, homecare products, soaps, toothpastes, shampoos, hair conditioners, and other foaming products. In addition, they are the components of various consumer products, such as beauty and personal care, cosmetics, sunscreen, herbicides, emulsifiers, and unsaturated polyester resins for coatings of materials, such as films, mirrors, and others.

In 2018, 2019 and 2020 37%, 33% and 17% respectively of our EO/EG was sold to the group and 63%, 67% and 83% respectively of our EO/EG was sold to third-party customers.

IOD's Competition

Following the incorporation of Integrated EO and PO Derivatives of Huntsman Corp, we established our positioning as the second largest EO manufacturer in the USA.

PEO Competition – Due to the hazardous nature of PEO, there are no imports or exports of PEO as a product. PEO derivatives, however, are open to import-export. IVOG competes in the US PEO market with global competitors, all of whom primarily produce PEO to support internal production of PEO derivatives and sell the balance of their capacity to the merchant market. Unlike all of our competitors, IVOG does not produce any PEO derivatives, which competes with our merchant customers' businesses.

Glycols Competition

The global market for MEG is highly competitive, involving a large number of producers located throughout the world. MEG is easy to transport and store. The shale gas revolution in the US has given its producers advantaged ethylene as a feedstock material ensuring the US is a low-cost region for MEG production. IVL's integration into MEG adds value to the US PET and polyester margin chain. The largest competitors in North America include Shell Chemical, MEGlobal, Equistar and Sabic, along with Pemex in Mexico. The US is a largely mature consumer of MEG with demand growth driven by new PET capacity and an opportunistic export arbitrage platform based on the advantaged North American ethylene costs associated with shale gas.

Integrated Oxides and Derivatives Production Facilities

The following table sets out the key figures for our olefins production facilities as of December 31, 2020:

Production Facility/ Location	Nameplate Capacity ('000 tons per annum)
IVOG – Clear Lake USA	495
IVOL - Lake Charles USA ⁽¹⁾	440
IVOX- USA, India and Australia ⁽¹⁾	2,972
Total	3,907

(1) Ethylene capacity of Lake Charles and Ethylene and EO Capacity of IVOX are almost captive.

5. Fibers Business

This segment includes all our offerings in the mobility (automotive and tires), personal hygiene and lifestyle domains. Each of these domains continue to grow at a rate of around 3-4% annually in normal market condition, offering the potential to become multi-billion dollar businesses individually. Growth in the fiber business comes as a result of trends towards light-weighting, use of sustainable materials, increasing attention being paid to personal hygiene and changes in the choice of personal wear, specifically by the younger generation.

Polyester Fibers and Yarns Business Overview

Polyester was discovered in the 1940s and has been manufactured on an industrial scale since 1947. Polyester fibers are the first choice for apparel and are used in trousers, skirts, dresses, suits, jackets, blouses and outdoor clothing.

Polyester fibers are produced by the melt spinning process. Raw materials are heated to a spinning mass, which is then pressed through spinnerets (similar to a sieve). Manufacturing techniques have developed to the point where they can produce round, oval or angular profiles, making them firm to the touch.

Polyester fibers are particularly resistant to light and weather, can withstand climatic effects, being as light or as fine as the weather demands, and have good moisture transport and dry quickly.

Polyester Fibers and Yarns Products

Polyester fibers are most commonly used for apparel, from sportswear to high fashion; home textiles, such as bedding and carpets; non-woven materials including surgical gowns; technical textiles such as filters, and automotive uses including carpets and insulation.

With the acquisition of Performance Fibers in China in 2015, IVL can produce polyester yarns and polyester fabrics that are used in tires and supplied to various world-class tire companies. With the

growth in demand, IVL is in the process of expanding production capacity by around 40% in China.

The acquisition of Glanzstoff in 2017 enhanced the offering of fibers in the automotive space with rayon fiber. Glanzstoff also makes composite fibers for the automotive sector. This acquisition enhances our strategic position in automotive fibers as we can now offer a suite of products to the same or similar group of customers.

DuraFiber in France and Mexico expanded the footprint of Performance Fibers in China as they produce similar products in the automotive fibers space.

In 2019, we completed the acquisition of the airbag yarns business in Germany and Mexico which provide an opportunity for IVL to further expand its portfolio in the airbag sector and become an integrated manufacturer of airbag yarns and textiles globally.

Furthermore, we completed the acquisition of a Polyester Staple Fiber business in Brazil, which provided an opportunity to establish a global footprint in South America's largest economy. We also acquired the specialty fibers business of Sinterama in four countries: Italy, Brazil, China and Bulgaria. Sinterama is vertically integrated from chips to yarns. It offers a vast range of colored polyester yarns for automotive, furnishing, apparel and technical applications.

In 2020, a new joint venture company by the name of Toyobo Indorama Advanced Fibers Company Limited ("TIAF") was formed. Toyobo has a long relationship with IVL and this new JV further strengthens this partnership, especially in the fast growing airbag market.



Polyolefin Fibers Business Overview

The fiber forming substance is any long-chain synthetic polymer composed of a weight of at least 85% ethylene, propylene, or other olefin unit. Italy began production of olefin fibers in 1957, followed by the United States in 1960. The first commercial producer of olefin fibers in the United States was Hercules, Inc., now known as FiberVisions and wholly-owned by IVL.

Polymer granules are usually fed into an extruder that melts the polymer which is then pumped through a spinneret. The filaments are cooled in an air stream before being wound on a package or collected in cans. Because the fibers are difficult to dye, colored pigments are often added to the polymer stream before extrusion to produce colored fibers.

Propylene, when polymerized, creates a crystalline polypropylene polymer. The fibers made with these polymers can be used in furnishings, apparel and industrial products. Olefin fibers provide warmth without much weight. Olefin is resistant to abrasions, stains, sunlight, fire and chemicals. It does not dye well, but has the advantage of being colorfast once pigments are added in the fibers. Since olefin fibers have a low melting point, they can be thermally bonded. One of the most important properties of olefin fibers is its strength, which can be tailored for different applications. It keeps its strength in wet or dry conditions. Olefin fibers can be multi or monofilament and staple, tow, or film yarns. The cross-section is usually round, but can be modified for different end uses.

Polyolefin Fibers Products

Uses include nonwoven fabrics for diapers, feminine care and adult incontinence products (as top sheets, back sheets, leg cuffs, elastic waistbands, and transfer layers); in spun laced nonwoven products such as medical disposable textiles, filtration products or in air-laid nonwoven structures as absorbent cores, and wet wipes.

In terms of apparel, olefin fibers are used in sports and active wear, socks, thermal underwear and as lining fabrics, while in the home they are often used independently or in blends for indoor and outdoor carpets, carpet tiles and carpet backing. The fiber can also be used in upholstery, draperies, wall coverings, slipcovers, and floor coverings as well as heat-sealable paper for use in cases such as tea and coffee-bags.

In heavier applications, the fibers are often used for interior fabrics, sun visors, arm rests, door and side panels, and trunk and parcel shelves, while olefins can be created into carpets, ropes, and geo-textiles that are in contact with the soil, filter fabrics, bagging and concrete reinforcements.

Bicomponent Fibers Business Overview

Bicomponent fibers may be defined as “extruding two polymers from the same spinneret with both polymers contained within the same filament.” A close relative is “co-spun fiber,” which is a group

of filaments of different polymers, but with a single component per filament spun from the same spinneret. The term “conjugate fibers” is often used, particularly in Asia, as synonymous with bicomponent fibers. The main objective of producing bicomponent fibers is to exploit capabilities not existing in either polymer alone. Bicomponent fibers are commonly classified by their fiber cross-section structures as side-by-side, sheath-core, islands-in-the-sea and citrus fibers or segmented-pie cross-section types. Bicomponent fibers made of polyethylene sheath and polypropylene core are important fibers for the nonwoven fabric market.

Worsted Wool Yarns Business Overview

The term worsted is derived from Worsted, a village in the English county of Norfolk. Worsted wool fabric is typically used in the making of tailored garments such as suits, as opposed to woolen wool, which is used for knitted items such as sweaters. The essential feature of worsted yarn is its straight, parallel fibers. Worsteds differ from woolens, in that the natural crimp of the wool fiber is removed in the process of spinning the yarn. IVL produces wool from Merino sheep. These sheep are sought after for their coats, which are said to produce the finest, softest wool available.

While many forms of wool require that the fiber undergo a spinning process, the production of worsted wool follows a slightly different path. Rather than going directly into a spinning process, the wool is first combed in a carding process. This is where the fibers are separated and prepared for spinning to remove any short and brittle fibers from the wool, leaving only the longer strands of fiber to undergo the spinning process, producing a smooth yarn that possesses a higher durability. Owing to the strength of worsted wool, the fibers can be woven into a finer material that is more crease resistant than many other fabric choices making it an ideal choice for garments that need to hold their shape. Worsted wool has been a popular choice for men's trousers, pleated skirts for women, and both men's suits and sports jackets. Because worsted wool is so durable, it wears very well and drapes easily, making it an ideal fabric for all sorts of garments.

Worsted Wool Yarns Products

Worsted wool produced by Indorama Ventures is used in high-end suiting for both men and women.

Nylon 6.6 Tire Cord Yarns Business Overview

With the acquisition of PHP Fibers GmbH and its subsidiaries (“PHP”), IVL holds 80% of PHP while the remaining 20% is held by Toyobo Co., Ltd., a leading Japanese manufacturer of high function products, including among others, automotive products.

PHP is a globally recognized manufacturer of branded high-tenacity polyamide nylon 6.6 yarns and is one of the leading suppliers in Europe for the automotive safety supply chain. PHP Group's production facilities are located in the United States, Europe and China.



The acquisition of PHP significantly enhances our High Value-Added (HVA) product portfolio with the addition of high performance automotive and industrial products.

Nylon 6.6 Tire Cord Yarns Products

These yarns are extensively used in air bags and tire cords in the automotive sector.

Fibers Products and Markets

Our main customers for fiber and yarn products are companies producing textiles for apparel, fast moving consumer goods companies in hygiene, companies producing home textiles and industrial companies such as automotive companies and packaging film producers.

Fibers Competition

Competition in the global fibers and yarns industry is characterized by the presence of large diversified industrial companies, as well as a large number of relatively small niche players with a capacity of sometimes less than 10,000 tons per annum. Larger fiber producers usually focus on high-volume standard fibers for sale in domestic markets where the level of competition is high and predominantly based on price and, to a lesser degree, on consistency of product quality. The larger polyester producers of commodity polyester products continue to focus on increasing their production of non-commodity products. They comprise approximately half of

our total output. China dominates polyester production and has many companies involved in this business, while there are a few companies in Korea, China, Turkey, and in western markets which compete with our specialized fibers and yarns.

Fibers Production Facilities

The following table describes our fibers and yarns production facilities as of December 31, 2020:

Production Facilities/ Location	Nameplate Capacity⁽¹⁾ ('000 tons per annum)
China	122
Europe	458
Indonesia	414
Middle East and Africa	35
Americas	324
India	533
Thailand	296
Total	2,182

⁽¹⁾ The capacity of plants has been re-rated to reflect the de-bottlenecking projects taken-up by various plants from time-to-time. However, the capacity does not include a non-operating site: IVL Karawang.

Management Discussion and Analysis (MD&A)

The following MD&A should be read in conjunction with our consolidated financial statements. It includes forward-looking statements reflecting our current views with respect to future events and future performance. Thus, a number of factors could cause actual results or outcomes to differ materially from those expressed in any forward-looking statement as described in our Risk Factors and statements appearing elsewhere.

2020 Executive Summary

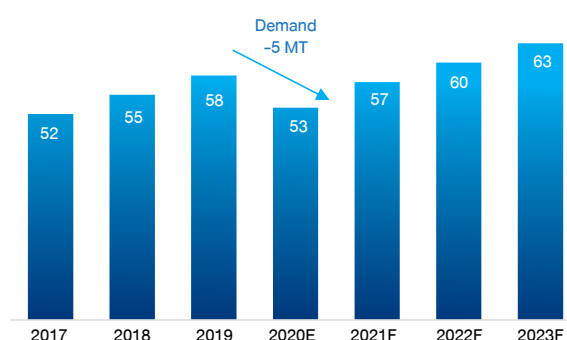
2020 Performance

- Full year sales volumes grew 18% to 14.08 million tons.
- Full year core EBITDA declined 3% to US\$1.11B.
- Full year operating cash flow grew 6% to US\$1.39B.
- Total capex of US\$2.6B in 2020 including Spindletop (IVOX), funded by US\$0.7B from operating cash flow and US\$1.9B from new debt.

Global Polyester Fibers Demand (MT)

Impact from decline in polyester demand

-2MT	-4MT	-3MT
MEG	PTA	PX



IVL experienced a challenging 2020 on account of the COVID-19 pandemic, as well as the collapse in the price of crude oil. The major impacts were the following:

- COVID-19 related reduction in polyester fiber demand of 9% from 2019, resulting in a 47% drop in PX/PTA spreads across the industry and a 20% drop in MEG spreads.
- Drop in crude oil price to US\$42/bbl resulting in a 37% decline in the shale gas advantage from 2019, having a material impact on our MTBE and MEG businesses.
- The COVID-19 lockdown and uncertainty resulted in reduced light vehicle sales globally, impacting our Mobility fibers group with 10% lower sales volumes compared to 2019.

While challenging in the very short-term, 2020 was a reassuring year for IVL, showing that we were able to withstand the impacts with no structural damage to any of our businesses and likely a boost for our PET and Hygiene verticals due to health and safety concerns. Bolstered by a strengthened **Platform**, empowered **People**, and advanced **Systems**, we emerge from 2020 with renewed confidence in our company.

Platform

2020 stress tested our businesses, proving that we have created a portfolio that is resilient, sustainable and positioned for growth. Amidst challenges, IVL delivered record sales volume of 14.08 million tons, against 11.91 million tons in 2019 (growth of 18% overall and 5% excluding IVOX).

Fibers

	2020	2019	2020 YoY%
Lifestyle			
Sales Volume (MMt)	1.04	1.01	4%
Core EBITDA (US\$m)	56	62	(10)%
Core EBITDA/t	58	64	(10)%
Mobility			
Sales Volume (MMt)	0.20	0.23	(10)%
Core EBITDA (US\$m)	18	70	(74)%
Core EBITDA/t	91	271	(66)%
Hygiene			
Sales Volume (MMt)	0.40	0.38	4%
Core EBITDA (US\$m)	121	90	35%
Core EBITDA/t	309	234	32%

*Core EBITDA/t calculation is based on production

COVID-19 had a mixed impact on the Fibers segment, resulting in an overall US\$27M drop in core EBITDA (US\$195M vs US\$222M) as compared with 2019. The pandemic resulted in a sharp decline in 2Q20 with a gradual recovery in demand by year-end in our Mobility and Lifestyle verticals due to reduced car sales and closure of retail outlets leading to a severe drop in polyester fiber demand. The Hygiene vertical was unexpectedly boosted by COVID-19 related demand for masks, wipes and PPE. This diversified portfolio partially hedged Fibers against the impact of COVID-19. Our Fiber

segment's leadership team prudently managed working capital and fixed costs through the period, resulting in stable ROCE and EBITDA margins, consistent with 2019.

By the end of 2020, the Mobility and Lifestyle verticals recovered close to pre-COVID levels, showing continuous improvements in operating rates.

Volumes for the Hygiene vertical remained strong through the year, our annual core EBITDA was up 35% but unevenly between quarters impacted by lag pricing from rapidly rising polypropylene prices. The negative lag will continue into 1Q21, inflated by the current freezing conditions affecting the US Gulf Coast. Petchem supply and shortages are expected to peak in 1Q21.

In 2020, as part of our five strategic priorities announced last year, we initiated a deep dive review, the "Fibers Full Potential Plan" which has delivered US\$42M in savings, 26% above target. Going forward, our full focus will be on realizing the initiatives from this transformation plan which are projected to lift our ROCE to double digits in 2023. There has been an important emphasis on leadership reorganization to respond with agility to external trends, invest in game-changing innovations, and focus on organic growth across the three Fiber verticals.

Combined PET

		2020	2019	2020 YoY%
PET	Sales Volume (MMt)	4.90	4.57	7%
	Core EBITDA (US\$m)	480	470	2%
PX/PTA	Sales Volume (MMt)	4.24	4.19	1%
	Core EBITDA (US\$m)	134	261	(49)%
Recycling	Sales Volume (MMt)	0.25	0.20	22%
	Core EBITDA (US\$m)	28	23	21%
Packaging	Sales Volume (MMt)	0.21	0.21	3%
	Core EBITDA (US\$m)	80	71	13%
Specialty chemicals	Sales Volume (MMt)	0.75	0.69	8%
	Core EBITDA (US\$m)	71	40	76%
Combined PET	Sales Volume (MMt)	10.35	9.86	5%
	Core EBITDA (US\$m)	794	866	(8)%

This segment achieved core EBITDA of US\$794M in 2020, compared with US\$866M in 2019. Our volumes were up 5% and our PET, Packaging and Specialty businesses delivered improved core EBITDA over 2019. Nevertheless, the steep drop in crude oil prices and polyester fiber consumption negatively impacted our segment earnings. The current up-trend in crude prices and polyester demand is anticipated to positively impact our product premiums and raw material discounts in 2021.

Key headwinds in 2020 were:

1. Compression of PTA industry margins as a result of the decline in polyester fiber demand.

- Crude-linked drop in product prices, impacting import parity into western markets for PET and lowered absolute discounts on PX procurement, leading to a narrowing of the PTA spreads over and above the significant drop in industry spreads.

On the other hand, PET demand was robust in 2020, with IVL achieving 7% YoY growth in PET sales volumes, primarily from increased demand in thermoforming for packaged food and large format bottles for home consumption. Additionally, despite a low virgin PET environment, our recycled PET business grew, reflecting strong commitments from customers towards circularity.

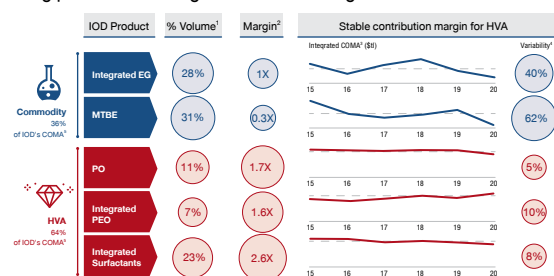
In spite of all of these challenges, as part of our cost transformation initiatives, we delivered US\$41M in savings in 2020, exceeding our target by US\$14M in this segment. During 2020, our combined PET leadership has been strongly aligned within the regions with empowered teams who carefully managed working capital and fixed costs through the period, resulting in stable ROCE and increased EBITDA margins, over 2019.

To thrive in the shifting market landscape, our strategic priorities are to further improve our cost competitiveness, improve advocacy on sustainability of PET, and grow our recycling, packaging and specialty chemicals businesses.

Our expansion plans for rPET (bottle flakes) and downstream rPET are well on track towards our 750KT commitment to the Ellen Macarthur Foundation. Our 2023 business plan envisages organic growth of 2 MMT of volume in combined PET *excluding our JV in Corpus Christi in the United State*.

Integrated Oxides and Derivatives (IOD)

Strong portfolio mix - higher & resilient margins for HVA



The IOD segment achieved core EBITDA of US\$105M in 2020, compared with US\$75M in 2019, with growth coming primarily from the acquisition of IVOX in January 2020 and the startup of the IVOL ethylene cracker. IOD has seen a series of unprecedented external events during 2020, however, no structural damage to our industry was observed as we saw resilience in our HVA portfolio while commodity margins are recovering well in 2021 with the return of the shale gas advantage over crude. On a positive note, the PO/MTBE planned turnaround in 1Q20 was completed on time

and within cost and we are suitably impressed with the talented and skilled leadership we have gained through the Spindletop acquisition who have integrated well with our existing leadership. This leadership faced and resolved several natural disasters of historic magnitude that have impacted our operations on the Gulf Coast of the United States, while maintaining COVID-19 safety at the forefront. The combined leadership bring to our IOD segment extensive expertise, with strong competencies to navigate the challenges ahead of us, as well as driving the growth potential of the segment.

The global MEG industry was hit by a number of negative effects in 2020; the crude-linked drop in the MEG benchmark ASP price, COVID-led reduction in MEG demand from both polyester fiber and antifreeze, and new capacities of MEG. IVL's ethane-based MEG production was affected by the erosion of the US shale gas advantage over naphtha, resulting in compressed margins. Additionally, the low demand and increased capacities led to higher discounts to customers. We believe that the overcapacity will take 2-3 years to balance and the benchmark margin recovery from currently unsustainable levels will be dependent on producer discipline. The erosion of the shale gas advantage and weather-related production issues at our cracker in Louisiana has negatively impacted our premise of overall integration benefits. As we see oil recovering, ethylene margins will improve and IVL will benefit from the full integration of ethane to MEG, returning positive ROCE.

An added benefit that IVL's MEG business receives is a 20% tolling component that enjoys steady margins, unaffected by industry margins and changes in discounts.

On a similar trend as MEG, MTBE EBITDA significantly declined in 2020, impacted by the COVID-19 related contraction of global MTBE demand. IVL MTBE volume was low due to a planned maintenance shutdown in 1Q20 and Hurricane Laura in 3Q20. Our MTBE margin squeeze was the result of global demand as well as the erosion of the shale gas advantage. We expect a gradual improvement of MTBE prices in 2021 with the return of travel and the driving season giving positive ROCE supported by improving shale gas economics against crude oil-based producers.

As we would expect in our HVA portfolio, our Propylene Oxide (PO), Purified Ethylene Oxide (PEO) and Surfactant businesses were stable in volumes and in margins and were the key contributors to the IOD segment earnings as they operate on a raw material pass-through mechanism.

In 2020, IVL successfully integrated 1,250+ employees from Spindletop and created a "Global One Team" for the IOD segment. More than 50% of the Transfer Service Agreement with Huntsman was completed and executed faster than originally planned. IVL integrated the IOD supply chains, leveraging procurement across the Company.

Going forward, we anticipate significant performance improvements in this business based on a widely expected market recovery and our comprehensive “Project Olympus” initiatives. In parallel, we are exploring multiple opportunities to harness IOD’s value and growth potential by creating value in adjacency, product line expansion and technology licensing.

People

The management team has used 2020 to “prepare for growth” by re-organizing the business and building strong leadership teams at every vertical. We now have 16 independent business teams, sitting within our three business segments, operating with accountability and agility. We are positioning the organization around a sound set of goals that empower our people to make good decisions quickly, preparing the company for the next era of growth.

Systems

To unlock the full potential of IVL and help our people with various tools to organize themselves to perform better, we have developed a pan-IVL operating system, on our journey towards establishing institutional excellence and efficiency. The cornerstone for operational excellence lies in the successful implementation of companywide one ERP, i.e. SAP S/4HANA, for which we are progressing well and on track. In addition to ERP, we are further enabling our teams with various support systems, such as shared services and centers of excellence.

Project Olympus

Execution of the company’s cost saving and business transformation project, called “Project Olympus,” is off to a strong start as IVL is ahead of the first year’s plan by 21%+ in cost savings. Encouraged by the internal assessment and outperformance, we have increased our Project Olympus ambition to deliver US\$610M in extra EBITDA on an annual basis by 2023 over 2019 (vs. US\$352M announced last year), comprised of 2,400+ Cost Transformation and Business Full Potential initiatives.

Corporate Strength and Strong Liquidity

IVL is well-positioned with operating cash flow of US\$1.39B in 2020 and liquidity of around US\$2.6B in December 2020. On a pro-forma basis, IVL’s operating debt improved at the end of 2020 over 2019, our interest rates decreased and we locked in 70% of debts at these historic low rates. We anticipate using our free cash flow for 2021 in strategic projects (including recycling growth), paying down debts, improving shareholder’s returns and our ROCE.

Capex

Total capex spending in 2020 of US\$2.6B includes maintenance capex of US\$326M. The acquisition of IVOX in January 2020 resulted in higher capex growth during the year. Our expected maintenance capex for 2021 and onwards is around US\$300-350M per year.



2020 Summary Financials

Table 1: Core Financials of Consolidated Business

US\$million (except where stated otherwise)	2020	2019	Change %
Production Volume (MMT)	13.72	12.34	11%
Consolidated Revenue ¹	10,594	11,361	(7)%
Core EBITDA^{2,3}	1,114	1,147	(3)%
Combined PET	794	866	(8)%
Integrated Oxides and Derivatives	105	75	40%
Fibers	195	222	(12)%
Core EBIT	459	598	(23)%
Core Net Profit after Tax and NCI⁴	205	387	(47)%
Core Net Profit after Tax and NCI (THB m)	6,430	12,002	(46)%
Core EPS after PERP Interest (THB)	1.01	1.96	(0.95)
Core EBITDA/T (US\$)	81	93	(13)%
Operating Cash Flow⁵	1,388	1,316	6%
Net Operating Debt to Equity (times)⁶	1.24	1.30	6bps

* Integrated Oxides and Derivatives was previously called Olefins. The new nomenclature better reflects our sector following the consolidation of Spindletop assets.

** Combined PET includes Integrated PET, Specialty Chemicals and Packaging.

¹ Consolidated financials are based on elimination of intra-company or intra-business segment transactions.

² Total of each segment may not always tally with consolidated financials due to holding segment.

³ Core EBITDA is Reported EBITDA less Inventory gains/(losses)

⁴ Core Net Profit is Reported Net Profit less Inventory gains/(losses) and one-time extraordinary items.

⁵ Operating Cash Flow is after changes in net working capital and cash tax, before maintenance capex.

⁶ Net operating debt of 2019 includes capex/acquisition of IVOL and Spindletop as they started/acquired in Jan20 itself.

Our view of IVL businesses in 2021:

As 2020 progressed, it became clear that the impact of the crude oil price collapse and COVID-19 on our industries was temporary, rather than structural in nature. With 123 operating sites in 33 countries, we are well-positioned to reap the benefits from consumption recovery in 2021 in all three segments and the various businesses therein.

Fibers:

- Our Lifestyle fibers vertical has seen a strong recovery at the end of 2020. As vaccines rollout and main street opens up, we expect a strong rebound in polyester fiber demand coming from the replenishment of pipeline inventory to support pent-up consumer demand.
- Our acquisition of Fiber assets in India is expected to perform better with higher fiber demand and operational excellence initiatives taken post-acquisition.
- Mobility fibers demand improved at the end of 2020 and is expected to improve further in 2021 as passenger vehicle sales should see a positive move to personal travel modes.
- Hygiene fibers demand is expected to remain strong due to consumers heightened sensitivity to safety.

- Polypropylene (PP) prices should peak in 1Q21, creating a positive lag in 2Q21. The freezing US Gulf Coast has created a shortage of PP supply and tightness in Hygiene fibers. IVL is substantially covered and therefore could see overall improvement in 1H21.

Combined PET:

- The increase in the price of crude oil will positively impact our PET premiums and result in positive inventory valuation gains.
- We see robust demand for PET and tightness in the market (similarly for Polyester fiber), which will be positive for spreads across our value chain of PX, PTA and MEG. Increased prices of feedstocks from crude oil are expected to be a pass through for Combined PET.
- Higher freight costs from Asia to Europe and Americas increases the landed cost (import parity) into these net importing western countries. As a global domestic producer, IVL will benefit being a domestic producer in these markets.
- PIA spreads improved with higher demand for PET and recovery in other applications like coatings. We are confident in our Specialty PET and NDC earnings from higher production.

- The push in circularity helps our rPET and rFIBER volumes which are being expanded both organically and through M&A.
- The key risks to our Combined PET segment are due to unforeseen production or weather-related delays.
- Overall, we anticipate volume growth to meet robust demand.

IOD:

- Recent months have seen a continuous improvement in the price of crude oil, gasoline demand, and MEG demand; further recovery is expected in 2021.
- The higher crude oil price is improving the MEG benchmark price and the US shale gas advantage, widening MEG spreads. Our integration into Ethylene allows us to capture the shale advantage. Crack margins have recovered since 4Q20 driven by strong derivatives demand and the higher crude oil price.
- On an integrated basis, IVL's EG portfolio stands to benefit and this should be reflected in our earnings as the IVOL cracker comes back online in June 2021.
- Following the successful rollout of COVID-19 vaccines, we anticipate improved gasoline demand through increased mobility and the upcoming driving season. MTBE is anticipated to benefit from the improved shale gas advantage over naphtha as well as the improvement in demand.
- Our HVA businesses in IOD such as Propylene Oxide, Integrated Surfactants and PEO is expected to continue to provide the segment with resilient earnings.
- The key risk to our earnings is weather-related as we have experienced to date, but we are confident in our management to minimize the impacts.

Business Segments Definitions

IVL now categorizes its businesses in three segments. This section of the document will discuss the performance of these three segments.

Combined PET	Integrated PET	Full PET value chain PX (Paraxylene), PTA (Purified terephthalic acid), PET (Polyethylene terephthalate), and Recycling
	Specialty Chemicals	Specialty PET-related chemicals (for medical, premium bottles, films and sheets); PIA (Purified Isophthalic Acid, for PET production, unsaturated polyester resins and coatings); NDC (Naphthalene Dicarboxylate, for optical displays and industrial/mobility uses)
	Packaging	PET preforms and packaging (e.g. bottles) for beverage and food end uses
Integrated Oxides and Derivatives	Includes Integrated EG, Integrated Purified EO, PO/MTBE and Integrated Surfactants including EOA, LAB and others	
Fibers	Polyester, Rayon, Nylon, Polypropylene, composites and worsted wool fibers, for three end-use segments: Mobility (automotive parts e.g. airbags, tires, seatbelts), Lifestyle (apparel, active wear), and Hygiene (diapers, feminine care)	



Performance Highlights

Table 2: Segment Results

US\$million (except where stated otherwise)	2020	2019	Change %
Production Volume (MMT)	13.72	12.34	11%
Combined PET	10.17	10.31	(1)%
Integrated PET	9.27	9.36	(1)%
Packaging	0.20	0.21	(4)%
Specialty Chemicals	0.70	0.74	(5)%
Integrated Oxides and Derivatives	1.98	0.41	380%
Fibers	1.57	1.61	(3)%
Operating rate (%)	79%	85%	(6)%
Combined PET	82%	86%	(4)%
Integrated PET	83%	88%	(6)%
Packaging	73%	76%	(4)%
Specialty Chemicals	74%	69%	8%
Integrated Oxides and Derivatives	75%	75%	0%
Fibers	72%	83%	(13)%
Consolidated Revenue^{1,2}	10,594	11,361	(7)%
Combined PET	6,783	8,536	(21)%
Integrated PET	5,918	7,620	(22)%
Packaging	302	335	(10)%
Specialty Chemicals	892	954	(6)%
Integrated Oxides and Derivatives	1,552	293	429%
Fibers	2,696	3,153	(15)%
Core EBITDA³	1,114	1,147	(3)%
Combined PET	794	866	(8)%
Integrated Oxides and Derivatives	105	75	40%
Fibers	195	222	(12)%
Core EBITDA Margin (%)	11%	10%	0 ppt.
Combined PET	12%	10%	2 ppt.
Integrated Oxides and Derivatives	7%	25%	(19) ppt.
Fibers	7%	7%	0 ppt.
Core ROCE%	5%	8%	(3) ppt.
Combined PET	13%	13%	0 ppt.
Integrated Oxides and Derivatives	(4)%	5%	(9) ppt.
Fibers	1%	1%	0 ppt.

¹ Consolidated financials are based on elimination of intra-company or intra-business segment transactions.

² Total of each segment may not always tally with consolidated financials due to elimination of Intra-company.

³ Core EBITDA is Reported EBITDA less Inventory gains/(losses)

Capital Expenditure Program

IVL expects its balance sheet and cash flow from operations to remain strong, and sufficient to meet its planned investments in future growth opportunities.

Table 3: Major Projects Update and Recycling Growth Plan

Project	Business	Expected Completion	Total Installed Capacity (KT)	Earnings & Returns	Capex in US\$M
Olympus Cost Transformation Program	Corporate and all business segments	2021-2023	n/a	EBITDA ~US\$600M	~600
Corpus Christi PET/PTA	Integrated PET	2024	PET: 367 kta PTA: 433 kta	Double digit ROCE	~700 (till Dec'20: 421)
Recycling projects	PET recycling	2021-2023	~600kta	ROCE 13-15%	~400

¹ Spindletop assets' acquisition completed on 3rd January 2020, total paid US\$2 billion

² Gas Cracker (IVOL) commercial startup on 31st January 2020, total capex ~US\$1 billion

Accounting Policy

The accounting policies are adopted and applied consistently to all of the periods. For more information on key accounting policies, please refer to Note numbers 3 and 4 of our full-year 2020 audited financial statements.

Emphasis of Matters in the Auditors Opinion

The auditor has drawn attention to the consolidated financial statements to Note 6, that the materiality of the transaction and the

significant judgement and complexities involved in determining the fair value of identifiable assets acquired and liabilities assumed. Note 15 that the materiality of the balances and the significant judgement and complexities involved in determining the future cash flows attributable to the CGUs, and Note 18 that, the materiality of the balances and the significant judgement and complexities involved in determining the future cash flows attributable to the individual CGU to which goodwill belongs. The opinion is not modified in respect of this matter.



Performance Comparison

Revenue from the sale of goods

THB in millions	FY 2019	FY 2020	Change (%)
Revenue from the sale of goods	352,692.4	331,512.9	(6.0)%
Add: Eliminations	30,863.7	23,976.4	(22.3)%
Adjusted revenue from the sale of goods	383,556.2	355,489.3	(7.3)%
Integrated PET	236,358.4	185,197.1	(21.6)%
Packaging	10,403.5	9,462.7	(9.0)%
Specialty Chemicals	29,804.3	27,919.1	(6.3)%
Integrated Oxides and Derivatives	9,099.5	48,552.8	433.6%
Fibers	97,890.5	84,357.7	(13.8)%

Sales revenue for the year ended 2020 was THB 331,512.9 million, a decrease of 6.0% from 2019, while the sales volume grew 18.2% from 2019. The decrease in sales revenue is the result of the steep drop in the crude oil price in 2020 which affected crude-linked product prices to drop.

Integrated PET Revenue

Integrated PET revenue for the year ended 2020 was THB 185,197.1 million, a decrease of THB 51,161.4 million, or 21.6% from 2019, mainly driven by the drop in the crude oil price that strongly affected the PTA product price despite the increase in sales volumes by 4.8%.

Packaging Revenue

Packaging revenue for the year ended 2020 was THB 9,462.7 million, a decrease of THB 940.8 million, or 9.0% from 2019, driven by the negative impact from the drop in the crude oil price despite the increase in sales volumes by 2.6%.

Specialty Chemicals Revenue

Specialty Chemicals revenue for the year ended 2020 was THB 27,919.1 million, a decrease of THB 1,885.2 million or 6.3% from 2019, driven by the negative impact from the COVID-19 pandemic despite the increase in sales volumes by 8.3%.

Integrated Oxides and Derivatives Revenue

Integrated Oxides and Derivatives revenue for the year ended 2020 was THB 48,552.8 million, an increase of THB 39,453.3 million, or 433.6% from 2019, driven by the increased sales volume which grew by 374.9%. The higher volume contributions were from the acquisition of IVOX in January 2020.

Fibers Revenue

Fibers revenue for the year ended 2020 was THB 84,357.7 million, a decrease of THB 13,532.8 million, or 13.8% from 2019, driven by the impact from the COVID-19 lockdown and uncertainty that caused less light vehicle sales globally and the closure of retail outlets leading to a severe drop in polyester fiber demand, impacting our Mobility and Lifestyle group. However, sales volumes grew by 1.6%.

Cost of Sales of Goods

THB in millions	FY 2019	FY 2020	Change (%)
Cost of sales of goods	295,054.6	270,055.0	(8.5)%
As a percentage of total revenues	83.7%	81.5%	

Our cost of sales for the year ended 2020 was THB 270,055.0 million, a decrease of THB 24,999.6 million, or 8.5% from 2019 which is in-line with the decrease in sales revenue.

Gross Profit

THB in millions	FY 2019	FY 2020	Change (%)
Gross profit	57,637.8	61,457.9	6.6%
As a percentage of total revenues	16.3%	18.5%	

Gross profit for the year ended 2020 was THB 61,457.9 million, an increase of THB 3,820.1 million or 6.6% from 2019. The gross profit margin of 18.5% in 2020 increased from the prior year mainly due to the acquisition of IVOX in January 2020, of which the product portfolio has higher margins, adding to IVL's existing product portfolios. However, lower spreads in the existing business of Integrated PET can be seen in the table below on industry spreads.

Spread or Raw Material Margins*

Amount in US\$ per MT	FY 2019	FY 2020
Industry spread		
Asia Integrated PET	243	206
West Integrated PET	439	404

*Selling price less raw material consumption

Our actual geographic capacity mix also impacts our margin when compared with the industry.

Earnings before Interest Expenses, Income Taxes, Depreciation & Amortization (EBITDA)

THB in millions	FY 2019	FY 2020	Change (%)
EBITDA⁽¹⁾	28,913.5	29,423.9	1.8%
Add: Inventory loss/(gain) ⁽²⁾	6,689.1	5,422.9	
CORE EBITDA	35,602.6	34,846.9	(2.1)%
As a percentage of total revenues	10.1%	10.5%	
Add: Eliminations and others ⁽³⁾	492.1	(621.9)	
Adjusted CORE EBITDA	36,094.7	34,225.0	(5.2)%
Integrated PET	23,408.9	20,085.4	(14.2)%
As a percentage of total Integrated PET revenue	9.9%	10.8%	
Packaging	2,219.3	2,518.8	13.5%
As a percentage of total Packaging revenue	21.3%	26.6%	
Specialty Chemicals	1,255.2	2,232.1	77.8%
As a percentage of total Specialty Chemicals revenue	4.2%	8.0%	
Integrated Oxides and Derivatives	2,320.2	3,280.4	41.4%
As a percentage of total Integrated Oxides and Derivatives revenue	25.5%	6.8%	
Fibers	6,891.1	6,108.3	(11.4)%
As a percentage of total Fibers revenue	7.0%	7.2%	

⁽¹⁾ EBITDA is calculated from sales revenue adding net foreign exchange gain (loss) and other income, then deducting cost of sales, selling & administrative expenses (excludes depreciation & amortization), management benefits expenses, and adjusting by extraordinary items. Excluding Feedstock price adjustments for captive sales to PET on freight savings. There are no impacts on regional or consolidated EBITDA.

⁽²⁾ Inventory gains (losses) are the gains or losses on the inventories that IVL carries every month, due to the movement in the prices of finished products and raw materials following market movements.

⁽³⁾ Eliminations and others include the amounts attributable to intra-group transactions and the EBITDA of holding companies.

Core EBITDA for the year ended 2020 was THB 34,846.9 million, a decrease of THB 755.8 million or 2.1%, mainly on account of the COVID-19 pandemic, as well as the crude oil price collapse, combined with a chain of natural calamities.

Integrated PET Core EBITDA

Integrated PET Core EBITDA for the year ended 2020 was THB 20,085.4 million, a decrease of THB 3,323.6 million, or 14.2% from 2019, driven by the COVID-19 related reduction in polyester fiber demand, resulting in a steep drop in PX/PTA spreads across the industry along with lowered absolute discounts on PX procurement, leading to narrowing of the PTA spreads over and above the significant drop in Industry spreads. In addition, the crude-linked drop in product prices also impacted import parity into western markets for PET.

Packaging Core EBITDA

Packaging Core EBITDA for the year ended 2020 was THB 2,518.8 million, an increase of THB 299.5 million, or 13.5% from 2019, driven by a full-year operation of Bevpak (acquired in October 2019).

Specialty Chemicals Core EBITDA

Specialty Chemicals Core EBITDA for 2020 was THB 2,232.1 million, an increase of THB 977.0 million, or 77.8% from 2019.

This was driven mainly by the recovery of PIA industry spreads and improved volumes in NDC.

Integrated Oxides and Derivatives Core EBITDA

Integrated Oxides and Derivatives Core EBITDA for the year ended 2020 was THB 3,280.4 million, an increase of THB 960.3 million, or 41.4% from 2019, driven by the acquisition of IVOX and the startup of the IVOL ethylene cracker in January 2020. However, the Integrated Oxides & Derivatives segment of IVL was adversely impacted due to the steeply lower crude oil price impacting margins of MEG and MTBE as shale gas lost its advantage against naphtha-based producers. Moreover, IVL realized a loss from several natural disasters of historic magnitude that impacted our operations on the Gulf Coast of the United States and 2020 performance. The damage is covered under comprehensive insurance coverage including loss of profit.

Fibers Core EBITDA

Fibers Core EBITDA for the year ended 2020 was THB 6,108.3 million, a decrease of THB 782.9 million, or 11.4% from 2019. This resulted from the fact that the Mobility & Lifestyle Fibers segment was severely impacted due to lockdowns, less consumer spending on durables and travel restrictions. However, Hygiene Fibers remains strong in demand & margins with its essentials nature of applications in the time of the pandemic.

Other Revenues

THB in millions	FY 2019	FY 2020	Change (%)
Interest income	183.2	192.0	4.8%
Net foreign exchange gain/(loss)	(296.1)	119.7	
Gain on a bargain purchase	805.5	1,806.4	124.3%
Other income	2,183.7	3,031.5	38.8%
Total	2,876.2	5,149.6	79.0%

Interest Income

Interest income for the year ended 2020 was THB 192.0 million, an increase of THB 8.9 million, or 4.8% from 2019. This was mainly due to an increase in current investments during the year.

Net Foreign Exchange Gain/(Loss)

There was a net foreign exchange gain for 2020 of THB 119.7 million which equals to 0.0% of net revenue. Currency volatilities

are also hedged in a natural way due to our global presence, for example, US\$ assets are hedged naturally against US\$ liabilities.

Gains on Bargain Purchases

In 2020, IVL acquired several businesses where the excess of the Group's interest in the net identified assets and liabilities of the companies acquired over cost (recognized values are higher than the consideration transferred) are considered to be gains on bargain purchases, and recognized in the consolidated statement of income in accordance with generally accepted accounting principles for business combinations. A valuation of net identified assets acquired and liabilities assumed is calculated every time to arrive at recognized values. Fair value adjustments are the difference between the carrying amount and the recognized value. In 2020, IVL had gains on bargain purchases of THB 1,806.4 million. The following details are provided:

THB in millions	Net identified assets acquired and liabilities assumed				
	Interest acquired (%)	Recognized values	Total Consideration	Gain on a bargain purchase	Goodwill
Companies acquired during the year ended December 31, 2019					
M&G Fibras Brasil Ltda., Brazil	100%	984.8	870.3	114.4	-
UTT Beteiligungsgesellschaft mbH, Germany	100%	2,833.1	2,325.9	507.1	-
INVISTA Resins & Fibers GmbH, Germany	100%	1,323.2	1,139.2	183.9	-
IVL Dhunseri Petrochem Industries Private Limited, India	50%	2,721.3	3,309.3	-	588.0
Custom Polymers PET, LLC, USA	100%	874.4	954.7	-	80.3
Indo Rama Synthetics (India) Limited, India	39%	1,578.9	1,672.2	-	93.3
Bevpak (Nigeria) Limited, Nigeria	100%	(110.8)	22.0	-	132.8
Sinterama S.p.A. and its subsidiaries, Italy, Brazil, China and Bulgaria	100%	1,775.2	1,797.7	-	22.5
Green Fiber International Inc., USA	100%	521.9	746.1	-	224.2
				805.5	1,141.1
Companies acquired during the year ended December 31, 2020					
Huntsman Corporation, USA	100%	60,922.5	59,116.1	1,806.4	-
AG Resinas Ltda., Brazil	100%	215.9	291.0	-	75.0
Industrie Maurizio Peruzzo Polowat spółka z ograniczoną odpowiedzialnością, Poland	100%	437.5	465.3	-	27.9
				1,806.4	102.9

A gain on a bargain purchase is considered by management as an extraordinary item which does not arise from the normal operations of the business, but is included in the net profit of the Company. Additional information on each acquisition is provided in Note 6 – Acquisitions of Businesses in the Audited Financial Statements. Net identifiable assets acquired, including intangible assets, i.e. customer contracts, technology licenses and know-how, trade names and trademarks, were all recognized in the financial statements at fair value, and subject to depreciation, amortization or impairment (if any) in accordance with generally accepted accounting principles, as disclosed in Note 4 – Significant Accounting Policies in the Audited Financial Statements.

IVL's management expertise and business model allows us to buy companies most of the time at below their fair value as determined by an appraiser. We, therefore, need to record the gain on bargain purchases. These gains are recorded under property plant & equipment or intangibles or other assets, as applicable.

Other Income

Other income for the year ended 2020 was THB 3,031.5 million, an increase of THB 847.8 million, or 38.8%, from 2019. This was mainly due to an insurance claim of Auriga Polymers Inc. and other income. Please refer to Note 28 – Other Income in the Audited Financial Statements for further details.

Expenses

THB in millions	FY 2019	FY 2020	Change (%)
Distribution costs ⁽¹⁾	18,974.7	20,736.8	9.3%
Administrative expenses ⁽¹⁾	14,968.3	18,046.2	20.6%
Management benefit expenses	307.1	309.3	0.7%
Total	34,250.1	39,092.3	14.1%

⁽¹⁾ Distribution costs and Administrative expenses in the 2019 financial statements have been reclassified to conform to the disclosure in the 2020 financial statements.

Total expenses for the year ended December 31, 2020 was THB 39,092.3 million, an increase of THB 4,842.2 million, or 14.1%, from 2019 as a result of higher spending on selling and administrative expenses in-line with our volume growth. Please refer to Note 30 and 31 – Distribution Costs and Administrative Expenses of the Audited Financial Statements for further details on this item.

Impairment Loss Determined in Accordance with TFRS 9 (2019: Provision for bad and doubtful debt expenses)

IVL had an impairment loss amount of THB 54.1 million in 2020 and THB 91.6 million in 2019, a decrease of THB 37.4 million, or 40.9%, from 2019 due to the adaptation of TFRS 9 in 2020. Please refer to Note 3 and 38 – Changes in Accounting Policies and Financial instruments.

Research and Development (R&D) Expenses

IVL has a robust R&D platform with 17 centers for innovation around the world. We are strongly committed to providing innovative solutions to our customers and focusing on an agenda geared to sustainability. We have many high value-added businesses which require R&D, and as a result, we have a strongly focused approach to innovation. In 2020, IVL spent THB 601.2 million (2019: THB 412.1 million) on R&D.

Finance Costs

Finance costs for the year ended 2020 was THB 7,673.9 million, an increase of THB 2,058.7 million from 2019, that were in-line with an increase in overall interest-bearing liabilities.

Share of Profit of Jointly-Controlled Entities, Net

IVL had a share of profit from joint ventures in the amount of THB 142.8 million and THB 5.3 million for the year ended 2020 and 2019, respectively. An increase in the share of profit from joint ventures was due to ES FiberVisions (Suzhou), ES FiberVisions (Thailand) and Huvis. Please refer to Note 12 – Investment in Joint Ventures in the Audited Financial Statements for further details.

Tax Income

Tax income for 2020 was THB 1,243.1 million. This was driven by the record of Deferred Tax Assets in India and the reverse of tax provision in the United States.

Net Profit

THB in millions	FY 2019	FY 2020	Change (%)
Net profit	4,363.7	2,800.1	(35.8)%
As a percentage of total revenues	1.2%	0.8%	
Profit attributable to:			
Owners of the Company	5,252.1	2,414.3	(54.0)%
Non-controlling interests	(888.4)	385.8	143.4%

Net Profit for the year ended December 31, 2020 was THB 2,800.1 million, a decrease of THB 1,563.6 million, or 35.8%, from 2019 due to a significant decline in industry margins across the business due to the sharp drop in the price of crude oil in 2020 and due to the COVID-19 pandemic leading to the drop in production volume in the overall business. Please refer to the explanation of EBITDA above for more details. Net profit for the period included extraordinary items, i.e. gains on bargain purchases, acquisition costs, and related transaction expenses incurred on completed acquisitions. These non-recurring items are not from the normal operations of the business.

Financial Position

IVL closely monitors the financial position, and any changes, of various businesses at the group level. An analysis of the financial position is presented below:

Total Assets

As of December 31, 2020 and 2019, IVL had total assets of THB 453,171.5 million and THB 380,567.9 million, respectively. The increase of 19.1% was mainly due to growth in our business from expansions and acquisitions. The major assets are as follows:

Trade Accounts Receivable

As of December 31, 2020 and 2019, IVL reported trade accounts receivable of THB 33,421.6 million, and THB 34,304.9 million respectively, representing 7.4% and 9.0% of total assets.

From January 1, 2020, the Company initially applied TFRS - Financial instruments standards. The Company has established a risk management committee, which established a credit policy under which each new customer is analyzed individually for creditworthiness before the Group's standard payment and delivery terms and conditions are offered. The Group's review includes external ratings, if they are available, financial statements, credit agency information, industry information and in some cases bank references. Sale limits are established for each customer and reviewed periodically. Any sales exceeding those limits require approval from the risk management committee.

The following table provides information about the exposure to credit risk and ECLs for trade accounts receivables.

THB in millions	Consolidated financial statements	
	December 31, 2019 ⁽¹⁾	December 31, 2020
Within credit terms	30,115.5	30,001.5
Overdue:		
Less than 3 months	3,593.0	3,068.6
3-6 months	270.6	222.2
6-12 months	127.2	87.6
Over 12 months	822.9	665.0
Total	34,929.1	34,044.8
Less: allowance for expected credit loss	(624.2)	(623.2)
Total	34,304.9	33,421.6

⁽¹⁾ Trade accounts receivables and allowance for doubtful accounts in the 2019 financial statements have been reclassified to conform to the disclosure in the 2020 financial statements

Inventories

As of December 31, 2020 and 2019, IVL reported inventories of THB 53,938.5 million and THB 62,164.9 million, respectively, representing 11.9% and 16.3% of total assets. The decrease in inventories is the result of a planned reduction in production to manage inventories.

Investment in Joint Ventures

As of December 31, 2020 and 2019, IVL reported investments in jointly-controlled entities of THB 2,954.9 million and THB 2,492.2 million, respectively, representing 0.7% and 0.7% of total assets. The slight increase is mainly the result of an increase in share capital of some joint ventures with Huvis and Loop Technologies and entering into a new Joint Venture Agreement with Toyobo, for which the Group entirely subscribed to the portion of its shareholdings.

Property, Plant and Equipment (PPE)

As of December 31, 2020 and 2019, IVL reported property, plant and equipment of THB 264,290.9 million and THB 212,422.9 million, respectively, representing 58.3% and 55.8% of total assets. The increase is the result of the completed acquisition of certain integrated Oxides and Derivatives businesses from IVOX in the United States. We also acquired PET recycling assets for PETValue in the Philippines, AG Resinas in Brazil and IMP Polowat in Poland.

Other Intangible Assets

As of December 31, 2020 and 2019, IVL reported intangible assets of THB 31,230.6 million and THB 24,165.1 million, respectively, representing 6.9% and 6.3% of total assets. Intangible assets increased 29.2% from last year which was mainly from customer contracts and relationships which were acquired through business combinations in 2020. Please refer to Note 19 – Other Intangible Assets in the Audited Financial Statements for further details.

Loan to Related Parties

IVL has given certain loans to related parties as per Note 7 – Related Parties in the Audited Financial Statements. There are various strategic reasons given and as of December 31, 2020, these amounts are not material.

Total Liabilities

As of December 31, 2020 and 2019, IVL reported total liabilities of THB 317,563.7 million and THB 242,400.6 million, respectively. The increase in total liabilities resulted from an increase in loans from financial institutions as a result of the acquisition of IVOX in the United States at the beginning of 2020.

Trade accounts payable

As of December 31, 2020 and 2019, IVL had trade accounts payable of THB 57,782.6 million and THB 57,172.9 million, respectively. This was in-line with the growth in volumes from business expansion and acquisitions. The payment days increased from 65.0 days for the year ended December 31, 2019, to 71.9 days for the year ended December 31, 2020, as a result of management actions on working capital optimization.

Interest-bearing liabilities

As of December 31, 2020 and 2019, IVL reported interest-bearing liabilities of THB 211,960.5 million and THB 146,951.3 million, respectively, representing 46.8% and 38.6% of total liabilities and shareholders' equity.

Our net operating debt-to-equity increased from 0.66 times at the end of 2019 to 1.24 times at the end of 2020, after spending on capex and investments of THB 80,110.7 million in 2020 which was primarily from the acquisition of IVOX. IVL's net operating debt increased from THB 91,647.8 million at the end of December 31, 2019 to THB 167,532.1 million at the end of December 31, 2020.

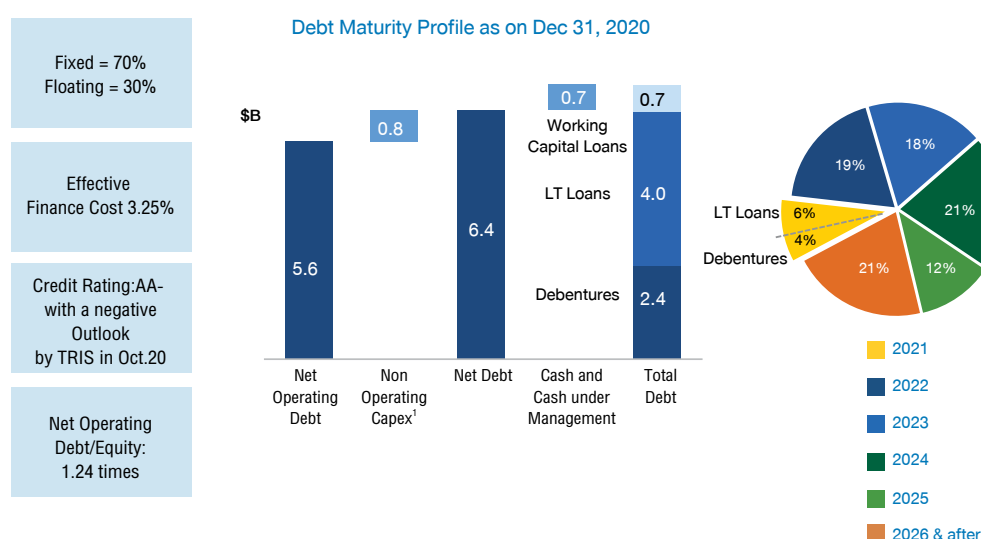
The table below describes total debt and net operating debt in THB billions:

THB billions	31-Dec-19	31-Dec-20
Total debt	147	212
Bank overdraft and short-term loans	30	21
Long-term debt (Current portion)	6	11
Debentures (Current portion)	4	8
Long-term debt (Non-current portion)	43	108
Debentures (Non-current portion)	63	65
Cash & Cash under management	11	20
Cash and cash equivalents	10	19
Current investments and loans given	0	1
Net debt	136	192
Non-operating debt (Project debt)	45	25
Net operating debt⁽¹⁾	92	168
Net debt to equity (times)	0.99	1.42
Net operating debt to equity (times) ⁽²⁾	0.66	1.24
Debts with fixed interest %	62%	70%
Credit rating by TRIS	AA-	AA-

⁽¹⁾ Net debt after debt for capex and investments in progress that is not generating revenue and earnings as on the date given.

⁽²⁾ Net operating debt to equity in 2019 excludes capex/acquisition of IVOL and Spindletop. If included, net operating debt to equity would be 1.30 times against 0.66 times as above.

The graph below provides the repayment schedule for long-term debt and debentures in US\$ billions:



Shareholders' Equity

As of December 31, 2020 and 2019, IVL reported shareholders' equity of THB 135,607.8 million and THB 138,167.3 million, respectively. The decrease in shareholders' equity was mainly due to the increase in loss of hedging reserve in 2020 compared to profit in 2019. Please refer to "Statement of Changes of Equity" in the Audited Financial Statements for more details.

Cash Flow

IVL generated THB 43,436.1 million in cash flow from operating activities in 2020 compared to THB 40,845.0 million in 2019 due to lower prices and operational excellence.

Cash flow used in investing activities of THB 78,602.1 million in 2020 was primarily paid towards the acquisition of IVOX in the United States and AG Resinas in Brazil. Capex and investments were funded by a mix of long-term loans and cash flow from operations.

Cash flow from financing activities of THB 43,737.1 million in 2020 was principally a result of short and long-term loans net of repayment that were used to support business growth.

Liquidity

Strong cash flow from operations and a longer average loan maturity led to a high liquidity position for the Company. As at December 2020, IVL had liquidity of THB 78,398.0 million, in the form of cash and cash under management, plus un-utilized banking credit lines. The high liquidity provides us greater flexibility in business operations and allows us to finance accretive growth opportunities.

Key Financial Ratios

Current Ratio

Our current ratio is calculated by dividing total current assets by total current liabilities. IVL's current ratio decreased slightly from 1.1 times at the end 2019 to 1.0 times at the end 2020 driven mainly by an increase in current liabilities. However, this ratio above 1 illustrated the strong financial position and liquidity of the Company as well as assurance of IVL's ability to pay-off our short-term liabilities.

Return on Equity Ratio (ROE)

Our ROE ratio is calculated by dividing our profit attributable to owners of the Company for the period by the average of the total equity attributable to equity holders of the Company. IVL ROE of 1.9% in 2020 compared to 3.8% in 2019. IVL's core ROE of 5.0% in 2020 compared to 9.0% in 2019 which decreased in-line with a decline in EBITDA and net profit.

Note: For the core ROE% calculation, we use the formula as follows: Core profit attributable to owners of the Company after interest on perp/average of the equity attributable to shareholders of the Company.

Return on Assets Ratio (ROA)

Our ROA ratio is calculated by dividing profit before finance costs and income tax expenses by the average total assets. For the year ended 2020 and 2019, our ROA ratio was 2.2% and 3.0%, respectively. IVL's core ROA of 3.5% in 2020 compared to 4.9% in 2019, which decreased in-line with a decline in core net profit.

Net Debt-to-Equity Ratio (D/E)

Our Net Interest Bearing Debt-to-Equity Ratio is calculated by dividing our interest-bearing liabilities-less cash and cash equivalents by total shareholders' equity. As of December 31, 2020 and 2019, our net interest bearing debt-to-equity stood at 1.4 times and 1.0 times, respectively. The Company raised cash through additional loans from financial institutions, which was used in acquisitions, ongoing expansions and working capital needs. However, the debt covenant for most of the debts is net debt to equity of at least two times.

Debt Servicing Coverage Ratio (DSCR)

Our DSCR is calculated by dividing core EBITDA by annual interest and principal payments on debt. As of December 31, 2020 and 2019, our DSCR was at 1.9 times and 2.1 times, respectively. The slight decrease came from an increase in debt used in acquisitions. However, our DSCR is still in a good range which indicates that operations-generated income is sufficient to cover outstanding debt payments during the year. However, the debt covenant for most of the debts is at 1.1 times DSCR.

Indorama Ventures Potential Risk Factors

Risk monitoring and control mechanism at IVL:

The Enterprise Risk Management framework uses top-down and bottom-up approaches to identify and manage business risks at the corporate and subsidiary levels around the world to identify and mitigate business risks. This is led by the Board, the Committee and senior management and covers the assessment and review of internal and external risks, including global risks and factors that may affect the Company's operations. Business heads in the Sustainability and Risk Management Committee, as well as the Business Risk Management Committees, monitor key risks and ensure adequate preventive measures and mitigation controls. All significant risks identified are analyzed, recorded and reported. The risk management report and mitigation plan is reviewed quarterly by committees at the business segment and plant level. In addition, the Sustainability and Risk Management Committee reviews a sensitivity analysis of the business plan, greenfield and M&A projects, to ensure sustainability especially with regards to the environmental and social impacts to business operations.

1. Emerging Business Risks

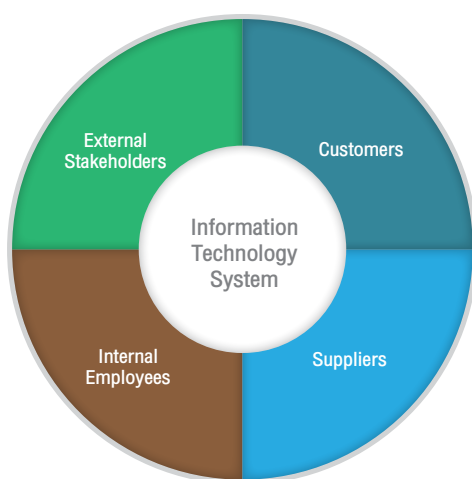
1.1 The evolving sophistication of emerging cyber threats could have an adverse impact on our business financially and reputationally

We rely extensively on information technology systems (IT Systems), including some which are managed, hosted, provided and/or used by third parties and their vendors to conduct our business. Our uses of these systems include, but are not limited to:

- communicating within our company and with other parties, including our customers;
- ordering and managing materials from suppliers;
- converting materials to finished products;
- receiving and processing orders from and shipping products to our customers;
- marketing products to customers;



- collecting and storing customer, employee, investor and other stakeholder information and personal data;
- processing transactions, including but not limited to employee payroll, employee benefits and payments to customers and vendors;
- hosting, processing and sharing confidential and proprietary research, business plans and financial information;
- complying with legal, regulatory and tax requirements;
- providing data security;
- handling other processes involved in managing our business.



Although we have a broad array of information security measures in place, our IT Systems, including those of third-party service providers with whom we have contracted, have been, and will likely continue to be subject to computer viruses or other malicious codes, unauthorized access attempts, phishing and other cyber-attacks.

In general, cyber-attacks and other cyber incidents are occurring more frequently; constantly evolving in nature; becoming more sophisticated; and made by groups and individuals with a wide range of expertise and motives.

Such cyber-attacks and cyber incidents can take many forms, including cyber extortion, password theft or introduction of viruses or malware, such as ransomware through phishing emails. We cannot guarantee that our security efforts will prevent breaches or breakdowns of our, or our third-party service providers' IT Systems since the techniques used in these attacks change frequently and may be difficult to detect for periods of time. In addition, although we have policies and procedures in place to ensure that all personal information collected by us or our third-party service providers is securely maintained, data breaches due to human error or intentional or unintentional conduct have occurred and will likely continue to occur.

Although we have seen no material impact on our business operations from the cyber-security attacks and data breaches we have experienced to date, we may suffer a loss or disclosure of confidential business or stakeholder information as a result of a breach of our IT Systems, including those of third-party service providers with whom we have contracted. Moreover, we may suffer reputational, competitive and/or business harm; incur significant costs, and be subject to government investigations, litigation, fines and/or damages, which may adversely impact our business, results of operations, cash flows and financial condition.

Furthermore, while we have disaster recovery and business continuity plans in place, if our IT Systems are damaged, breached or cease to function properly for any reason, including the poor performance of, failure of or cyber-attack on third-party service providers, catastrophic events, power outages, cyber-security breaches, network outages, failed upgrades or other similar events, and if the disaster recovery and business continuity plans do not effectively resolve such issues on a timely basis, we may suffer interruptions in our ability to manage or conduct business.

Risk Mitigation Actions:

- Our systems are protected with advanced firewalls, antivirus, antimalware, the latest system patch applications, and advanced threat protection to strengthen our system's security.
- Adopting emerging and modern AI-based protection technologies such as endpoint detection and response (EDR).
- Network segmentation is planned to keep users, servers, and applications on different network segments and passing inter-segment traffic through firewalls.
- Our guideline educates users on the risks of cyber security and trains them on safe usage of the system.
- We have a backup policy to protect our system and data, such that in case of a cyberattack, systems can be recovered.
- We have the capability to reduce the impact and proliferation of an event; to identify and classify applications, databases, systems, and information. We can minimize insider risks by keeping a closer watch on user activities, analyzing user behaviour, and regularly assessing risks to proactively spot weaknesses and improve our security position.
- By enhancing security and privacy capabilities across the Company, we establish stricter control over user IT activities in order to keep sensitive information secure and prevent insider breaches.
- The ongoing assessment of security threats, balanced against the existence and adequacy of security controls, is to ensure that security controls and countermeasures in place are commensurate with potential risks.

1.2 Disruptive innovations/technologies potentially leading to vulnerabilities such as PET alternatives

It is difficult to anticipate the nature of disruptive innovations or new technologies, which might outpace the Company's ability to remain competitive. Resistance to change may restrict IVL from making necessary adjustments to our business model and core operations.

In particular, consumer trends and the selection of perceived eco-friendly substitutes for disposable plastic water bottles is increasing. While good for raising environmental awareness, this might be misunderstood to include recyclable PET, thus affecting the future use of PET. Advanced technologies to invent alternatives to PET, such as biodegradable plastic, may expose vulnerabilities to our business position as one of the leading companies in the market.

Customers increasingly expect more personalized products and services. Sudden developments might alter their expectations and change the core business model. Innovations can be restrained by the organization's core business assumptions or structural limitations. The needs of customers may evolve; new technologies and solutions may become available, and/or regulations may change. Together, these can create discontinuities, potentially changing the structure of an industry.

Risk Mitigation Actions:

- IVL revisits its approach to corporate strategy development by introducing more agility, adaptability, and responsiveness to emerging threats. We continuously monitor changes in the environment to determine which, if any, could be truly disruptive.
- We see the strategic importance of research & development, choosing the appropriate level of investment while also effectively measuring return on those investments, which has meaningful impacts on our future positioning.
- We work closely with brand owners to promote recycling campaigns and provide education to differentiate PET from other plastics. We observe trends and strategically increase investment in recycling plants; arrange more recycling factory visits and encourage recycling and end-use of rPET.
- IVL has committed to increasing rPET capacity from 160,000 tons per annum at the end of 2019 to more than 750,000 tons per annum by 2025. At the same time, we have partnered with Ioniqa and Loop Industries to develop the next generation technology for recycling.

Embracing opportunities and potential rewards from disruptive trends

With the right business expertise and focus, disruptive innovations can present opportunities for a company's growth. Drift can lead to business-as-usual, and in response, a firm needs to be flexible by embracing new trends and using them as a competitive advantage.

The combination of artificial intelligence (AI) and sustainability can support environmental issues and help society. AI provides additional tools alongside physical and economic models to support decisionmakers operating in complex constrained frameworks by deploying data science as a means to address climate change information or leverage machine-learning techniques to support management of sustainable clean water and energy production. The environmental impact of PET is lower in comparison to glass, aluminum and other recyclable container materials. Being lightweight, PET saves resources and also cuts costs and environmental impacts during transportation. PET also reduces carbon footprints by using less energy, generating less solid waste, and contributing to lower GHG emissions. PET has become the top choice in the packaging sector.

IVL invests in research and development, fostering innovations, and encouraging our people to be proactive and develop capabilities to adapt and transform threats into opportunities. This assists the Company in disrupting the market by producing innovative, game-changing products and ideas that fundamentally change the way people live and work.

We work closely with our customers globally, providing them with innovative and specialized solutions to meet their evolving needs. Our business is exceptional in producing innovative and High-Value Added (HVA) products.

In leveraging IVL's strong foundation in the PET market and geographic reach, we see vast opportunities to grow the POLYSHIELD® PET and OXYCLEAR® Barrier PET brands to their full potential by reaching out to both existing and new customers around the world.

Please visit the Sustainability and Corporate Social Responsibility section in the Annual Report 2020 and Sustainability Report 2020 for more information.

1.3 Failure to address anti-plastic campaigns may adversely impact the industry's growth potential

Consumers view plastic pollution as a major concern second only to climate change. There has been a significant increase in anti-plastic campaigns demanding a stop to the production of single-use plastics. Consumer products companies are emerging as new targets for global activism, with green groups blaming them for polluting the oceans with plastic and activists urging governments to regulate them. Governments are being pressured to take meaningful steps towards reducing single-use plastic waste and helping preserve the environment. Brand owners are also reacting, as they make bold commitments targeted at managing waste from packaging. A failure to address this challenge presents risks to the industry's growth potential and license to operate.



Risk Mitigation Actions:

IVL has established key strategic priorities to steer the business through the plastic waste challenge and beyond.

- We are increasing our investments in recycling plants. We have committed USD 1.5 billion to build the recycling infrastructure needed globally to close the loop, encouraging the end-use of recycled PET and delivering a circular economy for beverage packaging.
- We are working with several industry partners to achieve a circular economy for sustainable plastics. We intend to play a leading role by bringing customers of recycled products into the value chain and developing ways to include recyclability in all our products.
- We encourage doing more with less through sustainable consumption and production in addition to educating consumers on the need to recycle and adopt a lifestyle focused on sustainability. Our global recycling education programs promote recycling and waste separation among children, communities, and consumers, and aim to increase their awareness and involvement in protecting the environment for a better future.
- We have acquired proprietary knowledge of mechanical recycling, which we are scaling up, and established partnerships with innovative players to develop and test next-generation chemical recycling technologies. For example, we collaborated with Ioniqa to create the first-ever PET bottle made from marine plastic waste.

1.4 Water crises may disrupt business operations and economic activities

Water crises, or the significant decline in the available quality and quantity of fresh water, have consistently emerged in many areas globally and are environment-related risks interconnected with extreme weather events and climate change. In the past several years, these risks have grown together with having more profound impacts. Continuing availability of water reinforces food security, energy security, poverty reduction, economic growth, conflict reduction, climate change adaptation and biodiversity loss, while increasing global mistreatment of water resources around the world has led to the significant degradation of ecosystems and the goods the industry provides.

As businesses seek to secure long-term prosperity to maintain their competitive advantage and differentiation, and to secure stability and optimal supply chains, the challenge of increasing water scarcity contributes to uncertainty in the form of physical, financial, regulatory, and reputational risks. More severe climate change can also lead to droughts and floods which might impact several of the Company's entities as we operate in different geographic locations. IVL can come under greater pressure to reduce water use and increase efficiency.

Risk Mitigation Actions:

- The risk management committees of plants and business segments regularly monitors potential regulatory changes and evaluates water risks and opportunities by conducting a scenario analysis with those changes.

- We communicate on an ongoing basis and work with local authorities to check ground water levels and levels in reservoirs to ensure adequate water supply and avoid potential conflicts with nearby stakeholders. The business continuity plans of our entities include water as one of the elements in their plans.
- We conduct a water sensitivity analysis using the AQUEDUCT Water Risk tool developed by the World Resources Institute (WRI) to identify water stress locations. The tool helps us to evaluate changes in water demand, water supply, risks from stakeholders and changes in regulations based on current and future conditions. Given the tool enable us to assess water risk assessment for 2020 and forecast on 2030 and 2040. These results are analyzed and discussed during meetings of the risk assessment committee which identify necessary mitigation measures or initiatives needed on a quarterly basis, covering plants located in areas at a high-risk of water stress or facing significant risks to water usage.
- We evaluate the possibilities and options to reduce water consumption, increase the recycling and reuse of wastewater, and harvest rain water to achieve our goal of zero effluent discharge at as many sites as possible, and establish targets at the entity and group level.
- IVL is committed to sustainable water management (including water withdrawal and discharge) by complying with all applicable environmental laws, international standards, and regulations in the countries where we have operations, and will be proactive in demonstrating leadership and responsibility in-line with our values.

Please visit the Sustainability and Corporate Social Responsibility section in the Annual Report 2020 and Sustainability Report 2020 for more information

1.5 The Company may be adversely impacted by economic uncertainties given the evolving coronavirus pandemic

The emergence of the novel coronavirus, known as COVID-19, led to disruptions and lockdowns in countries around the world resulting in the largest global economic recession since the Second World War. Developments surrounding the spread, containment, evolving variants and efficacy of vaccines may continue to present uncertainties in the future.

The COVID-19 pandemic tested our internal processes as we ensured the safety and well-being of our employees across all levels, from the shop floor to the Board of Directors.

Risk Mitigation Actions:

Our capabilities and presence worldwide as one of the world's leading petrochemicals producers in more than 30 countries helps us mitigate supply chain risks, while leveraging our facilities and networks allows us the opportunity to deliver products to our customers as a reliable partner, even in times of uncertainty.

Employee Care

We adopted measures worldwide to safeguard our employees as COVID-19 began to spread. We also undertook measures to ensure the safety of our sites around the world, increased security protocols and standards, and introduced preventive measures on our premises.

We eliminated business travel, postponed or cancelled physical meetings and events in favor of doing them virtually, enhanced sanitation of facilities and enabled employees to work from home while staying productive, collaborative, and fostering a sense of community. Our teams are working closely to follow the guidelines in line with local authorities. We remain vigilant and ready to adjust our measures in response to the changing circumstances. Face masks and social distancing have become the norm at all of our facilities globally.

Business Continuity

At the corporate level, the Indorama Management Council is closely monitoring the situation. We have a business continuity team, consisting of IVL leaders across functions and businesses, to monitor pandemic spin-off risks in their respective areas while working closely with local plant management to address both tactical and operational issues. We also work with specialists to analyze the potential security and safety impact to our people. Moreover, various platforms are in place allowing continuous communications to discuss developments, impacts and solutions with regards to our plants, people and business with both our customers and stakeholders.

IVL has developed emergency response plans in the event of a disruption caused by the pandemic and has already put in place risk mitigation actions such as travel restrictions for employees, pre-screening and restriction of visitors to our manufacturing sites, offices, etc.

Measures have also been put in place for the procurement of sufficient raw materials and additives, and logistics to alleviate any possible impact to IVL's operations. We expect our feedstock integration and geographic manufacturing diversity to help us further in sustaining business continuity.

Nevertheless, uncertainty remains at this point in time and we have yet to see the true impact of the new normal worldwide both in the short and medium-term. We expect the situation to be remain fluid with the COVID-19 variants as the vaccine rollout continues, and

we will remain agile and ready to act globally. The health and safety of our employees is our number one priority and we will continue to do all we can to take care of our customers.

2. Business Risks

2.1 Increasing international operations expose us to various challenges such as macroeconomic, geopolitical, environmental, regulatory and reputational risks

IVL's business operations have been rapidly increasing worldwide year-on-year, presenting new challenges and risks. These include: political instability; the safety and security of employees; tangible and intangible property due to increased terrorist attacks in new countries; anti-national or communal activities; unanticipated economic developments, and rapid changes in legislation, regulations, standards, or pandemic diseases.

We may also have to comply with inconsistent or unexpected changes in foreign laws; currency controls, tax regulations, and changes in international tax treaties; sanctions, the imposition of duties on imports; anti-dumping duties; data privacy, anti-corruption, environmental and regulatory requirements, or import and export controls.

Many of these could be beyond our control and could have an adverse impact on the Company.

Risk Mitigation Actions:

IVL has considered the likelihood and potential business impact of each risk and undertaken the following mitigation actions:

- Long-term and short-term risk profiling, sensitivity analyses of the Company's business plans, and correlation of various risks to the business.
- Stringent risk assessments and due diligence processes to benefit from opportunities and mitigate business risks including, but not limited to, environmental and geopolitical risk analyses of every business opportunity before decisions are taken by the management and the Board.
- Close and continuous monitoring of political, economic and legislative conditions of each country, including threats from anti-national and terrorist activities; the safety and security of employees, and the assets of the Company.

2.2 Climate Change Risk

Climate change is inevitable and going to have potentially serious implications for businesses. Post-COP 21, IVL anticipates more environmental, social, political, and economic repercussions. The Company has carried out Climate Change Risk and Opportunity

analyses. In addition, in 2020 IVL became a Task Force on Climate-Related Financial Disclosures (TCFD) supporter. We are the first chemical company in Thailand and the second chemical company in Southeast Asia to become a TCFD supporter by volunteering to comply with the TCFD's recommendations and supporting their climate change agenda as defined and disclosed in its *Sustainability Reports* and on our website.

The following are some of the climate change-related risks:

- **Regulatory:** Increased operational costs due to direct climate change legislation (e.g. cost of carbon) and indirect legislation (renewable energy targets, efficiency upgrades, etc.) that may affect the Company's operations.

As of December 31, 2020, IVL has 107 operating sites (excluding joint ventures and entities acquired or operations commenced on or after July 1, 2020) in 33 countries. Depending on the scope of any carbon levy, IVL could be directly and/or indirectly affected either through increased production costs and/or through impacts from the supply chain and downstream customers. The financial implications for the Company would involve producing more energy efficient, less carbon intensive products for climate protection in the long-term.

- **Physical:** Extreme weather events, increasing frequency and severity of floods, droughts, cyclones, etc., may impact the Company's operations and supply chains.
- **Changing Consumer Preferences:** Changing consumption patterns towards increasing demand for environmentally-friendly products and technologies will most probably result in declining demand for established or GHG-intensive products, particularly in Europe. A company that is lagging in this area could face the risk of being outmanoeuvred by companies that have positioned themselves more favorably with eco-friendly or green products/services.
- **Reputational:** This is another important risk as laggards on climate action risk may face damage to their reputations and brand image.

Management has nominated one senior executive at the corporate level to closely monitor both climate change risks and opportunities, who reports to all concerned, including the Sustainability and Risk Management Committee (SRMC) that in turn, reports to the Board.

Risk Mitigation Actions:

We have increased our focus on efficiency improvements; adherence to GHG reduction goals and targets as defined and disclosed in our [Sustainability Reports](#) and [website](#).

The Company has also participated in assessments by the Dow Jones Sustainability Indices (DJSI), CDP's Climate Change and Supply Chain, MSCI, Sustainalytics, FTSE and other external sustainability assessments in 2020. These assessments are helping IVL to:

- Identify financial implications and potential saving opportunities.
- Prepare for changes in regulations.
- An internal carbon price (ICP) is a value that companies voluntarily set for themselves in order to internalize the economic cost of their greenhouse gas emissions. We considered the IEA 450 scenario for financial analysis by using internal shadow carbon prices and the carbon taxes for countries where we operate. We conducted stress-testing analysis assuming carbon prices of USD 100 and 75 per ton for OECD and non-OECD countries respectively for 2030 to anticipate the impacts on production, EBITDA, and revenue as part of our risk management process.
- Improve risk awareness and long-term resilience.
- Enhance reputation and shareholder confidence.
- Continue our focus on accelerating innovation, recycling and developing a circular economy.
- Increase our focus on renewable and low-carbon energy.
- Reduce our carbon footprint in all our operations through life cycle assessments and management, greenhouse gas accounting, energy and environmental management.
- Produce low carbon products, improve operational eco-efficiencies within our operations and value chain, lowering product toxicity.
- Following the TCFD's recommendations, carry out water risk assessments globally in all our operations and initiate water management.
- Lightweighting of our products.
- Strategically move in closer proximity to our customers and suppliers to avoid supply chain risks.
- Explore opportunities for more post-consumer recycling of our products and increase usage of bio-based raw materials.

Climate Change is an Opportunity

At the same time, climate change is perceived as an opportunity as changes in regulations will drive the Company towards using more renewable energy. By harnessing innovations and the production of low-carbon products, IVL can become a preferred company

for customers and consumers, and also achieve financial gains through lower overall costs of production. Possible climate change opportunities include:

- Tax incentives for increased use of renewable energy.
- Tax incentives for increased recycling of PET waste; carbon credits to lower emissions through recycling and reuse as compared to virgin PET.
- Savings from global carbon and emission trading schemes due to reductions in carbon emissions.
- The increased popularity of sustainability-linked credit facilities and ESG integrated equities have made access to financing directly dependent upon our ESG performance. In November 2020, blue/green loans for USD 300m were provided by multiple intergovernmental institutions. The International Finance Corporation (IFC) provided up to USD 150m equivalent, the Asian Development Bank (ADB) and ADB Leap Loan provided up to USD 100m, and Deutsche Investitions and Entwicklungsgesellschaft (DEG) provided up to USD 50m. This funding will help IVL increase its recycling capacity in Thailand, Indonesia, the Philippines, India, and Brazil. Following Thailand's first-ever green loan (issued by Mizuho Bank at USD 100m and EUR 100m) and sustainability-linked Ninja loan (issued by 16 Japan-based banks and institutions at USD 255m), this further supports our sustainability commitments as a business and emphasizes our fiscal responsibility through green finance, through a structured link to IVL's sustainability performance.
- An enhanced reputation for being an environmentally friendly company that is recycling increasingly larger volumes.
- Becoming the preferred company to our consumers. A strong performance with a reduced carbon footprint is now a competitive advantage

2.3 We operate in highly competitive industries where the actions of our competitors could impact our profitability and market share

- The industries in which we operate are characterized by price and other competition.
- The majority of our products are commodities – necessities – with a growing number of high value-added (HVA) products, and it may be difficult to have product differentiation and pass on increased costs to customers.
- Other competitive factors include product quality, specifications or product performance; continuity and reliability of supplies to customers, and sustainable long-term customer relationships.

- We often compete with large multinational companies as well as regional and/or specialized producers in the markets for our polyester fiber products. Margin pressure could arise from, for instance, limited demand growth and overcapacity in a market.

Risk Mitigation Actions:

- Greater integration and diversification of our manufacturing facilities across geographies, product innovation, product diversification, cost reductions and other operational excellence measures.

2.4 How continuous demand growth in PTA, Oxide and Glycols, PET resins, Polyester and Non-Polyester fiber and yarn industries could result in overcapacity

- Our operating results reflect the historically cyclical pattern of the PTA, MEG, PET resin, polyester and non-polyester fiber and yarn industries, with periodic overcapacity and the resulting pressure on pricing.
- This cyclical nature arises, in part, from investments made at the top of the cycle (when margins are high and funds are available), thereby creating a demand-supply imbalance.
- The industry has experienced periods of overcapacity, when new plants become operational, and there can be no assurance that this will not recur in the future.
- In the absence of sufficient economic growth to generate increased demand, or the closure of facilities to mitigate the effect, new capacity causes a period of regional or global overcapacity which may lead to downward pressure on profit margins.

Risk Mitigation Actions:

- Diversification of customer portfolios, adding a high value-added product portfolio, recycled products, etc. to create customer loyalty and differentiation.

2.5 Crude oil and commodity price volatility affects the valuation of inventories and employed capital, distorting reported performance to an extent

- The volatility of crude oil prices brings the risk of markdowns or mark-ups of inventories that we carry at any point in time and can impact our performance adversely or positively.
- Our reported capital employed might also be affected as working capital requirements change with movements in our products or raw materials prices.
- Natural gas price volatility affects cash conversion costs in countries where we operate. As we consume natural gas at certain locations, the volatility of natural gas prices can benefit or hinder our performance.

Risk Mitigation Actions:

The losses or gains due to marking-to-market fluctuations in our inventories are largely mitigated by respective cash inflows, in our net working capital. The natural gas hedging tool is used to keep a check on price volatility by a partial fixed price contract of natural gas.

2.6 Our costs might be impacted from external market conditions or uncontrollable factors

- Our product costs may increase due to various external factors such as an increase in labor costs due to inflation, changes in minimum wage regulations; unplanned or prolonged shutdowns; raw material shortages; natural disasters; strikes; technical failures and regulatory rulings for environmental non-compliance.
- In such events, we may not be able to fulfil our product delivery obligations and could therefore be exposed to claims for damages, suffering loss of reputation.

Risk Mitigation Actions:

Insurance coverage including, but not limited to, loss from business interruptions caused by accidents, natural disasters, damage to property, plant and machinery breakdowns, etc. The geographic diversification of our business operations can minimize the risk of disruption from natural disasters or unexpected events. Business continuity management will help the organization plan, test, train, alert and recover to reduce business disruptions and the potential cost of downtime.

2.7 We may not be able to protect our intellectual property rights and could be adversely impacted should we infringe on the intellectual property rights of others

- We operate in many industries where our competitors have substantial intellectual property portfolios. The continued success of this business depends on our ability not only to protect our own technologies and trade secrets, but to also develop and sell new products that do not infringe on existing patents or threaten existing customer relationships.
- Intellectual property litigation can be very costly and could result in substantial expense and diversions of resources, both of which could adversely affect our businesses, financial conditions and results.
- There may be no effective legal recourse against infringement of our intellectual property by third parties, due to limitations on enforcement of rights in foreign jurisdictions or because of other factors.
- An unfavorable outcome in any intellectual property litigation could have a materially adverse effect on our financial condition.



Risk Mitigation Actions:

We undertake measures like patent and trademark registrations to protect our intellectual property (IP) rights. Moreover, we conduct FTO studies wherever appropriate to ensure that we do not infringe on the IP rights of others.

3. Operational Risks

3.1 Our operations are dependent on the availability and costs of raw materials

- Our operations are fundamentally dependent on the availability and costs of our primary raw materials. We procure PTA and MEG for our PET and fibers businesses; PX for our PTA business; ethylene for our Oxide and Glycols business; other types of raw materials for our Non-Polyester fibers business and recyclable bottles and flakes for our recycling business.
- Our financial conditions and operational results are thereby influenced by the market prices of these items, which are then subject to supply and demand, as well as other factors beyond our control.
- The markets and prices for petroleum products may be influenced by aggregate demand for such products (which can fluctuate with changes in economic conditions and cycles, seasons and weather patterns), the level of domestic and regional production, the prices and availability of imports, the prices and availability of substitute fuels and the extent and nature of government regulations and taxation.
- Any increase in raw material costs without a corresponding increase in the sale price would reduce our operating results. Our ability to pass on raw material price increases is dependent upon market conditions and our relative cost position compared to competitors.

- There may be periods of time in which we may not be able to fully recover increases in the cost of raw materials due to contractual arrangements or weaknesses in demand for, or oversupply of, our products.

Risk Mitigation Actions:

Entering into long-term purchase agreements with suppliers where possible, and hedging raw material prices when it makes economic sense.

3.2 Our production facilities are subject to operational risks that may adversely affect our operations

- We are dependent on the continued operations of our production facilities, which are subject to hazards associated with the manufacturing, handling, storage and transportation of chemical materials and products. This can include pipeline leaks and ruptures; explosions, fires, inclement weather, and natural disasters; mechanical failure, unscheduled downtime, labor difficulties, transportation interruptions, remediation complications, chemical spills, discharges, or releases of toxic or hazardous substances or gases, storage tank leaks and other environmental risks.
- These hazards can cause personal injury and loss of life, severe damage to, or destruction of, property and equipment, environmental damage, fines and liabilities.
- In 2020, our Indorama Ventures Olefins (IVOL) manufacturing facility in the United States experienced a lightning strike resulting in significant property damage. After this event, the same manufacturing plant was in the direct path of Hurricane Laura. The community suffered significant damage while the manufacturing plant experienced some flooding and building damage. The plant has experienced significant downtime since these events. IVL is committed to restarting the plant but not until we have assurance that it is safe to operate.

Risk Mitigation Actions:

- Since the lightning event, IVL has completed a lightning mitigation survey at each IVL location globally. Lightning strikes cannot be predicted and while the risk of a strike can never be completely eliminated, protections can certainly provide significant mitigations. Gaps were closed where lightning protection was found to be inadequate.
- Facilities that are pre-disposed geographically to risks of hurricanes have detailed plans in place that include bringing operations to a safe state, preparing buildings, securing any items that can take flight in high winds, identifying alternative power sources where available, readying the workforce and appointing ride out crews.

Other General Risk Mitigation Actions:

- Ensuring readiness by having emergency evacuation procedures and mock drills for catastrophes internally and Emergency Response Teams.
- Regular reviews of safety equipment onsite and annual training programs on safe work practices that are carried out for the awareness of all concerned.
- All new employees, contractors and visitors are given mandatory safety training before they are allowed to enter the factory premises.
- At production facilities, we conduct regular inspections, preventive maintenance, and replacement of old parts or equipment to avoid breakdown incidences.
- We closely monitor plant stocks as per inventory norms to ensure continuous availability of required materials.

3.3 Our business could be affected by an information technology system failure

- We rely on information technology (IT) systems to handle our businesses. Any systemic failure for whatever reason could disrupt our operations and prevent us from being able to process transactions with our customers, operate our manufacturing facilities, prepare internal MIS reports and properly report those transactions in a timely manner.
- A significant, protracted IT system failure may result in a materially adverse effect on our financial condition, operational results, or cash flow.

Risk Mitigation Actions:

- Adopting IT policies, processes and procedures to manage and protect IT risks. These policies and procedures are implemented as guidelines for the IT team and users. All policies and processes are reviewed and revised, as and when appropriate.

- IT infrastructure and IT applications are provided to ensure adequate resource allocation and optimal system function that supports the strategies and goals of the Company.
- Adopting cloud servers to quickly rebuild servers.
- IT assessments by external as well as internal auditors. Moreover, we conduct internal IT assessments of all sites in accordance with IT general controls (ITGCs) and report to senior management and the SRMC.

4. Management Risks**4.1 The costs and difficulties of integrating future acquired businesses and technologies could impede our future growth and adversely affect our competitiveness**

- As part of our strategy, we may seek further growth through acquisitions of manufacturing facilities producing PTA, PET, Fibers, Oxides and Glycols or other products in our product chain in order to maintain a competitive position within the industries in which we operate and to enhance our position in our core areas of operation.
- Unidentified or unanticipated liabilities or risks in the operations of the companies which we may acquire.
- Potential failure to achieve the economies of scale, synergies or other benefits sought.
- Greater than expected costs, time and effort spent by management in completing and integrating the acquisitions.
- Inability to successfully integrate the services, products, and personnel of the acquisitions into our operations or the inability to realize any expected cost-savings or other synergies from the acquisitions.
- Inability to retain employees, customers, or supplier relationships.
- Lack of return on our investment.

We may not be able to identify attractive acquisition opportunities or make acquisitions on attractive terms, or obtain the financing necessary to complete and achieve such acquisitions. Regulations on mergers and acquisitions by the European Union, the United States, Thailand or other national regulators may also limit our ability to make future acquisitions or mergers.

Risk Mitigation Actions:

We conduct detailed due diligence for acquisitions and seek appropriate production in the acquisition agreement.

4.2 The Indorama name is used by other companies that we do not control.

The 'Indorama' trade name belongs to Lohia Global Holdings Limited. IVL has a non-exclusive license for its use pursuant to a License Agreement with Lohia Global Holdings Limited and pays a royalty fee to Lohia Global Holdings Limited for the use of the 'Indorama' trade name.

The business groups of other Lohia family members use the 'Indorama' wordmark. We do not control the usage of the trade name by such business groups nor any adverse impact due to their actions on our reputation associated with the Indorama trade name.

Risk Mitigation Actions:

IVL differentiates itself by presenting the Company as Indorama Ventures PCL (IVL); listed and headquartered in Thailand.

4.3 The risk of a shareholder group that holds the majority of outstanding shares

The Lohia family holds around 64.77% of outstanding shares and may affect voting results on significant agenda items.

Risk Mitigation Actions:

All agenda items put to the shareholders meetings are always discussed and approved at the Board meeting, having an equal representation of independent and non-independent directors including representation from major shareholders. Notice of the shareholders meeting together with the Board's opinion is well-circulated to shareholders prior to the meeting.

5. Financial Risks

5.1 Significant capital investments including the future development of new facilities have been, and may in the future continue to be, necessary to achieve our growth plans, which carry project risks and other risks

Our growth plans require, and may continue to require, significant capital investments to expand, renovate, convert or upgrade existing facilities, develop new facilities or make major acquisitions or investments.

- Failure to complete a project within the outlined project timetable and/or within budget.
- Failure of the project to perform according to prescribed operating specifications following its completion.
- Any significant increase in costs that were unforeseen in the project plan, and any inability to sell the products produced at volumes and/or price levels envisaged in the project plan could affect the success of our projects.

- Due to the significant amount of capital required and the long time period between the planning and completion of such projects, project delays could have an effect on our business and future prospects.
- Acquired businesses may not achieve the required level of revenue, profit, cash flow or other financial benchmarks.
- Acquisitions may involve risks associated with the potential assumption of unanticipated liabilities and contingencies; difficulties in integrating acquired businesses and achieving planned operational synergies.
- While our strategy is to acquire businesses that will improve our competitiveness and profitability, acquisitions may not be successful or accretive to earnings.

Risk Mitigation Actions:

Project Cells work on each project with experienced individuals who have the requisite technical, commercial, and legal skills. They may use the resources of external consultants to strengthen the planning and execution of each project. Further, the projects are covered with comprehensive insurance cover during the construction period for physical assets and for manpower working onsite.

5.2 Exchange rate and/or interest rate fluctuations may have a significant adverse impact on our business, financial condition, prospects and operational results

- Due the global nature of our business, changes in foreign currency rates could have an adverse impact on our business, financial condition, prospects, and operational results. Currency fluctuations affect us because of mismatches between the currencies in which operating costs are incurred and those in which revenues are received. We sell products that are typically priced by reference to prices in US dollars or euros, while a portion of operating costs are incurred in local currencies.
- Floating interest rates are impacted by macroeconomic conditions and the monetary policy of each region. Interest rate risk is the risk that future movements in market interest rates will affect the results of the Company's operations and its cash flows.
- Credit risk is the potential financial loss resulting from the failure of a customer or counterparty to settle its financial and contractual obligations with the Company as and when they fall due.
- Our reported earnings may also be affected by fluctuations between the baht, which is our reporting currency, and the non-baht currencies in which some of our overseas subsidiaries report their results.

Risk Mitigation Actions:**Currency risk:**

- IVL primarily utilizes forward exchange contracts with maturities of less than one year to hedge certain financial assets and liabilities determined by foreign currencies.
- Our operating subsidiaries borrow loans in their principal currency of cashflows to have a natural hedge and minimize associated risk.

Interest rate risk:

- We manage a portfolio of debt with a mix of fixed interest rates and floating interest rates in major currencies of debt which are the Thai baht, US dollars and euros. At the end of December 31, 2020, 70% of outstanding debt is at fixed interest rates.
- IVL has mitigated interest rate risk by using derivative financial instruments. Principally, interest rate swaps and the issuance of fixed coupon debentures/bonds including perpetual debentures in the Thai bond market are used to manage exposure to fluctuations in interest rates on borrowings.

Credit risk:

- IVL has a credit policy in place and the exposure to credit risk is monitored on an ongoing basis.
- Credit evaluations are performed on all customers requiring credit over a certain amount.
- The Company does take credit insurance to cover credit risk. Most outstanding trade receivables are secured by credit insurance, letter of credits and others.

Liquidity risk:

- The Company monitors and maintains a level of cash, and cash equivalents and unutilized credit facilities, deemed adequate by management to finance the Group's/Company's operations, and to mitigate the effects of fluctuations in cash flows.

5.3 The Company is a holding company and is dependent on the receipt of dividends to make dividend payments on our shares

- As a holding company, the Company is dependent on the receipt of dividends from its subsidiaries and associated companies, for which payment will depend on their future financial performance. This, in turn, depends on successfully implementing their strategies as well as on financial, competitive, regulatory, technical and other factors; general economic conditions, demand and selling prices for their products, and other factors specific to their respective industries or specific projects, many of which are beyond our control.

- The subsidiaries have dividend policies to not pay over 80% of net profits after tax and legal reserves. However, the board of those subsidiaries will approve dividends paid from time to time by considering some factors, i.e. cash reserved for loan repayments; expansion investments, or to support the cash flow of the Company in case of impacts by changes in market conditions.
- The ability of our direct and indirect subsidiaries to pay dividends to their shareholders, including the Company, is subject to applicable laws.
- Although we intend to pay dividends with respect to shares, our ability to pay dividends in the future will depend on decisions by the Board of Directors and/or the approval of shareholders at general meetings; results of operations; as well as cash flows; financial conditions; contractual restrictions and restrictions imposed by applicable laws and other factors which the Board of Directors deems relevant.

Risk Mitigation Actions:

- IVL received dividend income of THB 6.37 billion in 2020 from its direct and indirect subsidiaries while it paid dividends of THB 3.93 billion to its shareholders. The dividend received is 1.62 times the dividend paid. At the end of 2020, the retained earnings increased to THB 19.20 billion from THB 16.63 billion.
- Annual planning is carried out for the receipt of interim and final dividends from direct and indirect subsidiaries. The respective CFO/financial controllers plan for the required corporate approvals and take their cashflow plan into consideration for the payment of dividends.

5.4 Risk that the Company cannot comply with debt covenants

IVL and its subsidiaries had total outstanding debts of THB 211.96 billion at the end of 2020. The total outstanding debt includes bank overdrafts, short-term loans, long-term loans, debentures/bonds and financial lease liabilities. The net debt-equity ratio at the end of 2020 was around 1.42 times, compared to what is required under financial covenants of equal to or less than 2.00 times.

The Company's financial position has strengthened over the years with a larger equity base and increase in cash flow from operations. Total shareholders' equity at the end of 2020 stood at THB 135.61 billion (including perpetual debentures of THB 14.90 billion). In addition, syndicated bank loans at the regional level and subsidiaries have standalone financing which are required to meet financial obligations and comply with financial covenants.



In October 2020, the domestic credit rating of IVL was reaffirmed at AA- by TRIS. IVL would like to maintain a business profile and financial profile which maintains or enhances its credit rating profile.

Risk Mitigation Actions:

The Board of Directors provides guidance to maintain a net debt-equity ratio to not to exceed 1.50 times.

- Diversified sources of financing through long-term loans, debentures, short-term loans, working capital financing solutions and others in multiple currencies including the Thai baht, US dollars, euros and others.
- Tap sources of long-term sustainability-linked financing.
- Surplus/unutilized credit lines from banks/institutions to have surplus liquidity.
- Monitoring the Company's financial position, cashflows and covenants on a quarterly basis.

6. Compliance & Legal Risks

6.1 Environmental regulations may cause us to incur costs and liabilities

- Our operations are subject to environmental laws and regulations by central and local authorities in the countries in which we operate. These requirements are complex, subject to frequent changes and have tended to become more stringent over time.
- We have incurred, and will continue to incur, costs and capital expenditures in complying with these laws and regulations and in obtaining and maintaining all necessary permits.

Risk Mitigation Actions:

We have procedures in place that enable us to comply with environmental laws and regulations; however, there can be no assurance that we will at all times be in compliance with all of our obligations in the future or that we will be able to obtain or renew all licenses, consents or other permits necessary to allow us to continue to operate our businesses. Any failure by us to comply with such laws and regulations could subject us to fines, penalties and other liabilities.

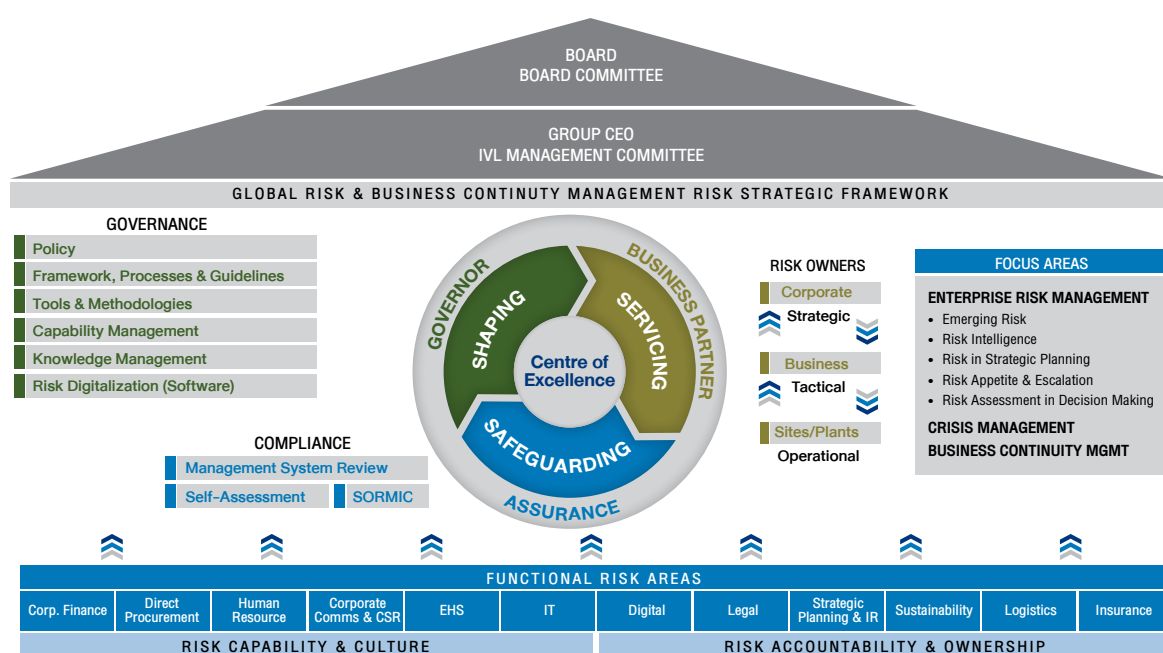
Risk Management



Strengthening Risk Management and Internal Control to support IVL's Board in compliance with International Standards

The business landscape is becoming more volatile, uncertain, untrusting, complex, ambiguous (VUUCA); change cycles are shorter, digital disruption and emerging risks are evolving business risks at a pace never seen before, potentially impacting our brand, competitive advantage and shareholder value.

The **Risk Operating Model** approach aims to strengthen Risk Management and Internal Controls in line with international standards and enhance Board risk oversight by integrating Enterprise Risk Management (ERM), Crisis Management (CM) and Business Continuity Management (BCM) to realize synergies, reduce redundancies and drive consistency, compliance and effectiveness on order to accelerate risk maturity across an increasingly integrated business value chain.



IVL Risk Operating Model

This will be driven alongside **a Five-Pronged Risk Strategy Framework**;

- Risk Governance** sets fit-for-purpose standard requirements by establishing a Risk Policy, Framework and Guidelines covering three fundamental focus areas: ERM, CM and BCM.
- Risk Operations and System** outlines the operating model and environment in which ERM, CM and BCM are to be implemented in IVL.
- Risk Oversight and Organization Structure** describes the organization of functions and roles within the Group to enable the three focus areas to be effectively implemented and institutionalized across the three levels of risks: Strategic, Tactical and Operational. Corporate will serve as the Centre of Excellence (COE) and play a Governor/ Partner role in the business to steward, shape and support the business in terms of expertise, facilitation, advisory, capability and change management.
- Risk Capability and Upskilling** will be centralized and designed to elevate both leaders and risk practitioners as Credible Risk Advocates by facilitating the right tools, training programs and platforms to strengthen risk competencies and best practices.

- Risk Culture and Change Management** aims to inculcate the right risk mindset and culture which is crucial to drive continuous improvement, sustainability of practices and a generative risk culture.

The Risk Strategy and Operating Model will enable value protection and value creation through the following Value Propositions:

- Proactive trigger of emerging risks to protect and leverage on opportunities
- Drive consistent practices through robust risk oversight, governance and assurance
- Institutionalize risk, crisis and business continuity processes for effective risk escalation and intervention
- Enable a structured risk-reward trade-off assessment to support decision-making
- Sustain risk capabilities and a pervasive risk culture across the organization

Internal Control and Risk Management

The Board of Directors has assigned the Audit Committee ("AC") to review the financial reporting process of the Company and its subsidiaries in accordance with generally accepted and consistently applied accounting standards in-line with the rules and regulations of the Securities and Exchange Commission ("SEC") and the Stock Exchange of Thailand ("SET"), as well as any relevant legislation. The responsibilities of the AC include reviewing the Company's performance in compliance with corporate governance principles, maintaining suitable, effective, and well-recognized internal control and audit systems, the selection and recommendation of external auditors, and any other tasks as assigned by the Board of Directors.

The Company's in-house Internal Audit Department ("IAD") reports to the AC. The IAD is responsible for reviewing the adequacy and effectiveness of the Company's internal control systems for IVL and its subsidiaries. The department reports its findings and recommendations to management and the AC. The assurance reviews are performed to ensure the existence of an effective system of internal controls that provides reasonable assurance for achievement of the Company's objectives. Risks at all levels of the Company are managed through an effective internal control system and documented in IVL's Sufficiency of Internal Control System Evaluation Form.

The Board of Directors, at Meeting No. 1/2021 held on January 14, 2021 and attended by all members of the AC, considered the recommendations of the Committee, evaluated its opinion on the internal control systems of the Company and its subsidiaries for 2020 and observed the internal control systems to be adequate. The internal control systems in use at the Company generally conform to the internal control model as advocated by the Committee of Sponsoring Organizations of the Treadway Commission ("COSO"). The summary of IVL's internal control systems in-line with the COSO framework is detailed below:

Control Environment

IVL prepares annual and five-year business plans, which are approved by the Board of Directors. These plans form the basis of arriving at employee goals and objectives at all operating units as well as the steps to be followed to achieve the Company's objectives. The Company's objectives are periodically reviewed from time to time. The Company has a well-structured organization in place that delineates the individual's responsibility for key businesses and other functions. All employees have been provided the IVL Policies Handbook which contains all of the policies that facilitate in improving the control environment. IVL has a detailed Code of Conduct, namely the Code of Conduct for Directors, and



the Code of Conduct for Employees. These Codes of Conduct apply to all directors and employees of Indorama Ventures PCL and its subsidiaries and affiliates. All new employees sign-off on the Code of Conduct, which is provided to them as part of their orientation program. The Code of Conduct for Employees and Directors is published on IVL's website.

The Company has a Policy on Internal Information Control and Use of Insider Information to regulate the conduct of all directors, executives and employees to keep the Company's information confidential and not divulging such information with the aim of gaining benefits for the individual in question or others, directly or indirectly. The Anti-Corruption Policy was adopted to conduct IVL's global business operations honestly, fairly, without corruption or bribery, and with accountability. These policies are published on IVL's website.

Risk Assessment

IVL has a Sustainability and Risk Management Committee ("SRMC"). The SRMC reviews the Company's performance on sustainability, assesses the risks associated with aspects on sustainable development and informs the Board of risks with potentially significant impacts to ensure the implementation of robust business processes, procedures and policies. In addition, there is an effective process to evaluate and advise the Board of significant risks and uncertainties that could adversely impact sustainable and profitable growth. The SRMC reports to the Board periodically on its activities and evaluates its performance on an annual basis by reference to its charter and current best practices. SRMC also reviews the sensitivity analysis of the business plan, greenfield and M&A projects. Respective business heads, who are members of the SRMC, also closely monitor key business risks.

Control Activities

IVL's operating units have policies and procedures with regard to general management, procurement, sales and marketing, and financial activities. These, together with the financial authority manual, ensure that adequate controls and checks are exercised by management to operate efficiently and mitigate the risk of fraud or misappropriations. There is an adequate separation of duties with respect to the authorizations, recording and custody of assets at all of the units. There is an internal policy on connected transactions which very clearly stipulates what constitutes a connected transaction, who falls under the definition of a connected/related party and the procedure to be followed in case the Company enters into a connected transaction. All connected transactions have to follow the rules and regulations of the SEC/SET, whereby, depending on the size of the transaction, a new connected transaction is reviewed by the AC and recommended

to the Board for its approval. Every quarter, a statement of all connected transactions is submitted to the AC and the Board. All IVL subsidiaries have directors who regularly monitor their operations ensuring they are in-line with the overall objectives of IVL. The IVL Board is regularly briefed on the performance of its subsidiaries. The minutes of subsidiary units are provided at each quarterly meeting of the Board. Compliance confirmation is obtained from the respective Plant Head confirming the status of compliance with all applicable laws and regulations, while statutory filings are reported to the AC on a quarterly basis and to the Board on an as-needed basis. The Company has a Disaster Recovery Plan for IT processes to bring the IT system back to normal within a specified timeframe.

Information and Communications

The Company and management ensure that adequate and sufficient information is provided to the Board for their review and consideration. The minutes of the Board of Directors meeting are prepared by the Company Secretary, covering all aspects of the discussions, and are reviewed by all directors and signed-off by the Chairman of the Meeting. The Company Secretary and the AC Secretary fulfill any requirements and provide information needed to assist the Directors. IVL has a Whistleblower Policy which provides different ways for employees to report anonymous complaints. The Legal & Secretarial Department of the Company is authorized to communicate with regulatory agencies. IVL's website provides a communications channel to external parties who may contact the Company's independent directors by sending an email to: independentdirectors@indorama.net or ethics@indorama.net

Monitoring

The annual operational and performance budgets of the Company and its subsidiaries are reviewed and approved by the Board of Directors.

IVL's quarterly consolidated financial statements are reviewed and approved by the AC, which also reviews the annual audited financial statements and makes recommendations to the Board for its consideration and approval. IVL's management evaluates the capability of the corporate internal control system on an annual basis and updates it accordingly to reflect the evolving needs of the business.

The Company's in-house IAD formulates the annual internal audit plan which is approved by the AC. The risk-based audit plan considers several risk factors and the results of previous internal audit reviews. The annual Internal Audit plan is also discussed with the Company's senior management and ultimately approved by the AC. The IAD reviews the internal control system throughout



the various business processes and across all subsidiaries according to its Annual Internal Audit Plan. The deficiencies noted and recommendations made are communicated to the personnel responsible for implementation through the internal audit report. The significant audit findings are presented to the AC on a half-yearly basis. From time to time, the AC reviews a management letter from the external auditors, and periodically reviews the status update on the implementation of outstanding recommendations. The IAD has completed the Control Self-Assessment Questionnaires (CSAs) for five business processes at IVL and its subsidiaries and affiliates, and is in the process of rolling out the sixth Control Self-Assessment Questionnaire on the "Operations and Waste Management" process. The IAD reviews the completed CSAs by the business units and reports on their compliance to the AC. The CSA approach facilitates a "Risk Awareness Culture" among employees working across all IVL entities.

Head of Internal Audit and Head of Corporate Compliance

1. Head of Internal Audit

The Company has its own Internal Audit Department (IAD). The Internal Audit Manual describes in detail the International Professional Practices Framework, Standards and Internal Audit planning and execution process that governs the day-to-day working of the IAD. The AC has the authority to approve the appointment, transfer and dismissal of the Head of Internal Audit. Mr. Narayanaswamy Subramanian heads the IAD at IVL.

2. Head of Corporate Compliance

IVL has appointed the Company Secretary, Mr. Souvik Roy Chowdhury, as the Head of Corporate Compliance to review and evaluate the various statutory and corporate compliances for all business units and ensure that they are in accordance with the applicable rules, regulations and Company policies.

Connected Transaction

The connected transactions occur in the normal course of business and the pricing is akin to market prices or at arm's length basis that would normally be charged to/by any other customers/suppliers with comparable and reasonable terms and conditions. The following is a summary of such transactions as at 31st December 2020:-

Connected Party & Relationship	Type of Transaction	(Amount in MB)		
		2018	2019	2020
PT. Indo-Rama Synthetics Tbk., Indonesia (PTIRS) • The majority shareholding in PTIRS is ultimately controlled by a Trust in which Mr. Sri Prakash Lohia ¹ and his immediate family members are the discretionary beneficiaries. • Mr. Sri Prakash Lohia ¹ is the President Commissioner and Mr. Amit Lohia ¹ is a Vice President Commissioner of PTIRS.	• Sale of raw materials/ products/services/utilities	1,778.54	1,547.92	2,587.95
	• Purchase of raw materials/ products/services/utilities	2,133.94	2,552.35	346.19
PT. Indorama Petrochemicals, Indonesia (PTIP)* * From January 2019, PTIP has become an indirect wholly-owned subsidiary of IVL and thus no longer a connected party.	• Sale of raw materials/ products/rendering of services	522.13	0.00	0.00
	• Purchase of raw materials/ products/services	9,234.25	0.00	0.00
Indorama Eleme Petrochemicals Ltd., Nigeria (IEPL) • The majority shareholding in IEPL is ultimately controlled by a Trust in which Mr. Sri Prakash Lohia ¹ and his immediate family members are the discretionary beneficiaries. • Mr. Sri Prakash Lohia ¹ is the Chairman and Mr. Amit Lohia ¹ is a Director of IEPL	Purchase of utilities/services	64.05	54.78	54.68
Pacific Resources Ltd., Thailand Mr. Anuj Lohia, son of Mr. Alope Lohia ² , is a major shareholder of Pacific Resources Ltd.	Service expense (Office Lease)	8.20	8.40	7.60
Cryoviva (Thailand) Ltd., Thailand Mr. Alope Lohia ² is an indirect shareholder of Cryoviva (Thailand) Ltd.	Service income	0.93	0.93	0.93
PT. Irama Unggul, Indonesia (IU) • The majority shareholding in IU is ultimately controlled by a Trust in which Mr. Sri Prakash Lohia ¹ and his immediate family members are the discretionary beneficiaries. • Mr. Sri Prakash Lohia ¹ is the President Commissioner of IU	Service expense (Office Lease)	1.06	1.02	1.02

Connected Party & Relationship	Type of Transaction	(Amount in MB)		
		2018	2019	2020
Lohia Global Holdings Limited, Hong Kong-China	Service expense (Royalty Fee for Indorama trade name)	165.51	175.44	204.86
Lohia Global Holdings Limited is owned by Ms. Shruti Lohia, a daughter of Mr. Sri Prakash Lohia ¹ , and Mr. Krishan Kumar Aggarwal.				
Vega Aviation Limited, British Virgin Islands	Service expense (Aircraft Lease)	80.81	77.61	78.23
Vega Aviation Limited is a company which is 100% owned by Canopus International Limited, Mauritius. Canopus International Limited is a company in which Mr. Alope Lohia ² and his immediate family have voting rights of up to 76% and an equity interest of up to 50% while the remaining voting rights of 24% and 50% of the equity interest is ultimately controlled by a Trust in which Mr. Sri Prakash Lohia ¹ and his immediate family members are the discretionary beneficiaries.				
Thai Plaspac Public Company Limited, Thailand (TPAC)	Sale of products	4.19	8.43	10.11
<ul style="list-style-type: none"> Mr. Anuj Lohia, son of Mr. Alope Lohia², is a major shareholder in TPAC. Mr. Kevin Kumar Sharma, son-in-law of Mr. Alope Lohia², is the CEO of TPAC. 				
Yayasan Pendidikan Indorama, Indonesia (YP)	Service Expense (Job work)	14.91	9.29	3.82
The sole trustee of YP is Mr. Sri Prakash Lohia ¹ and Mr. Amit Lohia ¹ is the Chairman of the Advisory Board of YP.				
PT. Tigadya Minergy, Indonesia	Purchase of coal	102.80	235.24	0.00
The majority shareholding of PT. Tigadya Minergy is ultimately controlled by Mr. Sri Prakash Lohia ¹ .				
Indorama Industries Limited, India (IIL)	<ul style="list-style-type: none"> Sale of raw materials/ products/services/utilities 	0.00	48.52	9.64
The majority shareholding in IIL is ultimately controlled by a Trust in which Mr. Sri Prakash Lohia ¹ and his immediate family members are the discretionary beneficiaries.				
	<ul style="list-style-type: none"> Purchase of raw materials/ products/services/utilities 	0.00	39.51	26.80
IVL Foundation	Donation for various social, charitable, environmental protection, sports, healthcare and other related activities.	0.00	20.00	11.50
Mrs. Suchitra Lohia ³ and Mrs. Aradhana Lohia, a daughter of Mr. Alope Lohia ² and Mrs. Suchitra Lohia ³ , are the Chairperson and Vice Chairperson of the IVL Foundation.				

Remark ¹ Mr. Sri Prakash Lohia is the Chairman and a Non-Executive Director and Mr. Amit Lohia is a Non-Executive Director of Indorama Ventures Public Company Limited ("IVL");

² Mr. Alope Lohia is an Executive Director and Group CEO of IVL;

³ Mrs. Suchitra Lohia is an Executive Director and Deputy Group CEO of IVL.

The Audit Committee Opinion on the Connected Transaction

The above connected transactions have been considered and opined by the Company's Audit Committee that the aforesaid connected transactions are reasonable and undertaken in the interest of the Company's business. While entering into these transactions, the Committee considers the best interest of the Company. No additional benefit has been transferred between the Company and the persons who have the conflict of interest.

Policy and Procedure to Approve the Connected Transaction

In the event that the Company carries out its business with the connected persons who may have a conflict of interest with the Company, the Audit Committee will express its opinion regarding the necessity of such transactions. The Audit Committee will ensure that terms and conditions of these transactions are consistent with market practice and prices charged for these transactions are evaluated and compared with market prices. In the event that market price is not available, the Audit Committee must ensure that these prices are reasonable and the transactions are carried out in the best interest of the Company. If the Audit Committee is unable to evaluate connected transactions due to lack of expertise in certain areas, the Company will arrange an independent expert to evaluate and give opinion on such transactions. The Board of

Directors or the Audit Committee or the Company shareholders, as the case may be, will use this opinion from the independent expert as a supplement to form their own conclusion. Those directors who may have conflict of interest with the Company are prohibited from either voting or attending the meeting on matters regarding to the said connected transactions and disclose in Annual Report and Annual Registration Statement (Form 56-1).

Policy on the Entering into a New Connected Transaction

For any new connected transaction, the respective unit would need to contact the Secretary of the Audit Committee and inform about the proposed transaction, its rationale, value of transaction, pricing, terms and conditions in order for the Secretary of the Audit Committee to classify under which category of connected transaction it would fall into and to get necessary approval from the Management/Audit Committee/Board/Shareholders as required. Moreover, the Company will ensure that such transactions are carried out in compliance with the SEC Act, Rules, Notifications and Regulations of the Capital Market Supervisory Board, SEC and SET. In addition, the Company must also comply with the disclosure rules related to connected transactions and the Company's policy. All connected transactions are reviewed and confirmed by the Internal Audit department.

Dividend Payment Policy

Indorama Ventures Public Company Limited

IVL has a policy to pay a total dividend of not less than 30% of the net profit after tax and appropriation to legal reserve. However, the Board of Directors shall have the authority to consider waiving or amending such dividend policy subject to the condition that it will bring the greatest benefit to the shareholders, such as to use such portion of the net profit as reserve for debt repayment, capital investment for production expansion or as a support in case of changing market conditions which would affect the company's future cash flows.

Subsidiary Companies

The payout of dividend by the IVL subsidiaries to IVL is up to 80% of their net profit after tax and after appropriation to legal reserve. However, the Board of Directors of the subsidiaries will consider the dividend payment, and may amend the dividend payment policy, by taking into account the reserves for debt payment, capital investment for production expansion or as a support in case of changing market conditions or as required to manage the future cash flows.



Corporate Governance Report 2020

As a global company, the Board of Directors and management at Indorama Ventures remain firmly committed to implementing and practicing good corporate governance across all its operations in pursuit of long-term, sustainable business success. The Company continues to abide by the Corporate Governance Code for listed companies 2017 and all the recommendations of the Securities Exchange Commission (SEC), Stock Exchange of Thailand (SET), Institute of Directors, Thailand (IOD) and others. The Company continues to ensure that all IVL employees are aware of our Corporate Governance principles and practices. The Corporate Governance Manual (the Manual), approved by the Board in August 2019, provides all IVL directors, managers, employees and stakeholders a clearer focus of how the Company's values are being implemented and how corporate governance is being realized at IVL.

1. Corporate Governance Principles

In the Manual, the Corporate Governance Policy was renamed the Corporate Governance Principles which follow the guidelines set out by the SET and the Corporate Governance criteria under the OECD Principles. It covers the following: a) the rights of shareholders; b) equitable treatment of shareholders; c) the role of stakeholders; d) disclosure and transparency; and e) the responsibility of the Board of Directors. The Corporate Governance Principles provide the basic foundation for sound, long-term oriented governance, and balance the interests of the Company's many stakeholders.



Furthermore, the Board of Directors performs its duties as suggested in the Corporate Governance Code for listed companies 2017 (the Code) issued by the SEC. It consists of eight principles: 1) Establish clear leadership roles and responsibilities of the Board; 2) Define objectives that promote sustainable value creation; 3) Strengthen Board effectiveness; 4) Ensure effective CEO and people management; 5) Nurture innovation and responsible business; 6) Strengthen effective risk management and internal controls; 7) Ensure disclosure and financial integrity; 8) Ensure engagement and communication with shareholders. The Company has implemented 97% of the SEC's recommendations.

In addition, the Board oversees and enforces the Company's adherence to the rules and regulations of Listed Companies issued by the SEC and Capital Market Supervisory Board (CMSB) and implements the recommendations as stated in the Corporate Governance Report of Thai Listed entities (CGR) issued by the IOD, ASEAN Corporate Governance Scorecard and Transparency International.

Highlighted Corporate Governance Practices in 2020

The Company has adopted and consistently complied with principles of good corporate governance as recommended by the SET as explained in the various sections below. However, the following may be noted:

1. The Manual, as mentioned above, was introduced to all IVL entities globally in September 2019. The Corporate CGPAC Team provided various support to units to ensure its effective implementation. Details are further explained below in the IVL Corporate Governance Policy Awareness Campaign 2020.
2. The Company has a Chairman of the Board who is a Non-executive Director and a major shareholder, who was chosen because of his vast experience in what is a very complex industry. The Chairman has no role in the management of the Company but his experience is called upon to advise the Board as necessary. He was re-appointed for another term.
3. The Company formalized the appointment a Lead Independent Director (LID) since February 2018. The roles and responsibilities of the LID were revised during the year to be aligned with good governance practices.
4. To improve gender diversity of the Board, a female independent director was appointed at the Annual General Meeting of Shareholders No. 1/2020 in June 2020. The Board now has two female directors.
5. Charters and other governance policies were reviewed and amendments were made as required. This is discussed in a later section of the report.
6. A new Whistleblower Committee, together with a Charter, were approved by the Board of Directors in November 2020. Further details are provided in the Whistleblower Policy.
7. The Company does not use "Cumulative Voting" for the election of Company directors.

The Company received the following assessment and awards for its good corporate governance practices in 2020:

1. **A score of 100 percent for the 2020 Annual General Meeting** of shareholders, judged by the Thai Investors Association. This was the ninth consecutive year this score was received.
2. An **"Excellent - 5 Star" CG score** in the practice of **Corporate Governance of Thai Listed Companies** carried out by the Thai Institute of Directors (IOD) in conjunction with the Stock Exchange and Security Exchange Commission of Thailand. The excellent CG score is the highest possible rating and is awarded to firms with a score of 90-100 percent. IVL again scored 93 percent. This is the eighth consecutive year that IVL received the "5 star" rating.
3. IVL was one of the awardees of the **Asset Class PLC** award for the 2019 ASEAN CG Scorecard (ACGS) announced in 2020. ACGS is supported by the ASEAN Capital Markets Forum (ACMF) and Asian Development Bank (ADB).
4. The Company is in the process of renewing its certification for **Thailand's Private Sector Collective Action Coalition Against Corruption (CAC)** due in 2021. IVL received its first certification in October 2014.
5. The Company was listed in the **Dow Jones Sustainability World and Emerging Markets Indices 2020 (DJSI)** - Chemicals Industry in third place among the top 115 global chemical companies.
6. The Company participated in the **CDP's Climate Change Assessment** for the fifth consecutive year and achieved a **"B"** Rating in 2020.
7. The Company was included as a constituent of the **FTSE4Good Index Series** and received the **Best ESG Score in the 100 Percentile** of the group.
8. The Company received a **Gold Recognition for sustainability from EcoVadis**. This achievement places the company in the **top 2% of companies** that manufacture basic chemicals, improving from a top 3% placement in 2019.
9. The Company received the **Thailand Sustainability Investment (THSI)** award from the Stock Exchange of Thailand for the **sixth consecutive year**.
10. The Company was awarded a **First Rank** in the **Leading SET Index Bloomberg ESG Disclosure Scores**.
11. The Company achieved a **"BBB"** rating in the **MSCI ESG Rating** in 2020, improving from a **"BB"** rating in 2019.
12. The Company received the **Sustainability Disclosure Award 2020 from Thaipat**, which recognized IVL's good

practice of disclosing social and environmental policies as well as outstanding performance in environmental, social and governance (ESG) factors, supporting long-term sustainable development.

IVL Corporate Governance Awareness Campaign 2020

IVL has had a Corporate Governance Policy Awareness Campaign (CGPAC) since 2013. The CGPAC Team in Bangkok has, through a dedicated resource, continuously monitored progress and provided guidance and support to establish strong awareness among all IVL associates in not only understanding all corporate governance related policies but their implementation through training in the spirit in which they were created. The CGPAC is a continuous program that communicates, trains, reviews and monitors implementation.

In 2020, the CGPAC Team continued to support the effective implementation of the CG Manual at all IVL units by:

- Developing an Anti-Corruption Assistance Package (the Assistance Package) as a guideline for units on how to effectively implement the Anti-Corruption Policy. Further details are provided in the Anti-Corruption and Bribery section.
- In view of the travel restrictions due to the pandemic, the team intensified their online training sessions and meetings with local teams who are responsible for communicating the Manual and implementing the Anti-Corruption Policy to their employees. Based on the requirements of each unit, the CGPAC Team used both lectures and in-depth discussions in delivering the online sessions, ensuring consistency and a clear understanding.

Online training session statistics with local teams conducted by the CGPAC Team

Number of Sessions			Number of Attendees		
CG Manual	Anti - Corruption Assistance Package	Total	CG Manual	Anti - Corruption Assistance Package	Total
9	21	30	211	260	471

The training session introduced the CG Manual to employees to provide guidance on how they can take part in creating good governance in the Company. The session began with an introduction of the concept of corporate governance and how it applies to IVL. It then discussed IVL's Code of Conduct with examples of ethical dilemmas that employees may face. To encourage the reporting of any wrongdoing that they may come across, the session concluded by informing employees about the Company's whistleblower reporting channels.

Following the training session, the units tested the level of understanding of employees on the CG Manual. In 2020, the CGPAC Team also developed a set of quiz questions and distributed them to all units to be used in their training.

- A set of training videos was developed to facilitate local teams in delivering their training of the Manual through online platforms. The duration of each video is within 15 minutes to ensure the full attention of trainees. Subtitles were added in Dutch, Polish, Portuguese (Brazil), Spanish and Turkish.
- An e-Book version of the Manual was also developed to make it more interesting and easier to navigate. Readers can click on content to directly access the relevant links containing annexes or webpages. The e-Book is available on IVL's website in multiple languages including Thai, Chinese and Spanish.

All site heads are responsible for the implementation of the Manual and report their results to the CGPAC Team which forwards the findings to the Nomination, Compensation and Corporate Governance Committee and the Board.

Site/HR heads ensure that employees are informed about the CG Manual as soon as they join the Company and new employees must acknowledge that they have read and understood the Manual. This initiative has ensured that all new employees are aware of the program.

The CGPAC Implementation Report for 2020 revealed that 86% of all employees attended corporate governance training in the past three years, increasing from the 80% reported last year. The proportion of sites with 100% training coverage of their employees also increased from 60% in 2019 to 81% in 2020.

To maintain the momentum in 2021, the CGPAC Team will develop a Conflict of Interest Assistance Package to facilitate the implementation of the related policy. The CGPAC Team will provide online training for unit management along the lines of the rollout of the Anti-Corruption Assistance Package. The CGPAC Team aims to deliver training sessions for all units in Asia and at least four training sessions for units from Europe, the Middle East and Africa (EMENA) and the Americas.

The CGPAC Team also plans to develop a new set of training toolkits for units to provide training locally. The training will focus on case studies relating to policies in the CG Manual.

The Corporate Governance Manual and related policies are reviewed annually. The CGPAC Team submits their recommendations to the Board for any changes to policies each year as required.

1.1 Rights and Equitable Treatment of Shareholders

The Company's utmost priority is to protect the rights of shareholders, irrespective of their shareholdings, and encourage them to exercise their rights as specified in relevant laws.

The Company recognizes the basic legitimate right of shareholders, whether major or minor, local, foreign or institutional, to participate in shareholders' meetings; to appoint a proxy to participate and vote at the meeting; to vote for the appointment or removal of Individual Directors; to vote on the annual appointment of statutory auditors and fix their remuneration and to vote on various other businesses of the Company. IVL implemented all of these shareholder rights at their Annual General Meeting of Shareholders No. 1/2020 held on June 30, 2020.

Shareholders' rights also include the eligibility to receive dividend payments and the right to give opinions and enquire into business matters of the Company at the shareholders' meeting.

Apart from the above, IVL also recognizes the equal rights of all shareholders to obtain accurate, adequate and timely information from the Company for their decision-making and will always strive to provide the same.

IVL has no agreement of any kind with any of its shareholders and has a straight forward structure with its subsidiaries, affiliates and joint venture partners with no joint holding and cross holding of shares.

Information on IVL Group's structure is available on the Company website under "Our Company" and updated quarterly.

a. General Rights and Equality

IVL provides an opportunity for minority shareholders to propose agenda items and to nominate qualified individuals to be elected as Directors of the Company before the AGM for a period of over 90 days. Such notifications to shareholders are posted on the websites of the SET and the Company, most recently on September 3, 2020. The notification clearly mentioned the procedures and criteria. The Company has not received any proposal from any shareholder and this was conveyed to the Board in February 2021.

IVL will continue to provide opportunities for minority shareholders to participate in fundamental corporate decisions.

To ensure that shareholders receive the annual audited financial statements and quarterly reviewed financial results on time, IVL disclosed the 2019 annual audited financial statements and the three reviewed quarterly financial statements of 2020 on the same day of their approval by the Board of Directors and/or Audit Committee through the websites of the Company and SET in English and Thai.

IVL ensures regular and timely disclosures through its website and also through the SET on all relevant information such as the Annual Report, Form 56-1, Shareholders' Meeting resolutions, important Board resolutions, acquisition updates, opportunity day presentations, analyst reports, press releases and other relevant information about the Company and its subsidiaries in an effort to keep shareholders informed on a timely and adequate basis.

IVL strongly believes in the participation of its shareholders and the important need for them to understand the operations and business activities of the Company and its subsidiaries and to interact with the management. The Company organizes visits by shareholders to its plant in Thailand every year. For 2020, the Company could not organize a plant visit due to the COVID-19 pandemic. Such annual visits shall continue to be organized in future as and when the situation improves.

Normally, shareholders are notified more than 30 days before the Shareholders' Meeting. Each shareholder receives complete and adequate information on the criteria and procedures of the meeting. However, due to the COVID-19 lockdown in Thailand and restrictions on holding large gatherings, the Annual General Meeting of Shareholders No. 1/2020 scheduled for April 22, 2020 for which the notice was sent out more than 30 days in advance (March 25) was cancelled and subsequently held on June 30, 2020 with a shorter notice period in accordance with the law. The main intention of the Company was to hold the Annual General Meeting as soon as possible without any inordinate delay.

All information sent to shareholders was posted on the Company's website both in English and in Thai on June 4, 2020. The shareholders were provided the facility to download the relevant information including the proxy forms.

The notice of the meeting was also communicated through the SET on June 4, 2020 and local newspapers to remind shareholders to participate at the meeting.

Shareholders were given the opportunity to submit questions in advance regarding the agenda, together with comments if any, from the date they were notified of the meeting. The procedure for submitting such questions was clearly mentioned in the notice to the meeting.

To support the measures of the Department of Disease Control, Ministry of Public Health, to reduce any risks from the COVID-19 outbreak and with regards to the health and safety of its shareholders, the Company informed shareholders of the guidelines for attending the shareholders' meeting in the notice.

The Company selected a meeting venue to avoid crowding from seating arrangements with appropriate social distancing at a



minimum of 1.5-2 meters distance between each seat. This limited the number of available seats in the meeting room but additional seating arrangements together with a live broadcast was made available in other rooms. All shareholders who wanted to attend the meeting were accommodated.

For the safety and well-being of attendees, no microphone was available to ask any questions at the meeting. The Company requested that shareholders who wished to ask questions write them down and submit their questions at the meeting room.

For 2020, as a safety precaution, IVL shareholders were encouraged to attend the AGM by proxy, in which shareholders can appoint either their authorized person or any one of the four Independent Directors nominated by the Company in this regard. The profiles of the Independent Director(s) were attached to the notification of the meeting.

The venue of the AGM was at a central location easily accessible to all, and a map of the location was provided in the notice to the meeting. The meeting was held at 2.00 pm in the afternoon.

On the meeting date, the Company arranged the shareholder registration to start more than two hours before the meeting. The preparation of the venue, greeters and appropriate number of registration staff were arranged to assist shareholders in the registration process. The registration continued even after the meeting had started to ensure the participation of all shareholders who came to attend the meeting.

The Company had detailed which documents were necessary for shareholders to present on the meeting date in order to have the right to attend the meeting, including the designated proxy form and shareholders were assisted by Company staff.

A barcode scanning system was used for the registration, providing a quick and efficient registration process. Barcoded ballots were handed out to each shareholder for voting.

To enable shareholders to make decisions, IVL provided adequate information in the notice to the meeting as to the agenda items.

[Appointment of New Directors and Re-Appointment of Retiring Directors](#)

Five Directors on the Board retired by rotation and agreed to be re-appointed for another term. In this regard, they gave their consent to the NCCG Committee to consider their re-appointment. The NCCG Committee after considering the experience and contribution of the Directors retiring deemed it appropriate to re-appoint them for another term and recommended the same to the Board.

The sixth Director (independent), who retired, opted out for re-election due to the mandatory retirement age criteria as specified in the Board Charter.

The Board, on the recommendation of the NCCG Committee, recommended the appointment of Mrs. Kaisri Nuengsigkapan as a new Independent Director in place of Mr. Maris Samaram who opted out of re-election. The appointment of Mrs. Kaisri improves the Board's gender diversity. She is the second female Director.

Profiles of the new Director and five Directors retiring and offering themselves for re-appointment include the following information, in order to facilitate voting by shareholders. Their name, age, type of directorship, family relationship with other directors, educational background, director training, work experience, positions held in other listed organizations, position in competing company/connected business that may cause a conflict of interest, number of years as director of the Company, shareholdings, legal disputes, meeting attendance and the opinion of the Board.

The NCCG Committee selects candidates with the highest personal and professional integrity, with demonstrated and exceptional abilities and judgment and who shall be the most effective, in conjunction with the other candidates and serving directors, in properly serving the long-term interest of shareholders.

In addition, the Committee considers the appropriate mix of skills, education, experiences, independence, knowledge, gender i.e. a broad diversity to match with the Company's requirements.

No Director of the Board has been proposed by major shareholders.

The appointment and re-appointment of retiring Directors was approved by shareholders based on the "one share one vote" method.

Minority shareholders were given the opportunity to nominate qualified individuals to be elected as Directors of the Company before the AGM for a period of over 90 days, but no proposals were received by the Company.

b. Approving Directors Remuneration

Independent and Non-Executive Directors

The Board reviewed and recommended to shareholders the remuneration of the Independent and Non-Executive Directors for 2020 and the annual bonus for all IVL Directors payable for 2019 performance as recommended by the NCCG Committee.

The policy followed by the NCCG Committee to recommend to the Board and shareholders the compensation and benefits of Independent and Non-Executive Directors are as follows:

- Compensation should fairly pay directors for work required in a company commensurate with the size and scope of the work;
- Compensation should, if possible, align directors' interests with the long-term interests of shareholders;
- The structure of the compensation should be simple, transparent and easy for shareholders to understand.
- Compensation for Non-executive Directors and Independent Directors is inclusive of a monthly retainer fee and annual bonus based on the previous year's Company performance.
- Additional compensation will be paid to directors serving on various sub-committees.

To implement the policy, the NCCG Committee designs an appropriate compensation package based on comparable listed companies with the following criteria:

The remuneration of the Chairman of the Board and Chairmen of the sub-committees who are either Independent or Non-Executive Directors is calculated at approximately 1.5 times the other members.

In determining the bonus payable to all Directors, the NCCG Committee assesses the individual performance annually based on their contributions, responsibilities, expertise and attendance. This assessment is undertaken by way of a Director Self Evaluation Form.

The total bonus is determined in relation to the profit of the Company and uses a point system to allocate amongst the directors as approved by the Board. There was no change in the retainer fee in 2020. No retainer fee was paid to Executive Directors on the Board of IVL.

Details of the remuneration paid in 2020 to the Independent Directors and Non-Executive Directors and the bonus for 2019 performance to all Directors is in the latter part of this report under Director Performance.

The Chairman of the NCCG Committee explained the above policy and the basis of calculation of the remuneration of Independent and Non-Executive Directors to shareholders at the 2020 Annual General Meeting.

Executive Directors and Management

The policy and criteria for Executive Directors and Management is elaborated in Board of Directors Performance in the later part of this report.

c. Appointing the External Auditor and Approving the Audit Fee

To facilitate shareholder voting, the notice of the meeting detailed the name of the audit firm, the auditors' names, the independence of the proposed auditors, the number of years they acted as the Company's auditor, the total audit and non-audit fees paid in 2018 and 2019 and separately, the Company audit fee proposed in 2020, together with the opinion of the Board based on the recommendation of the Audit Committee.

d. Payment of Dividend Interim Dividends

The dividend policy of the Company states that a dividend will be paid at not less than 30% of net profit after tax and appropriation to the legal reserve.

In compliance with the dividend policy of the Company, from the 2019 operating results, the Company paid four interim dividends at a rate of (i) 0.35 baht per share on June 4, 2019; (ii) 0.35 baht per share on September 5, 2019; (iii) 0.35 baht per share on December 11, 2019; and (iv) 0.175 baht per share on May 8, 2020, respectively. The fourth dividend payment was paid to alleviate the impact on the dividend entitlement of shareholders caused by the postponement of the AGM 2020. Thus, the total dividend payment

for the year 2019 was 1.225 baht per share. No further dividend was proposed at the Annual General Meeting held in June 2020.

e. Shareholders' Meeting

IVL's policy is to conduct shareholders' meetings in accordance with the Articles of Association of the Company and related laws to allow shareholders to fully exercise their rights in an informed manner.

The annual general meeting of shareholders must be organized within four months from the closure of the fiscal year of December. For fiscal year 2019, due to the COVID-19 crisis, the AGM was held on June 30, 2020 due to the enforcement of the lockdown in April and May in Thailand. The meeting started with 1,993 shareholders in person or proxy and representing 85.09% of the total shares sold. At the close of the meeting there were 2,026 shareholders in person or proxy representing 85.10%. The meeting started at 2.00 pm and ended at 3.50 pm.

Due to the COVID-19 travel restrictions worldwide, the Chairman of the Board, Mr. Sri Prakash Lohia, Chairman of the Boards, Mr. Amit Lohia, Non-Executive Director, and Mr. Udey Paul Singh Gill, Executive Director, who are all based out of Thailand could not attend the meeting. The Vice Chairman of the Board Mr. Rathian Srimongkol was appointed as the Chairman of the meeting.

Excluding the above three overseas directors, the remaining 13 Directors based in Bangkok attended the meeting in person including the Group Chief Executive Officer (GCEO), Chairman of the Audit Committee, Chairman of the NCCG Committee, the external auditors, the internal auditor of the Company, the legal counsel of the Company and senior management team members.

During the meeting, all shareholders were encouraged to question, express their opinions, suggestions, recommendations and request additional information to clarify any issues relating to the meeting. Shareholders were requested to write down their points and submit them to Company staff who in turn handed them over to the Chairman.

All answers to questions raised by shareholders were uploaded on the Company's website.

Prior to starting the meeting, the Chairman and his representative briefed shareholders on the criteria governing the meeting including the voting procedure. The legal counsel from The Capital Law Office, the Company's legal counsel was nominated to inspect the voting and vote counting procedure. In order to make the voting process fast and accurate, the Company used an electronic voting system. For each agenda/sub-agenda separate ballots were provided. After every agenda item was discussed and put to a vote, the ballots were collected and scanned. The results of the voting for each agenda were declared during the meeting and a summary of the results was presented at the close of the meeting.

The vote count was carried out in a transparent manner with one share being equal to one vote. Approval of a resolution was based on a majority of votes as there was no special resolution that would require three fourths of the eligible votes.

During the meeting, the Company did not introduce any unexpected important information or any new agenda items that were not notified to shareholders earlier. Directors who were to be re-appointed at the meeting left the meeting room when the agenda on their re-appointment was taken up.

The Company ensured that all shareholders were accommodated to attend the meeting even beyond the specified time limit.

The Chairman gave shareholders sufficient opportunity to have their questions addressed to the Chairman, GCEO, Chairman of the Audit Committee, Chairman of the NCCG Committee and management team during the meeting. The management team met shareholders informally after the meeting.

All the agenda items were passed by an average of around 99% of the total eligible votes. The resolution of the meeting, including the number of votes cast, was disclosed through the SET website on the same day of the meeting.

Comprehensive minutes of the meeting were recorded. They included the names of the Directors who attended and those who did not attend the meeting, summary of questions asked, important explanations and clarifications, and the voting results of each agenda and sub-agenda divided into for/against/abstained. The minutes were submitted to the SET within the required period of fourteen days after the AGM date. A copy of the minutes was also posted on the Company's website at the same time.

f. Reporting of and Trading in IVL Securities

The Company has a written policy in place on the reporting of and trading in IVL securities. Under this policy, no director or management shall directly or indirectly trade in IVL securities during the period of 15 working days prior to and two working days subsequent to the date of filing with the SET of the quarterly and annual financial statements of the Company. Further, if any director or management trades in IVL securities, they have to report to the SEC using the prescribed form within three working days and inform the Company Secretary Department. Every quarter, a summary of the shareholdings of Directors and management is reported to the Board.

g. Connected Transactions

The Company has in place a detailed policy on connected transactions which is stringently followed. The policy states who is a connected party and what constitutes a connected transaction, the various types of connected transactions and their threshold criteria/values for approval and disclosure purpose and what procedures to follow when there is a new connected transaction.

The guideline is circulated at the beginning of each year in order to remind all concerned about the compliance requirements regarding connected transactions. The Internal Audit Department ensures that all connected transactions follow the rules and regulations as prescribed by SEC/SET and internal policy guidelines. Any proposed new connected transaction is brought to the notice of the Internal Audit Department which, after their verification, forwards their recommendation to the Audit Committee through the Secretary of the Audit Committee. The Audit Committee, after their review, will in turn provide their recommendation to the Board. Without IVL Board approval, no new connected transaction can be made effective. At every quarterly meeting of the Audit Committee and Board of Directors, a statement of all the continuing connected transactions of the Company and its subsidiaries is submitted for acknowledgement.

However, the Company and its subsidiaries may have connected transactions with their Directors, management or potential connected persons. As a result, the Board of Directors Meeting approves, in principle, that management is empowered to approve such transactions under reasonable, transparent and non-corrupt conditions, provided that such a transaction is categorized as one with the same commercial terms as those an ordinary person would agree to with any unrelated counterparty under similar circumstances, on the basis of commercial negotiations (general trading conditions) and without any dependent interest resulting from the status of director, management or connected person, as the case may be.

Any Director who is directly or indirectly interested in any transaction abstains from discussions and voting. The Company has not given any financial assistance or guarantee to any external party.

Summary of Connected Transactions is reported separately in the Annual Report.

1.2 Role of Stakeholders

IVL gives equal importance to all of our stakeholders, both internal and external, such as shareholders, personnel, business partners, customers, competitors, creditors, communities, the environment and society. The Company is fully aware that support from each stakeholder will sustain and reinforce its competitive advantage and profitability.

The Company's policy safeguards their rights by strictly complying with applicable laws and regulations and to take into consideration their interests.

IVL's stakeholder policies are now part of the new Manual. Some of the policies which previously addressed groups of stakeholders separately were reviewed and integrated to avoid redundant provisions and elaborate on the more precise treatment of each group of key stakeholders.

IVL's policies relating to its Directors, employees and stakeholders in the new Manual are:

- Use of Internal Information
- Anti-Corruption Policy
- Environment Policy
- Intellectual Property Policy
- Human Rights Policy
- Health and Safety Policy
- HIV-AIDS
- Diversity Policy
- Treatment of Stakeholders:
 - Shareholders
 - Customers
 - Suppliers
 - Creditors
 - Competitors
 - Government
 - Media
- Whistleblower Policy
- Supplier Code of Conduct

All of the above policies, though included in the Manual, are separately disclosed on the website for reference. The policies are all uniformly structured.

As part of the CGPAC initiative and to develop and improve the relationship between IVL and its stakeholders, management will, on a continuous basis, reinforce that everyone working at IVL is aware of and understands all stakeholder related policies; and that they are implemented in the spirit in which they were created through continuous a program of training, seminars and monitored implementation.

The Company also communicates the Manual and Suppliers Code of Conduct with key stakeholders to ensure that they are aware of and have a clear understanding of IVL's corporate policies. Key stakeholders include the employees of contractors, suppliers, customers, local administration or authorities and external auditors, for example. On average, 70% of units directly communicated with key groups of stakeholders in 2020.

The Manual and related policies will be reviewed periodically and changes will be implemented as required.

The Company publishes a sustainability report every year. This is available on the Company's website in the sustainability section.

a. Shareholders:

IVL and our subsidiaries strive to conduct business in a transparent and efficient manner with a view to enhancing shareholder value and returns. We will only seek new businesses and projects that are accretive to shareholder value.

b. Customers:

IVL and its subsidiaries will strive to maintain and strengthen long-term and loyal relationships with customers and are determined to ensure customer satisfaction by providing high quality products and services that best fit customer needs at competitive prices, supported by a high standard of service and accurate information regarding our operations and products.

The Company believes in and will strive to keep communication channels open for constant customer feedback.

The Company hired J.D. Power to perform a customer satisfaction survey during the year. The customer satisfaction index average score for 2020 was 86.16.

c. Personnel:

All personnel of IVL and its subsidiaries are considered valuable assets, critical to the growth and profitability of the Company, where we strive to provide a conducive and quality-oriented work environment with the utmost emphasis on safety along with fair and equitable compensation compatible with similar businesses.

The Company prioritizes developing the skills, knowledge and potential of employees, and strives to build a work environment that is rich in diversity and attracts and retains high performance employees. The Company and its subsidiaries provide an orientation program for all new employees and development programs thereafter to develop and refresh their skills.

As the Company operates globally, each of its facilities has its own employee welfare policy, which is in line with local laws and regulations.

The Company has comprehensive policies on compensation and welfare for employees across all its global locations. These follow the local rules and regulations of the country where they are located.

The details of Indorama Ventures' compensation and training activities are provided below in the **"People"** section at the end of this report.

d. Suppliers:

IVL and our subsidiaries foster beneficial, long-standing and growing relationships with all its suppliers, based on mutual benefits and guided by good business ethics. We also want to work with our suppliers who operate in a fair, honest, and socially responsible manner. We feel strongly that we have a responsibility to ensure that consumers can trust the safety and quality of our products. Suppliers are expected to provide goods and services that meet all government and agreed-upon quality and safety standards.

Just as we have set standards for our business through our policies, we expect our suppliers, in addition to complying with

all environmental regulations, to share our commitment to use resources responsibly; eliminate and reduce waste; minimize their carbon footprint; offer a selection of natural, organic and eco-friendly products and develop facilities that align environmental, community, and business needs.

They should ensure that they adopt and implement acceptable safety, product quality, labor, and human rights, and social and legal principles in line with our own policies and to ensure these issues are adequately managed within the business for any goods or services supplied to us.

We have set ethical boundaries for ourselves and expect our suppliers to comply with them, acting with integrity and lawfully in the handling of competitive data, proprietary information and other intellectual property, and complying with legal requirements regarding competition, antitrust, and accurate and truthful marketing.

The Supplier Code of Conduct has been implemented in order to encourage the Company's supply chain to acknowledge and implement universal standards. The CGPAC Committee receives periodic reports from business units on the implementation status.

e. Creditors:

IVL and our subsidiaries attempt to provide its creditors with full and accurate information about the progress of the Company, as required for smooth business dealings and to comply with all our obligations.

Moreover, we want to see our creditors adhere to business principles consistent with our own and ensure that their products and services are produced and delivered to comply with all legislation relevant to their business in the areas where they operate.

f. Competitors:

IVL and our subsidiaries will act within the rules with respect to our competitors and employ best practices in dealing with them, as well as working towards market development and growth for the benefit of the industry as a whole.

g. Government:

IVL honors our relationships with governments and regulatory authorities in all of the jurisdictions where we operate and will comply with their instructions, statutory requirements and applicable laws concerning all aspects of our businesses.

h. Media:

IVL provides accurate and relevant information to the media as it plays a vital role in communicating information about the Company to the general public.

Whereas the Corporate Communication Department acts as a liaison with the media to provide information, only authorized

spokespersons may be interviewed or speak on behalf of the Company.

i. Community, Environment and Society:

IVL and our subsidiaries care about the safety of society, the environment, and the quality of life of people associated with all its operations and strives to comply with applicable laws and regulations. IVL and our subsidiaries try to actively participate in all activities that support and care for the environment and society and promote cultures in which the Company operates.

IVL and our subsidiaries treat and dispose of waste in a manner that will have the least impact on society, the environment and people. IVL has taken various steps towards the sustainability of not only the Company, but of the community as a whole. We want to ensure:

- A consistent supply high quality products and services to our customers
- That we create value for our investors
- That we provide a favorable work environment
- That we are a good community neighbor
- That we minimize the environmental footprint we leave behind

IVL encourages our employees to get involved with local environmental projects; especially those aligned with the Company's CSR strategy. We also provide relevant training for our employees so that they will have a clearer understanding of environmental issues relating to the Company's business and be able to help reduce our environmental impacts.

The Company cooperates with various waste management initiatives conducted by the private and public sector and undertakes an education program for communities to promote correct waste management methods.

We are committed to meet and surpass the environmental laws and regulations pertaining to each business and region, with periodic analysis and third-party inspections conducted in each plant.

j. Code of Conduct:

The Company, through the Code of Conduct, strives to achieve observance of ethical practices, honesty, and accountability, as well as a responsibility to all stakeholders and external agencies. The new CG Manual, effective from September 2019, now has one unified code for IVL directors and employees. Prior to this, there was a separate code of conduct for directors and employees. All governance policies of the Company are now reflected through the Code of Conduct in order to eliminate overlaps and duplications that existed previously and to better ensure that the values of the Company are realized on a day-to-day basis. The training of the code is embedded in the training of the new Manual.

Prior to the new Manual, all directors and employees were made aware of their respective codes.

k. Anti-Corruption and Bribery:

The new Manual explains among other things the Company's strong position against bribery and corruption. As a global company, IVL ensures that we reach the highest level of governance and for this reason; we have stipulated that we will abide by strict policies regarding corruption and bribery.

To demonstrate our firm commitment against corruption and bribery, the Board of Directors approved the Anti-Corruption Policy included in the new Manual of the Company. The policy provides a definition and explains the key practices to avoid engagement in any form of corruption.

The Company also adheres to all local, national and international laws where appropriate.

The Collective Action Against Corruption (CAC) certification was first received by the Company in 2014 and successfully renewed in 2018 for another three years. The Company submitted all documents for the 2021 renewal in mid-December 2020.

Having adopted an anti-corruption framework, including policy awareness and implementation of compliance, IVL created a strong anti-corruption culture and became a CAC certified company in Thailand.

An Anti-Corruption Assistance Package (The Assistance Package) was developed and shared with all units in 2020. It is based on anti-corruption frameworks that are widely accepted both in Thailand and internationally. The Assistance Package consists of a checklist and guidelines to streamline IVL's Anti-Corruption Policy, and to complement and assist units in further building out their existing Anti-Corruption Systems. This Assistance Package has been warmly accepted by the units and will help to reinforce the anti-corruption culture across IVL.

To ensure that the units have a good understanding of the Assistance Package, the respective management at local units were explained in detail about the Assistance Package through the following two channels:

1. Online training and meeting sessions with local teams Statistics: Anti-Corruption Assistance Package Online session

Number of Sessions	Number of Attendees
21	260

The session consisted of two main parts. First, the session introduced what the Assistance Package is and how it assists the unit in the implementation of the Anti-Corruption Policy. Second, the session discussed elements of the Anti-Corruption System, including suggestions on corruption risk assessments, internal control procedures to prevent corruption and emphasis of employee training, the grievance mechanism and others.

2. A short video was shared with all units to provide an overview of the Assistance Package, a brief explanation of key elements of the Anti-Corruption System and action steps that the teams at the units were required to take.

To provide employees with easy communications regarding our firm's zero tolerance of corruption, as well as to address practical guidelines and specific forms of corrupt activities that may arise in the course of the company operations, the Company continuously enforces training in local languages.

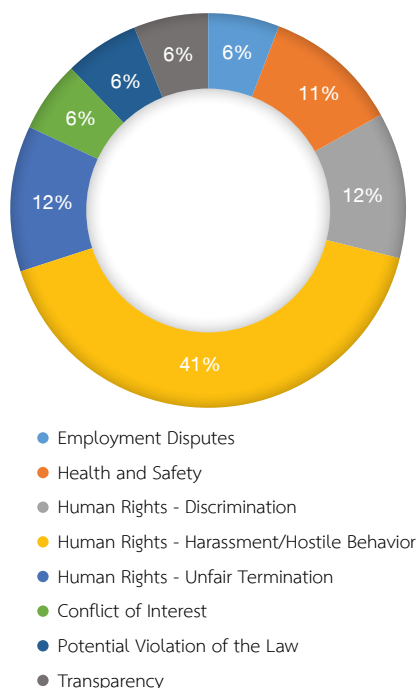
The Anti-Corruption Policy and education materials were uploaded on the Company's intranet and disseminated to overseas units to ensure that our policy is well-communicated, and the same standards and practices are made available worldwide. The CGPAC Team continuously monitors the progress of the training and awareness at all IVL sites and receives periodic feedback. To support these continued efforts and to monitor the implementation of the Anti-Corruption Policy, the Internal Audit Department conducts checks across all units and functions and reports their findings to the Audit Committee.

I. Whistleblower Policy:

The Company has a "Whistleblower" policy that allows all employees the opportunity to raise issues on any unethical practice (whether or not a violation of law), to the Whistleblower Committee without necessarily informing their line managers and without revealing their identity. The policy has been communicated to all employees globally and uploaded on the Company website. Employees may contact the committee via e-mail to ethics@indorama.net, conventional mail directed to the Whistleblower Committee at the Head Office in Bangkok, or by an independent website, whistleblower.indoramaventures.com. The main objective of these reporting channels is to provide anonymous reporting options for whistleblowers who can choose the channel they feel is most convenient and secure for them to report and to communicate with IVL's Whistleblower Committee. In return, the committee guarantees the protection of whistleblowers whose identities remain confidential under all circumstances and that no action will ever be taken against a whistleblower for any reason whatsoever. This information has been strongly communicated to all business units.

During 2020, the Whistleblower Committee received 20 complaints. Fifteen cases have been resolved and two are still under an investigation while three are not whistleblower cases. All cases carried over from 2019 have been resolved. The chart below depicts the categories of cases in 2020. A summary of the investigations and the actions taken were reported to the NCCG Committee and the Board of Directors.

Category of Cases Received in 2020



The Board of Directors appointed new members of the Whistleblower Committee and approved the Whistleblower Committee Charter in November 2020.

The Whistleblower Policy and the reporting website are EU General Data Protection Regulation (GDPR) compliant.

m. Complaint Filing Channel for Stakeholders:

The company has opened a channel for all stakeholders to bring concerns to independent directors via the e-mail independentdirectors@indorama.net. This channel may also be used by internal and external stakeholders to raise complaints or comments on any issues.

The channels to communicate with the Whistleblower Committee and Independent Directors are prominently highlighted on the Company's website in the "Corporate Governance" section.

1.3 Disclosures and Transparency

IVL's policy is to deliver all important information relevant to the Company, both financial and non-financial, that may have an impact on the interests of shareholders or any decision on whether or not to invest in the Company. All such information is disclosed sufficiently, accurately, on a timely basis and transparently through easy-to-access channels that are fair and trustworthy and all such information complies with the relevant rules of the SEC/SET.

The communications channels used are the Annual Report, Form 56-1, Management Discussion and Analysis (MD&A), press releases, the SET's website, shareholders' meetings, analysts' meetings and the Company's own website.

The designated executives that can disclose information about IVL include the Group Chief Executive Officer (Group CEO), the Company Secretary Department and the Investor Relations and Corporate Communications Department. They provide information to interested parties on various occasions such as one-on-one meetings with shareholders, creditors, analysts, quarterly meetings with analysts to discuss the recent financial performance, road shows and others.

The Nomination, Compensation and Corporate Governance Charter defines the policy for the nomination of Directors of the Company and the policy on remuneration of Directors and management of the Company which is followed by the NCCG Committee and management team.

In the section above on the **Appointment of New Directors and Re-Appointment of Retiring Directors and Approving Remuneration of Directors**, the key highlights of the policy and criteria of nomination and remuneration are stated.

For remuneration of management, the policy and criteria are stated below in the "Executive Director, Group CEO and Management Remuneration" section under Responsibility of the Board.

The Charters and Policies of the Company are reviewed annually by the Board to ensure alignment with best practices. The following were revised and approved by the Board based on the recommendations of the Nomination, Compensation and Corporate Governance sub-committee.

- Sustainability and Risk Management Committee Charter, February 26, 2020
- Nomination, Compensation and Corporate Governance Committee Charter, November 10, 2020
- Board Charter,*

**The Board Charter was revised in January 2021 to amend the quorum requirement of directors to two-thirds from the current 50%.*

The revised Charters were uploaded on the Company website.

The Board reviewed the Vision, Mission and Values Statement of the Company and were of the opinion that no change was required to the current statement.

The Company gives the utmost importance to its website, which is both in Thai and English, and regularly reviews it to ensure that all of the information provided is current and up-to date.

In 2020 and all previous years, the Company has never been accused by the SEC/SET of breaching any disclosure rules and regulations.

The following information on the Company's website is regularly updated:

Vision, Mission, Value Statements, financial statements, analyst reports, press and SET releases, annual report, corporate policies, corporate structure, details of subsidiaries, IVL Board and management structure, shareholding structure and major shareholders. Form 56-1 is updated annually and includes detailed information on business operations, financial status, risks, litigation, and capital structure, including information on ultimate shareholdings. The Company maintains a calendar of all major events that investors or shareholders may wish to attend.

The Company implements recommendations made by the SEC, SET and IOD.

The Company has a designated department for Investor Relations to disclose essential information to investors on matters relating to financial reporting and others. An annual investor relations plan is established and the executive in charge is involved in various investor relations activities including but not limited to periodic plant visits for the benefits of shareholders, investors and analysts, etc. Regular investor meetings are also organized.

To contact the Company's Investor Relations Department, the public may call (+66) 2 661 6661 ext. 134 or email to ir@indorama.net. Details are provided on the Company's website.

A statement of the Board's responsibility concerning the Company's financial report is disclosed in the Annual Report, which mentions among other things that the Company complies with generally accepted accounting principles and that accounting standards and practices used are appropriate and consistent to the nature of the business. It also states that all information presented in the financial reports is accurate, complete and adequate. The Chairman of the Board and the Group CEO sign the statement.

The individual shareholdings of Directors, Management including their spouses and minor children for the period January 1, 2020 to December 31, 2020 is as follows:

No.	Name	Ordinary Shares (Shares)				
		As at 31 Dec. 2019	Changes in 2020	As at 31 Dec. 2020		
		No. of Shares		No. of Shares	No. of Shares	%
1.	Mr. Sri Prakash Lohia	-	Acquisition/Disposition	-	-	-
	Spouse and Minor Children	-	Acquisition/Disposition	-	-	-
2.	Mr. Alope Lohia	1,000,010	Acquisition/Disposition	-	1,000,010	0.018
	Spouse and Minor Children	-	Acquisition/Disposition	-	-	-
3.	Mrs. Suchitra Lohia	-	Acquisition/Disposition	-	-	-
	Spouse and Minor Children	1,000,010	Acquisition/Disposition	-	1,000,010	0.018
4.	Mr. Amit Lohia	-	Acquisition/Disposition	-	-	-
	Spouse and Minor Children	-	Acquisition/Disposition	-	-	-
5.	Mr. Yashovardhan Lohia	-	Acquisition/Disposition	-	-	-
	Spouse and Minor Children	-	Acquisition/Disposition	-	-	-
6.	Mr. Dilip Kumar Agarwal	293,452	Acquisition/Disposition	146,529	439,981	0.008
	Spouse and Minor Children	-	Acquisition/Disposition	-	-	-
7.	Mr. Udey Paul Singh Gill	89,659	Acquisition/Disposition	52,290	141,949	0.003
	Spouse and Minor Children	-	Acquisition/Disposition	-	-	-
8.	Mr. Sanjay Ahuja	63,285	Acquisition/Disposition	37,748	101,033	0.002
	Spouse and Minor Children	-	Acquisition/Disposition	-	-	-
9.	Mr. Rathian Srimongkol	715,200	Acquisition/Disposition	276,200	991,400	0.018
	Spouse and Minor Children	-	Acquisition/Disposition	-	-	-
10.	Mr. William Ellwood Heinecke	4,934,932	Acquisition/Disposition	400,000	4,534,932	0.081
	Spouse and Minor Children	-	Acquisition/Disposition	-	-	-
11.	Dr. Siri Ganjarende	-	Acquisition/Disposition	-	-	-
	Spouse and Minor Children	-	Acquisition/Disposition	-	-	-
12.	Mr. Kanit Si	300,000	Acquisition/Disposition	-	300,000	0.005
	Spouse and Minor Children	-	Acquisition/Disposition	-	-	-
13.	Mr. Chakramon Phasukavanich	-	Acquisition/Disposition	-	-	-
	Spouse and Minor Children	102,354	Acquisition/Disposition	-	102,354	0.002
14.	Mr. Russell Leighton Kekuewa	750,000	Acquisition/Disposition	-	750,000	0.013
	Spouse and Minor Children	-	Acquisition/Disposition	-	-	-
15.	Mr. Tevin Vongvanich	-	Acquisition/Disposition	-	-	-
	Spouse and Minor Children	-	Acquisition/Disposition	-	-	-
16.	Mrs. Kaisri Nuengsigkapien	-	Acquisition/Disposition	-	-	-
	Spouse and Minor Children	-	Acquisition/Disposition	-	-	-
17.	Mr. Roberto Bettini	22,801	Acquisition/Disposition	3,016	25,817	0.000
	Spouse and Minor Children	-	Acquisition/Disposition	-	-	-
18.	Mr. Manoj Kumar Sharma	25,062	Acquisition/Disposition	14,372	39,434	0.001
	Spouse and Minor Children	-	Acquisition/Disposition	-	-	-
19.	Mr. Souvik Roy Chowdhury	26,779	Acquisition/Disposition	12,190	38,969	0.001
	Spouse and Minor Children	-	Acquisition/Disposition	-	-	-

Reporting

IVL has in place a reporting policy for all directors and management, that they report their shareholdings every quarter to the Company Secretary, who in turn writes a summary for the Board. The shareholdings include themselves, their spouses and minor children. Any trading in IVL securities must be reported immediately to the Company Secretary. IVL has set a black out period for trading in IVL securities. Every quarter, the Company's Secretarial Department informs the Directors and Management of the blackout period.

All IVL directors and management are required to report their interest, if any, in the Company's designated "Declaration of Interest" form at the beginning of each year. Such forms are kept by the Company Secretary's department.

1.4 Responsibility of the Board

a. Responsibility and Duties of the Board of Directors

The Board of Directors of IVL are responsible for the Company's vision, mission, value statement, plans, strategies, key policies and budgets with a view to effectively and efficiently managing the business for maximum shareholder value. Detailed budgets and plans are formulated for the Company and its subsidiaries. The Board closely monitors the management and implementation of business plans to achieve targets, and also sets internal controls and audit procedures, including risk management. All major CAPEX requires the approval of the Board. Detailed presentations are made by the respective business segment head.

At the beginning of each year, the Board holds a "Strategy and Annual Business Plan" meeting and at the meeting, the Vision and Mission statement is reviewed along with the strategy as presented by management. At the strategy meeting, key executives from all IVL units participate and discuss their performance and strategies both in the short and long-term with senior management and Board members. Such meetings give the Board and especially the Independent Directors ample opportunity to discuss and interact with the respective executives on their business plans and performance and to also understand the various businesses that IVL operates. Where necessary, suggestions are made by the Board.

After the business segments' plans are all presented, the annual plan for the year is thereafter approved by the Board of Directors. At the Board meetings and the many informal meetings with the Group CEO and senior management, the Board is updated on the Company's business performance, strategy vis-à-vis targets and industry trends. Based on such meetings, the Board provides their thoughts and recommendations. The management updates are based on the regular Executive Committee meeting that each business segment holds on its operating performance.

The detailed roles and responsibilities of the Board are clearly set out in the Board of Directors Charter which is uploaded on the Company website.

Board Approvals

The average attendance for Board meetings held in 2020 was approximately 97.98%. For the annual budget approval, attendance was 93.75%. For each agenda item at Board meetings, detailed discussions take place and approvals are given unanimously.

The Board requires each business head to explain the details of why their business fell below target and the plans to improve performance. The Board follows up on the action plan status in subsequent meetings.

The Board has guidelines on stakeholder business ethics as a part of the policies issued by the Company and monitors the effective implementation of good business practices and ethics using several tools such as customer and supplier surveys, the results of employee training feedback surveys and others.

The Board, through the Audit Committee, internal auditor, and Corporate Compliance Department, reviews potential conflicts of interest. The internal guidelines of the Company on related party transactions and the relevant rules and regulations of the SET/SEC provide a basis for avoiding conflicts of interest. Details of all related party transactions are updated in Form 56-1 and reported in the Annual Report. Those Board members who have an interest in a matter that may involve a conflict of interest must abstain from voting and other involvement, as prescribed by the Board. Company policy prohibits personnel at all levels from using inside information for personal benefit with all business decisions based on achieving the maximum benefit for the Company and its subsidiaries.

Every year, the Board evaluates the efficacy and sufficiency of the Company's internal controls by reviewing the Evaluation Form – Sufficiency of Internal Control Systems for IVL and its subsidiaries which is reviewed by the Audit Committee and forwarded to the Board.

The Board at the Strategic Business Plan meet in January has the opportunity to meet and interact with senior executives from around the world including executives from new acquisitions.

The Company held its annual Capital Markets Day on February 4, 2020 to apprise investors from both the buy and sell side of the work completed by management over the course of the year. Senior management from global business units were introduced to investors, who had the opportunity to raise questions about the business.

b. Board Structure

There are 16 Directors on the IVL Board comprising of six Executive Directors, two Non-Executive Directors and eight Independent Directors. The Board, which is diverse based on nationality, gender, age and skills, does not discriminate and hires according to availability and qualifications. The current Board composition includes two female directors.

The Board structure is appropriate in relation to the size of the Company, geographic spread, number of Executive, Non-Executive and Independent Directors and qualifications in terms of knowledge and expertise and provides a fair balance of power and effective management monitoring. The Company intends to maintain this broad base of knowledge and experience when it searches for new Directors in the future. The Board has a policy to seek the services of a professional search firm when necessary to replace or nominate a new director.

Role and Responsibility of Chairman

The principle role of the Chairman of the Board is to ensure that the Board is effective in its tasks of setting and implementing the Company's direction and strategy.

The Chairman plays a pivotal leadership role in ensuring that the Board works effectively. The key roles of the Chairman are:

- Determining the composition, size and structure of the Board to create a balance between executive directors and independent directors.
- Ensuring the Board and its committees are properly established, composed and operated.
- Ensuring the effective operation of the Board and its committees in conformity with the highest standards of corporate governance.
- Ensuring the participation of the executive, non-executive and independent directors in the Board's decision-making processes and activities.
- Ensuring the whole Board plays a constructive part in developing and determining the Company's strategy and objectives.
- Ensuring comprehensive induction programs for new directors.
- Acting in the key role of governing the Board and fostering teamwork and mutual dedication for the sustainable success of the organization.
- Engaging the Board regularly by assessing and developing its performance and communicating expectations to directors and manage directors' performance.
- Ensuring that the company has succession plans for senior executives.
- Acting as Chair at Board and shareholders meetings together with setting the agenda in consultation with directors, management and the Company Secretary.
- Ensuring that Board members receive accurate, timely, and sufficient information for Board meetings.
- Ensuring that there are sufficient channels for effective communication between Board members, management and shareholders.
- Providing independent advice to management and the Board.
- Appointing the Company Secretary to assist with Board functions.

In the Directors' profile, IVL discloses its director's names, profiles, qualifications, experience, and shareholdings in the Company to demonstrate the Board's knowledge, competence, qualifications and experience via the Annual Report and its website. It also mentions which Director is independent, executive, non-executive or represents a major shareholder.

The profile mentions the Board membership(s) of other companies held by the Directors.

The Board appointed a Company Secretary to meet the requirements and regulations of the SEC/SET. The Company Secretary is responsible for matters connected with meetings of the Board and shareholders and to advise and apprise the Board of relevant laws and regulations to effectively perform its duties, to administer the Board's activities and ensure the compliance of Board and shareholders resolutions. The role and responsibility of the Company Secretary is uploaded on the Company's website.

c. Charters

The Company has in place the following Charters:

- Board of Directors Charter
- Audit Committee Charter
- Nomination, Compensation and Corporate Governance Committee Charter
- Sustainability and Risk Management Committee Charter

The Charters are all uploaded on the Company website under the "Corporate Governance" section. During the year, the format of the Charters was standardized.

d. Other Directorships

The Board Charter specifies the outside Directorship for Executive, Non-Executive and Independent Directors.

None of the Directors of IVL have breached the above Directorship criteria in 2020.

e. Retirement of Directors

One third of the Directors retire by rotation at every Annual General Meeting as specified in the Articles of Association of the Company. A retiring director is eligible for re-election. Voting for appointment/re-appointment of Directors is done individually. The Company provides a detailed profile of the retiring Director who has given his/her consent to be re-appointed in the Notice to the Shareholders' Meeting.

The Board and the NCCG Committee, after due deliberation, has acknowledged that the industry is extremely complex and requires many years of study in order to be able to play a role on the Board. The current independent directors have shown their value over the years and will continue to play an important role in the Company. Replacing directors with many years of industry experience would seriously hinder the Board's ability to operate at an optimal level. However, they all take their independence seriously and play their role as an independent director.

The Board of Directors has therefore not limited the term of an independent director to not more than nine consecutive years.

However, the NCCG Committee and the Board will take into consideration the IOD recommendation of independent directors' term of service as published from time to time and will annually decide if certain director(s) will retire based on additional criteria, i.e., expertise in our business, contribution by the director, health of the individual as well as the availability of a suitable replacement director. The Board approved in 2018 to fix the retirement age of Independent Directors at 72.

f. Evaluation of Performance

The Board and sub-committee members carried out a self-evaluation of the Board and sub-committee's performance in 2020. The results were summarized and discussed at the Board meeting held in February 2021. The Board and subcommittee members were evaluated as having given a very good performance rating in 2020.

For the self-evaluation of the Board, the Company follows the guideline prescribed by the SET which is based on the following six criteria, namely: a) Structure and characteristics of the Board; b) Role and responsibilities of the Board; c) Board meetings; d) The Board's performance of duties; e) Relationship with management; f) Self-development of directors and executive development.

A similar evaluation is carried out by the sub-committees.

The Chairman of the Board, through the NCCG Committee, conducts an individual assessment of all Directors based on the following criteria.

- Supports the mission, vision and aims/objectives of the organization.
- Understands IVL's main business and does not intervene in the objectives or work for any competitor.
- Understands the role of the Board and the legal and ethical responsibilities of a Board member.
- Usually attends regular and special board meetings and other events requiring board participation.
- Studies the agenda items before attending the meeting and ensures that information is sufficient to proactively consider the agenda.
- Carefully reviews all of the minutes of each Board of Directors and shareholder meetings.
- Examines all documents relating to all matters that concern the Board. If something is not clear, he/she asks management to explain as quickly and clearly as possible.
- Raises questions on important matters and gives suggestions and recommendations to management.
- Carries out other committee responsibilities in an effective and timely manner.
- Ensures management's accountability to shareholders; preserves their rights and interests; clearly and fully discloses information.
- Attends all Board meetings and makes decisions on significant activities by the Company concerning the acquisition and disposition of assets, investment project expansion, policy implementation, and/or risk management, etc.
- Avoids participation in Board issues where it may be perceived there is a conflict of interest.
- Avoids other positions or jobs that may lead to conflicts of interest with the Company.
- Accepts only those positions as director or non-executive director on the Board of listed companies that allow sufficient time to attend meetings.
- Willing to participate in development opportunities, including workshops, information sessions and conferences, and in taking on new roles.



IVL Group Management Conference for 2020, January 30 - February 1, 2020, Bangkok

- Enjoys their service as a Board member in the organization or actively works to change issues or activities which are a barrier.

For Independent Directors

- Demonstrates independence of thought and judgment in order to protect the interests of all shareholders.

g. Functional Performance

The Board of Directors held seven meetings in 2020. The Company generally proposes scheduling a minimum of five meetings a year. Typically, a meeting is convened every three months with extra meetings convened as and when necessary to review operations, financial matters, plans, or other matters. Prior to the close of each year, a schedule of meetings for the next year is circulated to members to fix the meeting dates well in advance and to also ensure maximum participation.

Under the Chairmanship of Mr. Rathian Srimongkol, Lead Independent Director, all the independent Directors met on January 22, 2020 to review and discuss the Company's performance and other matters. A similar meeting of the Independent Directors will be held on January 26, 2021. The Lead Independent Director updated the Group CEO on the outcome of their meeting and management initiated required actions.

The Chairman, Group CEO, Lead Independent Director and Company Secretary sets the Board meeting agenda, and the Company Secretary sends invitation letters together with the

agenda and relevant documents to the Directors at least seven days prior to the meeting to allow adequate time for the Directors to study the information.

At each Board Meeting, the Chairman allows each Board member to express his or her views and management to answer all queries in full. If desired, Directors can request additional information from a designated person.

Detailed minutes are prepared for each meeting, which includes

- the meeting date
- time of the meeting's commencement and completion
- name of Directors who attended or were absent from the meeting
- summary proposals to the Board on each issue
- a brief report of the discussion
- Director's observations
- the person authorizing the minutes

The minutes are circulated within 14 days of the Board meeting.

The summary of the minutes of subsidiary companies are provided to Board members as requested.

For 2020, the attendance of all Directors was over 75% with an overall average of 97.98% while 14 out of the total 16 Directors had an average of 100%.

The following are the details of attendance of the Board of Directors' meeting in 2020.

Name	Attendance/ Physical/Online Meetings	Percentage (%)
Mr. Sri Prakash Lohia*	5/5	100%
Mr. Aloke Lohia	7/7	100%
Mrs. Suchitra Lohia	7/7	100%
Mr. Amit Lohia*	4/5	80%
Mr. Yashovardhan Lohia	7/7	100%
Mr. Dilip Kumar Agarwal	7/7	100%
Mr. Udey Paul Singh Gill*	6/6	100%
Mr. Sanjay Ahuja	7/7	100%
Mr. Rathian Srimongkol	7/7	100%
Mr. William Ellwood Heinecke	7/7	100%
Mr. Maris Samaram**	5/5	100%
Dr. Siri Ganjarendee	7/7	100%
Mr. Kanit Si	7/7	100%
Mr. Russell Leighton Kekuewa	6/7	85%
Mr. Chakramon Phasukavanich	7/7	100%
Mr. Tevin Vongvanich	7/7	100%
Mrs. Kaisri Nuengsigkapan**	2/2	100%

Remark: * In the first part of the year, before online meetings for overseas directors were allowed, directors (*) residing outside the country could not physically travel to Thailand due to an international travel ban on account of the COVID-19 pandemic. Their absence from meetings during this period has not been considered for attendance purposes.

****** Mrs. Kaisri Nuengsigkapan was appointed as an IVL Director in place of Mr. Maris Samaram on June 30, 2020.

h. Performance Measurement of Executive Directors, Group CEO and Management

The Group CEO and other executive Directors have their Key Performance Indicators (KPIs) set by the Board on the recommendation of the NCCG committee. This takes the form of a Balanced Scorecard. At the end of each year, their performance is used in the calculation of their compensation by the NCCG Committee.

For senior management executives, the NCCG Committee reviews and approves on an annual basis the evaluation process and compensation structure and assigns the Human Resources department to approve the annual compensation, including salary, bonus and non-equity incentive compensation. Similarly, line managers will follow the same principles when evaluating their staff.

Details discussed in the "Executive Director, Group CEO and Management Remuneration" section are below.

i. Remuneration of Board of Directors and Sub-Committees

The current remuneration of Independent Directors and Non-Executive Directors, including bonus, is established based on assignments and responsibilities. Such remuneration proposed by the Board and recommended by the NCCG Committee requires approval at the shareholders meeting.

The policy and criteria followed by the NCCG Committee has been explained above in the section on Approving Directors Remuneration.

In 2020, the total annual remuneration approved at the Annual General Meeting of Shareholders No. 1/2020 held on June 30, 2020 was an amount not exceeding 27,000,000 baht.



Capital Market Day, February 2, 2020, Bangkok

The actual remuneration paid in 2020 was 26,220,000 baht against the approved amount of 27,000,000 baht. The details of the remuneration paid are hereunder:

As Directors of the Company

No.	Independent/Non-Executive Directors	Amount Approved (Baht)	Actual Paid (Baht)
1.	Mr. Sri Prakash Lohia	75,000 per month	900,000
2.	Mr. Rathian Srimongkol	50,000 per month	600,000
3.	Mr. William Ellwood Heinecke	50,000 per month	600,000
4.	Mr. Chakramon Phasukavanich	50,000 per month	600,000
5.	Mr. Amit Lohia	50,000 per month	600,000
6.	Mr. Maris Samaram*	50,000 per month	300,000
7.	Dr. Siri Ganjarerndee	50,000 per month	600,000
8.	Mr. Kanit Si	50,000 per month	600,000
9.	Mr. Russell Leighton Kekuwa	50,000 per month	600,000
10.	Mr. Tevin Vongvanich	50,000 per month	600,000
11.	Mr. Kaisri Nuengsigkapien*	50,000 per month	300,000
Total			6,300,000

Remark: * Mr. Maris Samaram's remuneration was paid up to June 2020 and Mrs. Kaisri Nuengsigkapien's remuneration has been paid effective July 2020.

As Audit Committee Members

No.	Members	Amount Approved (Baht)	Actual Paid (Baht)
1.	Mr. Rathian Srimongkol	75,000 per month	900,000
2.	Mr. Maris Samaram*	50,000 per month	300,000
3.	Dr. Siri Ganjarerndee	50,000 per month	600,000
4.	Mr. Tevin Vongvanich*	50,000 per month	300,000
Total			2,100,000

Remark: * Mr. Maris Samaram's remuneration was paid up to June 2020 and Mr. Tevin Vongvanich's remuneration has been paid effective July 2020.

As Nomination, Compensation and Corporate Governance Committee Members

No.	Members	Amount Approved (Baht)	Actual Paid (Baht)
1.	Mr. Russell Leighton Kekuwa	35,000 per month	420,000
2.	Mr. William Ellwood Heinecke	25,000 per month	300,000
3.	Dr. Siri Ganjarerndee	25,000 per month	300,000
4.	Mr. Kanit Si	25,000 per month	300,000
5.	Mr. Chakramon Phasukavanich	25,000 per month	300,000
Total			1,620,000

As Sustainability and Risk Management Committee Members

No.	Members	Amount approved (Baht)	Actual Paid (Baht)
1.	Mr. Rathian Srimongkol	25,000 per month	300,000
2.	Mr. Russell Leighton Kekuwa	25,000 per month	300,000
3.	Mr. Kanit Si	25,000 per month	300,000
4.	Mr. Tevin Vongvanich	25,000 per month	300,000
Total			1,200,000

Bonus to Directors for the Performance of 2019

No.	Directors	Actual Paid (Baht)
1.	Mr. Sri Prakash Lohia	1,034,480
2.	Mr. Alope Lohia	1,551,720
3.	Mrs. Suchitra Lohia	1,034,480
4.	Mr. Amit Lohia	517,240
5.	Mr. Dilip Kumar Agarwal	775,860
6.	Mr. Udey Paul Singh Gill	775,860
7.	Mr. Sanjay Ahuja	775,860
8.	Mr. Rathian Srimongkol	1,293,100
9.	Mr. Maris Samaram	1,034,480
10.	Mr. William Ellwood Heinecke	1,034,480
11.	Dr. Siri Ganjarerndee	1,034,480
12.	Mr. Kanit Si	1,034,480
13.	Mr. Russell Leighton Kekuewa	1,034,480
14.	Mr. Chakramon Phasukavanich	1,034,480
15.	Mr. Yashovardhan Lohia	517,260
16.	Mr. Tevin Vongvanich	517,260
Total		15,000,000

Remark: Executive Directors on the IVL Board and Sub-Committees are not paid any retainer fee.

j. Remuneration of Executives

The key principles followed by the NCCG Committee in determining the compensation are:

- To review and approve on an annual basis the evaluation process and compensation structure for the Company's Executive Directors. The Committee evaluates the performance of the Company's executive directors and approves the annual compensation, including salary, bonus and non-equity incentive compensation for them based on initial recommendations from the Group CEO. Moreover, the Committee maintains regular contact with the leadership of the Company.

- To review and approve on an annual basis the corporate goals and objectives (KPIs) with respect to compensation for the Group Chief Executive Officer. The Committee shall evaluate at least once a year the Group Chief Executive Officer's performance in light of these established goals and objectives and based upon these evaluations shall set the Group Chief Executive Officer's annual compensation, including salary, bonus and non-equity incentive compensation (if any).
- To review and approve on an annual basis the evaluation process and compensation structure for the senior executives. The Committee shall approve or may assign the Human Resources department to approve the annual compensation, including salary, bonus and equity and non-equity incentive compensation for senior executives.
- Base salaries for the Company's Group CEO and Executive Directors depend on the scope of their responsibilities, their capabilities, and the period over which they have performed those responsibilities.
- Annual bonuses for the year and the percentage change from the prior year's bonus for senior executive officers are determined after an evaluation of the overall performance of the Company, the performance of the business or function that the officer leads and an assessment of each officer's performance against expectations, which were established at the beginning of the year. The bonuses also reflect (and are proportionate to) the annual financial results of the company.
- Other non-equity compensation is paid as per the HR manual of the Company which is reviewed from time to time.

The remuneration of IVL Executives in 2020 was approximately 274 million baht.

a. Details of remuneration paid to the Group CEO and the two CEO's are as follows:

(Million Baht)

No.	Name / Positions	2018			2019			2020*		
		Salary	Bonus and perquisites	Total	Salary	Bonus and perquisites	Total	Salary	Bonus and perquisites	Total
1.	Mr. Alope Lohia, Group CEO	29.04	28.35	57.39	39.58	31.19	70.77	39.77	26.84	66.61
2.	Mr. Dilip Kumar Agarwal, CEO of Combined PET and IOD business	26.85	21.86	48.71	39.18	29.43	68.61	39.32	25.45	64.77
3.	Mr. Udey Paul Singh Gill, CEO of Fibers business	15.50	12.35	27.85	15.52	9.53	25.05	15.49	14.00	29.49

Remark: *Compensation indicated above is on accrual basis.

b. Details of remuneration to other Executive Board and Indorama Management Council (IMC) members consisting of Mrs. Suchitra Lohia, Mr. Sanjay Ahuja, Dr. Deepak Parikh, Mr. Roberto Bettini and Mr. Yashovardhan Lohia are as follows:

(Million Baht)

2018			2019			2020**		
Salary	Bonus and perquisites	Total	Salary	Bonus and perquisites	Total	Salary	Bonus and perquisites	Total
27.52	25.70	53.22	62.57	53.40	115.97	65.48	47.28	112.76

Remark: ** Compensation indicated above is on accrual basis and compensation for an individual who has joined in the middle of the year has been annualized.

The remuneration above is in accordance with the Company's rules and regulations. The Board/NCCG Committee sets the long and short-term KPIs for the Group CEO, CEO of Combined PET and IOD business, and CEO of the Fibers business.

No compensation was paid to Directors in the form of shares.

k. Succession Planning

The NCCG Committee has put in place a succession plan for the Group CEO and key management team in consultation with the Board taking into consideration knowledge, potentiality and performance evaluations.

For all other employees, the Global HR department works with line management to create succession plans. To ensure that the succession plans are effective, the Global HR department implements employee development and training as well as a fast-track process for those it believes have high potential.

l. Group Management Conference

The Company holds one Board meeting every year to approve the Company's strategy and Annual Business Plan. This allows senior management to interact with members of the Board for free and frank discussions on the future direction of the Company. The Group Management Conference for 2020 was held from January 30 – February 1, 2020 in Bangkok.

m. Professional Development of Directors and Management

Directors who join the Company during the year are given a Directors Orientation folder with complete information about the Company and its subsidiaries to assist them in getting well acquainted with the business, practices and procedures of the Company and their rights, duties and obligations as Director. In addition to the orientation, meetings are arranged with the management team members.

Apart from the periodic informal meetings with the management teams, the Directors are invited to attend the various business meetings held during the year.

Continuous knowledge expansion

The Board encourages Board members, Audit Committee members, management team members, the Company Secretary and Internal Auditor to attend seminars, training and courses which would assist in further improving their contribution/performance in the Company. IVL encourages members of the Board to undergo applicable training programs.

The details of all courses attended are in the Directors profiles.

The SET requires the person taking the highest responsibility in finance and accounting (Chief Financial Officer: CFO) and the person supervising accounting (Chief Accountant) to undertake

certain training to meet the qualifications specified by SEC. IVL's CFO and Head of Accounting completed the following training in 2020:

Program	CFO Mr. Sanjay Ahuja	Head of Accounting Mr. Manoj Kumar Sharma
Development course as prescribed by the SET	12 hours of e-Learning CFO's Orientation Course (English Version) - Accounting and Financial Preparation (CFO's Orientation Course)	6 hours of e-Learning CFO's Refresh Course (English Version) – Training for continuing accounting knowledge (CFO's Refresh Course)

The Board also encourages senior management to attend training courses on corporate governance to enhance good governance within the Company.

2. Sub-Committees

The IVL Board has appointed the following three sub-committees: (a) Audit Committee; (b) Nomination, Compensation and Corporate Governance Committee; and (c) Sustainability and Risk Management Committee.

2.1 Audit Committee

The Audit Committee consists of three members with Mr. Rathian Srimongkol as Chairman, with Dr. Siri Ganjarerndee and Mr. Tevin Vongvanich as members. Mr. Tevin was appointed in place of Mr. Maris Samaram, who retired from the Board in June 2020. All members are Independent Directors and have the requisite experience and knowledge to review financial statements. The term of the Audit Committee expires in September 2021.

The Audit Committee held six meetings during the year with the attendance of members as follows:

Name	Attendance
Mr. Rathian Srimongkol*	6/6
Mr. Maris Samaram**	3/3
Dr. Siri Ganjarerndee*	5/6
Mr. Tevin Vongvanich**	3/3

Remark: * Mr. Rathian Srimongkol, and Dr. Siri Ganjarerndee have accounting knowledge to review financial statements.

** Mr. Tevin Vongvanich was appointed in place of Mr. Maris Samaram effective June 2020.

The role and responsibility of the Audit Committee are specified in the Audit Committee Charter, which is available on the Company's website under "Our Company" - Corporate Governance Section.

The Chairman of the Audit Committee reported on the Committee's activities to the Board, immediately following its meetings. Between meetings, the Committee reviewed emerging issues with the management team, Chief of Internal Audit and with the statutory auditors.

The Audit Committee Report on its performance to shareholders is separately disclosed in the Annual Report.

Internal Audit

The Company has its own Internal Audit Department, Internal Audit Manual and Internal Audit Charter. The Head of the Internal Audit Department is Mr. Narayanaswamy Subramanian. The Internal Audit Department is entrusted to carry out internal audit activities of the Company and its subsidiaries under the supervision of the Chief of Internal Audit. The Internal Audit Department reports functionally to the Audit Committee. A detailed plan for the year is formulated for units and approved by the Audit Committee which then periodically reviews the work of the Internal Audit Department against the plan and makes recommendations to management. In 2020, audits were carried out for all Thai units and several overseas units. The Secretary of the Audit Committee follows up on the implementation of recommendations and reports on progress to the Audit Committee and undertakes periodic checks to ensure compliance with statutory and regulatory requirements.

2.2 Nomination, Compensation and Corporate Governance Committee

The NCCG Committee consists of five members with Mr. Russell Leighton Kekuewa as Chairman. Other members of the Committee are Mr. William Ellwood Heinecke, Dr. Siri Ganjarerndee, Mr. Kanit Si and Mr. Chakramon Phasukavanich. All members on the Committee are independent directors. The Board at its meeting No. 4/2020 held on May 13, 2020 approved the reappointment of the NCCG Committee. The current term of the Committee expires in May 2022.

Mr. Alope Lohia, Group CEO, is an advisor to the NCCG Committee. The Nomination, Compensation and Corporate Governance Committee held three meetings during 2020 with the attendance of members as follows:

Name	Attendance
1. Mr. Russell Leighton Kekuewa	3/3
2. Mr. William Ellwood Heinecke	3/3
3. Dr. Siri Ganjarerndee	3/3
4. Mr. Kanit Si	3/3
5. Mr. Chakramon Phasukavanich	3/3

The role and responsibility of the NCCG Committee is specified in the NCCG Committee Charter, which is available on the Company's website under "Our Company" - Corporate Governance Section.

A report from the NCCG Committee is separately disclosed in the Annual Report.

2.3 Sustainability and Risk Management Committee

The SRMC Committee is chaired by Mr. Alope Lohia, the Group CEO and Vice Chairman of the Board. Other members of the Committee are Mr. Rathian Srimongkol, Mr. Dilip Kumar Agarwal, Mr. Udey Paul Singh Gill, Mr. Russell Leighton Kekuwa, Mr. Kanit Sri, Mr. Tevin Vongvanich, Mr. Yashovardhan Lohia and Dr. Deepak Parikh. The current term of the SRMC Committee expires in August 2021.

The SRMC Committee held three meetings during the year with the attendance of members as follows:

Name	Attendance
1. Mr. Alope Lohia	3/3
2. Mr. Rathian Srimongkol	3/3
3. Mr. Dilip Kumar Agarwal	3/3
4. Mr. Udey Paul Singh Gill	3/3
5. Mr. Russell Leighton Kekuwa	3/3
6. Mr. Kanit Si	3/3
7. Mr. Tevin Vongvanich	3/3
8. Mr. Yashovardhan Lohia	3/3
9. Dr. Deepak Parikh*	3/3

Remark: * Dr. Deepak resigned from the Company effective December 31, 2020.

The role and responsibility of the SRMC Committee is specified in the SRMC Charter, which is available on the Company's website under "Our Company" - Corporate Governance Section.

A report from the SRMC Committee is separately disclosed in the Annual Report.

3. Selection and Appointment of Directors and Group CEO

3.1 Directors

The selection, appointment and the withdrawal of the Board of Directors of Indorama Ventures PCL shall be as prescribed by the Articles of Association, which can be summarized as follows:

1. To conduct the business of the Company, the Board of Directors shall consist of at least five directors. Not less than one-half of all directors shall have residence in the Kingdom of Thailand.

2. The appointment of a director shall be made by a majority vote of the shareholders meeting in accordance with the following conditions and procedures:

- a. A shareholder shall have one vote for each share;
- b. The shareholder shall vote for the election of each director in turn, person by person;
- c. Each shareholder may exercise all the votes he or she has (a) to elect one or several persons as a director or directors, but the shareholder cannot divide his or her votes to any nominated director by any an allotment of shares of any number;
- d. The persons receiving the most votes are those who are elected to be directors, in descending order, to the number of directors who are to be elected. If there is a tie in the last to be elected and this exceeds the said number of directors, the presiding chairman shall have the casting vote.

3. At every annual general meeting, one-third of the total number of the directors shall vacate their office. If the number is not a multiple of three, then the number nearest to one-third must retire from office. The directors to retire during the first and second years following the registration of the Company shall be drawn by lots. In subsequent years, the director who has been in office for the longest term shall retire. A retiring director is eligible for re-election.

4. Any director wishing to resign from the director's position shall submit a resignation letter to the Company. The resignation shall take effect upon the date on which the resignation letter reaches the Company.

5. The Shareholders' Meeting may pass a resolution removing any director prior to retirement by rotation, by a vote of not less than three-fourths of the number of shareholders attending the meeting and having the right to vote, and the shares held by them shall not, in aggregate, be less than one half the number of the shares held by the shareholders attending the meeting and having the right to vote.

Qualification of Director and Independent Directors

The Company follows the guidelines of the SET and the SEC and industry best practices to set the qualifications of its Executive, Non-Executive and Independent Directors. The qualifications of such Directors are specified in the Board of Directors Charter and Qualification of Independent Directors, uploaded on the website.

3.2 Lead Independent Director

In continuation of good governance recommendations and practices, the Board, at its meeting in February 2018, approved the appointment of a Lead Independent Director. Mr. Rathian Srimongkol, Independent Director, Chairman of Audit Committee and Member of Sustainability and Risk Management Committee is the Lead Independent Director.

Details of the role and responsibilities of the Lead Independent Director are available on the Company's website under "Role and Responsibilities" in the Leadership section.

3.3 Group CEO

The Board of Directors will appoint the Group CEO. The Group CEO will be a person with the highest personal and professional integrity, with demonstrated and exceptional ability and judgment and who shall be most effective in serving the long-term interests of the Company and have knowledge in the industry in which IVL operates.

Role and Responsibilities of the Group CEO

- Designated as the authorized person in administering the Company's business and/or day-to-day operations to be in line with the objectives, articles of association, policies, rules, regulations, instructions and resolutions of the Board of Directors Meeting and/or resolutions of the Shareholders' Meeting.
- Arrange and prepare the Company's business policies, business plans and budget to be proposed to the Board of Directors for approval and has a duty to report the progress of such approved business plans and budget to the Board of Directors according to the period specified by the Board of Directors.
- Manage the Company's business operations in line with business policies, business plans and budgets, and to meet the financial goals as approved by the Board of Directors.
- Establish performance goals, allocate resources and comply with policies for management.
- Ensure overall business growth in accordance with the Company's objectives and business plans.
- Maintain good relationship with the Company's stakeholders.
- Ensure compliance with the law and ethical standards and maintain transparency.
- Ensure the organization's public standing.
- Be the leader in marketing strategy.
- Determine, monitor and strengthen the organization's standards that are essential to maintain its competitive edge and create organizational value by continuously working support the Company's people and products.
- Analyze current and potential overall global industrial conditions for hints of future changes within the industry and adjust the Company's strategy.
- Ensure appropriate returns to all stakeholders.
- Work closely with Chief Executive Officers, Chief Financial Officers and Chief Operating Officers of various business groups to deliver organizational value.
- Set up employee performance evaluation standards and review such standards periodically.
- Ensure effective implementation of the Board of Directors' resolutions.
- Recruit, appoint, remove, relocate, adjust, reduce or deduct salary or wages, impose disciplinary sanctions on officers and employees as well as dismiss officers and employees from their positions in accordance with the rules prescribed by the Board of Directors, except for executive officers or those in comparable or higher positions, which shall require prior approval from the Board of Directors.
- Approve the Company's normal financial transactions and debt restructuring transactions of short-term debts in the amount of not exceeding 500 million baht or long-term debts in the amount of not exceeding 250 million baht.
- Authorized to delegate authority to others to perform specific duties on his behalf. Such delegation of authority shall be within the scope of and in accordance with the power of attorney granted and/or shall be in accordance with the internal regulations, rules or instructions given by the Board of Directors and/or the Company. The authorization of duties and responsibilities of the GCEO shall not constitute an authorization or sub-authorization which may cause the GCEO or his authorized person(s) to be able to approve any transaction in which they, or any person who may have a conflict of interest (as defined in the notification of the Securities and Exchange Commission or the notification of the Capital Markets Supervisory Board), may have an interest or may gain benefit in any manner, or in which they may have any other conflict of interest with the Company or its subsidiaries, unless the approvals of such transactions are consistent with the policies and criteria approved by the Shareholders' Meeting or the Board of Directors Meeting.

4. Governance in Subsidiary and Associated Companies

It is the policy of the Company to have at least one experienced representative from Thailand to be a director of its operating subsidiaries and associated companies; who has the requisite qualification suitable for such business with no conflict of interest directly with the business of those subsidiaries. Such a representative shall manage and administer the business of

such subsidiaries according to the regulations and procedures provided in the Articles of Association of the Company and of such subsidiaries and relevant laws and also implement the policies, procedures, guidelines and recommendations of IVL.

The Corporate Secretarial Department keeps a summary of the corporate by-laws of all IVL subsidiaries and regularly monitors their compliance with those laws.

Moreover, key information of each subsidiary and associate company is maintained by the Corporate Secretarial Department and regular updates taken and changes to records are made as required.

Every quarter, confirmation and updates are taken from all units on their compliance with various regulations and litigations, if any. A summary of the same is presented to the Audit Committee.

The Corporate Secretarial Department in Thailand has a dedicated senior staff to follow-up on all IVL subsidiary companies' quarterly Board and shareholders meetings as applicable. In this regard, they are monitored by a global meeting control statement.

The core subsidiary companies of IVL held 491 Board and shareholders' meetings in 2020 which are summarized below:

Region	No. of Companies	No. of Meetings
Asia	47	180
Europe	65	183
Americas	62	100
Africa and Middle East	8	24
Australia	2	4

Apart from these meetings, there were also regular management and executive committee meetings of respective businesses to review the business performance of the various subsidiaries.

Effective monitoring of the minutes at the various units is done by way of a "Meeting Control Statement" by the Corporate Secretarial team.

5. Use of the Company's Internal Information

The Company has in place a written policy on the use of confidential and/or internal information so as to prevent any illegal use. The

statement is prominently displayed at IVL's head office and at the offices and workplaces of all our subsidiaries, for the knowledge of all employees.

The Code of Conduct in the Manual prohibits Directors and employees from buying, selling, transferring or accepting the transfer of Company securities by using confidential and/or internal information in any manner that may take advantage of outsiders by using inside information.

All Directors, senior management, auditors and employees having access to financial statements of the Company are required to make a declaration of their movement in shareholdings including their spouse and minor children, to the Company Secretary. A summary of the shareholdings is presented to the Board on a quarterly basis.

Each year, IVL Directors and executives submit to the Company Secretary a 'Declaration of Interest' form in a format approved by the Board, on their interest or a related person's interest in the Company or its subsidiaries.

Details of IVL's policy on the use of internal information can be found on the Company's website under the "Corporate Governance" section and under the CG Manual and Policies section.

6. Audit Fee

The total audit fee and non-audit fee paid during 2020 for IVL and all its subsidiaries, jointly controlled entities and associates globally are as follows:

Unit: Million Baht

Particulars	2019	2020
1. The total audit fees for IVL and all its subsidiaries, jointly-controlled entities and associates globally	184	208
a) Payment to KPMG Phoomchai Audit Ltd and other members firms of KPMG Phoomchai Audit Ltd.	159	179
b) Other Audit firms	25	29
2. The total non-audit fees paid to member firms of KPMG International other than KPMG Phoomchai Audit Ltd.	161	73

Remark: The increase in the audit fee is on account of the new acquisitions coming under the IVL umbrella in 2020.

Our Company's policies, integrity, ethics and disclosures always seek to emulate the best practices in corporate governance.

The strategic HR priorities are listed in the CHRO letter to stakeholders. The following report highlights key interventions and achievements in 2020.

2020 HIGHLIGHTS



91.51% Retention Rate



82 Nationalities



22% Female



429,886 Total Training Hours



18.58 Average Training Hours



2021 Employee Engagement survey results

- Survey participation 82.87%
- Employee Net Promoter Score 76.20%

IVL Leadership Development

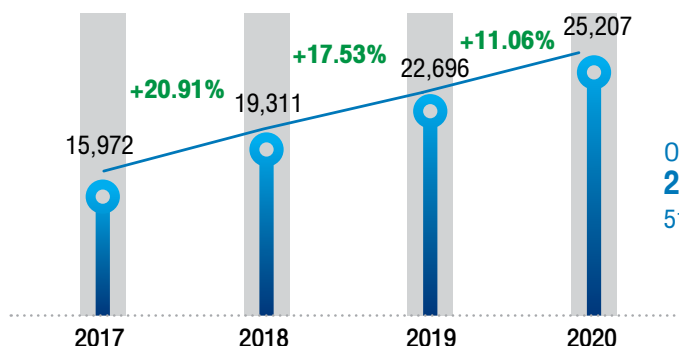
- 218 leaders were trained through virtual and in-person leadership training programs.
- 943 leaders completed e-Learning leadership.

HR Functions and Capabilities

- Contributing to professionalism and building HR functions and capabilities ensuring sustainable improvements in people practices.
- Setting regular meetings of the HR Council as the governance, review and decision-making body on HR group level matters and the status on HR projects.

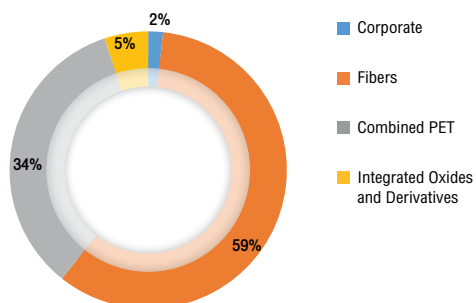
1. Our Global Workforce is Making a Difference

At IVL, we value our people. We have become a diverse and inclusive organization that continuously reinforces our team's capabilities through individual, collective, and organizational development programs, ensuring their sustainable growth and capacity development. In a world that continues to be complex and uncertain, our employees continue to succeed and thrive in their work as part of the IVL family.

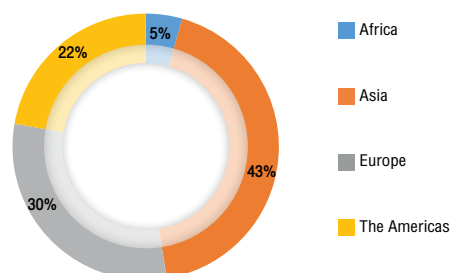


Our headcount grew by 11.06% to **25,207**. Acquisitions contributed 51.06% of our employee growth.

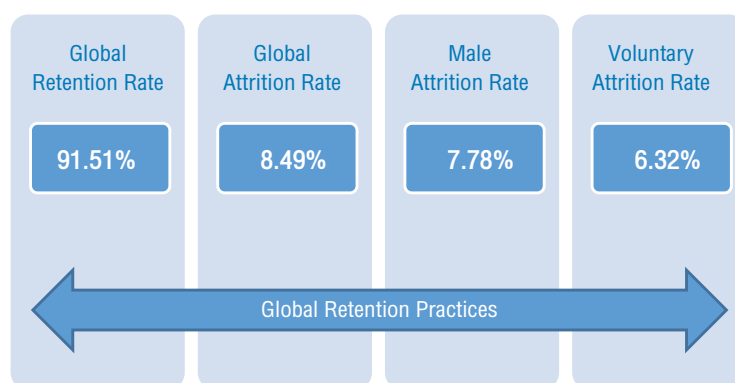
Permanent employees by segment



Permanent employees by continent



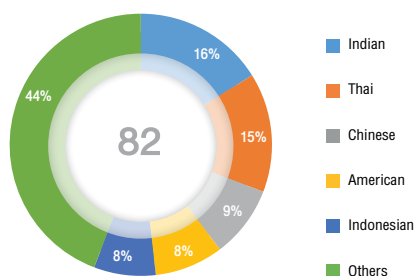
Retention



We developed retention programs through useful information gathered from various analytical resources. In 2020, we created local retention programs in the units with the highest turnover rate in the last two years. A local assessment has been performed through Global Employee Engagement Survey, geographic data and exit interviews analysis, focus group discussions, and inputs from our senior leadership team. Local action plans have been developed based on shared best practices to retain qualified employees within those units.

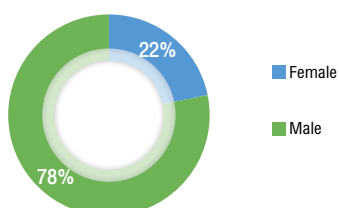
2. Diversity is our Strength

Nationalities

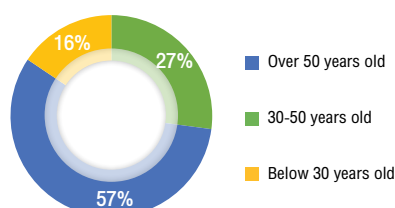


We are proud of our diverse workforce. Our different backgrounds and experiences contribute to new and exciting ideas, and unique perspectives which are incorporated in our business.

Gender Diversity



Age Diversity



IVL values diversity, and this is reflected in the membership of our top management group. The Indorama Management Council (IMC) includes representatives from the US, Europe, and Asia who bring a wide range of knowledge, skills and professional experiences. We also promote diversity and inclusion at all levels of the organization, including the disabled, by providing equal opportunities in sourcing and selection, learning and development, career development, and promotions. We take pride in our ability to bridge the best from different cultures, backgrounds and experiences allowing our team to contribute exciting ideas and unique perspectives which are incorporated in our business for sustainable growth.

3. Engaged People

We launched our first Global Employee Engagement (GEE) Survey in 2015. Year-on-year, we have achieved high participation rates and improvements in our engagement scores. In 2020, we redesigned the IVL Employee Engagement approach which expands employee experience touchpoints and other feedback channels allowing for a broader experience base while strengthening the evaluation's reliability.

We also placed a strong focus on collaborating with managers and employees to identify improvement areas, plans and follow through on actions. The survey will be conducted every two years to allow for a thorough execution and follow up of planned improvements.

The new approach will also ensure closer collaboration of local HR and site management units to gain a common understanding of the new EE approach and to better drive towards our common goals.

The 2021 Global Employee Engagement survey results reflect healthy engagement levels and positive trend:

- Survey participation 82.87%
- Employee engagement 73.90% (An actively engaged employee)
- Employee Net Promoter Score 76.20%

- Key engagement drivers
 1. Objectives and aspirations 75.68%
 2. Accountabilities and collaborations 78.77%
 3. People manager capabilities and interactions 73.24%
 4. Performance management and recognition 63.88%
 5. Leadership 72.98%

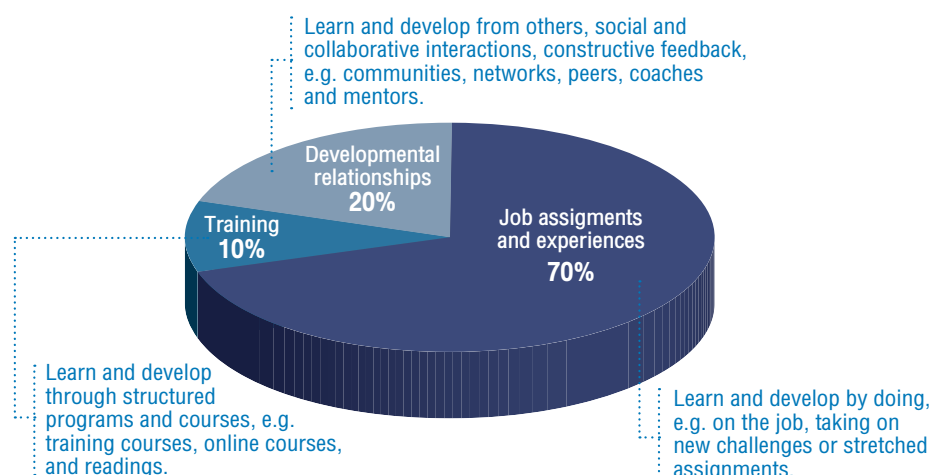
We disclose any misconduct or views about our processes and practices. In addition to local channels, an email address is provided on our website for employees to report potential breaches of Indorama Ventures' Values and Code of Conduct. The Ethics Council takes immediate action on these cases by maintaining the confidentiality of the whistleblower, and at the same time reports on such disclosures to the Nomination, Compensation & Corporate Governance (NCCG) Committee, which comprises Independent Board of Directors members.

4. People Development Opportunities

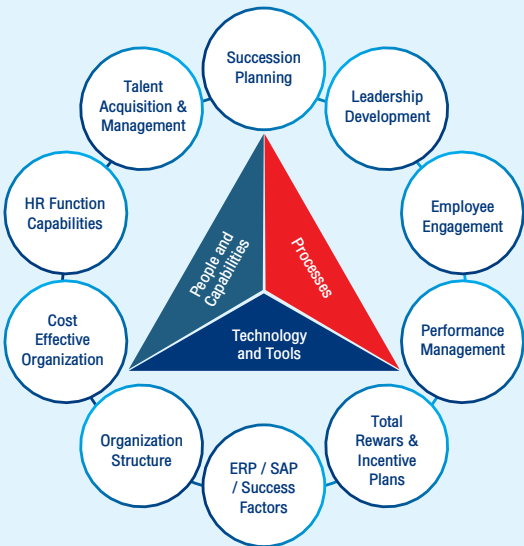
We promote a learning culture and a growth mindset where development is ongoing:

- Employees take ownership and drive their development.
- Managers facilitate, encourage and support the development of their employees.
- IVL, through our leaders, collectively create a dynamic, experiential and innovative environment for growth and learning.

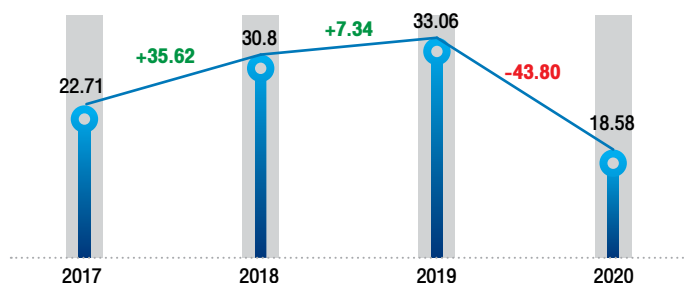
We recognize that there are different ways to learn and grow, depending on the development needs and an individual's learning style. Therefore, we promote a holistic learning and development approach, guided by a 70-20-10 ratio with the following types of development activities:



2020 highlights

Sr.	Initiatives	Outcomes
1	IVL Leadership Development <ol style="list-style-type: none"> Leadership development is a strategic priority for IVL as quality leadership enables sustained business performance and high employee engagement. IVL's leadership curriculum is designed to develop all company leaders by focusing on the IVL Leadership Skills Profile. Development is targeted by leadership level – Junior Management, Middle Management and Senior Leadership. The leadership training portfolio, coaching, and mentoring were implemented as centrally managed programs. 	<ul style="list-style-type: none"> 218 leaders were trained through virtual and in-person leadership training programs. 943 leaders completed e-Learning leadership. A global mentoring program was initiated for six junior and middle management leaders while six senior leaders were trained as mentors. We will continue to expand the mentoring program to support leadership development and build our internal pool of quality mentors. Two senior leaders joined the executive coaching program to support their career transitions and leadership development.
2	HR Functions and Capabilities <ol style="list-style-type: none"> HR is recognized for delivering value to the business and a positive employee experience by being integrated and digitally enabled. Contributing to professionalism and building HR functions and capabilities ensuring sustainable improvements in people practices. Setting regular meetings of the HR Council as the governance, review and decision-making body on HR group level matters and the status on HR projects. 	<ul style="list-style-type: none"> Key subjects were discussed and decisions taken at regular monthly and ad hoc HR Council meetings. Timely and purpose-driven engagement of local HR through webinars and workshops to ensure improved communications, engagement and alignment. Ongoing development of HR capabilities: <ul style="list-style-type: none"> Basic petrochemical industry knowledge. Fundamental project management for HR heads at every IVL site/entity. M&A for representatives in each area.
3	Customized training <ol style="list-style-type: none"> A new global program on pre-assignment training for new expatriates to support assimilation and cultural awareness. Training based on client-specific needs. Online training on a leading massive open online course (MOOC) platform. 	<ul style="list-style-type: none"> The program was designed and ready for implementation from January 2021 onwards. 250 e-Learning programs across all facets of the business. These programs are from Ivy League schools including Harvard University and Yale University.

Number of training hours per employee



*No. declined due to the impact of COVID-19.

Training hours by focus area

Focus Area	Training Hours
EHS and Quality	214,305
Functional	71,523
Technical and Operation	65,246
Induction and Orientation	33,690
Leadership and Behavior	24,702
Language skills	20,420
Total	429,886

5. Succession planning

To build a robust pipeline of talented employees who are seamlessly integrated into the organization through acquisition and management, together with a global succession planning process which was designed and launched in 2019 for senior management positions.

In 2020, this process was successfully implemented for middle management level positions which expanded from 39 to 211. The number of validated successors also increased significantly from 68 to 382. We continue to focus on diversity and building a young and talented pool which has already made solid progress over the past year. To accelerate and support the development of successors, each of them has a clearly defined Individual Development Plan.

Going forward, we will continue to expand this process to other key positions while the new ERP (SAP Success Factors) will be deployed in 2021.

In consultation with the NCCG committee, the Board reviews both the adequacy of the succession planning process and the plan for the Group CEO and Executive Board positions. For other key positions, IVL ensures successful leadership transitions through a constant process of developing the next generation of leaders.

6. Compensation and Rewards

We assess the compensation packages against industry standards and local nuances, either matching or exceeding them. The incentive system is linked to combination of performance matrix at company, business unit, and individual level.

Begun in 2017, the Employee Joint Investment Program (EJIP) allows participating employees to accumulate IVL shares on a monthly basis for a fixed period of time. The EJIP aligns the interests of employees with the Company's performance through share ownership.

The IVL Performance Excellence Award is a significant initiative to sustain and improve employee engagement and is meant to inspire our employees to challenge all boundaries and produce outstanding results. Underway since 2017, this award is based on stellar performance across 10 criteria based on: Financial Performance, Operational Performance, and Sustainability Performance (environment, health and safety). The best Business Units are identified by benchmarking their performance across these criteria and awarded at the IVL Group Management Conference (GMC) while cash incentives are also provided to employees of these units to recognize their excellent teamwork.

GCEO to average employee remuneration ratio:

	Remuneration 2020
GCEO (in 000 THB)	66,615.09
Average employee remuneration (in 000 THB)	1,407.21
Ratio	47.34

7. Human Rights

IVL respects the human rights of all of its workers and the local communities where we operate. In 2017, we formalized our commitment to the UN Guiding Principles on Business and Human Rights. We started a yearly global survey in 2015 on human rights, continue to work on action plans to mitigate perceived risks, and also engage with our suppliers on their commitment to address human rights issues. Our respective units have taken the initiative in getting SA8000 certification or its equivalent to ensure that there are no human rights violations across the organization.

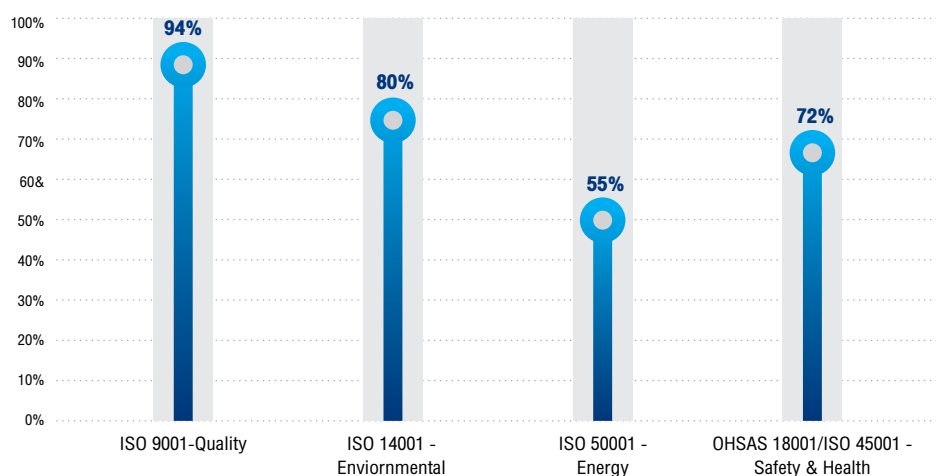
8. Material Labor Disputes

Since our inception, IVL has never had any material labor disputes.

Environmental, Health and Safety (EHS)

As one of our core values, being a safe and responsible company is fundamental to the way IVL operates. We are wholly committed to upholding this value and will not waiver from the responsibility that this places upon us. We accept that to truly achieve our expectations we need to continually adapt, innovate and transform the way in which we manage EHS throughout our business. With this in mind, the manner in which IVL approaches EHS is evolving. Previously IVL relied on business units to independently drive EHS and demonstrate excellence through third party certifications such as ISO 14001 and ISO 45001.

IVL Locations with ISO Certifications



While this approach has served IVL well, as part of our evolution in 2020 we created a Corporate EHS Organization as one of six enabling functions under an organizational improvement initiative called "Future Ready Organization". This new Corporate EHS organization will not replace our existing talented and professional site based EHS structure but will supplement and support by providing a more aligned risk based and strategic approach going forward.

The strategic approach is centered on the following anchor points:

Governance and Standardization

The EHS Culture within IVL finds its origins from companies that have been acquired. Each one of these businesses brings unique management systems, tools and areas of excellence. Until now,

melding this into a single EHS culture has been limited. The newly formed Corporate EHS team is now providing governance by sharing best practices across the company, standardizing approaches to EHS, including, the way we manage compliance and the software systems we use. This standardized approach will bring more centralized intelligence while maintaining localized intelligence. From a compliance perspective, the standardized approach is methodical. Each plant will be systematically defining all EHS regulations that are applicable to them using a common methodology. Once applicability is determined, compliance tasks can be created and assigned using software tools which systematically strengthen the approach to compliance. The applicability analysis also enables creation of audit protocols to be used in both plant regulatory self-audits as well as audits led by Corporate EHS. Governance and standardization drives excellence by choice, rather than chance.



Assurance

Corporate EHS has established a number of leading and lagging Key Performance Indicators (KPIs) to monitor the health and progress of EHS within the company. Detailed definitions were created for each metric to assure a common basis across the company. These KPI's are now reviewed monthly and interventions are employed as needed.

While all business segments have existing auditing systems that they execute, corporate EHS is developing an audit system to provide an independent view and measure EHS maturity of each EHS program.

Building EHS Capability

"Our People Make the Difference" is another one of IVL's values. Core to the Corporate EHS strategy is an investment in building EHS capability within the company. Efforts are currently underway to better understand our EHS talent and capabilities within EHS disciplines. Our efforts in building capability extend well beyond EHS personnel as we believe EHS excellence is a part of every employee's job. Beyond traditional training methodologies, we are building capability through audit member participation, networking and serving on Communities of Practice (COPs).

In 2020, IVL invested in new EHS roles in creating the new Corporate and Segment organization. These positions are grouped in three organizational nodes: 1) Corporate Center of Excellence, 2) Regional Corporate EHS and 3) Segment EHS. These three functional nodes work together to drive improved EHS performance. The majority of these new positions were filled by internal candidates. Backfilling of vacancies created by the filling of these new positions was strategic with the future in mind.

EHS Communication

Good communication is the bridge between confusion and clarity. Successes and failures are often dictated by the quality of communication. EHS is not unlike other areas. Corporate EHS identified this as being foundational to success. Communication can often be forgotten or not prioritized as projects move along. For this reason Corporate EHS has designed systematic communications that include, Global EHS SharePoint site, monthly reports, quarterly discussions with the C-Suite, quarterly regional networking meetings, quarterly virtual EHS Group Share events which have a town hall meeting format, as well as systematic approaches to new standard communication and training.

Sustainability and Corporate Social Responsibility

While our world has drastically changed, our commitment and proactive approach to sustainability remains strong. Our steadfast actions have kept our operations running safely, while helping to connect the dots along our value chain and also contributing to local communities. The global pandemic has forced us to adjust our habits and provided an opportunity for all of us to reevaluate practices as a company.






IVL's relentless business focus on our five priorities – including sustainability – has enabled us to tackle many global challenges. We have a comprehensive strategy with structures and processes that are efficiently implemented by our employees. Our long-term focus incorporates sustainability throughout the company, and we continue to invest in opportunities that improve our earnings and operations, while supporting our team around the world.

Sustainability Strategy

Our strategy, in-line with our corporate strategic levers, supports our vision of becoming a **world-class sustainable chemical company, making great products for society.**

With sustainability as one of our core corporate strategic levers, we are evolving our sustainability strategy to not only expand the boundaries of our work, but to further harness the dynamics of change to solve global challenges. *Our goal is to ensure economic success and sustainability for all of our stakeholders.* We are increasing our focus on the development and implementation of performance improvements and strengthening our business through a holistic approach.

IVL Sustainability Framework

Vision	To be a world class sustainable chemical company making great products for society				
Values	 "Always evidence based"	 "Honesty in everything"	 "Collaborative & Innovative"	 "Visionary leadership"	 "Adaptive mind-set"
Aspiration	Carbon Neutrality to sustain our world & business		Improving Lives through sustainable & affordable products		Trusted Partner to the global community
Differentiators	Thought Leadership on sustainability and the circular economy	Global-local Close to stakeholders	Circular Approach Value chain capture	Early adopter bringing innovation to our operations	ESG best in class investing in sustainable businesses
Strategic priorities	Must do		Thrusts – Sustainable growth		Enabler
	1 Stakeholder Engagement Aligning society to deliver on responsible action	2 Recycling Building the recycling infrastructure the world needs to deliver a Circular Economy	3 Measure Understand what will be covered in our sustainable commitments and how our products improve society	4 Efficiency Efficient use of resources delivering sustainability goals and ROCE. Energy transition/waste to resource	5 Education Scale education programs, leveraging IVL's extensive global footprint
Metrics	IVL goals shared & adopted by society	750 kt (50 bn) PET bottles recycling p.a. by 2025	External validation	Towards Carbon Neutrality	Educate 1,000,000 consumers by 2030

As IVL's operations continue to grow and expand, the more complex nature of our business means we must be equipped to strengthen our sustainability foundation. This involved restructuring our portfolios with a sharper focus and clearer processes so that we are better aligned in our future actions and direction. Yashovadhan Lohia was appointed to lead this effort as Chief Sustainability Officer. A task force covering other Sustainability functions including Environmental Sustainability, Reporting and Disclosures, Product Innovation & Stewardship and Communications & Advocacy helped to further to strengthen our long-term capabilities and performance and embed sustainable development within the organization.

Sustainability Leadership

IVL recognizes we have a broader role to play in contributing to sustainability resilience in both industry and society. We achieve this through a focused set of initiatives and by working with strategic partners and associations on voluntary projects on a global scale contributing positively through our actions to tackle plastic recycling, plastic waste and climate change.

Over the past few years, there has been increasing stakeholder interest in the role played by industry associations in public policy debates, particularly in the context of plastic recycling and plastic waste. These collaborations are aligned with our long-term sustainability objectives and can further our commitment to increase recycled content volumes of PET by at least 750,000 tons. IVL pledged USD 1.5 billion towards achieving this target by 2025.

We actively participate in **legislative engagements** with industry associations to support positive change and sustainable practices. Two key ambitions are announcing our intention to work with the Committee of PET Manufacturers in Europe (CPME) on **EU Plastic Tax Policy** and the EU Commission on a **Spanish law to ban extra virgin olive oil being sold in plastic**.

Moreover, we announced our intention to work with various associations that represent the plastic sector to develop a protocol on policy advocacy. We intend to define the policy areas, and build and improve public perceptions of PET, which is a 100% circular, recyclable plastic with a lower carbon footprint than other packaging materials such as glass and aluminium. We actively communicate with political actors and consumers about the recyclability and sustainability of PET through strategic partners including the **Global Plastic Action Partnership (GPAP)**, **PET Container Recycling Europe (PETCORE)**, **National Association for PET Container Resources (NAPCOR)**, and **The Recycling Partnership**.

To further catalyze our actions, we increased our presence at various global events and with important organizations throughout

the year to improve public perceptions of PET, including the World Economic Forum (WEF), UNGC Leadership Summit, Thailand Business Leadership for SDGs (GCNT), Climate 50 Leaders, Bloomberg interviews, PET recycling/rPET roundtable with Morgan Stanley/JP Morgan.

First-ever Blue Loan: IVL was the first company to collaborate on fund issuance through a blue loan, a financial package whereby funds raised are certified and tracked exclusively for projects that support a Blue Economy – i.e., sustainable use of ocean resources for economic growth, improved livelihoods and jobs, and ocean ecosystem health. The landmark USD 300 million-package was arranged by the International Finance Corporation (IFC), the Asian Development Bank (ADB) and the Deutsche Investitions- und Entwicklungsgesellschaft mbH (DEG), for IVL. Together with helping increase our recycling capacities in five countries, the loan further allows IVL to invest in other climate-related activities such as solar panels, Waste Heat Recovery (WHR) and other energy efficiency projects. Following Thailand's first-ever green loan and sustainability-linked Ninja loan, this further supports our sustainability commitments as a business and emphasizes our fiscal responsibility through green finance.

Climate-related Disclosure Pioneer: IVL was the first chemical company in Thailand and the second chemical company in Southeast Asia to voluntarily align our climate-related disclosures with the recommendations of the Financial Stability Board's **Task Force on Climate-related Financial Disclosures (TCFD)** in 2020. This reflects our commitment to enhancing financial disclosures that improve business evaluations, drive the climate change agenda, create positive impacts to sustainable investments, and make economies more resilient and stable. Learn more about our [TCFD report](#).

In addition to our environmental priorities, we are implementing a robust strategy through structures and processes that support human rights, labor, and anti-corruption that delivers significant value creation to our stakeholders. We are a signatory to the **United Nations Global Compact (UNGC)** and are detailing the progress of our implementation of the UNGC's Ten Principles and support for its broader development objectives.

Gender Diversity: Two key positions at the senior level were filled by women, a member of the Board of Directors and the Group Head of Business Continuity Management. IVL took this important step on inclusion that led to broad-based action across the organization. We recognize that promoting more women into leadership positions is an essential part of organizational development and change.

Sustainable Development Goals (SDGs) At IVL

We are committed to playing a constructive role by supporting the SDGs through our sustainability initiatives and operations. We believe that our collective commitment and synergies can drive sustainable growth and an economic recovery helping Thailand transition to a more sustainable path – now and for future generations. Our projects supporting the SDGs are related to the following goals:



Recycling and the Circular Economy

Bringing customers into the product value chain cycle and developing ways to support the circular economy

Climate Change & Energy

Being fully aligned with global initiatives that develop strong low-carbon strategies

Environmental Stewardship

Improving resource efficiencies and ensuring that our production is environmentally-friendly.

Health, Safety and Well-being

Guaranteeing that health and safety are at the forefront of our activities

CSR and Collaborations

Making Recycling Education a global program and collaborating to have further positive impacts on society

The progress we have made in our contributions to the SDGs has been monitored throughout the year and publicly reported in our [Sustainability Report 2020](#) and in the [SDGs section](#) on our website. As a result of our commitment and strong actions, IVL won the Sustainable Business Award for the UN Sustainable Development Goals in 2019 from Global Initiatives which was announced on December 4, 2020. Further details are available at [IVL SDGs Report 2020](#).

At the “GCNT FORUM 2020: Thailand Business Leadership for the SDGs” held at the United Nations Conference Center to celebrate both the 20th anniversary of the UNGC and the 75th anniversary of the United Nations, IVL pledged that by 2030, we will collectively invest a total of THB 1 billion (approximately USD 33 million) in sustainability projects and initiatives that directly support achieving the SDGs and also commit to embedding the SDGs into the core of our business strategies and activities. This declaration reaffirms our commitment to supporting the Thai government in its efforts to achieve the 2030 agenda.

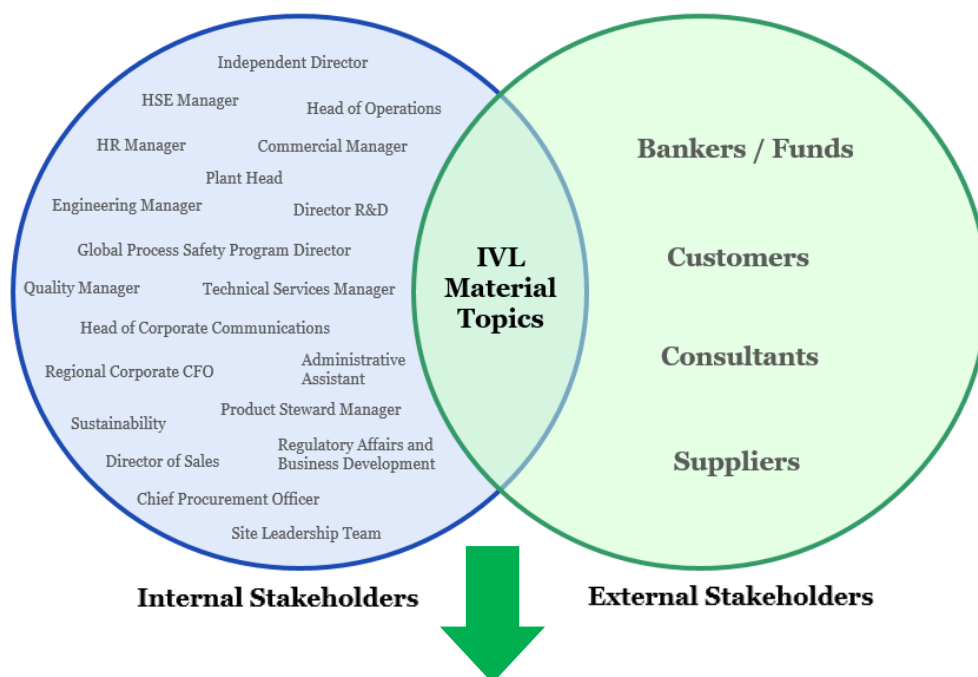


Mr. Aloke Lohia, Group CEO of Indorama Ventures PCL, joined a panel discussion on “Leadership for Sustainability under the New Normal towards the SDGs” at the GCNT Forum 2020: Thailand Business Leadership for SDGs on August 31, 2020, at the United Nations Conference Center in Bangkok, Thailand.

(Left to Right: Ms. Gita Sabharwal, UN Resident Coordinator in Thailand; Mr. Chaiwat Kovavisarach, President and CEO, Bangchak Corporation PCL; Mr. Aloke Lohia, Group CEO of Indorama Ventures PCL; Dr. Sarayuth Saengchan, Senior Executive Vice President-Finance and Acting COO of Mitr Phol Group; and Ms. Patchari Raksawong, Moderator)

Materiality Assessment

We are committed to operating with transparency, through open communications, and are working to develop trust and positive relationships with all stakeholders. One of the formal management systems to engage with and learn from our stakeholders is a materiality assessment. The corporate materiality assessment reflects how we identify, prioritize and take action on topics which we believe are of important interest to our stakeholders – notably in reference to our environmental, social and governance (ESG) factors. The materiality assessment is produced through an analysis of stakeholder surveys. The issues identified in fiscal year 2020 are in the table below:



Environment	Social	Governance
<ul style="list-style-type: none"> PET Recycling and Plastic Waste Climate Change (including Decarbonization) Product Stewardship 	<ul style="list-style-type: none"> Occupational Health and Safety Human Rights Human Capital Development 	<ul style="list-style-type: none"> Compliance Management (Regulatory and Environment) Business Ethics, Integrity and Transparency Risk and Crisis Management Corporate Governance Customer Relationship Management Supply Chain Management Cyber Security

Further details on the materiality assessment process, key material issues and performance are provided in our 2020 Sustainability Report and [2020 Materiality Assessment Report](#).

PET Recycling and Plastic Waste

We believe that recycled PET (rPET) is a new engine for growth and that the recycling of PET packaging is one of the most responsible solutions for the preservation of resources and the reduction of PET containers in landfills. We are doing our part by investing in recycling solutions globally. We understand that there is considerable pressure on plastics and that many people around the world want a sustainable environment for future generations. Amid the challenges, there are also tremendous opportunities with PET.

Our recycling strategy

Our recycling strategy is focused on strengthening our capabilities to increase recycling rates globally, contributing to a circular economy, and ensuring a fully closed loop. We will build on our leadership position as the largest virgin PET producer and remain a leader in rPET. As a leading recycler in Europe, North America and Asia, we have a competitive advantage in rPET through our global footprint, 30 years of recycling expertise, and strong partnerships across the circular value chain.

We are a member of industry associations around the world and voluntarily commit to several sustainability frameworks, standards

and initiatives and transparently disclose data according to their requirements. We believe these strategic approaches can support a number of functions that lead to better outcomes on policies, practices and standards. We leverage our voice focusing on the need to reduce plastic waste and reinforce our intentions as a force for good by driving and sharing our perspectives on real solutions.

Addressing issues and our 2025 Commitment

As part of our recycling efforts, we made a global commitment to invest USD 1.5 billion by 2025 incorporating 750,000 tons of post-consumer PET materials as feedstock into our polyester production. This commitment is just the start of our journey in generating value from gathered post-industrial and post-consumer PET from numerous sources, not limited to bottle-deposits or curbside collection alone, and promoting zero plastic in the environment. As we move towards achieving this goal, we undertook important steps to strengthen and increase our recycling operations in 2020 including:

- Establishing a joint venture, PETValue, with CocaCola Beverage Philippines.
- Acquiring AG Resinas Ltda in Brazil and forming Indorama Ventures Sustainable Solutions Brazil
- Acquiring two new facilities in Bielsko-Biala and Leczyca in Poland and a new recycling facility in Verdun, France.

These new investments strengthen our 2025 commitment by providing significant support to boosting global plastic collection rates and making increased recycling a reality.

Climate Change (including Decarbonization)

In recognizing the urgent need to address climate change in 2020, we accelerated our commitments to reduce Scope 1 & 2 GHG emissions by focusing on reducing climate risks related to our direct emissions. We set a GHG reduction target to conserve energy and minimize air emissions with a 10% reduction of combined GHG Scope 1 & 2 emissions intensity by 2025 (from 2020 levels). In addition to reducing our energy use, which is the key to our overall climate change strategy, we are continuing to purchase renewable energy and investing in alternative energy resources as part of our collective actions that will lead us to achieving our goals.

The following is a summary of our carbon footprint reduction efforts:

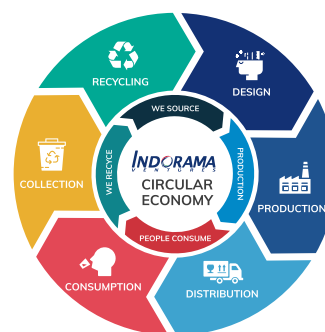
- Continuing to work on operational eco-efficiency initiatives. Various green projects were approved across three business segments with the intention to lower our environmental footprint (GHG, energy, water), improve operational eco-efficiency and water consumption efficiency.
- Increasingly exploring renewable energy consumption towards our target of 25% by 2030. We have been working with developers and consultants on virtual PPAs.

- A stronger focus on solar rooftop installations to increase renewable energy usage with an overall capacity of 25.4 MWp. Seven projects in Thailand and India have been completed. Five LOI/PPA-signed projects are in the execution phase in Thailand, while five more projects are underway in Indonesia, Lithuania and Thailand.

These important projects have allowed us to decouple business growth from GHG emissions and accelerate our progress towards our goals to reduce 10% of combined Scope 1 and 2 emissions intensity by 2025 (from 2020 levels), as well as consuming 25% renewable electricity by 2030. We believe our strategic actions will play an essential role in contributing to a decarbonized world and help us create value for decades to come.

Circular Economy

In 2020, we achieved considerable progress for a more circular economy through our investment in three recycling facilities in Brazil, Poland, and the Philippines, resulting in 15 operating sites globally.



With a belief that together we can drive high-potential solutions, last October, we joined the World Economic Forum's Global Plastic Action Partnership (GPAP) – a global multi-stakeholder partnership that aims to reduce plastic leakage into the environment and is driving the transition to a circular economy for plastics. This partnership is aligned with our 2025 recycling commitment. We were honored to receive the first blue loan from the IFC which will lead to the recycling of 50 billion PET bottles globally per year by 2025. This includes four countries in Asia and one in Latin America, where we will be diverting plastic waste from landfills and oceans, investing in renewable energy and resource efficiency projects, and delivering a circular economy for PET packaging.





We have continued to provide recycling education to students in schools and universities, communities, governmental organizations, and the public and private sectors. In 2020, more than 27,900 people, including students and teachers, were educated in waste management and recycling, resulting in approximately 9,430 kilograms of collected PET products which were returned to our recycling facility. Further details are available at [Recycling Education](#).

Through important collaborations and a better understanding on plastic waste separation, IVL already achieved approximately 58 billion recycled bottles at all of our recycling facilities from 2011 until the end of 2020. This means that IVL delivered by helping reduce plastic waste by more than 1.3 million tons and reduced our carbon footprint by more than 1.9 million tons. For our real time bottle recycling count, please visit [Recycling](#).

Additionally, during the COVID-19 pandemic, PET bottles have been collected for recycling and converted to high-quality recycled PET yarns. This is Thailand's sole source of medical-grade rPET, and the process is conducted at IVL's Nakhon Pathom recycling plant and was the country's first-ever PPE coverall made from yarn recycled from post-consumer PET bottles, which was 100% collected domestically. Further details are available at [Corporate Social Responsibility](#).



Sustainability – the Road Ahead

We recognize that our stakeholders and industry have rising expectations of our performance. Our Sustainability Strategy takes a systems-based approach, and seeks to identify and improve performance across a wide range of relevant issues, including the environment, people and society. In determining where to focus, we are taking materiality as well as impacts into consideration for the road ahead.

Addressing Climate Change:

We are striving to meet the objectives of the Paris Agreement to manage climate in the context of sustainable development. Given the scope of the challenges the world faces, we are building on what we have accomplished and continuing to raise the bar for ourselves through new and long-term goals. The company is responding to climate change by announcing more aggressive GHG targets and actions consistent with the Paris Agreement, including:

- Ramping up renewable electricity use in the Onsite (rooftop and ground mounted) and offsite (Virtual Power Purchase Agreements - vPPAs).
- Exploring options for Science-Based Targets (SBTs) and driving leadership in supplier engagement to bring down emissions in our supply chain.
- Adopting green technologies and innovations such as Carbon Capture and Storage (CCS), low carbon energy – green hydrogen and other clean energy sources as one of the means to help deliver climate neutrality and tackle energy security.

Our commitments speak for themselves. We not only continue to work to address climate change concerns but are also expanding the scale of our work to across boundaries and undertaking our responsibilities to the next level along the value chain.

Awards and Recognitions

Indorama Ventures assures **independent external sustainability assessments and evaluations** of our sustainability performance through participation in various worldwide recognitions such as the Dow Jones Sustainability Indices (DJSI), CDP, FTSE4Good, MSCI, Sustainalytics and EcoVadis, among others.

Our achievements and third-party recognitions speak to the focused efforts of management, together with the outstanding commitment and efforts of our employees. They provide us with a broader perspective of global standards and help drive continuous improvements over time. It is also important that we build on these successes and continue to aspire to be “**a world-class sustainable chemical company making great products for society.**” Learn more about [our corporate sustainability awards and recognitions](#).

Evolving Corporate Social Responsibility (CSR):

At IVL we integrate social and environmental concerns into our business and our interactions with stakeholders. Our CSR goal is to create a positive impact on society and deliver value, whether social, environmental, or economical to ensure the company remains sustainable. This year, we aim to implement CSR practices to meet with the Shared Value concept. To inspire our employee motivation, we encourage them to uplift their CSR activities by building awareness on the Creating Shared Value (CSV) concept. This means that we can address societal challenges through corporate expertise and accelerate initiative to create benefits for business and communities.

Shared Value takes an essential step beyond Corporate Social Responsibility, which is not about philanthropy, donations, or social contributions. It is about creating meaningful economic value such as a competitive advantage, brand reputation, secured supply chain, and response to social needs or community concerns.

CSR Global Activity Highlights 2020

Our CSR initiatives always aligned with the CSR focus areas: knowledge, well-being and environmental. Even though this challenging COVID-19 pandemic, IVL continues working to create value while contributing to society, to ensure that we benefit, both as company and a community. Illustrated below are just some of the activities from across the globe.

- **Knowledge:** We believe that establishing Waste Education programs - including plastics and the recycling process - for young people to install environmental responsible mindsets leads to strengthening STEM education and innovation. This can help address the waste challenge. We want to ensure equitable, quality education and promote lifelong learning opportunities for all. We support education and training on waste recycling for communities through internal and external collaborations.

Highlighted activity: Recycling Education Programme

Indorama Ventures' Recycling Education Project is an initiative to spread awareness and practical knowledge about recycling PET, implement sustainability missions globally. We extended our collaborations and worked with diverse groups to convey this message to a broader audience, together with having a positive impact among communities in different countries worldwide.

Despite the limitations of the COVID-19 pandemic in 2020, 60 schools, 2 universities and 9 organizations participated in our program, communicating our message to 29,756 participants

- **Well-being:** We believe in strengthening communities by focusing on quality of life, to facilitating access to health awareness and community care facilities.

Highlighted activity: Covid-19 Reaction

IVL works globally to address the social needs and build a good relationship with the local community to fight the COVID-19 pandemic throughout this tough time.

For instance, in Nigeria, we distributed food items to over 300 people in the Sanyo community to support families during the National Lockdown due to the pandemic. In the United States, we produced hand sanitizer and other relevant cleaning products to relieve the shortage. Over 14,300 sanitizing solution gallons have been distributed to hospitals, local governments, correction facilities and police departments.

300 people received the food in the Sanyo community, Nigeria



14,300 gallons of sanitizing was distributed across United States



- **Environment:** We believe that protecting and conserving the environment is the key to sustaining our planet. Our objective is to conserve natural resources and the existing environment. We are pleased to have supported and positively impacted organizations by collaborating with partners across the globe.

Highlighted activity: Promoting the circularity of PET bottles

In collaboration with our CSR partners, we worked closely with various parties such as independent organizations, education institutions and the private sector. We have collected **over 4.8 tons** of post-consumer PET bottles **within 5 months** and recycled them as sustainable yarn for PPE suits. We also promote the waste separation and encourage the public to support the circular economy for PET bottles under a collaborative project called “Separate PET Bottles to Help Doctors” and “Separate PET Bottles to Help Dentists.”

Furthermore, another 5 tons of PET bottles were collected as part of the Global Educational Programme outcome during 2020.

Within greatly collaboration, over 4 tons of PET bottles were collected as part of CSR activities



SROI: Social Return On Investment - Recycling Education Programme.

IVL's commitment is long-term, having committed to operating the Recycling Education project for 30 years project (2017 - 2047). In 2019, we educated over 13,000 students under the Recycling Education Programme in Thailand.



To evaluate the program's effectiveness and continue developing our crucial activity, we bring the Social Return on Investment (SROI) approach to understand the impact with a specific method to calculate benefits and outcomes. Moreover, this method also helps to identify the tangible results by comparing with the value of outcomes and the monetary value that the company spends. Meanwhile, the purpose of evaluation can strategically adapt to improve the outcomes for beneficiaries and stakeholders, as well as the value for money proposition.

There are five dimensions that we focus on, as shown in the figure. A recent study shows that **every 1 Baht investment in recycling education generates over 5 times the value for local communities.**

This value established by an external consultant named Social Value Thailand (SVTH), an initiative of Social Value International. It is a network of leading organizations worldwide, with memberships of more than 700 organizations in 25 countries globally. The objective is to set standards and develop personnel in social compensation assessment.

The process starts with identifying key stakeholders, engaging with the local community, and gathering feedback on the recycling education programme by conducting the survey, in-depth interview, and focus group. After that, the information was analysed and assessed to give the Social Return on Investment (SROI).

Recycling Education Highlights 2020

IVL continued our focus on recycling education and promoting our message of the need to separate waste, and how recycling provides multiple benefits including an improved environment, job creation and support for the economy. We extended our collaborations and worked with diverse groups, covering schools, universities, and a range of companies and organizations, to convey this message to a broader audience, and together, having a positive impact in communities in different countries throughout the world.

1. Launching New Recycling Education Materials:

We regularly update and develop our recycling materials to make it more interesting, engaging and in multiple languages. Last year, the Let's Find Out About Types of Plastic, Recycling PET and Waste Separation was our newest release with an aim to educate people to separating waste in the proper bins, types of plastic and the process to recycle PET. Furthermore, our animated books and the waste separation VDO was prepared in Spanish and we have a new animation of the PET recycling process to allow people to easily understand how it works and to be aware that rPET is safe. With these developments and improvements, IVL's recycling education materials can be more widely utilized all over the world.



2. Education:

In 2020, 27,906 people, 60 schools and 2 universities joined our education program on plastics and recycling PET.

Morgan Kids: In 2020, we shifted our focus to educate Morgan Kids on Koh Phayam, Koh Lao and the Mud Brick Learning Center and HDF Mercy Center in Ranong province supporting 63 kids and teachers on separating plastic, and the importance of recycling PET which can save the environment and create jobs.

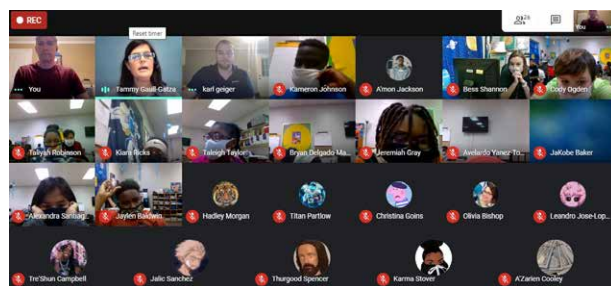


Kasetsart University: Students, teachers and officers at the Faculties of Environment and Fisheries were attend the training and provided 100 kilograms of PET for recycling to recycling factory at our factory.

Suan Sunandha Rajabhat University: The University joined the "Separating PET Bottles to Help Dentists" project providing 110 kilograms of PET bottles to be recycled into PPE coveralls for the Dental Council of Thailand in support of dental students.

3. Shifting to Virtual Training:

With the COVID-19 pandemic, we shifted from conventional to virtual training – but our message clearly resonated. Students and communities around the world are benefiting from recycling PET smarter. A total of 34 virtual training sessions were conducted in 2020.



4. Moving towards A Diverse Target Group:

Our message reached a wider group focused on a circular economy as recycling must involve everyone, beyond just governments and organizations. All of us must do our part for a more sustainable world. We engaged with nine new companies in 2020.

- **Companies** – Management and staff at Plus Property, CKPower, Next Capital and Bangkok International Trade & Exhibition Centre (BITEC) attended our training program and collected PET bottles for recycling at our plant (Plus Property attended the training only).
- **AMCHAM Scholars** – Training was provided to gifted university students who received scholarships from American Chamber of Commerce (AMCHAM) in Thailand and who in turn, will communicate what they learned in their communities.

- **HSBC** – We brought the bank’s offices in Thailand, the US and Mexico together for a virtual sharing session on sustainability and recycling PET, and also provided staff in Thailand with a focused in-person training. The bank provided 200 kilograms of PET for recycling at our plant.



- **KPMG** – We provided training to management and staff, and KPMG Thailand provided 150 kilograms of PET for recycling at our plant.
- **L’Oréal** – We provided virtual training to staff. The company is our customer as some of their packaging is made from recycled PET.
- **Suntory PepsiCo Beverage (Thailand) Co., Ltd.** – We continued educating their staff to raise awareness of new target groups on the merits of recycling for the second consecutive year.

5. Working on Partnerships and Collaborations:

Our education campaign stresses the importance of working in partnership. We successfully extended the campaign to governmental organizations including both teachers and students, as well as a PPP encompassing the public and private sectors, civil society and international organizations. While every individual effort counts, together, everyone can be a hero when it comes to recycling.

Office of the Basic Education Commission – A workshop was held for their environmental education officers exploring how to better manage plastic waste in schools. We provided our recycling education materials so students know how to separate waste and see the value of recycling.



Public-Private Partnership (PPP) for Sustainable Plastic and Waste Management – We facilitated their workshop which focused on the benefits of a circular economy in schools and provided our recycling education materials for all participants.



National Science and Technology Fair – In 2020, we showcased our recycled materials and end-used product samples in the “Sustainable Design” concept. IVL provided rPET materials, sample products made from PET bottles and education materials for the “Enjoy Science Careers” roadshow allowing kids to see PET innovations first-hand.



6. Contributions from our Global Team

IVL’s global team further contributed to recycling education throughout the year. They were quick to adapt and continued to reinforce our recycling message online, encouraging efforts to collect PET bottles in each country where we operate, and ensuring that PET waste does not end up in the environment.

For more details on Recycling Education, please visit our website and our 2020 Sustainability Report.

Scan the QR code to visit our recycling education webpage:



WE SUPPORT



A New Level of Ambition for Corporate Sustainability

Indorama Ventures PCL was accepted as a Participant of the United Nations Global Compact, joining a global network of 1000+ companies that are committed to building a sustainable future.

With our deep commitment and collective efforts on sustainability, we are implementing a solid strategy through structures and processes that support human rights, labor, the environment, and anti-corruption, and delivering significant value creation to our stakeholders.



HUMAN RIGHTS



LABOUR



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C H E M I C A L S | P O L Y M E R S | F I B E R S

The Audit Committee Report to the Shareholders for the year 2020

The Audit Committee of Indorama Ventures Public Company Limited consists of three Independent Non- Executive Directors in line with the SET requirements. The Independent Directors possesses appropriate qualifications to serve on the Audit Committee.

Mr. Rathian Srimongkol	-	Chairman
Mr. Maris Samaram	-	Member (Retired on 30 June 2020)
Dr. Siri Ganjarerndee	-	Member
Mr. Tevin Vongvanich	-	Member (Joined on 30 June 2020)

During the year 2020, the Committee held 6 meetings, with the attendance of the Audit Committee Members as under:

Sr. No.	Name of Audit Committee Member	Meetings Attendance
1	Mr. Rathian Srimongkol	6/6
2	Mr. Maris Samaram	3/3
3	Dr. Siri Ganjarerndee	5/6
4	Mr. Tevin Vongvanich	3/3

The Audit Committee independently performed its duties, in accordance with the Audit Committee Charter, which has been reviewed and approved by the Board of Directors and is in alignment with the regulations of the Stock Exchange of Thailand (SET).

Significant activities of the committee during the year are summarized here under-

1. Review and approval of Financial Statements

The Audit Committee reviewed the quarterly and annual consolidated financial statements of the Company and its subsidiaries, which were prepared in accordance with Thai Financial Reporting Standards (TFRS), which is in conformance with the International Financial Reporting Standards (IFRS). The Committee reviewed material issues and exceptional items and obtained sufficient clarifications from the external auditors and the management, and confirms that the financial statements are accurate, complete, presented fairly with adequate information and the disclosure in notes to the financial statements complied

with the relevant laws and financial reporting standards. The Audit Committee also reviewed Key Audit Matters (KAMs) as presented by the Statutory Auditors of the Company.

The Audit Committee approved quarterly consolidated financial statements and reviewed annual consolidated financial statements before the same is approved by the Board of Directors.

The committee also held meeting with external auditors in absence of management to review external auditor's scope of work, audit approach and any issues they might be facing.

2. Review and approval of Management Discussion and Analysis

Each quarter of the year, the Committee deliberated on the Management Discussion and Analysis (MD&A) in consultation with the Management. The Committee approved the quarterly MD&A reports and reviewed the annual MD&A reports before recommending the same to the Board of Directors for approval. The Committee believes that the Management Discussion and Analysis (MD&A) is presented fairly with adequate information.

3. Review of Internal Control Systems' Effectiveness

The Audit Committee assessed the adequacy of internal control systems with the Company's management, external and internal auditors. The Committee works together with the Internal Auditors and Management to streamline the internal control systems and procedures as a continuous process. The Committee also reviewed the progress of Control Self-Assessment Questionnaires (CSAs), a tool developed by Internal Audit department and distributed to business process owners to assist them in conducting "Self Business Process Audit" and fill in control gaps as deemed appropriate for domestic as well as overseas entities. The Audit Committee reviewed the Evaluation of "Sufficiency of Internal Controls Systems" for the year 2020. Based on its review, the Committee is in agreement with Management and Internal Audit department and believes that the company's internal control systems are adequate, suitable and adaptable to evolving circumstances to suit the company's businesses, present and future, while complying with the related laws and regulations.

4. Oversight of Internal Audit

The Audit Committee reviewed and approved the Annual Internal Audit Plan for the year 2020. On half - yearly basis Committee reviewed internal audit department presentations elaborating upon the progress of audit plan, reviewing significant audit findings and the follow – up implementation status of the past reported observations. Audit Committee also reviews the new initiatives undertaken by Internal Audit department to further increase the effectiveness and efficiency of Internal Audit process. The Committee also escalated some of the significant Internal Audit issues to the Board for their information. Based on its review, the Committee is of the opinion that the Company's internal audit function including their independence and team size is adequate and effective.

5. Review of Connected Transactions in compliance with the Law and Stock Exchange of Thailand's Regulations

The Audit Committee approved New Connected transactions, on quarterly basis, which are required to be approved by the Audit Committee as per SEC/SET regulations and Connected Transaction Policy of the company.

Based on its review, the Committee is of the opinion that all such transactions took place at regular commercial conditions and justifiable terms on arm's length basis as would have been entered with outsiders, in the best interest of the Company, in line with the Connected Transaction Policy of the Company and in compliance with regulatory requirements.

6. Compliance with Securities and Stock Market Laws, Regulations of the Stock Exchange of Thailand and/or other applicable laws

The Committee reviewed, on quarterly basis, the status of the company's compliance with the laws and regulations of the Stock Exchange of Thailand, the Securities and Exchange Commission and other relevant laws pertaining to the Company's business. There were no significant non-compliances noted.

The Committee further reviewed the status of compliance with the local and all other applicable laws and regulations of respective countries in which the subsidiaries exists and/or operates and observed no issue of non-compliances.

7. Appointment of External Auditors

The Committee evaluated the performance of KPMG Phoomchai Audit Limited, the external auditors of the Company, for the year 2019 and being satisfied, recommended to the Board for their re-appointment for the year 2020 along with the proposed audit fee.

8. Self-Assessment of Audit Committee Members

The Audit Committee conducted a self-assessment to review and evaluate its performance by benchmarking it with the Audit Committee Charter and best practice guidelines. The Audit Committee is satisfied that it has been effective in carrying out its duties and has followed the terms of reference in its charter. The results of the self-assessment were reported to the Board of Directors of the Company.

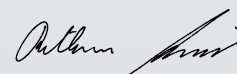
9. Report of the Audit Committee

The Audit Committee from time to time reported critical issues related to Internal Audit and other activities to the Board of Directors.

Based on above it can be said that the Audit Committee performed its duties as specified in the Board-approved charter with competence, prudence, and independence in equitable interests of stakeholders. In the opinion of the committee, IVL's financial reports were accurately prepared in all material aspects under generally accepted accounting principles. IVL has adequate risk management practices, appropriate internal controls and internal audit systems, compliance with good corporate governance, legislation, requirements, and obligations relevant to its businesses.

The Audit Committee received good cooperation throughout 2020 from the Board of Directors, executive officers, auditors and all other relevant departments.

On behalf of the Audit Committee



Mr. Rathian Srimongkol
Chairman of the Audit Committee

The Sustainability and Risk Management Committee Report for the Year 2020

The Sustainability and Risk Management Committee (the "Committee") was established by the Board and operates in accordance with the Sustainability and Risk Management Committee Charter to oversee the Group's sustainability activities and provide risk management oversight, including monitoring the effectiveness of the risk management framework and mitigation plans. Its findings are reported to the Board.

The Committee, which includes four independent and four executive directors, is accountable to the Board for its performance and is supported by the Chief Strategy Officer and Chief Sustainability Officer.

Mr. Alope Lohia	Chairman
Mr. Rathian Srimongkol	Member
Mr. Kanit Si	Member
Mr. Russell Leighton Kekuwa	Member
Mr. Tevin Vongvanich	Member
Mr. Yashovardhan Lohia	Member
Mr. Dilip Kumar Agarwal	Member
Mr. Udey Paul Singh Gill	Member

Three Committee meetings were convened in 2020, on February 26, May 13, and August 4. Attendance by committee members was 100% for all three meetings. At the end of the year, Dr. Deepak Parikh resigned from the company due to personal reasons.

COVID-19 Pandemic Response

Since the onset of the COVID-19 pandemic, the safety and well-being of our employees, customers, suppliers, and communities have been our highest priority. The Global Emergency Management Team was formed along with experts/leaders and held regular calls to monitor personnel, operations and the business situation across the organization and took any decisions as necessary or when needed to ensure the safety of our employees and limit any impact on the business. All necessary actions were being proactively implemented in IVL's overall ecosystem. Our colleagues continue to work tirelessly to support this massive effort providing critical protection to healthcare and other front-line workers who bear the greatest burden in fighting this pandemic. During the year, EHS head, Mr. Todd Hogue, was appointed to oversee all environmental, health and safety matters and set the strategic direction for effective environmental, health and safety management across the organization.

The Committee performed its duties in accordance with the SRMC Charter and within applicable laws and regulations. Noteworthy items for the year were:

1. Overseeing Sustainability Goals and Strategy

The committee reviewed and advised on sustainability goals and strategy in parallel with IVL's ongoing initiatives, enabling the company to flexibly adapt to external changes and strive towards achieving sustainable and resilient operations. These actions were shaped by IVL's strategic priorities which address megatrends such as climate change, the circular economy, water stewardship, product safety and transparency, and health and wellness, and reflect international frameworks such as the UN Sustainable Development Goals (UN SDGs), UN Global Compact (UNGC), the perspectives of a broad spectrum of stakeholders, and the impacts on corporations.

In addition, the sustainability function was restructured as part of the core priorities of the organization and Mr. Yashovardhan Lohia was appointed as the Chief Sustainability Officer of the IVL Group. There are four key elements under Sustainability: Environmental Sustainability, Sustainability Reporting & Disclosures, Sustainability Communications and Advocacy, and Global Product Innovation and Stewardship. All core functions are set to drive the business and aligned with the IVL's 2025 sustainability targets.

2. Overseeing Risk Management

Significant risks were monitored throughout 2020 by the Committee and the Risk Management Sub-Committees at the business and plant level, which also incorporated views concerning the wider impact of COVID-19.

- **Strategic risks** including environmental, social, and governance (ESG) related risks, emerging risks, scenario analysis, stress testing, global challenges, industry trends, cyber security, solutions for plastic waste and recycling, and disruptive innovations and technologies.
- **Operational risks** including health and safety, cyber security, supply chain, business continuity management (BCM), natural catastrophes, demand and supply, plastic pollution, customer/supplier expectations, climate change, environmental protection, carbon pricing and an emissions trading scheme (ETS), renewable energy, water scarcity and conservation, and plastic tax.

- **Financial risks** including debt compliance management, liquidity, currency fluctuations, interest rates, taxation, and insurance portfolio.
- **Reputational risks** including corruption, bribery, child and forced labor, protecting human rights, environmental and regulatory compliance, and plastic waste.

During the year, the role of Business Continuity Management (BCM) was established as part of the company's risk management enforcement and Ms. Wan Norashikin Mohd Nasir was appointed as the IVL Group Head of BCM.

3. Sustainability Performance Review

The Committee reviewed IVL's sustainability performance during the year and suggested improvements particularly related to health and safety, GHG emissions, energy consumption, operational eco-efficiency, environmental protection, and stakeholder engagement. The Committee further covered five strategic priorities with bold targets for the recycling business, and solutions to address plastic waste risk and single use plastics to steer the business through the plastic waste challenge and beyond by helping to solve environmental problems through our business and industry.

4. Assessing Sustainability Initiatives

The Committee reviewed the progress of sustainability initiatives undertaken last year and offered recommendations.

- **Carbon reduction** – operational eco-efficiency improvements and target setting together with energy consumption and GHG emissions.
- **Renewable electricity** – increasing the consumption of renewable electricity, both onsite (rooftop and ground mounting) and offsite (virtual power purchase agreements).
- **Climate strategy including** – internal shadow carbon pricing, an emission trading scheme (ETS), and water stress analysis by WRI.
- **Science Based Targets** – explore the options of setting up science-based targets (SBTs)
- **Hazardous and non-hazardous waste to landfill** – site audits and certifications.
- **Sustainability targets 2025/2030** – investment attractiveness, a balance with operational efficiency as well as CAPEX, the addition of new entities to the group, and industry benchmarking.
- **Health and safety** – a programmatic process in Environmental, Health and Safety (EHS) capabilities.

5. Sustainability Assessment Review

The Committee reviewed and acknowledged the recommendations from the Dow Jones Sustainability Indices (DJSI) Corporate Sustainability Assessment, together with

sustainability assessments by the CDP, EcoVadis, MSCI, FTSE4Good Index, Sustainalytics, the Stock Exchange of Thailand, and other ESG evaluations including from customers and funds, and advised on adopting suitable best practices.

6. Sustainability and Risk Management Committee Charter Revision Review and Approval

Following good governance practices, the Committee reviewed and approved the revised Sustainability and Risk Management Committee charter, which was subsequently approved by the Board.

7. Committee Performance Evaluation

The Committee conducted a self-assessment to review and evaluate its performance and effectiveness in carrying out its duties. The overall performance and effectiveness was satisfactory during the year.

Committee Leadership

Throughout 2020, we delivered real organic growth and achieved important ESG milestones, notably our inclusion in the Dow Jones Sustainability World Index for the second consecutive year and inclusion in the Dow Jones Emerging Markets Index for the fourth consecutive year. We were also rated by FTSE4Good as the company with the best ESG score among the world's leading companies in the chemicals sector. IVL improved its ratings in both the EcoVadis and MSCI assessments. All of these recognitions confirm that we are maintaining our trajectory through our commitment and leadership in sustainability.

In the pursuit of business growth and profitability, we strive to do things the right way – economically, socially and environmentally. We take our responsibilities seriously and remain focused on ensuring safe and profitable operations with a reduced impact on the environment, will respond with integrity to the trust and expectations of our stakeholders, and will work through our diverse business activities to contribute to both sustainable development internationally and help resolve critical global issues.

On behalf of the Sustainability and Risk Management Committee.



Mr. Alope Lohia
Chairman

The Nomination Compensation and Corporate Governance (NCCG) Committee Report for the Year 2020

The NCCG Committee (henceforth referred to as "Committee") is a sub-committee of the Board of Directors which supports the Board in matters of nominating and compensating Directors of the Board and the company's Group Chief Executive Officer. Furthermore the Committee supports the Board's effort to enhance its ESG profile by overseeing corporate governance.

The Committee members consist of five Independent Directors, who possess appropriate qualifications to serve in the Committee:

Mr. Russell Leighton Kekuewa	Chairman
Mr. William Ellwood Heinecke	Member
Mr. Chakramon Phasukavanich	Member
Mr. Kanit Si	Member
Dr. Siri Ganjarerndee	Member

Mr. Alope Lohia, Group CEO & Vice Chairmen of the Board serves as an advisor to the Committee.

There were three meetings held during 2020: February 25, August 4 and November 10. Attendance by committee members was 100% for all three meetings.

The Committee performed its duties in accordance with the NCCG Charter and within applicable laws and regulations. Noteworthy items for the year were:

1. Appointments to the Board and to Committees

Mrs. Kaisiri Neungsigkapan, formerly chief executive officer of KPMG Phoomchai Holding Company Limited was nominated by the Committee to be Independent Director succeeding Mr. Maris Samaran who retired from the Board due to age limit after serving for 10 years.

Mr. Tevin Vongvanich, Independent Director was nominated to be a member of the Audit Committee, also replacing Mr. Samaran who held the same position.

2. Re-appointment of Directors to the Board Due to Term Expiration:

Five Directors retired by rotation at the 2020 annual general meeting, but were eligible for re-appointment. After consideration of their performance and contribution to the Board the NCCG Committee deemed it appropriate to recommend the re-appointment of the five retiring Directors.

The Directors who were re-appointed were:

Mr. Rathian Srimongkol, Independent Director, Vice Chairman of the Board, Chairman of the Audit Committee

Mr. Bill Heinecke, Independent Director, Member of the Nomination, Compensation and Corporate Governance Committee

Dr. Siri Ganjarerndee, Independent Director, Member of the Audit Committee, Member of the Nomination, Compensation and Corporate Governance Committee

Mr. Kanit Si, Independent Director, Member of the Nomination, Compensation and Corporate Governance Committee, Member of the Sustainability and Risk Management Committee

Mr. Dilip Kumar Agrawal, Executive Director, Member of the Sustainability and Risk Management Committee, Chief Executive Officer of Combined PET, IOD and Fibers Business

3. Remuneration of the Board of Directors

The Committee proposed to the Board that there should be no change in the retainer fee structure paid to the Directors in 2020. Recent industry benchmarking verified that board remuneration is indeed competitive and reasonably aligned with market rates. As in previous years no retainer fee was paid to Executive Directors.

4. Disclosure of Senior Management Remuneration

In an effort to provide more visibility in the disclosure of senior management remuneration the Committee approved to disclose the

individual remuneration of its top leaders – Group CEO, CEO PET and CEO Fibers. In addition it was decided that the remuneration of the remaining members of the Indorama Management Council – Deputy Group CEO, Chief Financial Officer, Group HR Officer and Chief Strategy Officer would be disclosed collectively. Remuneration would be categorized by salary and bonus and perks.

5. Re-Structure of Management Organization and Succession

In the November meeting Mr. Alope Lohia, Group CEO revealed his plans to restructure the organization with emphasis on three business segments – IOD, Combined PET and Fibers. A new position of CEO, tasked to oversee the three business segments was added with Mr. DK Agrawal, previously CEO of PET appointed to that position. Committee members fully supported the re-structuring.

6. Annual Review of the NCCG Committee Charter

As per the charter of the Committee and for good governance, the Committee thoroughly reviewed the charter for need of updates or relevance. In all, seven paragraphs in the charter had been refined or re-written.

7. Introduction of the New Employee Engagement Process

Living the company's core values is important for its future success. "The Customer is Why We Exist" and key to this is the commitment and engagement of our employees. We strongly believe that "Our People Make the Difference". Hence it is essential that we have an effective process to monitor and improve upon employee engagement. Group Human Resources formulated a new process design to enhance employee engagement from time of induction to end of employment. The Committee fully supported this new initiative and believed it is very much aligned with the company values.

8. Adoption of a New Whistle Blowing Process

As a world-class company we strive to have a robust and effective whistle blowing process. With societal issues being brought to the forefront e.g. racial tensions, workplace inequality, female harassment, etc., and broadcasted more freely through social media, it was imperative to revisit the effectiveness of our Whistle Blowing process. The Committee voted in favor of the recommendations made by management to refine the current process and streamline the role and responsibilities of the whistle blowing committee with the purpose of establishing a more robust and timely process for dealing with whistle blowing issues.

9. Review of Corporate Governance Practices

The Committee oversaw the initiatives being undertaken in the organization to improve its corporate governance practices. Among the many initiatives being undertaken to improve governance the Committee in particular supported the company-wide training in anti-corruption practices.

10. Evaluation of the Performance of the NCCG Committee

As per the terms of the charter and for good governance practice a performance review of the Committee was undertaken through self-assessment evaluations completed by each of the Committee members. The results show no areas for concern and overall the performance was deemed satisfactory.

On behalf of the Nomination, Compensation and Corporate Governance Committee,



Mr. Russell Leighton Kekuewa
Chairman

Report of the Board of Directors' Responsibilities for the Financial Statements

The Board of Directors of Indorama Ventures Public Company Limited places great importance on its duties and responsibilities in supervising the Company's operations in compliance with good corporate governance principles and is accountable for the financial statements, including the financial data shown in the Annual Report. The financial statements for the accounting year ended December 31, 2020 were prepared under generally accepted accounting standards. In preparing the said financial statements, the Company has adopted accounting practices and standards that are appropriate to its nature of business. All material information has been sufficiently disclosed in the notes to financial statements. The financial statements have been audited by qualified and independent auditors who have confirmed that the said statements accurately reflect the actual financial standing, results and operating results over the past year, as well as being transparent.

The Board of Directors has maintained internal control, internal audit, risk management and corporate governance in order to ensure the completeness, adequacy, accuracy and fairness of the financial statements. The Board of Directors has assigned the Audit Committee to review the quality of the financial reports, the internal control system as well as the appropriate disclosure of connected transactions.

The Board of Directors expresses its satisfaction on the adequacy, credibility and reliability on the internal control system and the financial statements of Indorama Ventures Public Company Limited and its subsidiary companies for the year ended December 31, 2020.



Mr. Sri Prakash Lohia
Chairman



Mr. Alope Lohia
Group CEO

EMPOWERING COMFORT

The world's premium diaper brands count on our **bicomponent fibers** to provide the performance and comfort that wins the hearts of consumers.



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Independent Auditor's Report

To the Shareholders of Indorama Ventures Public Company Limited

Opinion

I have audited the consolidated and separate financial statements of Indorama Ventures Public Company Limited and its subsidiaries (the “Group”) and of Indorama Ventures Public Company Limited (the “Company”), respectively, which comprise the consolidated and separate statements of financial position as at 31 December 2020, the consolidated and separate statements of income, comprehensive income, changes in equity and cash flows for the year then ended, and notes, comprising a summary of significant accounting policies and other explanatory information.

In my opinion, the accompanying consolidated and separate financial statements present fairly, in all material respects, the financial position of the Group and the Company, respectively, as at 31 December 2020 and their financial performance and cash flows for the year then ended in accordance with Thai Financial Reporting Standards (TFRSs).

Basis for Opinion

I conducted my audit in accordance with Thai Standards on Auditing (TSAs). My responsibilities under those standards are further described in the *Auditor's Responsibilities for the Audit of the Consolidated and Separate Financial Statements* section of my report. I am independent of the Group and the Company in accordance with the Code of Ethics for Professional Accountants issued by the Federation of Accounting Professions that is relevant to my audit of the consolidated and separate financial statements, and I have fulfilled my other ethical responsibilities in accordance with these requirements. I believe that the audit evidence I have obtained is sufficient and appropriate to provide a basis for my opinion.

Key Audit Matters

Key audit matters are those matters that, in my professional judgement, were of most significance in my audit of the consolidated and separate financial statements of the current period. These matters were addressed in the context of my audit of the consolidated and separate financial statements as a whole, and in forming my opinion thereon, and I do not provide a separate opinion on these matters.

Acquisitions of businesses	
Refer to Note 6 to the consolidated financial statements.	
The key audit matter	How the matter was addressed in the audit
<p>In 2020, the Group completed the acquisitions of businesses resulting in the recording of gain on bargain purchase of Baht 1,806 million in the consolidated statement of income for the year ended 31 December 2020 and goodwill of Baht 103 million in the consolidated statement of financial position as at 31 December 2020.</p> <p>The acquisition method of accounting for business combinations is a complex and judgmental exercise, requiring the Group to determine the fair value of identifiable assets acquired and liabilities assumed and consideration transferred with any resulting differences recognised as goodwill or a gain on bargain purchase.</p> <p>Due to the materiality of the transactions and the significant judgement and complexities involved in determining the fair value of identifiable assets acquired and liabilities assumed, I considered accounting for business combination as a key audit matter.</p>	<p>My audit procedures applied to significant business combinations in 2020 included the following:</p> <ul style="list-style-type: none"> • Read the sale and purchase agreement and analysis memorandum of business combination prepared by the Group to understand key terms and conditions; • Evaluated the assessment by the Group of the identification of all the identifiable assets acquired and liabilities assumed and consideration transferred; • Evaluated the assumptions and methodologies underpinning the valuations; • Involved KPMG valuation specialist to evaluate the financial parameters applied to the discount rate, identification of the intangible assets, valuation methodology used and calculation rationale; • Involved KPMG valuation specialist to evaluate the fair value of property, plant and equipment prepared by the management's expert; • Involved KPMG actuarial specialist to evaluate the defined benefit obligations and the significant actuarial assumptions underpinning the valuations; • Assessed the adequacy of the Group's disclosure in accordance with Thai Financial Reporting Standards.

Impairment assessment of cash-generating unit	
Refer to Note 15 to the consolidated financial statements.	
The key audit matter	How the matter was addressed in the audit
<p>The Group performed impairment assessment for the CGUs in which there were indications of impairment at reporting date by applying the value-in-use (DCF) method to determine the recoverable amount of those CGUs.</p> <p>Due to the significant judgement and complexities involved in determining the future cash flows attributable to CGUs, I considered the measurement of the recoverable amount as the key audit matter.</p>	<p>My audit procedures performed for impairment assessment at CGUs with impairment indication at reporting date included the following:</p> <ul style="list-style-type: none"> • Assessed if the Group's identification of the CGUs were appropriate; • Evaluated the DCF provided by the Group and the Group's assumptions applied in the value-in-use method against relevant documents as well as externally derived data;

Impairment assessment of cash-generating unit	
Refer to Note 15 to the consolidated financial statements.	
The key audit matter	How the matter was addressed in the audit
	<ul style="list-style-type: none"> Analysed historical information to support the precision in the Group's forecasting process; Tested the principles and mathematical accuracy of the DCF and performed sensitivity analysis around the key assumptions; Evaluated the financial parameters applied to the discount rate; Assessed the adequacy of the Group's disclosure in accordance with Thai Financial Reporting Standards.

Impairment assessment of goodwill	
Refer to Note 18 to the consolidated financial statements.	
The key audit matter	How the matter was addressed in the audit
<p>As at 31 December 2020, the Group had goodwill of Baht 15,386 million.</p> <p>The cash generating units ("CGU") to which the goodwill belongs are tested for impairment annually. The Group applies the value-in-use (discounted cash flow ("DCF")) method to determine the recoverable amount of each CGU to which goodwill belongs. Any shortfall of the recoverable amounts against the carrying amounts would be recognised as impairment losses.</p> <p>Due to the materiality of the balances and the significant judgement and complexities involved in determining the future cash flows attributable to the individual CGU to which goodwill belongs, I considered the measurement of the recoverable amount as a key audit matter.</p>	<p>My audit procedures performed for impairment assessment of goodwill included the following:</p> <ul style="list-style-type: none"> Assessed if the Group's identification of the CGU to which goodwill belongs were appropriate; Evaluated the DCF provided by the Group and the Group's assumptions applied in the value-in-use method against relevant documents as well as externally derived data; Analysed historical information to support the precision in the Group's forecasting process; Tested the principles and mathematical accuracy of the DCF and performed sensitivity analysis around the key assumptions; Evaluated the financial parameters applied to the discount rate; Assessed the adequacy of the Group's disclosure in accordance with Thai Financial Reporting Standards.

Other Information

Management is responsible for the other information. The other information comprises the information included in the annual report, but does not include the consolidated and separate financial statements and my auditor's report thereon. The annual report is expected to be made available to me after the date of this auditor's report.

My opinion on the consolidated and separate financial statements does not cover the other information and I will not express any form of assurance conclusion thereon.

In connection with my audit of the consolidated and separate financial statements, my responsibility is to read the other information identified above when it becomes available and, in doing so, consider whether the other information is materially inconsistent with the consolidated and separate financial statements or my knowledge obtained in the audit, or otherwise appears to be materially misstated.

When I read the annual report, if I conclude that there is a material misstatement therein, I am required to communicate the matter to those charged with governance and request that the correction be made.

Responsibilities of Management and Those Charged with Governance for the Consolidated and Separate Financial Statements

Management is responsible for the preparation and fair presentation of the consolidated and separate financial statements in accordance with TFRSs, and for such internal control as management determines is necessary to enable the preparation of consolidated and separate financial statements that are free from material misstatement, whether due to fraud or error.

In preparing the consolidated and separate financial statements, management is responsible for assessing the Group's and the Company's ability to continue as a going concern, disclosing, as applicable, matters related to going concern and using the going concern basis of accounting unless management either intends to liquidate the Group and the Company or to cease operations, or has no realistic alternative but to do so.

Those charged with governance are responsible for overseeing the Group's and the Company's financial reporting process.

Auditor's Responsibilities for the Audit of the Consolidated and Separate Financial Statements

My objectives are to obtain reasonable assurance about whether the consolidated and separate financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditor's report that includes my opinion. Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with TSAs will always detect a material misstatement when it exists. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of these consolidated and separate financial statements.

As part of an audit in accordance with TSAs, I exercise professional judgement and maintain professional skepticism throughout the audit. I also:

- Identify and assess the risks of material misstatement of the consolidated and separate financial statements, whether due to fraud or error, design and perform audit procedures responsive to those risks, and obtain audit evidence that is sufficient and appropriate to provide a basis for my opinion. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control.

- Obtain an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Group's and the Company's internal control.
- Evaluate the appropriateness of accounting policies used and the reasonableness of accounting estimates and related disclosures made by management.
- Conclude on the appropriateness of management's use of the going concern basis of accounting and, based on the audit evidence obtained, whether a material uncertainty exists related to events or conditions that may cast significant doubt on the Group's and the Company's ability to continue as a going concern. If I conclude that a material uncertainty exists, I am required to draw attention in my auditor's report to the related disclosures in the consolidated and separate financial statements or, if such disclosures are inadequate, to modify my opinion. My conclusions are based on the audit evidence obtained up to the date of my auditor's report. However, future events or conditions may cause the Group and the Company to cease to continue as a going concern.
- Evaluate the overall presentation, structure and content of the consolidated and separate financial statements, including the disclosures, and whether the consolidated and separate financial statements represent the underlying transactions and events in a manner that achieves fair presentation.
- Obtain sufficient appropriate audit evidence regarding the financial information of the entities or business activities within the Group to express an opinion on the consolidated financial statements. I am responsible for the direction, supervision and performance of the group audit. I remain solely responsible for my audit opinion.

I communicate with those charged with governance regarding, among other matters, the planned scope and timing of the audit and significant audit findings, including any significant deficiencies in internal control that I identify during my audit.

I also provide those charged with governance with a statement that I have complied with relevant ethical requirements regarding independence, and to communicate with them all relationships and other matters that may reasonably be thought to bear on my independence, and where applicable, related safeguards.

From the matters communicated with those charged with governance, I determine those matters that were of most significance in the audit of the consolidated and separate financial statements of the current period and are therefore the key audit matters. I describe these matters in my auditor's report unless law or regulation precludes public disclosure about the matter or when, in extremely rare circumstances, I determine that a matter should not be communicated in my report because the adverse consequences of doing so would reasonably be expected to outweigh the public interest benefits of such communication.



(Sumate Jangsamsee)
Certified Public Accountant
Registration No. 9362

KPMG Phoomchai Audit Ltd.
Bangkok
24 February 2021

Statement of financial position

Indorama Ventures Public Company Limited and its Subsidiaries

		Consolidated financial statements		Separate financial statements	
		31 December		31 December	
Assets	Note	2020	2019	2020	2019
(in thousand Baht)					
Current assets					
Cash and cash equivalents	8	18,948,524	10,446,711	999,041	4,055
Current investments		441,859	263,436	-	-
Trade accounts receivable	7, 38	33,421,605	34,304,897	-	-
Other receivables	7	1,969,144	1,285,989	643,880	366,932
Short-term loans to related parties and interest receivable from related parties	7	126,685	174,308	6,896,962	17,282,207
Inventories	9	53,938,487	62,164,914	-	-
Other current financial assets		1,079,238	417,899	223,189	-
Other current assets	10	9,909,126	9,698,810	78,287	48,232
Total current assets		119,834,668	118,756,964	8,841,359	17,701,426
Non-current assets					
Other non-current financial assets		2,192,993	3,555,346	-	321,164
Investments in subsidiaries	11	-	-	66,587,539	66,579,369
Investments in joint ventures	12	2,954,889	2,492,161	-	-
Other long-term investments		108,547	27,375	-	-
Long-term loans to related parties	7	165,888	28,269	89,816,840	71,511,640
Property, plant and equipment	15	264,290,944	212,422,922	-	-
Right-of-use assets	16	11,865,311	-	-	-
Goodwill	18	15,385,817	15,249,931	-	-
Intangible assets other than goodwill	19	31,230,646	24,165,052	-	-
Deferred tax assets	35	2,611,676	2,321,911	-	-
Other non-current assets	7, 20	2,530,127	1,547,976	-	8,168
Total non-current assets		333,336,838	261,810,943	156,404,379	138,420,341
Total assets		453,171,506	380,567,907	165,245,738	156,121,767

The accompanying notes form an integral part of the financial statements.

Statement of financial position

Indorama Ventures Public Company Limited and its Subsidiaries

		Consolidated financial statements		Separate financial statements	
		31 December		31 December	
Liabilities and equity	Note	2020	2019	2020	2019
<i>(in thousand Baht)</i>					
Current liabilities					
Bank overdrafts and short-term loans from financial institutions	21	20,725,611	30,379,499	-	4,961,000
Trade accounts payable	7, 22	57,782,561	57,172,868	-	-
Current portion of long-term loans from financial institutions	21	8,919,764	6,033,458	112,274	-
Current portion of debentures	21	7,583,570	4,107,833	6,487,787	3,388,148
Current portion of lease liabilities (2019: Current portion of finance lease liabilities)	21	1,713,584	130,023	-	-
Income tax payable		1,448,921	1,049,458	-	-
Other current financial liabilities		356,500	108,236	-	-
Other current liabilities	7, 23	18,630,862	14,009,196	392,697	366,157
Total current liabilities		117,161,373	112,990,571	6,992,758	8,715,305
Non-current liabilities					
Long-term loans from financial institutions	21	99,448,030	42,551,173	8,876,390	3,020,659
Lease liabilities (2019: Finance lease liabilities)	21	8,944,466	689,232	-	-
Debentures	21	64,625,428	63,060,040	47,924,444	45,428,407
Deferred tax liabilities	35	16,685,868	17,010,040	131,575	131,893
Non-current provisions for employee benefits	24	7,658,473	4,696,194	-	-
Other non-current financial liabilities		1,485,726	144,978	136,321	72,294
Other non-current liabilities		1,554,357	1,258,389	-	-
Total non-current liabilities		200,402,348	129,410,046	57,068,730	48,653,253
Total liabilities		317,563,721	242,400,617	64,061,488	57,368,558

The accompanying notes form an integral part of the financial statements.

Statement of financial position

Indorama Ventures Public Company Limited and its Subsidiaries

	Note	Consolidated financial statements		Separate financial statements	
		31 December		31 December	
Liabilities and equity		2020	2019	2020	2019
<i>(in thousand Baht)</i>					
Equity					
Share capital:					
Authorised share capital <i>(5,666,010 thousand ordinary shares, par value at Baht 1 per share)</i>		5,666,010	5,666,010	5,666,010	5,666,010
Issued and paid-up share capital <i>(5,614,552 thousand ordinary shares, par value at Baht 1 per share)</i>		5,614,552	5,614,552	5,614,552	5,614,552
Share premium:					
Share premium on ordinary shares		60,331,434	60,331,434	60,331,434	60,331,434
Net gain (loss) on cash flow hedges	25	(400,807)	731,533	571,397	702,064
Exchange differences on translating financial statements	25	(16,361,922)	(16,674,451)	-	-
Excess of cost over book value of acquired subsidiaries	25	(3,758,268)	(3,778,116)	-	-
Differences arising from common control transactions	25	(1,235,562)	(1,235,562)	-	-
Retained earnings					
Appropriated					
Legal reserve	25	5,303,490	4,146,586	566,601	566,601
Unappropriated		62,257,320	66,349,979	19,195,508	16,632,989
Subordinated perpetual debentures	26	14,904,758	14,905,569	14,904,758	14,905,569
Subordinated perpetual debentures acquired by subsidiary	26	-	(679,600)	-	-
Equity attributable to owners of the parent		126,654,995	129,711,924	101,184,250	98,753,209
Non-controlling interests	14	8,952,790	8,455,366	-	-
Total equity		135,607,785	138,167,290	101,184,250	98,753,209
Total liabilities and equity		453,171,506	380,567,907	165,245,738	156,121,767

The accompanying notes form an integral part of the financial statements.

Statement of income

Indorama Ventures Public Company Limited and its Subsidiaries

		Consolidated financial statements		Separate financial statements	
		Year ended 31 December		Year ended 31 December	
	Note	2020	2019	2020	2019
(in thousand Baht)					
Revenue					
Revenue from sale of goods	7	331,512,907	352,692,448	-	-
Dividend income	7, 11	-	-	6,372,694	10,109,191
Net foreign exchange gain		119,441	-	45,123	-
Gains on bargain purchases	6	1,806,350	805,506	-	-
Other income	7, 28	3,031,480	2,183,670	626,182	362,209
Total revenue		336,470,178	355,681,624	7,043,999	10,471,400
Expenses					
Cost of sales of goods	7, 29	287,802,872	309,344,511	-	-
Distribution costs	7, 30	20,736,769	18,974,741	-	-
Administrative expenses	7, 31	18,046,196	14,968,286	469,329	412,872
Management benefit expenses	32	309,319	307,088	23,220	30,520
Net foreign exchange loss		-	296,132	-	4,001
Total expenses		326,895,156	343,890,758	492,549	447,393
Profit from operating activities		9,575,022	11,790,866	6,551,450	10,024,007
Finance income	7	192,039	183,159	2,975,661	3,310,098
Finance costs	34	(7,673,861)	(5,615,129)	(2,231,194)	(2,286,686)
Impairment loss of property, plant and equipment and right-of-use assets	15, 16	(624,946)	(374,938)	-	-
Impairment loss determined in accordance with TFRS 9, net (2019: Provision for bad and doubtful debts expense, net)	38	(54,126)	(91,566)	(8,866)	-
Share of net profit of joint ventures accounted for using equity method	12	142,812	5,320	-	-
Profit before tax expense (income)		1,556,940	5,897,712	7,287,051	11,047,419
Tax expense (income)	35	(1,243,122)	1,534,028	40,486	(25,152)
Profit for the year		2,800,062	4,363,684	7,246,565	11,072,571
Profit attributable to:					
Owners of the parent		2,414,276	5,252,109	7,246,565	11,072,571
Non-controlling interests	14	385,786	(888,425)	-	-
		2,800,062	4,363,684	7,246,565	11,072,571
Earnings per share					
Basic earnings per share (in Baht)	36	0.30	0.76	1.16	1.80

The accompanying notes form an integral part of the financial statements.

Statement of comprehensive income

Indorama Ventures Public Company Limited and its Subsidiaries

		Consolidated financial statements		Separate financial statements	
		Year ended 31 December		Year ended 31 December	
	Note	2020	2019	2020	2019
(in thousand Baht)					
Profit for the year		2,800,062	4,363,684	7,246,565	11,072,571
Other comprehensive income					
Items that will be reclassified subsequently to profit or loss					
Exchange differences on translating financial statements		(706,763)	(11,623,555)	-	-
Net gain (loss) on cash flow hedges		(1,188,316)	853,052	(64,027)	(84,192)
Net gain (loss) on hedges of net investments in foreign operations		862,462	206,827	(99,307)	206,827
Income tax relating to items that will be reclassified subsequently to profit or loss		90,772	(19,254)	32,667	(24,527)
Total items that will be reclassified subsequently to profit or loss		(941,845)	(10,582,930)	(130,667)	98,108
Items that will not be reclassified subsequently to profit or loss					
Loss on remeasurements of defined benefit plans	24	(797,166)	(894,668)	-	-
Income tax relating to item that will not be reclassified subsequently to profit or loss		180,259	132,530	-	-
Total items that will not be reclassified subsequently to profit or loss		(616,907)	(762,138)	-	-
Other comprehensive income (expense) for the year, net of tax		(1,558,752)	(11,345,068)	(130,667)	98,108
Total comprehensive income (expense) for the year		1,241,310	(6,981,384)	7,115,898	11,170,679
Total comprehensive income (expense) attributable to:					
Owners of the parent		1,053,986	(4,637,084)	7,115,898	11,170,679
Non-controlling interests	14	187,324	(2,344,300)	-	-
		1,241,310	(6,981,384)	7,115,898	11,170,679

The accompanying notes form an integral part of the financial statements.

Statement of changes in equity

Indorama Ventures Public Company Limited and its Subsidiaries

Consolidated financial statements													
Retained earnings					Other components of equity								
Note	Issued and paid-up share capital	Share premium on ordinary shares	Legal reserve	Unappropriated	Subordinated perpetual debentures of the Company acquired by subsidiary	Translation reserve	Hedging reserve	Excess of cost over-book value of acquired subsidiaries	Differences arising from common control transactions	Total other components of equity	Equity attributable to owners of the parent	Non-controlling interests	Total equity
(in thousand Baht)													
Year ended 31 December 2019													
Balance at 1 January 2019													
Transactions with owners, recorded directly in equity													
Distribution to owners of the parent													
37	-	-	-	(7,860,373)	-	-	-	-	-	-	(7,860,373)	(199,679)	(8,060,052)
Total distribution to owners of the parent													
Changes in ownership interests in subsidiaries													
6	-	-	-	-	-	-	-	(804,376)	-	(804,376)	(804,376)	(1,144,269)	(1,948,645)
6	-	-	-	-	-	-	-	-	-	-	-	5,126,047	5,126,047
Total changes in ownership interests in subsidiaries													
Total transactions with owners, recorded directly in equity													
Comprehensive income (expense) for the year													
Profit													
Other comprehensive income (expense)													
Total comprehensive income (expense) for the year													
26	-	-	-	(125,928)	(14,874,072)	-	-	-	-	-	(15,000,000)	-	(15,000,000)
26	-	-	-	-	14,905,569	-	-	-	-	-	14,905,569	-	14,905,569
26	-	-	-	-	(679,600)	-	-	-	-	-	(679,600)	-	(679,600)
26	-	-	-	(1,050,000)	-	-	-	-	-	-	(1,050,000)	-	(1,050,000)
25	-	-	939,460	(939,460)	-	-	-	-	-	-	-	-	-
Balance at 31 December 2019													
	5,614,552	60,331,434	4,146,586	66,349,979	(679,600)	(16,674,451)	731,533	(3,778,116)	(1,235,562)	(20,956,596)	129,711,924	8,455,366	138,167,290

The accompanying notes form an integral part of the financial statements.

Statement of changes in equity

Indorama Ventures Public Company Limited and its Subsidiaries

Consolidated financial statements														
Retained earnings					Other components of equity									
Note	Issued and paid-up share capital	Share premium on ordinary shares	Legal reserve	Unappropriated	Subordinated perpetual debentures	Subordinated perpetual debentures acquired by subsidiary	Translation reserve	Hedging reserve	Excess of cost over book value of acquired subsidiaries	Differences arising from common control transactions	Total other components of equity	Equity attributable to owners of the parent	Non-controlling interests	Total equity
Year ended 31 December 2020														
Balance at 31 December 2019 - as reported														
	5,614,552	60,331,434	4,146,586	66,349,979	14,905,569	(679,600)	(16,674,451)	731,533	(3,778,116)	(1,235,562)	(20,956,596)	129,711,924	8,455,366	138,167,290
3	-	-	-	(87,937)	-	-	19,140	(66,727)	-	-	(47,587)	(135,524)	-	(135,524)
	5,614,552	60,331,434	4,146,586	66,262,042	14,905,569	(679,600)	(16,655,311)	664,806	(3,778,116)	(1,235,562)	(21,004,183)	129,576,400	8,455,366	138,031,766
Balance at 1 January 2020 - restated														
Transactions with owners, recorded directly in equity														
Distribution to owners of the parent														
	-	-	-	(3,930,186)	-	-	-	-	-	-	-	(3,930,186)	(185,981)	(4,116,167)
37	-	-	-	(3,930,186)	-	-	-	-	-	-	-	(3,930,186)	(185,981)	(4,116,167)
Total distribution to owners of the parent														
Changes in ownership interests in subsidiaries														
Acquisition of non-controlling interests without a change in control														
	-	-	-	-	-	-	-	-	19,848	-	19,848	19,848	496,081	515,929
	-	-	-	-	-	-	-	-	19,848	-	19,848	19,848	496,081	515,929
Total changes in ownership interests in subsidiaries														
Total transactions with owners, recorded directly in equity														
	-	-	-	(3,930,186)	-	-	-	-	19,848	-	19,848	(3,910,338)	310,100	(3,600,238)
Comprehensive income (expense) for the year														
Profit														
	-	-	-	2,414,276	-	-	-	-	-	-	-	2,414,276	385,786	2,800,062
	-	-	-	(588,066)	-	-	293,389	(1,065,613)	-	-	(772,224)	(1,360,290)	(198,462)	(1,558,752)
	-	-	-	1,826,210	-	-	293,389	(1,065,613)	-	-	(772,224)	1,053,986	187,324	1,241,310
Total comprehensive income (expense) for the year														
Sale of subordinated perpetual debentures of the Company acquired by subsidiary														
26	-	-	-	-	-	679,600	-	-	-	-	-	679,600	-	679,600
26	-	-	-	-	(811)	-	-	-	-	-	-	(811)	-	(811)
26	-	-	-	(743,842)	-	-	-	-	-	-	-	(743,842)	-	(743,842)
25	-	-	1,156,904	(1,156,904)	-	-	-	-	-	-	-	-	-	-
Balance at 31 December 2020														
	5,614,552	60,331,434	5,303,490	62,257,320	14,904,758	-	(16,561,922)	(400,807)	(3,758,268)	(1,235,562)	(21,756,559)	126,654,995	8,952,790	135,607,785

The accompanying notes form an integral part of the financial statements.

Statement of changes in equity

Indorama Ventures Public Company Limited and its Subsidiaries

Separate financial statements							
Note	Retained earnings			Other component of equity			
	Issued and paid-up share capital	Share premium on ordinary shares	Legal reserve	Subordinated perpetual debentures	Hedging reserve	Total equity	
(in thousand Baht)							
Year ended 31 December 2019							
Balance at 1 January 2019							
	5,614,552	60,331,434	566,601	14,596,719	14,874,072	603,956	96,587,334
Transaction with owners, recorded directly in equity							
Distribution to owners							
37	-	-	-	(7,860,373)	-	-	(7,860,373)
Total distribution to owners							
	-	-	-	(7,860,373)	-	-	(7,860,373)
Comprehensive income for the year							
	-	-	-	11,072,571	-	-	11,072,571
Other comprehensive income							
	-	-	-	-	-	98,108	98,108
Total comprehensive income for the year							
	-	-	-	11,072,571	-	98,108	11,170,679
26	-	-	-	(125,928)	(14,874,072)	-	(15,000,000)
26	-	-	-	-	14,905,569	-	14,905,569
26	-	-	-	(1,050,000)	-	-	(1,050,000)
Balance at 31 December 2019							
	5,614,552	60,331,434	566,601	16,632,989	14,905,569	702,064	98,753,209

The accompanying notes form an integral part of the financial statements.

Statement of changes in equity

Indorama Ventures Public Company Limited and its Subsidiaries

Separate financial statements							
	Note	Retained earnings			Subordinated perpetual debentures	Other component of equity	
		Issued and paid-up share capital	Share premium on ordinary shares	Legal reserve		Unappropriated	Hedging reserve
(in thousand Baht)							
Year ended 31 December 2020							
Balance at 31 December 2019 - as reported		5,614,552	60,331,434	566,601	16,632,989	14,905,569	98,753,209
Impact of changes in accounting policies	3	-	-	-	(1,805)	-	(1,805)
Balance at 1 January 2020 - restated		5,614,552	60,331,434	566,601	16,631,184	14,905,569	98,751,404
Transaction with owners, recorded directly in equity							
Distribution to owners							
Dividends	37	-	-	-	(3,930,186)	-	(3,930,186)
Total distribution to owners		-	-	-	(3,930,186)	-	(3,930,186)
Comprehensive income (expense) for the year							
Profit		-	-	-	7,246,565	-	7,246,565
Other comprehensive income (expense)		-	-	-	-	-	(130,667)
Total comprehensive income (expense) for the year		-	-	-	7,246,565	-	7,115,898
Issuance expense of subordinated perpetual debentures	26	-	-	-	-	(811)	(811)
Coupon payment on subordinated perpetual debentures	26	-	-	-	(752,055)	-	(752,055)
Balance at 31 December 2020		5,614,552	60,331,434	566,601	19,195,508	14,904,758	101,184,250

The accompanying notes form an integral part of the financial statements.

Statement of cash flows

Indorama Ventures Public Company Limited and its Subsidiaries

		Consolidated financial statements		Separate financial statements	
		Year ended 31 December		Year ended 31 December	
	Note	2020	2019	2020	2019
		(in thousand Baht)			
Cash flows from operating activities					
Profit for the year		2,800,062	4,363,684	7,246,565	11,072,571
<i>Adjustments to reconcile profit to cash receipts (payments)</i>					
Tax expense (income)	35	(1,243,122)	1,534,028	40,486	(25,152)
Finance costs	34	7,673,861	5,615,129	2,231,194	2,286,686
Depreciation	15, 16	17,757,183	14,343,815	-	-
Amortisation of intangible assets and other assets		2,730,013	2,696,639	-	-
Impairment loss recognised in profit or loss determined in accordance with TFRS 9, net (2019: Provision for bad and doubtful debts expense, net)		54,126	91,566	8,866	-
Employee benefits expense related to defined benefit plans	24	623,454	510,536	-	-
Unrealised foreign exchange loss, net		219,382	237,653	22,431	45,313
Unrealised loss on fair value adjustment of commodity derivatives not qualified for hedge accounting, net		8,613	-	-	-
Share of net profit of joint ventures accounted for using equity method, net of tax	12	(142,812)	(5,320)	-	-
Provision for impairment on property, plant and equipment and right-of-use assets	15, 16	624,946	374,938	-	-
Provision for losses on inventories devaluation, net	9	118,677	396,559	-	-
Gains on bargain purchases	6	(1,806,350)	(805,506)	-	-
Gain on disposal of property, plant and equipment, net		(32,866)	(181,050)	-	-
Loss on written-off of property, plant and equipment, net		161,342	29,306	-	-
Loss on disposal of subsidiary		-	-	-	1,165
Finance income		(192,039)	(183,159)	(2,975,661)	(3,310,098)
Dividend income	11	-	-	(6,372,694)	(10,109,191)
		29,354,470	29,018,818	201,187	(38,706)
Changes in operating assets and liabilities					
Trade accounts receivable		4,631,370	9,825,447	-	-
Inventories		10,732,174	14,857,360	-	-
Other current assets		(155,068)	613,376	(331,810)	(194,241)
Other non-current assets		892,139	(3,162,533)	-	(3,358)
Trade accounts payable		(3,049,237)	(6,477,067)	-	-
Repayment of employee benefit related to defined benefit plans		(432,484)	(378,783)	-	-
Other current liabilities		2,390,195	447,483	21,624	(130,977)
Other non-current liabilities		386,052	(650,990)	-	-
Net cash generated from (used in) operating		44,749,611	44,093,111	(108,999)	(367,282)
Taxes (paid) received		(1,313,557)	(3,248,137)	(27,805)	16,175
Net cash from (used in) operating activities		43,436,054	40,844,974	(136,804)	(351,107)

The accompanying notes form an integral part of the financial statements.

Statement of cash flows

Indorama Ventures Public Company Limited and its Subsidiaries

		Consolidated financial statements		Separate financial statements	
	Note	Year ended 31 December 2020	Year ended 31 December 2019	Year ended 31 December 2020	Year ended 31 December 2019
		(in thousand Baht)			
Cash flows from investing activities					
Net cash outflow on acquisitions of businesses	6	(59,942,145)	(7,018,634)	-	-
Net cash outflow on additional investment in joint ventures	12	(275,130)	(2,220,942)	-	-
Proceeds from disposal of subsidiary		-	-	-	1,130
Proceeds from sale (purchase) of other investments		(501,869)	116,286	-	-
Proceeds from sale of property, plant and equipment		49,206	441,117	-	-
Acquisition of property, plant and equipment		(16,788,808)	(16,673,872)	-	-
Proceeds from sale of intangible assets		7,792	6,434	-	-
Acquisition of intangible assets		(1,340,193)	(126,070)	-	-
Dividend received	11	-	-	6,372,694	10,109,191
Finance income received		189,032	177,439	1,200	489
Net cash from (used in) investing activities		(78,602,115)	(25,298,242)	6,373,894	10,110,810
Cash flows from financing activities					
Proceeds from short and long-term loans		86,557,641	23,691,842	11,132,500	2,128,000
Repayment of short and long-term loans		(32,815,175)	(22,373,547)	(10,093,500)	(1,630,740)
Proceeds from debenture, net of debenture issuance costs		8,983,581	9,038,972	8,983,581	-
Proceeds from sale of subordinated perpetual debenture acquired by subsidiary		679,600	-	-	-
Payment of issuance expense of subordinated perpetual debentures		(811)	-	(811)	-
Repayment of debentures		(4,157,555)	(4,018,546)	(3,400,000)	(2,300,000)
Payment of lease liabilities (2019: Payment by a lessee for reduction of the outstanding liability relating to a finance lease)		(2,265,080)	(197,545)	-	-
Loans to subsidiaries, net		-	-	(9,284,838)	648,341
Loans to joint ventures, net		(93,026)	(51,375)	-	-
Dividends paid to owners of the Company	37	(3,930,070)	(7,860,219)	(3,930,070)	(7,860,219)
Dividends paid to non-controlling interests		(185,981)	(199,679)	-	-
Finance income received		-	-	4,327,111	2,674,665
Finance costs paid		(7,549,448)	(6,641,893)	(2,197,022)	(2,288,073)
Deferred financing cost paid		(742,718)	(360,072)	(27,000)	-
Repayment of subordinated perpetual debentures	26	-	(15,000,000)	-	(15,000,000)
Issuance of subordinated perpetual debentures, net of issuance cost of Baht 94 million	26	-	14,905,569	-	14,905,569
Subordinated perpetual debentures of the Company acquired by subsidiary	26	-	(679,600)	-	-
Coupon payment on subordinated perpetual debentures	26	(743,842)	(1,050,000)	(752,055)	(1,050,000)
Net cash from (used in) financing activities		43,737,116	(10,796,093)	(5,242,104)	(9,772,457)
Net increase (decrease) in cash and cash equivalents, before effect of exchange rates		8,571,055	4,750,639	994,986	(12,754)
Effect of exchange rate changes on cash and cash equivalents		(69,242)	117,627	-	-
Net increase (decrease) in cash and cash equivalents		8,501,813	4,868,266	994,986	(12,754)
Cash and cash equivalents at 1 January		10,446,711	5,578,445	4,055	16,809
Cash and cash equivalents at 31 December	8	18,948,524	10,446,711	999,041	4,055

The accompanying notes form an integral part of the financial statements.

Notes to the financial statements

For the year ended 31 December 2020

Indorama Ventures Public Company Limited and its Subsidiaries

Note	Contents
1	General information
2	Basis of preparation of the financial statements
3	Changes in accounting policies
4	Significant accounting policies
5	Impact of COVID-19 Outbreak
6	Acquisitions of businesses
7	Related parties
8	Cash and cash equivalents
9	Inventories
10	Other current assets
11	Investments in subsidiaries
12	Investments in joint ventures
13	Investment in joint operation
14	Non-controlling interests
15	Property, plant and equipment
16	Right-of-use assets
17	Leases
18	Goodwill
19	Other intangible assets
20	Other non-current assets
21	Interest-bearing liabilities
22	Trade accounts payable
23	Other current liabilities
24	Non-current provisions for employee benefits
25	Reserves
26	Subordinated perpetual debentures
27	Segment information and disaggregation of revenue
28	Other income
29	Cost of sales of goods
30	Distribution costs
31	Administrative expenses
32	Employee benefit expenses
33	Expenses by nature
34	Finance costs
35	Tax expense (income)
36	Earnings per share
37	Dividends
38	Financial instruments
39	Capital management
40	Commitments with non-related parties
41	Events after the reporting period
42	Reclassification of accounts

These notes form an integral part of the financial statements.

The financial statements issued for Thai statutory and regulatory reporting purposes are prepared in the Thai language. These English language financial statements have been prepared from the Thai language statutory financial statements, and were approved and authorised for issue by the Board of Directors on 24 February 2021.

1 General information

Indorama Ventures Public Company Limited, the “Company”, is incorporated in Thailand and was listed on the Stock Exchange of Thailand in February 2010. The Company’s registered office at 75/102, Ocean Tower II, 37th Floor, Sukhumvit 19, Asoke Road, Klongtoeynua, Wattana, Bangkok, Thailand.

The immediate and ultimate parent companies during the financial year were Indorama Resources Limited, incorporated in Thailand, and Canopus International Limited, incorporated in Mauritius, respectively.

The principal activities of the Company and its subsidiaries (“Group”) are the manufacture and distribution of polyethylene terephthalate (“PET”), purified terephthalic acid (“PTA”), paraxylene (“PX”), recycling, purified isophthalic acid (“PIA”), naphthalene dicarboxylate (“NDC”), PET preforms and packaging, integrated EG, integrated purified EO, PO/MTBE, integrated surfactants comprising EOA, LAB and others, fibers including polyester, rayon, nylon, polypropylene, composites and worsted wool fibers products. Details of the Company’s subsidiaries, joint ventures and joint operations as at 31 December 2020 and 2019 are given in notes 7, 11, 12 and 13.

2 Basis of preparation of the financial statements

(a) *Statement of compliance*

The financial statements are prepared in accordance with Thai Financial Reporting Standards (TFRS); guidelines promulgated by the Federation of Accounting Professions; and applicable rules and regulations of the Thai Securities and Exchange Commission.

New and revised TFRS are effective for annual accounting periods beginning on or after 1 January 2020. The initial application of these new and revised TFRS has resulted in changes in certain of the Group’s/Company’s accounting policies.

The Group/Company has initially applied TFRS - Financial instruments standards which comprise TFRS 9 *Financial Instruments* and relevant standards and interpretations and TFRS 16 *Leases* and disclosed impact from changes to significant accounting policies in note 3.

In addition, the Group/Company has not early adopted a number of new and revised TFRS, which are not yet effective for the current period in preparing these financial statements. The Group/Company has assessed the potential initial impact on the financial statements of these new and revised TFRS and expects that there will be no material impact on the financial statements in the period of initial application.

(b) *Functional and presentation currency*

The financial statements are presented in Thai Baht, which is the Company’s functional currency.

(c) *Use of judgements and estimates*

The preparation of financial statements in conformity with TFRS requires management to make judgements, estimates and assumptions that affect the application of the Group's/Company's accounting policies. Actual results may differ from these estimates. Estimates and underlying assumptions are reviewed on an ongoing basis. Revisions to accounting estimates are recognised prospectively.

(i) Judgements

Information about judgements made in applying accounting policies that have the most significant effects on the amounts recognised in the financial statements is included in the following notes:

4(j) and 17	Leases:
	- whether an arrangement contains a lease;
	- whether the Group is reasonably certain to exercise extension options;
	- whether the Group exercise termination options.
5	Impact of COVID-19 Outbreak;
6	Business combination: determining the acquisition date and determining whether the Group has control over the acquiree;
12	Equity-accounted investees: whether the Group has significant influence over an investee;
13	Investment in joint operation: whether the Group has joint control over an investee; and
26	The classification of subordinated perpetual debentures into equity.

(ii) Assumptions and estimation uncertainties

Information about assumption and estimation uncertainties as at 31 December 2020 that have a significant risk of resulting in a material adjustment to the carrying amounts of assets and liabilities in the next financial year is included in the following notes:

4(j)	Determining the incremental borrowing rate to measure lease liabilities;
5	Impact of COVID-19;
6	Acquisitions of businesses: fair value of the assets acquired and liabilities assumed, measured on a provisional basis;
15	Extension of useful lives of buildings, and machinery and equipment: changes in estimations of useful lives;
15, 18 and 19	Impairment test of cash-generating unit, goodwill and other intangible assets with indefinite useful lives: key assumptions underlying recoverable amounts;
24	Measurement of net defined benefit obligations: key actuarial assumptions;
38	Measurement of ECL allowance for trade receivables and contract assets: key assumptions in determining the weighted-average loss rate; and
35	Recognition of deferred tax assets: availability of future taxable profit against which deductible temporary differences and tax losses carried forward can be utilised.

3 Changes in accounting policies

From 1 January 2020, the Group/Company has initially applied TFRS - Financial instruments standards and TFRS 16.

<i>Impact on changes in accounting policy</i>	<i>Note</i>	Consolidated financial statements		Separate financial statements	
		Retained earnings	Other components of equity (in thousand Baht)	Retained earnings	Other component of equity
At 31 December 2019 - as reported		66,349,979	(20,956,596)	16,632,989	702,064
<i>Increase (decrease) due to:</i>					
Adoption of TFRS - Financial instruments standards					
Classification and measurement of financial assets and financial liabilities, including commodity derivatives not qualified for hedge accounting	(a.1)	(21,161)	-	-	-
Impairment losses on financial assets	(a.2)	(46,132)	-	(1,805)	-
Hedge accounting - Commodity derivatives qualified for hedge accounting	(a.3)	(28,257)	(66,727)	-	-
Related tax		24,747	-	-	-
Exchange differences on translating financial statements		(17,134)	19,140	-	-
At 1 January 2020 - restated		66,262,042	(21,004,183)	16,631,184	702,064

(a) TFRS - Financial instruments standards

The Group/Company has adopted TFRS - Financial instruments standards by adjusting the cumulative effects to retained earnings and other components of equity on 1 January 2020. Therefore, the Group/Company did not adjust the information presented for 2019. The disclosure requirements of TFRS for financial instruments have not generally been applied to comparative information.

These TFRS - Financial instruments standards establish requirements related to definition, recognition, measurement, impairment and derecognition of financial assets and financial liabilities, including accounting for derivatives and hedge accounting. The details of accounting policies are disclosed in note 4(d) and 4(k). The impact from adoption of TFRS - Financial instruments standards are as follows:

(a.1) Classification and measurement of financial assets and financial liabilities

TFRS 9 contains three principal classification categories for financial assets: measured at amortised cost, fair value through other comprehensive income (FVOCI) and fair value through profit or loss (FVTPL). The classification is based on the cash flow characteristics of the financial asset and the business model in which they are managed. TFRS 9 eliminates the previous classification of held-to-maturity debt securities, available-for-sale securities, trading securities and general investment as specified by TAS 105.

Under TFRS 9, all derivatives are measured at fair value in the statement of financial position. However, where derivatives qualify for hedge accounting, the recognition of resulting gain or loss depend on the nature of the item being hedged. Previously, except for commodity derivatives, the Group/Company initially recognised derivatives at fair value. Subsequent to initial recognition, they are remeasured at fair value. The gain or loss on remeasurement to fair value is recognised immediately in profit or loss where derivatives not qualify for hedge accounting. The Group previously recognised the commodity derivatives when they were exercised which is unlike TFRS 9.

Under TFRS 9, interest income and interest expenses recognised from all financial assets and financial liabilities measured at amortised cost shall be calculated using effective interest rate method. Previously, the Group/Company recognised interest income and interest expenses at the rate specified in the contract.

The following table shows comparative classification and measurement categories of investments and derivatives under TAS 105 and TFRS 9.

Consolidated financial statements					
Classification and measurement under TAS 105 at 31 December 2019		Classification and measurement under TFRS 9 at 1 January 2020			
	Carrying amounts	FVTPL	FVOCI (in thousand Baht)	Amortised cost - net	Total
Current investments					
Short-term deposits at financial institutions	262,612	-	-	262,612	262,612
Equity securities held for trading	452	452	-	-	452
Other non-marketable equity securities	372	372	-	-	372
	263,436	824	-	262,612	263,436
Other long-term investments					
Long-term deposits at financial institutions	17,296	-	-	17,296	17,296
Equity securities available for sale	4,094	4,094	-	-	4,094
Other non-marketable equity securities	5,985	5,985	-	-	5,985
	27,375	10,079	-	17,296	27,375
Derivative assets - excluding commodity derivatives	3,973,245	141,974	3,831,271	-	3,973,245
Derivative liabilities - excluding commodity derivatives	253,214	108,236	144,978	-	253,214
Commodity derivative liabilities	-	28,116	93,438	-	121,554
Separate financial statements					
Classification and measurement under TAS 105 at 31 December 2019		Classification and measurement under TFRS 9 at 1 January 2020			
	Carrying amounts	FVTPL	FVOCI (in thousand Baht)	Amortised cost - net	Total
Derivative assets - excluding commodity derivatives	321,163	-	321,163	-	321,163
Derivative liabilities - excluding commodity derivatives	72,294	-	72,294	-	72,294

(a.2) Impairment - Financial assets and contract assets

TFRS 9 introduces the 'expected credit loss' (ECL) model whereas previously the Group/Company estimated the allowance for doubtful account by analysing payment histories and future expectation of customer payment. TFRS 9 requires considerable judgement about how changes in economic factors affect ECLs, which are determined on a probability-weighted basis. The new impairment model applies to financial assets measured at amortised cost, contract assets, lease receivables and debt investments measured at FVOCI, except for investments in equity instruments.

The Group/Company has determined that the application of TFRS 9's impairment requirements at 1 January 2020 results in an additional allowance for impairment loss as follows:

	Consolidated financial statements	Separate financial statements
	<i>(in thousand Baht)</i>	
Allowance for impairment losses at 31 December 2019		
Allowance for doubtful debts - trade accounts receivable	624,239	-
<i>Additional impairment loss recognised at 1 January 2020 on:</i>		
-Short-term loans to joint ventures	1,022	-
-Undrawn loan commitment given to joint ventures	816	-
-Financial guarantee contract	1,805	1,805
-Trade accounts receivable	32,310	-
-Other receivables	2,965	-
Allowance for impairment losses at 1 January 2020	663,157	1,805

The Group/Company has opted to recognise the increase of impairment loss as an adjustment to retained earnings as at 1 January 2020.

(a.3) Hedge accounting

TFRS 9 introduces guidance on hedge accounting while previous TFRSs were silent on the requirements of hedge accounting and derivatives held for risk management purposes. In 2019, the Group/Company accounted for these transactions as described in accounting policies in note 4(d.5) and 4(d.6). The Group/Company has elected to adopt the new hedge accounting model in TFRS 9. This requires the Group/Company to designate certain derivatives held for risk management as well as certain non-derivative financial instruments as hedging instruments in qualifying hedging relationships and document the relationship between the hedging instruments and hedged items, including the risk management objective, strategy in undertaking the hedge, together with the method that will be used to assess the effectiveness of the hedging relationship. The Group/Company makes an assessment of the effectiveness, both at inception of the hedge relationship and on an ongoing basis.

These hedging relationships are fair value hedges, cash flow hedges and net investment in a foreign operation hedge.

In 2019, the Group/Company used derivatives to manage exposure to foreign exchange, interest rate and commodity price risks but applied hedge accounting for the derivatives made to manage exposure to foreign exchange and interest rate only. All hedging relationships designated under International Accounting Standard no. 39 ("IAS 39") at 31 December 2019 met the criteria for hedge accounting under TFRS 9 at 1 January 2020 and, therefore, regarded as continuing hedging relationship.

Previously, the Group recognised the derivatives used to manage exposure of the commodity price risks arising from raw material purchases, when the derivatives were exercised. The types of derivative are swap contract and future contract used to hedge variability in cash flows arising from fluctuation of market price of commodity raw materials, by swap the raw material purchase price from the market price to the fixed price for the future purchases. The Group applied the hedge accounting for these commodity derivatives that the specific requirement of hedge accounting under TFRS 9 at 1 January 2020 (hereinafter called “commodity hedge accounting”).

<i>Impact of commodity hedge accounting as at 1 January 2020</i>	<i>Consolidated financial statements (in thousand Baht)</i>
Increase in derivative liabilities	94,984
Decrease in retained earnings	(28,257)
Decrease in other components of equity - net gain on cash flow hedges	(66,727)

(b) TFRS 16 Leases

From 1 January 2020, the Group has initially adopted TFRS 16 on contracts previously identified as leases according to TAS 17 *Leases* and TFRIC 4 *Determining whether an arrangement contains a lease* using the modified retrospective approach.

Previously, the Group, as a lessee, recognised payments made under operating leases in profit or loss on a straight-line basis over the term of the lease. Under TFRS 16, the Group assesses whether a contract is, or contains, a lease. If a contract contains lease and non-lease components, the Group allocates the consideration in the contract based on stand-alone selling price (transaction price). As at 1 January 2020, the Group recognised right-of-use assets and lease liabilities, as a result, the nature of expenses related to those leases was changed because the Group recognised depreciation of right-of-use assets and interest expense on lease liabilities.

On transition, the Group also elected to use the following practical expedients:

- do not recognise right-of-use assets and lease liabilities for leases with less than 12 months of lease term;
- use hindsight when determining the lease term;
- apply a single discount rate to a portfolio of leases with similar characteristics;
- rely on previous assessments whether leases are onerous as an alternative to performing an impairment review; and
- exclude initial direct costs from measuring the right-of-use asset.

<i>Impact from the adoption of TFRS 16 At 1 January 2020</i>	<i>Consolidated financial statements (in thousand Baht)</i>
Increase in right-of-use assets	10,308,411
Decrease in property, plant and equipment	(2,267,913)
Decrease in other current assets	(17,177)
Increase in lease liabilities	8,842,576
Decrease in finance lease liabilities	(819,255)

<i>Measurement of lease liabilities</i>	Consolidated financial statements <i>(in thousand Baht)</i>
Operating lease commitment as disclosed at 31 December 2019	6,699,371
Contracts reassessed as lease contracts	3,574,795
Recognition exemption for short-term leases	(76,596)
Recognition exemption for leases of low-value assets	(67,417)
Extension and termination options reasonably certain to be exercised	3,356,840
Finance lease liabilities recognised as at 31 December 2019	819,255
Discounted using the incremental borrowing rate at 1 January 2020	(5,463,672)
Lease liabilities recognised at 1 January 2020	8,842,576
Weighted-average incremental borrowing rate (% per annum)	3.07

Right-of-use assets and lease liabilities shown above were presented in all segments.

4 Significant accounting policies

The accounting policies set out below have been applied consistently to all periods presented in these financial statements except as explained in note 3.

(a) Basis of consolidation

The consolidated financial statements relate to the Company and its subsidiaries and joint operations (together referred to as the “Group”) and the Group’s interests in joint ventures.

Business combinations

The Group applies the acquisition method for all business combinations when control is transferred to the Group, as describe in subsidiaries section, other than those with entities under common control.

The acquisition date is the date on which control is transferred to the acquirer.

Goodwill is measured as the fair value of the consideration transferred including the recognised amount of any non-controlling interest in the acquiree, less the net recognised amount (generally fair value) of the identifiable assets acquired and liabilities assumed, all measured as at the acquisition date. Any gain on bargain purchase is recognised in profit or loss immediately.

Consideration transferred includes the fair values of the assets transferred, liabilities incurred by the Group to the previous owners of the acquiree, and equity interests issued by the Group. Consideration transferred also includes the fair value of any contingent consideration.

Any contingent consideration is measured at fair value at the date of acquisition, and remeasured at fair value at each reporting date. Subsequent changes in the fair value are recognised in profit or loss.

A contingent liability of the acquiree is assumed in a business combination only if such a liability represents a present obligation and arises from a past event, and its fair value can be measured reliably.

Transaction costs that the Group incurs in connection with a business combination, such as legal fees, and other professional and consulting fees are expensed as incurred.

If the initial accounting for a business combination is incomplete by the end of the reporting period in which the combination occurs, the Group reports provisional amounts for the items for which the accounting is incomplete. Those provisional amounts are adjusted during the measurement period, or additional assets or liabilities are recognised, to reflect new information obtained about facts and circumstances that existed at the acquisition date that, if known, would have affected the amounts recognised at that date.

Step acquisition

When a business combination is achieved in stages, the Group's previously held equity interest in the acquiree is remeasured to its acquisition-date fair value and the resulting gain or loss, if any, is recognised in profit or loss. Amounts arising from interests in the acquiree prior to the acquisition date that have previously been recognised in other comprehensive income are reclassified to profit or loss where such treatment would be appropriate if that interest were disposed of.

Acquisitions from entities under common control

Business combination under common control are accounted for using a method similar to the pooling of interest method. Under that method, the acquirer recognises assets and liabilities of the acquired businesses at their carrying amounts in the consolidated financial statements of the ultimate parent company at the moment of the transaction. The difference between the carrying amount of the acquired net assets and the consideration transferred is recognised as surplus or discount from business combinations under common control in shareholder's equity. The surplus or discount will be transferred to retained earnings upon divestment of the businesses acquired.

The results from operations of the acquired businesses will be included in the consolidated financial statements of the acquirer from the beginning of the comparative period or the moment the businesses came under common control, whichever date is later, until control ceases.

Subsidiaries

Subsidiaries are entities controlled by the Group. The Group controls an entity when it is exposed to, or has rights to, variable returns from its involvement with the entity and has the ability to affect those returns through its power over the entity. The financial statements of subsidiaries are included in the consolidated financial statements from the date on which control commences until the date on which control ceases.

Non-controlling interests

At the acquisition date, the Group measures any non-controlling interest at its proportionate interest in the identifiable net assets of the acquiree.

Changes in the Group's interest in a subsidiary that do not result in a loss of control are accounted for as equity transactions.

Loss of control

When the Group loses control over a subsidiary, it derecognises the assets and liabilities of the subsidiary, and any related non-controlling interests and other components of equity. Any resulting gain or loss is recognised in profit or loss. Any interest retained in the former subsidiary is measured at fair value when control is lost.

Investment in joint operation

A joint operation is a joint arrangement whereby the parties that have joint control of the arrangement have rights to the assets, and obligations for the liabilities, relating to the arrangement.

Investment in joint operation is accounted for the assets, liabilities, revenues and expenses relating to its interest in a joint operation in accordance with the TFRSs applicable to the particular assets, liabilities, revenues and expenses.

Interests in equity-accounted investees

The Group's interests in equity-accounted investees comprise interests in joint ventures.

A joint venture is an arrangement in which the Group has joint control, whereby the Group has rights to the net assets of the arrangement, rather than rights to its assets and obligations for its liabilities.

Interests in joint ventures are accounted for using the equity method. They are initially recognised at cost, which includes transaction costs. Subsequent to initial recognition, the consolidated financial statements include the Group's share of the profit or loss and other comprehensive income of equity-accounted investees, until the date on which joint control ceases.

Transactions eliminated on consolidation

Intra-group balances and transactions, and any unrealised income or expenses arising from intra-group transactions, are eliminated. Unrealised gains arising from transactions with a joint venture are eliminated against the investment to the extent of the Group's interest in the investee. Unrealised losses are eliminated in the same way as unrealised gains, but only to the extent that there is no evidence of impairment.

(b) Investments in subsidiaries and joint ventures

Investments in subsidiaries in the separate financial statements of the Company are measured at cost less allowance for impairment loss. Investments in joint ventures in the consolidated financial statements are accounted for using the equity method.

Disposal of investments in the separate financial statements

On disposal of an investment, the difference between net disposal proceeds and the carrying amount is recognised in profit or loss.

If the Company disposes of part of its holding of a particular investment, the deemed cost of the part sold is determined using the weighted average method applied to the carrying value of the total holding of the investment.

(c) Foreign currencies

Foreign currency transactions

Transactions in foreign currencies are translated to the respective functional currencies of Group entities at exchange rates at the dates of the transactions.

Monetary assets and liabilities denominated in foreign currencies are translated to the functional currency at the exchange rate at the reporting date.

Non-monetary assets and liabilities measured at cost in foreign currencies are translated to the functional currency at the exchange rates at the dates of the transactions.

Non-monetary assets and liabilities measured at fair value in foreign currencies are translated to the functional currency at the exchange rates at the dates that fair value was determined.

Foreign currency differences are generally recognised in profit or loss. However, foreign currency differences arising from the translation of the qualifying cash flow hedges to the extent the hedge is effective are recognised in other comprehensive income.

Foreign operations

Goodwill, gain on bargain purchase and fair value adjustments arising on the acquisition of foreign operations at the acquisition date are translated to Thai Baht at the exchange rates at the dates of the transactions.

The assets and liabilities of foreign operations, including the carrying amount of the goodwill and fair value adjustments arising on acquisition at the reporting date, are translated to Thai Baht at the exchange rates at the reporting date.

The revenues and expenses of foreign operations are translated to Thai Baht at rates approximating the exchange rates at the dates of the transactions.

Foreign exchange differences are recognised in other comprehensive income and accumulated in the translation reserve, except to the extent that the translation difference is allocated to non-controlling interest.

When a foreign operation is disposed of in its entirety or partially such that control, significant influence or joint control is lost, the cumulative amount in the translation reserve related to that foreign operation is reclassified to profit or loss as part of the gain or loss on disposal. If the Group disposes of part of its interest in a subsidiary but retains control, then the relevant proportion of the cumulative amount is reattributed to non-controlling interests. When the Group disposes of only part of a joint venture while retaining joint control, the relevant proportion of the cumulative amount is reclassified to profit or loss.

When the settlement of a monetary item receivable from or payable to a foreign operation is neither planned nor likely in the foreseeable future, exchange gains and losses arising from such a monetary item are considered to form part of a net investment in a foreign operation and are recognised in other comprehensive income, and presented in the translation reserve in equity until disposal of the investment.

(d) Financial instruments

Accounting policies applicable from 1 January 2020

(d.1) Recognition and initial measurement

Trade receivables, debt securities that the Group/Company issued, and trade payables are initially recognised when they are originated. All other financial assets and financial liabilities are initially recognised when the Group/Company becomes a party to the contractual provisions of the instrument.

A financial asset and financial liability (unless it is a trade receivable without a significant financing component or measured at FVTPL) is initially measured at fair value plus transaction costs that are directly attributable to its acquisition or issue. A trade receivable without a significant financing component is initially measured at the transaction price. A financial asset and a financial liability measured at FVTPL are initially recognised at fair value.

(d.2) Classification and subsequent measurement

Financial assets - classification

On initial recognition, a financial asset is classified as measured at: amortised cost; fair value to other comprehensive income (FVOCI); or fair value to profit or loss (FVTPL).

Financial assets are not reclassified subsequent to their initial recognition unless the Group/Company changes its business model for managing financial assets, in which case all affected financial assets are reclassified prospectively from the reclassification date.

A financial asset is measured at amortised cost if it meets both of the following conditions and is not designated as at FVTPL:

- it is held within a business model whose objective is to hold assets to collect contractual cashflows; and
- its contractual terms give rise on specified dates to cash flows that are solely payments of principal and interest on the principal amount outstanding.

A debt investment is measured at FVOCI if it meets both of the following conditions and is not designated as at FVTPL:

- it is held within a business model whose objective is achieved by both collecting contractual cash flows and selling financial assets; and
- its contractual terms give rise on specified dates to cash flows that are solely payments of principal and interest on the principal amount outstanding.

On initial recognition of an equity investment that is not held for trading, the Group may irrevocably elect to present subsequent changes in the investment's fair value in OCI. This election is made on an investment-by-investment basis.

All financial assets not classified as measured at amortised cost or FVOCI as described above are measured at FVTPL. This includes all derivative financial assets. On initial recognition, the Group/Company may irrevocably designate a financial asset that otherwise meets the requirements to be measured at amortised cost or at FVOCI as at FVTPL if doing so eliminates or significantly reduces an accounting mismatch that would otherwise arise.

Financial assets - assessment whether contractual cash flows are solely payments of principal and interest

For the purposes of this assessment, 'principal' is defined as the fair value of the financial asset on initial recognition. 'Interest' is defined as consideration for the time value of money and for the credit risk associated with the principal amount outstanding during a particular period of time and for other basic lending risks and costs (e.g. liquidity risk and administrative costs), as well as a profit margin.

In assessing whether the contractual cash flows are solely payments of principal and interest, the Group/Company considers the contractual terms of the instrument. This includes assessing whether the financial asset contains a contractual term that could change the timing and amount of contractual cash flows such that it would not meet this condition. In making this assessment, the Group/Company considers:

- contingent events that would change the amount or timing of cash flows;
- terms that may adjust the contractual coupon rate, including variable-rate features; and
- terms that limit the Group's/Company's claim to cash flows from specified assets (e.g. non-recourse features).

Financial assets - subsequent measurement and gains and losses

Financial assets at FVTPL	These assets are subsequently measured at fair value. Net gains and losses, including any interest or dividend income, are recognised in profit or loss. However, see note 4(d.6) for derivatives designated as hedging instruments.
Financial assets at amortised cost	These assets are subsequently measured at amortised cost using the effective interest method. The amortised cost is reduced by impairment losses. Interest income, foreign exchange gains and losses and impairment are recognised in profit or loss. Any gain or loss on derecognition is recognised in profit or loss.
Equity investments at FVOCI	These assets are subsequently measured at fair value. Dividends are recognised as income in profit or loss unless the dividend clearly represents a recovery of part of the cost of the investment. Other net gains and losses are recognised in OCI and are never reclassified to profit or loss.

Financial liabilities – classification, subsequent measurement and gains and losses

Financial liabilities are classified as measured at amortised cost or FVTPL. A financial liability is classified as at FVTPL if it is classified as held-for-trading, it is a derivative or it is designated as such on initial recognition. Financial liabilities at FVTPL are measured at fair value and net gains and losses, including any interest expense, are recognised in profit or loss. Other financial liabilities are subsequently measured at amortised cost using the effective interest method. Interest expense and foreign exchange gains and losses are recognised in profit or loss. Any gain or loss on derecognition is also recognised in profit or loss.

(d.3) Derecognition

Financial assets

The Group/Company derecognises a financial asset when the contractual rights to the cash flows from the financial asset expire, or it transfers the rights to receive the contractual cash flows in a transaction in which substantially all of the risks and rewards of ownership of the financial asset are transferred or in which the Group/Company neither transfers nor retains substantially all of the risks and rewards of ownership and it does not retain control of the financial asset.

The Group/Company enters into transactions whereby it transfers assets recognised in its statement of financial position, but retains either all or substantially all of the risks and rewards of the transferred assets. In these cases, the transferred assets are not derecognised.

Financial liabilities

The Group/Company derecognises a financial liability when its contractual obligations are discharged or cancelled, or expire. The Group/Company also derecognises a financial liability when its terms are modified and the cash flows of the modified liability are substantially different, in which case a new financial liability based on the modified terms is recognised at fair value.

On derecognition of a financial liability, the difference between the carrying amount extinguished and the consideration paid (including any non-cash assets transferred or liabilities assumed) is recognised in profit or loss.

(d.4) Offsetting

Financial assets and financial liabilities are offset and the net amount presented in the statement of financial position when, the Group/Company currently has a legally enforceable right to set off the amounts and it intends either to settle them on a net basis or to realise the asset and settle the liability simultaneously.

(d.5) Derivatives

Derivatives are recognised at fair value. At the end of each reporting period the fair value is measured. The gain or loss on remeasurement to fair value is recognised immediately in profit or loss, except where the derivatives qualify for cash flow hedge accounting or hedges of net investment in a foreign operation, in which case recognition of any resultant gain or loss depends on nature of the item being hedged (see note 4(d.6)).

(d.6) Hedging

The Group/Company designated certain derivatives as hedging instruments to hedge exposure to foreign currency, interest rates and commodity price. Embedded derivatives are separated from the host and accounted for separately, if the host are non-financial assets and certain terms are met.

At inception of designated hedging relationships, the Group/Company documents the risk management objective and strategy for undertaking the hedge. The Group/Company also documents the economic relationship between the hedged item and the hedging instrument, including whether the changes in cash flows of the hedged item and hedging instrument are expected to offset each other.

Cash flow hedges

When a derivative is designated as a cash flow hedging instrument, the effective portion of changes in the fair value of the derivative is recognised in OCI and accumulated in the hedging reserve. The effective portion of changes in the fair value of the derivative that is recognised in OCI is limited to the cumulative change in fair value of the hedged item, determined on a present value basis, from inception of the hedge. Any ineffective portion of changes in the fair value of the derivative is recognised immediately in profit or loss.

The Group/Company designates both the change in fair value of the spot element of forward exchange contracts and the change in fair value of the forward element of forward exchange contracts (forward points) as the hedging instrument in cash flow hedging relationships.

When the hedged forecast transaction subsequently results in the recognition of a non-financial item such as inventory, the amount accumulated in the hedging reserve is included directly in the initial cost of the non-financial item when it is recognised.

For all other hedged forecast transactions, the amount accumulated in the hedging reserve is reclassified to profit or loss in the same period or periods during which the hedged expected future cash flows affect profit or loss.

If the hedge no longer meets the criteria for hedge accounting or the hedging instrument is sold, expires, is terminated or is exercised, then hedge accounting is discontinued prospectively. When hedge accounting for cash flow hedges is discontinued, the amount that has been accumulated in the hedging reserve remains in equity until, for a hedge of a transaction resulting in the recognition of a non-financial item, it is included in the non-financial item's cost on its initial recognition or, for other

cash flow hedges, it is reclassified to profit or loss in the same period or periods as the hedged expected future cash flows affect profit or loss.

If the hedged future cash flows are no longer expected to occur, then the amounts that have been accumulated in the hedging reserve are immediately reclassified to profit or loss.

Net investment hedges in foreign operation

When a derivative instrument is designated as the hedging instrument in a hedge of a net investment in a foreign operation, the effective portion of changes in the fair value of the derivative is recognised in OCI and presented in the translation reserve within equity. Any ineffective portion of the changes in the fair value of the derivative is recognised immediately in profit or loss. The amount recognised in OCI is reclassified to profit or loss as a reclassification adjustment on disposal of the foreign operation.

Accounting policies applicable before 1 January 2020

Investments in equity securities

Equity securities which are not marketable are stated at cost less any impairment losses.

Disposal of investments

On disposal of an investment, the difference between net disposal proceeds and the carrying amount together with the associated cumulative gain or loss that was reported in equity is recognised in profit or loss.

If the Group/Company disposes of part of its holding of a particular investment, the deemed cost of the part sold is determined using the weighted average method applied to the carrying value of the total holding of the investment.

Derivatives

Derivatives are used to manage exposure to foreign exchange, interest rate and commodity price risks arising from operational, financing and investment activities. Derivatives are not used for trading purposes. However, derivatives that do not qualify for hedge accounting are accounted for as trading instruments.

Derivatives are recognised initially at fair value; attributable transaction costs are recognised in profit or loss when incurred. Subsequent to initial recognition, they are remeasured at fair value. The gain or loss on remeasurement to fair value is recognised immediately in profit or loss. However, where derivatives qualify for hedge accounting, recognition of any resultant gain or loss depends on the nature of the item being hedged.

The fair value of interest rate swaps is based on broker quotes at the reporting date. Those quotes are tested for reasonableness by discounting estimated future cash flows based on the terms and maturity of each contract and using market interest rates for a similar instrument at the reporting date.

The fair value of forward exchange contracts is based on their listed market price at the reporting date, if available. If a listed market price is not available, then fair value is estimated by discounting the difference between the contractual forward price and the current forward price at the reporting date for the residual maturity of the contract using a risk-free interest rate (based on government bonds).

The Group recognised the derivatives used to manage exposure of the commodity price risks arising from raw materials purchases based on the differences between the fixed price and the settlement price of commodity derivatives entered under time spread agreements with financial institutions, when the derivatives were exercised. The types of derivatives are swap contract and future contract.

Hedging

The Group/Company applied IAS 39 as a guideline for hedge accounting.

Fair value hedges

Where a derivative hedges the changes in fair value of a recognised asset, liability or unrecognised firm commitment (or an identified portion of such asset, liability or firm commitment), any gain or loss on remeasuring the fair value or foreign currency component of the hedging instrument is recognised in profit or loss. The hedged item is also stated at fair value in respect of the risk being hedged, with any gain or loss being recognised in profit or loss.

Cash flow hedges

When a derivative is designated as the hedging instrument in a hedge of the variability in cash flows attributable to a particular risk associated with a recognised asset or liability or a highly probable forecast transaction that could affect profit or loss, the effective portion of changes in the fair value of the derivative is recognised in other comprehensive income and presented in the hedging reserve in equity. Any ineffective portion is recognised immediately in profit or loss.

When a hedged forecast transaction occurs and results in the recognition of a financial asset or financial liability, the gain or loss recognised in other comprehensive income does not adjust the initial carrying amount of the asset or liability but remains in equity and is reclassified from equity to profit or loss consistently with the recognition of gains and losses on the asset or liability as a reclassification adjustment.

For hedges of forecast transactions that result in the recognition of a non-financial asset or non-financial liability, the gain or loss recognised in other comprehensive income is reclassified from equity to profit or loss consistently with the recognition of gains and losses on the asset or liability as a reclassification adjustment.

Hedge of net investment in foreign operation

Hedges of a net investment in a foreign operation, including a hedge of a monetary item that is accounted for as part of the net investment, are accounted for similarly to cash flow hedges.

Discontinuing hedge accounting

Hedge accounting is discontinued prospectively when the hedging instrument expires or is sold, terminated or exercised, or no longer qualifies for hedge accounting. Any cumulative gain or loss on the hedging instrument existing in equity is retained in equity and is recognised when the forecast transaction is ultimately recognised in profit or loss. When a forecast transaction is no longer expected to occur, the cumulative gain or loss that was reported in equity is recognised in profit or loss immediately.

Hedge of interest rates

Interest differentials under swap arrangements are accrued and recorded as adjustments to the interest expense relating to the hedged loans. For interest rate forward contracts, the amounts received or paid on cash settlements, representing the gain or loss, are deferred and recognised over the life of the underlying monetary asset or liability as an adjustment to interest income or expense. For purchased interest rate options, the premiums paid are included in the statement of financial position under other assets or other liabilities. The premiums are amortised to interest income or expense over the life of the agreements.

(e) Cash and cash equivalents

Cash and cash equivalents in the statements of cash flows comprise cash balances, call deposits and highly liquid short-term investments. Bank overdrafts that are repayable on demand are a component of financing activities for the purpose of the statement of cash flows.

(f) Trade and other accounts receivable and contract assets

A receivable is recognised when the Group/Company has an unconditional right to receive consideration. If revenue has been recognised before the Group/Company has an unconditional right to receive consideration, the amount is presented as a contract asset.

A receivable is measured at transaction price less allowance for expected credit loss (2019: *allowance for doubtful accounts*) which is determined based on an analysis of payment histories and future expectations of customer payments. Bad debts are written off when incurred.

Contract assets are measured at the amount of consideration that the Group/Company is entitled to, less impairment losses.

(g) Inventories

Inventories are measured at the lower of cost and net realisable value.

Cost is calculated using the weighted average cost principle, and comprises all costs of purchase, costs of conversion and other costs incurred in bringing the inventories to their present location and condition. In the case of manufactured inventories and work-in-progress, cost includes an appropriate share of production overheads based on normal operating capacity.

Net realisable value is the estimated selling price in the ordinary course of business less the estimated costs to complete and to make the sale.

(h) Property, plant and equipment

Recognition and measurement

Owned assets

Property, plant and equipment are measured at cost less accumulated depreciation and impairment losses.

Cost includes expenditure that is directly attributable to the acquisition of the asset. The cost of self-constructed assets includes the cost of materials and direct labour, any other costs directly attributable to bringing the assets to a working condition for their intended use, the costs of dismantling and removing the items and restoring the site on which they are located, and capitalised borrowing costs. Cost also may include transfers from other comprehensive income of any gain or loss on qualifying cash flow hedges of

foreign currency purchases of property, plant and equipment. Purchased software that is integral to the functionality of the related equipment is capitalised as part of that equipment.

When parts of an item of property, plant and equipment have different useful lives, they are accounted for as separate items (major components) of property, plant and equipment.

Any gains or losses on disposal of item of property, plant and equipment are determined by comparing the proceeds from disposal with the carrying amount of property, plant and equipment, and are recognised in profit or loss.

Subsequent costs

The cost of replacing a part of an item of property, plant and equipment is recognised in the carrying amount of the item if it is probable that the future economic benefits embodied within the part will flow to the Group, and its cost can be measured reliably. The carrying amount of the replaced part is derecognised. The costs of the day-to-day servicing of property, plant and equipment are recognised in profit or loss as incurred.

Depreciation

Depreciation is calculated based on the depreciable amount, which is the cost of an asset, or other amount substituted for cost, less its residual value.

Depreciation is charged to profit or loss on a straight-line basis over the estimated useful lives of each component of an item of property, plant and equipment. The estimated useful lives for current year are as follows:

Land improvements	3-50 years
Buildings and building improvements	2-60 years
Machinery and equipment	2-50 years
Office furniture, fixtures and equipment	2-25 years
Transportation equipment	3-20 years
Stores and spares	1.5-15 years

No depreciation is provided on freehold land or assets under construction.

Depreciation methods, useful lives and residual values are reviewed at each financial year-end and adjusted if appropriate.

(i) Intangible assets

Goodwill

The measurement of goodwill at initial recognition is described in note 4(a). Subsequent to initial recognition, goodwill is measured at cost less accumulated impairment losses. In respect of equity-accounted investees, the carrying amount of goodwill is included in the carrying amount of the investment, and an impairment loss on such an investment is not allocated to any asset, including goodwill, that forms part of the carrying amount of the equity-accounted investee.

Research and development

Expenditure on research activities, undertaken with the prospect of gaining new scientific or technical knowledge and understanding, is recognised in profit or loss as incurred.

Development activities involve a plan or design for the production of new or substantially improved products and processes. Development expenditure is capitalised only if development costs can be measured reliably, the product or process is technically and commercially feasible, future economic benefits are probable, and the Group intends to and has sufficient resources to complete development and to use or sell the asset. The expenditure capitalised includes the cost of materials, direct labour, overhead costs that are directly attributable to preparing the asset for its intended use, and capitalised borrowing costs. Other development expenditure is recognised in profit or loss as incurred.

Capitalised development expenditure is measured at cost less accumulated amortisation and accumulated impairment losses.

Other intangible assets

Other intangible assets that are acquired by the Group and have finite useful lives are measured at cost less accumulated amortisation and accumulated impairment losses.

Subsequent expenditure

Subsequent expenditure is capitalised only when it increases the future economic benefits embodied in the specific asset to which it relates. All other expenditure, including expenditure on internally generated goodwill and brands, is recognised in profit or loss as incurred.

Amortisation

Amortisation is based on the cost of the asset, or other amount substituted for cost, less its residual value.

Amortisation is recognised in profit or loss on a straight-line basis over the estimated useful lives of intangible assets, other than goodwill, from the date that they are available for use, since this most closely reflects the expected pattern of consumption of the future economic benefits embodied in the asset. The estimated useful lives for current year are as follows:

Rights acquired	5-50	years
Supplier contract and relationships	3-10	years, Indefinite
Software licenses	2-37	years
Technology licenses and knowhow	4-50	years
Customer contracts and relationships	3-20.3	years
Trade name and trademarks	5-21.5	years, Indefinite
Chemicals exchange contract	19	years
Capitalised development expenditure	3-5	years

Amortisation methods, useful lives and residual values are reviewed at each financial year-end and adjusted if appropriate.

(j) Leases

Accounting policies applicable from 1 January 2020

At inception of a contract, the Group assesses whether a contract is, or contains, a lease. To assess whether a contract conveys the right to control the use of an identified asset, the Group uses the definition of a lease in TFRS 16.

As a lessee

At commencement or on modification of a contract that contains a lease component, the Group allocates the consideration in the contract to each lease component on the basis of its relative stand-alone prices. However, for the leases of property the Group has elected not to separate non-lease components and account for the lease and non-lease components as a single lease component.

The Group recognises a right-of-use asset and a lease liability at the lease commencement date, except for leases of low-value assets and short-term leases which is recognised as an expense on a straight-line basis over the lease term.

Right-of-use asset is measured at cost, less any accumulated depreciation and impairment loss, and adjusted for any remeasurements of lease liability. The cost of right-of-use asset includes the initial amount of the lease liability adjusted for any lease payments made at or before the commencement date, plus any initial direct costs incurred and an estimate of restoration costs, less any lease incentives received. Depreciation is charged to profit or loss on a straight-line method from the commencement date to the end of the lease term, unless the lease transfers ownership of the underlying asset to the Group by the end of the lease term or the cost of the right-of-use asset reflects that the Group will exercise a purchase option. In that case the right-of-use asset will be depreciated over the useful life of the underlying asset, which is determined on the same basis as those of property and equipment.

The lease liability is initially measured at the present value of the lease payments that are not paid at the commencement date, discounted using the interest rate implicit in the lease or, if that rate cannot be readily determined, the Group's incremental borrowing rate. The lease payments included fixed payments less any lease incentive receivable, variable lease payments that depend on an index or a rate, and amounts expected to be payable under a residual value guarantee. The lease payments also include amount under purchase, extension or termination option if the Group is reasonably certain to exercise option. Variable lease payments that do not depend on index or a rate are recognised as expenses in the accounting period in which they are incurred.

The Group determines its incremental borrowing rate by obtaining interest rates from various external financing sources and makes certain adjustments to reflect the terms of the lease and type of the asset leased.

The lease liability is measured at amortised cost using the effective interest method. It is remeasured when there is a change in lease term, change in lease payments, change in the estimate of the amount expected to be payable under a residual value guarantee, or a change in the assessment of purchase, extension or termination options. When the lease liability is remeasured, a corresponding adjustment is made to the carrying amount of the right-of-use asset or is recorded in profit or loss if the carrying amount of the right-of-use asset has been reduced to zero.

As a lessor

At inception or on modification of a contract that contains a lease component and one or more additional lease or non-lease components, the Group allocates the consideration in the contract to each component on the basis of their relative standalone prices.

When the Group acts as a lessor, it determines at lease inception whether the lease transfers substantially all of the risks and rewards incidental to ownership of the underlying asset. If this is the case, then the lease is a finance lease; if not, then it is an operating lease.

The Group recognises lease payments received under operating leases as rental income on a straight-line basis over the lease term as part of other income. Initial direct costs incurred in arranging an operating lease are added to the carrying amount of the leased asset and recognised over the lease term on the same

basis as rental income. Contingent rents are recognised as rental income in the accounting period in which they are earned.

The Group recognises finance lease receivables at the amount of the Group's net investment in the lease, which comprises the present value of the lease payments and any unguaranteed residual value, discounted using the interest rate implicit in the lease. Finance lease income is allocated to accounting periods so as to reflect a constant periodic rate of return on the Group's net investment outstanding in respect of the leases.

The Group applies the derecognition and impairment requirements in TFRS 9 to the net investment in the lease (see note 4(k)). The Group further regularly reviews estimated unguaranteed residual values used in calculating the gross investment in the lease.

Accounting policies applicable before 1 January 2020

As a lessee, leases in terms of which the Group substantially assumes all the risk and rewards of ownership are classified as finance leases. Property, plant and equipment acquired by way of finance leases is capitalised at the lower of its fair value and the present value of the minimum lease payments at the inception of the lease, less accumulated depreciation and impairment losses. Lease payments are apportioned between the finance charges and reduction of the lease liability so as to achieve a constant rate of interest on the remaining balance of the liability. Finance charges are charged directly to the profit or loss.

Assets held under other leases were classified as operating leases and lease payments are recognised in profit or loss on a straight-line basis over the term of the lease. Lease incentives received are recognised in profit or loss as an integral part of the total lease expense, over the term of the lease. Contingent lease payments are accounted for by revising the minimum lease payments over the remaining term of the lease when the lease adjustment is confirmed.

Determining whether an arrangement contains a lease

At inception of an arrangement, the Group determines whether such an arrangement is or contains a lease. A specific asset is the subject of a lease if fulfilment of the arrangement is dependent on the use of that specified asset. An arrangement conveys the right to use the asset if the arrangement conveys to the Group the right to control the use of the underlying asset.

At inception or upon reassessment of the arrangement, the Group separates payments and other consideration required by such an arrangement into those for the lease and those for other elements on the basis of their relative fair values. If the Group concludes for a finance lease that it is impracticable to separate the payments reliably, an asset and a liability are recognised at an amount equal to the fair value of the underlying asset. Subsequently the liability is reduced as payments are made and an imputed finance charge on the liability is recognised using the Group's incremental borrowing rate.

(k) Impairment of financial assets

Accounting policies applicable from 1 January 2020

The Group/Company recognises allowances for expected credit losses (ECLs) on financial assets measured at amortised cost (including cash and cash equivalents, trade receivables and other receivables, loans to related parties), contract assets, lease receivables, and loan commitments issued which are not measured at FVTPL.

Measurement of ECLs

ECLs are a probability-weighted estimate of credit losses. Credit losses are measured as the present value of all cash shortfalls (i.e. the difference between the cash flows due to the entity in accordance with the contract and the cash flows that the Group/Company expects to receive). ECLs are discounted at the effective interest rate of the financial asset.

ECLs are measured on either of the following bases:

- 12-month ECLs: these are losses that are expected to result from possible default events within the 12 months after the reporting date; or
- lifetime ECLs: these are losses that are expected to result from all possible default events over the expected lives of a financial instrument.

Loss allowances for trade receivables, lease receivables and contract assets are always measured at an amount equal to lifetime ECLs. ECLs on these financial assets are estimated using a provision matrix based on the historical credit loss experience, adjusted for factors that are specific to the debtors and an assessment of both current and forecast general economic conditions at the reporting date.

Loss allowances for all other financial instruments, the Group/Company recognises ECLs equal to 12-month ECLs unless there has been a significant increase in credit risk of the financial instrument since initial recognition or credit-impaired financial assets, in which case the loss allowance is measured at an amount equal to lifetime ECLs.

The maximum period considered when estimating ECLs is the maximum contractual period over which the Group/Company is exposed to credit risk.

The Group/Company considers a financial asset to have low credit risk when its credit rating rated by external rating agency is equivalent to the globally understood definition of 'investment grade'.

The Group/Company assumes that the credit risk on a financial asset has increased significantly if it is more than 30 days past due, significant deterioration in financial instruments's credit rating, significant deterioration in the operating results of the debtor and existing or forecast changes in the technological, market, economic or legal environment that have a significant adverse effect on the debtor's ability to meet its obligation to the Group/Company.

The Group/Company considers a financial asset to be in default when:

- the debtor is unlikely to pay its credit obligations to the Group/Company in full, without recourse by the Group/Company to actions such as realising security (if any is held); or
- the financial asset is more than 12 months past due.

Depending on the nature of the financial instruments, the assessment of a significant increase in credit risk is performed on either an individual basis or a collective basis. When the assessment is performed on a collective basis, the financial instruments are grouped based on shared credit risk characteristics, such as past due status and credit risk ratings.

ECLs are remeasured at each reporting date to reflect changes in the financial instrument's credit risk since initial recognition. Increased in loss allowance is recognised as an impairment loss in profit or loss. Loss allowances for financial assets measured at amortised cost are deducted from the gross carrying amount of the assets.

Credit-impaired financial assets

At each reporting date, the Group/Company assesses whether financial assets carried at amortised cost are credit-impaired. A financial asset is 'credit-impaired' when one or more events that have a detrimental impact on the estimated future cash flows of the financial asset have occurred. Evidence of credit-impairment includes significant financial difficulty, a breach of contract such as more than 90 days past due, probable the debtor will enter bankruptcy.

Write-off

The gross carrying amount of a financial asset is written off when the Group/Company has no reasonable expectations of recovering. Subsequent recoveries of an asset that was previously written off, are recognised as a reversal of impairment in profit or loss in the period in which the recovery occurs.

Accounting policies applicable before 1 January 2020

The carrying amounts of the Group's/Company's assets are reviewed at each reporting date to determine whether there is any indication of impairment. If any such indication exists, the assets' recoverable amounts are estimated.

An impairment loss is recognised if the carrying amount of an asset exceeds its recoverable amount. The impairment loss is recognised in profit or loss.

Reversal of impairment

An impairment loss in respect of a financial asset is reversed if the subsequent increase in recoverable amount can be related objectively to an event occurring after the impairment loss was recognised in profit or loss. For financial assets carried at amortised cost, the reversal is recognised in profit or loss.

(l) *Impairment of non-financial assets*

The carrying amounts of the Group's/Company's assets are reviewed at each reporting date to determine whether there is any indication of impairment. If any such indication exists, the assets' recoverable amounts are estimated. For goodwill and intangible assets that have indefinite useful lives or are not yet available for use, the recoverable amount is estimated each year at the same time.

An impairment loss is recognised if the carrying amount of an asset or its cash-generating unit exceeds its recoverable amount. The impairment loss is recognised in profit or loss.

Calculation of recoverable amount

The recoverable amount of a non-financial asset is the greater of the asset's value in use and fair value less costs to sell. In assessing value in use, the estimated future cash flows are discounted to their present value using a pre-tax discount rate that reflects current market assessments of the time value of money and the risks specific to the asset. For an asset that does not generate cash inflows largely independent of those from other assets, the recoverable amount is determined for the cash-generating unit to which the asset belongs.

Reversal of impairment

An impairment loss in respect of goodwill is not reversed. Impairment losses recognised in prior periods in respect of other non-financial assets are assessed at each reporting date for any indications that the loss has decreased or no longer exists. An impairment loss is reversed if there has been a change in the estimates used to determine the recoverable amount. An impairment loss is reversed only to the extent

that the asset's carrying amount does not exceed the carrying amount that would have been determined, net of depreciation or amortisation, if no impairment loss had been recognised.

(m) Contract liabilities

A contract liability is the obligation to transfer goods or services to the customer. A contract liability is recognised when the Group/Company receives or has an unconditional right to receive non-refundable consideration from the customer before the Group/Company recognises the related revenue.

(n) Employee benefits

Defined contribution plans

Obligations for contributions to defined contribution plans are expensed as the related service is provided.

Defined benefit plans

The Group's net obligation in respect of defined benefit plans is calculated separately for each plan by estimating the amount of future benefit that employees have earned in the current and prior periods, discounting that amount.

The calculation of defined benefit obligations is performed annually by a qualified actuary using the projected unit credit method. When the calculation results in a potential asset for the Group, the recognised asset is limited to the present value of economic benefits available in the form of any future refunds from the plan or reductions in future contributions to the plan. To calculate the present value of economic benefits, consideration is given to any application minimum funding requirements.

Remeasurements of the net defined benefit liability, actuarial gain or loss are recognised immediately in OCI. The Group determines the interest expense on the net defined benefit liability for the period by applying the discount rate used to measure the defined benefit obligation at the beginning of the annual period, taking into account any changes in the net defined benefit liability during the period as a result of contributions and benefit payments. Net interest expense and other expenses related to defined benefit plans are recognised in profit or loss.

When the benefits of a plan are changed or when a plan is curtailed, the resulting change in benefit that relates to past service or the gain or loss on curtailment is recognised immediately in profit or loss. The Group recognises gains and losses on the settlement of a defined benefit plan when the settlement occurs.

Other long-term employee benefits

The Group's net obligation in respect of long-term employee benefits is the amount of future benefit that employees have earned in return for their service in the current and prior periods. That benefit is discounted to determine its present value. Remeasurements are recognised in profit or loss in the period in which they arise.

Termination benefits

Termination benefits are expensed at the earlier of when the Group can no longer withdraw the offer of those benefits and when the Group recognises costs for a restructuring. If benefits are not expected to be settled wholly within 12 months of the end of the reporting period, then they are discounted.

Short-term employee benefits

Short-term employee benefits are expensed as the related service is provided. A liability is recognised for the amount expected to be paid if the Group has a present legal or constructive obligation to pay this amount as a result of past service provided by the employee and the obligation can be estimated reliably.

(o) *Share-based payments*

The grant-date fair value of equity-settled share-based payment awards granted to employees is generally recognised as an expense, with a corresponding increase in equity, over the vesting period of the awards. The amount recognised as an expense is adjusted to reflect the number of awards for which the related service and non-market performance conditions are expected to be met, such that the amount ultimately recognised is based on the number of awards that meet the related service and non-market performance conditions at the vesting date.

For share-based payment awards with non-vesting conditions, the grant-date fair value of the share-based payment is measured to reflect such conditions and there is no true-up for differences between expected and actual outcomes.

The fair value of the amount payable to employees in respect of share appreciation rights, which are settled in cash, is recognised as an expense with a corresponding increase in liabilities, over the period that the employees become unconditionally entitled to payment. The liability is remeasured at each reporting date and at settlement date. Any changes in the fair value of the liability are recognised as personnel expenses in profit or loss.

(p) *Provisions*

A provision is recognised if, as a result of a past event, the Group/Company has a present legal or constructive obligation that can be estimated reliably, and it is probable that an outflow of economic benefits will be required to settle the obligation. Provisions are determined by discounting the expected future cash flows at a pre-tax rate that reflects current market assessments of the time value of money and the risks specific to the liability. The unwinding of the discount is recognised as a finance cost.

Onerous contracts

A provision for onerous contracts is recognised when the expected benefits to be derived by the Group/Company from a contract are lower than the unavoidable cost of meeting the Group's/Company's obligations under the contract. The provision is measured at the present value of the lower of the expected cost of terminating the contract and the expected net cost of continuing with the contract. Before a provision is established, the Group/Company recognises any impairment loss on the assets associated with that contract.

(q) *Fair value measurement*

'Fair value' is the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date in the principal or, in its absence, the most advantageous market to which the Group/Company has access at that date. The fair value of a liability reflects its non-performance risk.

A number of the Group's/Company's accounting policies and disclosures require the measurement of fair values, for both financial and non-financial assets and liabilities.

When one is available, the Group/Company measures the fair value of an instrument using the quoted price in an active market for that instrument. A market is regarded as 'active' if transactions for the asset or liability take place with sufficient frequency and volume to provide pricing information on an ongoing basis.

If there is no quoted price in an active market, then the Group/Company uses valuation techniques that maximise the use of relevant observable inputs and minimise the use of unobservable inputs. The chosen valuation technique incorporates all of the factors that market participants would take into account in pricing a transaction.

If an asset or a liability measured at fair value has a bid price and an ask price, then the Group/Company measures assets and long positions at a bid price and liabilities and short positions at an ask price.

The best evidence of the fair value of a financial instrument on initial recognition is normally the transaction price - i.e. the fair value of the consideration given or received. If the Group/Company determines that the fair value on initial recognition differs from the transaction price and the fair value is evidenced neither by a quoted price in an active market for an identical asset or liability nor based on a valuation technique for which any unobservable inputs are judged to be insignificant in relation to the measurement, then the financial instrument is initially measured at fair value, adjusted to defer the difference between the fair value on initial recognition and the transaction price. Subsequently, that difference is recognised in profit or loss on an appropriate basis over the life of the instrument but no later than when the valuation is wholly supported by observable market data or the transaction is closed out.

When measuring the fair value of an asset or liability, the Group/Company uses observable market data as far as possible. Fair values are categorised into different levels in a fair value hierarchy based on the inputs used in the valuation techniques as follows:

- *Level 1*: quoted prices in active markets for identical assets or liabilities.
- *Level 2*: inputs other than quoted prices included in Level 1 that are observable for the asset or liability, either directly or indirectly.
- *Level 3*: inputs for the asset or liability that are based on unobservable input.

If the inputs used to measure the fair value of an asset or liability might be categorised in different levels of the fair value hierarchy, then the fair value measurement is categorised in its entirety in the same level of the fair value hierarchy as the lowest level input that is significant to the entire measurement.

The Group/Company recognises transfers between levels of the fair value hierarchy at the end of the reporting period during which the change has occurred.

(r) Subordinated perpetual debentures

Subordinated perpetual debentures are recognised as equity when the Company has the sole right and discretion to unconditionally defer principle repayment, interest and cumulative interest payment without time and deferral amount limitation. Accordingly, any coupon payments are accounted for as dividends and are recognised directly in equity at the time the payment obligation arises. This is because the coupon payments are discretionary and relate to equity. Coupon payments consequently do not have any impact in profit or loss. Coupon payments are recognised in the cash flow statement in the same way as dividends to ordinary shareholders.

When subordinated perpetual debentures recognised as equity are repurchased, the amount of the consideration paid, which includes directly attributable costs, is recognised as a deduction from equity.

(s) Revenue

Revenue is recognised when a customer obtains control of the goods in an amount that reflects the consideration to which the Group/Company expects to be entitled, excluding those amounts collected on behalf of third parties, value added tax and is after deduction of any trade discounts and volume rebates.

Sale of goods

Revenue from sales of goods is recognised when a customer obtains control of the goods, generally on delivery of the goods to the customers. For contracts that permit the customers to return the goods, revenue is recognised to the extent that it is highly probable that a significant reversal in the amount of cumulative revenue recognised will not occur. Therefore, the amount of revenue recognised is adjusted for estimated returns, which are estimated based on the historical data.

Long-term advances received from customers

Long-term advances received from customers is recognised as revenue when the Group transferred control over the goods to the customers. For the advances that contain a significant financing component, they include the interest expense accreted on the contract liability under the effective interest method. The Group uses practical expedient which is not adjust the consideration for any effects of a significant financing component if the period of financing is 12 months or less.

Refund liabilities

A refund liability is the obligation to refund some or all of the consideration received from the customer and is measured at the amount the Group ultimately expects it will have to return to the customer. The refund liability is reassessed at each reporting date and make a corresponding change to the amount of revenue recognised.

Dividend income

Dividend income is recognised in profit or loss on the date on which the Group's/Company's right to receive payments is established.

Guarantee and royalty income

Guarantee and royalty income is recognised over time as the services are provided.

(t) Interest

Accounting policies applicable from 1 January 2020

Effective Interest Rate (EIR)

Interest income or expense is recognised using the effective interest method. The EIR is the rate that exactly discounts estimated future cash payments or receipts through the expected life of the financial instrument to:

- the gross carrying amount of the financial asset; or
- the amortised cost of the financial liability.

In calculating interest income and expense, the effective interest rate is applied to the gross carrying amount of the asset (when the asset is not credit-impaired) or to the amortised cost of the liability. However, for financial assets that have become credit-impaired subsequent to initial recognition, interest income is calculated by applying the effective interest rate to the amortised cost of the financial asset. If the asset is no longer credit-impaired, then the calculation of interest income reverts to the gross basis.

Accounting policies applicable before 1 January 2020

Interest income is recognised in profit or loss at the rate specified in the contract.

Interest expenses and similar costs are charged to profit or loss for the period in which they are incurred, except to the extent that they are capitalised as being directly attributable to the acquisition, construction or production of an asset which necessarily takes a substantial periods of time to be prepared for its intended use or sale.

(u) Income tax

Income tax expense for the year comprises current and deferred tax. Current and deferred tax are recognised in profit or loss except to the extent that they relate to a business combination, or items recognised directly in equity or in other comprehensive income.

Current tax is the expected tax payable or receivable on the taxable income or loss for the year, using tax rates enacted or substantively enacted at the reporting date, and any adjustment to tax payable in respect of previous years.

Deferred tax is recognised in respect of temporary differences between the carrying amounts of assets and liabilities for financial reporting purposes and the amounts used for taxation purposes. Deferred tax is not recognised for the following temporary differences: the initial recognition of goodwill; the initial recognition of assets or liabilities in a transaction that is not a business combination and that affects neither accounting nor taxable profit or loss; and differences relating to investments in subsidiaries and joint ventures to the extent that it is probable that they will not reverse in the foreseeable future.

The measurement of deferred tax reflects the tax consequences that would follow the manner in which the Group/Company expects, at the end of the reporting period, to recover or settle the carrying amount of its assets and liabilities.

Deferred tax is measured at the tax rates that are expected to be applied to the temporary differences when they reverse, using tax rates enacted or substantively enacted at the reporting date.

In determining the amount of current and deferred tax, the Group/Company takes into account the impact of uncertain tax positions and whether additional taxes and interest may be due. The Group/Company believes that its accruals for tax liabilities are adequate for all open tax years based on its assessment of many factors, including interpretations of tax law and prior experience. This assessment relies on estimates and assumptions and may involve a series of judgements about future events. New information may become available that causes the Group/Company to change its judgement regarding the adequacy of existing tax liabilities; such changes to tax liabilities will impact tax expense in the period that such a determination is made.

Deferred tax assets and liabilities are offset if there is a legally enforceable right to offset current tax liabilities and assets, and they relate to income taxes levied by the same tax authority on the same taxable entity, or on different tax entities, but they intend to settle current tax liabilities and assets on a net basis or their tax assets and liabilities will be realised simultaneously.

A deferred tax asset is recognised to the extent that it is probable that future taxable profits will be available against which the temporary differences can be utilised. Future taxable profits are determined based on the reversal of relevant taxable temporary differences. If the amount of taxable temporary differences is insufficient to recognise a deferred tax asset in full, then future taxable profits, adjusted for reversals of existing temporary differences, are considered, based on the business plans for individual subsidiaries in the Group. Deferred tax assets are reviewed at each reporting date and reduced to the extent that it is no longer probable that the related tax benefit will be realised.

(v) Earnings per share

The Group/Company presents basic earnings per share (EPS) data for its ordinary shares. Basic EPS is calculated by dividing the profit or loss attributable to owners of the parent less coupon payment on subordinated perpetual debentures whether it has been accrued or not by the weighted average number of ordinary shares outstanding during the period, adjusted for own shares held.

(w) Related parties

A related party is a person or entity that has direct or indirect control or joint control, or has significant influence over the financial and managerial decision-making of the Group/Company; a person or entity that are under common control or under the same significant influence as the Group/Company; or the Group/Company has direct or indirect control or joint control or has significant influence over the financial and managerial decision-making of a person or entity.

(x) Segment reporting

Segment results that are reported to the Group's CEO (the chief operating decision maker) include items directly attributable to a segment as well as those that can be allocated on a reasonable basis. Unallocated items comprise mainly corporate assets (primarily the Company's headquarters), head office's and international business center's expenses, and tax assets and liabilities, etc.

5 Impact of COVID-19 Outbreak

Due to the COVID-19 outbreak at the beginning of 2020, Thailand and many other countries have enacted several protective measures against the outbreak, e.g. the order to temporarily shut down operating facilities or reduce operating hours, social distancing, etc. This has significantly affected world economy, production, supply chain of goods and business operation of many entities in wide areas. The management is closely monitoring the situation to ensure the safety of the Group's staff and to manage the negative impact on the business as much as possible.

At 31 December 2020, the situation of COVID-19 outbreak is still ongoing, resulting in estimation uncertainty on the potential impact, therefore, the Group/Company elected to apply accounting guidance on temporary accounting relief measures for additional accounting options in response to impact from the situation of COVID-19 outbreak on the following:

(a) Impairment of assets

The Group/Company elected to exclude the COVID-19 situation as impairment indicator for property, plant and equipment and intangible assets, and elected to exclude the COVID-19 situation, which may affect future financial forecasts, from the impairment testing factors of goodwill/other intangible assets with an indefinite useful life.

6 Acquisitions of businesses

Gains on bargain purchases and goodwill

The excess of the Group's interest in the net identified assets and liabilities of the companies acquired over cost during the years ended 31 December 2020 and 2019 is considered by management as gains on bargain purchases. The gains on bargain purchases and goodwill recognised in the consolidated statement of income for the years ended 31 December 2020 and 2019 and the consolidated statement of financial position as at 31 December 2020 and 2019 respectively, are as following:

Gains on bargain purchases

	Note	2020 (in thousand Baht)	2019
M&G Fibras Brasil Ltda., Brazil	6(ii)	-	114,434
UTT Beteiligungsgesellschaft mbH, Germany	6(iii)	-	507,125
INVISTA Resins & Fibers GmbH, Germany	6(iv)	-	183,947
Integrated Oxides and Derivatives business/assets of Huntsman Corporation, USA	6(x)	1,806,350	-
Total gains on bargain purchases		1,806,350	805,506

Goodwill

IVL Dhunseri Petrochem Industries Private Limited, India	6(v)	-	587,961
Custom Polymers PET, LLC, USA	6(i)	-	80,283
Indo Rama Synthetics (India) Limited, India	6(vi)	-	93,338
Bevpak (Nigeria) Limited, Nigeria	6(vii)	-	132,774
Sinterama S.p.A. and its subsidiaries, Italy, Brazil, China and Bulgaria	6(viii)	-	22,489
Green Fiber International Inc., USA	6(ix)	-	224,216
AG Resinas Ltda., Brazil	6(xi)	75,036	-
Industrie Maurizio Peruzzo Polowat spółka z ograniczoną odpowiedzialnością, Poland	6(xii)	27,857	-
Total goodwill		102,893	1,141,061

(i) Custom Polymers PET, LLC, USA

On 15 January 2019, IVL, through its indirect subsidiary, Indorama Ventures Holdings LP ("IVHLP"), completed the acquisition of a PET recycling facility in Alabama, USA from Custom Polymers PET, LLC, as per definitive Asset Purchase Agreement dated 21 December 2018 for a cash consideration of USD 29.9 million (Baht 954.7 million). The transaction is accounted for as a business combination.

Identifiable assets acquired and liabilities assumed

	Note	Fair values as at 15 January 2019 (in thousand Baht)
Inventories		132,264
Property, plant and equipment	15	611,524
Intangible assets	19	129,003
Other assets/(liabilities), net		1,649
Total identifiable net assets received		874,440
Goodwill		80,283
Purchase consideration transferred		954,723

(ii) **M&G Fibras Brasil Ltda., Brazil**

On 22 February 2019, IVL, through its indirect subsidiary, Indorama Ventures Brazil Participações S.A. ("IVBRZ"), completed the acquisition of 100% stake in M&G Fibras Brasil Ltda. located in Cabo de Santo Agostinho, Brazil from M&G Fibras Holding S.A., M&G Fibras Participações Ltda. and M&G Fibras e Resinas Ltda., as per a definitive Share Purchase Agreement dated 1 November 2018 for a cash consideration of BRL 104.2 million (Baht 870.3 million) as a final purchase price. The transaction is accounted for as a business combination.

Subsequent to the completion of the acquisition, M&G Fibras Brasil Ltda. was renamed to Indorama Ventures Fibras Brasil Ltda.

Identifiable assets acquired and liabilities assumed

	Note	Fair values as at 22 February 2019 (in thousand Baht)
Inventories		240,687
Trade receivables		132,699
Property, plant and equipment	15	1,217,138
Intangible assets	19	17,441
Short-term loan from financial institutions		(1,201)
Accounts payable		(161,040)
Deferred tax liabilities, net	35	(382,023)
Other assets/(liabilities), net		(78,922)
Total identifiable net assets received		984,779
Gain on bargain purchase		(114,434)
Purchase consideration transferred		870,345
Cash acquired		-
Net cash outflows		870,345

The trade receivables comprise gross contractual amounts due of Baht 194.7 million, of which Baht 62.0 million was expected to be uncollectible at the acquisition date.

(iii) **UTT Beteiligungsgesellschaft mbH, Germany**

On 28 February 2019, IVL, through its indirect subsidiary, PHP Fibers GmbH ("PHP Fibers"), completed the acquisition of 100% stake in UTT Beteiligungsgesellschaft mbH ("UTT"), Germany from Mr. Wilfried Trumpp and Ms. Venere Polito, as per definitive Share Purchase and Transfer Agreement dated 7 December 2018 for a cash consideration of EUR 65.0 million (Baht 2,325.9 million). The transaction is accounted for as a business combination.

Identifiable assets acquired and liabilities assumed

	Note	Fair values as at 28 February 2019 (in thousand Baht)
Cash and cash equivalents		132,343
Inventories		636,413
Trade receivables		58,068
Property, plant and equipment	15	3,169,987
Intangible assets	19	1,469,285
Accounts payable		(481,700)
Long-term loan from financial institutions		(994,712)

	<i>Note</i>	Fair values as at 28 February 2019 <i>(in thousand Baht)</i>
Deferred tax liabilities, net	35	(909,961)
Other assets/(liabilities), net		(246,664)
Total identifiable net assets received		2,833,059
Gain on bargain purchase		(507,125)
Purchase consideration transferred		2,325,934
Cash acquired		(132,343)
Net cash outflows		2,193,591

The trade receivables comprise gross contractual amounts due of Baht 58.3 million, of which Baht 0.2 million was expected to be uncollectible at the acquisition date.

(iv) INVISTA Resins & Fibers GmbH, Germany

On 4 March 2019, IVL, through its indirect subsidiary, Trevira Holdings GmbH (“THGM”), completed the acquisition of 100% stake in the PET business of INVISTA Resins & Fibers GmbH (“IRFG”), Germany and certain Intellectual Property Rights of INVISTA Textiles (U.K.) Limited from Arteva Holdings GmbH, INVISTA Textiles (U.K.) Limited, and INVISTA Equities, LLC, as per definitive Share Purchase Agreement dated 20 December 2018 for a cash consideration of EUR 31.5 million (Baht 1,139.2 million). The transaction is accounted for as a business combination.

Subsequent to the completion of the acquisition, INVISTA Resins & Fibers GmbH was renamed to Indorama Ventures Polymers Germany GmbH.

Identifiable assets acquired and liabilities assumed

	<i>Note</i>	Fair values as at 4 March 2019 <i>(in thousand Baht)</i>
Cash and cash equivalents		172,347
Inventories		731,474
Trade receivables		949,628
Property, plant and equipment	15	786,375
Intangible assets	19	1,058,235
Accounts payable		(491,178)
Deferred tax liabilities, net	35	(542,748)
Other assets/(liabilities), net		(1,340,938)
Total identifiable net assets received		1,323,195
Gain on bargain purchase		(183,947)
Purchase consideration transferred		1,139,248
Cash acquired		(172,347)
Net cash outflows		966,901

The trade receivables comprise gross contractual amounts due of Baht 949.6 million which the entire amount was expected to be collectible at the acquisition date.

(v) **IVL Dhunseri Petrochem Industries Private Limited, India ("DPGL")**

With effect from 1 January 2019, IVL has exercised the additional rights to appoint additional director (i.e fourth director) on the Board of Directors of DPGL and right to require deletion of one affirmative vote item in relation to the approval of business plan of DPGL. With the additional rights acquired, Management believes that it has control over DPGL and the transaction is accounted for as a business combination.

Identifiable assets acquired and liabilities assumed

	Note	Fair values as at 1 January 2019 (in thousand Baht)
Cash and cash equivalents		768,717
Inventories		3,323,356
Trade receivables		3,802,315
Property, plant and equipment	15	6,671,617
Intangible assets	19	499,764
Short-term loan from financial institutions		(2,501,746)
Accounts payable		(5,228,638)
Long-term loan from financial institutions		(2,351,448)
Deferred tax liabilities, net	35	(458,090)
Other assets/(liabilities), net		916,760
Total identifiable net assets		5,442,607
Less Non-controlling interests (50%)		(2,721,304)
Total fair value of identifiable net assets received		2,721,304
Goodwill		587,961
Fair value of previously held equity interest		3,309,265

There is neither gain nor loss recognised as a result of remeasuring to fair value of the previously held equity interest in DPGL as follows:

Fair value of previously held equity interest	3,309,265
Carrying amount of previously held equity interest	(2,960,108)
Unrealised loss previously recognised in other comprehensive income	(349,157)
Gain (loss) recognised as a result of remeasuring to fair value of the previously held equity interest	-

The trade receivables comprise gross contractual amounts due of Baht 3,802.3 million which the entire amount was expected to be collectible at the acquisition date.

(vi) **Indo Rama Synthetics (India) Limited, India ("IRSL")**

On 15 January 2019, IVL, through its indirect subsidiary, Indorama Netherlands B.V. ("INBV"), purchased newly issued shares in IRSL, equaling to approximately 31.79% of IRSL's enlarged share capital (the "Share Purchase"). Share Purchase formalities has been completed on 3 April 2019 for a cash consideration of INR 2,988.0 million (Baht 1,378.3 million). INBV is further required to do an open offer to minority shareholders holding, (the "Open Offer") under regulations of the Securities Exchange Board of India ("SEBI"). Consequently, upon completion of the Open Offer process, INBV further acquired 6.77% stake in IRSL for a cash consideration of INR 637.1 million (Baht 293.9 million). The transaction is accounted for as a business combination.

Identifiable assets acquired and liabilities assumed

	Note	Fair values as at 3 April 2019 (in thousand Baht)
Cash and cash equivalents		1,648,323
Inventories		847,171
Trade receivables		274,242
Property, plant and equipment	15	5,589,866
Intangible assets	19	430,997
Deferred tax assets, net	35	462,431
Short-term loan from financial institutions		(1,622,214)
Accounts payable		(2,294,453)
Long-term loan from financial institutions		(1,020,636)
Other assets/(liabilities), net		(221,045)
Total identifiable net assets		4,094,682
Less Non-controlling interest (61.44%)		(2,515,773)
Total identifiable net assets received		1,578,909
Goodwill		93,338
Purchase consideration transferred		1,672,247
Cash acquired		(1,648,323)
Net cash outflows		23,924

The trade receivables comprise gross contractual amounts due of Baht 530.4 million, of which Baht 256.2 million was expected to be uncollectible at the acquisition date.

(vii) Bevpak (Nigeria) Limited, Nigeria

On 2 October 2019, IVL, through its indirect subsidiary, Indorama Netherlands B.V. ("INBV"), completed the acquisition of 100% stake in the Packaging business of Bevpak (Nigeria) Limited located in Nigeria from Church Street Trustees Limited as trustees of the SI Trust, BTI Overseas Limited and Capital Alliance Private Equity II Limited, as per definitive Share Purchase Agreement dated 6 February 2019 for a cash consideration of NGN 260.0 million (Baht 22.0 million). The transaction is accounted for as a business combination.

Identifiable assets acquired and liabilities assumed

	Note	Fair values as at 2 October 2019 (in thousand Baht)
Cash and cash equivalents		4,520
Inventories		15,217
Trade receivables		7,639
Property, plant and equipment	15	94,892
Intangible assets	19	33,618
Accounts payable		(2,527)
Long-term loan from financial institutions		(66,974)
Deferred tax liabilities, net	35	(25,606)
Other assets/(liabilities), net		(171,584)
Total identifiable net assets received		(110,805)
Goodwill		132,774
Purchase consideration transferred		21,969
Consideration payable		(4,397)
Cash acquired		(4,520)
Net cash outflows		13,052

The trade receivables comprise gross contractual amounts due of Baht 15.3 million, of which the entire amount Baht 7.7 million was expected to be uncollectible at the acquisition date.

(viii) Sinterama S.p.A. and its subsidiaries, Italy, Brazil, China and Bulgaria

On 19 November 2019, IVL, through its indirect subsidiary, Indorama Netherlands B.V. ("INBV"), completed the acquisition of 100% stake in the Fibers business of Sinterama S.p.A. and its subsidiaries namely Autofil Holdings Limited, Sinterama Bulgaria EOOD, Autofil Yarns Limited, Autofil Worldwide Limited, Autofil Properties Limited, Autofil Yarns Limited - Branch Bulgaria, Sinterama Asia Limited, Sinterama Yarns Dongguan Co., Ltd, Sinterama Trading Shanghai Co., Ltd, and Sinterama do Brasil Ltda from DeA Capital Alternative Funds SGR S.p.A (51.00% shareholdings), Compagnie de l'Ours SARL (33.75% shareholdings) and other minor shareholders as per definitive Share Purchase Agreement dated 29 July 2019 for a cash consideration of EUR 53.8 million (Baht 1,797.7 million). The transaction is accounted for as a business combination.

Identifiable assets acquired and liabilities assumed

	Note	Fair values as at 19 November 2019 (in thousand Baht)
Cash and cash equivalents		213,676
Inventories		1,124,114
Trade receivables		738,433
Property, plant and equipment	15	1,191,289
Intangible assets	19	2,896
Accounts payable		(747,155)
Short-term loan from financial institutions		(396,461)
Deferred tax liabilities, net	35	(163,873)
Other assets/(liabilities), net		(187,670)
Total identifiable net assets received		1,775,249
Goodwill		22,489
Purchase consideration transferred		1,797,738
Cash acquired		(213,676)
Net cash outflows		1,584,062

The trade receivables comprise gross contractual amounts due of Baht 756.6 million, of which Baht 18.2 million was expected to be uncollectible at the acquisition date.

(ix) Green Fiber International Inc., USA

On 3 December 2019, IVL, through its indirect subsidiary, Indorama Ventures Holdings LP ("IVHLP"), completed the acquisition of 100% stake in the PET business of Green Fiber International Inc., USA from LQ Inc., as per definitive Share Purchase Agreement dated 3 December 2019 for a cash consideration of USD 24.6 million (Baht 746.1 million). The transaction is accounted for as a business combination.

Identifiable assets acquired and liabilities assumed

	Note	Fair values as at 3 December 2019 (in thousand Baht)
Cash and cash equivalents		33,383
Inventories		22,138
Trade receivables		122,446
Property, plant and equipment	15	299,754

	Note	Fair values as at 3 December 2019 (in thousand Baht)
Intangible assets	19	168,599
Accounts payable		(45,748)
Deferred tax liabilities, net	35	(86,193)
Other assets/(liabilities), net		7,554
Total identifiable net assets received		521,933
Goodwill		224,216
Purchase consideration transferred		746,149
Cash acquired		(33,383)
Net cash outflows		712,766

The trade receivables comprise gross contractual amounts due of Baht 122.4 million which the entire amount was expected to be collectible at the acquisition date.

(x) Integrated Oxides and Derivatives business/assets of Huntsman Corporation, USA

On 3 January 2020, IVL, through its indirect subsidiaries, Indorama Ventures Holdings LP (“IVHLP”) and Indorama Netherlands B.V. (“INBV”), completed the acquisition of Integrated Oxides and Derivatives businesses/assets from Huntsman Corporation (“Seller”), USA, a listed entity on New York Stock Exchange and/or the Seller’s subsidiaries, located in: (i) Port Neches, TX, USA (“Port Neches Facility”); (ii) Dayton, TX, USA (“Dayton Facility”); (iii) Alvin (Chocolate Bayou), TX, USA (“Chocolate Bayou Facility”); (iv) Botany, New South Wales, Australia (“Botany Facility”); and (v) Ankleshwar, India (“Ankleshwar Facility”), which manufacture the following key products: Ethylene Oxide (EO), Propylene Oxide (PO), Glycols, Ethanolamines (EOA), Surfactants, Linear Alkylbenzene (LAB), and Methyl Tertiary-butyl Ether (MTBE), including certain R&D Centers, patents and technology, as per Equity and Asset Purchase Agreement on 7 August 2019 for a cash consideration of USD 1,962.0 million (Baht 59,116.1 million). The transaction is accounted for as a business combination. During the period from acquisition date to 31 December 2020, the business contributed revenue of USD 1,114.6 million (Baht 34,883.4 million) and net loss excluding gain on bargain purchase of USD 62.4 million (Baht 1,953.8 million) to the Group’s results.

Identifiable assets acquired and liabilities assumed

	Note	Fair values as at 3 January 2020 (in thousand Baht)
Cash and cash equivalents		5
Inventories		4,191,658
Trade receivables		4,085,811
Property, plant and equipment	15	51,374,792
Right-of-use assets	16	2,421,990
Intangible assets	19	7,583,330
Accounts payable		(2,772,390)
Lease liabilities		(2,381,303)
Deferred tax liabilities, net	35	(555,188)
Other assets/(liabilities), net		(3,026,223)
Total identifiable net assets received		60,922,482
Gain on bargain purchase		(1,806,350)
Purchase consideration transferred		59,116,132
Cash acquired		(5)
Net cash outflows		59,116,127

The trade receivables comprise gross contractual amounts due of Baht 4,110.8 million, of which Baht 25.0 million was expected to be uncollectible at the acquisition date.

(xi) AG Resinas Ltda., Brazil

On 8 June 2020, IVL, through its indirect subsidiary, Indorama Ventures Polimeros S.A. ("IVBRZ"), completed the acquisition of 100% equity stake in the PET recycling facilities business of AG Resinas Ltda. ("AG Resinas"), Brazil, as per definitive share purchase agreement dated 25 March 2020 for a cash consideration of BRL 45.6 million (Baht 291.0 million). The transaction is accounted for as a business combination. During the period from acquisition date to 31 December 2020, the business contributed revenue of BRL 9.1 million (Baht 52.4 million) and net loss of BRL 1.3 million (Baht 7.7 million) to the Group's results. If the acquisition had occurred on 1 January 2020, management estimates that consolidated revenue and consolidated net profit for the year would have increased by Baht 30.2 million and decreased by Baht 50.5 million, respectively. In determining these amounts, management has assumed that the fair value adjustments, determined provisionally, that arose on the date of acquisition would have been the same if the acquisition had occurred on 1 January 2020.

Subsequent to the completion of the acquisition, AG Resinas Ltda. was renamed to Indorama Ventures Soluções Sustentáveis Brasil Ltda.

Identifiable assets acquired and liabilities assumed

	Note	Fair values as at 8 June 2020 (in thousand Baht)
Cash and cash equivalents		17
Inventories		3,048
Trade receivables		4,960
Property, plant and equipment	15	327,980
Intangible assets	19	15,128
Accounts payable		(1,780)
Deferred tax liabilities, net	35	(79,274)
Other assets/(liabilities), net		(54,163)
Total identifiable net assets received		215,916
Goodwill		75,036
Purchase consideration transferred		290,952
Cash acquired		(17)
Net cash outflows		290,935

The trade receivables comprise gross contractual amounts due of Baht 5.0 million which the entire amount was expected to be collectible at the acquisition date.

The fair value of assets acquired and liabilities assumed have been provisionally determined at the acquisition date. Determination of fair value of assets acquired and liabilities assumed and the allocation of the purchase price have not been completed as of the date of approval of these financial statements.

(xii) Industrie Maurizio Peruzzo Polowat spółka z ograniczoną odpowiedzialnością, Poland

On 29 October 2020, IVL, through its indirect subsidiary, Indorama Netherlands B.V. (“INBV”), completed the acquisition of 100% stake in the PET recycling facilities business of Industrie Maurizio Peruzzo Polowat spółka z ograniczoną odpowiedzialnością (“IMP Polowat”), Poland, as per definitive Share Purchase Agreement dated 3 August 2020 for a cash consideration of PLN 58.7 million (Baht 465.3 million). The transaction is accounted for as a business combination. During the period from acquisition date to 31 December 2020, the business contributed revenue of PLN 10.3 million (Baht 83.3 million) and net loss of PLN 0.7 million (Baht 5.8 million) to the Group’s results. If the acquisition had occurred on 1 January 2020, management estimates that consolidated revenue and consolidated net profit for the year would have increased by Baht 445.6 million and Baht 7.0 million, respectively. In determining these amounts, management has assumed that the fair value adjustments, determined provisionally, that arose on the date of acquisition would have been the same if the acquisition had occurred on 1 January 2020.

Subsequent to the completion of the acquisition, Industrie Maurizio Peruzzo Polowat spółka z ograniczoną odpowiedzialnością was renamed to Indorama Ventures Recycling Poland Sp. z o.o.

Identifiable assets acquired and liabilities assumed

	Note	Fair values as at 29 October 2020 (in thousand Baht)
Cash and cash equivalents		67,185
Inventories		63,079
Trade receivables		79,149
Property, plant and equipment	15	240,469
Right-of-use assets	16	53,872
Accounts payable		(30,396)
Lease liabilities		(17,924)
Deferred tax liabilities, net	35	(29,294)
Other assets/(liabilities), net		11,312
Total identifiable net assets received		437,452
Goodwill		27,857
Purchase consideration transferred		465,309
Cash acquired		(67,185)
Net cash outflows		398,124

The trade receivables comprise gross contractual amounts due of Baht 79.1 million which the entire amount was expected to be collectible at the acquisition date.

The fair value of assets acquired and liabilities assumed have been provisionally determined at the acquisition date. Determination of fair value of assets acquired and liabilities assumed and the allocation of the purchase price have not been completed as of the date of approval of these financial statements.

During the years ended 31 December 2020 and 2019, the Group incurred acquisition-related costs of Baht 689.2 million and Baht 160.3 million, respectively, relating to external legal fees, advisory fees and due diligence costs. These amounts have been included in administrative expenses in the Group’s consolidated statements of income for the years ended 31 December 2020 and 2019, respectively.

In accordance with TFRS 3, management is required to make a preliminary assessment of the fair values of businesses acquired as at the acquisition date. During the measurement period, which must not exceed one year from the acquisition date, the acquirer shall retrospectively adjust the provisional amounts recognised at the acquisition date to reflect new information obtained about facts and circumstances that existed as of the acquisition date. Finalisations of the fair values for acquisition of AG Resinas Ltda. and Industrie Maurizio Peruzzo Polowat spółka z ograniczoną odpowiedzialnością are dependent on determination of the ultimate purchase price and completion of the purchase price allocation exercise.

7 Related parties

Relationships with subsidiaries, joint ventures and joint operation are described in notes 11, 12 and 13. Other related parties that the Group/Company had significant transactions with during the year were as follows:

Name of entities	Country of incorporation/ Nationality	Immediate parent company	Subsidiary (% of effective interest)	Indirect subsidiary (% of effective interest)	Indirect joint venture (% of effective interest)	Common Director/Key management personnel	Family relationships
Indorama Resources Limited	Thailand	✓	-	-	-	✓	-
Indorama Ventures Global Services Limited	Thailand	-	99.99	-	-	✓	-
Indorama Polymers Public Company Limited	Thailand	-	99.91	-	-	✓	-
Indorama Holdings Limited	Thailand	-	99.81	-	-	✓	-
Indorama Polyester Industries Public Company Limited	Thailand	-	99.49	-	-	✓	-
Indorama Petrochem Limited	Thailand	-	99.99	-	-	✓	-
TPT Petrochemicals Public Company Limited	Thailand	-	99.97	-	-	✓	-
IVL Belgium N.V.	Belgium	-	99.99	-	-	✓	-
Indo Polymers Mauritius Limited (Dissolution 7 January 2020)	Mauritius	-	100.00	-	-	✓	-
Petform (Thailand) Limited	Thailand	-	-	59.94	-	✓	-
Asia Pet (Thailand) Limited	Thailand	-	-	99.90	-	✓	-
Guangdong IVL PET Polymer Co., Ltd.	China	-	-	99.91	-	✓	-
FiberVisions (China) Textile Products Limited	China	-	-	99.99	-	-	-
Performance Fibers (Kaiping) Company Limited	China	-	-	99.99	-	✓	-
Performance Fibers (Kaiping) No.2 Company Limited	China	-	-	99.99	-	✓	-
Performance Fibers (Kaiping) No.3 Company Limited	China	-	-	99.99	-	✓	-
Performance Fibers (Kaiping) Trading Company Limited	China	-	-	99.99	-	-	-

Name of entities	Country of incorporation/ Nationality	Immediate parent company	Subsidiary (% of effective interest)	Indirect subsidiary (% of effective interest)	Indirect joint venture (% of effective interest)	Common Director/Key management personnel	Family relationships
Glanzstoff Industries (Qingdao) Company Limited	China	-	-	99.99	-	-	-
Sinterama Trading (Shanghai) Co., Ltd.	China	-	-	99.99	-	-	-
Sinterama Yarns (Dongguan) Co., Ltd.	China	-	-	99.99	-	-	-
Hubei Gold Dragon Nonwoven Fabrics Co., Ltd.	China	-	-	65.30	-	-	-
Glanzstoff Holding (Hong Kong) Limited	Hong Kong - China	-	-	99.99	-	-	-
Performance Fibers (Hong Kong) Limited	Hong Kong - China	-	-	99.99	-	✓	-
Sinterama Asia Limited	Hong Kong - China	-	-	99.99	-	-	-
PT. Indorama Ventures Indonesia	Indonesia	-	-	99.99	-	✓	-
PT. Indorama Polyester Industries Indonesia	Indonesia	-	-	99.98	-	✓	-
PT. Indorama Polychem Indonesia	Indonesia	-	-	99.99	-	✓	-
PT. Indorama Polypet Indonesia	Indonesia	-	-	99.99	-	✓	-
PT. Indorama Glycol Indonesia (Dissolution 20 November 2020)	Indonesia	-	-	99.99	-	✓	-
PT. Indorama Petrochemicals KP Equity Partners Inc.	Indonesia Malaysia	-	-	99.99	-	✓	-
Indorama Ventures Packaging (Myanmar) Limited	Myanmar	-	-	99.91	-	-	-

Name of entities	Country of incorporation/ Nationality	Immediate parent company	Subsidiary (% of effective interest)	Indirect subsidiary (% of effective interest)	Indirect joint venture (% of effective interest)	Common Director/Key management personnel	Family relationships
Indorama Ventures Packaging (Philippines) Corporation	Philippines	-	-	99.99	-	-	-
PETVALUE PHILIPPINES CORPORATION	Philippines	-	-	69.99	-	-	-
IVL Singapore Pte. Ltd.	Singapore	-	-	99.91	-	✓	-
Indorama Ventures Oxides	India	-	-	99.98	-	✓	-
Ankleshwar Private Limited (Formerly Indorama Ventures Strategic Projects Private Limited)	India	-	-	99.98	-	✓	-
Indorama Ventures Global Shared Services Private Limited	India	-	-	-	-	-	-
Avgol India Private Limited	India	-	-	65.96	-	-	-
Avgol Nonwovens India Private Limited	India	-	-	65.96	-	-	-
IVL Dhunseri Petrochem Industries Private Limited	India	-	-	50.00	-	✓	-
Indo Rama Synthetics (India) Limited	India	-	-	38.56	-	✓	✓
Indorama Yarns Private Limited	India	-	-	38.56	-	-	-
FiberVisions (China) A/S	Denmark	-	-	99.99	-	-	-
FiberVisions A/S	Denmark	-	-	99.99	-	-	-
Wellman France Recyclage S.A.S.	France	-	-	99.99	-	-	-
Glanzstoff Longlaville S.A.S.	France	-	-	99.99	-	-	-
Glanzstoff Services S.A.S.	France	-	-	99.99	-	-	-
Indorama Ventures Recycling Verdun S.A.S.	France	-	-	99.99	-	-	-

Name of entities	Country of incorporation/ Nationality	Immediate parent company	Subsidiary (% of effective interest)	Indirect subsidiary (% of effective interest)	Indirect joint venture (% of effective interest)	Common Director/Key management personnel	Family relationships
Wellman Neufchateau Recyclage S.A.	France	-	-	99.99	-	✓	-
FiberVisions Vermögensverwaltungsgesellschaft mbH	Germany	-	-	99.99	-	-	-
Indorama Germany GmbH	Germany	-	-	99.99	-	✓	-
Trevira GmbH	Germany	-	-	99.99	-	-	-
PHP Fibers GmbH	Germany	-	-	79.99	-	✓	-
Schoeller Süssen GmbH	Germany	-	-	99.99	-	-	-
UTT	Germany	-	-	79.99	-	-	-
Beteiligungsgesellschaft mbH							
UTT Technische Textilien GmbH & Co. KG	Germany	-	-	79.99	-	-	-
UTT Technische Textilien Geschäftsführung GmbH	Germany	-	-	79.99	-	-	-
Indorama Ventures Polymers Germany GmbH	Germany	-	-	99.99	-	-	-
Wellman International Ltd.	Ireland	-	-	99.99	-	✓	-
Glanzstoff Industries S.R.L.	Italy	-	-	99.99	-	-	-
Società Industriale Cremonese SICREM s.p.a.	Italy	-	-	99.99	-	-	-
Sinterama S.p.A.	Italy	-	-	99.99	-	✓	-
Glanzstoff Industries S.A. (Former name is Glanzstoff Industries A.G.)	Luxembourg	-	-	99.99	-	✓	-
Textilcord Steinfort S.A.	Luxembourg	-	-	99.99	-	-	-
Glanzstoff Management GmbH	Austria	-	-	99.99	-	-	-
Schoeller GmbH & Co KG	Austria	-	-	99.99	-	-	-

Name of entities	Country of incorporation/ Nationality	Immediate parent company	Subsidiary (% of effective interest)	Indirect subsidiary (% of effective interest)	Indirect joint venture (% of effective interest)	Common Director/Key management personnel	Family relationships
Indorama Austria GmbH	Austria	-	-	99.99	-	-	-
AE BG AlphaOmega Holding GmbH	Austria	-	-	99.99	-	-	-
Glanzstoff - Bohemia s.r.o.	Czech Republic	-	-	99.99	-	-	-
KORDÁRNA Plus a.s.	Czech Republic	-	-	99.99	-	✓	-
Kordplast s.r.o.	Czech Republic	-	-	99.99	-	-	-
Schoeller Kresice s.r.o.	Czech Republic	-	-	99.99	-	-	-
UAB Orion Global PET	Lithuania	-	-	99.91	-	✓	-
UAB Indorama Polymers Europe	Lithuania	-	-	99.91	-	✓	-
UAB Indorama Holdings Europe	Lithuania	-	-	99.81	-	✓	-
Indorama Netherlands Co B.V. (Formerly Indorama Netherlands Cooperatief U.A., merged with Indorama Netherlands B.V. and Indorama Netherlands B.V. is a surviving entity)	The Netherlands	-	-	99.99	-	-	-
Indorama Netherlands B.V. (Merged with Indorama Netherlands Co B.V. and Indorama Netherlands B.V. is a surviving entity)	The Netherlands	-	-	99.99	-	-	-
Indorama Ventures Europe B.V.	The Netherlands	-	-	99.99	-	✓	-
Indorama Polymers Rotterdam B.V.	The Netherlands	-	-	99.91	-	✓	-
Indorama Ventures Recycling Netherlands B.V.	The Netherlands	-	-	99.99	-	-	-

Name of entities	Country of incorporation/ Nationality	Immediate parent company	Subsidiary (% of effective interest)	Indirect subsidiary (% of effective interest)	Indirect joint venture (% of effective interest)	Common Director/Key management personnel	Family relationships
MJR Recycling B.V.	The Netherlands	-	-	99.99	-	-	-
Indorama Holdings Rotterdam B.V.	The Netherlands	-	-	99.81	-	✓	-
Indorama Ventures Dutch Investments B.V.	The Netherlands	-	-	51.00	-	-	-
Indorama Ventures Poland Sp. z o.o.	Poland	-	-	99.99	-	✓	-
Indorama Ventures Recycling Poland Sp. z o.o.	Poland	-	-	99.99	-	✓	-
Indorama Ventures Química S.L.U.	Spain	-	-	99.99	-	✓	-
Indorama Ventures Spain S.L.	Spain	-	-	99.99	-	-	-
Indorama Trading AG	Switzerland	-	-	99.81	-	-	-
Indorama Ventures Adana PET Sanayi Anonim Sirketi	Turkey	-	-	99.99	-	✓	-
Indorama Ventures Corlu PET Sanayi Anonim Sirketi	Turkey	-	-	99.99	-	✓	-
Beverage Plastics (Holdings) Limited	United Kingdom	-	-	99.86	-	-	-
Beverage Plastics Limited	United Kingdom	-	-	99.86	-	-	-
Beacon Trading (UK) Limited	United Kingdom	-	-	99.81	-	-	-
Indorama Trading (UK) Ltd.	United Kingdom	-	-	99.81	-	-	-
Indorama Polymers Workington Limited	United Kingdom	-	-	99.91	-	✓	-
Autofil Holdings Limited	United Kingdom	-	-	99.99	-	-	-

Name of entities	Country of incorporation/ Nationality	Immediate parent company	Subsidiary (% of effective interest)	Indirect subsidiary (% of effective interest)	Indirect joint venture (% of effective interest)	Common Director/Key management personnel	Family relationships
Autofil Worldwide Limited	United Kingdom	-	-	99.99	-	-	-
Autofil Yarns Limited	United Kingdom	-	-	99.99	-	-	-
Autofil Properties Limited	United Kingdom	-	-	99.99	-	-	-
Indorama Ventures Portugal PTA - Unipessoal, LDA.	Portugal	-	-	99.99	-	-	-
Indorama Ventures Portugal Utility - Unipessoal, LDA.	Portugal	-	-	99.99	-	-	-
Avgol Cyprus Ltd.	Cyprus	-	-	65.96	-	-	-
"Avgol" Limited Liability Company	Russia	-	-	65.96	-	-	-
Indorama Ventures Holdings LP	USA	-	-	99.99	-	-	-
Indorama Ventures USA Holdings LP	USA	-	-	99.99	-	-	-
Indorama Ventures OGL Holdings LP	USA	-	-	99.99	-	-	-
Indorama Ventures Logistics LLC	USA	-	-	99.99	-	✓	-
Indorama Ventures (Oxide & Glycols) LLC	USA	-	-	99.99	-	✓	-
Performance Fibers Holdings Finance, Inc.	USA	-	-	99.99	-	-	-
Performance Fibers Asia Holdings, LLC	USA	-	-	99.99	-	-	-
Performance Fibers Asia, LLC	USA	-	-	99.99	-	-	-
Indorama Ventures AlphaPet Holdings, Inc.	USA	-	-	99.99	-	✓	-

Name of entities	Country of incorporation/ Nationality	Immediate parent company	Subsidiary (% of effective interest)	Indirect subsidiary (% of effective interest)	Indirect joint venture (% of effective interest)	Common Director/Key management personnel	Family relationships
Indorama Polymers (USA) LLC	USA	-	-	99.99	-	-	-
AlphaPet, Inc.	USA	-	-	99.99	-	✓	-
Indorama Ventures Polyholding LLC	USA	-	-	99.99	-	-	-
Indorama Ventures USA LLC	USA	-	-	99.99	-	-	-
Auriga Polymers Inc.	USA	-	-	99.99	-	✓	-
StarPet Inc.	USA	-	-	99.99	-	✓	-
Indorama Ventures Xylenes & PTA LLC	USA	-	-	99.99	-	✓	-
Indorama Ventures Performance Fibers Holdings USA LLC	USA	-	-	99.99	-	-	-
FiberVisions Corporation	USA	-	-	99.99	-	-	-
FiberVisions Manufacturing Company	USA	-	-	99.99	-	-	-
FiberVisions Products, Inc.	USA	-	-	99.99	-	-	-
FiberVisions L.P.	USA	-	-	99.99	-	-	-
Trevira North America, LLC	USA	-	-	99.99	-	-	-
PHP Fibers Inc.	USA	-	-	79.99	-	✓	-
Safe Tweave Inc.	USA	-	-	79.99	-	-	-
Indorama Ventures Olefins Holding LLC	USA	-	-	99.99	-	-	-
Indorama Ventures Investments USA LLC	USA	-	-	51.00	-	-	-
Indorama Ventures Olefins LLC	USA	-	-	90.40	-	✓	-
Indorama Ventures Exporter Inc.	USA	-	-	99.99	-	✓	-
Winnsboro Fibres LLC	USA	-	-	99.99	-	-	-

Name of entities	Country of incorporation/ Nationality	Immediate parent company	Subsidiary (% of effective interest)	Indirect subsidiary (% of effective interest)	Indirect joint venture (% of effective interest)	Common Director/Key management personnel	Family relationships
Indorama Ventures Corpus Christi Holding LLC	USA	-	-	99.99	-	✓	-
Avgol America Inc.	USA	-	-	65.96	-	-	-
Avgol Distribution Company Inc.	USA	-	-	65.96	-	-	-
Indorama Ventures Sustainable Solutions LLC	USA	-	-	99.99	-	✓	-
Indorama Ventures Oxides LLC	USA	-	-	99.99	-	✓	-
Indorama Ventures Sustainable Solutions Fontana, Inc.	USA	-	-	99.99	-	✓	-
Indorama Ventures Propylene Oxides LLC	USA	-	-	99.99	-	✓	-
Indorama Ventures Oxides International LLC	USA	-	-	99.99	-	✓	-
Indorama Ventures Northern Investments Inc.	Canada	-	-	99.99	-	✓	-
Indorama Ventures Gestion Inc.	Canada	-	-	99.99	-	✓	-
Indorama Ventures PTA Montréal LP	Canada	-	-	99.99	-	-	-
4200144 Canada Inc.	Canada	-	-	99.99	-	-	-
IVL Holding, S. de R.L. de C.V.	Mexico	-	-	99.99	-	✓	-
Grupo Indorama Ventures, S. de R.L. de C.V.	Mexico	-	-	99.99	-	✓	-
Indorama Ventures Polymers Mexico, S. de R.L. de C.V.	Mexico	-	-	99.99	-	-	-

Name of entities	Country of incorporation/ Nationality	Immediate parent company	Subsidiary (% of effective interest)	Indirect subsidiary (% of effective interest)	Indirect joint venture (% of effective interest)	Common Director/Key management personnel	Family relationships
Indorama Ventures Polycom, S. de R.L. de C.V.	Mexico	-	-	99.99	-	✓	-
Indorama Ventures Servicios Corporativos, S. de R.L. de C.V.	Mexico	-	-	99.99	-	✓	-
Performance Fibers Operations Mexico, S. de R.L. de C.V.	Mexico	-	-	99.99	-	✓	-
Performance Fibers Services, S. de R.L. de C.V.	Mexico	-	-	99.99	-	✓	-
Glanzstoff Industries Mexico, S. de R.L. de C.V.	Mexico	-	-	99.99	-	-	-
UTT de México Technical Textiles, S.A. de C.V.	Mexico	-	-	79.99	-	-	-
Indorama Ventures Polimeros S.A.	Brazil	-	-	99.99	-	✓	-
Tereftálicos Indústrias Químicas Ltda.	Brazil	-	-	51.00	-	-	-
Indorama Ventures Fibras Brasil Ltda.	Brazil	-	-	99.99	-	-	-
Indorama Ventures Soluções Sustentáveis Brasil Ltda.	Brazil	-	-	99.99	-	-	-
Sinterama do Brasil Ltda.	Brazil	-	-	99.99	-	-	-
Sinterama Bulgaria EOOD	Republic of Bulgaria	-	-	99.99	-	-	-
Indorama PET (Nigeria) Limited	Nigeria	-	-	89.92	-	✓	-
Indorama Ventures Packaging (Nigeria) Limited	Nigeria	-	-	99.99	-	-	-
Bevpak (Nigeria) Limited	Nigeria	-	-	99.99	-	-	-

Name of entities	Country of incorporation/ Nationality	Immediate parent company	Subsidiary (% of effective interest)	Indirect subsidiary (% of effective interest)	Indirect joint venture (% of effective interest)	Common Director/Key management personnel	Family relationships
Indorama Ventures Packaging (Ghana) Limited	Republic of Ghana	-	-	99.99	-	-	-
IVL Dhunseri Polyester Company S.A.E.	Egypt	-	-	49.99	-	✓	-
Medco Plast Co. for Packing & Packaging systems (S.A.E.)	Egypt	-	-	73.99	-	✓	-
Avgol Industries 1953 Ltd.	Israel	-	-	65.96	-	✓	-
Avgol Ltd.	Israel	-	-	65.96	-	-	-
Indorama Ventures Holdings Pty Ltd.	Australia	-	-	99.99	-	-	-
Indorama Ventures Oxides Australia Pty Limited	Australia	-	-	99.99	-	✓	-
ES FiberVisions (Thailand) Co., Ltd.	Thailand	-	-	-	50.00	-	-
Toyobo Indorama Advanced Fibers Company Limited	Thailand	-	-	-	49.75	-	-
ES FiberVisions (Suzhou) Co., Ltd.	China	-	-	-	50.00	-	-
ES FiberVisions Shanghai Co., Ltd.	China	-	-	-	50.00	-	-
Shenna-PHP (Pingdingshan) Air Bag Yarn Manufacturing Co., Ltd.	China	-	-	-	39.20	-	-
PHP-Shenna Air Bag Yarn Marketing (Shanghai) Co., Ltd.	China	-	-	-	40.80	-	-
ES FiberVisions Hong Kong Limited	Hong Kong - China	-	-	-	50.00	-	-

Name of entities	Country of incorporation/ Nationality	Immediate parent company	Subsidiary (% of effective interest)	Indirect subsidiary (% of effective interest)	Indirect joint venture (% of effective interest)	Common Director/Key management personnel	Family relationships
ES FiberVisions Company Limited	Japan	-	-	-	50.00	-	-
ES FiberVisions Holdings ApS	Denmark	-	-	-	50.00	-	-
ES FiberVisions ApS	Denmark	-	-	-	50.00	-	-
TTI GmbH	Germany	-	-	-	40.00	-	-
ES FiberVisions LP	USA	-	-	-	50.00	-	-
ES FiberVisions, Inc.	USA	-	-	-	50.00	-	-
Huvis Indorama Advanced Materials, LLC	USA	-	-	-	50.00	-	-
Indorama Loop Technologies, LLC	USA	-	-	-	50.00	✓	-
Indorama Ventures EcoMex, S. de R.L. de C.V.	Mexico	-	-	-	51.00	✓	-
Indorama Ventures EcoMex, Services, S. de R.L. de C.V.	Mexico	-	-	-	51.00	✓	-
Pacific Resources Limited	Thailand	-	-	-	-	✓	✓
Cryoviva (Thailand) Limited	Thailand	-	-	-	-	-	✓
Thai Plaspac Public Company Limited	Thailand	-	-	-	-	✓	✓
Lohia Global Holdings Limited	Hong Kong - China	-	-	-	-	✓	✓
Indorama Commerce DMCC	United Arab Emirates	-	-	-	-	✓	-
Vega Aviation Limited	British Virgin Islands	-	-	-	-	✓	✓

Name of entities	Country of incorporation/ Nationality	Nature of relationships
PT. Indo-Rama Synthetics Tbk.	Indonesia	24.00% shareholder of indirect joint venture, and related parties as commissioners
PT. Irama Unggul	Indonesia	Family relationships with commissioner
PT. TIGADAYA MINERGY	Indonesia	Subsidiary of 50.00% shareholder of indirect joint venture, and related parties as commissioners
Yayasan Pendidikan Indorama	Indonesia	Family relationships with trustee and advisory board
Indorama Eleme Petrochemicals Limited	Nigeria	10.00% shareholder of indirect subsidiary, some common directors
Indorama Industries Limited	India	Family relationships with board of directors
IVL Foundation	Thailand	Common Director/Family relationships with board of directors
Corpus Christi Polymers LLC	USA	33.33% shareholder of indirect joint operation
Key management personnel	Thailand, India, Indonesia and USA	Persons having authority and responsibility for planning, directing and controlling the activities of the entity, directly or indirectly, including any director (whether executive or otherwise) of the Group/Company

On 28 April 2020, Indorama Ventures Recycling Verdun S.A.S., a new indirect subsidiary, was incorporated in France, with the registered share capital of EUR 0.01 million (Baht 0.35 million).

On 9 June 2020, PETVALUE PHILIPPINES CORPORATION, a new indirect subsidiary, was incorporated in Philippines, with the registered share capital of PHP 2,500 million (Baht 1,553 million).

On 9 November 2020, Avgol Nonwovens India Private Limited, a new indirect subsidiary, was incorporated in India, with the registered share capital of INR 10 million (Baht 4.09 million).

On 13 November 2020, Toyobo Indorama Advanced Fibers Company Limited, a new indirect joint venture, was incorporated in Thailand, with the registered share capital of Baht 786.01 million.

On 11 December 2019, Indorama Ventures Global Shared Services Private Limited, a new indirect subsidiary, was incorporated in India, with the registered share capital of INR 100,000 (Baht 46,180).

The pricing policies for transactions with related parties are explained further below:

Transactions	Pricing policies
Sales of goods	Market prices
Purchases of goods and raw materials	Market prices
Dividend income	As declared
Finance income	Market linked rate/contractually agreed
Other income	Contractually agreed
Finance costs	Market linked rate/contractually agreed
Distribution costs and administrative expenses	Contractually agreed
Other raw materials conversion charges and overheads	Contractually agreed
Rental income	Market price/ Contractual price
Rental expense	Market price/ Contractual price

Significant transactions for the years ended 31 December with related parties were as follows:

	Consolidated financial statements		Separate financial statements	
<i>Year ended 31 December</i>	2020	2019	2020	2019
	<i>(in thousand Baht)</i>			
Subsidiaries				
Finance income	-	-	2,974,460	3,309,609
Other income	-	-	626,182	362,209
Dividend income	-	-	6,372,694	10,109,191
Joint ventures				
Revenue from sales of goods	4,911,892	5,015,389	-	-
Purchases of goods and raw materials	292,098	268,571	-	-
Other raw materials conversion charges and overheads	317	304	-	-
Finance income	6,801	8,541	-	-
Other income	2,424	200,754	-	-
Rental income	48,148	41,719	-	-
Joint operation				
Other income	6,949	13,223	-	-
Key management personnel compensation				
Directors' fee and bonus	24,500	32,267	23,220	30,520
Short-term employee benefits	291,487	270,691	-	-
Long-term employee benefits	5,332	4,130	-	-
Other related parties				
Revenue from sales of goods	2,607,339	2,938,632	-	-
Purchases of goods and raw materials	419,742	1,323,290	-	-
Other raw materials conversion charges and overheads	79,899	321,472	-	-
Distribution costs and administrative expenses	240,306	253,658	17,465	16,166
Other income	6,148	7,981	-	-
Rental expense	8,313	14,707	-	-

Balances as at 31 December with related parties were as follows:

Trade accounts receivable	Consolidated financial statements		Separate financial statements	
	2020	2019	2020	2019
	<i>(in thousand Baht)</i>			
Joint ventures	530,117	584,644	-	-
Other related parties	237,369	267,673	-	-
	767,486	852,317	-	-
Less allowance for expected credit loss (2019: allowance for doubtful accounts)	(1,655)	-	-	-
Net	765,831	852,317	-	-
Reversal of expected credit losses (2019: Bad and doubtful debts expense) for the year	174	-	-	-

Other receivables	Consolidated financial statements		Separate financial statements	
	2020	2019	2020	2019
	<i>(in thousand Baht)</i>			
Subsidiaries	-	-	643,880	366,932
Joint ventures	235,551	136,867	-	-
Other related parties	73,639	74,909	-	-
Joint operation	18,623	-	-	-
	327,813	211,776	643,880	366,932
Less allowance for expected credit loss (2019: allowance for doubtful accounts)	-	-	-	-
Net	327,813	211,776	643,880	366,932
Expected credit losses (2019: Bad and doubtful debts expense) for the year	-	-	-	-

Other non-current assets	Consolidated financial statements		Separate financial statements	
	2020	2019	2020	2019
	<i>(in thousand Baht)</i>			
Joint ventures	331,434	388,415	-	-
	331,434	388,415	-	-
Less allowance for expected credit loss (2019: allowance for doubtful accounts)	-	-	-	-
Net	331,434	388,415	-	-
Expected credit losses (2019: Bad and doubtful debts expense) for the year	-	-	-	-

Short-term loans to	Interest rate	Consolidated financial statements				
	At 31 December (% per annum)	At 1 January	Increase	Decrease (in thousand Baht)	Reclassification	At 31 December
2020						
Joint ventures	1.99-8.60	170,994	377,811	(277,207)	(149,301)	122,297
Less allowance for expected credit loss (2019: allowance for doubtful accounts)		(1,023)	(1,664)	1,233	601	(853)
Net		169,971				121,444
2019						
Joint ventures	1.32-9.63	168,639	134,577	(79,872)	(52,350)	170,994
Less allowance for doubtful accounts		-	-	-	-	-
Net		168,639				170,994

Short-term loans to	Interest rate	Separate financial statements				
	At 31 December (% per annum)	At 1 January	Increase	Decrease (in thousand Baht)	Reclassification	At 31 December
2020						
Subsidiaries	1.98-3.66	15,292,538	13,048,200	(22,079,648)	-	6,261,090
Less allowance for expected credit loss (2019: allowance for doubtful accounts)		-	-	-	-	-
Net		15,292,538				6,261,090
2019						
Subsidiaries	3.20-4.81	56,131,818	53,989,944	(65,558,799)	(29,270,425)	15,292,538
Less allowance for doubtful accounts		-	-	-	-	-
Net		56,131,818				15,292,538

Long-term loans to	Interest rate	Consolidated financial statements				
	At 31 December (% per annum)	At 1 January	Increase	Decrease (in thousand Baht)	Reclassification	At 31 December
2020						
Joint ventures	2.00-6.35	28,269	7,166	(17,654)	149,301	167,082
Less allowance for expected credit loss (2019: allowance for doubtful accounts)		-	(908)	315	(601)	(1,194)
Net		28,269				165,888

<i>Long-term loans to</i>	Interest rate	Consolidated financial statements				
	At 31 December (% per annum)	At 1 January	Increase	Decrease (in thousand Baht)	Reclassification	At 31 December
2019						
Joint ventures	5.76-6.35	42,590	-	(14,321)	-	28,269
Less allowance for doubtful accounts		-	-	-	-	-
Net		42,590				28,269

<i>Long-term loans to</i>	Interest rate	Separate financial statements				
	At 31 December (% per annum)	At 1 January	Increase	Decrease (in thousand Baht)	Reclassification	At 31 December
2020						
Subsidiaries	2.10-4.77	71,511,640	19,991,200	(1,686,000)	-	89,816,840
Less allowance for expected credit loss (2019: allowance for doubtful accounts)		-	-	-	-	-
Net		71,511,640				89,816,840

2019						
Subsidiaries	2.81-4.77	31,588,856	12,555,710	(1,903,351)	29,270,425	71,511,640
Less allowance for doubtful accounts		-	-	-	-	-
Net		31,588,856				71,511,640

	Consolidated financial statements	Separate financial statements	
	2020	2019	2020
			2019
		(in thousand Baht)	

Expected credit losses (2019: Bad and doubtful debts expense) of short-term and long-term loans to for the year

1,071	-	-	-
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<i>Interest receivable</i>	Consolidated financial statements	Separate financial statements	
	2020	2019	2020
			2019
		(in thousand Baht)	
Subsidiaries	-	-	635,872
Joint ventures	5,241	3,314	-
Total	5,241	3,314	635,872

During 2020, IVL Holding S. de R.L. de C.V., an indirect subsidiary of the Company, has amended the loan agreements with Indorama Ventures EcoMex S. de R.L. de C.V. to change the repayment term resulting in the reclassification of short-term loans to related parties of Baht 149.3 million, to long-term loans to related parties.

During 2019, the Company has amended the loan agreements with Indorama Netherlands Cooperatief U.A. to change the repayment term resulting in the reclassification of long-term loans to related parties of Baht 9,378 million, to be presented under short-term loans to related parties.

During 2019, the Company has amended the loan agreement with Indorama Holdings Limited to change the repayment term resulting in the reclassification of long-term loans to related parties of Baht 50 million, to be presented under short-term loans to related parties.

During 2019, the Company has amended the loan agreement with Indorama Ventures Global Services Limited to change the repayment term resulting in the reclassification of short-term loans to related parties of Baht 38,698 million, to be presented under long-term loans to related parties.

During 2020 and 2019, the Company has amended the loan agreements with certain subsidiaries to change the interest rate of the short-term loans and long-term loans to subsidiaries.

<i>Advance for share subscription</i>	Consolidated financial statements		Separate financial statements	
	2020	2019	2020	2019
	<i>(in thousand Baht)</i>			
Subsidiary	-	-	-	8,168

<i>Trade accounts payable</i>	Consolidated financial statements		Separate financial statements	
	2020	2019	2020	2019
	<i>(in thousand Baht)</i>			
Joint ventures	12,551	4,195	-	-
Other related parties	45,846	50,935	-	-
Total	58,397	55,130	-	-

<i>Other current liabilities</i>	Consolidated financial statements		Separate financial statements	
	2020	2019	2020	2019
	<i>(in thousand Baht)</i>			
Subsidiary	-	-	59,025	-
Joint ventures	1,704	-	-	-
Other related parties	91,047	49,752	3,610	3,331
Total	92,751	49,752	62,635	3,331

	Consolidated financial statements		Separate financial statements	
	2020	2019	2020	2019
	<i>(in thousand Baht)</i>			
Reversal of expected credit losses of undrawn loan commitment given to related parties included in other current liabilities for the year	224	-	-	-

Significant agreements with related parties

Guarantee Agreements

The Company entered into Guarantee Agreements with its related parties to provide the corporate guarantee to the third parties for the term loan of agreed amount. Under the term of the agreements, those related parties agree to pay guarantee fees as stipulated in the agreements. The agreements expire when the loan has been fully paid by those related parties to third parties.

Lease Agreement

On 31 January 2019, Auriga Polymers Inc. (“Auriga”), an indirect subsidiary of the Company, entered into the Equipment Lease Agreement with its joint venture, Huvis Indorama Advanced Materials, LLC (“Huvis”) whereby Auriga rent to Huvis the equipment on the terms and conditions stipulated in the agreement on a non-cancellable period of 15 years. The Group treats aforesaid lease as a lease (2019: *finance lease*).

8 Cash and cash equivalents

	Consolidated financial statements		Separate financial statements	
	2020	2019	2020	2019
	<i>(in thousand Baht)</i>			
Cash on hand	39,729	17,892	-	-
Cash at banks - current accounts	9,659,891	5,579,919	2,465	1,658
Cash at banks - savings accounts	7,339,371	703,551	996,576	2,397
Highly liquid short-term investments	1,909,533	4,145,349	-	-
Total	18,948,524	10,446,711	999,041	4,055

9 Inventories

	Consolidated financial statements		Separate financial statements	
	2020	2019	2020	2019
	<i>(in thousand Baht)</i>			
Finished goods	24,721,821	31,122,937	-	-
Work in progress	2,369,208	2,700,945	-	-
Raw materials	15,780,598	17,990,611	-	-
Trading materials	85,421	75,977	-	-
Spare parts and supplies	8,806,431	8,168,116	-	-
Goods in transit	3,187,639	3,459,565	-	-
	54,951,118	63,518,151	-	-
<i>Less allowance for decline in value</i>	<i>(1,012,631)</i>	<i>(1,353,237)</i>	<i>-</i>	<i>-</i>
Net	53,938,487	62,164,914	-	-
Inventories recognised in ‘cost of sales of goods’:				
- Cost	287,684,195	308,947,952	-	-
- Write-down to net realisable value	534,954	883,616	-	-
- Reversal of write-down	(416,277)	(487,057)	-	-
Net	287,802,872	309,344,511	-	-

10 Other current assets

	Consolidated financial statements		Separate financial statements	
	2020	2019	2020	2019
	<i>(in thousand Baht)</i>			
Value added tax receivable	3,195,608	4,273,762	17,988	-
Advance tax payments and withholding tax	2,980,918	2,115,039	49,208	35,523
Prepaid expenses	1,326,332	1,249,213	-	825
Advance payments	1,258,549	1,092,958	11,091	11,884
Material price adjustment receivable	290,249	319,272	-	-
Export incentive receivable	252,297	185,278	-	-
Insurance claims receivable	173,112	19,959	-	-
Others	432,061	443,329	-	-
Total	9,909,126	9,698,810	78,287	48,232

11 Investments in subsidiaries

Type of business		Ownership interest		Separate financial statements										Dividend income for the year	
				Paid-up capital		Cost		Impairment		At cost-net					
												2020			
(in thousand Baht)															
Subsidiaries															
Indorama Petrochem Limited	Manufacture of PTA and PET	99.99	99.99	10,146,167	10,146,167	7,944,151	7,944,151	-	-	7,944,151	7,944,151	-	-		
Indorama Holdings Limited	Manufacture of worsted wool yarns	99.81	99.81	774,468	774,468	2,001,419	2,001,419	-	-	2,001,419	2,001,419	739,017	1,980,504		
Indorama Polymers Public Company Limited	Manufacturing of SSP Chips and PET	72.60	72.60	1,382,198	1,382,198	7,219,741	7,219,741	-	-	7,219,741	7,219,741	943,327	1,726,087		
Indorama Polyester Industries Public Company Limited	Manufacture of polyester fibers and yarns and PET	64.94	64.94	2,202,850	2,202,850	1,473,995	1,473,995	-	-	1,473,995	1,473,995	329,047	844,076		
TPT Petrochemicals Public Company Limited	Manufacture of PTA	99.97	99.97	2,955,000	2,955,000	5,182,189	5,182,189	-	-	5,182,189	5,182,189	-	-		
IVL Belgium N.V.	Holding company	99.99	99.99	129,800	129,800	121,630	121,630	(121,630)	(121,630)	8,170	-	-	-		
Indo Polymers Mauritius Limited	Holding company	-	100.00	-	2,218	-	-	-	-	-	-	-	-		
Indorama Ventures Global Services Limited	International business center	99.99	99.99	42,757,917	42,757,917	42,757,874	42,757,874	-	-	42,757,874	42,757,874	4,361,303	5,558,524		
Total				66,709,169	66,700,999	(121,630)	(121,630)	66,587,539	66,579,369	6,372,694	10,109,191				

None of the Group's subsidiaries are publicly listed and consequently do not have published price quotations.

During 2020, IVL Belgium N.V. ("IVLB") increased its share capital from EUR 3.1 million (Baht 121.6 million) to EUR 3.2 million (Baht 129.8 million) for which the Company entirely subscribed to the portion of its shareholdings.

Indo Polymers Mauritius Limited returned its capital of USD 32,029 and EUR 4,158 (Baht 1.1 million) to the Company in 2019 and was dissolved on 7 January 2020.

12 Investments in joint ventures

Consolidated financial statements																
Type of business	Effective ownership interest		Paid-up capital		Cost method		Equity method		Impairment		Effect of movements in exchange rate		Carrying value at equity method		Share of profit (losses) of joint ventures for the year	
	2020	2019	2020	2019	2020	2019	2020	2019	2020	2019	2020	2019	2020	2019	2020	2019
(in thousand Baht)																
Joint ventures																
ES Fiber Visions																
Marketing and sales of fiber	50.00	50.00	613,653	613,653	699,178	699,178	1,119,395	1,131,128	-	-	22,342	(83,565)	1,141,737	1,047,563	71,832	75,946
ES Fiber Visions (Suzhou) Co., Ltd.																
Manufacture and sale of bicomponent fibers	50.00	50.00	786,545	786,545	392,992	392,992	412,605	411,277	-	-	24,739	(35,050)	437,344	376,227	36,378	(6,167)
Sherma-PHP (Pingdingshan) Air Bag Yarn Manufacturing Co., Ltd.																
Manufacture and sale of air bag yarns	39.20	39.20	796,144	796,144	191,864	191,864	205,954	210,214	-	-	10,616	(16,113)	216,570	194,101	11,853	8,388
PHP-Sherma Air Bag Yarn Marketing (Shanghai) Co., Ltd.																
Marketing and sale of air bag yarns	40.80	40.80	9,038	9,038	152,611	152,611	182,319	194,585	-	-	14,379	(14,975)	196,698	179,610	2,709	12,073
TTI GmbH																
Research and development service	40.00	40.00	1,119	1,119	12,852	12,852	2,763	5,416	-	-	390	(421)	3,153	4,995	(2,232)	1,110
ES Fiber Visions (Thailand) Co., Ltd.																
Manufacture of polyester fibers and yarns	50.00	50.00	410,000	410,000	205,000	205,000	281,616	198,618	-	-	-	-	281,616	198,618	82,998	(17,062)
Indorama Ventures EcoMex, S. de R.L. de C.V.																
Manufacture of PET recycled flake	51.00	51.00	644,100	634,864	341,069	341,069	135,884	215,678	-	-	1,946	(11,617)	137,830	204,061	(68,177)	(41,730)
Indorama Ventures EcoMex Services, S. de R.L. de C.V.																
Administrative services	51.00	51.00	7	7	3	3	2,493	2,201	-	-	(24)	(105)	2,469	2,096	397	1,198

Consolidated financial statements																
Type of business	Effective ownership interest		Paid-up capital		Cost method		Equity method		Impairment		Effect of movements in exchange rate		Carrying value at equity method		Share of profit (losses) of joint ventures for the year	
	2020	2019	2020	2019	2020	2019	2020	2019	2020	2019	2020	2019	2020	2019	2020	2019
(in thousand Baht)																
Joint ventures																
Hivis Indorama Advanced	50.00	50.00	922,690	607,964	436,609	303,981	399,022	268,011	-	-	(4,784)	(8,750)	394,238	259,261	7,133	(28,436)
Maternals, LLC																
Indorama Loop Technologies, LLC	50.00	50.00	96,066	53,593	48,033	26,795	46,867	26,795	-	-	(1,812)	(1,166)	45,055	25,629	-	-
Toyobo Indorama Advanced Fibers Company Limited	50.00	-	196,515	-	98,258	-	98,179	-	-	-	-	-	98,179	-	(79)	-
Tenacity Nylon Filament Yarn for air bag and related service																
Total					2,578,469	2,326,345	2,887,097	2,663,923	-	-	67,792	(171,762)	2,954,889	2,492,161	142,812	5,320

ES FiberVisions group consists of ES FiberVisions LP, ES FiberVisions, Inc., ES FiberVisions Holdings ApS, ES FiberVisions ApS, ES FiberVisions Hong Kong Limited, ES FiberVisions Shanghai Co., Ltd. and ES FiberVisions Company Limited.

During 2020, Huvis Indorama Advanced Materials, LLC (“HIAM”) increased its share capital from USD 19.4 million (Baht 608.0 million) to USD 29.6 million (Baht 922.7 million) for which the Group entirely subscribed to the portion of its shareholdings.

During 2020, Indorama Ventures EcoMex, S. de R.L. de C.V. increased its share capital from USD 19.9 million (Baht 634.9 million) to USD 20.2 million (Baht 644.1 million). The Group did not subscribe to the portion of its shareholdings.

During 2020, Indorama Loop Technologies, LLC (“ILT”) increased its share capital from USD 1.7 million (Baht 53.6 million) to USD 3.0 million (Baht 96.1 million) for which the Group entirely subscribed to the portion of its shareholdings.

During 2020, Toyobo Indorama Advanced Fibers Company Limited paid-up its share capital of Baht 196.5 million for which the Group entirely subscribed to the portion of its shareholdings.

During 2019, Huvis Indorama Advanced Materials, LLC (“HIAM”) increased its share capital from USD 6.4 million (Baht 210.7 million) to USD 19.4 million (Baht 608.0 million) for which the Group entirely subscribed to the portion of its shareholdings.

During 2019, Indorama Ventures EcoMex, S. de R.L. de C.V. increased its share capital from USD 14.1 million (Baht 459.3 million) to USD 19.9 million (Baht 634.9 million) for which the Group entirely subscribed to the portion of its shareholdings.

During 2019, Indorama Loop Technologies, LLC (“ILT”) paid-up its share capital of USD 1.7 million (Baht 53.6 million) for which the Group entirely subscribed to the portion of its shareholdings.

During 2020 and 2019, there was no disposal of investments in joint ventures.

None of the Group’s joint ventures are publicly listed and consequently do not have published price quotations.

The following table summarises the financial information of the significant joint ventures as included in their own financial statements, adjusted for fair value adjustments at acquisition date and differences in accounting policies. The table also reconciles the summarised financial information to the carrying amount of the Group’s interest in these entities.

	ES FiberVisions (Suzhou) Co., Ltd.	
	ES FiberVisions	
	2020	
	<i>(in thousand Baht)</i>	
Revenue	988,779	9,123,384
Profit from operations (a)	72,756	143,665
Other comprehensive income	-	-
Total comprehensive income (100%)	72,756	143,665
Group's share of total comprehensive income	36,378	71,832
Current assets (b)	485,727	2,352,529
Non-current assets	1,132,400	1,148,556
Current liabilities (c)	212,325	1,198,444
Non-current liabilities (d)	536,224	15,523
Net assets (100%)	869,578	2,287,118
Carrying amount of interest in joint ventures	437,344	1,141,737
Remark:		
a. Includes:		
- depreciation and amortisation	49,193	-
- interest expense	57,768	1,767
- tax expense	7,752	19,614
b. Includes cash and cash equivalents	150,779	462,954
c. Includes current financial liabilities (excluding trade and other payables)	-	-
d. Includes non-current financial liabilities (excluding trade and other payables)	536,224	-

	ES FiberVisions (Suzhou) Co., Ltd.	
	ES FiberVisions	
	2019	
	<i>(in thousand Baht)</i>	
Revenue	656,830	8,924,867
Profit from operations (a)	(12,333)	151,892
Other comprehensive income	-	-
Total comprehensive income (100%)	(12,333)	151,892
Group's share of total comprehensive income	(6,167)	75,946
Current assets (b)	453,327	2,201,547
Non-current assets	1,105,535	1,153,567
Current liabilities (c)	218,187	1,224,135
Non-current liabilities (d)	594,021	14,660
Net assets (100%)	746,654	2,116,319
Carrying amount of interest in joint ventures	376,227	1,047,563

	ES FiberVisions (Suzhou) Co., Ltd.	
	ES FiberVisions 2019 (in thousand Baht)	
Remark:		
a. Includes:		
- depreciation and amortisation	32,705	-
- interest expense	29,911	1,497
- tax (income) expense	(2,168)	24,100
b. Includes cash and cash equivalents	88,554	569,328
c. Includes current financial liabilities (excluding trade and other payables)	30,480	-
d. Includes non-current financial liabilities (excluding trade and other payables)	594,021	-

Immaterial joint ventures

The following table is summarised financial information for the Group's interest in immaterial joint ventures based on the amounts reported in the Group's consolidated financial statements:

	Immaterial joint ventures	
	2020	2019
	(in thousand Baht)	
Carrying amount of interests in immaterial joint ventures	1,375,808	1,068,371
Group's share of:		
- Profit (loss) from operations, net	34,602	(64,459)
- Other comprehensive income, net	-	76
- Total comprehensive income (expense)	<u>34,602</u>	<u>(64,383)</u>

13 Investment in joint operation

IVL, through its indirect subsidiary, Indorama Ventures Holdings LP, formed an equal joint operation, namely Corpus Christi Polymers LLC ("CC Polymers"), with Alpek, S.A.B. de C.V. ("Alpek"), and Far Eastern Investment (Holding) Ltd. ("Far Eastern") and has entered into an asset purchase agreement with M&G USA Corp. and its affiliated debtors ("M&G") on 28 March 2018 to acquire the integrated PTA-PET plant currently under construction in Corpus Christi, Texas (the "Corpus Christi Project"), along with certain M&G intellectual property, and utility assets. The acquisition has been completed on 28 December 2018. The consideration for investment in CC Polymers by IVL amounted to USD 382.5 million (Baht 12,043.8 million) out of which USD 20.0 million (Baht 600.7 million) and USD 20.0 million (Baht 603.1 million) are payable as of 31 December 2020 and 2019, respectively.

Although CC Polymers is legally separated from IVL, Alpek and Far Eastern (together referred as "the Members"), the Group has classified it as a joint operation. This is on the basis that the Members will each receive one-third of the capacity of PTA and PET produced. Each of the Members will procure raw materials independently, while also independently selling and distributing their corresponding PTA and PET. The funding to settle the liabilities is provided by the Members.

On 19 March 2020, the Board of Managers of Corpus Christi Polymers LLC ("CCP"), comprising of representatives of all the three Members, have decided to extend the approval of projected capital expenditure, through 2020 to optimise project construction efficiency in order to build a competitive PTA-PET asset at the site. The Board of Managers are expected to arrange a meeting in the mid of 2021 to consider the resolution of the extension of approval of projected capital expenditure.

14 Non-controlling interests

The following table summaries the information relating to each of the Group's subsidiaries that has a material non-controlling interest, before any intra-group eliminations:

	31 December 2020					
	PHP Fibers GmbH and its subsidiaries	Petform (Thailand) Limited	Indo Rama Synthetics (India) Limited	Avgol Industries 1953 Ltd.	IVL Dhunseri Petrochem Industries Private Limited	Total
	<i>(in thousand Baht)</i>					
Non-controlling interest percentage	20.00	40.00	61.44	34.05	50.00	
Current assets	3,578,708	612,248	2,096,169	4,904,127	2,115,444	
Non-current assets	11,430,961	1,737,695	5,175,110	13,654,799	7,176,168	
Current liabilities	4,461,828	170,021	3,602,485	3,113,165	3,143,786	
Non-current liabilities	5,401,613	95,462	1,687,554	6,641,359	1,020,292	
Net assets	5,146,228	2,084,460	1,981,240	8,804,402	5,127,534	
Carrying amount of non-controlling interest	496,910	833,836	1,101,961	2,615,336	2,388,421	7,436,464
Other individually immaterial non-controlling interest of the Group's subsidiaries						1,516,326
Total						8,952,790
Revenue	8,985,788	2,891,887	7,006,829	11,985,904	14,658,327	
Profit (loss)	(592,152)	433,320	(577,513)	808,493	708,346	
Other comprehensive income (expense)	(83,094)	(7,221)	(15,517)	(42,872)	(29,863)	
Total comprehensive income (expense)	(675,246)	426,099	(593,030)	765,621	678,483	
Profit (loss) allocated to non-controlling interest	(118,430)	173,328	(354,824)	278,846	354,173	333,093
Other individually immaterial non-controlling interest of the Group's subsidiaries						52,693
Total						385,786
Other comprehensive income (expense) allocated to non-controlling interest	77,237	(1,038)	(75,644)	(96,115)	(135,806)	(231,366)
Other individually immaterial non-controlling interest of the Group's subsidiaries						32,904
Total						(198,462)

31 December 2020					
	PHP Fibers GmbH and its subsidiaries	Petform (Thailand) Limited	Indo Rama Synthetics (India) Limited	Avgol Industries 1953 Ltd.	IVL Dhunseri Petrochem Industries Private Limited
	(in thousand Baht)				
Cash flows from operating activities	964,189	567,261	550,411	2,745,361	2,474,954
Cash flows used in investing activities	(521,322)	(214,095)	(149,800)	(187,942)	(94,094)
Cash flows used in financing activities (Dividends to non-controlling interest: Baht 186.0 million)	(331,268)	(197,314)	(424,587)	(1,275,616)	(2,601,572)
Net increase (decrease) in cash and cash equivalents	111,599	155,852	(23,976)	1,281,803	(220,712)

31 December 2019						
	PHP Fibers GmbH and its subsidiaries	Petform (Thailand) Limited	Indo Rama Synthetics (India) Limited	Avgol Industries 1953 Ltd.	IVL Dhunseri Petrochem Industries Private Limited	Total
	(in thousand Baht)					
Non-controlling interest percentage	20.00	40.00	61.44	34.05	50.00	
Current assets	3,760,441	513,435	2,471,570	4,632,107	5,698,883	
Non-current assets	11,027,771	1,684,099	5,544,343	14,870,963	6,247,350	
Current liabilities	2,735,266	453,407	3,435,562	3,244,088	4,916,163	
Non-current liabilities	6,351,420	30,258	1,952,616	8,028,329	2,123,755	
Net assets	5,701,526	1,713,869	2,627,735	8,230,653	4,906,315	
Carrying amount of non-controlling interest	538,103	685,547	1,532,429	2,433,057	2,320,686	7,509,822
Other individually immaterial non-controlling interest of the Group's subsidiaries						945,544
Total						8,455,366
Revenue	10,735,675	3,478,721	6,974,357	12,848,863	19,822,324	
Profit (loss)	735,139	482,580	(1,162,832)	121,192	182,162	
Other comprehensive income (expense)	(78,572)	(4,626)	(2,172)	13,380	(39,343)	
Total comprehensive income (expense)	656,567	477,954	(1,165,004)	134,572	142,819	

	31 December 2019					
	PHP Fibers GmbH and its subsidiaries	Petform (Thailand) Limited	Indo Rama Synthetics (India) Limited	Avgol Industries 1953 Ltd.	IVL Dhunseri Petrochem Industries Private Limited	Total
<i>(in thousand Baht)</i>						
Profit (loss) allocated to non-controlling interest	45,603	193,032	(714,444)	41,672	91,081	(343,056)
Other individually immaterial non-controlling interest of the Group's subsidiaries						<u>(545,369)</u>
Total						<u>(888,425)</u>
Other comprehensive income (expense) allocated to non- controlling interest	<u>(151,669)</u>	<u>(1,644)</u>	<u>(268,901)</u>	<u>(392,831)</u>	<u>(415,822)</u>	(1,230,867)
Other individually immaterial non-controlling interest of the Group's subsidiaries						<u>(225,008)</u>
Total						<u>(1,455,875)</u>
Cash flows from (used in) operating activities	478,554	684,226	(556,028)	376,355	890,976	
Cash flows used in investing activities	(3,125,353)	(118,642)	(39,017)	(296,508)	(39,322)	
Cash flows from (used in) financing activities (Dividends to non- controlling interest: Baht 170.6 million)	<u>2,881,032</u>	<u>(561,555)</u>	<u>418,345</u>	<u>(186,020)</u>	<u>(859,716)</u>	
Net increase (decrease) in cash and cash equivalents	<u>234,233</u>	<u>4,029</u>	<u>(176,700)</u>	<u>(106,173)</u>	<u>(8,062)</u>	

	Consolidated financial statements							
	Land and land improvements	Buildings and building improvements	Machinery and equipment	Office furniture, fixtures and equipment	Transportation equipment	Stores and spares	Construction in progress	Total
	<i>Note</i>							
				<i>(in thousand Baht)</i>				
Depreciation								
At 1 January 2019	542,768	6,585,333	61,206,193	1,201,300	222,260	186,722	-	69,944,576
Depreciation charge for the year	96,482	1,295,657	12,577,854	250,297	79,585	43,940	-	14,343,815
Reclassifications	-	-	-	14	-	-	-	14
Disposals	-	-	(1,898,468)	(68,135)	(19,523)	-	-	(1,986,126)
Effect of movements in exchange rates	(33,656)	(424,452)	(3,417,174)	(46,951)	(9,481)	(1,562)	-	(3,933,276)
At 31 December 2019	605,594	7,456,538	68,468,405	1,336,525	272,841	229,100	-	78,369,003
Reclassifies to depreciation of right- of-use asset on initial application of TFRS 16	(55,524)	(214,112)	(53,686)	-	(40,384)	-	-	(363,706)
At 1 January 2020 - as adjusted	550,070	7,242,426	68,414,719	1,336,525	232,457	229,100	-	78,005,297
Depreciation charge for the year	144,821	1,060,344	14,031,820	292,284	107,930	44,751	-	15,681,950
Reclassifications	(57,664)	54,245	82,957	3,068	-	-	-	82,606
Disposals	-	(13,283)	(544,665)	(71,323)	(11,702)	(2,180)	-	(643,153)
Effect of movements in exchange rates	4,634	234,850	1,237,077	42,424	(304)	(506)	-	1,518,175
At 31 December 2020	641,861	8,578,582	83,221,908	1,602,978	328,381	271,165	-	94,644,875
Impairment losses								
At 1 January 2019	-	(118,024)	(1,044,801)	(4,403)	(571)	(294)	(4,301)	(1,172,394)
Impairment losses	-	-	(393,876)	-	-	-	-	(393,876)
Reversal	-	-	18,938	-	-	-	-	18,938
Effect of movements in exchange rates	-	8,350	81,845	664	40	22	304	91,225
At 31 December 2019	-	(109,674)	(1,337,894)	(3,739)	(531)	(272)	(3,997)	(1,456,107)
Impairment losses	-	(32)	(581,558)	(3,589)	-	-	(39,461)	(624,640)
Effect of movements in exchange rates	-	426	29,827	705	2	1	1,600	32,561
At 31 December 2020	-	(109,280)	(1,889,625)	(6,623)	(529)	(271)	(41,858)	(2,048,186)

Consolidated financial statements						
	Land and land improvements	Buildings and building improvements	Machinery and equipment	Office furniture, fixtures and equipment	Transportation equipment	Stores and spares
						Construction in progress
						Total
<i>(in thousand Baht)</i>						
Net book value						
At 31 December 2019						
Owned assets	9,817,717	21,480,525	132,549,794	815,415	178,777	44,408,532
Assets under finance leases	1,293,873	423,539	311,843	-	101,563	-
	<u>11,111,590</u>	<u>21,904,064</u>	<u>132,861,637</u>	<u>815,415</u>	<u>280,340</u>	<u>44,408,532</u>
						<u>210,292,104</u>
						<u>212,422,922</u>
At 1 January 2020 - as adjusted						
Owned assets	9,866,164	21,309,507	132,533,303	815,415	180,744	44,408,532
At 31 December 2020						
Owned assets	<u>12,354,270</u>	<u>23,539,324</u>	<u>202,365,444</u>	<u>1,183,277</u>	<u>620,545</u>	<u>23,049,769</u>
						<u>264,290,944</u>

In 2013, Indorama Polymers Workington Ltd. ("IRPW"), an indirect subsidiary, suspended its operations and mothballed the plant with the management intention to re-start the operations when the business conditions improved. The management of IRPW believed that the values of its plant, machinery and equipment and related spare parts as of 30 June 2014 might be impaired. Management of IRPW assessed the recoverable amount by preparing discounted cash flow projections ("DCF") to determine the value in use of the cash-generating unit ("CGU") which comprised plant, machinery and equipment and related spare parts related to IRPW's production and appointed an independent appraiser to determine the fair value less cost of disposal of property, plant and equipment as at 31 December 2014. Based on the result of the assessment, IRPW recorded an impairment loss on plant, machinery and equipment of Baht 557.8 million and spare parts of Baht 39.6 million, totaling Baht 597.4 million in the consolidated statement of income for the year ended 31 December 2014. As at 31 December 2017, management concluded that the plant will not be re-started and assessed the recoverable amount of CGU resulting in a further impairment of GBP 1.9 million (Baht 81.7 million) in the consolidated statement of income for the year ended 31 December 2017. The carrying amount of plant, machinery and equipment related to IRPW's production after recognition of impairment loss amounted to GBP nil.

In 2016, Indorama Ventures Adana PET Sanayi Anonim Sirketi ("IVAP"), an indirect subsidiary, suspended its operations and mothballed the plant with the management intention to re-start the operations when the business condition improved. The production facility has been suspended on 30 December 2016. The management of IVAP believed that the values of plant, machinery and equipment and intangibles assets of IVAP might be impaired. Therefore, as of 31 December 2016, the management has determined the fair value less cost of disposal based on the residual value of the cash-generating unit which comprised plant, machinery and equipment and intangible assets related to IVAP's operations ("CGU") to determine the recoverable amount of CGU. Based on the result of this assessment, the Group recorded impairment loss on plant, machinery and equipment of Baht 407.2 million and on intangible assets of Baht 106.6 million, totaling Baht 513.8 million in the consolidated statement of income for the year ended 31 December 2016. The carrying amount of plant, machinery and equipment and intangible assets related to IVAP's operation after recognition of impairment loss as of 31 December 2016 amounted to TRY 1.7 million and TRY nil million, respectively.

In 2016, Indorama Petrochem Limited ("IRPTA"), a direct subsidiary, impaired certain machinery and equipment related to Thermal Oxidiser unit which has not been used in operation. The management of IRPTA determined the fair value less cost of disposal based on the residual value of relevant machinery and equipment. Based on the result of this assessment, the Group recorded impairment loss on machinery and equipment of Baht 94.1 million in the consolidated statement of income for the year ended 31 December 2016. The carrying amount of machinery and equipment related to Thermal Oxidiser unit after recognition of impairment loss as of 31 December 2016 amounted to Baht nil million.

During 2017, PT. Indorama Polyester Industries Indonesia ("PTIPII"), an indirect subsidiary, suspended its operations and mothballed the plant. The management of PTIPII is of the view that plant will not be operated in near future and believes that the values of plant, machinery and equipment of PTIPII is impaired. Management has determined the fair value less cost of disposal based on the residual value of the CGU which comprised the plant, machinery and equipment related to PTIPII's operation to determine the recoverable amount of the CGU. Based on the result of this assessment, the Group recorded impairment loss of USD 9.7 million (Baht 330.3 million) in the consolidated statement of income for the year ended 31 December 2017. The carrying amount of plant, machinery and equipment of PTIPII after recognition of impairment loss as of 31 December 2017 amounted to USD 3.1 million.

In December 2019, the Board of Directors of Avgol Industries 1953 Ltd. ("Avgol"), an indirect subsidiary, approved the resolution to relocate its facility at Barkan site (West Bank) to another existing site in Israel within 2020. In this regard, the Group recorded impairment loss-net on machinery and equipment of USD 0.07 million (Baht 2.3 million) in the consolidated statement of income for the year ended 31 December 2019.

During 2019, the actual financial performances of Performance Fibers Operations Mexico, S. de R.L. de C.V. ("PFOM") and Glanzstoff Longlaville S.A.S. ("GLLV"), the indirect subsidiaries, were significantly lower than the management's expectations. The management believes that the impairment indications existed; therefore, the management assessed the recoverable amount by preparing discounted cash flows to determine the value in use of those CGUs. Based on the result of this assessment, the Group recorded impairment loss on plant, machinery and equipment of USD 7.0 million (Baht 217.3 million) for PFOM and EUR 4.5 million (Baht 155.3 million) for GLLV, totaling of Baht 372.6 million, in the consolidated statement of income for the year ended 31 December 2019. The carrying amount of plant, machinery and equipment of PFOM and GLLV after recognition of impairment loss as of 31 December 2019 amounted to USD 19.4 million and EUR 19.2 million, respectively.

On 1 August 2020, there was a lightning strike at Indorama Ventures Olefins LLC ("IVOL") facility and subsequently flaring. Consequently, IVOL recorded impairment loss due to damage of certain machineries of USD 15.2 million (Baht 474.1 million) and insurance income of USD 11.3 million (Baht 352.4 million) in the consolidated statement of income of the year 2020. The plant is currently offline and being assessed the damage by plant personnel. The plant is expected to restart in the second quarter of 2021.

As at 31 December 2020, the management further assessed the recoverable amount of impaired CGU and concluded that there has been no change in the amount of allowance for impairment loss since the previous assessment.

The gross amount of the Group's fully depreciated property, plant and equipment that was still in use as at 31 December 2020 amounted to Baht 22,949.7 million (2019: Baht 22,226.7 million).

Capitalised borrowing costs relating to the construction of the new plant are amounted to Baht 464.3 million (2019: Baht 1,533.9 million), with a capitalisation rate of 1.56-8.00% (2019: 2.20-6.20%) (see note 34).

In 2020, the Group revisit the residual lives of the operating plant, which resulted in changes in the estimated useful lives of certain building and, machinery and equipment where they are now estimated to have useful lives for up to 50 years from the date of the completion of the construction and available for use (previously, 25 to 30 years). As a result of aforesaid extension of useful lives of building and, machinery and equipment, the effect of these changes on actual and expected depreciation expense, included in cost of sales of goods, was as follows:

	2020	2021	For the year ended 31 December				Later
			2022	2023	2024	2025	
			(in million Baht)				
(Decrease) increase in depreciation expense							
Building	(394)	(388)	(380)	(378)	(369)	(350)	2,259
Machinery and equipment	(3,658)	(3,568)	(3,488)	(3,424)	(3,349)	(3,209)	20,696

16 Right-of-use assets

Consolidated financial statements							
	Note	Leasehold land	Buildings and building improvements	Machinery and equipment	Office furniture, fixtures and equipment (in thousand Baht)	Transportation equipment	Total
Cost							
At 1 January 2020							
- as adjusted	3(b)	4,582,211	2,604,691	1,571,186	26,775	1,887,254	10,672,117
Additions		-	340,022	316,082	12,080	427,869	1,096,053
Acquisitions through business combinations	6	93,793	281,293	1,416,724	-	684,052	2,475,862
Remeasurement		2,626	13,229	(51,321)	-	(1,669)	(37,135)
Disposals		-	(5,484)	-	-	(6,418)	(11,902)
Effect of movements in exchange rates		78,229	62,872	(47,990)	1,215	(10,205)	84,121
At 31 December 2020		4,756,859	3,296,623	3,204,681	40,070	2,980,883	14,279,116
Depreciation							
At 1 January 2020							
- as adjusted	3(b)	(55,524)	(214,112)	(53,686)	-	(40,384)	(363,706)
Depreciation charge for the year		(147,024)	(393,518)	(631,704)	(10,904)	(910,743)	(2,093,893)
Disposals		-	640	-	-	1,183	1,823
Effect of movements in exchange rates		(689)	(2,835)	17,997	(9)	27,801	42,265
At 31 December 2020		(203,237)	(609,825)	(667,393)	(10,913)	(922,143)	(2,413,511)
Impairment losses							
At 1 January 2020		-	-	-	-	-	-
Impairment losses		-	(306)	-	-	-	(306)
Effect of movements in exchange rates		-	12	-	-	-	12
At 31 December 2020		-	(294)	-	-	-	(294)
Net book value							
At 1 January 2020							
- as adjusted		4,526,687	2,390,579	1,517,500	26,775	1,846,870	10,308,411
At 31 December 2020		4,553,622	2,686,504	2,537,288	29,157	2,058,740	11,865,311

Depreciation of leasehold land amounted to Baht 15.1 million, buildings and building improvements amounted to Baht 3.6 million was capitalised in construction in progress included in property, plant and equipment.

17 Leases

As a lessee

The Group leases a number of land, buildings, machinery and office equipment, furnitures and transportation equipment for 1-99 years, with extension options at the end of lease term. The rental is payable as specified in the contract.

Extension options

Some property leases contain extension options exercisable by the Group up to one year before the end of the non-cancellable contract period. Where practicable, the Group seeks to include extension options in new leases to provide operational flexibility. The extension options held are exercisable only by the Group and not by the lessors. The Group assesses at lease commencement date whether it is reasonably certain to exercise the extension options. The Group reassesses whether it is reasonably certain to exercise the options if there is a significant event or significant changes in circumstances within its control.

	Consolidated financial statements		Separate financial statements	
<i>For the year ended 31 December</i>	2020	2019	2020	2019
	<i>(in thousand Baht)</i>			
Amounts recognised in profit or loss				
Depreciation of right-of-use assets:				
- Leasehold land	131,933	-	-	-
- Buildings and building improvements	389,949	-	-	-
- Machinery and equipment	631,704	-	-	-
- Office furniture, fixtures and equipment	10,904	-	-	-
- Transportation equipment	910,743	-	-	-
Interest on lease liabilities	472,365	-	-	-
Expenses relating to short-term leases	220,413	-	-	-
Expenses relating to leases of low-value assets	17,675	-	-	-
Lease expense	-	1,178,108	-	-

In 2020, total cash outflow for leases of the Group was Baht 2,503 million.

18 Goodwill

		Consolidated financial statements	
	<i>Note</i>	2020	2019
		<i>(in thousand Baht)</i>	
Cost			
At 1 January		15,249,931	15,210,011
Acquired through business combinations	6	102,893	1,141,061
Effect of movements in exchange rates		32,993	(1,101,141)
At 31 December		15,385,817	15,249,931
Net book value			
At 31 December		15,385,817	15,249,931

Impairment testing for the cash generating unit containing goodwill

For the purpose of impairment testing, goodwill has been allocated to the cash generating unit or group of cash generating units ("CGU") identified according to the lowest level within the entity for which information about goodwill is available and monitored for internal management purpose as follows:

	Consolidated financial statements	
	2020	2019
	<i>(in million Baht)</i>	
CGU 1 - Indorama Ventures OGL Holdings LP and its subsidiaries	6,276	6,301
CGU 2 - Avgol Industries 1953 Ltd. and its subsidiaries	4,182	4,198
Others	4,928	4,751
Total	15,386	15,250

The recoverable amounts of the CGU containing goodwill were based on discounted cash flows estimated by managements covering a five-year period. Cash flows beyond the five-year period are extrapolated using the growth rate does not exceed the long-term average growth rate for the business in which CGU operates. The discount rate was a post-tax measure estimated based on the historical industry average weighted-average cost of capital.

2020	CGU1	CGU2
Growth rate (%)	1.0	0.0
Discount rate (%)	7.5	8.0
2019	CGU1	CGU2
Growth rate (%)	1.0	0.0
Discount rate (%)	7.5	8.0

The estimated recoverable amount of each CGU exceeded its carrying amount therefore no impairment losses to be recognised as of 31 December 2020 and 2019.

19 Other intangible assets

Consolidated financial statements										
	Rights acquired	Supplier contract and relationships	Software licenses	Technology licenses and knowhow	Customer contracts and relationships	Trade name and trademarks	Chemicals exchange contract	Capitalised development expenditure	Intangible assets under development	Total
(in thousand Baht)										
Cost										
At 1 January 2019	191,897	7,487,078	542,133	10,829,136	10,084,469	3,092,564	324,498	924,055	-	33,475,830
Additions	5,913	-	71,131	8,017	-	4,717	-	63,745	-	153,523
Acquisitions through business combinations										
● Custom Polymers PET, LLC	6(i)	-	-	-	129,003	-	-	-	-	129,003
● M&G Fibras Brasil Ltda.	6(ii)	17,441	-	-	-	-	-	-	-	17,441
● UTT Beteiligungsgesellschaft mbH	6(iii)	-	4,700	949,302	372,149	100,194	-	42,940	-	1,469,285
● INVISTA Resins & Fibers GmbH	6(iv)	-	45	422,554	588,686	46,950	-	-	-	1,058,235
● IVL Dhunseri Petrochem Industries Private Limited	6(v)	224,828	540	-	274,396	-	-	-	-	499,764
● Indo Rama Synthetics (India) Limited	6(vi)	-	-	-	299,272	131,725	-	-	-	430,997
● Bepak (Nigeria) Limited	6(vii)	-	-	-	33,618	-	-	-	-	33,618
● Sinterama S.p.A. and its subsidiaries	6(viii)	-	2,896	-	-	-	-	-	-	2,896
● Green Fiber International Inc.	6(ix)	4,784	-	-	163,815	-	-	-	-	168,599
Reclassifications	12,378	-	4,689	-	-	-	-	17,285	-	34,352
Write-off	-	-	(139)	(5,042)	-	-	-	(1,833)	-	(7,014)
Effect of movements in exchange rates	(14,768)	(630,308)	(38,697)	(939,561)	(1,033,974)	(248,280)	(22,958)	(85,261)	-	(3,013,807)
At 31 December 2019 and 1 January 2020	195,420	7,103,823	587,298	11,264,406	10,911,434	3,127,870	301,540	960,931	-	34,452,722
Additions	-	-	33,021	15,727	28,754	-	-	99,985	1,965,192	2,142,679
Acquisitions through business combinations										
● Integrated Oxides and Derivatives										
● business/assets of Huntsman Corporation	6(x)	-	-	-	7,583,330	-	-	-	-	7,583,330
● AG Resinas Ltda.	6(xi)	-	-	13,219	1,909	-	-	-	-	15,128
Reclassifications	29,577	-	8,686	-	(3,719)	-	-	6,499	19,782	60,825
Write-off	-	-	-	(7,779)	-	-	-	-	(4,014)	(11,793)
Effect of movements in exchange rates	6,985	54,089	16,904	3,641	(221,525)	78,838	(1,170)	70,219	535	8,516
At 31 December 2020	231,982	7,157,912	645,909	11,289,214	18,300,183	3,206,708	300,370	1,137,634	1,981,495	44,251,407

Consolidated financial statements										
	Rights acquired	Supplier contract and relationships	Software licenses	Technology licenses and knowhow	Customer contracts and relationships	Trade name and trademarks	Chemicals exchange contract	Capitalised development expenditure	Intangible assets under development	Total
<i>(in thousand Baht)</i>										
<i>Amortisation</i>										
At 1 January 2019	49,365	1,855,314	301,974	2,489,551	2,919,218	355,226	115,294	196,724	-	8,282,666
Amortisation charge for the year	16,451	649,745	91,308	654,232	894,385	259,775	16,340	101,925	-	2,684,161
Write-off	-	-	(104)	-	-	-	-	(480)	-	(584)
Effect of movements in exchange rates	(3,523)	(182,156)	(22,285)	(196,274)	(252,413)	(37,264)	(8,627)	(20,529)	-	(723,071)
At 31 December 2019 and 1 January 2020	62,293	2,322,903	370,893	2,947,509	3,561,190	577,737	123,007	277,640	-	10,243,172
Amortisation charge for the year	16,640	426,622	81,877	636,801	1,127,161	270,056	16,515	129,471	-	2,705,143
Reclassifications	-	-	(3,205)	-	-	208	-	-	-	(2,997)
Effect of movements in exchange rates	1,935	(17,393)	8,375	8,599	(3,886)	19,906	(1,140)	23,178	-	39,574
At 31 December 2020	80,868	2,732,132	457,940	3,592,909	4,684,465	867,907	138,382	430,289	-	12,984,892
<i>Impairment losses</i>										
At 1 January 2019	799	-	1,331	-	51,731	-	-	-	-	53,861
Effect of movements in exchange rates	(139)	-	(231)	-	(8,993)	-	-	-	-	(9,363)
At 31 December 2019 and 1 January 2020	660	-	1,100	-	42,738	-	-	-	-	44,498
Effect of movements in exchange rates	(128)	-	(213)	-	(8,288)	-	-	-	-	(8,629)
At 31 December 2020	532	-	887	-	34,450	-	-	-	-	35,869
<i>Net book value</i>										
At 31 December 2019	132,467	4,780,920	215,305	8,316,897	7,307,506	2,550,133	178,533	683,291	-	24,165,052
At 31 December 2020	150,582	4,425,780	187,082	7,696,305	13,581,268	2,338,801	161,988	707,345	1,981,495	31,230,646

Capitalised borrowing costs related to the intangible assets under development are amounted to Baht 8.2 million (2019: nil) (see note 34).

20 Other non-current assets

		Consolidated financial statements		Separate financial statements	
	Note	2020	2019	2020	2019
		<i>(in thousand Baht)</i>			
Advance payment on purchase of property, plant and equipment		891,334	250,611	-	-
Finance lease receivable from related party	7	329,070	365,570	-	-
Refundable deposits		297,573	226,664	-	-
Others		1,012,150	705,131	-	8,168
Total		2,530,127	1,547,976	-	8,168

21 Interest-bearing liabilities

	Consolidated financial statements		Separate financial statements	
	2020	2019	2020	2019
	<i>(in thousand Baht)</i>			
Bank overdrafts	3,019,308	4,174,610	-	-
Secured	230,128	388,872	-	-
Unsecured	2,789,180	3,785,738	-	-
Short-term loans from financial institutions (a)	17,706,303	26,204,889	-	4,961,000
Secured	5,727,482	10,418,671	-	-
Unsecured	11,978,821	15,786,218	-	4,961,000
Long-term loans from financial institutions (b)	108,367,794	48,584,631	8,988,664	3,020,659
Secured	13,311,242	14,844,484	-	-
Unsecured	95,056,552	33,740,147	8,988,664	3,020,659
Lease liabilities (2019: Finance lease liabilities) (c)	10,658,050	819,255	-	-
Debentures (d)	72,208,998	67,167,873	54,412,231	48,816,555
Secured	-	-	-	-
Unsecured	72,208,998	67,167,873	54,412,231	48,816,555
Total interest-bearing liabilities	211,960,453	146,951,258	63,400,895	56,798,214

	Consolidated financial statements		Separate financial statements	
<i>Assets pledged as security for liabilities as at 31 December</i>	2020	2019	2020	2019
	<i>(in thousand Baht)</i>			
Current investment	-	8,759	-	-
Trade accounts receivable	14,483,692	14,262,030	-	-
Inventories	19,218,400	23,755,176	-	-
Property, plant and equipment	46,552,283	49,484,785	-	-
Total	80,254,375	87,510,750	-	-

(a) Short-term loans from financial institutions

Short-term loans from financial institutions comprise the following:

	Consolidated financial statements		Separate financial statements	
	2020	2019	2020	2019
	<i>(in thousand Baht)</i>			
Secured short-term loans secured by trade accounts receivable, inventories, plant and machine and working capital	1,374,735	2,577,699	-	-
Unsecured short-term loans	10,537,761	15,320,631	-	4,961,000
Secured revolving loan (USD 112,906,136) (2019: USD 191,203,655) due in January 2025, secured by trade accounts receivable and inventories	3,391,373	5,765,555	-	-
Secured revolving loan (USD 1,782,305) (2019: USD 6,662,364) secured by trade accounts receivable and inventories	53,535	200,897	-	-
Unsecured revolving loan (EUR 30,000,000)	1,106,292	-	-	-
Unsecured revolving loan (2019: EUR 2,181,510)	-	73,585	-	-
Packing credits	764,774	1,580,184	-	-
Promissory note	334,768	392,002	-	-
Bill discount	143,065	294,336	-	-
Total	17,706,303	26,204,889	-	4,961,000

Under the terms of trust receipt agreements with banks, certain imported inventory has been released by the bank to the Group in trust. The Group is accountable to the banks for the inventory balance or its related sales proceeds until the inventory is fully paid for.

(b) Long-term loans from financial institutions

Long-term loans from financial institutions comprise the following:

	Consolidated financial statements		Separate financial statements	
	2020	2019	2020	2019
	<i>(in thousand Baht)</i>			
Unsecured loan, due in July 2023, repayable semi-annually, with interest at 3 month LIBOR plus margin per annum	3,020,680	3,033,130	3,020,680	3,033,130
Unsecured loan, due in June 2023, repayable in lumpsum, with interest at MLR minus 3.25%	6,000,000	-	6,000,000	-
Unsecured loan, due in December 2024, repayable quarterly, with Philippine Treasury Reference Rate with fixed interest rate	456,140	515,617	-	-

	Consolidated financial statements		Separate financial statements	
	2020	2019	2020	2019
	<i>(in thousand Baht)</i>			
Unsecured loan, due in July 2020, repayable semi-annually, with interest at 6 month LIBOR plus margin per annum	-	151,657	-	-
Unsecured loan, due in May 2022, repayable in lumpsum, with interest at 6 month EURIBOR plus margin per annum	3,681,650	3,367,800	-	-
Unsecured loan, due in December 2024 repayable in quarterly installments with interest at 3 month LIBOR plus margin per annum	37,846,746	-	-	-
Secured loan, due in October 2021, repayable semi-annually, with interest at 3 month EURIBOR plus margin per annum, secured by inventory and property, plant and equipment	-	2,293,715	-	-
Unsecured loan, due in September 2021, repayable annually, with interest at 3 month LIBOR plus margin per annum	-	1,507,700	-	-
Unsecured loan, due in May 2022, repayable semi-annually, with the central bank of the People's Republic of China interest rate plus margin per annum	65,273	78,683	-	-
Unsecured loan, due in March 2023, repayable in lumpsum, with interest at 3 month LIBOR plus margin per annum	1,499,545	1,806,504	-	-
Unsecured loan, due in March 2022, repayable in lumpsum, with interest at with interest at 3 month LIBOR plus margin per annum	4,498,635	4,516,260	-	-
Unsecured loan, due in February 2022, repayable in lumpsum, with interest at 3 month LIBOR plus margin per annum	2,999,090	3,010,840	-	-
Unsecured loan, due in December 2024, repayable in lumpsum, with interest at 3 month LIBOR plus margin per annum	4,998,483	5,780,813	-	-
Unsecured loan, due in March 2024, repayable in lumpsum, with interest at 3 month EURIBOR	6,136,083	5,085,378	-	-
Unsecured loan, due in May 2024, repayable in lumpsum, with interest at 3 month LIBOR plus margin per annum	2,999,090	3,010,840	-	-
Unsecured loan, due in December 2024, repayable in lumpsum, with interest at 3 month LIBOR plus margin per annum	5,998,180	-	-	-

	Consolidated financial statements		Separate financial statements	
	2020	2019	2020	2019
	<i>(in thousand Baht)</i>			
Unsecured loan, due in March 2025, repayable in lumpsum, with interest at 3 month LIBOR plus margin per annum	7,647,680	-	-	-
Unsecured loan, due in December 2028, repayable in lumpsum, with interest at 6 month LIBOR plus margin per annum	2,999,090	-	-	-
Unsecured loan, due in December 2028, repayable in lumpsum, with interest at 6 month LIBOR plus margin per annum	1,999,393	-	-	-
Unsecured loan, due in December 2028, repayable in lumpsum, with interest at 6 month LIBOR plus margin per annum	999,697	-	-	-
Unsecured loan, due in December 2024, repayable quarterly, with interest at 3 month LIBOR plus margin per annum	1,441,781	1,809,240	-	-
Secured loan, due in February 2024, repayable in lumpsum, with interest at 6 month LIBOR plus margin per annum secured by property, plant and equipment	393,096	507,432	-	-
Secured loan, due in October 2025, repayable in lumpsum, with interest at 6 month LIBOR plus margin per annum secured by property, plant and equipment	414,932	499,863	-	-
Secured loan, due in June 2026, repayable in lumpsum, with interest at 6 month LIBOR plus margin per annum secured by property, plant and equipment	434,847	515,844	-	-
Secured loan, due in June 2026, repayable in lumpsum, with interest at 6 month LIBOR plus margin per annum secured by property, plant and equipment	360,445	422,156	-	-
Secured loan, due in June 2023, repayable semi-annually, with interest at 3 month LIBOR plus margin per annum secured by land	289,107	331,694	-	-
Secured loan, due in September 2027, repayable quarterly, with interest at 3 month LIBOR plus margin per annum secured by land	1,007,144	1,101,526	-	-
Secured loan, due in September 2030, repayable quarterly, with interest at 3 month LIBOR plus margin per annum secured by land	2,395,949	2,405,274	-	-

	Consolidated financial statements		Separate financial statements	
	2020	2019	2020	2019
	<i>(in thousand Baht)</i>			
Unsecured loan, due in February 2027, repayable in lumpsum, with interest at 3 month EURIBOR plus margin per annum	258,135	472,235	-	-
Secured loan, due in March 2020, repayable quarterly, with interest at 6 month LIBOR plus margin per annum secured by property, plant and equipment	-	53,614	-	-
Secured loan, due in March 2024, repayable quarterly, with interest at 1 year MCLR plus margin per annum secured by property, plant and equipment	124,590	326,529	-	-
Secured loan, due in September 2023, repayable quarterly, with interest at 1 year MCLR plus margin per annum secured by property, plant and equipment	-	201,882	-	-
Secured loan, due in September 2024, repayable quarterly, with interest at 1 year MCLR plus margin per annum secured by property, plant and equipment	-	248,232	-	-
Secured loan, due in December 2024, repayable quarterly, with 1 year MCLR plus margin per annum, secured by property, plant and equipment	209,050	158,112	-	-
Secured loan, due in September 2024, repayable quarterly, with interest at 1 year MCLR plus margin per annum secured by property, plant and equipment	-	527,871	-	-
Secured loan, due in March 2024, repayable quarterly, with interest at 6 month LIBOR plus margin per annum secured by property, plant and equipment	189,266	221,548	-	-
Secured loan, due in September 2024, repayable quarterly, with interest at 1 year MCLR plus margin per annum secured by property, plant and equipment	-	76,573	-	-
Secured loan, due in June 2024, repayable quarterly, with interest at 1 year MCLR plus margin per annum secured by property, plant and equipment	252,685	308,820	-	-
Secured loan, due in March 2028, repayable quarterly, with fixed interest rate secured by property, plant and equipment	326,840	329,890	-	-

	Consolidated financial statements		Separate financial statements	
	2020	2019	2020	2019
	<i>(in thousand Baht)</i>			
Secured loan, due in March 2028, repayable quarterly, with fixed interest rate secured by property, plant and equipment	237,945	240,165	-	-
Secured loan, due in June 2025, repayable quarterly, with interest at 3 month EURIBOR plus margin per annum secured by property, plant and equipment, inventory and trade accounts receivable	322,513	322,215	-	-
Secured loan, due in April 2024, repayable semi-annually with fixed interest rate, secured by property, plant and equipment	613,650	633,000	-	-
Secured loan, due in June 2023, repayable quarterly, with interest at 1 year MCLR secured by property, plant and equipment	388,645	481,080	-	-
Secured loan, due in June 2024, repayable annually, with fixed interest rate secured by property, plant and equipment	290,461	299,620	-	-
Secured loan, due in November 2020, repayable quarterly, with interest at 6 month EURIBOR plus margin per annum secured by property, plant and equipment	-	161,399	-	-
Secured loan, due in March 2020, repayable quarterly, with interest at 6 month LIBOR plus margin per annum secured by property, plant and equipment	-	18,485	-	-
Unsecured loan, due in April 2024, repayable quarterly, with interest at 6 month MCLR plus margin per annum	265,915	-	-	-
Secured revolving loan, (USD 157,440,186) (2019: USD 57,440,186) due in January 2025, repayable with interest at 1 month LIBOR plus margin per annum, secured by trade accounts receivable and inventories	4,729,047	1,732,051	-	-
Other long-term loans	553,103	476,017	-	-
Total long-term loans from financial institutions	109,344,601	49,041,304	9,020,680	3,033,130
<i>Less deferred financing costs</i>	<i>(976,807)</i>	<i>(456,673)</i>	<i>(32,016)</i>	<i>(12,471)</i>
Net long-term loans from financial institutions	108,367,794	48,584,631	8,988,664	3,020,659

	Consolidated financial statements		Separate financial statements	
	2020	2019	2020	2019
	<i>(in thousand Baht)</i>			
Less portion due within one year, net of related deferred financing costs	(8,919,764)	(6,033,458)	(112,274)	-
Long-term loans from financial institutions	99,448,030	42,551,173	8,876,390	3,020,659

The above loan agreements contain certain covenants relating to the declaration and payment of dividends, maintenance of financial ratios, acquisition of major fixed assets, additional indebtedness and share transfers.

As at 31 December 2020, the Group and the Company had unutilised credit facilities totaling Baht 73,103.0 million and Baht 9,514.0 million, respectively (2019: Baht 65,351.8 million and Baht 6,234.3 million).

(c) *Lease liabilities (2019: Finance lease liabilities)*

Consolidated financial statements						
	2020			2019		
	Lease payments over the remaining term of the lease liabilities	Interest	Carrying value of lease liabilities <i>(in thousand Baht)</i>	Minimum lease payments	Interest	Present value of minimum lease payments
<i>Maturity period</i>						
Within 1 year	2,032,119	318,535	1,713,584	150,804	20,781	130,023
1-5 years	4,788,074	850,790	3,937,284	570,702	54,823	515,879
After 5 years	9,612,209	4,605,027	5,007,182	185,681	12,328	173,353
Total	16,432,402	5,774,352	10,658,050	907,187	87,932	819,255

(d) *Debentures*

As at 31 December, the Group and the Company had outstanding debentures as follows:

	Consolidated financial statements		Separate financial statements	
	2020	2019	2020	2019
	<i>(in thousand Baht)</i>			
IVL - Debentures (i)	54,412,231	48,816,555	54,412,231	48,816,555
IVL Singapore - Debentures (ii)	4,137,983	4,152,582	-	-
AVGOL - Debentures (iii)	4,720,000	5,239,951	-	-
IVGSL - Debentures (iv)	8,938,784	8,958,785	-	-
Total	72,208,998	67,167,873	54,412,231	48,816,555

(i) IVL Debentures

As at 31 December 2020, the Company had outstanding unsubordinated and unsecured debentures totaling Baht 54,470 million (2019: Baht 48,870 million) as follows:

Debentures no.	Principal (in thousand Baht)	Interest rate (% p.a.)	Term	Maturity date	Deferred debenture issuance expense (in thousand Baht)	Net
1/2011-3	37,000	5.00 for 1st - 4th year 5.50 for 5th - 8th year 6.00 for 9th - 10th year	10 years	19 Oct 21	13	36,987
1/2011-6	3,163,000	5.35	10 years	19 Oct 21	1,088	3,161,912
1/2012-2	1,250,500	5.10 for 1st - 3rd year 5.60 for 4th - 7th year 6.00 for 8th - 10th year	10 years	5 Apr 22	358	1,250,142
1/2012-5	2,649,500	5.52	10 years	5 Apr 22	759	2,648,741
2/2012-3	1,645,000	5.11	10 years	14 Dec 22	714	1,644,286
2/2012-4	1,475,000	5.28	12 years	14 Dec 24	1,080	1,473,920
1/2013-3	1,100,000	5.10	10 years	27 Jun 23	975	1,099,025
1/2014-3	1,400,000	5.30	10 years	14 Mar 24	1,010	1,398,990
1/2015-1	1,100,000	4.20	10 years	13 Oct 25	957	1,099,043
1/2015-2	500,000	4.00	7 years	13 Oct 22	232	499,768
2/2015-1	1,150,000	3.92	10 years	9 Dec 25	790	1,149,210
1/2016-1	300,000	2.88	5 years	20 Oct 21	81	299,919
1/2016-2	200,000	3.68	10 years	20 Oct 26	196	199,804
1/2016-3	2,200,000	4.10	12 years	20 Oct 28	2,416	2,197,584
1/2016-4	2,300,000	4.39	15 years	20 Oct 31	2,797	2,297,203
1/2017-2	500,000	3.24	5 years	4 May 22	341	499,659
1/2017-3	1,000,000	3.75	7 years	4 May 24	1,215	998,785
1/2017-4	2,000,000	4.11	10 years	4 May 27	3,229	1,996,771
1/2017-5	2,000,000	4.28	12 years	4 May 29	3,540	1,996,460
2/2017-1	300,000	2.92	7 years	16 Nov 24	276	299,724
2/2017-2	700,000	3.46	10 years	16 Nov 27	798	699,202
2/2017-3	1,000,000	3.90	15 years	16 Nov 32	1,313	998,687
1/2018-1	3,000,000	2.31	3 years	8 Jun 21	701	2,999,299
1/2018-2	3,000,000	2.78	5 years	8 Jun 23	2,362	2,997,638
1/2018-3	1,500,000	3.18	7 years	8 Jun 25	1,537	1,498,463
1/2018-4	1,800,000	3.83	10 years	8 Jun 28	2,165	1,797,835
1/2018-5	5,000,000	4.12	12 years	8 Jun 30	6,359	4,993,641
1/2018-6	3,200,000	4.27	15 years	8 Jun 33	4,291	3,195,709
1/2020-1	4,000,000	2.78	5 years	27 Nov 25	7,157	3,992,843
1/2020-2	1,990,000	3.15	7 years	27 Nov 27	3,581	1,986,419
1/2020-3	3,010,000	3.42	10 years	27 Nov 30	5,438	3,004,562
Total	54,470,000				57,769	54,412,231
Less portion due within one year	(6,500,000)				(12,213)	(6,487,787)
Net	47,970,000				45,556	47,924,444

The extraordinary general meeting of shareholders held on 22 September 2011, the annual general meeting of shareholders held on 29 April 2013, the annual general meeting of shareholders held on 24 April 2015 and the annual general meeting of shareholders held on 24 April 2019, approved the issue of debentures totally not exceeding Baht 150,000 million (in Baht or equivalent foreign currency).

On 27 November 2020, the Company raised in cash by Baht 9,000 million, through the issuance and offering of unsubordinated and unsecured Baht debentures in a private placement.

(ii) IVL Singapore Debentures

As at 31 December 2020, IVL Singapore Pte. Ltd. ("IVLS"), an indirect subsidiary of the Company, had outstanding senior unsecured guaranteed debentures totaling SGD 195.0 million (Baht 4,145.1 million) (2019: SGD 195.0 million (Baht 4,161.3 million)), as follows:

Debentures no.	Principal (in thousand Baht)	Interest rate (% p.a.)	Term	Maturity date	Deferred debenture issuance expense (in thousand Baht)	Net
1/2015-1	4,145,120	3.73	10 years	7 Oct 25	7,137	4,137,983
Total	4,145,120				7,137	4,137,983

The resolution of IVLS held on 25 August 2015 approved the issuance of debentures up to an amount not exceeding USD 140 million equivalent in Singapore dollars. The debenture is guaranteed by Credit Guarantee & Investment Facility, a trust fund of the Asian Development Bank and listed on the SGX-ST.

(iii) AVGOL Debentures

As at 31 December 2020, Avgol Industries 1953 Ltd. ("Avgol"), an indirect subsidiary of the Company, had outstanding unsecured debentures totaling USD 158.0 million (Baht 4,746.4 million) (2019: USD 197.9 million (Baht 5,275.6 million)), as follows:

Debentures no.	Principal (in thousand Baht)	Interest rate (% p.a.)	Term	Maturity date	Deferred debentures issuance expense (in thousand Baht)	Net
1/2014-C	3,127,224	4.75	10 years	31 Dec 24	11,625	3,115,599
1/2017-D	1,619,161	3.90	8 years	31 Dec 25	14,760	1,604,401
Total	4,746,385				26,385	4,720,000
Less portion due within one year	(1,105,169)				(9,386)	(1,095,783)
Net	3,641,216				16,999	3,624,217

(iv) IVGSL Debentures

As at 31 December 2020, Indorama Ventures Global Services Limited (“IVGSL”), a subsidiary of the Company, had outstanding senior unsecured debentures totaling USD 300.0 million (Baht 8,997.3 million) (2019: USD 300.0 million (Baht 9,032.5 million)) as follows:

Debentures no.	Principal (in thousand Baht)	Interest rate (% p.a.)	Term	Maturity date	Deferred debentures issuance expense (in thousand Baht)	Net
1/2019-1	8,997,270	4.375	5 years	12 Sep 24	58,486	8,938,784
Total	8,997,270				58,486	8,938,784

The resolution of IVGSL held on 27 June 2019 approved the issuance of debentures up to an amount not exceeding USD 600.0 million or its equivalent in any other currency.

On 12 September 2019, IVGSL issued senior unsecured debentures to foreign institutional investors for the total amount of USD 300.0 million. The debenture is guaranteed by the Company.

22 Trade accounts payable

		Consolidated financial statements		Separate financial statements	
	Note	2020	2019	2020	2019
		(in thousand Baht)			
Related parties	7	58,397	55,130	-	-
Other parties		57,724,164	57,117,738	-	-
Total		57,782,561	57,172,868	-	-

23 Other current liabilities

		Consolidated financial statements		Separate financial statements	
	Note	2020	2019	2020	2019
		(in thousand Baht)			
Accrued operating expenses		8,040,586	5,544,987	23,695	35,556
Other payables		3,619,714	2,508,471	62,635	3,331
Materials price adjustments payable		2,351,957	1,610,741	-	-
Contract liabilities	27	1,391,536	563,485	-	-
Interest payable		611,682	738,009	293,182	279,384
Payable for acquiring joint operation	13	600,742	603,080	-	-
Value added tax payable		560,404	597,042	-	-
Withholding tax payable		377,358	331,054	-	45,487
Others		1,076,883	1,512,327	13,185	2,399
Total		18,630,862	14,009,196	392,697	366,157

24 Non-current provisions for employee benefits

	Consolidated financial statements		Separate financial statements	
<i>At 31 December</i>	2020	2019	2020	2019
	<i>(in thousand Baht)</i>			
Statement of financial position				
Non-current provisions for:				
Post-employment benefits				
Thailand legal severance plan	693,992	628,296	-	-
Defined benefit plans				
established in Europe	3,754,978	3,223,915	-	-
Defined benefit plans				
established in United States	2,692,452	443,848	-	-
Defined benefit plans				
established in rest of the world	496,844	381,311	-	-
Other long-term employee benefits	20,207	18,824	-	-
Total	7,658,473	4,696,194	-	-
	Consolidated financial statements		Separate financial statements	
<i>For the year ended 31 December</i>	2020	2019	2020	2019
	<i>(in thousand Baht)</i>			
Statement of income:				
Recognised in profit or loss:				
Post-employment benefits				
Thailand legal severance plan	52,308	155,042	-	-
Defined benefit plans				
established in Europe	251,259	234,964	-	-
Defined benefit plans				
established in United States	224,603	46,769	-	-
Defined benefit plans				
established in rest of the world	91,606	67,797	-	-
Other long-term employee benefits	3,679	5,964	-	-
Total	623,455	510,536	-	-
Recognised in other comprehensive income:				
Remeasurement gains:				
Actuarial losses	1,136,630	1,239,247	-	-
Return on plan assets excluding amounts included in interest income	(339,464)	(344,728)	-	-
Others	-	149	-	-
Total	797,166	894,668	-	-

Thailand legal severance plan and other long-term employee benefits

The subsidiaries registered in Thailand provide a defined benefit plan based on the requirement of Thai Labour Protection Act B.E. 2541 (1998) to provide retirement benefits to employees based on pensionable remuneration and length of service. The subsidiaries registered in Thailand also provide long service award plans as part of other long-term employee benefits to certain employees based on remuneration and length of service.

These defined benefit plans expose the Group to actuarial risks, such as interest rate risk and longevity risk.

<i>Present value of the defined benefit obligations</i>	Consolidated		Separate	
	financial statements	financial statements	financial statements	financial statements
	2020	2019	2020	2019
	<i>(in thousand Baht)</i>			
At 1 January	647,120	407,082	-	-
Included in profit or loss:				
Current service costs	44,682	36,967	-	-
Past service costs	-	107,346	-	-
Interest on obligation	9,891	12,958	-	-
Actuarial losses for other long-term employee benefits	1,414	3,735	-	-
	55,987	161,006	-	-
Included in other comprehensive income				
Actuarial losses				
- Demographic assumptions	-	3,502	-	-
- Financial assumptions	2,351	45,874	-	-
- Experience adjustment	35,502	79,657	-	-
	37,853	129,033	-	-
Other				
Benefits paid by the plan	(26,761)	(50,001)	-	-
	(26,761)	(50,001)	-	-
At 31 December	714,199	647,120	-	-

On 5 April 2019, the Labor Protection Act was amended to include a requirement that an employee, who is terminated after having been employed by the same employer for an uninterrupted period of twenty years or more, receives severance payment of 400 days of wages at the most recent rate. The Group has therefore amended its retirement plan in accordance with the changes in the Labor Protection Act in 2019. As a result of this change, the provision for retirement benefits as well as past service cost recognised increased.

Defined benefit plans established in Europe

These defined benefit plans expose the Group to actuarial risks, such as currency risk, interest rate risk, longevity risk and market (investment) risk.

The Group expects to pay Baht 383.4 million (EUR 10.4 million) in contributions to its defined benefit plans in 2021.

The statement of financial position obligation was determined as follows:

	Consolidated financial statements		Separate financial statements	
	2020	2019	2020	2019
	<i>(in thousand Baht)</i>			
Excess of present value of obligations over fair value of plan assets	3,464,584	3,432,551	-	-
Effect of movement in exchange rates	290,394	(208,636)	-	-
Statement of financial position obligation	3,754,978	3,223,915	-	-
<i>Present value of the defined benefit obligations</i>	Consolidated financial statements		Separate financial statements	
	2020	2019	2020	2019
	<i>(in thousand Baht)</i>			
At 1 January	5,298,314	2,977,077	-	-
Included in profit or loss:				
Current service costs	206,594	184,928	-	-
Past service costs	14,256	572	-	-
Interest on obligation	61,473	83,696	-	-
Actuarial losses	504	1,761	-	-
	282,827	270,957	-	-
Included in other comprehensive income				
Actuarial losses (gains)				
- Demographic assumptions	(36,154)	(7,655)	-	-
- Financial assumptions	514,930	992,411	-	-
- Experience adjustment	57,158	34,192	-	-
	535,934	1,018,948	-	-
Others				
Defined benefit obligations assumed through business combinations	7,539	1,447,913	-	-
Benefits paid by the plan	(73,838)	(53,127)	-	-
Expected employees contribution	13,419	13,511	-	-
Effect of movements in exchange rates	519,628	(376,965)	-	-
	466,748	1,031,332	-	-
At 31 December	6,583,823	5,298,314	-	-
<i>Fair value of plan assets</i>	Consolidated financial statements		Separate financial statements	
	2020	2019	2020	2019
	<i>(in thousand Baht)</i>			
At 1 January	2,074,399	1,651,558	-	-
Included in profit or loss:				
Interest income	31,568	35,993	-	-
	31,568	35,993	-	-

<i>Fair value of plan assets</i>	Consolidated financial statements		Separate financial statements	
	2020	2019	2020	2019
	<i>(in thousand Baht)</i>			
Included in other comprehensive income				
Return on plan assets excluding amounts included in interest income	202,801	323,539	-	-
Others				
Expected plan participant contributions	13,419	12,003	-	-
Benefits paid by the plan	(18,913)	(15,047)	-	-
Contribution paid into the plan	296,337	234,682	-	-
Effect of movements in exchange rates	229,234	(168,329)	-	-
	520,077	63,309	-	-
At 31 December	2,828,845	2,074,399	-	-
Statement of financial position obligations at 31 December	3,754,978	3,223,915	-	-

Plan assets

Plan assets comprise the following:

	Consolidated financial statements		Separate financial statements	
	2020	2019	2020	2019
	<i>(in thousand Baht)</i>			
Equity securities	14,845	15,988	-	-
Insurance contract	2,710,795	1,961,415	-	-
Interest bearing securities	103,205	90,598	-	-
Others	-	6,398	-	-
Total	2,828,845	2,074,399	-	-

Defined benefit plans established in United States

These defined benefit plans expose the Group to actuarial risks, such as currency risk, interest rate risk, longevity risk and market (investment) risk.

The Group expects to pay Baht 317.8 million (USD 10.6 million) in contributions to its defined benefit plans in 2021.

The statement of financial position obligation was determined as follows:

	Consolidated financial statements		Separate financial statements	
	2020	2019	2020	2019
	<i>(in thousand Baht)</i>			
Excess of present value of obligations over fair value of plan assets	2,746,141	458,191	-	-
Effect of movement in exchange rates	(53,689)	(14,343)	-	-
Statement of financial position obligation	2,692,452	443,848	-	-

<i>Present value of the defined benefit obligations</i>	Consolidated financial statements		Separate financial statements	
	2020	2019	2020	2019
	<i>(in thousand Baht)</i>			
At 1 January	639,826	592,525	-	-
Included in profit or loss:				
Current service costs	251,660	14,633	-	-
Past service costs	-	(5,154)	-	-
Interest on obligation	196,794	39,399	-	-
Actuarial losses (gains)	(5,783)	4,036	-	-
	<u>442,671</u>	<u>52,914</u>	<u>-</u>	<u>-</u>
Included in other comprehensive income				
Actuarial losses				
- Demographic assumptions	5,147	5,592	-	-
- Financial assumptions	500,226	56,247	-	-
- Experience adjustment	5,286	10,559	-	-
	<u>510,659</u>	<u>72,398</u>	<u>-</u>	<u>-</u>
Others				
Defined benefit obligations assumed through business combinations	4,395,672	-	-	-
Benefits paid by the plan	(104,052)	(55,029)	-	-
Other	-	(23)	-	-
Effect of movements in exchange rates	(71,182)	(22,959)	-	-
	<u>4,220,438</u>	<u>(78,011)</u>	<u>-</u>	<u>-</u>
At 31 December	<u>5,813,594</u>	<u>639,826</u>	<u>-</u>	<u>-</u>
<i>Fair value of plan assets</i>	Consolidated financial statements		Separate financial statements	
	2020	2019	2020	2019
	<i>(in thousand Baht)</i>			
At 1 January	195,978	193,628	-	-
Included in profit or loss:				
Interest income	219,257	6,766	-	-
Others	(1,189)	(621)	-	-
	<u>218,068</u>	<u>6,145</u>	<u>-</u>	<u>-</u>
Included in other comprehensive income				
Return on plan assets excluding amounts included in interest income	<u>136,669</u>	<u>21,374</u>	<u>-</u>	<u>-</u>
Others				
Fair value of plan assets assumed through business combinations	2,668,020	-	-	-
Benefits paid by the plan	(95,762)	(32,676)	-	-
Contribution paid into the plan	15,662	16,296	-	-

Fair value of plan assets	Consolidated financial statements		Separate financial statements	
	2020	2019	2020	2019
	<i>(in thousand Baht)</i>			
Other	-	(173)	-	-
Effect of movements in exchange rates	(17,493)	(8,616)	-	-
	<u>2,570,427</u>	<u>(25,169)</u>	<u>-</u>	<u>-</u>
At 31 December	<u>3,121,142</u>	<u>195,978</u>	<u>-</u>	<u>-</u>
Statement of financial position obligations at 31 December	<u>2,692,452</u>	<u>443,848</u>	<u>-</u>	<u>-</u>

Plan assets

Plan assets comprise the following:

	Consolidated financial statements		Separate financial statements	
	2020	2019	2020	2019
	<i>(in thousand Baht)</i>			
Equity securities	2,245,839	80,382	-	-
Insurance contract	-	13,661	-	-
Government bonds	4,551	15,972	-	-
Interest bearing securities	847,635	34,751	-	-
Others	23,117	51,212	-	-
Total	<u>3,121,142</u>	<u>195,978</u>	<u>-</u>	<u>-</u>

Defined benefit plans established in rest of the world

These defined benefit plans expose the Group to actuarial risks, such as currency risk, interest rate risk, longevity risk and market (investment) risk.

The Group expects to pay Baht 14.2 million in contributions to its defined benefit plans in 2021.

The statement of financial position obligation was determined as follows:

	Consolidated financial statements		Separate financial statements	
	2020	2019	2020	2019
	<i>(in thousand Baht)</i>			
Excess of present value of obligations over fair value of plan assets	505,781	401,684	-	-
Effect of movements in exchange rates	(8,937)	(20,373)	-	-
Statement of financial position obligation	<u>496,844</u>	<u>381,311</u>	<u>-</u>	<u>-</u>

Present value of the defined benefit obligations	Consolidated financial statements		Separate financial statements	
	2020	2019	2020	2019
	<i>(in thousand Baht)</i>			
At 1 January	399,079	195,739	-	-
Included in profit or loss:				
Current service costs	58,621	39,553	-	-
Interest on obligation	31,071	29,901	-	-

<i>Present value of the defined benefit obligations</i>	Consolidated financial statements		Separate financial statements	
	2020	2019	2020	2019
	<i>(in thousand Baht)</i>			
Actuarial losses	3,523	1,423	-	-
	93,215	70,877	-	-
Included in other comprehensive income				
Actuarial losses				
- Demographic assumptions	212	336	-	-
- Financial assumptions	46,504	13,373	-	-
- Experience adjustment	5,468	5,160	-	-
	52,184	18,869	-	-
Others				
Defined benefit obligations assumed through business combinations	7,799	149,673	-	-
Benefits paid by the plan	(16,035)	(14,283)	-	-
Effect of movements in exchange rates	(7,185)	(21,796)	-	-
	(15,421)	113,594	-	-
At 31 December	529,057	399,079	-	-

<i>Fair value of plan assets</i>	Consolidated financial statements		Separate financial statements	
	2020	2019	2020	2019
	<i>(in thousand Baht)</i>			
At 1 January	17,768	-	-	-
Included in profit or loss:				
Interest income	1,609	3,080	-	-
	1,609	3,080	-	-
Included in other comprehensive income				
Return on plan assets excluding amounts included in interest income	(6)	(185)	-	-
Others				
Fair value of plan assets assumed through business combinations	7,799	11,700	-	-
Contributions paid into the plan	3,851	4,597	-	-
Benefits paid by the plan	(560)	(1)	-	-
Effect of movements in exchange rates	1,752	(1,423)	-	-
	12,842	14,873	-	-
At 31 December	32,213	17,768	-	-
Statement of financial position obligations at 31 December	496,844	381,311	-	-

Plan assets

Plan assets comprise the following:

	Consolidated financial statements		Separate financial statements	
	2020	2019	2020	2019
	<i>(in thousand Baht)</i>			
Insurance contract	21,102	17,768	-	-
Others	11,111	-	-	-
Total	32,213	17,768	-	-

Actuarial assumptions

<i>Principal actuarial assumptions</i>	Consolidated financial statements		Separate financial statements	
	2020	2019	2020	2019
	<i>(%)</i>		<i>(%)</i>	
<i>Thailand legal severance plan</i>				
Discount rate	1.30	1.70	-	-
Future salary increases	4.00-5.50	4.00-6.00	-	-
Employee turnover	0.00-40.00	0.00-40.00	-	-

At 31 December 2020, the weighted-average duration of the defined benefit obligation was 8.00 years (2019: 8.00 years).

Assumptions regarding future mortality have been based on published statistics and mortality tables.

	Consolidated financial statements		Separate financial statements	
	2020	2019	2020	2019
	<i>(%)</i>		<i>(%)</i>	
<i>Defined benefit plans established in Europe</i>				
Discount rate	(0.02)-13.60	0.30-12.10	-	-
Expected return on plan assets	0.60-1.50	1.20-1.50	-	-
Future salary increases	0.80-8.50	1.20-8.00	-	-
Employee turnover	0.00-14.87	0.05-15.95	-	-

At 31 December 2020, the weighted-average duration of the defined benefit obligation were 8.10 to 28.50 years (2019: 8.80 to 28.30 years).

	Consolidated financial statements		Separate financial statements	
	2020	2019	2020	2019
	<i>(%)</i>		<i>(%)</i>	
<i>Defined benefit plans established in United States</i>				
Discount rate	2.10-5.75	1.90-7.05	-	-
Expected return on plan assets	2.50-7.75	4.25-7.05	-	-
Future salary increases	2.50-4.75	2.50-4.75	-	-
Employee turnover	3.52-26.50	3.76-26.50	-	-

At 31 December 2020, the weighted-average duration of the defined benefit obligation were 2.57 to 12.18 years (2019: 2.60 to 12.39 years).

	Consolidated financial statements		Separate financial statements	
	2020	2019	2020	2019
	(%)		(%)	
<i>Defined benefit plans established in rest of the world</i>				
Discount rate	4.08-7.00	7.10-8.00	-	-
Expected return on plan assets	6.30	-	-	-
Future salary increases	3.00-8.00	2.50-8.00	-	-
Employee turnover	0.00-15.00	0.00-5.00	-	-

At 31 December 2020, the weighted-average duration of the defined benefit obligation were 9.17 to 24.56 years (2019: 10.56 to 15.60 years).

Sensitivity analysis

Reasonably possible changes at the reporting date to one of the relevant actuarial assumptions, holding other assumptions constant, would have affected the defined benefit obligation by the amounts shown below.

	Consolidated financial statements		Separate financial statements	
	(in million Baht)			
Thailand legal severance plan				
At 31 December 2020	Increase	Decrease	Increase	Decrease
Discount rate (0.5% movement)	(28)	30	-	-
Future salary increases (0.5% movement)	29	(27)	-	-
Employee turnover (0.5% movement)	(29)	31	-	-
Defined benefit plans established in Europe				
At 31 December 2020	Increase	Decrease	Increase	Decrease
Discount rate (0.5% movement)	(785)	913	-	-
Expected return on plan assets (0.5% movement)	(24)	27	-	-
Future salary increases (0.5% movement)	77	(75)	-	-
Employee turnover (0.5% movement)	(17)	17	-	-
Defined benefit plans established in United States				
At 31 December 2020	Increase	Decrease	Increase	Decrease
Discount rate (0.5% movement)	(284)	309	-	-
Expected return on plan assets (0.5% movement)	(15)	15	-	-
Future salary increases (0.5% movement)	51	(48)	-	-
Employee turnover (0.5% movement)	(1)	1	-	-
Defined benefit plans established in rest of the world				
At 31 December 2020	Increase	Decrease	Increase	Decrease
Discount rate (0.5% movement)	(23)	24	-	-
Future salary increases (0.5% movement)	26	(24)	-	-
Employee turnover (0.5% movement)	-	7	-	-

	Consolidated financial statements		Separate financial statements	
	(in million Baht)			
Thailand legal severance plan				
At 31 December 2019	Increase	Decrease	Increase	Decrease
Discount rate (0.5% movement)	(26)	28	-	-
Future salary increases (0.5% movement)	27	(25)	-	-
Employee turnover (0.5% movement)	(28)	30	-	-
Defined benefit plans established in Europe				
At 31 December 2019	Increase	Decrease	Increase	Decrease
Discount rate (0.5% movement)	(308)	360	-	-
Expected return on plan assets (0.5% movement)	(2)	-	-	-
Future salary increases (0.5% movement)	53	(51)	-	-
Employee turnover (0.5% movement)	(12)	12	-	-
Defined benefit plans established in United States				
At 31 December 2019	Increase	Decrease	Increase	Decrease
Discount rate (0.5% movement)	(19)	21	-	-
Expected return on plan assets (0.5% movement)	(1)	1	-	-
Future salary increases (0.5% movement)	9	(8)	-	-
Employee turnover (0.5% movement)	-	1	-	-
Defined benefit plans established in rest of the world				
At 31 December 2019	Increase	Decrease	Increase	Decrease
Discount rate (0.5% movement)	(17)	18	-	-
Future salary increases (0.5% movement)	19	(18)	-	-
Employee turnover (0.5% movement)	(2)	2	-	-

Although the analysis does not take account of the full distribution of cash flows expected under the plan, it does provide an approximation of the sensitivity of the assumptions shown.

25 Reserves

Reserves comprise:

Appropriations of profit and/or retained earnings

Legal reserve

Section 116 of the Public Companies Act B.E. 2535 requires that a public company shall allocate not less than 5% of its annual net profit, less any accumulated losses brought forward, to a reserve account ("legal reserve"), until this account reaches an amount not less than 10% of the registered authorised capital. The legal reserve is not available for dividend distribution.

Other components of equity

Translation reserve

The transaction reserves comprises all foreign currency differences arising from the translation of the financial statements of foreign operations to Thai Baht, foreign exchange differences arising from transaction of intercompany loans considered as part of net investment in foreign operations, as well as

the effective portion of any foreign currency differences arising from hedges of net investment in foreign operations (*see note 4(d.6)*).

Hedging reserve

The hedging reserve comprises the effective portion of the cumulative net change in the fair value of hedging instruments used in cash flow hedges pending subsequent recognition in profit or loss or directly included in the initial cost or other carrying amount of a non-financial asset or non-financial liability.

Excess of book value of acquired subsidiaries over cost/(cost over book value)

The excess of book value of acquired subsidiaries over cost/(cost over book value) represent the differences between book value and cost of investment as of the date of acquisition of additional shares of certain existing subsidiaries and have been recorded as a reserve. It is non-distributable and will be retained until the respective investment in shares of subsidiaries are sold or otherwise disposed off.

Differences arising from common control transactions

The differences arising from common control transactions represent the difference of the book values of certain entities or businesses under common control over their cost as of the date of their acquisition and have been recorded as a reserve. It is non-distributable and will be retained until the respective entities or businesses are sold or otherwise disposed off.

26 Subordinated perpetual debentures

On 31 October 2014, the Company completed the issuance of Subordinated Perpetual Debentures ("the 1st Debentures") of Baht 15,000 million with bullet payment upon dissolution of the Company or upon the exercise of the Company's early redemption right per conditions as stipulated in the terms and conditions of the 1st Debentures. The 1st Debentures bear interest which is calculated based on 5-year government bond yield adjusted with initial credit spread and coupon step-up as stipulated in the terms and conditions of the 1st Debentures and is paid on a quarterly basis. However, the Company has the sole right to unconditionally defer interest and cumulative interest payments to the 1st Debentures holders without time and deferral amount limitation. If the Company defers the interest payment, the Company shall not redeem, reduce, cancel, acquire or buy-back for any consideration on any instrument or security issued by the Company which rank *pari passu* or junior to the 1st Debentures and shall not declare and make any dividend payment.

IVL has exercised its call option to early redeem all of the 1st Debentures. The aggregate early redemption amount of the 1st Debentures was Baht 15,000 million and was fully repaid on 31 October 2019.

On 8 November 2019, the Company has issued and offered Subordinated Perpetual Debentures of the Company No. 1/2019 (the "2nd Debentures") in the amount of Baht 15,000 million at par value with bullet payment upon dissolution of the Company or upon the exercise of the Company's early redemption right per conditions as stipulated in the terms and conditions of the 2nd Debentures. The 2nd Debentures are unsecured and unconvertible. The 2nd Debentures bear interest at 5% per annum for the first to the fifth years; and thereafter, the interest rate for the 2nd Debentures shall be in accordance with the details stated under the terms and conditions in relation to the 2nd Debentures. The interest is paid on a quarterly basis. However, the Company has the sole right to unconditionally defer interest and cumulative interest payments to the 2nd Debentures holders without time and deferral amount limitation. If the Company defers the interest payment, the Company shall not redeem, reduce, cancel, acquire or buy-back for any consideration on any instrument or security issued by the Company which rank *pari passu* or junior to the 2nd Debentures and shall not declare and make any dividend payment.

On 7 November 2019, Indorama Ventures Global Services Limited (“IVGSL”), a direct subsidiary of the Company, resolved to approve the purchase of the 2nd Debentures issued and offered by the Company for an amount up to Baht 1,400 million. As at 31 December 2019, the balance of the purchased 2nd Debentures amounting to Baht 679.6 million is presented as “Subordinated perpetual debentures acquired by subsidiary” as part of equity in the consolidated financial statement as at 31 December 2019.

During 2020, IVGSL sold the 2nd Debentures issued and offered by the Company amount of Baht 679.6 million to financial institution.

27 Segment information and disaggregation of revenue

The Group’s reportable segments, as described below, represent the Group’s strategic divisions. The strategic divisions offer different products, and are managed separately because they require different technology and marketing strategies. For each of the strategic divisions, the chief operating decision maker (“CODM”) reviews internal management reports on at least a quarterly basis. The following summary describes the operations in each of the Group’s reportable segments.

Segment 1	Manufacture and distribution of PET value chain comprising PX, PTA, PET, and Recycling (“Integrated PET”)
Segment 2	Manufacture and distribution of specialty PET-related chemicals comprising PIA and NDC (“Specialty Chemicals”)
Segment 3	Manufacture and distribution of PET preforms and packaging (“Packaging”)
Segment 4	Manufacture and distribution of integrated EG, integrated purified EO, PO/MTBE and integrated surfactants comprising EOA, LAB and others (“Integrated Oxides and Derivatives”)
Segment 5	Manufacture and distribution of polyester, rayon, nylon, polypropylene, composites and worsted wool fibers, for three end-use segments: mobility, lifestyle and hygiene (“Fibers”)

There are varying levels of integration between reportable segments. This integration includes sales of goods.

Information regarding the results of each reportable segment is included below. Performance is measured based on segment profit before finance costs and tax expense (income), as included in the internal management reports that are reviewed by the Group’s CODM. Segment profit before finance costs and tax expense (income) is used to measure performance as management believes that such information is the most relevant in evaluating the results of certain segments.

The Group’s main revenue is derived from contracts with customers and recognised at a point in time.

For the year ended 31 December 2020	Consolidated financial statements							
	Integrated PET	Specialty Chemicals	Packaging	Integrated Oxides	Fibers	Eliminations	Unallocated	Total
				and Derivatives				
(in thousand Baht)								
Information about reportable segments								
External revenue	166,910,522	25,333,785	9,182,449	46,148,494	83,937,657	-	-	331,512,907
Inter-segment revenue	18,286,546	2,585,296	280,266	2,404,271	420,029	(23,976,408)	-	-
Total segment revenue	185,197,068	27,919,081	9,462,715	48,552,765	84,357,686	(23,976,408)	-	331,512,907
Disaggregation of revenue from sales of goods								
Primary geographical markets								
Thailand	6,970,078	45,268	2,404,371	19,120	2,983,524	-	-	12,422,361
North America	53,088,018	13,641,469	-	38,540,309	18,145,574	-	-	123,415,370
Europe	47,285,911	6,800,482	1,053,500	2,038,577	30,231,229	-	-	87,409,699
Rest of the world	59,566,515	4,846,566	5,724,578	5,550,488	32,577,330	-	-	108,265,477
Total segment revenue	166,910,522	25,333,785	9,182,449	46,148,494	83,937,657	-	-	331,512,907
Net foreign exchange gain (loss)	(34,350)	(76,299)	(92,814)	28,634	(200,163)	3,902,232	-	3,527,240
Gain on bargain purchases	-	-	-	1,806,350	-	-	-	1,806,350
Unallocated revenue	-	-	-	-	-	-	(376,319)	(376,319)
Total revenue	185,162,718	27,842,782	9,369,901	50,387,749	84,157,523	(20,074,176)	(376,319)	336,470,178
Cost of sale of goods	154,052,556	24,501,021	6,207,610	37,391,243	71,647,566	(23,745,001)	-	270,054,995
Distribution costs and administrative expenses	15,213,871	2,479,786	635,071	7,340,323	7,373,089	(2,589,605)	-	30,443,535

<i>For the year ended 31 December 2020</i>	Integrated PET	Specialty Chemicals	Packaging	Integrated Oxides and Derivatives	Fibers	Eliminations	Unallocated	Total
	<i>(in thousand Baht)</i>							
Impairment loss (reversal of impairment loss) determined in accordance with TFRS 9, net (2019: provision for bad and doubtful debts expense, net)	19,880	1,802	(2,069)	(2,120)	25,867	-	10,766	54,126
Impairment loss of property, plant and equipment and right-of-use assets	39,461	-	-	474,095	111,390	-	-	624,946
Depreciation and amortisation	5,941,636	1,255,665	734,041	7,251,841	5,238,310	-	-	20,421,493
Unallocated expenses	-	-	-	-	-	-	5,975,133	5,975,133
Total expenses	175,267,404	28,238,274	7,574,653	52,455,382	84,396,222	(26,343,606)	5,985,899	327,574,228
Share of profit (loss) of joint ventures, net of tax	(67,780)	7,133	-	-	203,459	-	-	142,812
Profit (loss) before finance costs and tax expenses (income)	9,827,534	(388,359)	1,795,248	(2,067,633)	(35,240)	6,269,430	(6,362,218)	9,038,762
Finance costs	(2,138,789)	(298,886)	(253,465)	(1,028,524)	(1,554,461)	-	-	(5,274,125)
Unallocated items	-	-	-	-	-	-	(2,207,697)	(2,207,697)
Profit (loss) before tax expense (income)	7,688,745	(687,245)	1,541,783	(3,096,157)	(1,589,701)	6,269,430	(8,569,915)	1,556,940
Tax expense (income)	1,088,243	122,429	41,820	(1,506,557)	(443,395)	-	-	(697,460)
Unallocated items	-	-	-	-	-	-	(545,662)	(545,662)
Profit (loss) for the year	6,600,502	(809,674)	1,499,963	(1,589,600)	(1,146,306)	6,269,430	(8,024,253)	2,800,062

For the year ended 31 December 2019	Consolidated financial statements							
	Integrated PET	Specialty Chemicals	Packaging	Integrated Oxides and Derivatives	Fibers	Eliminations	Unallocated	Total
(in thousand Baht)								
Information about reportable segments								
External revenue	211,658,350	26,898,193	10,403,529	6,164,960	97,550,084	-	17,332	352,692,448
Inter-segment revenue	24,700,094	2,906,062	-	2,934,532	340,379	(30,881,067)	-	-
Total segment revenue	236,358,444	29,804,255	10,403,529	9,099,492	97,890,463	(30,881,067)	17,332	352,692,448
Disaggregation of revenue from sales of goods								
Primary geographical markets								
Thailand	9,663,300	45,330	2,872,643	-	3,599,457	-	-	16,180,730
North America	72,066,680	14,606,368	-	6,117,870	20,912,600	-	-	113,703,518
Europe	59,416,170	7,738,804	1,109,232	-	32,911,666	-	-	101,175,872
Rest of the world	70,512,200	4,507,691	6,421,654	47,090	40,126,361	-	17,332	121,632,328
Total segment revenue	211,658,350	26,898,193	10,403,529	6,164,960	97,550,084	-	17,332	352,692,448
Gain on bargain purchases								
	-	183,947	-	-	621,559	-	-	805,506
Unallocated revenue	-	-	-	-	-	-	2,183,670	2,183,670
Total revenue	236,358,444	29,988,202	10,403,529	9,099,492	98,512,022	(30,881,067)	2,201,002	355,681,624
Cost of sale of goods								
Distribution costs and administrative expenses	200,837,763	26,639,378	7,489,148	5,976,847	84,812,493	(30,701,021)	-	295,054,608
	17,463,191	2,655,839	725,024	804,707	7,415,550	(2,462,421)	-	26,601,890

<i>For the year ended 31 December 2019</i>	Consolidated financial statements						
	Integrated PET	Specialty Chemicals	Packaging	Integrated Oxides and Derivatives	Fibers	Eliminations	Total
				<i>(in thousand Baht)</i>			
Provision for bad and doubtful debts expenses	27,966	31,344	12	-	32,244	-	91,566
Impairment loss of property, plant and equipment	-	-	-	-	374,938	-	374,938
Net foreign exchange (gain) loss	(80,777)	(5,248)	1,096	(343)	73,683	694,422	682,833
Depreciation and amortisation	7,789,975	1,542,274	639,057	1,663,230	5,367,957	-	17,002,493
Unallocated expenses	-	-	-	-	-	-	4,548,934
Total expenses	226,038,118	30,863,587	8,854,337	8,444,441	98,076,865	(32,469,020)	344,357,262
Share of profit (loss) of joint ventures, net of tax	(40,532)	(28,436)	-	-	74,288	-	5,320
Profit (loss) before finance costs and tax expense	10,279,794	(903,821)	1,549,192	655,051	509,445	1,587,953	11,329,682
Finance costs	(3,425,220)	(478,995)	(324,750)	(353,485)	(2,276,403)	(49,829)	(6,908,682)
Unallocated items	-	-	-	-	-	-	1,476,712
Profit (loss) before tax expense (income)	6,854,574	(1,382,816)	1,224,442	301,566	(1,766,958)	1,538,124	5,897,712
Tax expense (income)	1,228,428	(819,408)	210,823	(17,833)	308,458	-	910,468
Unallocated items	-	-	-	-	-	-	623,560
Profit (loss) for the year	5,626,146	(563,408)	1,013,619	319,399	(2,075,416)	1,538,124	4,363,684

At / for the year ended 31 December 2020	Consolidated financial statements								
	Integrated PET	Specialty Chemicals	Packaging	Integrated Oxides and Derivatives		Fibers	Eliminations	Unallocated	Total
				(in thousand Baht)					
Cash and cash equivalents	5,828,908	164,573	624,385	743,964	5,770,561	-	-	-	13,132,391
Trade accounts receivable	18,486,405	3,169,538	1,090,473	6,736,869	8,479,002	(6,241,825)	-	-	31,720,462
Inventories	25,192,763	6,141,005	860,545	6,253,716	15,550,241	(59,783)	-	-	53,938,487
Property, plant and equipment	109,260,539	9,526,375	4,915,404	83,190,668	56,060,537	-	-	-	262,953,523
Unallocated assets	-	-	-	-	-	-	91,426,643	-	91,426,643
Total assets	158,768,615	19,001,491	7,490,807	96,925,217	85,860,341	(6,301,608)	91,426,643	453,171,506	
Trade and other accounts payable	36,316,902	5,816,863	1,109,909	6,836,701	16,117,374	(5,953,578)	-	-	60,244,171
Interest-bearing liabilities	52,204,393	9,328,751	3,160,075	32,432,686	39,611,371	(93,970,806)	-	-	42,766,470
Unallocated liabilities	-	-	-	-	-	-	214,553,080	-	214,553,080
Total liabilities	88,521,295	15,145,614	4,269,984	39,269,387	55,728,745	(99,924,384)	214,553,080	317,563,721	
Capital expenditure and investments	7,328,565	1,704,338	578,113	64,224,575	3,031,013	-	1,498,685	-	78,365,289
Depreciation	5,132,467	1,046,093	671,708	6,564,361	4,295,623	-	46,931	-	17,757,183
Amortisation	809,169	209,572	62,333	687,480	942,688	-	18,771	-	2,730,013
Loss (gain) on disposal and written-off of property, plant and equipment	(12,143)	-	(677)	8,362	132,977	-	(43)	-	128,476

<i>At / for the year ended 31 December 2019</i>	Consolidated financial statements						
	Integrated PET	Specialty Chemicals	Packaging	Integrated Oxides and Derivatives	Fibers	Eliminations	Total
				<i>(in thousand Baht)</i>			
Cash and cash equivalents	3,905,799	210,383	202,514	9,916	2,806,990	-	7,135,602
Trade accounts receivable	23,226,856	3,081,143	1,611,892	1,503,437	9,282,690	(5,215,840)	33,490,178
Inventories	32,680,472	8,896,264	1,013,962	1,224,339	18,468,548	(118,671)	62,164,914
Property, plant and equipment	103,701,317	11,976,750	4,889,344	32,866,418	58,039,754	-	211,473,583
Unallocated assets	-	-	-	-	-	66,303,630	66,303,630
Total assets	163,514,444	24,164,540	7,717,712	35,604,110	88,597,982	(5,334,511)	380,567,907
Trade and other accounts payable	40,724,735	4,644,549	1,128,637	1,013,796	16,283,688	(5,261,667)	58,533,738
Interest-bearing liabilities	49,642,129	13,624,362	3,427,868	26,801,983	47,159,839	(98,782,446)	41,873,735
Unallocated liabilities	-	-	-	-	-	-	141,993,144
Total liabilities	90,366,864	18,268,911	4,556,505	27,815,779	63,443,527	(104,044,113)	242,400,617
Capital expenditure and investments	8,072,280	1,979,365	539,982	6,000,612	8,833,873	-	25,604,023
Depreciation	6,611,849	1,313,980	584,077	1,370,145	4,448,261	-	14,343,815
Amortisation	1,180,407	228,294	54,979	293,085	919,696	-	2,696,639
Loss (gain) on disposal and written-off of property, plant and equipment	24,034	(193,635)	(120)	8,971	9,005	-	(151,745)

(a) Geographical segments

In presenting information on the basis of geographical segments, segment revenue is based on the geographical location of customers. Segment assets are based on the geographical location of the assets.

The Group operates in the following main geographical areas:

Segment 1	Thailand
Segment 2	North America
Segment 3	Europe
Segment 4	Rest of the world

Consolidated financial statements				
	Segment assets		Capital expenditure and investments	
	2020	2019	2020	2019
	<i>(in thousand Baht)</i>			
Thailand	39,879,445	35,265,991	2,318,926	2,223,437
North America	215,034,477	156,758,459	70,614,631	12,562,759
Europe	112,217,798	99,281,294	3,923,700	7,530,991
Rest of the world	86,039,786	89,262,163	1,508,032	3,286,836
Total	453,171,506	380,567,907	78,365,289	25,604,023

(b) Promotional privileges

Certain subsidiaries incorporated in Thailand have been granted promotional certificates by the Office of the Board of Investment for manufacturing of worsted wool yarn, wool top, purified terephthalic acid, polyethylene terephthalate resin, PET preforms and closures, amorphous resin and being an international business center ("promoted businesses"). The certain subsidiaries incorporated in Thailand have been granted several privileges including exemption and/or reduction from payment of income tax on the net profit derived from promoted operations with certain time, terms and conditions prescribed in the promotional certificates.

Consolidated financial statements						
	2020			2019		
	Promoted businesses	Non-promoted businesses	Total	Promoted businesses	Non-promoted businesses	Total
<i>Year ended 31 December</i>						
	<i>(in thousand Baht)</i>					
Export sales	10,694,705	14,679,748	25,374,453	6,799,931	23,525,747	30,325,678
Local sales	4,979,027	19,834,097	24,813,124	6,453,468	30,974,681	37,428,149
Eliminations	(3,562,986)	-	(3,562,986)	(2,913,622)	-	(2,913,622)
Total	12,110,746	34,513,845	46,624,591	10,339,777	54,500,428	64,840,205

(c) Contract Balances

The contract liabilities primarily relate to the advance consideration received from customers for sale of goods. The Group recognises such contract liabilities as revenue when transferring control of the goods to the customers.

Significant changes in the contract liabilities balances during the year are as follows:

	Consolidated financial statements		Separate financial statements	
	Contract liabilities		Contract liabilities	
	2020	2019	2020	2019
	<i>(in thousand Baht)</i>			
At 1 January	563,485	450,331	-	-
Recognised as revenue from sale of goods during the year	(14,532,328)	(4,061,748)	-	-
Advance received during the year	15,411,345	3,996,407	-	-
Advance received from customer acquired through business combination	-	228,243	-	-
Reclassification	(22,035)	-	-	-
Effect of movements in exchange rates	(28,931)	(49,748)	-	-
At 31 December	1,391,536	563,485	-	-

28 Other income

	Consolidated financial statements		Separate financial statements	
	2020	2019	2020	2019
	<i>(in thousand Baht)</i>			
Insurance claim	942,824	203,999	-	-
Others	2,088,656	1,979,671	626,182	362,209
Total	3,031,480	2,183,670	626,182	362,209

29 Cost of sales of goods

	Consolidated financial statements		Separate financial statements	
	2020	2019	2020	2019
	<i>(in thousand Baht)</i>			
Changes in inventories of finished goods and work in progress	10,722,945	5,582,080	-	-
Raw materials and consumables used	187,960,504	223,685,103	-	-
Depreciation and amortisation	18,203,118	14,799,024	-	-
Personnel expense	27,021,978	22,122,329	-	-
Others	43,894,327	43,155,975	-	-
Total	287,802,872	309,344,511	-	-

30 Distribution costs

	Consolidated financial statements		Separate financial statements	
	2020	2019	2020	2019
	(in thousand Baht)			
Distribution	17,921,023	15,913,624	-	-
Insurance expense	1,027,457	734,842	-	-
Travelling expense	235,329	497,361	-	-
Others	1,552,960	1,828,914	-	-
Total	20,736,769	18,974,741	-	-

31 Administrative expenses

	Consolidated financial statements		Separate financial statements	
	2020	2019	2020	2019
	(in thousand Baht)			
Personnel expense	5,289,628	4,280,161	-	-
Depreciation and amortisation	2,284,078	2,241,430	-	-
Professional fees	1,674,462	1,999,346	188,679	347,680
Others	8,798,028	6,447,349	280,650	65,192
Total	18,046,196	14,968,286	469,329	412,872

32 Employee benefit expenses

	Consolidated financial statements		Separate financial statements	
	2020	2019	2020	2019
	(in thousand Baht)			
Management				
Wages and salaries	177,001	165,407	-	-
Contribution to defined contribution plans, social security and expenses related to defined benefit plans	5,332	4,130	-	-
Others	126,986	137,551	23,220	30,520
	309,319	307,088	23,220	30,520
Other employees				
Wages and salaries	24,530,311	19,396,332	-	-
Contribution to defined contribution plans, social security and expenses related to defined benefit plans	2,816,665	2,589,325	-	-
Bonus	1,223,257	1,422,223	-	-
Staff welfare	3,701,586	2,952,425	-	-
Others	39,787	42,185	-	-
	32,311,606	26,402,490	-	-
Total employee benefit expenses	32,620,925	26,709,578	23,220	30,520

Defined contribution plans

The defined contribution plans comprise provident funds established by subsidiaries registered in Thailand for its Thai employees. Membership to the funds is on a voluntary basis. Contributions are made monthly by the employees at the rate of 3 - 15% of their basic salaries and by the Thai subsidiaries at the rate of 3 - 5% of the employees' basic salaries. The provident funds are registered with the Ministry of Finance as juristic entities and are managed by a licensed Fund Manager. Total expense recognised by the Thai subsidiaries for this defined contribution plans for the year ended 31 December 2020 amounted to Baht 37.2 million (2019: Baht 35.8 million).

Employee Joint Investment Program (EJIP)

On 23 June 2017, The Company received the approval of Employee Joint Investment Program ("EJIP") from Securities and Exchange Commission ("SEC"). EJIP is an investment program for accumulative buying of IVL shares on a periodic basis by the employees of all its subsidiaries and all its joint ventures in Thailand, established to serve as another means of compensating the certain employees and executives effective for the period from May 2017 to June 2024. Total expense recognised for the program for the year ended 31 December 2020 amounted to Baht 18.6 million. (2019: Baht 18.8 million).

Employee retirement schemes

Subsidiaries in United States established a 401(k) plan that allows eligible employees to contribute up to 60% of their compensation, with the contributions by the US subsidiaries of 50% of employee contributions but not exceed 6% of their compensation. The plan also allows discretionary profit sharing contributions to be made by management. Total expense recognised for the plan for the year ended 31 December 2020 amounted to approximately USD 7.7 million (Baht 239.5 million) (2019: USD 3.5 million (Baht 108.8 million)).

Subsidiaries in Europe established a defined contribution plan that provides benefits for its employees upon retirement. Total annual contribution by the European subsidiaries to the plans is defined by the annual and risk premiums charged by the insurance company. Total expense recognised for the plans for the year ended 31 December 2020 was GBP 0.1 million and EUR 3.6 million (Baht 133.0 million) (2019: GBP 0.1 million and EUR 3.7 million (Baht 134.0 million)).

33 Expenses by nature

The statements of income include an analysis of expenses by function. Expenses by nature disclosed in accordance with the requirements of various TFRS were as follows:

		Consolidated financial statements		Separate financial statements	
	<i>Note</i>	2020	2019	2020	2019
		<i>(in thousand Baht)</i>			
Changes in inventories of finished goods and work in progress		10,722,945	5,582,080	-	-
Raw materials and consumables used		187,960,504	223,685,103	-	-
Employee benefit expenses	32	32,311,606	26,402,490	-	-
Depreciation and amortisation		20,487,196	17,040,454	-	-

34 Finance costs

		Consolidated financial statements		Separate financial statements	
	Note	2020	2019	2020	2019
		(in thousand Baht)			
Interest expense:					
Related parties	7	6,772	-	-	-
Financial institutions		8,139,564	7,149,025	2,231,194	2,286,686
Total interest expense		8,146,336	7,149,025	2,231,194	2,286,686
Less: amount included in the cost of assets under construction	15, 19	(472,475)	(1,533,896)	-	-
Net		7,673,861	5,615,129	2,231,194	2,286,686

35 Tax expense (income)

<i>Income tax recognised in profit or loss</i>	Consolidated financial statements		Separate financial statements	
	2020	2019	2020	2019
<i>(in million Baht)</i>				
Current tax expense				
Current year	38	859	8	-
Adjustment for under provided in prior years	41	13	-	-
	79	872	8	-
Deferred tax expense				
Movements in temporary differences	(1,322)	662	32	(25)
	(1,322)	662	32	(25)
Total tax expense (income)	(1,243)	1,534	40	(25)

Consolidated financial statements						
	Before tax	2020 Tax (expense) benefit	Net of tax	Before tax	2019 Tax (expense) benefit	Net of tax
<i>Income tax</i>						
<i>(in million Baht)</i>						
<i>Recognised in other comprehensive income</i>						
Net investment hedge	862	(9)	853	207	(41)	166
Cash flow hedges reserve	(1,188)	94	(1,094)	853	21	874
Defined benefit plan actuarial gains (losses)	(797)	186	(611)	(895)	133	(762)
Total	(1,123)	271	(852)	165	113	278

Separate financial statements						
	Before tax	2020 Tax (expense) income	Net of tax (in million Baht)	Before tax	2019 Tax (expense) income	Net of tax
Income tax						
Recognised in other comprehensive income						
Net investment hedge	(99)	20	(79)	207	(41)	166
Cash flow hedges reserve	(64)	12	(52)	(84)	17	(67)
Total	(163)	32	(131)	123	(24)	99
Consolidated financial statements						
	Rate (%)	2020 (in million Baht)	Rate (%)	2019 (in million Baht)		
Profit before income tax expense		1,557		5,898		
Income tax using the Thai corporation tax rate	20.00	311	20.00	1,180		
Income tax reduction - deferred - other countries		(66)		95		
Effect of different tax rates in foreign jurisdictions		(677)		278		
Income not subject to tax and tax privileges		(931)		(544)		
Coupon payment on subordinated perpetual debentures recognised in equity		(150)		(215)		
Expenses not deductible for tax purposes		880		417		
Utilisation of previously unrecognised tax losses		(374)		(337)		
Recognition of deferred tax assets from previously unrecognised tax losses		(2,221)		(382)		
Current year losses for which no deferred tax asset was recognised		451		913		
Under provided in prior years		41		13		
Written-off unrecoverable deferred tax assets from loss carry forward		677		360		
Share of profit of joint ventures		(55)		(34)		
Foreign exchange differences arising from transaction of intercompany loans considered as part of net investment in foreign operations		82		(846)		
Gain on bargain purchases		(410)		(161)		
Change in recognition of temporary difference		1,353		661		
Others		(154)		136		
Total	(79.83)	(1,243)	26.01	1,534		
Separate financial statements						
	Rate (%)	2020 (in million Baht)	Rate (%)	2019 (in million Baht)		
Profit before income tax expense		7,287		11,047		
Income tax using the Thai corporation tax rate	20.00	1,457	20.00	2,209		
Income not subject to tax		(1,274)		(2,021)		
Coupon payment on subordinated perpetual debentures recognised in equity		(150)		(215)		
Expenses not deductible for tax purposes		7		2		
Total	0.55	40	(0.23)	(25)		

Consolidated financial statements						
<i>Deferred tax</i>	Assets		Liabilities		Net	
<i>At 31 December</i>	2020	2019	2020	2019	2020	2019
	<i>(in million Baht)</i>					
Property, plant and equipment	(1,889)	(2,241)	23,579	16,548	21,690	14,307
Right-of-use assets	(562)	-	509	-	(53)	-
Intangible assets	(2,769)	(118)	5,424	5,512	2,655	5,394
Accounts receivable	-	(3)	-	-	-	(3)
Derivatives	(257)	-	378	306	121	306
Inventories	(132)	(204)	3	33	(129)	(171)
Provisions	(868)	(533)	1,409	348	541	(185)
Loss carry forward	(8,492)	(3,867)	-	-	(8,492)	(3,867)
Others	(2,300)	(1,537)	41	444	(2,259)	(1,093)
Total	(17,269)	(8,503)	31,343	23,191	14,074	14,688
Set off of tax	14,657	6,181	(14,657)	(6,181)	-	-
Net deferred tax (assets) liabilities	(2,612)	(2,322)	16,686	17,010	14,074	14,688

Separate financial statements						
<i>Deferred tax</i>	Assets		Liabilities		Net	
<i>At 31 December</i>	2020	2019	2020	2019	2020	2019
	<i>(in million Baht)</i>					
Derivatives	(27)	(14)	170	189	143	175
Provisions	(5)	(3)	-	-	(5)	(3)
Loss carry forward	(6)	(40)	-	-	(6)	(40)
Total	(38)	(57)	170	189	132	132
Set off of tax	38	57	(38)	(57)	-	-
Net deferred tax liabilities	-	-	132	132	132	132

Consolidated financial statements							
Deferred tax	At 1 January 2020	Charged / (credited to) :			Acquired through business combinations	Exchange differences	At 31 December 2020
		Opening balance adjustment	Profit or loss	Other comprehensive income			
		(in million Baht)					
Property, plant and equipment	14,307	-	3,880	-	3,529	(26)	21,690
Right-of-use assets	-	-	(54)	-	-	1	(53)
Intangible assets	5,394	-	(118)	-	(2,811)	190	2,655
Accounts receivable	(3)	3	-	-	-	-	-
Derivatives	306	(21)	(77)	(90)	-	3	121
Inventories	(171)	-	42	-	-	-	(129)
Provisions	(185)	(6)	813	-	(56)	(25)	541
Loss carry forward	(3,867)	-	(4,775)	-	-	150	(8,492)
Others	(1,093)	(1)	(1,033)	(181)	2	47	(2,259)
Total	14,688	(25)	(1,322)	(271)	664	340	14,074

<i>Unrecognised deferred tax assets</i>	Consolidated		Separate	
	financial statements		financial statements	
	2020	2019	2020	2019
	<i>(in million Baht)</i>			
Deductible temporary differences	14	39	-	-
Tax losses	2,724	2,593	-	-
Total	2,738	2,632	-	-

The tax losses expire from 2021 onward. The deductible temporary differences do not expire under current tax legislation. The Group has not recognised these items as deferred tax assets because it is not probable that the Group will have sufficient future taxable profit to utilise the benefits therefrom.

36 Earnings per share

	Consolidated financial statements		Separate financial statements	
	2020	2019	2020	2019
	<i>(in thousand Baht / thousand shares)</i>			
<i>Profit attributable to ordinary shareholders for the year ended 31 December</i>				
Profit for the year attributable to owners of the parent	2,414,276	5,252,109	7,246,565	11,072,571
Less: coupon payment on subordinated perpetual debentures	<u>(748,869)</u>	<u>(977,576)</u>	<u>(752,055)</u>	<u>(982,603)</u>
Profit attributable to ordinary shareholders of the Company (basic)	<u>1,665,407</u>	<u>4,274,533</u>	<u>6,494,510</u>	<u>10,089,968</u>
Weighted average number of ordinary shares outstanding (basic) at 31 December	<u>5,614,552</u>	<u>5,614,552</u>	<u>5,614,552</u>	<u>5,614,552</u>
Earnings per share (basic) (in Baht)	<u>0.30</u>	<u>0.76</u>	<u>1.16</u>	<u>1.80</u>

37 Dividends

The shareholders of the Company have approved dividends as follows:

	Approval date	Payment schedule	Dividend rate per share (Baht)	Amount (in million Baht)
2020				
Interim dividend	10 November 2020	December 2020	<u>0.175</u>	<u>982.55</u>
Interim dividend	14 August 2020	September 2020	<u>0.175</u>	<u>982.55</u>
Interim dividend	13 May 2020	June 2020	<u>0.175</u>	<u>982.55</u>
2019				
Interim dividend	10 April 2020	May 2020	<u>0.175</u>	<u>982.55</u>
Interim dividend	12 November 2019	December 2019	<u>0.350</u>	<u>1,965.09</u>
Interim dividend	9 August 2019	September 2019	<u>0.350</u>	<u>1,965.09</u>
Interim dividend	8 May 2019	June 2019	<u>0.350</u>	<u>1,965.09</u>
2018				
Annual dividend	24 April 2019	May 2019	<u>0.350</u>	<u>1,965.09</u>

38 Financial instruments

(a) Carrying amounts and fair values

The following tables show the carrying amounts and fair values of financial assets and financial liabilities, including their levels in the fair value hierarchy. It does not include fair value information for financial assets and financial liabilities measured at amortised cost if the carrying amount is a reasonable approximation of fair value.

Consolidated financial statements							
Carrying amount				Fair value			
	Financial instruments measured at FVTPL	Financial instruments measured at FVOCI	Financial instruments measured at amortised cost	Total	Level 1	Level 2	Level 3
<i>(in million Baht)</i>							
At 31 December 2020							
Other financial assets							
Forward exchange contracts	138	-	-	1,667	-	1,667	-
Cross currency swaps	-	-	-	1,021	-	1,021	-
Commodity derivatives	43	-	-	584	-	584	-
Total other financial assets	181	-	-	3,272			
Other financial liabilities							
Interest rate swaps	17	-	-	1,062	-	1,062	-
Forward exchange contracts	160	-	-	482	-	482	-
Cross currency swaps	-	-	-	237	-	237	-
Commodity derivatives	5	-	-	61	-	61	-
Total other financial liabilities	182	-	-	1,842			
At 31 December 2020							
Other financial assets							
Forward exchange contracts	1	-	-	223	-	223	-
Total other financial assets	1	-	-	223			
Other financial liabilities							
Interest rate swaps	-	-	-	136	-	136	-
Total other financial liabilities	-	-	-	136			

Separate financial statements							
Carrying amount				Fair value			
	Financial instruments measured at FVTPL	Financial instruments measured at FVOCI	Financial instruments measured at amortised cost	Total	Level 1	Level 2	Level 3
<i>(in million Baht)</i>							
At 31 December 2020							
Other financial assets							
Forward exchange contracts	1	-	-	223	-	223	-
Total other financial assets	1	-	-	223			
Other financial liabilities							
Interest rate swaps	-	-	-	136	-	136	-
Total other financial liabilities	-	-	-	136			

Consolidated financial statements					
	Carrying amount	Fair value			
		Level 1	Level 2	Level 3	Total
		(in million Baht)			

31 December 2019

Financial assets and financial liabilities measured at fair value

Derivative assets	3,973	-	3,973	-	3,973
Derivative liabilities	253	-	253	-	253
Commodity derivative liabilities	-	-	122	-	122

Separate financial statements					
	Carrying amount	Fair value			
		Level 1	Level 2	Level 3	Total
		(in million Baht)			

31 December 2019

Financial assets and financial liabilities measured at fair value

Derivative assets	321	-	321	-	321
Derivative liabilities	72	-	72	-	72

Financial instruments measured at fair value

Type	Valuation technique
Forward exchange contracts	<i>Forward pricing:</i> The fair value is determined using quoted forward exchange rates at the reporting date and present value calculations based on high credit quality yield curves in the respective currencies.
Interest rate swaps	<i>Swap models:</i> The fair value is calculated as the present value of the estimated future cash flows. Estimates of future floating-rate cash flows are based on quoted swap rates, futures prices and interbank borrowing rates. Estimated cash flows are discounted using a yield curve constructed from similar sources and which reflects the relevant benchmark interbank rate used by market participants for this purpose when pricing interest rate swaps.
Commodity futures/ Commodity swaps/ Cross currency swap and other derivatives	<i>In cases where there is an active market,</i> the Group/Company uses the market value as the fair value of derivatives. <i>In cases where there is no active market,</i> simple over-the-counter derivative are derived by using a valuation technique incorporating observable market data.

(b) Financial risk management policies

Risk management framework

The Group's/Company's board of directors has overall responsibility for the establishment and oversight of the Group's/Company's risk management framework. The board of directors has established the risk management committee, which is responsible for developing and monitoring the Group's/Company's risk management policies. The committee reports regularly to the board of directors on its activities.

The Group's/Company's risk management policies are established to identify and analyse the risks faced by the Group/Company, to set appropriate risk limits and controls and to monitor risks and adherence to limits. Risk management policies and systems are reviewed regularly to reflect changes in market conditions and the Group's/Company's activities. The Group/Company, through its training and management standards and procedures, aims to maintain a disciplined and constructive control environment in which all employees understand their roles and obligations.

(b.1) Credit risk

Credit risk is the risk of financial loss to the Group/Company if a customer or counterparty to a financial instrument fails to meet its contractual obligations and arises principally from the Group's receivables from customers.

(b.1.1) Trade accounts receivables

The risk management committee has established a credit policy under which each new customer is analysed individually for creditworthiness before the Group's standard payment and delivery terms and conditions are offered. The Group's review includes external ratings, if they are available, financial statements, credit agency information, industry information and in some cases bank references. Sale limits are established for each customer and reviewed periodically. Any sales exceeding those limits require approval from the risk management committee.

The following table provides information about the exposure to credit risk and ECLs for trade accounts receivables.

Consolidated financial statements			
<i>At 31 December 2020</i>	Carrying amounts of trade accounts receivable <i>(in thousand Baht)</i>	Weighted average loss rate <i>(%)</i>	Allowance for expected credit loss <i>(in thousand Baht)</i>
Within credit terms	30,001,548	0.11	32,369
Overdue:			
Less than 3 months	3,068,552	0.63	19,236
3-6 months	222,171	11.67	25,925
6-12 months	87,551	25.82	22,606
Over 12 months	664,991	78.66	523,072
Total	34,044,813		623,208
Less allowance for expected credit loss	(623,208)		
Net	33,421,605		

Loss rates are based on actual credit loss experience over the past 2 years. These rates are multiplied by scalar factors to reflect differences between economic conditions during the period over which the historical data has been collected, current conditions and the Group's view of economic conditions over the expected lives of the receivables.

<i>Trade accounts receivables</i>	Consolidated financial statements <i>(in thousand Baht)</i>	Separate financial statements
<i>At 31 December 2019</i>		
Within credit terms	30,115,451	-
Overdue:		
Less than 3 months	3,592,984	-
3-6 months	270,639	-
6-12 months	127,195	-
Over 12 months	822,867	-
	34,929,136	-
Less allowance for doubtful accounts	(624,239)	-
Net	34,304,897	-

The normal credit term granted by the Group ranges from 7 days to 240 days.

<i>Movement of allowance for expected credit loss of trade accounts receivables</i>		Consolidated financial statements <i>(in thousand Baht)</i>	Separate financial statements
	<i>Note</i>		
At 1 January 2020 - restated	3(a.2)	656,549	-
Assumes from business acquisition	6	24,979	-
Addition		100,890	-
Reversal		(100,164)	-
Write-off		(44,553)	-
Effect of movements in exchange rates		(14,493)	-
At 31 December 2020		623,208	-

(b.1.2) Cash and cash equivalent and derivatives

The Group's/Company's exposure to credit risk arising from cash and cash equivalents and derivative assets is limited because the counterparties are banks and financial institutions with a minimum investment grade credit rating given from external rating agency, for which the Group/Company considers to have low credit risk.

(b.1.3) Guarantees

The Group's/Company's policy is to provide financial guarantees for subsidiaries' liabilities. At 31 December 2020, the Group/Company has issued a guarantee to certain banks in respect of credit facilities granted to subsidiaries (see note 7).

(b.2) Liquidity risk

The Group/Company monitors its liquidity risk and maintains a level of cash and cash equivalents deemed adequate by management to finance the Group's/Company's operations and to mitigate the effects of fluctuations in cash flows.

The following table are the remaining contractual maturities of financial liabilities at the reporting date. The amounts are gross and undiscounted and include contractual interest payments and exclude the impact of netting agreements.

Consolidated financial statements						
Contractual cash flows						
<i>At 31 December 2020</i>	Carrying amount	1 year or less	More than 1 year but less than 2 years (in thousand Baht)	More than 2 years but less than 5 years	More than 5 years	Total
Non-derivative financial liabilities						
Bank overdrafts	3,019,308	3,019,308	-	-	-	3,019,308
Trade accounts payable	57,782,561	57,782,561	-	-	-	57,782,561
Short-term loans from financial institutions	17,706,303	17,706,303	-	-	-	17,706,303
Long-term loans from financial institutions	108,367,794	8,919,764	26,226,279	62,581,267	10,640,484	108,367,794
Lease liabilities	10,658,050	1,713,584	1,605,519	2,331,765	5,007,182	10,658,050
Debentures	72,208,998	7,583,570	7,606,916	31,633,934	25,384,578	72,208,998
Interest payable	677,844	4,296,964	3,572,462	7,160,617	4,564,529	19,594,572
	270,420,858	101,022,054	39,011,176	103,707,583	45,596,773	289,337,586
Derivative financial liabilities						
Cross currency swaps:						
- Cash outflow	(11,473)	(248)	(247)	(742)	(10,236)	(11,473)
- Cash inflow	12,160	355	355	1,063	10,387	12,160
Interest rate swaps	(1,133)	(501)	(322)	(310)	-	(1,133)
Forward exchange contracts:						
- Cash outflow	(16,694)	(6,737)	-	(9,957)	-	(16,694)
- Cash inflow	17,073	6,931	-	10,142	-	17,073
Commodity derivatives	(61)	(61)	-	-	-	(61)
	(128)	(261)	(214)	196	151	(128)

Separate financial statements						
At 31 December 2020	Carrying amount	1 year or less	Contractual cash flows			Total
			More than 1 year but less than 2 years	More than 2 years but less than 5 years	More than 5 years	
			(in thousand Baht)			
Non-derivative financial liabilities						
Long-term loans from financial institutions	8,988,664	112,274	693,293	8,183,097	-	8,988,664
Debentures	54,412,231	6,487,787	6,535,542	16,004,323	25,384,579	54,412,231
Interest payable	293,182	2,321,700	1,951,793	4,201,737	4,392,350	12,867,580
	63,694,077	8,921,761	9,180,628	28,389,157	29,776,929	76,268,475
Derivative financial liabilities						
Interest rate swaps	(137)	(67)	(55)	(15)	-	(137)
	(137)	(67)	(55)	(15)	-	(137)

Consolidated financial statements					
Maturity period					
At 31 December 2019	Effective interest rate (% per annum)	Within 1 year	After 1 year but within 5 years (in thousand Baht)	After 5 years	Total
Financial Assets					
Short-term loans to related parties	1.32-9.63	170,994	-	-	170,994
Long-term loans to related parties	5.76-6.35	-	28,269	-	28,269
Total		170,994	28,269	-	199,263
Financial Liabilities					
Bank overdrafts	0.03-18.00	4,174,610	-	-	4,174,610
Short-term loans from financial institutions	0.50-18.25	26,204,889	-	-	26,204,889
Long-term loans from financial institutions	1.00-17.00	6,033,458	37,348,593	5,202,580	48,584,631
Finance lease liabilities	1.50-20.00	130,023	515,878	173,354	819,255
Debentures	2.31-6.00	4,107,833	34,464,149	28,595,891	67,167,873
Total		40,650,813	72,328,620	33,971,825	146,951,258

Separate financial statements					
		Maturity period			
<i>At 31 December 2019</i>	Effective interest rate (% per annum)	Within 1 year	After 1 year but within 5 years (in thousand Baht)	After 5 years	Total
Financial Assets					
Short-term loans to related parties	3.20-4.81	15,292,538	-	-	15,292,538
Long-term loans to related parties	2.81-4.77	-	71,511,640	-	71,511,640
Total		15,292,538	71,511,640	-	86,804,178

At 31 December 2019	Separate financial statements				
	Effective interest rate (% per annum)	Maturity period			Total
		Within 1 year	After 1 year but within 5 years (in thousand Baht)	After 5 years	
Financial Liabilities					
Short-term loans from financial institutions	1.55-2.25	4,961,000	-	-	4,961,000
Long-term loans from financial institutions	3.40-4.26	-	3,020,659	-	3,020,659
Debentures	2.31-6.00	3,388,148	21,293,677	24,134,730	48,816,555
Total		8,349,148	24,314,336	24,134,730	56,798,214

The cash inflows/cash outflows disclosed in the above table represent the contractual undiscounted cash flows relating to derivative financial liabilities held for risk management purposes and which are not usually closed out before contractual maturity. The disclosure shows net cash flow amounts for derivatives that are net cash-settled and gross cash inflow and outflow amounts for derivatives that have simultaneous gross cash settlement.

(b.3) Market risk

The Group/Company is exposed to normal business risks from changes in market interest rates and currency exchange rates and from non-performance of contractual obligations by counterparties. The Group/Company does not hold or issue derivatives for speculative or trading purposes.

(b.3.1) Foreign currency risk

The Group/Company is exposed to foreign currency risk relating to purchases, sales and borrowings which are denominated in foreign currencies. The Group/Company primarily utilises forward exchange contracts with maturities of less than one year to hedge such financial assets and liabilities denominated in foreign currencies. The forward exchange contracts entered into at the reporting date also relate to anticipated purchases and sales denominated in foreign currencies, for the subsequent period.

The Group/Company is exposed to the transactions with foreign currency risk to the extent that there is a mismatch between the currencies in which sales, purchases, receivables and borrowings are denominated and the respective functional currencies of the Group/Company.

The Group's/Company's risk management policy is to hedge up to 90% its estimated foreign currency exposure in respect of forecast sales and purchases within 12 months at any point in time. The Group/Company uses forward exchange contracts to hedge its currency risk, mostly with less-than-one-year maturity from the reporting date. These contracts are generally designated as financial instruments measured at FVTPL.

The Group/Company designates the spot element of forward foreign exchange contracts to hedge its currency risk and applies a hedge ratio of 1:1. The Group's/Company's policy specifies the critical terms of the forward exchange contracts to align with the hedged item.

The Group/Company determines the existence of an economic relationship between the hedging instrument and hedged item based on the currency, amount and timing of their respective cash flows. The Group/Company assesses whether the derivative designated in each hedging relationship is effective in offsetting changes in cash flows of the hedged item using the hypothetical derivative method.

In these hedge relationships, the main sources of ineffectiveness are:

- the effect of the counterparties' and the Group/ Company's own credit risk on the fair value of the forward foreign exchange contracts, which is not reflected in the change in the fair value of the hedged cash flows attributable to the change in exchange rates; and
- differences in the timing of the hedged transactions

<i>Exposure to foreign currency at 31 December</i>	Consolidated financial statements		Separate financial statements	
	2020	2019	2020	2019
	<i>(in thousand Baht)</i>			
<i>United States Dollars</i>				
Cash and cash equivalents	1,013,970	3,640,112	1,047	411
Trade accounts receivable	3,449,307	3,954,742	-	-
Short-term loans to related parties	-	-	3,023,380	3,473,891
Interest-bearing liabilities	(53,496,259)	(24,050,394)	(3,010,979)	(3,020,659)
Trade accounts payable	(7,548,371)	(6,286,519)	-	-
Gross balance sheet exposure	<u>(56,581,353)</u>	<u>(22,742,059)</u>	<u>13,448</u>	<u>453,643</u>
<i>Euro</i>				
Cash and cash equivalents	205,053	92,487	15	13
Trade accounts receivable	1,009,925	1,185,272	-	-
Interest-bearing liabilities	(11,448,925)	(9,169,526)	-	-
Trade accounts payable	(214,747)	(1,076,719)	-	-
Gross balance sheet exposure	<u>(10,448,694)</u>	<u>(8,968,486)</u>	<u>15</u>	<u>13</u>
<i>Pounds Sterling</i>				
Cash and cash equivalents	83,055	52,751	-	-
Trade accounts receivable	76,277	80,868	-	-
Interest-bearing liabilities	(1)	(879)	-	-
Trade accounts payable	(13,110)	(35,433)	-	-
Gross balance sheet exposure	<u>146,221</u>	<u>97,307</u>	<u>-</u>	<u>-</u>
<i>Chinese Yuan</i>				
Cash and cash equivalents	378,303	242,326	-	-
Trade accounts receivable	337,825	572,767	-	-
Interest-bearing liabilities	(75,369)	(78,683)	-	-
Trade accounts payable	(171,904)	(134,909)	-	-
Gross balance sheet exposure	<u>468,855</u>	<u>601,501</u>	<u>-</u>	<u>-</u>
<i>Mexican Peso</i>				
Cash and cash equivalents	148,442	84,491	-	-
Trade accounts receivable	378,530	455,837	-	-
Short-term loans to related parties	56,250	14,738	-	-
Interest-bearing liabilities	(57,953)	-	-	-
Trade accounts payable	(1,364,689)	(406,117)	-	-
Gross balance sheet exposure	<u>(839,420)</u>	<u>148,949</u>	<u>-</u>	<u>-</u>

<i>Exposure to foreign currency at 31 December</i>	Consolidated financial statements		Separate financial statements	
	2020	2019	2020	2019
	<i>(in thousand Baht)</i>			
<i>Polish Zloty</i>				
Cash and cash equivalents	80,774	42,566	-	-
Trade accounts receivable	101,631	69,116	-	-
Trade accounts payable	(179,948)	(117,739)	-	-
Gross balance sheet exposure	2,457	(6,057)	-	-
<i>Indonesian Rupiah</i>				
Cash and cash equivalents	167,089	56,262	-	-
Trade accounts receivable	790,556	891,467	-	-
Interest-bearing liabilities	(9,814)	(17,481)	-	-
Trade accounts payable	(1,473,252)	(1,243,114)	-	-
Gross balance sheet exposure	(525,421)	(312,866)	-	-
<i>Danish Krone</i>				
Cash and cash equivalents	506,237	136,436	-	-
Trade accounts receivable	179,467	426,251	-	-
Interest-bearing liabilities	(4,518)	-	-	-
Trade accounts payable	(444,322)	(397,000)	-	-
Gross balance sheet exposure	236,864	165,687	-	-
<i>Turkish Lira</i>				
Cash and cash equivalents	3,334	-	-	-
Trade accounts payable	(6,143)	-	-	-
Gross balance sheet exposure	(2,809)	-	-	-
<i>Indian Rupee</i>				
Cash and cash equivalents	125,640	44,955	-	-
Other investments	-	2,654,004	-	-
Trade accounts receivable	45,686	169,224	-	-
Trade accounts payable	(2,854)	(7,780)	-	-
Gross balance sheet exposure	168,472	2,860,403	-	-
<i>Czech Koruna</i>				
Cash and cash equivalents	35,650	4,750	-	-
Trade accounts receivable	1,274	416	-	-
Interest-bearing liabilities	-	(6,694)	-	-
Trade accounts payable	(96,279)	(43,568)	-	-
Gross balance sheet exposure	(59,355)	(45,096)	-	-
<i>Egyptian pound</i>				
Cash and cash equivalents	19,599	-	-	-
Trade accounts receivable	28,047	-	-	-
Interest-bearing liabilities	(17,186)	-	-	-
Trade accounts payable	(19,739)	-	-	-
Gross balance sheet exposure	10,721	-	-	-

Exposure to foreign currency at 31 December	Consolidated financial statements		Separate financial statements	
	2020	2019	2020	2019
	<i>(in thousand Baht)</i>			
<i>Brazilian real</i>				
Cash and cash equivalents	70,672	37,980	-	-
Trade accounts receivable	54,243	66,228	-	-
Trade accounts payable	(30,925)	(40,686)	-	-
Gross balance sheet exposure	93,990	63,522	-	-
<i>Israeli New Shekels</i>				
Cash and cash equivalents	413,881	40,798	-	-
Trade accounts receivable	35,984	77,315	-	-
Interest-bearing liabilities	(3,127,223)	(2,771,424)	-	-
Trade accounts payable	(14,147)	(35,160)	-	-
Gross balance sheet exposure	(2,691,505)	(2,688,471)	-	-
<i>Russian ruble</i>				
Cash and cash equivalents	175,026	57,585	-	-
Trade accounts receivable	119,878	326,296	-	-
Trade accounts payable	(7,029)	(17,339)	-	-
Gross balance sheet exposure	287,875	366,542	-	-
<i>Saudi Arabian Riyal</i>				
Cash and cash equivalents	24	59	-	-
Trade accounts receivable	-	5,837	-	-
Gross balance sheet exposure	24	5,896	-	-
<i>Arab Emirates Dirham</i>				
Trade accounts receivable	66,762	109,805	-	-
Gross balance sheet exposure	66,762	109,805	-	-

The net fair value position of cross currency swaps and forward exchange contracts at 31 December 2020 was Baht 1,968.6 million (net asset transactions) (2019: Baht 3,681.7 million (net asset transactions)).

Sensitivity analysis

A reasonably possible strengthening (weakening) of the Euro or US dollar against all other currencies at 31 December 2020 would have affected the measurement of financial instruments denominated in a foreign currency and affected equity and profit or loss by the amounts shown below. This analysis assumes that all other variables, in particular interest rates, remain constant and ignores any impact of forecast sales and purchases.

Consolidated financial statements					
At 31 December 2020	Movement (%)	Profit or loss		Equity, net of tax	
		Strengthening	Weakening	Strengthening	Weakening
		<i>(in thousand Baht)</i>			
USD	1	544,507	(544,507)	(64,267)	161,837
EUR	1	105,434	(105,434)	159,095	166

<i>At 31 December 2020</i>	Movement (%)	Separate financial statements			
		Profit or loss		Equity, net of tax	
		Strengthening	Weakening (in thousand Baht)	Strengthening	Weakening
USD	1	(134)	134	-	-
EUR	1	-	-	15,551	(8,037)

(b.3.2) Interest rate risk

Interest rate risk is the risk that future movements in market interest rates will affect the results of the Group's/Company's operations and its cash flows because majority of loan interest rates are floated. The Group/Company is primarily exposed to interest rate risk from its borrowings (see note 21). The Group/Company mitigates this risk by ensuring of its borrowings which are at floated interest rates use derivatives, principally interest rate swaps, to manage exposure to fluctuations in interest rates on specific borrowings.

The Group/Company adopts a policy of ensuring that at least 50% of its interest rate risk exposure is at a fixed rate. This is achieved partly by entering fixed-rate instruments and partly by borrowing at a floating rate and using interest rate swaps as hedges of the variability in cash flows attributable to movements in interest rates. The Group/Company applies a hedge ratio of 1:1.

The Group/Company determines the existence of a relationship between the hedging instrument and hedged item based on the reference interest rates, tenors, repricing dates and maturities and the notional or par amounts.

The Group/Company assesses whether the derivative designated in each hedging relationship is expected to be effective in offsetting changes in cash flows of the hedged item using the hypothetical derivative method.

In these hedge relationships, the main sources of ineffectiveness are:

- the effect of the counterparty's and the Group/Company's own credit risk on the fair value of the swaps, which is not reflected in the change in the fair value of the hedged cash flows attributable to the change in interest rates; and
- differences in repricing dates between the swaps and the borrowings.

<i>Exposure to interest rate risk at 31 December 2020</i>	Consolidated financial statements	Separate financial statements
	(in thousand Baht)	
<i>Financial instruments with fixed interest rates</i>		
Financial assets	-	-
Financial liabilities	(7,552,648)	-
	(7,552,648)	-
Interest rate swaps	(80,042,676)	(3,003,710)
	<u>(87,595,324)</u>	<u>(3,003,710)</u>
<i>Financial instruments with variable interest rates</i>		
Financial assets	292,573	-
Financial liabilities	(119,498,257)	(9,020,680)
	(119,205,684)	(9,020,680)
Interest rate swaps	80,042,676	3,003,710
	<u>(39,163,008)</u>	<u>(6,016,970)</u>

For exposure to interest rate risk at 31 December 2019, please see the table under topic: liquidity risk.

Interest rate swap contract

The Group/Company has entered into an interest rate swap agreement for a long-term loan swapping a floating interest rate to a fixed interest rate ranging from -0.3 to 2.65 percent per annum, with monthly and quarterly settlement starting on March 2018 until March 2025.

Fair value sensitivity analysis for fixed-rate instruments

The Group/Company does not account for any fixed-rate financial assets or financial liabilities, at FVTPL, and the Group/Company does not designate derivatives (interest rate swaps) as hedging instruments under a fair value hedge accounting model. Therefore, a change in interest rates at the reporting date would not affect profit or loss.

Cash flow sensitivity analysis for variable-rate instruments

A reasonable possible change of 1% in interest rates at the reporting date would have increased (decreased) equity and profit or loss by the amounts shown below. This analysis assumes that all other variables, in particular foreign currency exchange rates, remain constant.

Consolidated financial statements				
<i>At 31 December 2020</i>	Profit or loss		Equity, net of tax	
	1% increase in interest rate	1% decrease in interest rate	1% increase in interest rate	1% decrease in interest rate
	<i>(in thousand Baht)</i>			
Financial instruments with variable interest rate	1,194,983	(1,194,983)	-	-
Interest rate swaps	3,563	403	1,566,195	(1,759,503)
Cash flow sensitivity (net)	1,198,546	(1,194,580)	1,566,195	(1,759,503)

Separate financial statements				
<i>At 31 December 2020</i>	Profit or loss		Equity, net of tax	
	1% increase in interest rate	1% decrease in interest rate	1% increase in interest rate	1% decrease in interest rate
	<i>(in thousand Baht)</i>			
Financial instruments with variable interest rate	90,207	(90,207)	-	-
Interest rate swaps	-	-	48,539	(50,742)
Cash flow sensitivity (net)	90,207	(90,207)	48,539	(50,742)

(b.4) Cash flow hedges

The amounts at the reporting date relating to items designated as hedged items were as follows.

Consolidated financial statements		
<i>At 31 December 2020</i>	Cash flow hedge reserve	Balance remaining in the cash flow hedge reserve from hedging relationships for which hedge accounting is no longer applied (in thousand Baht)
Foreign currency risk		
Receivables, loan assets, payables, and borrowings	7,475	-
Interest rate risk		
Variable-rate instrument	(1,051,966)	-
Commodity price risk		
Raw material purchases forecast	488,201	-
Separate financial statements		
<i>At 31 December 2020</i>	Cash flow hedge reserve	Balance remaining in the cash flow hedge reserve from hedging relationships for which hedge accounting is no longer applied (in thousand Baht)
Interest rate risk		
Variable-rate instrument	(121,861)	-

The amounts relating to items designated as hedging instruments and hedge ineffectiveness were as follows.

	Consolidated financial statements	Separate financial statements
	(in thousand Baht)	
Foreign currency risk		
At 31 December 2020		
Cross-currency swaps - nominal amount	26,590,528	-
Foreign currency forwards - nominal amount	7,447,133	-
Carrying amount included in:		
- other current financial assets	174,292	-
- other non-current financial assets	871,923	-
- other current financial liabilities	1,554	-
- other non-current financial liabilities	237,400	-
For the year ended 31 December 2020		
Recognised in OCI		
- changes in value of the hedging instrument	(834,205)	-

	Consolidated financial statements	Separate financial statements
	(in thousand Baht)	
Interest rate risk		
At 31 December 2020		
Interest rate swap contracts - nominal amount	11,272,017	100,000
Carrying amount included in:		
- other current financial liabilities	127,396	-
- other non-current financial liabilities	918,125	136,321
For the year ended 31 December 2020		
Recognised in OCI		
- changes in value of the hedging instrument	(894,974)	(64,026)
Commodity price risk		
At 31 December 2020		
Commodity future contracts - nominal amount (thousand metric tons)	27	-
Commodity swap contracts - nominal amount (thousand metric tons)	386	-
Carrying amount included in:		
- other current financial assets	502,503	-
- other non-current financial assets	39,147	-
- other current financial liabilities	55,423	-
For the year ended 31 December 2020		
Recognised in OCI		
- changes in value of the hedging instrument	30,008	-
- hedging reserve transferred to cost of goods sold	546,499	-
Recognised in profit or loss		
- hedge ineffectiveness included in cost of goods sold	(24,205)	-

The following table provides a reconciliation by risk category of components of equity and analysis of OCI items, net of tax, resulting from cash flow hedge accounting.

	Consolidated financial statements	Separate financial statements
	(in thousand Baht)	
Hedging reserve		
Balance at 1 January 2020	664,806	(57,835)
Cash flow hedges		
Changes in fair value:		
Foreign currency risk	(834,205)	-
Interest rate risk	(894,974)	(64,027)
Commodity price risk	30,008	-
Amount reclassified to profit or loss:		
Foreign currency risk	-	-
Interest rate risk	-	-
Commodity price risk	546,499	-

	Consolidated financial statements	Separate financial statements
	<i>(in thousand Baht)</i>	
Hedging reserve		
Tax on movements on reserves during the year	87,058	12,805
Balance at 31 December 2020	(400,808)	(109,057)

(b.5) Net investment hedges

A foreign currency exposure arises from the Group's/Company's net investment in its overseas subsidiaries that has Euro/USD functional currency. The risk arises from the fluctuation in spot exchange rates between the Euro/USD and the Thai Baht, which causes the amount of the net investment to vary.

The hedged risk in the net investment hedge is the risk of a weakening Euro/USD against the Thai Baht that will result in a reduction in the carrying amount of the Group's/Company's net investment in the subsidiaries.

Part of the Group's/Company's net investment in its overseas subsidiaries is hedged by an Euro/USD long term foreign forward contracts which mitigates the foreign currency risk arising from the subsidiary's net assets. The long term forward contract is designated as a hedging instrument for the changes in the value of the net investment that is attributable to changes in the THB/EUR THB/USD spot rate.

To assess hedge effectiveness, the Group/Company determines the economic relationship between the hedging instrument and the hedged item by comparing changes in the fair value of forward contracts that is attributable to a change in the spot rate with changes in the investment in the foreign operation due to movements in the spot rate (the offset method). The Group's/Company's policy is to hedge the net investment only to the extent of the cost of the investment.

The amounts related to items designated as hedged items were as follows.

Consolidated financial statements		
	Foreign currency translation reserve	Balance remaining in the foreign currency translation reserve from hedging relationships for which hedge accounting is no longer applied
2020		<i>(in thousand Baht)</i>
EUR net investment	(93,145)	628,710
USD net investment	1,276,771	-

Separate financial statements		
	Foreign currency translation reserve	Balance remaining in the foreign currency translation reserve from hedging relationships for which hedge accounting is no longer applied
2020		<i>(in thousand Baht)</i>
EUR net investment	221,857	628,710

The amounts related to items designated as hedging instruments were as follows.

	Consolidated financial statements	Separate financial statements
	(in thousand Baht)	
Net investment risk		
At 31 December 2020		
Foreign exchange - nominal amount		
- forward contracts (USD)	20,275,043	-
- forward contracts (EUR)	12,537,976	1,475,056
Carrying amount included in:		
- other current financial assets	221,857	221,857
- other non-current financial assets	1,281,922	-
- other non-current financial liabilities	320,153	-
For the year ended 31 December 2020		
Recognised in OCI		
- changes in value of the hedging instrument	862,462	(99,307)

39 Capital management

The Board of Directors' policy is to maintain a strong capital base so as to maintain confidence of stakeholders including customers, suppliers, creditors, investors and markets and to sustain future growth and development of the business. The Board of Directors monitor the return on capital employed, which the Group defines as result from operating activities divided by total shareholders' equity, excluding non-controlling interests, plus net interest bearing debt outstanding and also monitors the level of dividends to ordinary shareholders.

40 Commitments with non-related parties

	Consolidated financial statements		Separate financial statements	
	2020	2019	2020	2019
	(in million Baht)			
Capital commitments				
<i>Contracted but not provided for:</i>				
Land and land improvements	231	97	-	-
Buildings and other construction	179	219	-	-
Machinery and equipment	1,702	1,814	-	-
Intangible asset	1,982	-	-	-
Total	4,094	2,130	-	-
Other commitments				
Short-term lease and lease of low-value assets commitments (2019: future minimum lease payment under non-cancellable operating leases)	1,054	6,699	-	-
Purchase orders and unused letters of credit for goods and supplies	13,920	13,062	-	-
Bank guarantees	5,845	5,643	1,469	4,121
Others	138	306	-	-
Total	20,957	25,710	1,469	4,121

Certain subsidiaries have executed long-term purchase agreements committing them to purchase agreed quantities of raw materials for periods up to three years, at prices limited to the market prices of the underlying commodities.

41 Events after the reporting period

As disclosed in note 5, the Group/Company has elected to apply accounting guidance on temporary accounting relief measures for additional accounting options in response to impact from the situation of coronavirus pandemic (COVID-19). The guidance expired on 31 December 2020.

The COVID-19 pandemic continued subsequent to the expiration of the guidance as increasingly affected cases were found and spread all over Thailand. In response to the situation, Thailand has enacted measures to monitor and control the spread, encouraging people to keep social distancing, avoid crowded gathering and travel less. Meanwhile, according to information from the World Health Organization (WHO), vaccines for COVID-19 have become available and are being rolled out around the world. However, it is still not possible to predict for how long and to what extent the vaccines will provide protection and when the spread will be over.

As the situation is highly uncertain and fluid, it is currently not possible to determine the impact of the continued pandemic, government measures and roll out of the vaccination on the business of the Group/Company. Management is closely monitoring the situation and managing to lessen the impact as much as possible.

On 24 February 2021, the board of directors proposed for the dividend payment of Baht 0.175 per share, amounting to Baht 982.5 million. This dividend payment is subject to the approval by the shareholders of the Company.

42 Reclassification of accounts

Certain accounts in the notes to the financial statements as at 31 December 2019 and statement of income for the year ended 31 December 2019 have been reclassified to conform to the disclosure in the 2020 financial statements as follows:

	2019		
	Consolidated financial statements		
	Before reclassification	Reclassification (in million Baht)	After reclassification
Notes to financial statements as at 31 December 2019			
Trade accounts receivable	34,586	343	34,929
Allowance for doubtful accounts	(281)	(343)	(624)
		<u>-</u>	
Statement of income for the year ended 31 December 2019			
Distribution costs	21,216	(2,241)	18,975
Administrative expenses	12,727	2,241	14,968
		<u>-</u>	

The reclassifications have been made because, in the opinion of management, the new classification is more appropriate to the Group's business.



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