

TPI FIBER CEMENT WOOD

รายงานประจำปี ๒๕๖๑  
annual  
report 2018



บริษัท ทีพีโอ โพลีน จำกัด (มหาชน)  
**TPI POLENE**  
Public Company Limited



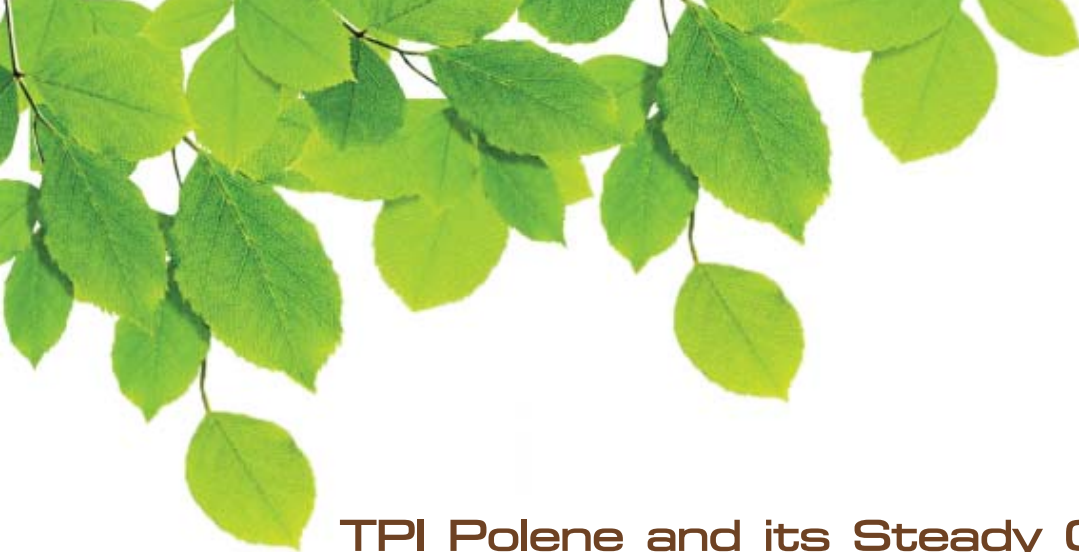


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Investors can access the information of the Company that issued security, from the annual report (form 56-1) of the Company through the website at [www.sec.or.th](http://www.sec.or.th)





## **TPI Polene and its Steady Growth**

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The Company operates the business under a policy of sustaining financial stability and to consistently develop product innovations to be environmentally friendly while enhancing a long-established policy of emphasizing prudence on assets management, as well as consistently managing opportunity and risks to create competitive advantages in the organization with an adherence to creating a corporate culture with good corporate governance and focusing on the importance of corporate social responsibility.



# Message from the Board of Directors

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## To: Shareholders

Dear Sirs,

In 2018, TPI Polene and its subsidiaries carried out its business operations to further enhance the sustainable long-term growth of the business. With full cooperation of all members of the Company's staff and management team, the Company successfully pursued its business operations and achieved its objectives as planned.

## Operating Performance in 2018

In 2018, the Company and its subsidiaries reported total revenues from sales of Baht 34,993 million compared with Baht 29,088 million in 2017, an increase of 20.30%. Total consolidated income in 2018 was Baht 37,315 million compared with Baht 30,996 million in 2017, an increase of 20.39%.

In 2018, the Company and its subsidiaries registered a profit for the year of Baht 1,425 million compared with loss in 2017 of Baht 696 million, an increase in profit of 304.59%, achieving a leap operating growth reusing from loss to profit.

## New Products Development and Creation of New Products Innovation

The Company realizes the importance of product development and uses Nano technology to achieve and maintain optimal product efficiency within the group of companies through ongoing research and development initiatives. The Company also employed modern technology to produce new fiber cement products, such as tough board, as its properties are equivalent to natural wood. With a distinctly durable character, tough board can be cut, screwed or completely fill the pinholes/space on fiber cement sheets without problem of erosion or cracks as it has better properties than traditional fiber cement. The fiber cement sheets can be suitably used in replacement of wood stiles, doors and windows, as well as in a variety of furniture work as fiber cement is manufactured to ensure endurance and is cost saving. The Company also develops high-quality facade panels, constructed with high-density fiber cement, assuring efficient installation, and that meet EU Industrial Standards. The Company's fiber cement boards are specifically designed with an extinguished texture property, offering a choice of smooth finish or marble effect with a wide range of colors.

The Company has also successfully developed and launched organic products for livestock (synbiotic products) and fisheries as organic agriculture helps increase efficiency in raising livestock animals and helps decrease the risk of potential pathogen outbreaks in animal farming. Organic agriculture also reduces the uses of antibiotics, is a better alternative for livestock and is getting more and more attention from government authorities and the private sector. Therefore, big livestock animal manufacturers have started to form a business relationship with the Company.

## Distribution Channels

TPI Polene still focuses on an aggressive marketing strategy in the domestic market. This includes the expansion of products through sales channels to accommodate disruptive technology, evolutionary forms of innovation, and to respond to customer behavior which is anticipated to change to correspond to the wide-ranging effect of modern globalization through online sales and modern trade centers to achieve a much faster penetration to consumers.

## To enhance production efficiency, streamline production costs and expenses

Presently, the Company enjoys cost advantages with cost per unit of output decreasing with increasing scale (economies of scale). The Company also enhances production efficiency with an application of automatic weight bridge to streamline production costs, reduces administration expenses and transportation costs to constantly increase its competitive advantages.

## Shares repurchase Scheme of Baht 1,983 million

The Extraordinary Shareholders' Meeting no.1/2561, held on June 25, 2018 passed a resolution to approve a share repurchase scheme (Treasury Stock) of not greater than 1,009,500,000 shares for financial management purposes. The repurchase period was from July 16, 2018 to January 15, 2019.

As at January 15, 2019, the Company fully repurchased 1,009,500,000 shares under the scheme with a total cost of Baht 1,982,775,193, in order to maximize return on equity and better manage financial liquidity in the best interest of the Company.

The Company can sell the repurchased shares under the scheme starting six months after the completion date of the scheme, but not later than three years after the completion date of the scheme. The Board of Directors of the Company will thereafter consider and define



the selling period of the repurchased shares. In case the Company does not sell or not fully sell all repurchased shares within the period approved as above, the Company is obliged to cancel the remaining repurchased shares by way of registration of its capital decrease with the Ministry of Commerce, according to related rules and regulation.

### **The Offering for Sale of Baht 11,530 million Debentures**

In 2018-2019, the Company successfully completed its fund raising through the issuance and sale offering of unsubordinated/unsecured debentures, in the amount of Baht 8,000 million in April 2018 and Baht 3,530 million in January 2019 respectively, with the TRIS affirmed credit rating of such debentures at BBB+, a stable rating outlook. The proceeds from the fund raising was utilized to refinance the matured debentures and for working capital purpose. To this end, the Company has the policy to maintain the financial stability in order to enhance its stability and to constantly keep pace with economic and financial instability.

### **Consistently awarded the Industrial certificates under corporate social responsibility**

The current achievements in business operation of the Group has been reflected in the Company's awards and certificates, such as on September 26, 2018, TPI Polene received "Thailand Coal Awards" from the Ministry of Energy of Thailand (the "MOE") and CSR-DIW Continuous Award 2018 (Standard for Corporate Social Responsibility from Department of Industrial Work) on August 17, 2018. The awards as above confirm TPI Polene Group's strong commitment to being a corporation to consistently protect the surrounding environment while creating public well-being in surrounding communities.

The Company's current success has been one of our proudest achievements as a Thai Corporation to be able to be competitive internationally. On behalf of the Company, the Company's Board of Directors would like to take this opportunity to thank all related parties for a well-coordinated effort and their ongoing trust in the Company to create unswerving progress for the organization. It is a major goal of the management team and all levels of the Company's staff to move the business forward to overcome obstacles to achieve the goal. We strengthened our growth potential so as to create sustainability within the group, to create stability for the organization, and to enhance the economic strength of the country. To this end, the Company realized the importance of conducting business operations by emphasizing the balanced consideration of all related parties, fair treatment of all parties concerned, while supporting public well-being and consistently protecting the surrounding environment to further enhance the sustainable growth of the country.

Sincerely Yours,



A handwritten signature in black ink, appearing to read 'Khantchai Vichakkana'.

**Mr. Khantchai Vichakkana**  
Chairman of the Board



A handwritten signature in black ink, appearing to read 'Prachai Leopairatana'.

**Mr. Prachai Leopairatana**  
Chief Executive Officer

## Financial Highlights

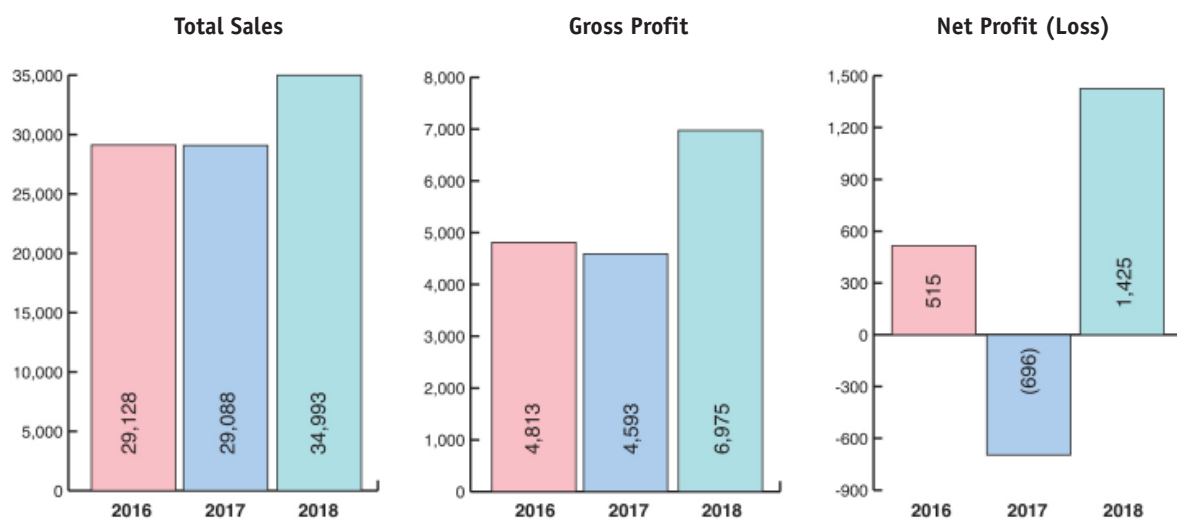
	Unit	2016	2017	2018
<b>Operational Performance</b>				
Total Revenues	(Baht Mil.)	31,492	30,996	37,315
Total Sales	(Baht Mil.)	29,128	29,088	34,993
Gross Profit	(Baht Mil.)	4,813	4,593	6,975
Operating Profit (Loss) before interest and income tax	(Baht Mil.)	1,138	547	2,980
Operating Profit (Loss) before income tax	(Baht Mil.)	(511)	(1,100)	1,261
Net Profit (Loss)	(Baht Mil.)	515	(696)	1,425
<b>Financial Status</b>				
Total Assets	(Baht Mil.)	92,618	103,178	110,488
Total Current Assets	(Baht Mil.)	19,549	24,195	28,391
Total Liabilities	(Baht Mil.)	55,864	51,092	59,551
Total Interest Bearing Debt	(Baht Mil.)	46,609	40,972	50,457
Total Shareholder's Equity	(Baht Mil.)	36,755	52,086	50,937
<b>Key Financial Ratios</b>				
Gross Profit Margin	(%)	16.52	15.79	19.93
Net Profit Margin	(%)	1.63	(2.25)	3.82
Paid-up Capital	(Baht Mil.)	20,190	20,190	20,190
Par value per share	(Baht)	1.00	1.00	1.00
Book Value per share	(Baht)	1.84	2.61**	2.63**
Earnings per Share	(Baht)	0.026	(0.063)	0.016
Dividend per Share	(Baht)	0.02	0.02	0.02
Dividend payout Ratio*	(%)	29.85	N/A	153.85
Debt to Equity Ratio	(times)	1.52	0.98	1.17
Net Debt to Equity Ratio***	(times)	1.42	0.85	1.00
Interest Bearing Debt to Equity Ratio	(times)	1.27	0.79	0.99
Net Interest Bearing Debt to Equity Ratio***	(times)	1.17	0.66	0.82

Remarks: \* Based on Separate Financial Statements

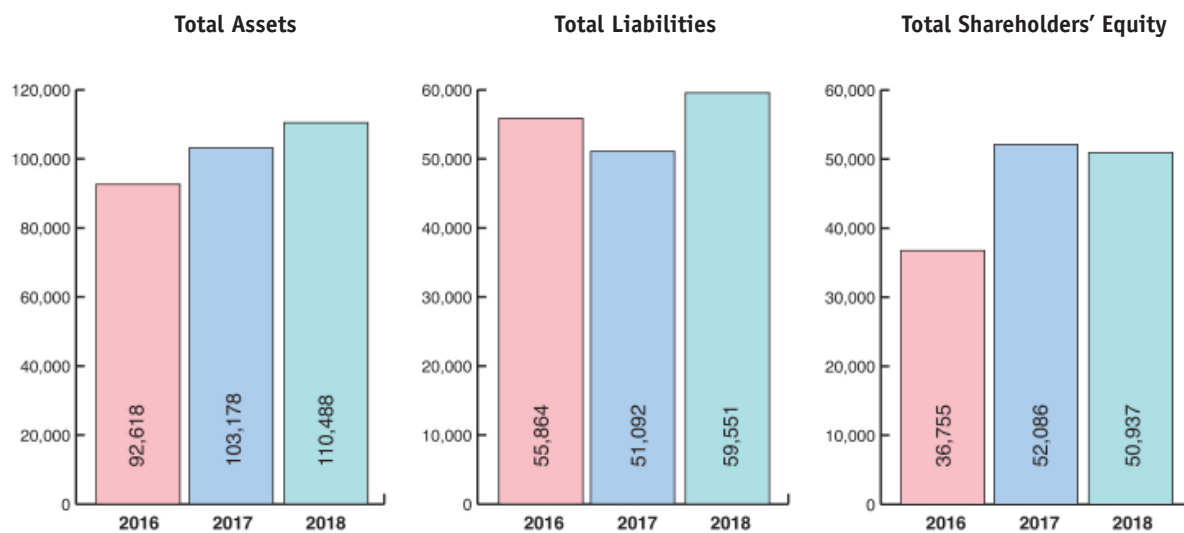
\*\* Number of 5,899,999,300 common shares of TPIPP, held by TPI Polene not yet been marked to market and the above share price was realized at the par value of Baht 1 per share.

\*\*\* After deducting Cash and Cash Equivalent and Current Investments.

## Total Revenues and Net Profit



## Financial Status



## Corporate Profile

<b>Company's Name</b>	: TPI Polene Public Company Limited
<b>Abbreviation in the SET</b>	: TPIPL
<b>Registration Number</b>	: 01075370000564 (formerly Bor. Mor. Jor. 303)
<b>Nature of Business</b>	: Manufacture and sale of cement, cement mortar, clinker, electricity, ready-mixed concrete, LDPE/EVA plastic resin, solar film, EVA emulsion, EVA powder, concrete roof tile, fiber cement, lightweight Concrete, industrial waste disposal, organic fertilizer and drinking water, etc.
<b>Registered Capital</b>	: Baht 24,815,000,000 Consisting of 24,815,000,000 ordinary shares, at the par value of Baht 1 each.
<b>Paid-up Capital</b>	: Baht 20,190,000,000 Consisting of 20,190,000,000 ordinary shares, at the par value of Baht 1 each.
<b>Accounting Period</b>	: January 1 - December 31

### Location

<b>Head Office Location</b>	: 26/56 Chan Tat Mai Road, Thungmahamek, Sathorn, Bangkok 10120
Tel. Number	: +66 (0) 2213-1039 - 49, 285-5090 -9
Fax Number	: +66 (0) 2213-1035, 213-1038
Web Address	: <a href="http://www.tpipolene.co.th">http://www.tpipolene.co.th</a>
<b>Cement Plant/Power Plant</b>	: 299 Moo 5, Mittraparp Road, Tambol Tubkwang, Amphur Kangkhoy, Saraburi 18260
<b>Cement Mortar Plant</b>	
<b>Lightweight Concrete Plant</b>	
<b>Pyrolysis and RDF Plant</b>	
Tel. Number	: +66 (0) 3633-9111
Fax Number	: +66 (0) 3633-9228-30
<b>LDPE/EVA Plant</b>	: 299 Moo 5 Sukhumvit Road, Tambol Chuengnoen, Amphur Muang, Rayong 21000
Tel. Number	: +66 (0) 3861-1333
Fax Number	: +66 (0) 3880-2568
<b>Concrete Roof Tiles and</b>	: 77 Moo 7, within CRT Plant sub-road from Sai Ban Kork Street, Banlardkaopoon and Highway no. 1014,
<b>Fiber Cement Plant</b>	Tambol Ban Kang, Amphur Chaloem Phrakiat, Saraburi 18260
Tel. Number	: +66 (0) 3667-0370-5
Fax Number	: +66 (0) 3667-0377
<b>Solar Film Plant</b>	: 49/1 Moo 1, Phichainarong Songkham Road, Tambol Nachong, Amphur Muang Saraburi, Saraburi 18260
Tel. Number	: +66 (0) 3673-1724
<b>Investors Relation Unit:</b>	
Tel. Number	: +66 (0) 2213-1039 ext. 12983 and 12985

### Other Relevant Information:

<b>Share Registrars</b>	: Thailand Securities Depository Company Limited
<b>Office Location</b>	: The Stock Exchange of Thailand, 93 Rajadapisek Road, Khwang Dindaeng, Dindaeng, Bangkok 10110
Tel. Number	: +66 (0) 2009-9000, call center +66 (0) 2009-9999
Fax Number	: +66 (0) 2009-9991



**Debentures, Debentures Registrar and Debenture Holders' Representatives**  
**Offering for Sale of Debentures on January 31, 2019**

Debenture Series	Name	Type	Amount (MB)	Interest Rate (p.a.)	Issued Date	Maturity Date	Tenor
TPIPL197A	Debentures of TPI Polene Public Company Limited No.1/2017 Series 1 Due A.D.2019	Unsecured and Unsubordinated Debentures with a debentureholders' representative	2,000	3.20 %	7 Jul 2017	7 Jul 2019	2 Years
TPIPL198A	Debentures of TPI Polene Public Company Limited No.2/2015 Series2 Due A.D.2019	Unsecured and Unsubordinated Debentures with a debentureholders' representative	2,750	4.40 %	5 Aug 2015	5 Aug 2019	4 Years
TPIPL201A	Debentures of TPI Polene Public Company Limited No.1/2015 Series2 Due A.D.2020	Unsecured and Unsubordinated Debentures with a debentureholders' representative	3,000	5.20 %	22 Jan 2015	22 Jan 2020	5 Years
TPIPL207A	Debentures of TPI Polene Public Company Limited No.1/2017 Series2 Due A.D.2020	Unsecured and Unsubordinated Debentures with a debentureholders' representative	2,000	3.50 %	7 Jul 2017	7 Jul 2020	3 Years
TPIPL208A	Debentures of TPI Polene Public Company Limited No.2/2015 Series3 Due A.D.2020	Unsecured and Unsubordinated Debentures with a debentureholders' representative	2,205	4.65 %	5 Aug 2015	5 Aug 2020	5 Years
TPIPL214A	Debentures of TPI Polene Public Company Limited No.1/2016 Series 1 Due A.D.2021	Unsecured and Unsubordinated Debentures with a debentureholders' representative	1,600	4.35 %	1 Apr 2016	1 Apr 2021	5 Years
TPIPL218A	Debentures of TPI Polene Public Company Limited No.2/2015 Series4 Due A.D.2021	Unsecured and Unsubordinated Debentures with a debentureholders' representative	3,600	4.90 %	5 Aug 2015	5 Aug 2021	6 Years
TPIPL224A	Debentures of TPI Polene Public Company Limited No.1/2016 Series 2 Due A.D.2022	Unsecured and Unsubordinated Debentures with a debentureholders' representative	1,200	4.60 %	1 Apr 2016	1 Apr 2022	6 Years
TPIPL228A	Debentures of TPI Polene Public Company Limited No.2/2015 Series 5 Due A.D.2022	Unsecured and Unsubordinated Debentures with a debentureholders' representative	4,000	5.20 %	5 Aug 2015	5 Aug 2022	7 Years
TPIPL234A	Debentures of TPI Polene Public Company Limited No.1/2016 Series 3 Due A.D.2023	Unsecured and Unsubordinated Debentures with a debentureholders' representative	2,645	4.80 %	1 Apr 2016	1 Apr 2023	7 Years
TPIPL214B	Debentures of TPI Polene Public Company Limited No.1/2018 Due A.D.2021	Unsecured and Unsubordinated Debentures with a debentureholders' representative	8,000	3.30 %	26 Apr 2018	26 Apr 2021	3 Years
TPIPL221A*	Debentures of TPI Polene Public Company Limited No.1/2019 Due A.D.2022	Unsecured and Unsubordinated Debentures with a debentureholders' representative	3,530	4.10 %	11 Jan 2017	11 Jan 2022	3 Years
Total			36,530				

**Debenture Registrar and Debenture Holders' Representative**

Name : CIMB Thai Bank Plc  
Address : 44, Langsuan Road, Lumpini Subdistrict, Pathumwan District, Bangkok 10330  
Telephone : +66(0) 2626-7507-8, + 66(0) 2626-7591  
Fax : +66(0) 2657-3390

Name : Bank of Ayudhya Plc.\*  
Address : 1222, Rama 3 Road, Bang Phongphang Subdisrict, Yan Nawa District, Bangkok 10120  
Telephone : +66(0) 2296-2000, + 66(0) 2296-5696  
Fax : +66(0) 2683-1302

Remark : \*Bank of Ayudhya Plc. is Debenture Registrar for Debenture series TPIPL221A only.

**Statutory Auditor** : KPMG Phoomchai Audit Limited.  
Office Location : 1 Empire Tower, 50<sup>th</sup> FL., South Sathorn, Yannawa Subdisrict, Sathorn District, Bangkok 10120  
Telephone : +66 (0) 2677-2000  
Fax : +66 (0) 2677-2222

## Our Pride Awards in 2018



In 2018, TPI Polene Group has passed all assessments and was awarded and certified under Asian and National Standards as follows:-

### 1. Thailand Coal Awards 2018

On September 26, 2018, TPI Polene received the “Thailand Coal Awards 2018” from the Department of Mineral Fuel, under the Ministry of Energy of Thailand (the “MOE”). The awards confirm that TPI Polene was selected as a corporation focusing on the importance of “Corporate Social Responsibility” under the category “TPIPL strived to CSR” for the 3rd consecutive year.



### 2. Energy Saving Label Award

On January 14, 2019, the Company received certificates for “Efficient Energy Saving Label” from the Department of Renewable Energy and Energy Conservation, Ministry of Energy with the surpassing of standards to be in compliance under “the Project to promote highly efficient machinery and the use of materials for Energy Conservation with the Label Award” in full accordance with energy saving codes.



### 3. CSR-DIW Awards 2017 and 2018

TPI Power Plc. won CSR-DIW Continuous Awards, under the category “Standards for Corporate Social Responsibility”, from the Department of Industrial Works, Ministry of Industry on August 17, 2017 and August 17, 2018 respectively.

### 4. Thailand Energy Award 2018

On August 27, 2018 TPI Polene Power Plc. received a “Thailand Energy Award 2018”, the outstanding performance reward in the category of “Innovation on Alternative Energy Project for an increase in efficiency and a downtime reduction of the Power generation of RDF-Fired Power Plant (TG5)” from the Department of Alternative Energy Development and Efficiency under the Ministry of Energy



### 5. TG1/TG2 and TG3 for all three systems

Waste heat recovery power plants (TG1&2) and a RDF-fired power plant (TG3) were certified complete in three systems, i.e., Quality Standard System (ISO 9001:2015) on June 21, 2018, Environmental Standard System (ISO 14001:2015) on August 7, 2018, and Health and Safety Management System (OHSAS 18001:2007) on August 3, 2018.

### 6. RDF-fired Power Plant (TG5) was certified Quality Standard System (ISO9001:2015) and Energy Management System (ISO50001:2011)

RDF-fired Power Plant (TG5) was certified Quality Standard System (ISO9001:2015) on September 12, 2018 and Energy Management System (ISO50001:2011) on August 15, 2018.

### 7. Refused Derived Fuel (RDF) Plant was certified Quality Standard System (ISO9001:2015)

Refused Derived Fuel (RDF) Plant was certified Quality Standard System (ISO9001:2015) on September 10, 2018.

The Company’s awards and certificates Standards as above confirm TPI Polene Group’s strong commitment to being a corporation that pursues a policy of consistently developing products that emphasizes energy conservation and are environmentally friendly.



# Audit Committee's Report for 2018

## To: Shareholders:

Dear Sirs,

The Audit Committee of TPI Polene Public Company Limited consists of 4 independent directors, who are all qualified with knowledge of finance, law and management administration: namely, Mr. Supoj Singsaneai as the Chairman of the Audit Committee; Mr. Manas Sooksmarn, Mr. Pises Iamsakulrat and Mr. Thavich Taychanavakul as Audit Committee members; with Mr. Nitisit Jongphitakratana, the Corporate Secretary, as Secretary to the Audit Committee. All Audit Committee members possess appropriate qualifications and are, in all aspects, in compliance with the rules and regulations imposed by the Stock Exchange of Thailand.

The Audit Committee has fully performed its duties and responsibilities to review and evaluate internal control systems, disclosure of Company information, and to review implementation of the provisions of related governing laws, as well as any other important tasks. In 2018, the Audit Committee convened 5 meetings.

### 1. To review and to evaluate internal control systems.

The Company and its subsidiaries have appropriate internal control systems and have operated the business efficiently and effectively under appropriate and sufficient internal controls, as supported by the operational performance report. The Company and its subsidiaries have internal controls and risk management systems that can protect against potential risks to the Company and to all related parties. The systems are in place to ensure that any mistakes and irregularities will be identified in due course; and that financial reports are accurate, adequate and reliable; and the assets used by the Company and its subsidiaries, benefit all parties as well as shareholders. In addition, the Company has performed in compliance with the principles of good corporate governance and has embraced the Code of Conduct as a policy for all employees to follow, by emphasizing the balanced consideration of all related parties, fair treatment to all parties concerned, including shareholders, suppliers, contractors and the community as a whole. The Company also realizes the importance of public well-being creation and environmental conservation and fosters the development of all our staff to expand their knowledge so as to become a knowledge organization. This will further enhance our long-term development and create sustainable growth for the Company.

### 2. To review the disclosure of all relevant information for investors.

The Company has a policy of disclosing all relevant information for investors, such as connected transactions and any other transactions that might affect the interests of related parties. The Company always discloses accurate, reliable and relevant information on a timely basis.

### 3. To review and to ensure that the Company performs in compliance with all regulations and related governing laws.

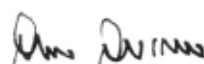
The Company has a clear policy to comply with all regulations and related governing laws, and codes of conduct, to protect against the use of insider information. As announced in the Company's Rules and Regulations, any misuse of internal information shall be subject to disciplinary action, including dismissal. The Company supervises submission by the Management of reports of their shareholding in the Company to comply with related governing laws. The Company realizes the importance of information disclosure, including financial statements and other reports, and ensures that they are complete, accurate, reliable and timely.

### 4. To select, nominate, and propose the remuneration of the statutory auditors of the Company for the year 2019.

The Audit Committee has taken into consideration the independence, performance, experience and an appropriate remuneration of auditors. The Audit Committee has passed a unanimous resolution to propose to the Company's Board of Directors for consideration and to propose to the shareholders' meeting to consider and approve the appointment of Mr. Ekkasit Chuthamsathit, CPA registration no. 4195 or Mr. Boonyarit Thanormcharoen, CPA registration no. 7900 or Mr. Natthapongse Thantijattathanond, CPA registration no. 8829, KPMG Phoomchai Audit Limited, to be the statutory auditors of the Company for 2019.

The Audit Committee considers that in the previous year, the Board of Directors as well as the Management of the Company, was in complete compliance with the principles of good corporate governance. They performed their duties and responsibilities ethically, with integrity, and in a professional manner, to achieve the objectives of the Company. In addition, a product quality system, in compliance with international standards and applicable laws, has been developed. The Audit Committee recognizes that the Company is committed to social and environmental responsibility. The Company has also prepared financial reports in compliance with generally accepted accounting principles, with an adequate disclosure of information, internal control and audit systems, and is able to ensure product quality and good corporate governance, without any material deficiencies.

On behalf of the Audit Committee,



**Mr. Supoj Singsaneai**

Chairman of the Audit Committee



# Sustainable Development



## The Policy to Create Sustainable Growth

The Company is committed to pursuing its business operations with ethics and well-managed business administration practices with an adherence to creating a corporate culture with good corporate governance in parallel with social conservation and environmental preservation. In its business operations, the Company concentrates on establishing a sustainable return on investment for shareholders. It continues to discharge its responsibilities towards relevant rules and regulations and support the community surrounding its facilities, thus providing better living standards for all related parties. The Company is continuously committed to promoting academic development, encouraging better healthcare and safety, protecting the environment and supporting beneficial activities towards society, and promoting Thai arts and traditional Thai cultures alongside social development. The Company's objective is to genuinely respond to the needs of the people in the surrounding communities in order to create sustainable growth for the Company.

## Vision

TPI Polene is one of the leading cement and plastic resins manufacturers in the country and has developed a variety of construction products using Nano technology while focusing on the importance of corporate social responsibility to consistently preserve the surrounding environment.

## Mission

TPI Polene is one of the leading cement and plastic resins manufacturers in the country and is well prepared for "Thailand 4.0". The Company develops sustainable energy and construction material businesses, as well as a balance of agricultural products, to fully respond to the current policy of the Thai government.

## Organization's Philosophy

TPI Polene realized the importance of consistently producing good quality products while supporting the activities that discharge its responsibilities towards relevant governmental rules and regulations while providing better living standards for all related parties. The Company also concentrates on establishing a sustainable return on investment for shareholders to further enhance the sustainable growth of the business.

## The Policy to Enhance Sustainable Growth of TPI Polene Group

The Company's CSR Committee is responsible for the overall assessment of TPI Polene Group's CSR activities. This also includes the development of CSR activities with a policy of full commitment to create value and sustainable growth of CSR implementation. The policies of CSR implementation have been set to promote and to monitor CSR activities. The Group CSR committee consists of the Chairman, the Vice-Chairman, and the Committee members, who were recruited from top management in the relevant departments of TPIPL group. The meetings of the CSR Committee are held regularly to set the framework of TPI Polene Group's CSR activities to consistently monitor and create a corporate culture with good corporate governance.

## The Stakeholders of the Company

The Company established “corporate governance policies for related parties who have conflicts of interest” by announcing the written publication of “the policies and measurements towards related parties who have conflicts of interest” as a principal guideline for employees to interact properly with the related parties who have conflicts of interest. The Company still maintains a policy of full commitment to the principles of creating value cooperatively with the related parties. Top management will be responsible for policy affairs treatment for all parties concerned and pass the opinion of the parties concerned through relevant departments which are responsible for all parties concerned. The above policies are a principal guideline for the management and employees of the group that perform in compliance with the principles of good corporate governance by putting corporate social responsibility into clear practice. All related parties, who have a direct impact on business operations, are as follows:

1. Employees - Fair practice to employees/human right compliance.
2. Shareholders/suppliers/contractors/customers - Value ethical and transparent business conduct.
3. Competitors - Enhance fair competition and new innovation.
4. Surrounding community, as well as related persons as a whole - Reduce environmental impact at the source.
5. Environmental preservation: Reduce the environmental impact at the source.

### Guidelines and Practices towards the Company's Stakeholders

Stakeholders	Requirements	Procedures	Plan implementation
1. Employees	<ul style="list-style-type: none"> <li>- Work progress in their careers</li> <li>- Employees' welfare and security</li> <li>- Membership of Co-Op</li> <li>- Obtaining courses and training programs for potential development</li> <li>- Good image of the Company</li> <li>- Fair treatment</li> <li>- Safety in the workplace</li> </ul>	<ul style="list-style-type: none"> <li>- The Company schedules training programs and on-the-job training sessions as well as relevant knowledge for employees to perform their duties properly, safely and suitably for employees in each respective position.</li> <li>- The Company provide courses and training sessions to develop growth potential, knowledge and competitive advantages of the employees to keep pace with the future growth of the corporation and work progress in their careers.</li> <li>- The Company encourages on-the-job training program among employees, including in-house and external-training courses in compliance with job descriptions.</li> <li>- The Company provides employees the opportunities to pursue their study and obtain courses training programming in compliance with job descriptions.</li> </ul>	<ul style="list-style-type: none"> <li>- The Company has clear rules and regulations on employment to be strictly applied, which also include equal opportunities for employees to progress in their career regardless of sex, age, generic information, races, religion, educational background. The employment policies and conditions of work are based on job requirements.</li> <li>- The Company shall not hire expatriates, which include contractors and sub-contractors.</li> <li>- Allow expression of views and advice.</li> <li>- Fair practice to employees.</li> <li>- The Company offers salary and wages as well as welfare to be equivalent or comparable to those in the same industry.</li> <li>- The Company provides a safe and healthy working environment.</li> <li>- To comply with rules and regulations of human rights.</li> </ul>
2. Shareholders	<ul style="list-style-type: none"> <li>- To create sustainable return on investment.</li> <li>- To conduct the business with transparency.</li> <li>- To take part in decision-making.</li> <li>- Ongoing business operations and low risk.</li> <li>- To obtain information regarding operating results.</li> </ul>	<ul style="list-style-type: none"> <li>- The Company shall protect shareholders' fundamental rights and ensure equitable treatment to all shareholders to facilitate shareholders to access the Company's information.</li> <li>- The Company operates in compliance with the principles of good corporate governance with honesty, prudence and without conflicts of interest to create sustainable value to all shareholders.</li> <li>- Deliver the invitation to the Annual General Shareholders' Meeting with all relevant documents for shareholders in advance of the meeting</li> <li>- Shareholders are able to appoint proxies to delegate their votes to others to act on behalf of them.</li> <li>- Provide shareholders opportunities to add agenda items or propose to the meeting the name of the persons to be elected as the Directors of the Company to be in compliance with the legal Articles of Association of the Company.</li> </ul>	<ul style="list-style-type: none"> <li>- All shareholders have fundamental rights and must have equitable treatment.</li> <li>- To create long-term growth of the business and establish sustainable return on investment to shareholders.</li> </ul>

Stakeholders	Requirements	Procedures	Plan implementation
		<ul style="list-style-type: none"> <li>- Constantly disclose corporate information as well as financial statements and operating results to all shareholders accurately, completely, transparently and in a timely manner to ensure that shareholders obtain adequate corporate operational performance through a network that is easily accessed.</li> <li>- Accept advice and complaints.</li> </ul>	
3. Trade partners	<ul style="list-style-type: none"> <li>- Clear purchasing policy</li> <li>- Fair business operation</li> <li>- Help develop growth potential of the purchasers.</li> <li>- Clear procurement policy.</li> </ul>	<ul style="list-style-type: none"> <li>- TPIPL group has to obtain the best value for materials and goods and to maintain the highest ethical standards in dealing with suppliers. Value includes price, quality and service.</li> <li>- Purchasing personnel are not permitted personal interest in the procurement process.</li> <li>- The Company will not engage with the trade partners who deal with businesses that act against the law.</li> <li>- Employees of TPIPL group shall procure material and goods at the appropriate and fair price and ensure that its trade partners perform in compliance with guideline leading to sustainable growth for both parties.</li> </ul>	<ul style="list-style-type: none"> <li>- Strictly perform in compliance with terms and conditions of the transaction and contracts.</li> <li>- Take into consideration of the corporate benefits of both parties, thus enhancing equitable practices for business operations</li> <li>- All trade partners should be treated equally.</li> </ul>
4. Customers	<ul style="list-style-type: none"> <li>- Good quality and safe merchandise.</li> <li>- Fair prices</li> <li>- Easy and convenient to acquire</li> <li>- Sales promotions and free samples.</li> <li>- Alternative merchandises</li> <li>- Provide products profiles and instruction</li> </ul>	<ul style="list-style-type: none"> <li>- The Company is focused on the importance of quality product development and full-scale service to be delivered to customers in a timely manner and meet the requirements of customers.</li> <li>- The Company shall keep track of records of customers' profiles systematically in a safe place and protect customer information and records against unauthorized access to or misuse of customer records or information.</li> <li>- Offer fair prices for goods and services.</li> <li>- The Company provides a unit or center to be responsible for providing a range of information of products and services as well as submission of a claim or make a complaint.</li> <li>- An arrangement of customers seminars to consistently educate them on the variety of products.</li> </ul>	<ul style="list-style-type: none"> <li>- Satisfy the needs to customers</li> <li>- Do not act or obtain or attempt to offer any goods or service by any means or device with the intent of fraud to the customers, who must believe in the quality of our goods or services</li> <li>- Provide customers goods and services which are safe and harmless for them.</li> <li>- Create brand loyalty.</li> </ul>
5. Competitors	<ul style="list-style-type: none"> <li>- Market share</li> <li>- Fair Competition</li> <li>- New innovations</li> </ul>	<ul style="list-style-type: none"> <li>- Under the fair competition circumstances</li> </ul>	<ul style="list-style-type: none"> <li>- Not to violate identifiable information of competitors.</li> <li>- To perform in compliance with good practices for trading.</li> </ul>
6. Communities	<ul style="list-style-type: none"> <li>- Keep the community informed of relevant information</li> <li>- Promoting Thai traditional cultures.</li> <li>- Improved Quality of life.</li> <li>- Participating in activities to develop public well-being</li> <li>- Create good opportunities for careers.</li> </ul>	<ul style="list-style-type: none"> <li>- Survey the Community's needs and opinions.</li> <li>- Consistently provide mobile medical units for local people in the community</li> <li>- Supporting reforestation and rehabilitation of used mine areas.</li> </ul>	<ul style="list-style-type: none"> <li>- Support of community activities</li> <li>- Provide training courses for employees to stimulate them to be conscious of environmental preservation.</li> </ul>
7. Environment	<ul style="list-style-type: none"> <li>- reduce environmental impact at the source.</li> <li>- Reduce the uses of national resources, raw material and coal</li> <li>-</li> </ul>	<ul style="list-style-type: none"> <li>- Enhancing production process to reduce environmental impact.</li> <li>- Generating renewable heat recovery to generate electricity back to the system</li> <li>- Generating crude oil and liquid fuel from tire pyrolysis</li> <li>- make use of decomposed organic substances as compost materials to produce Organic Fertilizers</li> </ul>	<ul style="list-style-type: none"> <li>- reduce energy uses from coal</li> <li>- Processing of RDF as alternative fuel from municipal solid wastes</li> <li>- minimizing residual waste from operations and purchase wastes from the community and municipal government</li> <li>- Operate fully integrated industrial waste disposal business to help eliminate industrial wastes from industries</li> </ul>



The Company also realizes the importance of creating quality of life for consumers, employees, the community as well as stakeholders through its operating activities, starting from the procurement of raw materials, the production process through to dispatching the products to customers. This will further enhance our long-term development for stakeholders and create sustainable growth for the Company as per the mission as follows:-

1. TPI Polene pledges its commitment to consistently create quality of life for consumers.
2. The Company is focused on consistently producing quality products, manufactured under top safety standards for customers and in response to the need of customers.
3. TPI Polene also fosters self-development of all levels of employees, creating quality of life for the staff of the Company.
4. TPI Polene maintains a policy of reducing resource employment.
5. TPI Polene established a policy to reduce environmental impacts at the source, including living along with a sustainable community.
6. TPI Polene is committed to sustainable communities.
7. Committed to creating sustainable growth for our shareholders.

### **Anti-Corruption Policy**

The Company is committed to pursuing its business operations, with an emphasis on transparency with ethics and responsibility to shareholders, customers, employees, society and other stakeholders. The Directors, the Management and all levels of employees are prohibited from operating or accepting, soliciting, demanding, or accepting assets or other benefits to other persons in business dealings with the Company, whether directly or indirectly, as a motive for them to do or refrain from doing any act to acquire or keep benefits that are unsuitable to the business, except as allowed by the laws, rules, regulations, local customs or traditions, or business customs, to create the balanced consideration of all related parties and fair treatment to all parties concerned. The Company has conducted Anti-Corruption awareness as guideline policies for the management and employees of the group to perform in compliance with the principles of good corporate governance, Code of Conducts and/or related to the terms and regulations or any legal issues to create sustainable value and long-term growth of the business.

### **Objective**

1. All employees must not induce to act or refrain from acting that may lead to malfeasance and corruption, and not getting involved in corruption, whether directly or indirectly.
2. To support all employees' roles and responsibilities to take part in the activities of Anti-Corruption Policy Corruption, not to solicit, demand, or accept assets or other benefits to other persons in business dealing with the Company,
3. To conduct its business with fairness and enhance the confidence of its stakeholders.

### **Scope of Anti-Corruption Policy**

Stakeholders of the Company who are involved in Anti-Corruption Policy are classified into 2 major groups as follows:-

1. Internal: Director, Management Team, and all levels of staffs/employees
2. External: Customer or suppliers, contractors, sub-contractors, business partners, creditors, governmental authorities and private officers.

### **Anti-Corruption Definition**

Corruption means any types of bribery; an offering, agreement to give, giving, promising to give, soliciting, or receiving of money, assets, or other inappropriate benefits from government officers, government sectors, private sectors, or responsible person either in direct or indirect action so that such person could proceed or disregard his/her function in order to acquire, retain the business, recommend a specific company to the entity, or achieve any improper benefits in business transactions. Exception shall be applied in the case of laws, regulations, statements, standards, customs, or business traditions that are enabled to do so.

### **Roles and Responsibilities**

1. The Board of Directors is responsible for determining the policy, monitoring, and forming of an effective system supporting the Anti-Corruption act in order to affirm that the Management Team is intensively concerned with, emphasizes, and cultivates an Anti-Corruption mindset as the company's culture.
2. Presidents and the Management are responsible for determining the Anti-Corruption system, promoting, and encouraging that Anti-Corruption manners are conveyed to all staff and related parties. This also includes reconsideration of systems or regulations in order to best adjust to business changes, regulations, standards, and laws.
3. The Audit Committee is responsible for revision of financial and accounting reports, internal controls, internal audit functions, and risk management so that such operations are concise, appropriate, effective, and conform to global standards.

4. The Internal Audit Director is responsible for auditing, assessing, and evaluating whether business transactions are accurate and comply with guidelines, approval authorities, standards, laws, and policies in such monitored departments in order to assure that the internal controls are sufficient and suitable for probable risk in corruption. This shall be directly reported to the Audit Committee.

### **Anti-Corruption Guidelines**

1. Staff shall not be negligent in any corruption conditions involved directly with the Company. All staff must notify such acts to supervisors or the responsible person provided in particular channels, including cooperating with any fact-finding investigation.
2. A person who commits corruption is considered for disciplinary offenses. This means such person is to be considered for discipline according to the Company's standards. Legal prosecution may be applied in case such acts violate laws.
3. The Company shall be fair and provide safeguards for staff members who report corruption cases relating to Anti-Corruption.
4. The Company understands the importance of dissemination, knowledge sharing, and constant communications with employees.
5. The Internal Audit Department of the Company will be responsible for reviewing and evaluating internal control systems, disclosure of Company information, and to review implementation of the provisions and risk management systems that can mitigate risks against corruption and report directly to the Audit Committee.

### **Provision in Implementation**

#### **Implementation on Anti-Corruption Policy (to interact properly with business partners and the related parties who have conflicts of interest)**

All employees will be responsible for adhering to the Company's Anti-Corruption Policy in their business connections with customers, suppliers and all parties concerned. (Thereinafter called "related parties who have conflicts of interest" who have a direct impact on business operations)

1. The employees must comply with the Anti-Corruption policy and measures, the Company's corporate governance principles and code of business conduct and hospitality activities from other persons in business dealing with the Company.
2. The employees must not accept Gifts, Entertainment and Hospitality Offerings or entertainment and hospitality activities from other persons in business dealing with the Company, whether directly or indirectly.
3. Employees must not be corrupt or accept corruption in any form under any circumstances, related to the business without getting prior approval from the direct supervisors. Any acceptance thereof as above from other persons must comply with the Anti-Corruption policy and measures, the Company's corporate governance principles and code of business conduct and must not have any impact in the business decision of said employee.
4. Employees must not perform any act to acquire or keep benefits from their positions in the Company to accept Gifts, Entertainment and Hospitality Offering or entertainment and hospitality activities from other persons in business dealing with the Company.
5. Whenever the employees advise the HR department of the Company, those actions must not go against the benefits and/or recruitments of the Company and employees must refrain from doing any act to acquire or keep benefits that go against relevant laws and regulations.
6. There are to be no close relationships between supervisors and those under their supervision within the same departments such as married couples, or parents or offspring, that may impose conflicts of interest.
7. The Business Relations and Procurement Process with the Public Sector or all types of bribery or illegal payments are prohibited in all business transactions, operations, and connections to the government.
8. Corrupt persons who violate or fail to comply with the Anti-Corruption measures must face punishment under the Company's rules and may also face prosecution if the action violates the law.
9. Employees must be granted an approval from their supervisors before offering all types of gifts (such as the Company's products) or entertainment and hospitality activities to other persons for business purposes, to be in compliance with the Anti-Corruption policy and measures, the Company's corporate governance principles, and code of business conduct. In case of emergency that in any circumstances, supervisor approval has not been granted in advance, such employees are deemed to get an approval from their supervisors immediately after offering all types of gifts (such as the Company's products) or all forms in any circumstances, to other persons for business purposes.
10. Employees must not acquire or take benefits from their positions in the Company to perform inappropriate relationships, sexual harassment and other verbal or physical harassment of a sexual nature, any kinds of treatment or consideration of, or making a distinction in favor of or against (discrimination based on race, sex, disabilities or religion). This also includes burglary, threats, force or any other kind of action that violates the law.

11. Employees should ask or request opinions from their supervisors or responsible persons when the employees face or have doubt about any act that is considered corruption in order to avoid any arguments.

## **File complaints or reports of fraud**

### **1. Complaints or recommendations**

- 1.1 A complaint if encountering any acts that are considered corruption, either directly or indirectly.
- 1.2 Any act that is considered corruption and/or has a direct effect on the internal controls of the Company, to cooperate in the fact-finding investigation stipulated by the Company's regulations.
- 1.3 Any act that has a direct impact on the Company's reputation and benefits.
- 1.4 Any misconduct that goes against the law, morals or business ethics.

## **Identities and confidentiality protected**

### **1. Identities protected**

As the whistleblower or the person filing the grievance in good faith is greatly beneficial to the Company and all employees, said whistleblower or the person subject to such grievance and parties involving in the fact-finding and reporting process, regardless of the difficulties they might have, the Company will ensure that no employees shall be demoted, penalized or be otherwise affected because they honestly decline to participate in corruption.

The Company has a policy to investigate such reports with equality, transparency, care, and fairness and subject them to a proper investigation. All information will be kept confidential and only be revealed when necessary while we will take into consideration the safety of and damage to the whistleblower or the person filing the grievance, which will be carried out in a confidential manner to ensure staff who make the reports will have their identities protected.

### **2. Names and Confidentiality Protected**

The whistleblower or the person filing the grievance (various groups of stakeholders or employees) may choose not to reveal his or her name, address or contact number unless he or she feels that such a disclosure will enable the Company to inform him or her of the progress. Information will be kept confidential and only be revealed when necessary while we will take into consideration the safety of and damage to the whistleblower or the person filing the grievance. The Company will hear all such reports with equality, transparency, care, and fairness and subject them to a proper investigation, which will be carried out in a confidential manner to ensure the staff members who make the reports will have their identities protected.

## **Fact-Finding Process and Penalties**

1. Having received the grievance, the Management Representatives, whose members consist of the Compliance Unit and the Audit Committee, will be responsible for conducting an investigation.
2. During the fact-finding process, the Management Representatives and the Audit Committee might ask the Management Representatives to keep them informed of the progress of further investigation.
3. In case that tips or grievances are found to contain material evidence, the person committing corruption or violating or failing to comply with the Anti-Corruption measures will be granted an opportunity to acknowledge the charges and will have the right to defend themselves by providing additional information or evidence that they weren't involved in any corruption or that they violated or failed to comply with the Anti-Corruption measures as accused.
4. In case that the person, who committed corruption or violated or failed to comply with the Anti-Corruption measures, is proven guilty, the Company will take actions in accordance with the established procedures to investigate and levy disciplinary punishment on employees at fault relating to corruption matters. Such person will be considered for discipline according to Company standards. Legal prosecution may apply in case such acts violate the laws. The Management's decision is considered the final judgment for punishment on employees at fault relating to corruption matters.

## **Disclosure of the Anti-Corruption Policy**

1. The Company announces the written publication of the Anti-Corruption Policy and measurements as a principal guideline for employees to follow.
2. The Company discloses the written publication of the Anti-Corruption Policy and measurements through the Company's channel, such as letters, the Company's website and Annual Report., etc.
3. The Anti-Corruption Policy needs to be reviewed regularly, including with a possible revision of such policy and implementation provisions in order to be in accord with business changes, regulations, standards, and laws.



# TPI Polene and its Corporate Social Responsibility

The Company and its subsidiaries, as a Thai corporation, realize the importance of the clear role of operating the business in order to foster good corporate governance, while creating public well-being and being environmentally friendly by putting corporate social responsibility into practice. The Company has focused on development to further enhance the sustainable implementation in all respects, which can be partly reported below:



## 1. Environmental Activities

TPI Polene and its subsidiaries are committed to pursuing business operations with highly efficient fuel management at an international level and to consistently improve machinery and production processes using modern technology and innovations to be implemented in business operations. The Company realizes the importance of “Corporate Social Responsibility” to consistently preserve social and community improvement. This resulted in the company receiving the award from the Thailand Coal Awards 2018 for the highest energy efficiency. The Corporate Social Responsibility (TPIPL-Strives to CSR) Award is what shows TPI Polene’s commitment to business, taking into account the environment and living with local communities sustainably through social and environmental responsibility. This is one of the main missions of TPI Polene - to create a balance between the economy, community, society and the environment.

In addition, the company also received a certificate of reduction or avoidance of greenhouse gas emissions for products - (Carbon Reduction Label) for the 3rd time, which has 11 carbon label certified products and has participated in the Carbon Label Registration Program for a period of 12 years. The Company also participates in reducing emissions - greenhouse gases were reduced up to 1,443,196 tonCO<sub>2</sub> eQ/year, equivalent to more than 302,000 acres of eucalyptus-carbon dioxide absorption.

### • Planting trees project to promote nature conservation and the environment.

TPI Polene executives and TPI employees together planted trees at the Cement Plant, Amphur Kangkhoei, Saraburi province, to increase the green area. In addition to helping the ecology surrounding the plant, it also results in the absorption of carbon dioxide accumulated in the atmosphere that is increasing every day. The project also creates relationships, unity and good attitude toward environmental preservation, and lets everyone turn their attention and join together to plant trees to reduce the global warming problem.

• TPI Polene also participated in the “Pan Plook Par” campaign to help restore the natural mangrove forests, organized by The National Legislative Assembly and Royal Thai Army Cavalry center and Saraburi province. TPI Polene planted trees with the King’s Guard, 5th Cavalry Division, Mueang District, Saraburi province on the day of His Majesty the King’s birthday, Maha Vajiralongkorn Bodindradebayavarangkun, the 66th anniversary of the birth of His Majesty the King, and helped raise public awareness of the love and affection for the national forest resources. Muak Lek Subdistrict Administration Section 2018 under “Pracharat Ruamjaiplooktonmaihaiphandin 2018” at Ban Pak Khlong Muak Lek





District, Saraburi province Supporting urban forest projects “Pracha Rat” at Phu Khae Botanical Garden, Saraburi province.

- TPI Polene donated bio-organic agricultural products through Pracharat Rak Samakhi Saraburi (Social enterprise) Co., Ltd to promote the planting of herbs, health care, generate income for the community at Complex OTOP Tambon Phu Khae, Chaloem Phra Kiat District, and Saraburi province. With a total area of 15 acres from TPI fertilizer thriving more than 600 species such as Wan rangkordam, Somohmeu, Huaroiroo, Paksientphi, Buuk, Rangdang, Yasaema, Bualuang, Wanmahagan, Poigug, Mapood, Sametdaeng / Krawan, Wantakob promote organic agriculture “To alleviate unhappiness, to encourage happiness and to make smiles” and participated in “Mobile Smile Fair” for the people in the Taopoon Sub-district Administration Organization, Kaeng Khoi District, Saraburi province support the Damrongtham Center Project “Smile Mobile Fair”, 2018. Growing safe vegetables by using the product TPI Organic Fertilizer. In order to be able to continue in the career and make money can be self-reliant and sustainable for the project participants at Song Khon Subdistrict Administration Organization Cham Phak Phaeo Subdistrict Administrative Organization Ban Hin Son School, Kaeng Khoi District, Saraburi province.
- Providing Microme Knox and TPI Synbiotic products to farmers in Muak Lek District to pass on to farmers in the area Nong Yang Suea Subdistrict, Muak Lek District, Saraburi province to prevent, control and decrease the risk of potential pathogen outbreaks of foot-and-mouth disease (FMD) in cloven-hoofed animals according to the announcement of the temporary area of «the livestock footprint of Muak Lek District that was infected in other areas.
- Supporting the project to promote career, skills training, and generate income for the community under the “Chemical Free Vegetable Growing Project” of Ban Sub Chili School, Ban Khao Mai Kwian School and Ban Sap Bon School, Saraburi province, to enhance knowledge, cultivate skills in growing vegetables, and promote organic farming. The project promoted planting safe vegetables using TPI organic fertilizer products, which allowed project participants to build a career and make money to become self-reliant and sustainable.
- Made a contribution of 447 tons of cement to the governmental authority to support construction of a dam, by cooperating with various agencies such as Ban Luang Subdistrict Administration Organization. Repaired the King’s Weir according to the public line for anti- drugs project at Ban Pong Pattana area, Ban Luang Subdistrict, Mae Aey District, Chiang Mai province, where a rainstorm causing a lot of water to flow, which caused the area of the dam construction area to be affected by flash floods. Those projects include the construction of “Pracharat dam”, of The Second Army Area, Fort Suranaree, Nakhon Ratchasima province, to keep natural balance in the eco system to solve the drought problem by damming up water supply to be used for agri-cultures during lean periods, supported the construction and renovation of a dam, by cooperating with Kamlungphamuang Cooperation Troop, to regulate flow of water and to keep moisture on the surface of soil in the forest in particular areas in Pitsanulok province and a construction of 100 dams to regulate flow of water in the areas of Tambol Wangnag-Ann, Amphur Wangthong, Pitsanulok province





## 2. Social Activities

### • Contribution of blankets in 2018

The Management team and the staff of the Company, together with the Environment for Better Life Foundation, distributed 11,000 blankets to local people, who suffer in the cold in remote areas and do not have enough clothing. TPI Polene wanted to share and help alleviate the cold for those in need in the remote areas. As for the areas in the North, TPI Polene distributed 3,500 blankets to Border Patrol Police Bureau 3 (Chinghai Center) to further distribute to the students in that jurisdiction and distributed blankets to the Meditation Center “Thamsiri”, to further distribute to help students at Ban Khun Sap School, Pang Khum School, Mae Lan Kham School and Pa Kha Nok School Hill tribe people and people in Samoeng district, Chiang Mai province. TPI Polene distributed 1,500 blankets to the Sri Don Mun Temple, to further distribute 500 blankets to people who suffered in the cold in remote areas, and 200 blankets to hill tribes and people in Chom Thong District, Chiang Mai province. TPI Polene distributed 500 blankets to the Environment for Better Life Foundation to further distribute to hill tribe people and people in the area of Pong Sa Subdistrict, Pai District, Mae Hong Son Thung Khao Phluang Subdistrict, Chiang Dao District, Chiang Mai province. As for the areas in the northeast, TPI Polene distributed 2,000 blankets to Border Patrol Police Bureau 24 (Udonthani Center) to further distribute to the students, professors and people in areas that belong to the region’s winter sufferers in Sikhio District and Dan Khun Thot District, Nakhon Ratchasima province. The Company also distributed 2,000 blankets and 800 blankets to The Peace Control Forces Bung Kan province and the Border Patrol Police School students under Bueng Kan respectively. By making such donations, TPI Polene would like to be part of giving warmth to the victims of the cold and will help alleviate the suffering from the cold weather.

• Made a contribution of Baht 14,895,000 to foundations, associations, and organizations to help support activities that are beneficial to society such as: a donation to the Srinakarind Day Fund for low income patients; to the Srinagarind Hospital Faculty of Medicine Khonkaen University Intellectual Disability Sports Association of Thailand to select the right to compete in the ASEAN Para Games and Paralympic Games; supported the Royal Thai Navy Football Club 5, Sattahip District, Chonburi province to increase the efficiency of the administration and the work of the Navy Football Club to be able to continue fighting the Thai League; to the 80<sup>th</sup> Anniversary Commemoration of Sao Hai Hospital, in Saraburi province for the Baht 1 Run Runners Project by having “Toon Body Slam” come to invite people to donate money to buy medicines, medical supplies, tools and rehabilitation equipment for patients with paralysis that require a long treatment time, to allow patients to return to normal life, and to develop the hospital; to the Association of Social Welfare Council of Thailand to help educate poor children in Her Majesty’s Queen Fah Wan Mai School (Elderly School), Thap Kwang Municipality, Saraburi province, for the elderly to have skills in taking care of themselves with a better quality of life; supported the wheel project for the disabled to enable disabled school-aged children to use in educational institutions and for traveling in order to take care





of themselves and their families as part of the Thai Disability Foundation; to the Elderly Potential Development Project based on sufficiency economy principles of Mittraphap Subdistrict Administrative Organization, Saraburi province to improve the quality of life for the elderly, both physically, mentally, and socially.

- Promoted the “Good Health Project” for people in the community by continuously providing mobile medical units to protect them from overall hazards including serious infectious illnesses. This also includes general check-up services, and lung inspection services; TPI Polene also held activities to provide health information to local people in the community; the Company also promoted an awareness campaign for people in the community to plant organic vegetables to encourage good health to the local people in the surrounding communities in Amphur Kaengkhohi, Amphur Muaklek, Amphur Chalermpraiat, Saraburi province; visited patients and disabled patients in the district of Muaklek, Amphur Muaklek, Tambol Mittraphab and Tambol Tubkwang, Saraburi province; joined the project “Precaution of dengue hemorrhagic fever infection”; and supported athletic activities under the Anti-Drug program of the Sub-District Administration organization in Tambol Tubkwang”, Saraburi province.

- To support and improve the quality of life of the Thai people, TPI Polene participated in the activity “Donation of blood for the auspiciousness of His Majesty the King” under the coordination of the Center of Saraburi Hospital and Saraburi Red Cross. For the event, employees of TPI Polene, together with local people in the community, jointly donated 331,800 cc of blood to patients in need in Saraburi province and the surrounding area. Ten and eight staff members of the Company jointly donated cornea and human organs to the hospitals.

- Helped develop the potential of the community leaders by having a group of community leaders, from the community committee in Tambol Muaklek, Saraburi province, follow and study on the path of Phayao province and Chiang Rai province. The Elderly Muak Lek Subdistrict Administrative Organization visited Nong Khai province for elderly people, Thap Kwang Municipality followed and studied on the path of Chachoengsao province and Kanchanaburi province. Community leaders, administrators, members of the sub-district administration organization and organization leaders in the area of Muak Lek Subdistrict, Saraburi province, studied the route of Phrae province; the Muak Lek Subdistrict Administrative Organization followed and studied on the path of Chanthaburi province, bringing the community development volunteer spirit; Thap Kwang Municipality studied in Nan province to create knowledge in the development of community villages for trainees to be able to apply in their own villages and communities sustainably.

- Helped support the community by purchasing loincloths to further distribute to the elderly in the community during the 2018 Songkran festival in the area of Thap Kwang Subdistrict, Tha Khlo Subdistrict, Kaeng Khoi District / Mittraphap Subdistrict, Muak Lek Subdistrict, Muak Lek District / Wang Muang District to create good morale and to care for the elderly.



- Made a contribution of 4,986.66 tons of cement as well as concrete roof tiles and super armour nano cement paint and other products, with a total value of Baht 2,127,040.82 to the governmental authority for the renovation of office buildings and athletic grounds of governmental authorities, such as participating in the construction of the elderly home in Nakhon Ratchasima, supporting the Pracha Rat Saraburi project to repair / build a house in Kaeng Khoi District, Wang Muang District, Saraburi province to provide assistance to the needy, the underprivileged, the disabled who suffer from housing problems according to government policy. Supported the Quality of Life Development Fund, Kaeng Khoi District, Saraburi province to solve the problems people with disabilities/ disadvantages experience, such as chronic illness, lack of housing for a better quality of life: supported the Housing Renovation Project and responsible area of «the agency of the 2nd Infantry Battalion, Lopburi province to promote good morale for the personnel to perform their duties.

Supported the renovation of Military Operating Bases alongside Thailand-Burma boundary in Amphur Maeye, Chiangmai province, Quality of Life Enhancement Fund, Amphur Kangkhoi Saraburi province for renovation and construction of houses for the disabled, the needy and the poor to have a better quality of life and Cavalry Battalion No.24, Saraburi province for renovation of office building and soldier's accommodation building.

- Distributed TPIPL 350 ml. and 600 ml. drinking water bottles for a total of 284,760 bottles to organizations to support activities such as: "Walk-Run for collaboration in the Community No.11" of Siriraj Piyamaharajkarun Hospital; to help the construction of the "84-year Nawamintharaborphit Building"; supported the National Wildlife Protection Day Project (Conservation Area Management Office 1, Saraburi Branch) to see the importance of wildlife conservation and wildlife habitat; support the education for OPEN HOUSE graduation ceremony for Ban Khao Mai Kwian School, Muak Lek District, Saraburi province; supported the traditional culture day of Asa Bucha, Buddhist Lent Day - Buddhist Lent Day, Khao Din Subdistrict Administrative Organization, Ban Kaeng Subdistrict Administrative Organization, Chaloem Phra Kiat District, Saraburi province Kaeng Khoi District and Muak Lek District, 26 temples, Saraburi province; supported the activities of Kaeng Khoi Hospital Phra Phutthabat Hospital Ban Kaeng Health Promoting Hospital, Saraburi Hospital, etc. TPI Polene jointly promoted awareness of risk mitigation from road accidents during the 2018 New Year's holiday and the Songkran Festival to a variety of government authorities, such as the Provincial Constabulary Station in Saraburi province and Muaklek Police Station, Kaeng Khoi Municipality Office Chalermprakiat Klang Dong Police Station and Muak Lek, Saraburi province, Metropolitan Police Bureau Kaeng Khoi Highway Section Klang Dong Police Station, Nakhon Ratchasima province, etc.





### 3. Academic and Youth Activities

TPI Polene realizes the importance of academic development and educational support for creating good opportunities for young people to learn hands-on by broadening their skills as well as consistently developing the quality of academic institutions. TPI Polene fully understands that our youth are fundamental to the future of the nation. For events, the Company held many activities and supported many organizations that performed useful activities for young people and granted scholarships to those with special qualifications, such as academic talent, but who might have lacked monetary resources. They are as follows:

#### Scholarships Awarded

- Consistently supported educational funds in the form of scholarships to 120 students in schools located in the area around the TPI Polene cement plant, Saraburi province for a total of 6 schools. They are: Ban Sap Bon School, Nikhom Thap Kwang Songkhro Community School 1, Thap Kwang Kindergarten School, Thap Kwang Subdistrict, Kaeng Khoi District / Ban Sap Phrik School Muak Lek School in Mitrphap Subdistrict / Ban Khao Mai Kwian School, Muak Lek Subdistrict, Muak Lek District, Saraburi province.
- Consistently supported educational funds in the form of scholarships and fellowships to a total of 7 students in the community of Kaset Samphan, TPI Polene cement plant, Saraburi province. Scholarships are reserved for students with special qualifications, such as academic talent and good behavioral performance until graduation.
- Awarded 20 scholarships to support needy students with outstanding academic qualifications and supported educational funds for 1 scholarship to schools, as well as learning and sports materials to students in Wat Wang Yai Chim School, Nakhon Nayok province.
- Donated 10 scholarships to the graduate students of Mahidol University, as a part of funding for the thesis of students with outstanding academic qualifications and good behavior; funds for those who sacrifice and perform themselves in a beneficial way for society or make a reputation for the nation so that the students could complete the study course effectively.
- Participated in activities and supported "2018 Children Day Fair" in 34 places in schools and government authorities in the surrounding communities: TPI Cement Plant, Kaeng Khoi District, Muak Lek District, Wang Muang District, Chaloem Phra Kiat District, Saraburi province, Army District No. 18, to focus on promoting quality of life, improve the quality of education, make children and young people happy, and for growth and national strength in further development.

#### To Enhance Academic Quality

- Promoted the project for national talented youth by arranging the forum "Competitive Academic Solutions and General Academic Wisdom", to reinforce academic fundamentals and English skills for young people, and the research and developmental process, to create architectural teaching skills for students. The winners were awarded a trophy from Her Highness Princess Maha Chakri Sirindhorn.
- Supported international conferences of the Women's Medical Associa-



tion of Thailand under the Royal Patronage to protect and care for public health, focusing on women, children, and the elderly and be a representative body of women doctors in Thailand; supported the activities of the World Women's Medical Association, such as cervical cancer examinations and breast cancer; issued a mobile unit for female correctional institutions, the teaching of resuscitation practice (CPR), and supported scholarships for rural medical students, etc.

- Supported the 11th conference of the Renewable Energy Model for the Community of Thailand, 2018, under the name of the event "Community Energy Following the Footsteps of the King for Sustainability" at the main auditorium, Chaiyaphum Rajabhat University. It was a discussion on renewable energy from academics, government agencies and communities, and included workshop activities for the community sector.
- Supported a "Science Museum Project" (Khlom Ha), in Pathum Thani province by students from Bansuborn School and Kao Maikwan School, Ban Sub Pik School Muak Lek Nai School and Dairy Farming Self-help Settlement School, Saraburi province; the project allowed students to join the activity and had the children get responses to queries regarding exhibitions in the museum by contacting, testing, thinking, deciding and searching for the answers by themselves. The students had a good time joining the above activity, which helped them increase their experience in science and technology.
- Supported the Bangkok Children's Museum Project by students at Bansuborn School, Kao Maikwan School, Dairy Farming Self-Help Settlement School, and Nikhom Thap Kwang Songkhro 1 School, Saraburi province; Joined activities to find answers in science learn research and experiment inside buildings such as dinosaur detective. Amazed myself Inventor club Miracle building and entered the city of Rainbow: Rainbow Town with a role in various careers. All the children were very happy to be given the opportunity to come on this field trip and to bring the knowledge they received to share with the children that did not join this project.
- Supported the project for vocational academics and teaching potential as a professional career to create the highest benefits for academic development by supporting "Teachers' Day 2018" in Amphur Kangkhoei, Saraburi province, to support education personnel and promote education for national development; supported the teacher-teaching program for Ban Sap Bon School, Ban Sap Chili School and Khao Mai Kwian School, Kaeng Khoi District, Muak Lek District, Saraburi province, to focus and promote education for students; Attended the Muttima Chit, retirement work, teachers from various schools in the Saraburi province who have worked with sacrifice, as well as personnel who have cooperated to guide the way to the TPI cement plant as well in the development of education for youth in Area around the factory.
- Supported the project "Rural Development Voluntary Camps.

The Company made a contribution of TPIPL cement products of 1,825 tons as well as super armour nano paint, TPIPL concrete roof tiles and other products, totaling Bath 873,616.01 to both governmental institutions and private institutions, for construction or repair of school buildings, multipurpose buildings, canteen, ground courts, etc., such as: Rural Development Volunteer Club of the Faculty of Engineering, Thammasat Uni-





versity; built a school building at the Thai Mountain Learning Center, “Mae Fah Luang”, Ban Pang Toy, Chiang Mai province; student clubs, good student project from the countryside; Thammasat University Build libraries and participated in community development at Ban Huai Tom School Si Satchanalai District, Sukhothai province; Federation of Pharmacy Students of Thailand Chulalongkorn University; the 14th Drug Medicine Camp Project for Health Promotion and Community Learning at Ban That Noi School Ubon Ratchathani province; Students of Agricultural Economics and Student Assembly of Agricultural Business, Faculty of Economics, Kasetsart University; made a playground and painted school buildings at Ban Don Makham School, Petchaburi province; Faculty of Engineering, Rajamangala University of Technology, Bangkok; adjusted the landscape and built a playground at Ban Huay Duan School, Kanchanaburi province; Chulalongkorn University, poured the floor to improve the outer surface, also at Ban Wang Khum School Surat Thani province, etc. The objective is to encourage students to use their free time to benefit themselves and society. It also brings knowledge that has been studied to practice in the field and transfer knowledge. Received to benefit the community The society that went to the development camp.

- Made contributions of TPIPL cement to the Faculties of Civil Engineering in 25 institutions throughout the country for the purpose of a course-training program for masons and to support useful activities for the society.
- Made a contribution of 717 tons of TPIPL cement products, dry concrete and ready-mixed concrete as well as TPIPL Nano Super Armour and concrete roof tiles, totaling Baht 2,969,873.39 to academic institutions, for the renovation, repair and construction of buildings: “Bua Nilaphat Building and open the Bua Busakorn Building Label” Thap Kwang Kindergarten School, Thap Kwang Subdistrict, Kaeng Khoi District, Saraburi province. Together with TISCO Bank Public Company Limited, the Company built a new school building for Ban Muang School, to replace the 2-storey wooden building, with 6 classrooms that are more than 41 years old; supported the construction of a kindergarten building Ban Nong Khun Phrom School, Buriram province; made concrete roads and renovated the premises of Ban Muang School, Chaiyaphum province; repaired the roof of the school building, which has been severely damaged since the construction for more than 40 years, Phorarang School, Krabi province; painted the school building, Mae Chan Wittayakhom School, Chiang Rai province; in Ban Non Saen Suk School, Sisaket province, the Company built a cafeteria and improved the landscape of the cafeteria; also, in Nikom Thap Kwang Songkhro Community School 1, Kaeng Khoi District, Saraburi province Suwattabodee School, Lopburi province, etc.

- TPIPL, Saraburi plant, hosted, welcomed and fully supported activities regarding academic programs in cooperation with a group of professors and students at the level of Bachelor’s degree, Master’s degree and Ph.D. degrees from various institutions, such as: Chulalongkorn University, Ban Somdejchaopraya Rajabhat University, Thonburi District; Sao Hai School “Wimol Witthayanukul” Khon Khaen University Demonstration School, Department of Air Force Quartermaster; supported a study visit “Cement production process and cement products”, Pungruang Subdistrict Administrative Organization; studied sustainable agriculture with organic fertilizers and TPI antibiotics, Nakhon Ratchasima Rajabhat University; supported a study visit to prevent accidents and safety in the factory. Ban Khao Mai Kwian School; studied the community waste management process, etc.



#### 4. Religious Activities

##### • Katin Ceremony

TPI Polene Plc and its subsidiaries acknowledge the significance of promoting and preserving Buddhism and have consistently taken part in Katin ceremonies every year until the present. To this end, the management team, the company's staff, clients and mystic people together made donations for the construction and renovation of religious monasteries and buildings in the temples including the monk and novice ordination project, year 2018 worth Baht 7,544,627. TPI Polene, hosted Katin ceremonies at Phadarapirom Temple, Chiangmai province, hosted Katin ceremonies at Sridonmoon Temple and Ban Hin Lab Temple and co-hosted Katin ceremonies, offerings for the priests, and jointly made donations to: Wat Wachiralongkorn Wararam Worawihan, Pak Chong District, Nakhon Ratchasima province, Wat Noi Nok, Nonthaburi province, Mongkhon Chai Pattana Temple, Sapbon Temple and temples in the surrounding communities of Kaeng Khoi District, Muak Lek District, Saraburi province.

• Supported the "Novices Propagation Ordination Project" at the Temple of International School, 2018 by the Land Dhamma Foundation in the royal patronage together with the Rama IX Kanchanaphisek Temple for His Majesty King Maha Vajiralongkorn Bodindradebayavarangkun or King Bhumibol's fiftieth, to encourage youth trained in the mind according to the guidelines of Buddhism during the school holidays, with the ordination of novices and precepts, which is the time when youth will learn Buddhism and their own good culture.

• Supported the propagation of Buddhism through "The World Buddhist Television of Thailand (WBTV)" at Wat Yannawara, introduced and propagated the teachings of Lord Buddha in the country and to the world community in order to bring about peace and harmony to the lives of the people in the country with various nationalities and religions. The aim is to cultivate and create consciousness among Thai people, to be patriotic to their homeland and sacrifice themselves for the genuine good of the nation, their religion and the monarchy. This also includes the propagation of Buddhism under the program, "The Miracles of Wisdom", with a monk as a daily speaker, Phrarajyannakawee and Phrapornphol Prasanno, at The Temple of the Rama IX Golden, to introduce and propagate the teachings of Lord Buddha.

• Supported the propagation of the teachings of Lord Buddha through "Dhamma and an inspiration" channel at Wat Weiruwan, Kanjanaburi province, with the objective to dissimilate the teachings of Lord Buddha, with an emphasis on the donation to charity, observing the precepts and making mediation. The Company also supported the project "Meditation Practice Project for the youth". The aim is to cultivate and create consciousness among Thai people, to further apply Dhamma in daily lives.





• Donated TPIPL cement product of 3,256 tons, ready-mixed concrete of 150 cubic meters concrete, Super Armour Nano paint and roof tiles as well as other products, with total value of Baht 6,961,656.12, to more than 32 temples in the country for the purchase of construction materials to build and renovate religious places such as Thip Upsorn Temple Amorn In Lamphun province, Wat Pa Nanthaburi Yanasangwararam (Dara Pirom Temple Branch), Nan province, Nong Chedi Temple, Lamphun Temple, Doi Yang Temple (Abandoned), Ban Don Phueng, Nan province; for a storage cabinet, Tripitaka, Phan, principal, and emotional test room Of the Dharma Sin School, Samoeng District, Chiang Mai province; bathroom renovation at Hua Lamphong Temple, Royal Monastery Bangkok Wat Suwannasamngkol, Phetchaburi province, Khao Sukum Temple, Chanthaburi province, Na Charoen Temple, Songkhla province; library improvement at Wat Mahathat, Wachiramongkol, Krabi, Wat Si Nuan, Khon Kaen province, etc.

In addition, the Company also supported the following projects: construction of the art therapy activity building, “the elderly home in Nakhon Ratchasima Of the Saint Camillo Foundation of Thailand, to develop the elderly and make sure there is more potential for good relationships between the elderly and the people in the surrounding communities.

## 5. Preservation of Traditional Thai Culture

### • Sustaining Artwork by TPIPL Cement Mortar and Preserving Thailand’s Unique Identity

TPIPL realizes the importance of art and culture and has consistently taken part in supporting cultural activities for more than 20 years. The Company pursues its business operations with a full commitment to deepen the harmonious coexistence of the activities of the community by, from time to time, promoting and preserving Thai traditional cultures to maintain the consistent development of Thai society; by providing a stucco art contest project in Thailand for the 18<sup>th</sup> consecutive year in 2018. The project was organized in collaboration with the Fine Arts Department and the College of Nursery Rajamangala University of Technology Rattanakosin in order to preserve and protect stucco art to be part of Thai culture forever. The competition comprised two levels as follows:

#### I. General Public Level with three categories:

1. Molding stucco under the title “Chai Mongkolkhatha”
2. Molding cement mortar under the title “King of Science”
3. Sculpturing of cement mortar under the title, “Angel and animal vehicles”

#### II. Youth level molding premixed cement under the title, “The Consciousness of Grace”.

The competition was held on May 2 - 5, 2018, at the College of Technicians, Phra Nakhon District, Bangkok.

Her Royal Highness Princess Maha Chakri Sirindhorn, the guest of honor, presided at the opening ceremony of the 18th Thailand Art of Stucco Exhibition on November 24, 2018 at the Poh Chang Museum Art Gallery, Pho Chang College. Her Royal Highness Princess Maha Chakri Sirindhorn bestowed the prize to the selected winners in “The Art of Stucco Molding of Thailand” competition, which further enhanced the highest spiritual



kindness for the Art of Stucco Molding and the related persons for the further creation of the Art of Stucco Molding as the unique identity of our country. The Company was honored to take part in helping maintain the conservation of cultural art and development of the Art of Stucco as a unique Thai identity. The Company also realizes the importance of sustaining Thailand's Traditional Cultures by having established "Thai Art Preservation Fund" with the objective to arrange academic documents in relation to Thai printing art in each Thai province under the cooperation of the College of Technicians, Phra Nakhon District, Bangkok. The academic documents have been published in booklets and distributed to the public in 4 sets-1. Carved printing in contemporary Khom era 2. Carved printing in early stage of Ayutthaya era 3. Carved printing in Sukhothai era 4. Carved printing in Hirikulchai-Lanna era.

#### • To Sustain Thailand's Traditional Cultures

In local areas, TPIPL realizes the importance of the surrounding community by participating in the activities and providing support for the offerings dedicated to Buddhist monks, and supplying the big candles used in the temples on the occasion of the beginning of Buddhist Lent, to more than 26 temples in Saraburi and Chaiyabhoorn province. TPIPL also preserved the "Thai Traditional Songkran Festival", a traditional way of paying respects to elders and receiving blessings from elders in Amphur Kangkoi, Amphur Muaklek, Amphur Wungmuang, Saraburi province; the Company also participated in the Devo rice porridge festival, Luk Yot, at Phra Buddha Chai Temple, Saraburi province. TPIPL has participated in traditional Loy Kratong Festivals at Chaloem Phra Kiat District, Kaeng Khoi District, Muak Lek District, Saraburi province and supported the fair, "Historical 2nd World War" (for the 10th year), in the sub-district of Kangkhoi, Muaklek, Saraburi province to encourage Thai people to take part in maintaining the conservation of Thai historical culture with an aim to stimulate the harmony of Thai people and to protect Royal institutions.

TPIPL is committed to being an organization with fuel efficiency management at an international level, and conducting research and development of new innovations for continuous business operations, including giving importance and recognizing the roles and responsibilities as an organization that is ready to support society, education, youth, religion and the environment. The Company is committed to creating a supportive society, a good environment, and a sustainable Thai economy. "TPI Polene: we create the future"



## TPI Polene, its Quality, Safety, Hygiene and Environment

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TPI Polene is well aware that our success and the sustainable growth of the organization at a level of excellence is primarily the result of growth from operational outcomes together with the acceptance and trust of the community and society. Consequently, the Company's management has implemented Quality Standard Systems ISO 9001:2008, API Spec.Q1, Environment Standard System ISO14001:2015, Health and Safety Management Standard TIS 18001:2554, OHSAS 18001:2007 as well as ISO/IEC 17025:2005 Standard and Energy Management System ISO 50001:2011, certifying the performance evaluation test and calibration laboratories under the certified laboratory system of Thai Industrial Standards Institute. TPI Polene has applied the standardization in all respects to be implemented suitably and properly to enable TPI Polene to operate the business effectively and efficiently.

### Quality Management

TPI Polene Group focuses on producing, distributing and delivering quality products to satisfy customers' needs. The Company consistently improves the effectiveness of quality control and reduces greenhouse gases. All products of TPI Polene Group were developed under the Quality Control System ISO 9001:2015, API Specification Q1, SPI Specification Q10 and ISO/IEC 17025:2005. In addition, the Company reviews objectives and targets regarding quality at least once a year.

### Health and Safety Management

TPI Polene Group continuously emphasizes health and safety as a part of business operations to prevent all employees and all people involved from overall hazards including work-related injury and illness.

The Company, together with the Department of Welfare and Labor Protection, the Ministry of Labor, arranged the project "Safety and Health in the Workplace" to provide knowledge to employees, educational institutions and people in general, under the auspices of Her Royal Highness Princess Maha Chakri Sirindhorn, with an emphasis on reducing to zero any accidents associated from risk in the workplace. Throughout the year 2018, the Company has understood the significance of occupational health and safety in workplace and has consistently taken part in developing safety systems in the workplace, aiming to reduce accidents to zero. The Company also participates in projects as a corporation to conduct its business according to all the rules and regulations of Thailand regarding health and safety in order to reduce and control moderate to severe risks, and was recognized for its achievement in Safety and Health in the Workplace under the auspices of Her Royal Highness Princess Maha Chakri Sirindhorn, from the Department of Welfare and Labor Protection on September 28, 2015.

The Company has implemented a Health and Safety Management System (OHSAS 18001:2007 /TIS 18001:2011) and has conducted its business according to all the rules and regulations of Thailand regarding health and safety in order to reduce and control moderate to severe risks. The Company believes that health and safety are a responsibility of executives and employees at all levels; therefore, the Company provides sufficient and proper resources such as personnel, time, budget, and training. Additionally, the Company reviews objectives and targets to control the risk of the activities of the company at least once a year and uses work performance in terms of safety as a factor in performance evaluation of employees.

The Company also prepares health check-ups precautions for all employees such as Lung Function Test and Autography.

### Public Well Being and Employee Healthcare

The Company shows its serious concern for public health in the surrounding community by continuously sending mobile medical units to offer health services to the public. The Company also extends medical welfare (OPD) for employees and covers the families of employees such as parents, spouses and their children. In addition, annual medical check-ups are provided for all employees. The Company also prepared for the prevention of seasonal epidemics by supplying tetanus for clostridium tetani vaccines, flu type B and Swine Flu vaccines to employees and their families.

### Environmental Management

TPI Polene Group is committed to environmental conservation. Hence, the Company properly improves and preserves the environment to conform to environmental standards and regulations and continuously prevents pollution in every aspect of work. The Company implemented international Environmental Standard System ISO 14001:2015 to reduce waste and environmental impact. The Company reduces the amount of dust as well as controls the quality of wastewater from the production process. In addition, the Company has a policy to economize energy usage and to handle waste properly as well as to utilize resources effectively. The Company fully supports activities regarding the environment in cooperation with the government, private sector and local communities. The Company promotes sustainable nature conservation with the rehabilitation of used mine areas to be the same as much as possible with the

adoption of biodiversity process to determine design, plan and technique to be used for reforestation. TPI Polene is also committed to reducing environmental impact in surrounding communities, such as dust, noise and vibrations. The Company promotes sustainable nature conservation by supporting reforestation and the rehabilitation of used mine areas. The Company also reviews objectives and targets regarding the environment and provides suitable knowledge and training about the environment for all levels of employees in order to raise environmental awareness.

TPI Polene Group has operated the Waste Heat Recovery Power Plant business for bringing total cement production capacity to generate electricity. This enables the Company to reduce electricity energy usage and electricity generating from the PEA, thereby reducing our environmental impact at the source, as fuel is not required to be utilized for power generation in the above-mentioned project.

### **Laboratory Standards**

In addition, the laboratories of our cement plants passed the performance evaluation test under the certified laboratory system of Thai Industrial Standards Institute, according to ISO/IEC 17025:2005 and TIS 17025:2548, the performance evaluation test and calibration laboratories. The Company has also bestowed the registration for private organization of “the analytical lab” in respect of environmental preservation by the Department of Industry, registration no. Ror-097.

### **Carbon Label: “the Symbol of Environmental-Friendly Production Process”**

The Company was the first Thai manufacturer in the country and in the Asian region to be awarded the Carbon Label in Thailand and in Asia by the Thailand Greenhouse Gas Management Organization (TGO) in the cement production category in 2008. The Company’s 11 types of products passed the evaluation criteria and were awarded the Carbon Label. To this end, the Company has a strong commitment to consistently develop production processes at environmentally-friendly plants.

On June 9, 2017, TPI Polene was recognized by the Thailand Business Council for Sustainable Development (TBCSD) together with the Thailand Business Environment Institute Foundation (TBEIF) as the corporation which has a strong commitment and consistently cooperates to reduce or avoid gas emissions. The awards confirm the Company’s strong commitment to the importance of Corporate Social Responsibility to consistently manufacture products that are environmentally-friendly.

On September 19, 2016, TPI Polene Power participated and registered in the project “Thailand Voluntary Emission Reduction Program: T-VER” from Thailand Greenhouse Gas Management Organization (“TGO”). It is anticipated that the amount of carbon dioxide emitted will be reduced in the labeled products by the equivalent of 51,854 tons.

### **Energy Management**

The Company has participated in a preparation project for energy management standards together with the Department of Renewable Energy and Energy Conservation, Ministry of Energy, to be in compliance with Energy Conservation Act B.E 2538 (Amended B.E 2550) for Control Building and Control Factory. On July 22, 2016, the Company received ISO50001:2011 certification for energy management standards from AJA Registrars. The reward confirms the Company’s commitment to be a socially responsible enterprise dedicated to being environmentally-friendly and promoting sustainable environmental awareness by adhering to the best practices for energy efficiency and aiming to utilize energy resources. Presently, the energy crisis is currently considered as an essential international concern, thereby increasing production costs. Therefore, efficient energy management in an organization to fully utilize all the resources used in the production process is essential, which helps mitigate or reduce green-house gas emissions which cause global warming. To this end, the Company has a strong commitment to consistently comply with regulatory requirements and fully supports activities regarding the environment in cooperation with the government.

In addition, on December 6, 2016, TPI Polene received “The Thailand Energy Awards 2016”, an outstanding performance reward in the category of innovation of effective utilization of energy under the project “Regenerative Downhill Conveyor”, from Air Chief Marshal, Dr. Prajin Juntong, Deputy Prime Minister, the Department of Alternative Energy Development and Efficiency (“DEDE”) under the Ministry of Energy of Thailand (the “MOE”).

### **Productive Management**

The Company has applied the Total Productive Management (TPM) system, creating awareness so that everyone shares in the organizational development movement and the opportunities are given for all levels of employees to take part in the activities through the Small Group Activity (SGA) and by preparing One Point Lesson (OPL) for staff coaching in the departments. An arrangement of machinery and equipment inspection has been made regularly with Visual Control to promote cooperation and group activities amongst

all employees and to motivate them by offering award “Improvement Sheets” for the purpose of problem solutions. Project teamwork has been set up to analyze causes of the problems to alleviate losses throughout the entire production process. TPM could be applied in the entire production process development starting from repair and maintenance as scheduled as well as quality control, customer services, new product design, office improvement, job improvement of supporting units, and the potential development of personnel through Work Flow Analysis methods, leading to excellence in operations and management.

### **Social Responsibility Standards**

The Company has implemented social responsibility standards ISO 26000 to be implemented throughout the organization covering all major issues. The Company acts according to 237 standard regulations and 321 provisions. In addition, the Company operates sustainable community development projects in education, economics, public health, and the environment in order to enhance quality of life in the community in line with the Sufficiency Economy concept and ongoing organizational improvement. TPI Polene has always strived to improve educational and social development, community standards of living, and the environment in order to deepen the harmonious coexistence of our Company and our society, following the Sufficiency Economy concept. On September 9, 2015 and July 28, 2016, TPI Polene consistently won CSR-DIW Awards as the top manufacturer in the country, under the category “Standards for Corporate Social Responsibility”, from the Department of Industrial Works, Ministry of Industry. In addition, TPI Polene received “Thailand Coal Awards 2015 under the category “Corporate Social Responsibility” on June 25, 2015 from the Department of Mineral Fuel, under the Ministry of Energy of Thailand (the “MOE”).

### **Integrated Management Systems**

The Company's LDPE plant has moved forward to be the top leading plastic resin manufacturer in Thailand and in the Asian region. TPI Polene is the first plastic resin manufacturer to be awarded Integrated Management Systems (IMS) from ISO Standard Institutions and it is among the top six manufacturers in the country, which all have been awarded the above certificate of Integrated Management Systems.

***“TPI Polene: we create the future alongside reliable wisdom, ethics and consciousness towards society.”***

## Overview of Business Operations

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TPI Polene group has the policy to create the balanced consideration of its business growth in parallel with environmental preservation and to strengthen society to be an integral part in moving the Thai economy forward together with Thai society. The Company is principally engaged in the manufacture and supply of the products mainly classified as follows:-

1. Construction sector: manufacture & sale of cement, mortar, clinker, ready-mixed concrete, CRT/FCB, lightweight concrete and cement paint, etc.
2. Petrochemical sector: manufacture & sale of EVA/LDPE plastic resins, ammonium nitrate and nitric acid, Solar Film, EVA Emulsion and EVA Powder., etc.
3. Energy sector : Manufacture and sale of RDF alternative fuel, a waste heat recovery power plant, a coal-fired power plant, a RDF-fired power plant, oil and NGV service stations and petroleum exploration., etc.
4. Others: Industry industrial waste disposal, manufacture and sales of organic fertilizers and pesticide, probiotics for livestock, liquid soap and stain remover, as well as life insurance business, real estate development, packaging bags, import-export business, retailed products of the group, drinking water and energy drink Pro-150., etc.

### **Policy of Business Segregation within TPI Polene Group**

TPI Polene has established subsidiary companies and/or affiliate companies to support the core business and to be convenient, easy to manage, efficient to operate and increase its competitive advantages by considering any other factors, such as relevant governing laws, financial structure, taxes and risk management, etc.

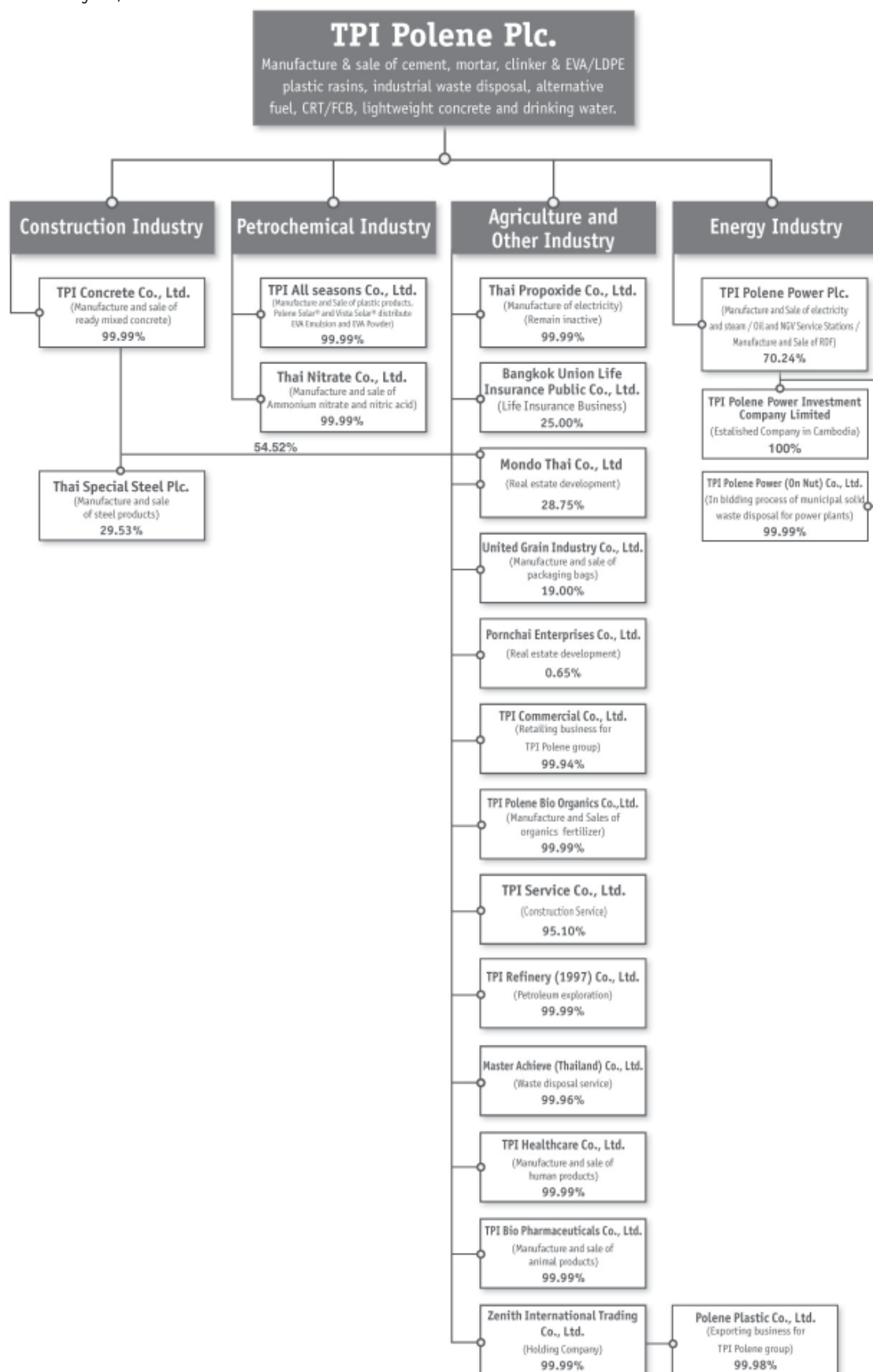
TPI Polene has maintained a policy of managing its subsidiary companies to operate their business to be in compliance with the policies of its mother company to ensure that the business administration and good corporate governance system is controlled in the same way. As for the administration of subsidiary and affiliate companies, the Company has appointed a representative to a position in the executive management team to jointly manage and make decisions on policy and plan implementation by placing great importance on fostering a good governance corporate culture throughout the organization, with an emphasis on transparency to achieve set objectives.

TPI Polene and its subsidiaries have maintained our position as one of the top leading cement manufacturers to create stability and balance in business operations, public well-being, social and community improvement, while protecting our environmental surroundings to strengthen society, further enhance the sustainable growth of the Company, and to always be in compliance with the policy of TPI Polene's responsibility towards society.



# Structure of the Group

as at January 31, 2019



# Nature of Business

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## 1. Cement, Clinker and Mortar Cement Business

TPI Polene is one of the major manufacturers and distributors of cement products and mortar cement under the brand name “TPIPL”. The plants are located in Saraburi Province. All the Company’s cement products meet the ISO/TIS certifications of industrial standards, ASTM Industrial Standards and the EU Industrial Standards. TPI Polene was the first cement manufacturer in Thailand to be awarded ISO 9002 Certification from the International Standard Institute, for surpassing industrial and environmental protection standards. This has enabled the Company to export cement to the state of California, where surrounding communities are highly aware of environmental conservation.

TPI Polene was also the first cement manufacturer to be awarded the Carbon Label for both Portland cement and the mortar cement products. The Carbon Label demonstrates that the producer has submitted data to show that TPI Polene puts an emphasis on producing products to be environmentally-friendly and helps to even out temperatures in the atmosphere.

The Company currently operates four cement production plants with a total production capacity of 13.5 MTPA, using technologically-advanced machinery, and is strategically-located, adjacent to both a limestone quarry and an efficient transportation distribution network, which reaches throughout the country. This gives the Company its low-cost competitive advantage. TPI Polene Group also operates Waste Heat Recovery Power Plants, which generate electricity from waste heat emitted from TPI Polene’s 4 cement production plants and/or uses Refuse Derived Fuel (RDF) as fuel to generate electricity in its RDF-fired power plants. As a result, TPI Polene Group has become a power plant operator in Thailand, with the largest waste-to-energy power plant operations in the country, a renewable energy to enhance the environment.

### Cement Industry

In 2018, cement demand in the country was 35 million tons, increasing from roughly 34 million tons in 2017, or an increase of 3%, supported by an increase of construction of massive governmental infrastructure projects in the country. In 2018, the Company consistently developed new cement products for the market, such as TPI Super Primer for preparatory coating for fine art work, automatic cement paint mixers and cement mortar for concrete surface repairing, cement mortar for bonding and general plastering on brick wall, and non-shrink cement for ground leveling, which has been registered as a new product innovation from the Office of National Science and Technology Agency (NSTDA).

In 2019, the Company anticipates that cement demand consumption in the domestic market will increase, supported by investment in telecommunication development systems, public infrastructure works, mass transit railway systems, such as the construction of the Pink Line Skytrain and the Yellow Line Skytrain, mass rapid transit BTS Skytrain, the construction of a motorway from Bangkok to Nakhon Ratchasima., etc. Those entire construction projects will have a direct impact on an increase of cement demand consumption in both the public and private sectors.

Competition in cement, clinker and other cement products sales in export markets will tend to be intense due to an increased number of cement producers in the Asean market, such as Indonesia and Vietnam, with the surplus in the country being exported to international markets. However, quality standards of cement products from Thailand are more acceptable than those countries in the global market. Cement and clinker manufactured in Thailand are mostly required in the Asean market where the construction sector is expanding tremendously, particularly for the development of large-scale investments in infrastructure construction in those countries in addition to demand consumption in other arenas in the international market.

## 2. LDPE/EVA plastic resins

TPI Polene is the manufacturer and distributor of LDPE Homopolymer (LDPE) and LDPE Copolymer (EVA) plastic resin. TPI Polene operates this business in Rayong province, with total production of 158,000 TPA. The LDPE is the output to be used as a main raw material for many types of plastic products, while EVA plastic resin will be used to produce athletic shoes. Low-density polyethylene (LDPE) and Ethyl Vinyl Acetate (EVA) account for TPI Polene’s market share of 20% and 90% of total domestic sales volume in the country respectively. We are the sole producer of EVA in Thailand and one of the few producers of EVA in the world that can develop proprietary EVA production technology.

### LDPE/EVA Industry

In 2018, fluctuation of LDPE/EVA prices in the global market were primarily the result of raw material price changes, such as, ethylene, VAM, crude oil prices. Simultaneously, there were several new manufacturers brought on stream with additional capacity, thereby having an impact on plastic resin market share particularly from manufacturers in China. However, competition in the market was still

intense, and most consumers have monitored plastic resin prices and prolonged buying plastic resins owing to fluctuation of plastic resins as well as crude oil prices throughout the year 2017.

However, TPI Polene did not rely mainly on the domestic market and focused on export sales and demand consumption of EVA plastic resin in international markets, such as China and India, thereby resulting in a consistent growth in export sales volume during the past several years.

The Company has focused on a policy to develop differentiated products to create value-added to EVA plastic resins and to create competitive advantages and yield higher contributions, such as high quality EVA emulsion, EVA powder and stretch Wrap Film and PE film where demand consumption in both the domestic market and international market is quite high. TPI Polene has also developed EVA Sheet Encapsulate, which is our innovative solar encapsulation film used for the production of solar cell modules.

In 2019, the Company anticipates that plastic resin prices will decrease whereas cost of production in plastic resin will tend to decrease, which will have a direct impact on the petrochemical business to some extent. The Company has focused on a policy to develop differentiated products to penetrate the niche markets that yield higher contributions.

### **3. Ready-mixed Concrete**

TPI Concrete Co., Ltd. Manufacture (a 99.9% owned subsidiary company) is the third largest manufacturer and distributor of ready-mixed concrete with a market share of 11% of ready-mixed concrete demand in the country. Product quality and consistent improvement of service is our prominent feature.

The major competitors of TPI Concrete are Concrete Product and Aggregate Co., Ltd. (CPAC), Siam City Concrete Co., Ltd. and Asia Concrete Products Co., Ltd. There are also several other minor concrete manufacturers in the country.

#### **Ready-mixed Concrete Industry**

In 2018, ready-mixed concrete demand consumption in the country showed signs of recovery, a result of the Thai government's flagship policy to accelerate infrastructure development alongside the Eastern Seaboard Development Programme, which covers the development of the country's various infrastructure projects worth a trillion baht. Presently, construction of several projects has already been completed, such as the Leam Chabang deep-sea port A and civil work of the rapid sky train's Red Line route. Meanwhile, various projects are in a work-in-progress phase, such as the construction of double track sky train's 7 line routes, the construction of a Thailand-China motorway from Bangkok to Nakhon Ratchasima and the Red, Pink and Yellow Lines Skytrain Projects in Bangkok. Increased spending on infrastructure projects by the government should help drive real estate enterprises to invest in construction of residential housing, for both condominium and detached houses alongside rapid sky train's line routes throughout the city, leading to higher concrete production output and rising demand consumption for concrete in the country accordingly.

In 2019, it is anticipated that the Government's construction of infrastructure projects for the logistics system will expand over the year 2018 through Public Utility Development and Mega Projects investment plan, which show a sign of consistent investment under the Thai government's Emergency Implementation Plan, which has a direct impact on investment expansion. Those projects include: the construction of Denchai - Chiang Rai - Chiang Khong double tracking railways, rapid train's nation rail network and opening links to 3 airports line routes, construction of the Maintenance Facility Center at U-Tapao's terminals, development project for U-Tapao Airport, Eastern Aviation Center in Leam Chabang Port Phase 3, and Map Ta Phut Industrial Port Phase 3 Developmental Project. These government projects will cause expansion of property development from the private sector to increase the number of new construction projects and help stimulate the economy in the country, leading to the increase in overall demand consumption of ready-mixed concrete.

### **4. Concrete Roof Tile/Fiber Cement Businesses and Lightweight Concrete**

The Company currently operates four existing plants of concrete roof tiles as follows:-

FCB 1: Board sheets production line; substitute for wood product category, using the production process of autoclave; production capacity of 128,000 TPA.

FCB 2: Board sheets production line; using the production process of autoclave; production capacity of 128,000 TPA.

FCB 3: Production line for a substitute for wood product category and digital board production line (autoclave system) as well as corrugated production line and its cover set (Air cure system); production capacity of 5,000 TPA.

FCB 4: Digital board production line and a substitute for wood product category; using the production process of autoclave; production capacity of 166,000 TPA.

Concrete Roof Tile products are comprised of concrete roof tiles products and its cover set. Total production of concrete roof tiles are 1,600,000 square meters or 16 million pieces per annum.

TPI Polene is the manufacturer and seller of concrete roof tiles and fiber cement products under the logo, "TPIPL", designed through a production process that uses modern machinery and high technology. Concrete roof tiles and fiber cement products are made from high quality cement and are manufactured to meticulous strength specifications, ensuring endurance and ultimate press and quality of the products surpassing the production standards from Thai Industrial Standards Institute and the International Standard Organization (ISO 9001:2015) from British Standards Institution (BSI). In addition, we have a skilled quality control team, assuring qualified products by the professional team under the standardization of roofing material, which can be tested before launching to the market. Concrete roof tiles and fiber cement products are made from high quality cement and are manufactured to meticulous strength specifications, ensuring endurance and ultimate press. It has captured all the characteristics of creative curb appeal, created a matte appearance and they make a roof stand out. TPI Polene put an emphasis on producing the products to be environmentally-friendly and help to even out temperatures. The Company also developed varieties of products from fiber cement by employing modern "digital technology". TPI Polene is the very first manufacturer in the country to use digital technology.

Also, the Company provides a full comprehensive range of design for the structure of concrete roof tiles in professional styles. Our superior quality tiles are available with roofing systems, heat-resistant coating and also the budget for installation can be quickly estimated. Our tiles are ideal to complete sustainable building construction, assuring efficient installation work by the professional team under the standardization of roofing materials and efficient production process, which can be tested before launching into the market. Our roof system has a large variety of quality products with an attractive appearance and has a comparatively long lifecycle, as well as a highly efficient product development team.

The dominant characteristic of the lightweight concrete project is that the Company can produce lightweight concrete using a variety of raw materials produced at its own plant, which is greater than 90%, and includes electricity and surplus of steam which will be reusable in the production process, thereby resulting in lower costs of production and creating competitive advantages.

#### **Concrete Roof Tile/ Fiber Cement and Lightweight Concrete Industry**

**Concrete Roof Tile and Fiber Cement:** There are 6 major manufacturers in the Concrete Roof Tile and Fiber Cement Industry, which are: Siam Cement Plc., (CPAC brand), Diamond Roofing Tiles Plc., (Diamond brand), TPI Polene Plc., (TPI Polene brand), Siam City Cement Plc., (Conwood brand), Mahaphant Fiber Cement Plc., (Mahaphant brand) and Oranit Roofing Tiles Co., Ltd., (Oranit brand). Big roofing manufacturers, who operate their own cement plants, have competitive advantages in terms of controlled costs of production.

**Lightweight Concrete:** There are 6 major manufacturers in the Lightweight Concrete Industry, which are: Siam Cement Plc., (Q-Con brand), Thai Light Block and Panel Co.,Ltd., (Thai Con brand), Diamond Roofing Tiles Plc., (Diamond brand), Siam City Cement Plc., Siam City Cement Plc., (Insee Super Block brand), Smart Concrete Co., Ltd. (Smart Block brand) and TPI Polene Plc., (TPI Block brand). TPI Polene uses a strategy for sales and marketing in the domestic market through the integrated marketing concept, focusing on marketing a mix of products to customize the product offerings to customers based on advertisements via television, print media, and product displays at more than 500 construction material sales agents and modern trade throughout the country. The Company also utilizes online media advertising to create awareness and deliver product details of marketing messages to consumers with real product presentations. TPI Polene maintains the policy to produce new products through research and development for product innovations to respond to the needs of consumers, focusing on product differentiation suitable for a wide range of purposes, genuine application and elegant design such as industrial furniture group, products for the elderly and hi-end products for high purchasing power groups of customers., etc. The Company has the policy to produce products that reduce carbon dioxide gas that causes global warming and are environmentally- friendly.

The Company has a policy to consistently export fiber cement products and concrete roof tiles to CLMV member countries, as well as to India, Indonesia, the Philippines, South Korea, South Africa and South Asia and has a plan to expand the market to other countries and other continents, to maintain a consistent expansion in project construction.

As there is some limitation of wood properties to be used in decoration or construction work, the fiber cement market has potential for growth as they can be used as a substitute for wood. They have better properties as compared with wood, as fiber cement is manufactured to ensure moisture endurance, flexibility, free from termites and insect infestation, and is cost saving compared to wood and its availability.

In 2019, there are still some negative constraints for the Fiber Cement industry, such as residential mortgage monitoring measurement from financial institutions, which will come into force in April 2019. It is anticipated that this credit measurement will have a direct impact on a real estate sector covering the residential areas in Bangkok, metropolitan areas and the region. In addition, the mortgage rate hike will also diminish the purchasing power of the buyers of residential housing in the market. All of these factors will have a



direct impact on demand consumption in the construction business sector. However, political factors and a new election in 2019 will further drive increased spending from both the government and private sectors in the country. Besides, the government has a measurement policy to help support low income buyers to purchase their own residential housings with the launch of “the Mortgage Development Project”, offered to real estate enterprises to invest in construction of residential housing. The aim of the project is to offering mortgage loans to purchasers who want to buy their own residential housing for a value of not greater than Baht 1 million, with a measurement policy for foreigners’ right to own 49% in condominium property. This also includes detached houses alongside rapid sky train line routes throughout the city, leading to rising demand consumption for the construction sector and the construction materials industry.

Export sales to developing countries has also been affected by the global economic crisis as demand consumption in the international market showed signs of a slowdown, a result of policy rate increases by the FED. All these factors, including a trade war between USA and China, and fluctuations of crude oil prices tends to result in the slowdown of the global economy. In effect, price competition will tend to be intensify in 2019 and further drive manufacturers to put their best efforts to sell products in the tougher market in order to keep their existing market shares.

In 2019, the Company anticipates that the light weight concrete business will grow over the previous year as demand consumption for light weight concrete supported by increased spending on infrastructure projects by the government and property development from the private sector will help drive real estate enterprises to invest in the construction of residential housing, for both high rise buildings and detached houses. In addition, real estate enterprises will introduce new projects in the market, which will commence project construction in 2019. To this end, TPI Polene has a strategic plan to expand marketing sales through modern trade centers and local agents as well as to penetrate highly expandable real estate development projects, leading to higher demand consumption for light weigh concrete in the country throughout 2019 accordingly.

## 5. Refuse Derived Fuel (“RDF”) Plant

TPI Polene Power Public Co., Ltd. (a 70.24% owned- subsidiary of the Company) operates a renewable energy business with an Alternative Fuel Power Plant, or Refuse Derived Fuel (RDF). It commenced commercial operations in 2001. The plant is located within the area of our cement plant in Saraburi province. The RDF project enables the Company to use RDF fuel to generate energy in the form of electricity in the Plant. The RDF Plant as above has been granted promotion certificates from the Board of Investment (“BOI”).

To support its RDF-fired power generation capacity, TPI Polene Power currently operates RDF production facilities with a daily installed capacity to process up to 6,000 tons of municipal wastes and produce up to 3,000 tons of RDF. Presently, TPI Polene Power has constructed a warehouse for RDF storage of up to 100,000 tons, to ensure sufficient waste supply to support its RDF requirement as fuel to generate power for a period of one month.

In addition, TPIPP has entered into wastes supply agreements with 9 waste management companies in (1) a company in Chonburi province (2) a company in Samutsakorn province (3) 3 companies in Ayudhaya province (4) 2 companies in Rayong province (5) a company in Karnjanaburi province and (6) a company in Nakhonratchasima province under which the Company agreed to install its semi-mobile waste-sorting machines at the landfill site to produce RDF fuel to be transported to TPIPP’s Power Plants in lieu of municipal waste to its power plants in Saraburi province. This helps save costs and expenses and solves the problems of waste supply transported from remote areas to TPIPP’s Power Plants, in Saraburi province. It commenced commercial operations in early 2018 and currently has a daily capacity to process up to 600 tons/day of municipal wastes or produce up to 180,000 tons per annum, enabling it to streamline costs. TPIPP believes that the semi-mobile waste-sorting machines allows it to diversify waste sourcing channels and increase the quality of waste sourced.

## 6. Power Plants

TPI Polene Power Plc (“TPIPP”) is a power plant operator, with the largest waste-to-energy power operations in the country and has become one of the top leading waste-to-energy power plant explorers in Thailand, with an established track record and expertise in waste management and proprietary technology well adapted to waste-to-energy operations in Thailand.

As of December 31, 2018, TPIPP had 8 power plants in operation, with total installed power generation capacity of 440 MW. TPI Polene Power will sell a contracted power generation capacity of 180 MW to The Electricity Generation Authority of Thailand (EGAT) and to TPI Polene under contracted power generation capacity of 260 MW (With a permitted power generation capacity of 230 MW) under Power Purchase Agreements (“PPA”) as follows:-

- TPIPP sells contracted RDF-fired power generation capacity of 180 MW, consisting of Power Plants with power generation capacity of 20 MW, 60 MW and 100 (70+30) MW and which specifies 3 contracted power generation capacity of 18 MW, 55 MW and 90 MW respectively to The Electricity Generation Authority of Thailand (EGAT). The RDF-fired Power Plants receive an adder of Baht 3.50 per kWh, which is payable in addition to the standard price of EGAT, on alternative-fuel-generated electricity for 7-year period,

from EGAT.

- TPIPP sells power generation from Power Plants with power generation capacity of 260 MW, comprising 1) waste-heat-recovery power plant, which generates electricity from waste heat emitted from TPIPL's cement production plants and has an installed power generation capacity of 40 MW, consisting of two 20 MW power generation units. 2) Power Plants with power generation capacity of 70 MW. (with approved power generation of 40 MW), which becomes commercially operational on August 18, 2018 3) A Coal-fired Power Plant with power generation capacity of 150 MW became commercially operational on January 25, 2018. TPIPP began to sell a contracted power generation to the Company at the same rate that the Company purchases directly from the Provincial Electricity Authority.

TPIPP had 8 power plants in operation, with total installed power generation capacity of 440 MW as follows:-

1. A waste heat recovery power plant (**the "WHRPP-40 MW"**), which generates electricity from waste heat emitted from TPIPL's cement production plants and has an installed power generation capacity of 40 MW (TG1& TG2 = Turbine Generator), consisting of two 20 MW power generation units. TPIPP began to sell a contracted power generation capacity of 40 MW to TPI Polene in June 2009, at the same rate that TPI Polene purchases directly from the Provincial Electricity Authority.
2. An RDF-fired Power Plant (TG 3) with an installed power generation capacity of 20 MW. TPI Polene Power Co., Ltd. began to sell a contracted power generation capacity of 18 MW in January 2015 to The Electricity Generation Authority of Thailand (EGAT). The RDF-fired Power Plants receive an adder of Baht 3.50 per kWh, which is payable in addition to the standard price of EGAT, on alternative-fuel-generated electricity for 7-year period, from EGAT. These RDF-fired Power Plants have been granted promotion certificates from the BOI.
3. An RDF-fired Power Plant (TG 5) with an installed power generation capacity of 60 MW. In August 2015, TPI Polene Power Co., Ltd. began to sell a contracted power generation capacity of 55 MW from RDF-fired Power Plant with an installed power generation capacity of 60 MW to The Electricity Generation Authority of Thailand (EGAT). The RDF-fired Power Plants receive an adder of Baht 3.50 per kWh, which is payable in addition to the standard price of EGAT, on alternative-fuel-generated electricity for 7-year period, from The Power Electricity Authority of Thailand. These RDF-fired Power Plants have been granted promotion certificates from the BOI.
4. A power plant with an installed power generation capacity of 100 MW, (TG4) consisting of a 30 MW waste heat recovery power generation unit and a 70 MW RDF-fired power generation unit. The 30 MW Waste Heat Recovery Power Plant commenced commercial operations in February 2016 and initially sold electricity generated from the waste heat recovery power generation unit to TPIPL and consequently sold electricity generated from combined 100 MW Power Plant to EGAT under the power purchase agreement of 90 MW, which commenced commercial operation on April 5, 2018 and receive an adder of Baht 3.50 per kWh, which is payable in addition to the standard price of EGAT for 7-year period. Both of these have been granted promotion certificates from the BOI, which entitles it to a number of benefits including tax exemptions.
5. A Power Plant (TG 7) (Approved power generation capacity of 40MW) became commercially operational on August 18, 2018. TPIPP began to sell a contracted power generation at the same rate that the Company purchases directly from the Provincial Electricity Authority.
6. A coal and RDF-fired power plant (TG 8) with an installed power generation capacity of 150 MW became commercially operational on January 25, 2018. TPIPP began to sell a contracted power generation at the same rate that the Company purchases directly from the Provincial Electricity Authority. These coal and RDF-fired power plant have been granted promotion certificates from the BOI.

## **7. Industrial Waste Disposal Business**

TPI Polene also operates an industrial waste disposal business to dispose of industrial waste from various industries in the country, under a license to operate a central waste treatment plant granted by Department of Industrial Works. This project helps eliminate industrial waste from industries, enhance recycling opportunities, lower raw material and fossil fuel usage, and develop a recycling economy with the preservation of environmental surroundings.

## **8. Pyrolysis Plant**

The Company operates modern, high-efficiency energy recovery technology using a Pyrolysis Plant, with total project investment of Baht 652 million. The plant is designed to generate crude oil and liquid fuel from waste plastic and tire pyrolysis. The project is operated adjacent to the RDF plant, which is located within the area of our cement plant in Saraburi province. The Pyrolysis Plant has been granted promotion certificates from the Board of Investment ("BOI").

## 9. Oil Service Stations and NGV gas stations

TPI Polene Power Public Company Limited also operates oil service stations and NGV gas stations in Bangkok and provincial areas, under the logo “TPIPL”. NGV gas stations have been granted promotion certificates from the Board of Investment. Currently, TPI Polene Power operates a total of 8 oil service stations, 1 NGV gas stations and 3 oil service stations and NGV in Bangkok and provincial areas.

## 10. Fertilizer Plant

TPI Polene Bio Organics Co., Ltd. (99.99% owned subsidiary of the Company). The project became operational in 2011 and is operated adjacent to the RDF Plant. The composting or the biodegradable waste is sorted and reprocessed into new material bound for the manufacture of organic fertilizer for full cycling for waste management collection, treatment and disposal services. The plant is located within the area of our cement plant in Saraburi province. The organic fertilizer plant has been granted promotion certificates from the Board of Investment (“BOI”). TPI Polene Bio Organics Co., Ltd. obtained quality products in compliance with the standards of IFOAM for liquid fertilizer on September 5, 2011. Most importantly, TPIPL organic fertilizers are toxic-free and safe for human beings and the environment. TPI Polene Bio Organics Co., Ltd. has consistently produced research and product development to obtain varieties of agricultural products specially manufactured for plants and livestock (synbiotic products), such as organic fertilizers, soil enhancers, biocide and products for livestock (synbiotic products) and fishery such as Synbiotic/Probiotics and best organic products used directly in livestock and fishery farms as well as hygienic products such as TPI Biosan, hygienic soap, and stain/grease removers.

Presently, the products as mentioned above are sold under the names of companies as follows:-

1. Organic fertilizers as well as other products specially manufactured for plants are distributed by TPI Bio Organics Co., Ltd.
2. Products for livestock (synbiotic products) and fishery are distributed by TPI Bio Pharmaceuticals Co., Ltd.
3. Best organically hygienic products are distributed by TPI Healthcare Co., Ltd.

### Organic Fertilizer Industry and TPI Probiotic for animal farming

In 2018, the agricultural sector in the country grew by 4.6% over the previous year while the agricultural commodity prices index decreased 6.7%, farmer income per family. As a consequence an average farm family income reduced accordingly, leading to lower demand consumption of fertilizers in the market. However, the government has planned a strategic project for sustainable agricultural development, aiming to support farmers to do organic agriculture. The agriculture development initiative under the National Organic Agriculture Development Strategic Project for the year 2017-2021 has consequently driven the organic products of the Company to grow consistently.

Organic products are currently promoted and encouraged to be used in replacement of antibiotics, leading to the growing of TPIPL's probiotic/organic products (which are chemical free and safe for farmers and consumers). Besides, demand consumption for organic consumer products used in household families has expanded consistently, thereby leading to higher demand consumption for hygienic products of the Company.

## 11. Ammonium Nitrate and Nitric Acid

Thai Nitrate Co., Ltd. (a 99.99% owned-subsidary Company) is the largest producer of ammonium nitrate and nitric acid in the country and Thai Nitrate is the sole producer of nitric acid in Thailand.

## 12. TPIPL Drinking Water Business

TPIPL has operated a drinking water business under the brand name “TPIPL” since 2011. It has good quality products and it is safe for consumers as it uses high quality reverse osmosis technology filtration systems (RO). This process requires that high pressure be exerted on the high concentration side of the membrane and by applying ultra violet treatment to eliminate biological contamination and the ozone treatment process in the water-bottling stage of the production of drinking water. These major benefits have made TPIPL drinking water possess quality characteristics of water; thus, we obtained a certificate approved from the Food and Drug Administration (FDA) in compliance with the standards from natural resources. TPIPL drinking water is consumed at the plants and head office and is also distributed to consumers.

## 13. Polene Solar® Products and EVA Emulsion and EVA Powder

TPI All Seasons Co., Ltd. (99.99%-owned subsidiary of the Company) is the manufacturer and distributor of EVA film that is used for encapsulant for photovoltaic (PV) modules, which are ideal for crystalline, amorphous thin film solar panels under the brand names, Polene Solar® and Vistasolar®. In addition, EVA can be used in laminated safety glass and tempered glass screen protectors under the brand name, VistaSafe™. Wrap film, top sheet, masking film, multi-purpose plastic sheet, anti-slip mat applications are certified by the International Standard Organization, ISO 9001:2015, ISO 14001:2015 and ISO 45001:2018. TPI All Seasons presently operates 10

production lines with an annual capacity of 20,100 TPA.

TPIPL is also the manufacturer and distributor of water-based adhesive and re-dispersible powder, which are widely used as adhesives for distribution. The main raw material of these products is the byproduct of ethylene and vinyl acetate, which are used to produce LDPE Homopolymer and EVA Copolymer. It is classified as a recyclable material, aiming to reduce greenhouse effects and carbon dioxide emitted in the atmosphere. The Company has also developed and launched re-dispersible powder into the market.

We have developed proprietary EVA Emulsion and EVA Powder production technology and we also are one of the few producers in Thailand that has developed and launched EVA Emulsion and EVA Powder into the market under the logo Polene(r). They are distributed by TPI All Seasons Co., Ltd.

In 2018, the Company installed additional machinery and equipment to expand the production capacity to keep pace with the increased demand consumption in the market, thereby increasing the production capacity of EVA Emulsion and EVA Powder to 30,000 tons per annum and 1,200 tons per annum respectively. The Company has a plan to expand the production capacity of EVA Powder to 6,000 tons per annum in the next 1-2 years.

Polene Solar® Products can be classified according to their components and application as follows:

1. EVA encapsulant for Photovoltaic (PV) modules: The encapsulant is very important for the solar module because it is used to fix all components of the modules together. Moreover, the EVA sheet must be robust and protect the solar cells against UV light and moisture for at least 25 years. The above products are classified into two brand names as follows:-

- Polene® Solar Film: In 2007, TPI All Seasons created the first EVA products by using high technology in collaboration with Thailand's top-tier PV manufacturers and our R&D team, which has over 10 years of experience in polymeric materials. The product exhibits very outstanding properties such as high light transmission, UV protection, and excellent adhesion to glass which is suitable for various solar panels (crystalline and amorphous thin film) in order to meet the demands of domestic customers and the Indian market.
- Vistasolar ®: The most prestigious and oldest brand of EVA film in Europe, founded in 1982, it was purchased by TPI All Seasons Co., Ltd. in 2014. All machinery, equipment and its technology have been transferred to be installed in Thailand. For this reason, the Company has gained more market share and has become more well-known in the world market. The above takeover also included the Company's technology processes, all machinery, equipment, intellectual property as well as market share. The products are designed to satisfy the needs of customers in the global market, while the market is mainly in European countries.

2. VistaSafe™: The Company has also developed the EVA film for laminated glass, tempered glass screen protector and decorative glass for building and vehicles.

3. Blown film products

Blown film extrusion is a well-known technology that is the most common method to make plastic films, especially for the packaging industry (wrap film, top sheet and masking film).

4. Anti-slip mats

Polene EVA film can be used as a household multi-purpose plastic sheet such as anti-slip mats or surface protective film in the kitchen, living room and bathroom.

In 2018, TPI All Seasons Co., Ltd had the following total revenues: 65% from EVA encapsulant film, 28% from Blown film products and 8% from anti-slip mat and other products respectively.

1. EVA emulsion and EVA powder can be categorized according to product types and utilization purposes as follows:-

- a. Wood works and wood decoration works.
- b. Fabric and textile for apparel.
- c. Packaging and labeling.
- d. Lamination works.

2. EVA Power is specially designed for significant components of construction industrial work and is applied for decoration substances for superstructure work, especially to sustain other material to enhance adhesive strength and reinforce bars in structural members. The Company also developed specially designed EVA power, for sustaining workability for cement products of the Company as follows:-

- 2.1 Tile adhesive mortar
- 2.2 Plastering mortar



## **Polene Solar® Products and EVA Emulsion and EVA Powder**

TPI All Seasons Co., Ltd. (a 99.99% owned subsidiary company) manufactures and distributes Polene Solar® Products and EVA Emulsion and EVA Powder. The nature of the business is summarized as follows:-

### **Opportunity and Constraints in Solar Film Business**

Solar energy is a naturally occurring and clean energy. With the large magnitude of solar energy available and concerns about global climate change, many countries try to utilize sunlight to generate electricity instead of oil and coal as well as to reduce the emission of greenhouse gases. For this reason, solar power is a promising choice to address the world energy crisis.

However, there are other factors affecting the opportunities and limitations of the EVA solar film business.

#### **1. Government policy on renewable energy (Internal and Foreign Policies):**

The government action plan that encourages the use of renewable energy, especially solar energy will promote the solar power industry. The Ministry of Energy will possibly increase the proportion of solar energy within 10 years and will allow rooftop solar energy systems with unlimited power generation. This support by the Thai Government may facilitate increasing the capacity of EVA solar film production by our company due to the increase of solar power demand in the future.

In addition to Thailand's energy policy, the government's foreign policy also plays an key role in this business. If solar power is promoted around the world, this will also help to increase our production capacity. For example, Japan will host the online auction of solar power plants due to the shortage of fuel for electricity generation in Japan. However, the USA has a plan to raise import duty rates. Also, the Indian government plans to increase import duties for machinery and equipment for solar panels, which will have a direct impact on the solar cell business including TPI All Seasons Co., Ltd.

#### **2. Crude Oil and coal price:**

Crude oil and coal are the main fuel for electricity generation. If the price of those raw materials decreases, this will retard the business of renewable energy and the production capacity of TPI All Season Co., Ltd. as well.

#### **3. Technology:**

If the technology of solar cell and solar module fabrications is developed to obtain more power, the cost of solar power generation might be reduced compared to the conventional technology and other renewable energy generations.

### **Competition in Solar Film Industry**

There are several competitors in the solar film industry both in the country and in the international market. Major solar film competitors are Chinese manufacturers, who have established a production base in Thailand and will commence commercial operations in mid-2018. They are considered the major competitors of the Company because the raw materials of production in China are cheaper with higher quality. In the international market, several manufacturers from Japan and Spain went out of business while several manufacturers in the solar film industry in China and South Korea are still in the business.

In 2019, it is anticipated that production output and sales revenues for EVA film Encapsulate in the domestic market will increase accordingly, supported by Thai government policy on solar cell production. In addition, there are several manufacturers of solar cells from offshore that have established their production bases in Thailand. In addition, the real estate business in Thailand is growing continuously; this also increases the demand for our EVA film which is used for laminated glass and solar panels. However, there are several manufacturers of solar cells from China to establish their production base in Thailand, which will have a direct impact on sales revenues for solar film in the domestic market.

For the international market, sales revenues and profits tend to increase as several manufacturers from Japan and Spain have gone out of business; so manufacturers of solar cells in the Eurozone, East Asia and Southeast Asia turned to purchase additional products from the Company.

Therefore, the agreement also provides opportunities on higher demand consumption for solar cells in the global market. However, there were solar film manufacturers from Saudi Arabia, with relatively lower costs of production, that entered the Indian market and offered lower prices of solar film to manufacturers in India, causing the intense competition for the solar cell business in the international market.

In 2018, sales volume of EVA emulsion and EVA powder, (which are widely used as adhesives) in the domestic market grew constantly as customers mostly accept the products' quality standards and the pricing is acceptable of the VAE business of the Company. TPIPL can also increase its competitive advantages to be able to compete in both the domestic and international markets. In the first half of 2018, the Company's market share for VAE business accounts was 70% of the total VAE market in the country. The Company plans to

consistently develop a full comprehensive range of products for an ever-increasing number of applications and to expand further to other groups of products, such as, cement paint, adhesive cement and apparel businesses within the year 2019.

As for the export market, TPI All Seasons can expand its export sales to countries in the Middle East group, such as Egypt, Saudi Arabia, United Arab Emirates, and countries in Southeast Asia such as Vietnam, Indonesia and Malaysia. Besides, TPI All Seasons can capture market share in China and India and tends to consistently gain more market share in the international market.

#### **14. Petroleum Exploration and Production Technology**

TPI Refinery (1997) Co., Ltd. entered into the Petroleum Concession no. 2/2554/110 (addition) covering an area of petroleum exploration concession block no. L29/50 with the Ministry of Energy on January 11, 2017, as the concessionaire for extension of Petroleum Exploration and Production Technology for another 3-year period from February 8, 2017 to February 7, 2020.

TPI Refinery (1997) Co., Ltd. is a concessionaire for Petroleum Exploration and Production Technology, which are considered as an essential business for energy industrialization, production industry and logistic systems of the country. Presently, TPI Refinery (1997) Co., Ltd. is in the process of petroleum exploration in the third stage of exploration, which involves geophysical, technological seismic surveys, using the 3D seismic method year and drilling an exploration well.

In addition, the Company has invested in other businesses through its subsidiaries and affiliated companies, and is involved in real estate development, the provision of life insurance services, and the manufacture and sale of packaging bags, etc.

## Affiliated Companies as of December 31, 2018

Company's name	Head Office Address	Business	Registered Capital (Baht)	Paid-up Capital (Baht)	Shareholding (%)
<b>Subsidiaries</b>					
1. TPI Concrete Co., Ltd.	26/56, 5 <sup>th</sup> Floor, TPI Tower, Chan Tat Mai Rd., Thungmahamek, Sathorn, Bangkok 10120 Tel: (02) 678-5350-74 Fax: (02) 678-5375-6	Manufacture and sale of ready-mixed concrete	2,000,000,000	2,000,000,000	99.99
2. TPI Polene Power Co., Ltd.	26/56, 8 <sup>th</sup> Floor, TPI Tower, Chan Tat Mai Rd., Thungmahamek, Sathorn, Bangkok 10120 Tel: (02) 285-5090-9 Fax: (02) 213-1035	Manufacture and sale of electricity and steam, RDF, exploration and manufacture petroleum including oil and NGV service stations	8,400,000,000	8,400,000,000	70.24
3. Thai Nitrate Co., Ltd.	26/56, 21 <sup>st</sup> Floor TPI Tower, Chan Tat Mai Rd., Thungmahamek, Sathorn, Bangkok 10120 Tel: (02) 2678-5450-2 Fax: (02) 678-5484	Manufacture and sale of ammonium nitrate and nitric acid	468,750,000	468,750,000	99.99
4. TPI All Seasons Co., Ltd.	26/56, 8 <sup>th</sup> Floor, TPI Tower, Chan Tat Mai Rd., Thungmahamek, Sathorn, Bangkok 10120 Tel: (02) 285-5090-9 Fax: (02) 213-1035	Manufacture and sale of plastic product, Polene Solar®, Vista Solar®, EVA Emulsion and EVA Powder	450,000,000	450,000,000	99.99
5. Thai Propoxide Co., Ltd.	26/56, TPI Tower, Chan Tat Mai Rd., Thungmahamek, Sathorn, Bangkok 10120 Tel: (02) 678-5000, 678-5050 Fax: (02) 678-5001-5	Manufacture of electricity (Remain inactive)	1,000,000	250,000	99.99
6. Mondo Thai Co., Ltd.	26/56, 19 <sup>th</sup> Floor, TPI Tower, Chan Tat Mai Rd., Thungmahamek, Sathorn, Bangkok 10120 Tel: (02) 678-5470 Fax: (02) 678-6511	Property Developing	36,000,000	36,000,000	83.27*
7. TPI Commercial Co., Ltd.	26/56, TPI Tower, Chan Tat Mai Rd., Thungmahamek, Sathorn, Bangkok 10120 Tel: (02) 678-5470 Fax: (02) 678-6511	Retailing business for TPI Polene Group	100,000	100,000	99.94
8. TPI Refinery (1997) Co., Ltd.	26/56, TPI Tower, Chan Tat Mai Rd., Thungmahamek, Sathorn, Bangkok 10120 Tel: (02) 678-5470 Fax: (02) 678-6511	Petroleum exploration	1,300,000,000	1,300,000,000	99.99
9. Polene Plastic Co., Ltd.	26/56, TPI Tower, Chan Tat Mai Rd., Thungmahamek, Sathorn, Bangkok 10120 Tel: (02) 285-5090-9 Fax: (02) 213-1035	Exporting business for TPI Polene Group	10,000,000	10,000,000	99.98**
10. TPI Polene Bio Organics Co., Ltd.	26/56, G Floor, TPI Tower, Chan Tat Mai Rd., Thungmahamek, Sathorn, Bangkok 10120 Tel: (02) 285-5090-9 Fax: (02) 213-1035	Manufacture and sale of organic fertilizer	3,300,000,000	3,300,000,000	99.99
11. Zenith International Trading Co., Ltd.	26/56, TPI Tower, Chan Tat Mai Rd., Thungmahamek, Sathorn, Bangkok 10120 Tel: (02) 285-5090-9 Fax: (02) 213-1035	Holding company	100,000,000	100,000,000	99.99
12. TPI Service Co., Ltd.	26/56, TPI Tower, Chan Tat Mai Rd., Thungmahamek, Sathorn, Bangkok 10120 Tel: (02) 285-5090-9 Fax: (02) 213-1035	Construction service	10,000,000	4,600,000	95.10
13. TPI Healthcare Co., Ltd. (Former name "TPI Intertrade Co., Ltd.)	26/56, TPI Tower, Chan Tat Mai Rd., Thungmahamek, Sathorn, Bangkok 10120 Tel: (02) 285-5090-9 Fax: (02) 213-1035	Manufacture and sale of human products	10,000,000	5,050,000	99.99
14. TPI Bio Pharmaceuticals Co., Ltd. (Former name "TPI Tank Terminal Co., Ltd.)	26/56, TPI Tower, Chan Tat Mai Rd., Thungmahamek, Sathorn, Bangkok 10120 Tel: (02) 285-5090-9 Fax: (02) 213-1035	Manufacture and sale of animal products	10,000,000	5,500,000	99.99
15. Master Achieve (Thailand) Co., Ltd.	26/56, TPI Tower, Chan Tat Mai Rd., Thungmahamek, Sathorn, Bangkok 10120 Tel: (02) 285-5090-9 Fax: (02) 213-1035	Waste disposal service	1,000,000	1,000,000	99.96

Remarks: \* Held by TPI Polene Plc. and TPI Concrete Co., Ltd., which accounted for 28.75% and 54.52% respectively, totaling 83.27%.

\*\* Held by Zenith International Trading Co., Ltd. 99.98%.



Company's name	Head Office Address	Business	Registered Capital (Baht)	Paid-up Capital (Baht)	Shareholding (%)
<b>Associated Companies</b>					
1. Thai Special Steel Industry Plc.	26/56, TPI Tower, Chan Tat Mai Rd., Thungmahamek, Sathorn, Bangkok 10120 Tel: (02) 678-5350-74 Fax: (02) 678-5375-6	Manufacture and sale of Steel	11,200,000,000	4,220,000,000	29.53
2. Bangkok Union Life Insurance Plc.	175-177, 8 <sup>th</sup> Floor, Bangkok Insurance Tower, Surawongse, Bangrak, Bangkok 10500 Tel: (02) 634-7323-30 Fax: (02) 634-7331	Life Insurance	500,000,000	500,000,000	25.00
3. United Grain Industry Co.,Ltd.	26/56, 27 <sup>th</sup> Floor, TPI Tower, Chan Tat Mai Rd., Thungmahamek, Sathorn, Bangkok 10120 Tel: (02) 678-6988-97 Fax: (02) 678-6988-99	Manufacture and sale of Packaging bags	550,000,000	550,000,000	19.00
<b>Other</b>					
1. Pornchai Enterprise Co.,Ltd.	26/56, 22 <sup>th</sup> Floor, TPI Tower, Chan Tat Mai Rd., Thungmahamek, Sathorn, Bangkok 10120 Tel: (02) 678-5490-3 Fax: (02) 678-5494	Real estate business and rental service	4,599,919,600	4,599,919,600	0.65

## Sales Revenue Structure

TPI Polene's investment in reciprocal businesses will generate significant sales revenues and create steady growth for the Group. The sales revenues structure is as follows:

Unit: Million Baht

Product/Service	Operated by	% Of TPIPL's Shareholding	Sales revenues from external customers		Inter-company's revenues		Total Sales revenues			
			2018	2017	2018	2017	2018	%	2017	%
Construction material	TPI Polene Plc. TPI Concrete Co.,Ltd.	- 99.99	19,994	18,078	13,088	6,688	33,082	58.47	24,766	56.38
Petrochemical and Chemical Products	TPI Polene Plc. Thai Nitrate Co., Ltd.	- 99.99	8,176	6,684	7,561	7,472	15,737	27.81	14,156	32.23
Electricity and Utility	TPI Polene Power Plc.	70.24	6,698	4,202	922	663	7,620	13.47	4,865	11.07
Organic Products	TPI Polene Bio Organics Co.,Ltd.	99.99	125	125	14	16	139	0.25	141	0.32
Total			34,993	29,088	21,585	14,839	56,578	100.00	43,928	100.00

## Corporate Developments in 2018

TPI Polene Group as a Company has expanded projects to build up business operations and consistently reduce energy. TPI Polene has moved forward to continue to create high-growth potential for the business by making further investments in projects as follows:

### **TPIPP's 8 power plants in operation with total installed power generation capacity of 440 MW**

Since January 31, 2019, TPIPP has operated 8 power plants, with total installed power generation capacity of 440 MW. TPIPP sells power generation to the Electricity Generation Authority of Thailand (EGAT) under installed power generation capacity of 180 MW, and sells power generation to TPIPL under installed power generation capacity of 260 MW, with permitted power generation capacity of 230 MW.

### **Enhancement of Fiber Cement Production Lines**

In 2018, TPI Polene made an additional investment to improve fiber cement production line # 1 and #3 to expand production capacity of Autoclaved Board, with its sales volumes increasing consistently particularly in the international market. The improvement of the production lines as above will additionally increase the production capacity of Autoclaved products by 7,000 tons/month (at 100% utilization rate) or an increase from 23,500 tons/month to 30,500 tons/month.

### **Installation of Automatic Belt Conveyor System to streamline cement production costs**

TPI Polene has installed an automatic belt conveyor system to be used to transport shale-in pit crushing system and classification plant system. It is considered a labor-saving system that allows the machines to move rapidly through a process, allowing companies to particularly save limestone/aggregate transportation expenses.

### **Restructuring of the Group of Companies to separate the distribution of organic fertilizer products, livestock and fishery products and hygienic products**

In 2018, TPI Polene restructured its group of companies through a separation of organic fertilizer products, livestock and fishery products, and hygienic products. The products are classified clearly into 3 groups for sale and distribution under the 3 companies as follows:-

1. Organic fertilizers as well as other products specially manufactured for plants are distributed by TPI Bio Organics Co., Ltd. (a 99.99% owned- subsidiary company)
2. Products for livestock (synbiotic products) and fishery are distributed by TPI Bio Pharmaceuticals Co., Ltd. (a 99.99% owned- subsidiary company)
3. Best organically hygienic products are distributed by TPI Healthcare Co., Ltd. (a 99.99% owned- subsidiary company)

### **New Product Development in 2018**

The Company and the group of companies have developed and launched new products as follows:

#### **• Fiber Cement Products**

##### **Solid Hardwood Intaglio Floor planks**

TPI Polene Solid Hardwood Intaglio floor plank is well developed to enable the creation of wood printed patterns through consistent printing patterns, which resolve the long-standing defects of wood flooring such as arching, deforming and gaps between floorings and are of attractive appearance and have a beautiful style. It can be applied for both internal and external decoration works. Intaglio floor plank is an extremely solid and durable product that can stand up to the worst of conditions, is water-proof and is anti-termite and anti-insect, ensuring that the work is easily installed and cleaned.

##### **Fiber Cement Stiles**

TPIPL fiber cement stiles are made from high quality cement, cellulose fiber and PVC. The ingredients consist of special substances that enable it to have waterproof properties, help dampen noise while making ingress into or egress from and it is a durable product that can stand up to the worst of conditions and is anti-fungus.







## • Cement Mortar Products

### Floor Leveling Semi-Self Mortar: M410

Properties of the product: Good quality cement for floor leveling, which is suitable for ground leveling, with 1-3 centimeter thickness, giving a smooth surface as it contains special chemicals for well-flow purposes to help users work easily on ground leveling before the step of decoration work, such as floor tiles, parquet work and laminate floor tiles. The package is 50 kg per bag.

### Cement mortar for light weight concrete - M 220B (New non-foam formula)

Properties of the product: Special formula cement mortar, which is well-suited to produce lightweight concrete and to make lightweight concrete block a fine surface texture. The ingredients consist of material that works as insulation, ensuring heat and sound protection. The product is easy to use immediately by mixing well with water at the recommended proportion. It gives more time for cement to ensure the best possible consistent spread up to 90-100% in the concrete mold and is especially well-suited to produce Cellular Lightweight Concrete ("CLC") and to fill holes between fiber cement installed on wall. The product can be used with cement spraying machine. The package is 50 kg per bag.

### Cement mortar - TPI LOFT: M 103 Powder formula used immediately by mixing well with water

Properties of the product: A powder formula mortar making a polished-surfaced appearance by plastering on the surface, which is especially well-suited for plastering for loft style, to create specially distinguished printing and giving smooth surface by using a steel trowel as it contains special substances which is exposed to abrasion-resistant surfaces with waterproof properties. It has added anti-fungal and mildew resistance additives, which will lower the water absorption, reduce absorbency and diminish the problem of erosion. M103 is especially well-suited for general plastering on brick wall masonry, concrete block and fiber cement board. The package is 3 kg and 10 kg per bag. (Apparatus included only in 10 kg per bag packaging)

### Non-Shrink Grout TPI M670: New packaging in 25 kg bags.

Properties of the product: A hydraulic cement mortar is a high-quality cement base tile grout with special components that is specially-designed, allowing for good workability for both early strength and very high compressive strength with non-shrinkage property. The cubic compressive strength can develop up to 700 ksc. TPI M670 is suitable for industrial work, civil work and general engineering work, such as foundation work and to completely fill the space/holes to strengthen the floor or foundation work that require highly compressive strength as well as repairmen work., etc.

The product is sold in 50 kilogram bags.

### General Purpose Non-shrink Grout: M 671

Properties of the product: A hydraulic cement mortar is a high-quality cement base tile grout with special components that is specially-designed, allowing for good workability for both early strength and very high compressive strength with non-shrinkage property. TPI M671 is suitable for industrial work, civil work and general engineering work, such as foundation super structures work for motor machinery, especially foundation work that have to sustain heavy loads from the entire structure. It can be poured easily in spite of the complexity of reinforcing bars in structural members, installation of Precast Concrete, including general repairing work. The cubic compressive strength can develop up to 480 ksc within 28 days. The product is sold in 25 kilogram bags.



#### **NP 103: Polished-surfaced cement mortar - TPI LOFT: ready-mixed formula**

Properties of the product: A ready-mixed mortar making a polished-surfaced appearance by plastering on the surface and is ready to be used with no mixture of water, which is well-suited for plastering for loft style, to create specially distinguished printing and giving a smooth surface by using a steel trowel as it contains special substances which are exposed to abrasion-resistant surfaces with waterproof properties. It has added anti-fungal and mildew resistance additives and diminishes the problem of erosion. NP103 is especially well-suited for general plastering on brick wall masonry, concrete block and fiber cement board. The package is 3 kg and 10 kg per bag. (Apparatus included only in 10 kg per bag).



#### **Nano Products Group**

#### **TPI Super Special Armour Nano Paint "NP101M" Premium Shield: Concentrated water**

**based Film Colors (breathable nano paint)**

**Properties of the product:** A concentrated water-based film colors is a ready-mixed formula, with the specialty grade of matte film color that enables it to protect against radiation, humidity/water and it can cover all imperfections of the original for building surface applications, breathable nano paint and waterproof film color bases. It is specially designed for painting on building surfaces, such as ceilings and walls, specially designed for decoration on interior and external building surfaces and is ready to be used with no mixture of water. It can be applied on the required areas after painting with TPI Super Special Armour Nano Paint (NP100S) or 100SW. With fine cement-based mixtures, it gives the colors as needed on building surfaces that increase paint durability, and enables it to protect against humidity/water, abrasion resistance and scratch resistant. The product is sold in 1/4, 1, 2.5 and 5 gallon containers.



#### **TPI Ceiling Paint "NP102" Premium Shield: Concentrated water Based Matte Film Colors**

Properties of the product: A ready-mixed formula, with the specialty nano color that enables it to protect against radiation, humidity/water and it can cover all imperfections of the original for building surface applications, and waterproof properties. It is specially designed for painting on ceilings, and is ready to be used with no mixture of water. It gives the colors as needed on surfaces that increase paint durability, and enables it to protect against humidity/water, resist peeling and cracking. The product is sold in 1 and 5 gallon containers.



#### **TPI Anti-rust Primer: NP110: Matte Film Top Coat (New formula)**

TPI Anti-rust Primer: NP110 is well developed with a special mixture of high-quality acrylic resin anti-rust pigment. Its anti-corrosive properties make it ideal for preventing rust, ensuring that there will be a better adhesion for top coat when applied to the required areas, such as steel and metal substrates, concrete and mortar surfaces or woods and is suitable for application with a brush or roller onto a variety of substrates. TPI Anti-rust Primer is available in 1 and 5 gallons containers.



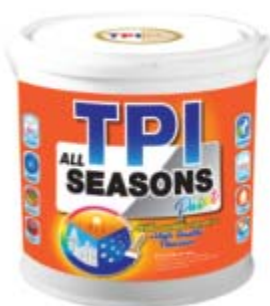
#### **TPI Primer for Heavy Duty Flooring: NP301P - Super Special high quality top coat**

Properties of the product: Well-developed with high adhesion properties of 2-component polyurethane for following-on coats of paint. With the high technological development of nano top coat, ensuring that there will be a better adhesion for top coat when applied to the required areas. NP301P provides a highly adhesive undercoat in preparation for the application of a decorative topcoat. It also increases the durability of the paint and anti-moisture on the required areas. The TPI Primer for Heavy Duty Flooring is available in 1 and 5 gallons containers.



#### **TPI Super Armour Nano Paint “NP303”: Specialty Top Coat-Heavy duty Flooring**

Properties of the product: A 2-component polyurethane high-quality top coat that has no solution, which is used to paint on the required areas for oil and chemical prevention. The paint has high resistance against UV radiation, scratches, and heavy impacts, which is suitable for factory, warehouse, and heavy duty floors where increased durability and abrasion resistance are desired. It resists penetration of scratches and oil. It is easy to be painted on any surface with a laying-on trowel, brush or roller. The TPI Primer for Heavy Duty Flooring is available in 1/4 and 1 gallon containers.



#### **TPI All Seasons Super Special Armour Nano Paint “NP104”**

Properties of the product: Water-based with nano substance, thus providing an excellent adhesive property and 100% acrylic resins added to make them more hard-wearing. Emulsion paint consists of tiny polymer Nano particles within which the pigments are trapped, rendering a perfect smoothness over the surface and expertly covers small imperfections on the wall or ceiling. With a special mixture of high-quality titanium, they are specially designed to withstand extreme weather conditions with superior anti-fungal & anti-algae properties. Film Colors have high resistance against UV radiation and infrared, which helps even out temperatures in the houses and is cost-saving. They are also lightly washed to remove unsightly marks. Also, Nano Paint NP104, with acrylic resins added makes them more hard-wearing and easier to clean. Most importantly, they are mercury/lead and solvent-free and safe for human beings, pets and the environment. NP104 is especially well-suited for general plastering on brick wall masonry, concrete block and fiber cement board and is suitable for application with a brush or roller onto a variety of substrates. In order to enhance the durability, the required areas should be repainted with TPI Super Special Armour Nano Top Coat Paint (NP101S). Available in 1/4, 1, 2.5 and 5 gallons containers.



#### **TPI Super Armour Nano Paint “NP101” (Top Coat: For Fine Art)**

Properties of the product: A ready-mixed formula, with the combination of golden fine pearl and

specialty grade of fine silver, that enables it to provide an outstanding sparkling surface look and

glittering brass color. Additionally, the cement colors can be plastered with a laying-on trowel to make pigments or printing appearance on concrete surfaces, gypsum, fiber cement board. With TPIPL's unique specialty nano technological formula with fine cement-based mixtures, the colors give a smooth and adhesive texture, which adhere firmly on concrete, cement and fiber cement panels ( for interiors and exteriors application ), which can be applied to surfaces with brushes, roller and paint spraying machines. It is recommended to be used along with TPI Super Special Armour Nano Paint NP100SW or TPI Super Special Armour Paint “NP900” on brick wall masonry, concrete block and fiber cement board, to be coated on the first layer. Available in 1/2 and 1gallon containers.

#### **TPI Super Special Armour Paint “NP900” (Top Coat for Fine Arts Work)**

Properties of the product: Super special formula coat paint in concentrated water-based formula, ready to be used to cover the existing surface of cement surfaces. It can cover all imperfections of the original surfaces with only 1 layer of painting with brushes or rollers. It is specially designed for coating on cement surfaces or fiber cement board. It is designed to provide a long-lasting durable finish, ready to be used with no mixture of water. It can be applied on the required areas before painting with golden color, NP901 TPIPL Nano paint for fine arts or NP101, golden sparkling colored paint, to enhance both exteriors and interiors. Available in 1/4 and 1gallon containers.

#### **TPI Super Special Armour Paint “NP901” (TPI Paint for Fine Arts Work)**

Properties of the product: Super special formula coat paint in dense liquid form for fine arts work, ready to be used on cement or concrete surfaces with acrylic brushes or small brushes with no mixture of water. It can be applied on the required areas after painting on top of dried TPI Super Armour Nano Paint NP900 (Top Coat for Fine Arts Work) to enhance beautiful pigments of fine arts. Available in 250 ml, 500 ml and 1 liter containers.



## Consistently Develop Potential in our Human Resources

As at December 31, 2018, the Company and its subsidiaries employed 8,362 persons. Of these, 141 were management personnel, totaling 8,503 persons.

The Company strongly believes that highly competent employees are the key driver for corporate success. To this end, the Company has focused on continuous development of our human resources in addition to aiming for our employees to perform their duties ethically, responsibly, and with integrity. Furthermore, the Company strongly believes that encouraging our employees to embrace corporate social responsibilities will reinforce the sustainable growth of our organization.

In addition to the aforementioned activities, the Company has taken the following initiatives in order to further enhance our employees' competency:

**Human Resource Development and Essential Knowledge:** The Company acknowledges the importance of human resources; therefore, we encourage our employees to continuously develop and strive to achieve their fullest potential by providing all our employees with the opportunities to learn and acquire the knowledge equally among employees. The Company offers the following programs to our employees:

- **Development courses and training programs:** The Company fosters staff development at all levels. Each year, the Company schedules training programs specifically designed for each business unit to educate and to provide employees at different levels with an understanding of their tasks and responsibilities with safety. Scheduled training programs for this year were organized through survey needs from employees in each respective department to respond to the necessity for employees to join Development courses and training programs.
- **External Training:** The Company encourages employees to acquire external education by subsidizing independent courses and seminars to be in line with job descriptions. The Company also provides our employees with opportunities to visit the international fairs and global companies in order to update our employees with current international standards and expand our employees' vision. Employees are regularly supported to attend course seminars through the Skill Development Center and Safety Committee, for further preparation to be professional lecturers and auditors for technician classification at the factory.



- **In-house Training:** To develop our employees' ways of thinking, potential and knowledge to perform their duties to be in line with the corporate objectives and competitive circumstances, the Company provides several in-house training programs in the following topics:

**New Employee Orientation:** To enroll the employees in the new employee welcome orientation and to foster an understanding of integrity and ethics. We also encourage our employees to meditate and study the ways of Dharma from notable and well-respected monks, and engage in Dharma practice, mediation practice and meditation walking during a 1-day course at Wat Rama IX Golden. The course session is held for employees to educate them in view of the cement production process, types, and quality of our products such as cement, concrete roof tiles, Nano paints and organic fertilizers to ensure their confidence and pride in the Company, to encourage ethics and integrity, as well as to build positive working attitudes and relations with colleagues.

**Dhamma Practice Course in Workplace and Dhamma Teachings:** TPI Polene arranges and supports employees to attend the programs, "Happy Life, Cheerful Work" and "Good Dhamma and Self-Consciousness in Work". The aim is to cultivate and create self-consciousness and apply Buddha teachings as a guide to live and work in a truthful way. These programs include the Dharma course arranged for children to cultivate the knowledge of Dharma through the practice of "self-consciousness, concentration and wisdom/study" with an aim to motivate the young students to concentrate on studying.



#### **Management Training Program for Employees and Management:**

The course training includes systematic thinking and decision-making, "Preparation for Management Level Step-Up", "Goal Setting and Working Plan", "Happiness Creation and Teamwork", "Creativity Thinking", "Succession Planning", "Project Analysis and Job Delegation", "Human Resource Management" to reduce conflicts in the Company, "Techniques For Success in Working" with all generations, "Psychological Management and Motivation Skills", "IG&EQ with Self-Development", "Value Creation for Work", "Techniques to Cultivate Deep Bonds and Corporate Affection", "Employee Engagement", etc. These provide much-needed opportunities to focus on strategic skills, and to lead and manage to be in line with management systems and the ongoing business operations of the organization.

**Self Skill Coursework:** This includes: creating a cheerful atmosphere, teamwork as well as development and work improvement and stimulus awareness to love the corporation, EQ-AQ, success in work, and to encourage motivation for work among employees. These also lead and manage to be in line with the ongoing business operations of the organization.

**Course Seminars for Sales Training Program:** To provide sales representatives and employees in the relevant departments with essential skills to maximize sales performance, such as Course Training for Strategic Sales Development and Modern Marketing in 4G Era, Customer Relation Management (CRM) and Sales Course, Customer Analysis and advanced Sales Professionals, Creation of Sales Professional Teamwork to succeed sustainably.

**Products and their Training Program:** techniques to use products, such as TPIPL products, overview of products specification of TPIPL products such as nano products and new formula cement mortar, TPIPL organic fertilizer, fiber cement, Lightweight concrete and techniques to use products for PC in the country., etc.

**Hygiene and Safety Management Standard:** Course training arranged for heads of safety guards, safety in the workplace for management level, First aid and CPR and knowledge about fire extinguishers and a fire protection course.

**Specially Occupational Course:** such as accounting e-Tax Invoice & e-Receipt, preparation, dispatching and keeping e-Tax Invoice & e-Receipt, TFRS-5, revenues generated from contracts entered into with customers, Cash Flow Management and Analysis, Legal Tax with tax expertise, 6 Key Points, the techniques for modern accountants, etc. The courses for personnel management include: rights and privileges as per the Labor Skills Support and Development Act 2545, Efficient Measures for the Private Sector, Anti-Corruption, the Cooperation between government sector and private sector to support and develop labor skills.

**Course Training Program for Management:** To provide knowledge and management skills for employees at management level to develop their professional work to be efficient as well as to gain new knowledge and new revolution to be able to catch up with dynamic circumstances. The course training programs include: Economic expertise, Economic analysis, to overcome the business startup, drive your success business with HDE Gen 10, Alert signal, Megaproject and construction material problems, True Business Forum 2018: The Digital Future to Sustainability,



Digital Future to Sustainability, Asia Lot Business, CFO Certification Program #21, Development Administrator in Digital Era-DAD #2, CEBIT ASEAN Thailand 2018, Transforming IA for the Digital Age, New Innovation, Opportunity of Thai Industry, Logistic Summit 2018, and Robotic Summit 2018., etc.

**Course Training Program** on ISO 9001:2015, Internal Auditor, ISO/IEC 17025:2005 General requirements for the competence of testing and calibration laboratories standards, as well as ISO/IEC 17025 Standard, certifying the performance evaluation test and Quality Standard Systems, ISO 14001 and OHSAS 18001: the standardization in all respects to be implemented suitably and properly to enhance the management team to perform their duties under Corporate Social Responsibility and to reduce gamma radiation impact and waste management in general. The Company always strives to reduce the amount of hazardous waste.

**Health and Safety Management Standard:** Safe way to use forklifts for machinery lifting, safe uses of machinery and cranes, advanced fire extinguisher course, Risk Appraisal, Safety in the Workplace for Officers and Heads of each department.

**On-the-Job Training:** To encourage coaching sessions and on-the-job training programs among employees to consistently develop the employees to perform their duties efficiently to be in line with the "Training Road Map" in each respective department. To enroll the employees in the new employee welcome and orientation class through the Employee Development & Training Unit to foster an understanding of their roles and functions to perform their duties. The course session is held for employees to educate them in view of all the functions of their duties at least 1-2 months ahead of their employment in their own departments. The course session is held for employees to educate them in view of the cement production process to all employees.

**Energy Saving Course:** The course session for energy management standards system: ISO50001, TSV Energy Chart & Energy Equation and Awareness of Energy Preservation and the development of capability of the energy corporation in respect of improved efficiency of machinery and equipment.

**Ethics and Quality of Life:** The Company under the cooperation of the State Railway of Thailand, built the Statue of Kin Rama 5 to pay their respects beside the Phasadej Railway Station. In addition to placing Buddha statues at several landmark in our factories for employees and visitors to pay their respects, These programs include the Dharma course arranged for children to cultivate the knowledge of Dharma through the practice of "self-consciousness, concentration and wisdom/study" with an aim to motivate the young students to concentrate on study (free of charge) at Wat Rama IX Golden, Bangkok.

In addition, the Company is focused on a policy to improve standards of living for employees, to be safe in both their lives and possessions as follows:



- The Company strictly prohibits drug activities; therefore, we have been certified as a "White Factory," which signifies a sustainable "Drug-Free" zone. Random alcohol breath tests are regularly set up during long holiday period to regularly protect and accidents precaution.
- The Company is committed to supporting disabled people to join the workplace by encouraging and promoting equal opportunities and equal treatment of people with disabilities. The Company has clear rules and regulations on employment to be strictly applied, regardless of sex, age, generic information, races, religious, education background which also includes equal opportunities for employees to progress in their careers as well as compensation. The employment policies and conditions of work are based on job requirements.

**Quality and Productivity Enhancement:** In addition to our emphasis on HSE, OSHA and CSR as delineated above, we made a full commitment to improve our productivity and to ensure product quality control and assurance. The Company provides various training to our employees on Quality Management System pursuant to ISO 9000, Environmental Management System pursuant to ISO 14001 and OHSAS, and Occupational Health and Safety Management System pursuant to Mor.Or.Kor. 18001 and CSR implementation for the employees and management. Training programs have been performed to encourage

Office Improvement (“OI”) to be in line with Total Productive Management (“TPM”), in those departments that support (rather than being directly involved in) production. These “OI” programs focus on improving working processes, reducing waste, and increasing work efficiency, in order to effectively increase productivity.

Other than the employee performance evaluation of the annual review conducted by the supervisors of each respective department, the Company has implemented the new system of annual performance evaluation, with the objective that employees actively acknowledge and are involved in understanding the requirements of their jobs and are together responsible for the performance of the plants, particularly total production costs, expenses, safety of operations of each respective department and activity involvement in TPM.

**Efficient Time Management:** The Company also encourages employees to participate in social activities during their free time. Available activities include a Buddhism club and athletic clubs, such as a petanque club, a football club, a golf club and Voluntary club, etc.

**Encourage saving program:** TPI Polene and TPI Concrete have established a co-operative saving program for employees to encourage saving money. This also includes financial assistance in the form of loan offerings to employees at a lower interest rate as compared with financial institutions.

**Employee welfare:** The Company also strives to support equal opportunities for employees to progress and to be secured in their career by providing assessment standards of job appraisal, regardless of sex, age, generic information, race, religion, or educational background. The employment policies and conditions of work are based on job requirements. In addition, the Company offers special care for employees who perform their work in particular areas by providing remuneration in the form of salary and bonuses; the Company also provides subsidized healthcare benefits in the form of OPD medical expenses (outpatient department) to employees and their family members, including father, mother, spouses and legal offspring. The Company also provides free annual health check-ups; life and healthcare benefits are offered in the form of health insurance packages and accident insurance coverage. Financial assistance is also offered for funeral rites of the employees, as well as the family members of employees who pass away. An establishment of “Funeral Assistance Association” among the members of the Company’s employees was allowed to assist the members of the Association foundation to offer financial assistance for funeral rites of the employees. In addition, the Company offers special care for employees who perform their work in particular areas by providing free health check-ups at medical centers and free vaccination against tetanus and hepatitis B (HBV) to all employees and to ensure that all levels of the Company’s staff have received annual healthcare check-ups. Any employees found ill or with other physical impairments will be sent for repeated healthcare check-ups and put on other job rotations. Also, the Company provides mobile medical units for check-up services for the people in the surrounding community and encourages employees to jointly donate blood to Saraburi Center Hospital and Saraburi Red Cross every three months. TPI Polene also supported athletic activities such as the race of “Association Football” between each department, held at our cement plant, to encourage coordination and harmonization between the management team and staff of the Company. The Company also entered the agreement with Government Housing Bank and Government Savings Bank to grant sources of funds for home loans for employees at a relatively low interest rate.

**Employee welfare:** The Company also provides educational support for children of employees by granting scholarships and provides additionally subsidized welfare to them.

#### **Provide opportunities to the disabled to work in the Company**

The Company strives to support equal opportunities in society and it has clear rules and regulations on employment that are strictly applied. These also include equal opportunities for employment regardless of sex, age, generic information, races, religion, educational background as well as compensation and career paths. The employment policies and conditions of work are based on job requirements and the qualifications of that particular person.

**Personnel Management System:** The personnel management system at our cement plant is an online system. The program provides several services online; for instance, employee online attendance system and compensation leave system. This includes online personnel management system linkage through all units of operation, such as online attendance system and leave system, by applying finger scan for recording work attendance. This also includes an employee performance appraisal system and payroll. CCTV has been installed in particular spots in the workplace. Throughout 2018, the personnel management system has been improved with the establishment of small group activities according to Office Improvement in Total Production Management system, which could save annual costs and expenses in the amount of 214,276 Baht. The system involves reduction of work procedures with the implementation of IT and reduced usage of paper. It also means the Company doesn’t have to hire more employees to replace those who resign from their positions.



# Operating Results and Financial Status for 2018

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## Revenues

Total consolidated revenues from sales in 2016, 2017 and 2018 were Baht 29,128 million, Baht 29,088 million and Baht 34,993 million respectively. Sales revenues in the construction business sector accounted for 63.7%, 62.1% and 57.1% of total revenues from sales, and sales revenues generated from the energy and utilities businesses sector accounted for 12.8%, 14.4% and 19.1% of total revenues from sales respectively.

Sales revenues in the petrochemical business accounted for 23.2%, 23.0% and 23.4% of total revenue from sales in 2016, 2017 and 2018 respectively.

In 2018, sales revenues generated from the energy and utilities businesses sector increased, primarily due to an increase in units of the electricity sales from the energy and utilities businesses, which increased by 60.8%, as 2 power plants (TG 6 and TG7) commenced commercial operation in 2018, with average tariff rates increased by 3.6%. In 2018, total sales revenues generated from the construction business sector increased mainly due to the fact that average price of cement increased by 8.2%. Sales revenues generated from the petrochemical business increased by 22.3% to be in line with the 4.2% and 1.3% increase in sales volume and the selling price respectively.

Other revenues, which were comprised of revenues from transportation, net foreign exchange gain, investment income and gain on bargain purchase and other revenues in 2016, 2017 and 2018 were Baht 2,364 million, Baht 1,907 million and Baht 2,321 million respectively. Other revenues in 2018 were considered higher compared with the same in the previous year because in 2017 the Company recorded net foreign exchange gains and compensation from insurance claims increased.

Total consolidated revenues in 2016, 2017 and 2018 were Baht 31,492 million, Baht 30,996 million and Baht 37,315 million respectively.

## Cost of Goods Sold

Consolidated cost of goods sold in 2016, 2017 and 2018 were Baht 24,316 million, Baht 24,495 million and Baht 28,018 million respectively, which accounted for 83.5%, 84.2% and 80.1% of total revenues from sales. As a result, gross profit margins in 2016, 2017 and 2018 represented 16.5%, 15.8% and 19.9% of total revenues from sales respectively. Gross profit margin in 2018 increased as compared with the same in 2017, primarily due to an increased proportion in revenues from energy and utilities businesses, the gross profit margin of which was relatively high, from 14.4% in 2017 to 19.1% in 2018, with an increased average selling price of cement, leading to an improvement of gross profit margins in construction business sector.

## Selling and Administrative Expenses

Consolidated selling and administrative expenses in 2016, 2017 and 2018 were Baht 5,364 million, Baht 5,810 million and Baht 5,965 million, which accounted for 18.4%, 20.0% and 17.0% of total revenues from sales respectively. Selling and administrative expenses as a percentage of revenues in 2018 decreased due to an increase of 20.3% in revenue from the sale of goods from various projects.

## Interest Expenses (Cost of financial debt)

In 2016, 2017 and 2018, the Company and its subsidiaries recorded interest expenses of Baht 1,649 million, Baht 1,647 million and Baht 1,719 million respectively. The interest expenses in 2018 was higher than that of 2017 as the Company utilized loans as well as the issuance and offering for sales of debentures for various investment projects.

## Net Profit

In 2016, 2017 and 2018, the Company and its subsidiaries registered net profits (loss) of Baht 515 million, Baht (696) million and Baht 1,425 million, or basic earnings (loss) per share of Baht 0.026, Baht (0.063) and Baht 0.016 respectively. Higher net profit in 2018 was mainly due to an increase in sales revenues.

The Company and its subsidiaries recorded normal operating profit (loss), excluding gain (loss) from foreign exchange, gain on bargain purchase and corporate income tax in the amount of Baht -511 million, Baht -1,100 million and Baht 1,261 million in 2016, 2017 and 2018 respectively.

## Financial Status and Financial Ratio

### Assets

At year-end 2016, 2017 and 2018, total consolidated assets were Baht 92,618 million, Baht 103,178 million and Baht 110,488 million respectively. The increase in assets value was mainly due to additional investments in various projects in the energy and utilities businesses sector as well as an increase of cash, cash equivalents, and current investments as the Company received the proceeds from the issuance and sale offering of debentures in the fourth quarter of 2018.

At year-end 2016, 2017 and 2018, total consolidated current assets were Baht 19,549 million, Baht 24,195 million and Baht 28,391 million respectively. The increase in total current assets was in line with the increase in cash, current investments, trade accounts receivable and inventories. Inventory accounted for 60.0%, 54.3% and 50.5% of total current assets in 2016, 2017 and 2018, equating to average inventory turnover periods of 168 days, 183 days and 176 days respectively. Trade accounts receivable (after the provision of doubtful debts) represented 15.4%, 12.7% and 15.2% of total current assets, which equated to an average collection period of 36 days, 39 days and 39 days.

As of December 31, 2016, December 31, 2017 and December 31, 2018, the property, plant and equipment of the Company and its subsidiaries were Baht 69,833 million, Baht 76,551 million and Baht 79,456 million respectively. The increase in the property, plant and equipment was mainly due to additional investments in various projects in energy and utilities businesses sector, such as RDF Power Plant 70 MW (TG6), Power Plant 70 MW (TG7), Coal-Fired Power Plant 150 MW (TG8) and RDF Fuel Power Plant.

### Liabilities

Total consolidated liabilities were Baht 55,864 million, Baht 51,092 million and Baht 59,551 million at the end of 2016, 2017 and 2018 respectively. The debt liabilities increased because the Company and its subsidiaries recorded long term loans from financial institutions of Baht 3,000 million and the issuance and sale offering of debentures in the amount of Baht 4,000 million for various power plant investment projects and for the working capital of the Company and its subsidiaries.

Trade account payables at year-end 2016, 2017 and 2018 were Baht 2,214 million, Baht 2,818 million and Baht 3,002 million, equating to an average payment period of 35 days, 37 days and 37 days respectively.

As of December 31, 2016, December 31, 2017 and December 31, 2018, the Company and its subsidiaries had short-term loans from financial institutions of Baht 5,610 million, Baht 2,718 million, and Baht 2,644 million respectively; long-term loans from financial institutions of Baht 8,909 million, Baht 5,790 million, and Baht 7,812 million respectively; and the issuance and sale offering of debentures of Baht 32,000 million, Baht 33,000 million, and Baht 40,000 million respectively. Short-term and long-term loans from financial and debenture debts increased because the Company and its subsidiaries made additional investment in power plants projects and utilize the proceeds for working capital of the Company and its subsidiaries.

### Shareholders' Equity

As of December 31, 2016, December 31, 2017 and December 31, 2018, shareholders' equity was Baht 36,755 million, Baht 52,086 million and Baht 50,937 million respectively. The shareholders' equity as of December 31, 2018 decreased by Baht 1,150 million primarily due to TPIPL Shares Repurchase Scheme with total cost Baht 1,683 million ( as on January 15, 2019 , the Company utilized Baht 1,982,775,193 under Shares Repurchase Scheme of 1,009,500,000 TPIPL common shares).

### Capital Structure

As of December 31, 2016, 2017 and 2018, the debts to equity ratios were at 1.52 times, 0.98 times and 1.17 times respectively whereas the Net Interest Bearing Debt to Equity ratio equated 1.17, 0.66, and 0.82 times respectively. In 2018, debt to equity ratio was higher compared with the same in 2017 as the Company additionally made a long-term loan from a financial institution and issued and sold debentures for various investment projects.

Shareholders' equity as of December 31, 2018 decreased because, up until January 15, 2019, the Company utilized cash of Baht 1,982,775,193 to repurchase 1,009,500,000 shares under Shares Repurchase Scheme.

As of December 31, 2018, consolidated cash and cash equivalent were Baht 4,367 million, with current investment of Baht 4,261 million, making total financial liquidity of Baht 8,628 million. Therefore, to better evaluate the Company's capital structure, a net interest bearing debt to equity ratio approach should be a better approach than a debt to equity ratio approach.

## Financial Liquidity

In 2016, 2017 and 2018, consolidated net cash flow from operating activities of the Company and its subsidiaries were Baht 1,932 million, Baht 1,955 million and 3,762 million respectively. The increase in consolidated net cash flow from operating activities in 2017 and 2018 was primarily a result of an increase in sales revenues generated from investments in various projects in energy and utilities businesses sector.

In 2016, 2017 and 2018, net cash flow from investing activities of the Company and its subsidiaries were Baht (7,962) million, Baht (11,055) million and Baht (7,369) million respectively as the Company invested in plants including machinery and equipment of Power Plants, RDF- Fuel Plant and Fiber Cement Project.

In 2016, 2017 and 2018, net cash flow from financing activities of the Company and its subsidiaries were Baht 7,059 million, Baht 8,533 million, and Baht 5,047 million respectively. The Company received the proceeds from short-term and long-term loans from financial institutions and the issuance and sale offering of debentures for the construction of various investment projects as mentioned above. As a result, by year-end 2016, 2017 and 2018, consolidated cash and cash equivalent were Baht 1,029 million, Baht (567) million and Baht 1,448 million respectively.

In 2016, 2017 and 2018, Interest Coverage Ratio equated 2.31, 1.94 and 3.39 times respectively, which increased accordingly because of the improved operating results primarily in energy and utilities businesses sector and construction sector. In addition, Debt Service Coverage Ratio was 1.68, 1.31 and 2.37 times respectively whereas the Company and its subsidiaries' Interest Bearing Debt to Equity ratio was 1.27, 0.97, and 0.99 times whilst Net Interest Bearing Debt to Equity Ratio was 1.17, 0.66, and 0.82 times respectively.

## Source and Use of Funds

The Company and its subsidiaries had sufficient funds for various project investments as the source of funds came from the issuance and sale offering of debentures, loans from financial institutions from both domestic and international institutions, as well as cash flow from business operations of the Company and its subsidiaries. The projects which used the funds from loans from financial institutions are as follows:

### • Cement Line no. 4 Project

Cement Line no. 4 project, with project investment of approximate Baht 11,500 million was 100% funded by financial institutions. The Company had long-term loans from domestic financial institutions in the amount of Baht 5,500 million (which was fully prepaid in August 2015 and from financial institutions abroad under the guarantee of Euler Hermes Deutschland AG, a German Export Credit Agency of the Ministry of Finance in Germany, and Office National Du Ducroire or ONDD, a Belgian Export Credit Agency in Belgium, in the amount of Euro 153,851,376.39 with a 36-month grace period and a 10-year repayment period. The loan agreement stipulates certain conditions that the Company must comply with, such as maintaining Interest Bearing Debt to Equity Ratio to be equal or less than 1:1 and to maintain Debt Service Coverage Ratio to be equal or more than 1.20: 1. As of December 31, 2018, the Company had an outstanding debt of Euro 114,740,696.72 or an equivalent of Baht 4,301.44 million of the above mentioned loans.

As of December 31, 2018, the Company's Interest Bearing Debts to Equity Ratio equated 0.99: 1 and Net Interest Bearing Debts to Equity Ratio equated 0.82: 1, (which was not higher than 1:1 as per the terms and conditions stipulated in the loan agreements) and Debt Service Coverage ratio equated 2.37:1 which was not lower than 1.2:1 times as per the terms and conditions stipulated in the loan agreements.

### • TPIPL's Electric Locomotives

The Company made an investment to purchase electric locomotives in the amount of USD 24.2 million. The Company borrowed funds of 85% of the project investment from financial institutions abroad under the guarantee of SINOSURE, a Chinese Export Credit Agency in China. The condition was to maintain Interest Bearing Debt to Equity Ratio to be equal or less than 1:1. As of December 31, 2018, the Company had an outstanding debt of USD 11,999,166.65 or Baht equivalent 391.35 million of the above mentioned loan.

As of December 31, 2018, the Company's Interest Bearing Debt to Equity Ratio equaled 0.99 : 1 and Net Interest Bearing Debts to Equity Ratio equaled 0.82 : 1 which was not higher than 1:1 as stipulated in the loan agreement as mentioned above.

### • TPIPL's Financial Debts of Baht 3,000 million.

The Company borrowed the funds from domestic financial institutions in the amount of Baht 3,000 million with the loan period of 3.50 years. The conditions were to maintain Interest Bearing Debt to Equity Ratio to be equal or less than 1.5:1. As of December 31, 2018, the Company had an outstanding debt of Baht 3,000 million of the above mentioned loans.

As of December 31, 2018, the Company's Interest Bearing Debts to Equity Ratio equated 0.99: 1 and Net Interest Bearing Debts to Equity Ratio equated 0.82:1, which was not higher than 1.5:1 times as per the terms and conditions stipulated in the loan agreements.

• **TPIPL's Outstanding debentures debt of Baht 36,530 million**

As at December 31, 2018, the Company's outstanding debt of debentures was Baht 36,000 million. (Consequently on January 31, 2019, outstanding debt of debentures was Baht 36,530 million). The condition was to maintain Interest Bearing Debts to Equity Ratio not greater than 1.5:1.

As of December 31, 2018, the Company's Interest Bearing Debts to Equity Ratio equated 0.99: 1 and Net Interest Bearing Debts to Equity Ratio equated 0.82:1, which was not higher than 1.5:1 times as per the terms and conditions stipulated in the loan agreements.

• **TPIPP's Outstanding debentures debt of Baht 4,000 million**

As at December 31, 2018, TPIPP's outstanding debt of debentures was Baht 4,000 million. The terms and conditions for debentures agreement were to maintain Interest Bearing Debts to Equity Ratio not greater than 1.75:1.

As at December 31, 2018, Interest Bearing Debts to Equity Ratio equated 0.16:1 and Net Interest Bearing Debts to Equity Ratio equated -0.016:1, (as the Company's cash and cash investment was greater than financial debt) which was not greater than 1.75:1 as stipulated in the loan agreement as mentioned above.

The Company has the policy to manage financial liquidity by using cash flow from business operations of the Company and its subsidiaries to repay financial debt while sources of funds for business operations are from working capital facilities provided by financial institutions and/or issuance of Bills of Exchange and/or the issuance and sale offering of debentures. Presently, the Company has working capital facilities supported by financial institutions in the amount of Baht 3,000 million and revolving B/E line in any particular time of Baht 5,000 million.

For project investments, the Company has the policy to set investment budgets for development of production efficiency to reduce production costs, by utilizing the source of funds generated from net cash flow from the operating activities of the Company and its subsidiaries and/or long-term loans from financial institutions and/or the issuance and sale offering of debentures in the amount as approved in the Shareholders' meeting of the Company. Currently, the Company's un-utilized amount for the issuance and sale offering of debentures is Baht 19,470 million.

For TPI Polene Power Plc., it had sufficient funds from operating activities, and presently has working capital facilities granted by financial institutions in the amount of Baht 1,060 million, and Revolving B/E line in any particular time of Baht 5,000 million.

For project investment, TPI Polene Power Plc. has a source of funds from net cash flow from business operations and/or loans from financial institutions and/or the issuance and sale offering of debentures in any particular time in the amount of not greater than Baht 25,000 million (Revolving basis) as approved in the TPIPP Shareholders' meeting. Currently, TPIPP utilized such available line for issuance and sales offering of debentures of Baht 4,000 million. Therefore, TPIPP has an un-utilized amount for issuance of debentures of Baht 21,000 million.

**Commitments with non-related parties**

As at December 31, 2018, the Company and its subsidiaries' Commitments with non-related parties can be summarized as follows:-

1. Commitments binding to supply contracts in the amount of Baht 3,398 million, the source of funds of which was generated from net cash flow from business operations and/or the issuance of debentures.
2. Commitments binding to car rental contracts and lease agreements, the legal obligation of which can be divided into a 1-year period in the amount of Baht 74 million and more than a 1-year period but not over a 5-year period in the amount of Baht 92 million, the source of funds of which was generated from net cash flow from business operations.
3. Commitments binding to a Letter of Credit (import of raw material and spare parts) in the amount of Baht 787 million, purchase contracts in the amount of Baht 263 million, and a bank guarantee in the amount of Baht 356 million, the source of funds of which was generated from net cash flow from business operations and/or a working capital credit line from financial institutions and/or the issuance of debentures.

**Operational Results classified by Business Sector**

**Construction Business**

In 2017, cement and ready-mixed concrete sales volume decreased by 2.9% and 13% compared with the same in 2016 respectively due to the economic deterioration in the country, the slowdown of government infrastructure projects and private construction projects. In 2017, average cement price and ready-mixed concrete price in the domestic market dropped by Baht 40/ton and Baht 90/cubic meter respectively as compared with the same in 2016.



In 2018, cement and ready-mixed concrete sales volume in the country increased by 2% and 11% respectively compared with the same in 2017, supported by the emergence of infrastructure construction projects from both the government and private sector in 2018. In 2018, the average domestic selling price of both cement and ready-mixed concrete increased compared with the same in 2016 respectively.

In 2019, it is anticipated that demand consumption in the construction sector will tend to improve because of additional investment in infrastructure construction projects from the government sector, resulting in an increase in sales revenues and operation performance of the manufacturers in the construction sector.

#### **Petrochemical and Chemical Business**

In 2017, the average selling price of plastic products increased, resulting in the better gross profit margin to increase from 7.6% in 2016 to 11.6% in 2017.

In 2018, sales volumes slightly increased by 4% compared with the same in 2017. The average selling price of plastic products increased accordingly to be in line with ethylene price rise, resulting in a better operating performance of the overall petrochemical and chemical business and a gross profit margin increase from 11.6% in 2017 to 13% in 2018.

In 2019, the Company anticipates that the petrochemical and chemical business tend to improve, which will result in the better operating performance of the overall petrochemical and chemical business.

#### **Energy and Utility Business**

In 2017, total sales revenue increased by 13.1% compared with the same in 2016, which was due to an increase in units of power sales by 15% together with the increase in an average tariff rate. Out of the sales revenues in 2017, revenue generated from power plants, oil and gas stations services represented 86% and 14% respectively.

In 2018, total sales revenues increased by 56.6% compared with the same in 2017, which was due to an increase in sales revenue generated from power plants. Out of the sales revenues in 2018, revenue generated from power plants represented 91% while sales revenue from oil and NGV station represented 9% as a 100 MW RDF-fired power generation plant, (TG6 and TG4) and 70 MW power generation (TG 7 - with a permitted power generation capacity of 40 MW) commenced commercial operations on April 5, 2018 and August 18, 2018 respectively.

In January 2019, our 150 MW Coal-Fired Power generation plant (TG8) became commercially operational. As of January 25, 2019, TPIPP had 8 power plants in operation, with total installed power generation capacity of 440 MW (with permitted power generation capacity of 410 MW). This will result in the better operating performance of the overall energy and utility business.

#### **Agriculture Business**

In 2017, total sales revenue increased by 28% compared with the same in 2016 due to an increase of fertilizer sales volume, driven by a policy to support the use of organic agricultural products from the government sector, as well as climate conditions in particular areas in the country with adequate sources of water further facilitating the agriculture and fisheries expansion accordingly.

In 2018, total sales revenue slightly decreased by 0.3% mainly due to the fact that weakening prices of agriculture products have lowered (rice crop not included) and the lower consumption of organic fertilizer by farmers to a lower cost.

In 2019, the Company will introduce and launch a variety of new products into the market. As the Company's products become well-known among users in the market, the Company anticipates that operating performance of the overall agriculture business will improve accordingly.

**Summary of Consolidated financial statements of TPI Polene Plc. in 2016, 2017 and 2018**  
**Statements of financial position (Consolidated)**

	Accounting Period ended December 31					
	2016		2017		2018	
	"000" Baht	Ratio	"000" Baht	Ratio	"000" Baht	Ratio
Total current assets	19,549,201	21.11	24,194,558	23.45	28,391,149	25.70
Property, plant and equipment	69,833,310	75.40	76,551,024	74.19	79,455,918	71.91
Other non-current assets*	3,235,591	3.49	2,432,053	2.36	2,640,857	2.39
<b>Total Assets</b>	<b>92,618,102</b>	<b>100.00</b>	<b>103,177,635</b>	<b>100.00</b>	<b>110,487,924</b>	<b>100.00</b>
Total current liabilities	17,068,947	18.43	16,216,936	15.72	19,220,280	17.40
Long-term loans from financial institutions	8,002,058	8.64	5,039,377	4.88	6,235,392	5.64
Other non-current liabilities**	30,792,569	33.25	29,835,188	28.92	34,095,663	30.86
<b>Total Liabilities</b>	<b>55,863,574</b>	<b>60.32</b>	<b>51,091,501</b>	<b>49.52</b>	<b>59,551,335</b>	<b>53.90</b>
<b>Equity</b>						
Authorized share capital	24,815,000	26.79	24,815,000	24.05	24,815,000	22.46
Issued and paid-up share capital	20,190,000	21.80	20,190,000	19.57	20,190,000	18.27
Treasury shares held by subsidiaries	(359,235)	(0.39)	(359,235)	(0.35)	-	-
Treasury shares	-	-	-	-	(1,682,625)	(1.52)
Shares premium on ordinary shares	60,600	0.07	60,600	0.06	60,600	0.05
Shares premium on treasury shares	-	-	-	-	35,218	0.03
Other surpluses (deficits)	52,943	0.06	9,840,436	9.54	9,840,436	8.91
Retained earnings	16,693,810	18.02	15,036,655	14.57	14,928,646	13.51
Other components of equity	110,412	0.12	114,160	0.11	109,437	0.10
Non-controlling interests	5,998	0.01	7,203,518	6.98	7,454,877	6.75
<b>Total Equity</b>	<b>36,754,528</b>	<b>39.68</b>	<b>52,086,134</b>	<b>50.48</b>	<b>50,936,589</b>	<b>46.10</b>
<b>Total Liabilities and Equity</b>	<b>92,618,102</b>	<b>100.00</b>	<b>103,177,635</b>	<b>100.00</b>	<b>110,487,924</b>	<b>100.00</b>

Remarks : \* Other non-current assets comprise investments in associates and joint venture, long-term investments in related parties, other long-term investments, investment properties, land leasehold rights, intangible assets, deferred tax assets, advances payment for plant and equipment and other non-current assets.

\*\* Other non-current liabilities comprise debentures, financial lease liabilities, deferred tax liabilities, non-current provisions for employee benefit and other non-current liabilities.

## Statements of comprehensive income (Consolidated)

Statement of Comprehensive Income	Accounting Period ended December 31					
	2016		2017		2018	
	"000" Baht	Ratio	"000" Baht	Ratio	"000" Baht	Ratio
<b>Income</b>						
- Revenue from sales of goods	29,128,215	100.00	29,088,352	100.00	34,993,161	100.00
- Delivery income	1,264,643	4.34	1,254,582	4.31	1,284,354	3.67
- Gain on bargain purchase	434,990	1.49	0	0.00	0	0.00
- Net foreign exchange rate	287,989	0.99	162,604	0.56	382,189	1.09
- Other income	376,597	1.29	490,186	1.69	654,936	1.87
<b>Total income</b>	<b>31,492,434</b>	<b>108.12</b>	<b>30,995,724</b>	<b>106.56</b>	<b>37,314,640</b>	<b>106.63</b>
<b>Expenses</b>						
- Cost of sales of goods	24,315,714	83.48	24,495,256	84.21	28,018,397	80.07
- Distribution costs	3,691,808	12.67	4,032,725	13.86	4,167,612	11.91
- Administrative expenses	1,671,869	5.74	1,777,383	6.11	1,797,180	5.14
- Finance costs	1,649,248	5.66	1,647,192	5.66	1,719,358	4.91
- Net foreign exchange loss	0	0.00	0	0.00	0	0.00
<b>Total expenses</b>	<b>31,328,639</b>	<b>107.55</b>	<b>31,952,556</b>	<b>109.85</b>	<b>35,702,547</b>	<b>102.03</b>
Share of profit of investment in associates and joint venture	48,121	0.17	19,742	0.07	31,090	0.09
<b>Profit (Loss) before income tax expense</b>	<b>211,916</b>	<b>0.73</b>	<b>(937,090)</b>	<b>(3.22)</b>	<b>1,643,183</b>	<b>4.70</b>
Income tax (expense) benefit	302,961	1.04	240,723	0.83	(218,509)	(0.62)
<b>Profit (Loss) for the year</b>	<b>514,877</b>	<b>1.77</b>	<b>(696,367)</b>	<b>(2.39)</b>	<b>1,424,674</b>	<b>4.07</b>
Total Comprehensive gain (loss) for the year	546,349	1.88	(690,671)	(2.37)	1,387,519	3.97
Profit (Loss) from operation*	(511,063)	(1.75)	(1,099,694)	(3.78)	1,260,994	3.60

Remark: \*Profit from operation not including net foreign exchange gain/loss, gain on bargain purchase, income tax and tax expenses

## Revenues from sales-outside customers

	2016 ("000" Baht)	%	2017 ("000" Baht)	%	2018 ("000" Baht)	%
Construction	18,556,750	63.71	18,077,561	62.15	19,993,749	57.14
Petrochemical and Chemical	6,759,341	23.20	6,684,190	22.98	8,176,511	23.37
Energy and Utilities	3,714,303	12.75	4,201,598	14.44	6,698,253	19.14
Agriculture	97,821	0.34	125,003	0.43	124,648	0.35
<b>Total</b>	<b>29,128,215</b>	<b>100.00</b>	<b>29,088,352</b>	<b>100.00</b>	<b>34,993,161</b>	<b>100.00</b>

## Statement of cash flow (Consolidated)

	Accounting Period ended December 31		
	2016 ("000" Baht)	2017 ("000" Baht)	2018 ("000" Baht)
<b>Net cash from operating activities</b>	<b>1,932,197</b>	<b>1,955,085</b>	<b>3,761,907</b>
<b>Net cash used in investing activities</b>	<b>(7,961,662)</b>	<b>(11,055,289)</b>	<b>(7,369,208)</b>
<b>Net cash from financing activities</b>	<b>7,058,570</b>	<b>8,532,808</b>	<b>5,046,791</b>
Net increase (decrease) in cash and cash equivalents before effect of exchange rates and changes in holding of investment in subsidiary	1,029,105	(567,396)	1,439,490
Effect of exchange rate changes on balances held in foreign currencies	(13,129)	20,781	8,090
Cash and cash equivalents from changes in holding of investment in subsidiaries	754,441	0	0
<b>Net increase in cash and cash equivalents</b>	<b>1,770,417</b>	<b>(546,615)</b>	<b>1,447,580</b>
Cash and cash equivalents at 1 January	1,695,178	3,465,595	2,918,980
<b>Cash and cash equivalents at December 31</b>	<b>3,465,595</b>	<b>2,918,980</b>	<b>4,366,560</b>

## Key Financial Ratio

Financial Ratio	Accounting Period ended December 31		
	2016	2017	2018
<b>Liquidity Ratio</b>			
1.Current Ratio (times)	1.15	1.49	1.48
2.Quick Ratio (times)	0.38	0.60	0.67
3.Cash Ratio (times)	0.13	0.12	0.21
4.Receivable Turnover (times)	10.08	9.17	9.21
5.Collection Period (days)	35.72	39.24	39.07
6.Inventory Turnover Period (times)	2.14	1.97	2.04
7.Inventory Turnover (days)	167.99	182.66	176.46
8.Account Payable Turnover (times)	10.26	9.73	9.63
9.Payment Period (days)	35.08	36.98	37.39
10.Cash Cycle (days)	168.64	184.92	178.14
<b>Profitability Ratio</b>			
11.Gross Profit Margin (%)	16.52	15.79	19.93
12.Operating Profit Margin (%)	3.62	1.45	8.20
13.Other Profit Margin (%)	(2.83)	(4.44)	(3.37)
14.Cash to Net Profit Ratio (times)	1.83	4.65	1.31
15.Net Margin (%)	1.63	(2.25)	3.82
16.Return on Equity (%)	1.11	(1.57)	2.77
<b>Efficiency Ratio</b>			
17.Return on Assets (%)	0.51	(0.71)	1.33
18.Return on Fixed Assets (%)	3.84	2.63	5.40
19.Assets Turnover (times)	0.31	0.32	0.35
<b>Financial Policy Ratio</b>			
20.Debt to Equity Ratio (times)	1.52	0.98	1.17
21.Net Debt to Equity Ratio (times) <sup>2</sup>	1.42	0.85	1.00
22.Interest Bearing Debt to Equity Ratio (times)	1.27	0.79	0.99
23.Net Interest Bearing Debt to Equity Ratio (times) <sup>2</sup>	1.17	0.66	0.82
24.Interest Coverage Ratio (times) <sup>3</sup>	2.31	1.94	3.39
25.Debt Service Coverage Ratio (times) <sup>3</sup>	1.68	1.31	2.37
26.Dividend Payout Ratio (%) <sup>1</sup>	29.85	N/A	153.85
27.Net Debt to EBITDA Ratio (times)	12.19	11.27	7.40
28.Be Size to Interest Bearing Debt Ratio (times)	0.10	0.03	0.02
29.Current Interest Bearing Debt to Interest Bearing Debt Ratio (times)	0.21	0.19	0.24
30.Long Term Borrowing from Financial Institutions to Liabilities Ratio (times)	0.26	0.16	0.18
<b>Share data</b>			
31.Book Value per Share (Baht)	1.84	2.61 <sup>4</sup>	2.63 <sup>4</sup>
32.Earnings per Share (Baht)	0.026	(0.063)	0.016
33.Dividend per Share (Baht)	0.020	0.020	0.020
<b>Growth Rate</b>			
34.Total Assets (%)	(13.96)	11.40	7.09
35.Total Liabilities (%)	8.10	(8.54)	16.56
36.Sales (%)	7.34	(0.14)	20.30
37.Operating Expenses (%)	5.57	8.32	2.66
38.Net Profit (%)	41.51	(235.25)	304.59

Remarks: 1. Calculation based on Separate Financial Statements.

2. After Deducting Cash and Cash Equivalents and Current Investments.

3. Cash basis

Interest coverage ratio = Cash from (used in) operating activities (before change in current assets and current liabilities) divided by finance cost paid from cash flow from financing activities. Debt service coverage ratio is calculated based on formula of Financial Covenants stipulated in Financial Agreements of the Company with commercial bank creditors, which is as follows:-

Debt service coverage ratio = Cash from (used in) operating activities (before change in current assets and current liabilities) divided by repayment of long-term loan + finance lease payments + finance cost paid from cash flow from financing activities

4. Number of 5,899,999,300 shares of TPIPP, held by TPI Polene not yet mark to market. The above share price was realized at the par value of Baht 1 per share.



**Independent Auditor's Report for the consolidated and separate financial statements for the year ended December 31, 2018**

KPMG Phoomchai Audit Ltd (the statutory auditor of the Company and its subsidiaries formed an unconditioned opinion that financial statements were presented fairly in all material respects in the Independent Auditor's Report for the consolidated and separate financial statements for the year ended December 31, 2018. The key matters on the continuous loss in operation of two subsidiaries; TPI Polene Bio Organics Co., Ltd. and TPI All Seasons Co., Ltd. indicated that property, plant and equipment and loan to and investment in subsidiaries may be impaired.

Since the consideration of impairment of assets depend on the management's judgments and assumptions in respect to the forecast of operating results, discount rate and key assumptions used to estimate the recoverable amount of the aforementioned business, this is one of the key judgmental areas that my audit is concentrated on.

The audit procedures in this area included, among others:

- Understanding the management's process of identifying impairment indicators and impairment testing and estimate recoverable amounts;
- Evaluating key assumptions used in discounted future cash flows such as growth rate, future outcomes and considering the reasonableness of forecasts by comparing historical estimation with the actual results as well as assessing the appropriateness of discount rate used; and
- Evaluating the adequacy of disclosure in accordance with the related Thai Financial Reporting Standards

**Impairment assessment of property, plant and equipment in consolidated financial statements and loan to and investment in subsidiaries in separate financial statements**

Recognition of investment in TPI Polene Bio Organics Co., Ltd. is as follows:-

TPI Polene Bio Organics Co., Ltd.	As of December 31, 2018 (Bht. Mil)	As of December 31, 2017 (Bht. Mil)
Paid-up capital of TPI Polene Bio Organics Co., Ltd.	3,300.00	3,300.00
Investment Cost in TPI Polene Bio Organics Co., Ltd.	2,654.40	2,654.40
Less : Allowance for impairment of assets	(770.00)	(562.00)
Cost (Net)	1,884.4	2,092.40

Recognition of investment in TPI All Seasons Co., Ltd. is as follows:-

TPI All Seasons Co., Ltd.	As of December 31, 2018 (Bht. Mil)	As of December 31, 2017 (Bht. Mil)
Paid-up capital of TPI All Seasons Co., Ltd.	450.00	450.00
Investment TPI All Seasons Co., Ltd.	450.00	450.00
Less : Allowance for impairment of assets	(0)	(0)
Cost (Net)	450.00	450.00

There was no recognition of an allowance for impairment in property, plant and equipment in TPI All Seasons Co., Ltd. as it is appraised that the assessment of the recoverable amount of those assets was not lower than project investment cost in TPI All Seasons Co., Ltd.

As for TPI All Seasons Co., Ltd., the Company has a strategic plan to increase sales volume by expanding marketing sales to support the multi-channel growth. The agriculture development initiative under the National Organic Agriculture Development Strategic Project for the year 2017-2021 has consequently driven the organic products of the Company to grow consistently.

# INTER-COMPANY TRANSACTIONS

Disclosure of information about inter-company transactions, and other transactions that might have the potential to involve conflicts of interest, is in compliance with the rules and regulations imposed by the SET and the SEC.

The Audit Committee has performed its duties and responsibilities to review inter-company transactions. The procedures used in inter-company transactions have always been subject to the normal terms and conditions of business and reflect applicable market prices. The Company established procedures for the above transactions in the same manner as for transactions with general customers and all inter-company transactions reflect applicable market prices to ensure that there are no conflicts of interest.

As of December 31, 2018, the Company and its subsidiaries had inter-company transactions with related persons, which might have the potential to involve conflicts of interest. The Directors and/or Management have considered the reasonableness of the above inter-company transactions, and all were undertaken for the maximum benefit of the Company and were subject to the normal terms and conditions of business to reflect applicable market prices and in compliance with the rules and regulations imposed by the SET and the SEC. Details of the inter-company transactions are contained in Note 4 of the consolidated financial statements as at December 31, 2018, which can be summarized as follows:

Company (Description of relationship)	Description of transaction	Baht million	Necessity and reasonableness
1. Pornchai Enterprise Co., Ltd. (There are 6 common Directors. Mr. Prachai Leophairatana Mr. Prateep Leopairut Dr. Pramuan Leophairatana Mrs. Orapin Leophairatana Mr. Prayad Liewphairatana Miss Malinee Leophairatana)	The Company and its subsidiaries advanced funds for infrastructure expenses to obtain good terms and conditions to Pornchai Enterprise for a 90-year lease period.	172.471	Such agreements are regarded as special reciprocal agreements because the advance rent is considered to be a financial support to Pornchai Enterprise for the construction of the building and to ensure that the Company and its subsidiaries pay the total rental expense below that in the market and at the fixed rate for 90-year lease period, free from inflation rate reflection. In addition, the location is suitable for office building in Bangkok Metropolitan and the number of employees. Such agreements are regarded as special reciprocal agreement.
	The Company pays rental advance to Pornchai Enterprise for 3-year lease period.	0.353	
	The Company pays rental and service fee as the deposit to Pornchai Enterprise Co., Ltd.	15.692	
	The Company and its subsidiaries pay rental fee to Pornchai Enterprise Co., Ltd.	44.87	
2. United Grain Industry Co., Ltd. ("UGI") (There are 5 common Directors. Mr. Prachai Leophairatana Dr. Pramuan Leophairatana Mr. Prayad Liewphairatana Mrs. Orapin Leophairatana Miss Malinee Leophairatana)	The Company and its subsidiaries pay UGI for cement bags.	16.012	Transactions are always undertaken at market rates to support normal business operations of the Company.
	Accounts Payable	2.033	
3. Thai Plastic Film Co., Ltd. (There are 7 common Directors. Mr. Prachai Leophairatana Mr. Prateep Leopairut Dr. Pramuan Leophairatana Dr. Chavin Iamsopana Mr. Prayad Liewphairatana Mrs. Orapin Leophairatana Miss Malinee Leophairatana)	The Company sells plastic resin to Thai Plastic Film Co., Ltd.	0	Transactions are always undertaken at market rates to support normal business operations of the Company.
	The Company hires Thai Plastic Film Co., Ltd. to produce cement bags at the rate of Baht 2.00 to 2.60 per bag. (This rate includes labor cost, rental charges, electricity and other related expenses)	104.586	
	The Company and its subsidiaries pay Thai Plastic Film Co., Ltd. for cement bags.	97.556	
	Accounts Payable	71.661	

Company (Description of relationship)	Description of transaction	Baht million	Necessity and reasonableness
4. Thai Plastic Product Co., Ltd. (There are 7 common Directors. Mr. Prachai Leophairatana Mr. Prateep Leopairut Dr. Pramuan Leophairatana Dr. Chavin Iamsopana Mr. Prayad Liewphairatana Mrs. Orapin Leophairatana Miss Malinee Leophairatana)	The Company and its subsidiaries purchases cement bags for export from Thai Plastic Product.  Accounts Payable  The Company Sells plastic resin to Thai Plastic Product Co.,Ltd.	418,534  131,610  8,003	Transactions are always undertaken at market rates to support normal business operations of the Company.
5. Bangkok Union Insurance Plc. (BUI) (There are 2 common Directors. Mr. Prachai Leophairatana Miss Malinee Leophairatana)	The Company and its subsidiaries pay insurance premium to BUI.	185,601	Transactions are always undertaken market rates to support normal business operations of the Company.
6. Bangkok Union Life Insurance Plc. (There are 4 common Directors. Dr. Pramuan Leophairatana Mr. Prayad Liewphairatana Dr. Chavin Iamsopana Miss Malinee Leophairatana)	The Company pays life insurance premium to Bangkok Union Life Insurance Plc.	20,466	Transactions are always undertaken at market rates to support normal business operations of the Company.

### Procedures to approve Related Transactions

Since the Company is a listed company, its practices regarding related transactions are conducted according to the rules and regulations of the SET and the SEC. The Company is highly aware of the sensitivity of this issue and closely monitors any situation in which a potential related transaction could occur. The above inter-company transactions were subject to the normal terms and conditions of business to reflect applicable market prices. Directors of the Company who are not deemed to be connected parties to such transactions are responsible for making decisions in regard to the said connected transactions.

The process for approval of connected transactions will be carried out under the standards of integrity, and be reviewed by the Audit Committee to be in the best interests of the Company and its shareholders. This complies with SEC and SET regulations. The Company will disclose types and values of transactions that might present conflicts of interest accurately and completely. For any transactions that are considered to have potential conflicts of interest, market prices will be used as criteria to consider those transactions.

### Potential Future Related Transactions

The Company expects to continue its business transactions with subsidiaries, affiliated companies, and related companies in the normal course of its business. Inter-company transactions are subject to normal terms and there is no conflict of interest. The Company adheres to practices for the above transactions that comply with the SET regulations, and regulations of other relevant governmental authorities, with regard to the reasonableness of the conditions and fair prices.

## Risk Factors

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TPI Group has constantly managed risks to be at controllable and acceptable levels. The Company has already implemented a management information system ("MIS"), which covers various areas of management to identify different aspects of risk, in order to ensure that each operation unit operates so as to achieve its targets. Risk management can be classified as follows:

### **Risks associated with potential foreign currency exchange rate fluctuations**

As at December 31, 2018, the Company's major long-term loans are mainly denominated in Baht currencies, representing 88% while the remaining long-term borrowing is denominated in Euro and USD currency accounting for 9% and 3% respectively. Therefore, the Company has impact from risks associated with the exchange rate fluctuation to some extent.

The Company also has debt liability in the form of working capital, a significant amount of which is denominated in USD currency while part of it is denominated in Euro currency. However, most of the Company's income is generated in US dollars, which is higher than the payment of expenses in foreign currencies (in both US dollars and Euro based). The Company has a policy to mitigate foreign exchange risk through natural hedging by balancing its foreign currency revenues and expenses. These measures will partly protect the company against currency fluctuations, by balancing its cash flow in foreign currencies, revenue and expenses structure. The Company can use a number of financial mechanisms against risk caused by fluctuations in currency exchange rates by exporting products for payment in US dollars and maintaining a US dollar deposit account for repayment of principal and interest to creditors, to mitigate foreign exchange risk through natural hedging.

In addition, the Company has also applied the policy to mitigate risk associated with foreign exchange to use financial instruments, which is apt for hedging to enter into a forward exchange contract and /or cross currency swap, as considered appropriate; to hedge its foreign exchange exposure, and will closely monitors potential adverse currency movements, by balancing the income generated in US dollars and the payment of expenses in foreign currencies.

### **Risk associated with potential coal price fluctuations**

Coal is a principle source of kiln fuel in the manufacture of cement. Coal price fluctuation depends on supply from major exporters in Australia and Indonesia. In case that demand for coal from major importers of coal in China increases, coal prices will be adjusted upward. Therefore, the Company's fundamental approach to managing coal price fluctuation risk is to identify extensive supply sources for coal, and establish import sales contracts throughout the entire year, with an appropriate allocation of short-term and long-term contracts, in order to efficiently manage cement production costs.

### **Risk associated with credit provision**

To mitigate credit risk stemming from debtors' potential failure to comply with their contracts, the Company has the policy to conduct business transactions with reliable trade partners by selling cement products based on cash and credit terms. Usually customers are required to give collateral in the form of a letter guarantee or bank guarantee in return for customer credit lines. A Credit Committee has been appointed to consider proper criteria for offering credit lines to customers and to develop a monitoring process for cash collection from customers.

As at December 31, 2018 and December 31, 2017, Allowance for Doubtful Debt percentage to Total Account Receivable of the Company was 3.83 % and 2.08%, respectively.

### **Risk associated with Product Price's fluctuation**

The Company's plastic resins' price fluctuation has a direct impact on the business profitability of the group. However, the Company manufactures and sells a variety of products. Thus, cement products are regarded as a typically fundamental consumer item in that its price fluctuation depends on the health of the nation's economy. Revenue receipts from cement sales balances with the revenues from export sales of plastic resins while commodity's global price rise will drive coal prices to increase accordingly. All in all, cement production costs will be higher. Nonetheless, all these factors will also impact a plastic resin price hike, leading to an increase in plastic resins price and its higher revenues. These measures will partly protect the company against price fluctuations, by balancing revenue structure and net revenue earned by TPI Polene Group.



# Financial Structure

## Ordinary Share

As of December 31, 2018, the registered capital of the company is Baht 24,815 million consisting of 24,815,000,000 ordinary shares, at the par value of Baht 1 each. Paid-up capital is Baht 20,190 million consisting of 20,190,000,000 ordinary shares, at the par value of Baht 1 each.

## Debentures

As of January 31, 2019, the Company issued unsubordinated/unsecured onshore Debentures, in registered form with debenture holders' representatives. Details of Debenture are summarized as follows:

Debenture Series	Name	Type	Amount (MB)	Interest Rate (p.a.)	Issued Date	Maturity Date	Term
TPIPL197A	Debentures of TPI Polene Public Company Limited No.1/2017 Series 1 Due A.D.2019	Unsecured and Unsubordinated Debentures with a debentureholders' representative	2,000	3.20 %	7 Jul 2017	7 Jul 2019	2 Years
TPIPL198A	Debentures of TPI Polene Public Company Limited No.2/2015 Series2 Due A.D.2019	Unsecured and Unsubordinated Debentures with a debentureholders' representative	2,750	4.40 %	5 Aug 2015	5 Aug 2019	4 Years
TPIPL201A	Debentures of TPI Polene Public Company Limited No.1/2015 Series2 Due A.D.2020	Unsecured and Unsubordinated Debentures with a debentureholders' representative	3,000	5.20 %	22 Jan 2015	22 Jan 2020	5 Years
TPIPL207A	Debentures of TPI Polene Public Company Limited No.1/2017 Series2 Due A.D.2020	Unsecured and Unsubordinated Debentures with a debentureholders' representative	2,000	3.50 %	7 Jul 2017	7 Jul 2020	3 Years
TPIPL208A	Debentures of TPI Polene Public Company Limited No.2/2015 Series3 Due A.D.2020	Unsecured and Unsubordinated Debentures with a debentureholders' representative	2,205	4.65 %	5 Aug 2015	5 Aug 2020	5 Years
TPIPL214A	Debentures of TPI Polene Public Company Limited No.1/2016 Series 1 Due A.D.2021	Unsecured and Unsubordinated Debentures with a debentureholders' representative	1,600	4.35 %	1 Apr 2016	1 Apr 2021	5 Years
TPIPL218A	Debentures of TPI Polene Public Company Limited No.2/2015 Series4 Due A.D.2021	Unsecured and Unsubordinated Debentures with a debentureholders' representative	3,600	4.90 %	5 Aug 2015	5 Aug 2021	6 Years
TPIPL224A	Debentures of TPI Polene Public Company Limited No.1/2016 Series 2 Due A.D.2022	Unsecured and Unsubordinated Debentures with a debentureholders' representative	1,200	4.60 %	1 Apr 2016	1 Apr 2022	6 Years
TPIPL228A	Debentures of TPI Polene Public Company Limited No.2/2015 Series 5 Due A.D.2022	Unsecured and Unsubordinated Debentures with a debentureholders' representative	4,000	5.20 %	5 Aug 2015	5 Aug 2022	7 Years
TPIPL234A	Debentures of TPI Polene Public Company Limited No.1/2016 Series 3 Due A.D.2023	Unsecured and Unsubordinated Debentures with a debentureholders' representative	2,645	4.80 %	1 Apr 2016	1 Apr 2023	7 Years
TPIPL214B	Debentures of TPI Polene Public Company Limited No.1/2018 Due A.D.2021	Unsecured and Unsubordinated Debentures with a debentureholders' representative	8,000	3.30 %	26 Apr 2018	26 Apr 2021	3 Years
TPIPL221A	Debentures of TPI Polene Public Company Limited No.1/2019 Due A.D.2022	Unsecured and Unsubordinated Debentures with a debentureholders' representative	3,530	4.10 %	11 Jan 2017	11 Jan 2022	3 Years
Total			36,530				

## Short term loan in form of bill of exchange

As at January 31, 2019, the Company's outstanding debt in the form of Bill of Exchange was Baht 550 million.

## Shareholding Structure

### Top 10 major shareholders as at January 4, 2019 (latest closing date)

Shareholders	Number of Shares	Shareholding (%)
1. Leophairatana Enterprises Co., Ltd. 1/	4,539,209,790	22.48
2. Thai Petrochemical Industry Co., Ltd. 1/	2,807,042,160	13.90
3. Mr. Nares Ngamapichon	1,300,000,000	6.44
4. Mrs. Orapin Leophairatana	867,346,240	4.30
5. Mr. Prayad Liewphaitana	867,122,740	4.29
6. TPI Polene Public Company Limited	863,096,300	4.27
7. Mr. Pakorn Leophairatana	862,745,810	4.27
8. Dr. Pramuan Leophairatana	808,900,000	4.01
9. Bangkok Bank Public Company Limited	657,693,240	3.26
10. Miss Pattrapan Leophairut	629,077,220	3.12

Note: 1/ Majority shares held by the Leophairatana family

## Dividend Payment Policy

The dividend payout policy of the Company is subject to the operational results of single financial statements of the Company. Dividend payment will be paid to shareholders by taking into consideration other factors such as liquidity, cash flow and financial status of the Company. Such dividend payments shall be subject to the shareholders' approval or the Board of the Directors' approval. In addition, the Board of Directors of the Company may from time to time approve the payment of interim dividends to shareholders, where it is justified by the profits of the Company. After the payment of dividends, the transaction shall be reported to shareholders at the next meeting.

Separate Financial Statement	2016	2017	2018
Net Profit per share (Baht)	0.067	(0.005)	0.013
Dividend per share (Baht)	0.02	0.02	0.02*
Par Value per Share (Baht)	1.00	1.00	1.00
Dividend Payout Ratio (%)	29.85	N/A	153.85

Remarks: \* At the Company's Board of Directors' meeting no. 2/2019, held on February 28, 2019, it passed a resolution to approve the dividend payment. However, the right of shareholders to receive the above dividend is still uncertain until it is approved at the 2019 Ordinary Shareholders' Meeting, which will be held on April 29, 2019.

# The Management

## Management Structure

As at December 31, 2018, the management structure of the Company consists of three Executive Committees: the Board of Directors, the Executive Management Committee and the Audit Committee. The Board of Directors of the Company had a total of 14 directors, consisting of 6 independent directors, which exceeds one third of the total number of directors, details of which are as follows:

### The Board of Directors as at December 31, 2018

Name	Position
1. Mr. Khantachai Vichakkhana	Chairman and Independent Director
2. Mr. Prachai Leophairatana	Director
3. Mr. Prateep Leopairut	Director
4. Dr. Pramuan Leophairatana	Director
5. Dr. Chavin Iamsopana	Director
6. Mr. Prayad Liewphairatana	Director
7. Mrs. Orapin Leophairatana	Director
8. Mr. Tayuth Sriyusiri	Director
9. Mr. Chulasingh Vasantasingh	Independent Director
10. Miss Malinee Leophairatana	Director
11. Mr. Supoj Singsane	Chairman of the Audit Committee and Independent Director
12. Mr. Manas Sooksmarn	Audit Committee and Independent Director
13. Mr. Pises Iamsakulrat	Audit Committee and Independent Director
14. Mr. Thavich Taychanavakul	Audit Committee and Independent Director

Remark: Mr. Nitisit Jongphitakratana is the Corporate Secretary.

## Functions and Responsibilities of the Board of Directors

1. To carry out activities prudently and in compliance with related governing laws, the objectives of the Company, and the Articles of Association, in order to protect the Company's interests and for the benefit of shareholders.
2. To consider policy, vision, work plans and key strategies, as well as ethical standards for business operations, and to supervise and monitor Management, to ensure that they perform duties efficiently and are in compliance with the Company's policies.
3. To monitor the operational results of the Company and any other key progress criteria.
4. To determine interim dividends to shareholders.
5. To ensure that financial reports are complete, accurate, reliable and timely, and are prepared in compliance with generally accepted accounting principles.
6. To monitor the implementation of internal control and audit systems; to comply with all regulations and related governing laws; and to ensure appropriate risk management.
7. To ensure that the Company performs in compliance with good corporate governance policies, and focuses on fair treatment for all related parties, and discloses all relevant information that might affect the interests of related parties and the public.
8. To monitor and to prevent conflicts of interest, and ensure that connected transactions and any other transactions that might affect the interests of related parties are in compliance with related rules and regulations.

**The Executive Management Committee** as at December 31, 2018

Name	Position
1. Mr. Prachai Leophairatana	Chairman of Executive Management Committee
2. Mr. Prateep Leopairut	Executive Director
3. Dr. Pramuan Leophairatana	Executive Director
4. Mr. Prayad Liewphairatana	Executive Director
5. Mrs. Orapin Leophairatana	Executive Director
6. Dr. Chavin Iamsopana	Executive Director
7. Mr. Tayuth Sriyusiri	Executive Director

Seven Directors are authorized to sign on behalf of the Company. Two of the seven directors must jointly sign, together with the affixation of the official company stamp.

**Functions and Responsibilities of the Executive Management Committee**

1. To govern and determine the operational strategy of the business, in compliance with the policy of the Board of Directors.
2. To monitor operational results of each department.
3. To select and nominate top management of the Company.
4. To nominate and remove officers of the Company, and to determine their rewards.
5. To perform their duties in relation to the general administration of the Company

**The Audit Committee** as at December 31, 2018

Name	Position
1. Mr. Supoj Singsanej *	Chairman of the Audit Committee
2. Mr. Manas Sooksmarn	Audit Committee
3. Mr. Pisej Iamsakulrat	Audit Committee
4. Mr. Thavich Taychanavakul	Audit Committee

Remark: \* Possesses background and experience in auditing of financial statements.

**Functions and Responsibilities of the Audit Committee**

1. To control and monitor the Company's financial reports to ensure that they are complete, adequate and reliable.
2. To monitor the auditing process and internal control systems of the Company to ensure that they are appropriate and efficient.
3. To select and propose the appointment of the statutory auditor of the Company.
4. To supervise and ensure that the Company acts in compliance with the regulations imposed by the SET and the SEC and related governing laws.
5. To consider the disclosure of information regarding connected transactions or transactions that might have conflicts of interest, to ensure it is accurate and complete.
6. To prepare the Audit Committee Report as disclosed in the Company's Annual Report to be in compliance with the provisions imposed by the SET and the SEC.
7. To perform any other tasks that may be stipulated in the Articles of Association of the Company.
8. To perform any other tasks that may be delegated by the Board of Directors.



## The Management as at December 31, 2018

Name	Position
1. Mr. Prachai Leophairatana	Chief Executive Officer
2. Mr. Prateep Leopairut	President
3. Dr. Pramuan Leophairatana	President
4. Mr. Prayad Liewphairatana	President
5. Mrs. Orapin Leophairatana	Senior Executive Vice President*
6. Mr. Prasert Ittimakin	Senior Vice President - Accounting and Finance Division
7. Miss Chularat Danwattanachai	Vice President - Accounting and Finance Division
8. Mr. Pongsak Yiengsakun	Vice President - Finance Department
9. Mrs. Bussara Ketmanee	Asst. Vice President - Accounting Department**

Remark: \* In the position of Chief Financial Officer, the highest position in Finance and Accounting Division.

\*\* Directly in charge of monitoring and preparing the financial accounting reports of the Company.

### Functions and Responsibilities of the Chief Executive Officer

1. To carry out activities prudently; to be in compliance with the objectives of the Articles of Association; and to be in line with establishing policy as approved by the Board of Directors of the Company, in order to protect the Company's interests and for the benefit of shareholders.
2. To monitor and manage daily operational results of each department to ensure these are carried out effectively and efficiently.
3. To assign, nominate, remove and punish employees and staff of the Company to comply with Company discipline.
4. To report work progress to be in line with work plans and budgets as approved by the Board of Directors.

**Business relationships or professional service relationships between independent directors and the Company, or the parent company, or its affiliates, or subsidiary companies, or associated companies, or juristic persons within the Company, that may impose conflicts of interest in an amount exceeding the restricted amount under the notification of the SEC regarding permission and approval of new shares issuance (if any), as well as the resolution and opinion of the Board of Directors approval (if any).**

-None-

### Selection of the Directors and the Management

The Board of Directors of the Company is responsible for the selection of Directors and Management of the Company. Selection of Directors takes into consideration their background, knowledge, experience in related fields of business, ethical behavior, standards of integrity, independence, courage in giving opinions, responsible discharge of duties, precision and honesty, and consistent attendance at all Board meetings. Their resumes and their ethical behavior are taken into consideration as well as other appropriate qualifications deemed beneficial to the Company. We also consider other factors that may impose conflicts of interest.

Selection of the directors to replace those retiring by rotation is under the criteria of the Office of Securities and Exchange Commission and the Stock Exchange of Thailand.

Selection of Management takes into consideration their background, knowledge, abilities, professional skills, and experience deemed beneficial to the Company. Management selection is in compliance with recruitment procedures of the Company.

Criteria for selection of the Independent Directors are as follows:

1. Under the criteria of the Office of Securities and Exchange Commission and the Stock Exchange of Thailand, Independent Directors:
  - 1.1 Are restricted in the number of shares they may hold to not greater than 1% of the voting shares in the Company, its affiliates, its associated companies, or its juristic persons that may impose conflicts of interest (implicitly including related persons as stated in Section 258 of the SEC's Act B.E. 2535.)

- 1.2 Have no management participation in the Company, its affiliates, or its associated companies; and are not employees or regularly paid consultants, or persons who have control over the Company, its affiliates, or its associated companies or its juristic persons that may impose conflicts of interest.
  - 1.3 Have no business relationship with the Company, its affiliates, or its associated companies; and do not have any loss or gain, directly or indirectly, in the finance or management of the Company, its affiliates, or its associated companies; or its juristic persons that may impose conflicts of interest.
  - 1.4 Have no close relatives, or persons related in a way that may lead to a lack of independence from the management or major shareholders of the Company, its affiliates, or its associated companies, or its juristic persons that may impose conflicts of interest; nor may they be appointed to protect the interest of any director or major shareholders.
  - 1.5 Maintain consistent attendance at all board meetings, and follow and monitor the business performance and operations of the Company.
2. Independent Directors must be capable, talented and knowledgeable, with backgrounds and experience deemed beneficial to the Company; such as backgrounds in engineering, accounting, finance etc.
  3. Independent Directors must detail their qualifications and perform their duties with great care and loyalty in the best interest of the shareholders, without conflict of interest with/for their own businesses or former businesses, or related parties.

#### **Authority to approve and to perform their actions in the Company's transaction**

The Company determined that the Board Directors of the Company has the authority to approve and amend work plans, annual budgets, each investment expense and budget for selling and administration expense of the Company. In this regard, the Chief Executive Officer and/or President, Senior Executive Vice President have power and authority to approve the investment based on the budget as earlier approved, an allowance for budget expenses, the plan and alteration of marketing plan as well as the annual budget of the marketing department, as earlier approved, with no limited budget. In the event, the Chief Executive Officer and/or President, Senior Executive Vice President have power and authority to approve the advertising, advertising campaign, sales promotion including all other marketing activities stated or not stated in the plans within the limited budget, as earlier approved.

#### **Remuneration of the Directors and the management**

##### **1. Remuneration in monetary terms**

##### **(1) Remuneration of the Directors**

In 2018, remuneration awarded to the Company's 16 directors in the form of meeting allowances and bonuses was Baht 26,858,238 compared to Baht 27,680,661 in 2017 for 16 directors. Details of remuneration in 2018 are as follows:

*Unit: Baht*

No.	Name	Position	Meeting allowances	Bonus	Total
1.	Mr. Khantachai Vichakkhana <sup>1/</sup>	Chairman	1,684,908	133,723	1,818,631
2.	Mr. Prachai Leophairatana	Director	1,684,908	133,723	1,818,631
3.	Mr. Prateep Leopairut	Director	1,684,908	133,723	1,818,631
4.	Dr. Pramuan Leophairatana	Director	1,684,908	133,723	1,818,631
5.	Mr. Supoj Singsane <sup>2/</sup>	Director	1,123,272	-	1,123,272
6.	Miss Malinee Leophairatana	Director	1,684,908	133,723	1,818,631
7.	Dr. Chavin Iamsopanaa	Director	1,684,908	133,723	1,818,631
8.	Mr. Prayad Liewphairatan	Director	1,684,908	133,723	1,818,631
9.	Mrs. Orapin Leophairatana	Director	1,684,908	133,723	1,818,631
10.	Mr. Manas Sooksmarn	Director	1,684,908	133,723	1,818,631
11.	Mr. Pisej Iamsakulrat	Director	1,684,908	133,723	1,818,631
12.	Mr. Tayuth Sriyuksiri	Director	1,684,908	133,723	1,818,631
13.	Mr.Thavich Taychanakul	Director	1,684,908	133,723	1,818,631
14.	Mr. Chulasingh Vasantasingh	Director	1,684,908	133,723	1,818,631
15.	Dr. Narasri Vaivani <sup>3/</sup>	Director	1,123,272	133,723	1,256,995
16.	Mr. Visith Noiphan <sup>4/</sup>	Director	702,045	133,723	835,768
Total			24,852,393	2,005,845	26,858,238

Remarks :1. At the Company's Board of Directors' meeting on June 25, 2018, it passed a resolution to approve the appointment of Mr. Khantachai Vichakkhana to the position of Chairman of the Board.

2. Mr. Supoj Singsanej has been in the position of Independent Director and the Audit Committee of the Company on April 25, 2018 and it was approved at the Company's Board of Directors' meeting on June 25, 2018 to be in the position of Chairman of the Audit Committee.

3. Dr. Narasri Vaivanijkul, Director of the Company resigned from the position of Chairman of the Audit Committee on June 25, 2018 and resigned from the position of Chairman, Independent Director and the Audit Committee of the Company on August 30, 2018.

4. Mr. Visith Noiphan, Director of the Company, resigned from the position of Chairman of the Board and Independent Director of the Company on June 25, 2018.

## (2) Remuneration of Management

In 2018, remuneration awarded to the Company's 5 Executives including salaries and bonuses was Baht 236,886,000 compared to Baht 236,886,000 for total of 5 persons in 2017.

## 2. Other remuneration

Other remuneration to the Management includes company cars for each position.

## Audit Fees

### 1. The Company and its subsidiaries paid audit fees for 2018 to:

(1) The statutory auditor of the Company for the financial year ended 2018 in the amount of Baht -0-

(2) The office of the statutory auditor of the Company, or other persons or related enterprises relating to the statutory auditor of the Company for year 2018 in the amount of Baht 11,400,000.

### 2. Non-Audit Fees

TPI Polene and its subsidiaries paid a fee to KPMG Phoomchai Audit Limited to review the report of promotional privileges and benefits of exemption from payment of corporate income tax by virtue of the promotional certificates of the Board of Investment in 2018 for a total of Baht 240,000.

## Embracing Corporate Governance Code 2017 (CG Code) for listed companies

The Company has reviewed the corporate governance policy by referring to the Corporate Governance Code for listed companies in 2012 of the Stock Exchange of Thailand and good Corporate Governance Code for listed companies 2017 (CG Code) of the Securities and Exchange Commission which the Company has embraced most practices by adding practices that are suitable for the business and can do without any other effects on the corporate governance policy of the Company. At present, the Company is considering additional review and making a plan to gradually improve the corporate governance policy to be in line with Corporate Governance Code for listed companies 2017 (CG Code).

## Company shares held by the Directors and the Management (including couple marriage and their offspring) as at January 4, 2019

Name	Shareholding As at January 4, 2019 (shares)	Shareholding As at May 11, 2018 (shares)	Change Increase/ (decrease) During year 2018 (shares)
1. Mr. Prachai Leophairatana	867,446,240	867,446,240	-
2. Mr. Prateep Leopairut	2,140,000	2,140,000	-
3. Dr. Pramuan Leophairatana	809,000,000	809,000,000	-
4. Dr. Chavin Iamsopana	21,910,000	21,910,000	-
5. Mr. Prayad Liewphairatana	883,217,140	883,217,140	-
6. Mrs. Orapin Leophairatana*	*	*	*
7. Mr. Manas Sooksmarn	-	-	-
8. Mr. Pisej Iamsakulrat	8,128,400	8,128,400	-
9. Mr. Thavich Taychanavakul	1,091,180	1,091,180	-
10. Mr. Tayuth Sriyusiri	94,425,890	94,425,890	-
11. Mr. Khantachai Vichakkhana	27,760	27,760	-
12. Mr. Chulasingh Vasantasingh	50,000	50,000	-
13. Miss Malinee Leophairatana	8,143,080	8,143,080	-
14. Mr. Supoj Singsanej**	-	-	-
15. Mr. Prasert Ittimakin	10,480	10,480	-
16. Miss Chularat Danwattanachai	-	-	-
17. Mr. Pongsak Yiengsakun	-	-	-
19. Mrs. Bussara Ketmanee	-	-	-

Note: \* Included in shareholding changes of Mr.Prachai Leophairatana to comply with the provisions contained in the SEC Act, article 258.

\*\* Mr.Supoj Singsanej has been in the position of a director since April 25, 2018.

**Positions of the Management and Controlling Persons over the Company, its Subsidiaries, the Joint Venture Company, Associated Companies and other related Companies as of 31 December 2018.**

Name	TPI	Subsidiaries 2/																		
	Polene	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
1. Mr.Prachai Leophairatana	//	//x	//x	//x	//x	//x	//x	//x	//	//x	-	//x	//x	//x	//x	//x	//x	//x	//x	//x
2. Mr.Prateep Leopairut	//	//	//	//	//	//	//	//	//	//	-	//	//	-	//	//	//	//	-	//
3. Dr.Pramuan Leophairatana	//	//	//	//	//	//	//	//	//	//	//x	//	//	-	//	//	//	//	-	//
4. Dr.Chavin Iamsopana	//	-	-	-	-	-	-	-	-	-	//	//	-	-	-	-	-	-	-	-
5. Mr.Prayad Liewphairatana	//	//	//	//	//	//	//	//	//	//	//	//	//	-	//	//	//	//	-	//
6. Mrs.Orapin Leophairatana	//	//	-	//	//	//	//	//	-	//	-	//	//	//	//	//	//	//	//	//
7. Mr.Manas Sooksmarn	/	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8. Mr.Pisej Iamsakulrat	/	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9. Mr.Thavich Taychanavakul	/	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10. Mr.Tayuth Sriyusiri	//	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11. Mr.Khantachai Vichakkhana	X	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12. Mr.Chulasingh Vasantasingh	/	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13. Miss Malinee Leophairatana	/	-	-	/	-	-	-	-	/	-	//	//	//	-	-	-	-	-	-	-
14. Mr.Supoj Singsane	/	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Note: 1. / = Director      X = Chairman      // = Executive Director  
2. / Names of the Companies

No.	The Subsidiaries Company	Status
1	TPI Concrete Co.,Ltd.	Subsidiary company
2	Thai Propoxide Co.,Ltd.	Subsidiary company
3	TPI Polene Power Plc.	Subsidiary company
4	TPI All Seasons Co.,Ltd.	Subsidiary company
5	Polene Plastic Co.,Ltd.	Subsidiary company
6	TPI Polene Bio Organics Co.,Ltd.	Subsidiary company
7	Thai Nitrate Co.,Ltd.	Subsidiary company
8	Thai Special Steel Plc.	Associated company
9	Mondo Thai Co.,Ltd.	Subsidiary company
10	Bangkok Union Life Insurance Public Co.,Ltd.	Associated company
11	United Grain Industry Co.,Ltd.	Associated company
12	Pornchai Enterprises Co.,Ltd.	Related company
13	TPI Commercial Co.,Ltd.	Subsidiary company
14	TPI Service Co.,Ltd.	Subsidiary company
15	Zenith International Trading Co.,Ltd.	Subsidiary company
16	TPI Healthcare Co.,Ltd.	Subsidiary company
17	TPI Refinery (1997) Co.,Ltd.	Subsidiary company
18	Master Achieve (Thailand) Co.,Ltd.	Subsidiary company
19	TPI Bio Pharmaceuticals Co.,Ltd.	Subsidiary company



**The Board of Directors - TPI Concrete Co., Ltd. as at December 31, 2018**

	<b>Name</b>	<b>Position</b>
1.	Mr. Prachai Leophairatana	Chairman
2.	Mr. Prateep Leopairut	Director
3.	Dr. Pramuan Leophairatana	Director
4.	Mr. Prayad Liewphairatana	Director
5.	Mrs. Orapin Leophairatana	Director
6.	Mr. Panya Tangsingtrong	Director
7.	Ms. Niphond Punyaratabandhu	Director

**The Board of Directors - TPI Polene Power Plc. as of December 31, 2018**

	<b>Name</b>	<b>Position</b>
1.	Mr. Prachai Leophairatana	Chairman
2.	Dr. Pramuan Leophairatana	Vice Chairman
3.	Mrs. Orapin Leophairatana	Vice Chairman
4.	Mr. Prayad Liewphairatana	Director
5.	Mr. Pakorn Leopairut	Director
6.	Miss Pattrapan Leopairut	Director
7.	Mr. Pakkapol Leopairut	Director
8.	Miss. Nitawan Leophairatana	Director
9.	Mr. Manue Leohairoj	Director
10.	Mr. Thiraphong Vikitset	Director
11.	Mr. Apichai Chantarasaen	Director
12.	Mr. Khantachai Vichakkhana	Director
13.	Miss Malinee Leophairatana	Director
14.	Mr. Wanchai Manosutthi	Director

**The Board of Directors - Polene Plastic Co., Ltd. as at December 31, 2018**

	<b>Name</b>	<b>Position</b>
1.	Mr. Prachai Leophairatana	Chairman
2.	Mr. Prateep Leopairut	Director
3.	Dr. Pramuan Leophairatana	Director
4.	Mr. Prayad Liewphairatana	Director
5.	Mrs. Orapin Leophairatana	Director
6.	Miss Pattrapan Leopairut	Director
7.	Mr. Pakorn Leopairut	Director
8.	Mr. Pakkapol Leopairut	Director
9.	Mr. Thanakorn Liewphairatana	Director
10.	Miss Chutinan Liewphairatana	Director

**The Board of Directors - TPI Polene Bio Organics Co., Ltd.** as at December 31, 2018

Name		Position
1.	Mr. Prachai Leophairatana	Chairman
2.	Mr. Prateep Leopairut	Director
3.	Dr. Pramuan Leophairatana	Director
4.	Mr. Prayad Liewphairatana	Director
5.	Mrs. Orapin Leophairatana	Director
6.	Miss Pattrapan Leopairut	Director
7.	Mr. Pakorn Leopairut	Director
8.	Mr. Pakkapol Leopairut	Director
9.	Mrs. Achira Chatdarong	Director
10.	Mrs. Nitawan Leophairatana	Director
11.	Mr. Thanakorn Liewphairatana	Director
12.	Miss Chutinan Liewphairatana	Director
13.	Mr. Vipot Kotbua	Director
14.	Mr. Pakpoom Thongsorn	Director

**The Board of Directors - TPI All Seasons Co., Ltd.** as at December 31, 2018

Name		Position
1.	Mr. Prachai Leophairatana	Chairman
2.	Mr. Prateep Leopairut	Director
3.	Dr. Pramuan Leophairatana	Director
4.	Mr. Prayad Liewphairatana	Director
5.	Mrs. Orapin Leophairatana	Director
6.	Mr. Panya Tangsingtrong	Director
7.	Mr. Pakorn Leopairut	Director
8.	Mrs. Nitawan Leophairatana	Director
9.	Mrs. Achira Chatdarong	Director
10.	Mr. Virat Chatdarong	Director
11.	Mr. Porakrit Leophairatana	Director

**The Board of Directors - Mondo Thai Co., Ltd.** as at December 31, 2018

Name		Position
1.	Mr. Prachai Leophairatana	Chairman
2.	Mr. Prateep Leopairut	Director
3.	Dr. Pramuan Leophairatana	Director
4.	Mr. Prayad Liewphairatana	Director
5.	Mrs. Orapin Leophairatana	Director

**The Board of Directors - TPI Commercial Co., Ltd.** as at December 31, 2018

	Name	Position
1.	Mr. Prachai Leophairatana	Chairman
2.	Mrs. Orapin Leophairatana	Director
3.	Mr. Pakorn Leopairut	Director
4.	Miss Pattrapan Leopairut	Director
5.	Mr. Pakkapol Leopairut	Director
6.	Mrs. Achira Chatdarong	Director
7.	Mrs. Nitawan Leophairatana	Director
8.	Mr. Thanakorn Liewphairatana	Director
9.	Miss Chutinan Liewphairatana	Director
10.	Mr. Prasert Ittimakin	Director
11.	Mr. Vipot Kotbua	Director
12.	Mr. Pakpoom Thongsorn	Director
13.	Mr. Chairat Kittithorn	Director

**The Board of Directors - TPI Service Co., Ltd.** as at December 31, 2018

	Name	Position
1.	Mr. Prachai Leophairatana	Chairman
2.	Mr. Prateep Leopairut	Director
3.	Dr. Pramuan Leophairatana	Director
4.	Mr. Prayad Liewphairatana	Director
5.	Mrs. Orapin Leophairatana	Director
6.	Mr. Pakorn Leopairut	Director
7.	Mr. Pakkapol Leopairut	Director
8.	Mrs. Achira Chatdarong	Director
9.	Mrs. Nitawan Leophairatana	Director
10.	Mr. Thanakorn Liewphairatana	Director

**The Board of Directors - Thai Nitrate Co., Ltd.** as at December 31, 2018

	Name	Position
1.	Mr. Prachai Leophairatana	Chairman
2.	Mr. Prateep Leopairut	Director
3.	Dr. Pramuan Leophairatana	Director
4.	Mr. Prayad Liewphairatana	Director
5.	Mrs. Orapin Leophairatana	Director
6.	Mr. Pakorn Leopairut	Director
7.	Mr. Pakkapol Leopairut	Director

**The Board of Directors - Master Achieve (Thailand) Co., Ltd.** as at December 31, 2018

Name		Position
1.	Mr. Prachai Leophairatana	Chairman
2.	Mrs. Orapin Leophairatana	Director
3.	Mr. Pakorn Leopairut	Director
4.	Mr. Pakkapol Leopairut	Director
5.	Mrs. Achira Chatdarong	Director
6.	Mrs. Nitawan Leophairatana	Director
7.	Miss Pattrapan Leopairut	Director
8.	Mr. Thanakorn Liewphairatana	Director
9.	Miss Chutinan Liewphairatana	Director

**The Board of Directors - TPI Bio Pharmaceuticals Co., Ltd.** as at December 31, 2018

Name		Position
1.	Mr. Prachai Leophairatana	Chairman
2.	Mr. Prateep Leopairut	Director
3.	Dr. Pramuan Leophairatana	Director
4.	Mr. Prayad Liewphairatana	Director
5.	Mrs. Orapin Leophairatana	Director
6.	Miss Pattrapan Leopairut	Director
7.	Mr. Pakorn Leopairut	Director
8.	Mr. Pakkapol Leopairut	Director
9.	Mr. Thanakorn Liewphairatana	Director
10.	Miss Chutinan Liewphairatana	Director
11.	Mr. Porakrit Leophairatana	Director

**The Board of Directors - Zenith International Trading Co., Ltd.** as at December 31, 2018

Name		Position
1.	Mr. Prachai Leophairatana	Chairman
2.	Mr. Prateep Leopairut	Director
3.	Dr. Pramuan Leophairatana	Director
4.	Mr. Prayad Liewphairatana	Director
5.	Mrs. Orapin Leophairatana	Director
6.	Miss Pattrapan Leopairut	Director
7.	Mr. Pakorn Leopairut	Director
8.	Mr. Pakkapol Leopairut	Director
9.	Mrs. Achira Chatdarong	Director
10.	Mrs. Nitawan Leophairatana	Director



**The Board of Directors - TPI Healthcare Co., Ltd.** as at December 31, 2018

	<b>Name</b>	<b>Position</b>
1.	Mr. Prachai Leophairatana	Chairman
2.	Mr. Prateep Leopairut	Director
3.	Dr. Pramuan Leophairatana	Director
4.	Mr. Prayad Liewphairatana	Director
5.	Mrs. Orapin Leophairatana	Director
6.	Miss Pattrapan Leopairut	Director
7.	Mr. Pakorn Leopairut	Director
8.	Mrs. Nitawan Leophairatana	Director
9.	Mr. Pakkapol Leopairut	Director
10.	Mr. Porakrit Leophairatana	Director

**The Board of Directors - TPI Refinery (1997) Co., Ltd.** as at December 31, 2018

	<b>Name</b>	<b>Position</b>
1.	Mr. Prachai Leophairatana	Chairman
2.	Mr. Prateep Leopairut	Director
3.	Dr. Pramuan Leophairatana	Director
4.	Mr. Prayad Liewphairatana	Director
5.	Mrs. Orapin Leophairatana	Director
6.	Mr. Pakorn Leopairut	Director
7.	Mrs. Nitawan Leophairatana	Director
8.	Mr. Pakkapol Leopairut	Director

**The Board of Directors - Thai Propoxide Co., Ltd.** as at December 31, 2018

	<b>Name</b>	<b>Position</b>
1.	Mr. Prachai Leophairatana	Chairman
2.	Mr. Prateep Leopairut	Director
3.	Dr. Pramuan Leophairatana	Director
4.	Mr. Prayad Liewphairatana	Director
5.	Mrs. Orapin Leophairatana	Director
6.	Miss Pattrapan Leopairut	Director
7.	Mr. Pakorn Leopairut	Director
8.	Mr. Pakkapol Leopairut	Director
9.	Mr. Thanakorn Liewphairatana	Director
10.	Miss Chutinan Liewphairatana	Director

NAME/AGE/ FAMILY RELATION AMONG DIRECTORS & EXECUTIVES	EDUCATIONAL BACKGROUND/TRAINING	% SHARE HOLDING*	WORK EXPERIENCE			
			DURATION	POSITION	COMPANY/ BUSINESS	
Mr. Khantachai Vichakkhana 71 years of age -no relationship	Master of Political Science, (Public Administration), Thammasat University	0.00	Jun 25 2018 - Present	Chairman and Independent Director	TPI Polene Plc.	
			Oct 2009 - Present	Independent Director	TPI Polene Plc.	
	Jan 2016-Present		Independent Director	TPI Polene Power Plc.		
	Bachelor of Law, Thammasat University		1986	Land Officer- Uttaradit	Department of Lands	
			1986-1988	Land Officer- Nakhornnayok	Department of Lands	
			1988-1989	Land Officer- Nonthaburi and Bangyai District	Department of Lands	
			Directors Accreditation Program (DAP- No.112/2014) Thai Institute of Directors (IOD)	1989-1990	Land Officer- Phuket	Department of Lands
	1990-1992			Land Officer- Chonburi	Department of Lands	
	1992-1995			Department of Important book	Department of Lands	
	1995-1998			Land Management Division	Department of Lands	
	Role of Compensation Committee (RCC-No.19/2014) Thai Institute of Directors (IOD)		1998-1999	Director of Bureau Authority Land	Department of Lands	
			1999-2000	Inspector-General	Department of Lands	
			2000	Staff Plan & Policy Analysis (Land)	Department of Lands	
			2000-2002	Directors: Land Registration Bureau of Standards	Department of Lands	
	Directors Certification Program (DCP- No.119/2015) Thai Institute of Directors (IOD)		2002-2008	Deputy Director -General	Department of Lands	
			Aug8,2014-Present	Director and the Nomination, Remuneration and Corporate Governance committee Independent Director	L.P.N. Development Public Co.,Ltd.	
	Guest Speaker Training Program- Land Class 2: Department of Land (1979)					
	Division Director of Security within the Kingdom Program (Ka.Rmn): Royal Thai Army (1979)					
	Advance Land Management School Program Class 3: Department of Lands (1984)					
	Advance administration Program: Class 30, Institute of Administration Development, Department of Provincial Administration (1993)					
	High Level Information Technology Executives (CIO) Seminar (2003)					
	Political Development in Democratic Governance for Executives Program Class 8, King Prajadhipok's Institute (2004)					
					Extracurricular	
					Council Member	Rajamangala University or technology Bangkok
					Assets Management Committee Diagnosis Sub-Committee	Thai Red Cross Council Office of the Election Commission of Thailand
					Committee	Retired Government Officials' Pension
					Committee	Association of Interior Foundation
					Committee	Executive Public Administration Foundation (EPAF) TriamudomsuksaAlumni Foundation
					Committee	Anan Anantakool Foundation
					Committee	Dr.Suk Phukyaphon, Foundation
					Committee	Hospital & phrapiya school Foundation
					Assets Management Committee	Srisavarindhira Thai Red Cross Institute of Nursing

NAME/AGE/ FAMILY RELATION AMONG DIRECTORS & EXECUTIVES	EDUCATIONAL BACKGROUND/TRAINING	% SHARE HOLDING*	WORK EXPERIENCE		
			DURATION	POSITION	COMPANY/ BUSINESS
<b>Mr. Prachai Leophairatana</b> 75 years of age Younger brother of Miss Malinee Leophairatana, elder brother of Mr. Prateep Leopairut, Dr. Pramuan Leophairatana and Mr. Prayad Liewphairatana	Honorary Doctorate Degree in Industrial Engineering, Rajamangala University of Technology Krungthep	4.30	2001-Present	Chief Executive Officer	TPI Polene Plc.
			1991-Present	Chairman	TPI Polene Power Plc.
			1969-1997	Chairman	Cathay Finance & Securities Plc.
			1978-2006	Chief Executive Officer	Thai Petrochemical Industry Public Co.,Ltd. and TPI Polene Group of Companies.
	M.S.(EE) University of California (Berkeley) U.S.A.		1992-2000	Senator	Parliamentary Commission
			2000-2006	Board Executive Director	Bangkok Union Insurance Public Co.,Ltd.
	B.E.(EE) (1 <sup>st</sup> Class Hons.) University of Canterbury, New Zealand		April 2012-Present	Director	Bangkok Union Insurance Public Co.,Ltd.
			Directors Accreditation Program (DAP- No.35/2005) Thai Institute of Directors (IOD)		

NAME/AGE/ FAMILY RELATION AMONG DIRECTORS & EXECUTIVES	EDUCATIONAL BACKGROUND/TRAINING	% SHARE HOLDING*	WORK EXPERIENCE		
			DURATION	POSITION	COMPANY/ BUSINESS
<b>Mr. Prateep Leopairut</b> 73 years of age Younger brother of Miss Malinee Leophairatana and Mr.Prachai Leophairatana, elder brother of Dr. Pramuan Leophairatana, and Mr. Prayad Liewphairatana	Honorary Doctorate Degree in Engineering Materials Faculty of Engineering Rajamangala University of Technology Rattanakosin	0.01	1987-Present	President	TPI Polene Plc.
			1991-Present	Executive Director	TPI Concrete Co.,Ltd.
			2002-Present	Executive Director	Polene Plastic Co.,Ltd.
			2007-Jan 2015	President	Thai Nitrate Co.,Ltd.
			2011-Jan 2015	President	TPI Polene Bio Organics Co.,Ltd.
			1978-Present	Director	United Grain Industry Co., Ltd.
			1989-Present	Director	Thai Plastic Film Co., Ltd.
			1988-Present	Director	Thai Plastic Product Co., Ltd.
	M.S. (Industrial Engineering) Stanford University U.S.A.		1994-Present	Vice Chairman	Bangkok Union Insurance Plc.
			1981-2006	President	International Plastic Trading Co., Ltd.
	B.E. (Industrial Engineering) Chulalongkorn University		1978-2006	President	Thai Petrochemical Industry Plc.
			1973-Present	Executive Director	Leophairatana Enterprises Co., Ltd.
			1996-Present	Executive Director	Pornchai Enterprises Co., Ltd.
	National Defense College in cooperation with the private sector, 2/1990, National Defense College		1996-Present	Director	Mondo Thai Co.,Ltd.
			1987-present	President	Thai Petrochemical Industry and Trade Association
			1987-1993	Director	Bangkok Union Insurance Plc.
			1990-1992	President	The Thai Packaging Association
			2009-2011	Commission of Central Asia	Thai Chamber of Commerce
			2009-2011	Committee of International Trade	Thai Chamber of Commerce
	The Political "Leadership in new era" program, 2/2005, King Prajadhipok's Institute		2009-2011	Committee of International Negotiation Trade	Thai Chamber of Commerce
			2009-Present	Specialist on the examination of working professionals with engineering diploma in industrial engineering field	Council of Engineers
	Directors Accreditation Program (DAP) No.28/2004 Thai Institute of Directors (IOD)		2009-Present	Expert on the examination of corporate engineering level of working professionals industrial engineering field	Council of Engineers
			2012-2014	Chairman	ASEAN Federation of Cement Manufacturers (AFCM)
	Directors Certification Program (DCP) No.53/2005 Thai Institute of Directors (IOD)		2012-Present	Committee of the Examination of Working professionals with Engineering diploma in industrial engineering field	Council of Engineers
			2012-2016	President	Thai Cement Manufacturers Association (TCMA)
	Audit Committee Program (ACP) No.8/2005 Thai Institute of Directors (IOD)		2012-2016	President of Cement Group	The Federation of Thai Industries
			2012-2016	Committee of the Federation of Thai Industries	The Federation of Thai Industries
			2012-2016	Committee of Logistics Economic Division	The Federation of Thai Industries
	Understanding the Fundamental of Financial Statements (UFS) no.1/2006 Thai Institute of Directors (IOD)		2012-2016	Committee of Logistics Economic and Infrastructure Development	The Federation of Thai Industries
			2012-2016	Committee of Logistics Trade	The Federation of Thai Industries
			2012-2014	Committee of Development of the economic cooperation of neighboring countries, the Mae-kong sub region (GMS/ACMECS/MJ/Business council of Burma-Loas-Cambodian-Vietnam)	
	Chartered Director Class (CDC) No.5/2009 Thai Institute of Directors (IOD)		2012-2014	Committee of Facilitate on Trade, Import-Export and Custom Practices	The Federation of Thai Industries
			2012-2016	Committee of The Institute of Industrial Environment	The Federation of Thai Industries
			2012-Present	Committee of the Institute of Industrial Energy	The Federation of Thai Industries
			2012-2014	President of construction Materials Cluster	The Federation of Thai Industries
			2012-2014	Honorary Member and Council Association	The Thai Packaging Association
			2013-Present	Committee of the Examination of License for professional Engineer in industrial engineering field	Council of Engineers
			2013	Committee Council of the study system rice industry	Committee on Economics, commerce and Industrial of the Senate
			2013-2014	Honorary Council	Committee on Economics, commerce and Industrial of the Senate
			2015-Present	President	Thai Organic Fertilizer Industry Foundation Trade Association

NAME/AGE/ FAMILY RELATION AMONG DIRECTORS & EXECUTIVES	EDUCATIONAL BACKGROUND/TRAINING	% SHARE HOLDING*	WORK EXPERIENCE		
			DURATION	POSITION	COMPANY/ BUSINESS
<b>Dr. Pramuan Leophairatana</b> 70 years of age Younger brother of Miss Malinee Leophairatana, Mr. Prachai Leophairatana and Mr. Prateep Leopairut, elder brother of Mr. Prayad Liewphairatana	M.S., SC.D. Massachusetts Institute of Technology at Cambridge, M.A., U.S.A.  B.S. (Honors) University of California (Berkeley), U.S.A.  Directors Accreditation Program (DAP- No.39/2005) Thai Institute of Directors (IOD)  National Defense College No.41 and National Defense College in cooperation with the private sector No.11, King Prajadhipok's Institute	4.01	2001-Present	President	TPI Polene Plc.
			1973-Present	Director	Leophairatana Enterprises Co.,Ltd.
			1978-2006	President	Thai Petrochemical Industry Plc.
			1988-Present	Director	Thai Plastic Product Co.,Ltd.
			1989-Present	Director	Thai Plastic Film Co.,Ltd.
			1989-Present	Director	United Grain Industry Co.,Ltd.
			1990-Aug.2013	Director	Thai Nitrate Co.,Ltd.
			1991-Present	Vice Chairman	TPI Polene Power Plc.
			1991-Present	Executive Director	TPI Concrete Co.,Ltd.
			1996-Jul.2014	Director	Mondo Thai Co.,Ltd.
			1997-Present	Chairman	BUI Life Insurance Plc.
			2002-Present	Executive Director	Polene Plastic Co.,Ltd.
			2010-Present	Executive Director	TPI Polene Bio Organics Co.,Ltd.
			Oct.2013-Jan.2015	Director	Thai Nitrate Co.,Ltd.
			Aug.2016-Present	Director	Thai Nitrate Co.,Ltd.
			Jul.2014-Present	Executive Director	Mondo Thai Co.,Ltd.
<b>Miss Malinee Leophairatana</b> 77 years of age Elder sister of Mr.Prachai Leophairatana, Mr.Prateep Leopairut, Dr.Pramuan Leophairatana and Mr.Prayad Liewphairatana	Master Degree in Actuarial Science Georgia State University, U.S.A.  Bachelor of Commerce and Accounting Major in Statistics (Second Honour) Chulalongkorn University  Directors Certification Program (DCP) No.22/2002 Thai Institute of Directors (IOD)  Certified as Actuary under Section 78/2 of The Non-Life Insurance Act B.E.2535 as Amended by Non-Life Insurance Act (No.2), B.E.2551	0.04	April 2016-Present	Director	TPI Polene Plc.
			Jan 2016-Present	Director	TPI Polene Power Plc.
			1973-Present	Director	Leophairatana Enterprises Co., Ltd.
			2001-Present	Chief Executive Officer	Bangkok Union Insurance Plc.
			1997-Present	Director	Bangkok Union Life Insurance Plc.
			1987-1989	President	Thai General Insurance Association
<b>Dr. Chavin Iamsopana</b> 77 years of age Brother-in-law of Mr. Prachai Leophairatana, Mr. Prateep Leopairut, Dr. Pramuan Leophairatana, and Mr. Prayad Liewphairatana	Doctor of Engineering, Osaka City University Japan  Directors Accreditation Program (DAP- No.28/2004) Thai Institute of Directors (IOD)  Directors Certification Program (DCP-No.46/2004) Thai Institute of Directors (IOD)  Audit Committee Program (ACP-No.15/2006) Thai Institute of Directors (IOD)	0.11	1987-Present	Executive Director	TPI Polene Plc.
			1989-Present	Executive Director	Thai Plastic Film Co.,Ltd.
			1989-Present	Executive Director	Thai Plastic Product Co.,Ltd.
			1989-Present	Executive Director	United Grain Industry Co.,Ltd.
			1997-Present	President	BUI Life Insurance Co.,Ltd.
			2004-Present	Executive Director	Bangkok Union Insurance Plc.



NAME/AGE/ FAMILY RELATION AMONG DIRECTORS & EXECUTIVES	EDUCATIONAL BACKGROUND/TRAINING	% SHARE HOLDING*	WORK EXPERIENCE		
			DURATION	POSITION	COMPANY/ BUSINESS
<b>Mr. Prayad Liewphairatana</b> 68 years of age Younger brother of Miss Malinee Leophairatana, Mr. Prachai Leophairatana, Mr. Prateep Leopairut, and Dr. Pramuan Leophairatana	M.S.C.E. University of Michigan (ANN ARBOR) U.S.A.  Directors Accreditation Program (DAP- No.29/2004) Thai Institute of Directors (IOD)	4.37	1987-Present	President	TPI Polene Plc.
			1973-Present	Director	Leophairatana Enterprises Co.,Ltd.
			1981-2006	Director	International Plastic Trading Co.,Ltd.
			1988-Present	President	Thai Plastic Product Co.,Ltd.
			1988-Present	President	United Grain Industry Co.,Ltd.
			1989-Present	President	Thai Plastic film Co.,Ltd.
			1991-Present	Executive Director	TPI Polene Power Plc.
			1991- Present	Executive Director	TPI Concrete Co.,Ltd.
			1996-Present	Executive Director	Mondo Thai Co.,Ltd.
			1997- Present	Executive Director	BUI Life Insurance Co.,Ltd.
			2002-Present	Executive Director	Polene Plastic Co.,Ltd.
			Aug 2, 2016-Present	Executive Director	Thai Nitrate Co.,Ltd.
			2010-Present	Executive Director	TPI Polene Bio Organics Co.,Ltd.
<b>Mrs. Orapin Leophairatana</b> 72 years of age Mr. Prachai Leophairatana's wife	Political Science (2 <sup>nd</sup> Class Honors) Chulalongkorn University  Directors Accreditation Program (DAP- No.35/2005) Thai Institute of Directors (IOD)	4.30	1998-2003,	Senior Executive	TPI Polene Plc.
			2005-Present	Vice President	
			1977- 1982	Third Secretary	Ministry of Foreign Affairs
			1986-1997	Managing Director	Cathay Finance & Securities Plc.
			1995-1997	Director	Bangkok Stock Trading Center
			1995-1997	Chairman	Association of the Securities Brokerage
			April-Dec.1997	Director	Association of Finance Companies
			1998-Present	Executive Director	TPI Concrete Co., Ltd.
			2001-2011	Director	Thai Listed Company Association
			2002-Present	Executive Director	Polene Plastic Co.,Ltd.
			2007-Present	Vice Chairman	TPI Polene Power Plc.
			2009-Present	Executive Director	TPI All Season Co., Ltd.
			2009-Aug.2013	Director	Thai Nitrate Co.,Ltd.
			2010-Present	Executive Director	United Grain Industry Co.,Ltd.
			2010-Present	Executive Director	Thai Petrochemical Industry Co.,Ltd.
			2010-Present	Executive Director	TPI Polene Bio Organics Co.,Ltd.
			Oct.2013-Jan.2015	Executive Director	Thai Nitrate Co.,Ltd.
			Jul.2014-Present	Executive Director	Mondo Thai Co.,Ltd.
<b>Mr. Supoj Singsanei</b> 70 years of age -no relationship	M.B.A. Finance, Michigan State University, U.S.A.  Bachelor of Accounting (Honor), Thammasat University  Directors Certification Program (DCP-No.90/2007) Thai Institute of Directors (IOD)  The Role of Chairman Program (RCP) No.18/2008 Thai Institute of Directors (IOD)  Successful Formulation & Execution of Strategy (SFE) No.4/ 2009 Thai Institute of Directors (IOD)	-	Jun 25, 2018-Present	Chairman of the Audit Committee and Independent Director	TPI Polene Plc.
			Apr 25, 2018- Jun 2018	Independent Director and Audit Committee	TPI Polene Plc.
			2017-Present	Audit Committee	Humanica Plc.
			2016- Present	Director	Marui Real Estate Co., Ltd.
			1988- Present	Director	Pisant Co., Ltd.
			2015-2017	Chairman and Audit Committee	Saksiam Leasing Plc.
			1995-2015	Audit Partner	KPMG Phoomchai Audit Co., Ltd.

NAME/AGE/ FAMILY RELATION AMONG DIRECTORS & EXECUTIVES	EDUCATIONAL BACKGROUND/TRAINING	% SHARE HOLDING*	WORK EXPERIENCE		
			DURATION	POSITION	COMPANY/ BUSINESS
<b>Mr. Manas Sooksmarn</b> 82 years of age -no relationship	Master of Science in Industrial Engineering and Management, Oklahoma State University, U.S.A.  Post Graduate diploma Industrial Development Programming. (Economics) Institute of Social Studies (ISS), The Hague, Netherlands  Master of Political Science, Ramkhamhaeng University  B.E. (Industrial Engineering), Chulalongkorn University.  National Defense College No.31  Directors Accreditation Program (DAP- No.47/2005) Thai Institute of Directors (IOD)	-	2005-Present	Member of the Audit Committee and Independent Director	TPI Polene Plc.
			1996-2000	Senator	The Senate of Thailand
			1996-1997	Committee	Express Authority of Thailand
			1997	Advisor to Deputy Minister	Ministry of Interior
			1997, 2001	Advisor to Deputy Minister	Ministry of Agriculture and Cooperatives
			2006	Honorable Committee	The Constitutional Court
<b>Mr. Pises Iamsakulrat</b> 55 years of age -no relationship	Master of International Trade, Golden Gate University, U.S.A.  Bachelor Degree, Business Administration, Menlo College, California, U.S.A  Directors Accreditation Program (DAP- No. 140/2017) Thai Institute of Directors (IOD)	0.04	Mar1,2018-Present	Independent Director and Audit Committee	TPI Polene Plc.
			2008- Present	Director	TPI Polene Plc.
			1987- Present	Managing Director	Iamsakulrat Co., Ltd.
			1990- Present	Managing Director	Lampang Food Products Co., Ltd.
			1995- Present	Vice President	Laos Industrial-Agriculture Co., Ltd.
			1997- Present	Director	K. Cotton & Gloss Co., Ltd.
			1997- Present	Director	TPI Holding Co., Ltd.
			2004- Present	Managing Director	Maekong Inter Trade Co., Ltd.
<b>Mr. Thavich Taychanavakul</b> 70 years of age -no relationship	Bachelor Degree, Business Administration Kinki University, Japan  National Defense College No. 366  Directors Accreditation Program (DAP- No. 6/2003) Thai Institute of Directors (IOD)  Finance for Non-finance Director (FND) No.30/2006 Thai Institute of Directors (IOD)	0.01	Mar1,2018-Present	Audit Committee	TPI Polene Plc.
			2008- Present	Independent Director	TPI Polene Plc.
			2013-Present	Board Executive Director	Mae Fah Luang University Council
			2012-Present	Advisor	Thai Industrial Estate Association
			2012-Present	Board Executive Director	Hi-Tech Kabin Logistics Co.,Ltd.
			1999-Present	Board Executive Director	Ayutthaya Technology Hi-Tech Center Co.,Ltd.
			1990- Present	Board Executive Director	Thai Industrial Estate Co., Ltd.
			1983-Present	Member of the Audit Committee /Independent Director	Bangkok Union insurance Plc.
<b>Mr.Tayuth Sriyusiri</b> 65 years of age -no relationship	Master Of Business Administration, Boston University, U.S.A.  Bachelor's Degree, Engineering, Mechanic, Worcester University, U.S.A.	0.47	2008-Present	Executive Director	TPI Polene Public Plc.
			1982- Present	Managing Director	K. Cotton & Gloss Co., Ltd.
			1994- Present	Director	TPI Holdings Co., Ltd.
			1999- Present	Director	Micro Fiber Industry Co., Ltd.
	2005- Present		Director	Hua Thai Manufacturing Plc.	
	Director Accreditation Program (DAP- No.29/2004) Thai Institute of Directors (IOD)				

NAME/AGE/ FAMILY RELATION AMONG DIRECTORS & EXECUTIVES	EDUCATIONAL BACKGROUND/TRAINING	% SHARE HOLDING*	WORK EXPERIENCE		
			DURATION	POSITION	COMPANY/ BUSINESS
<b>Mr.Chulasingh Vasantasingh</b> 69 years of age -no relationship	Bachelor of Law (Honor), Chulalongkorn University	0.00	Aug.2014-Mar2015	Director	TPI Polene Plc.
			Mar2015-Present	Independent Director	TPI Polene Plc.
	Thai Barrister at law, Institute of Legal Education of the Thai Bar		2005-2009	Deputy Attorney General	Office of The Attorney General
			2009-2013	Attorney General	Office of The Attorney General
			2010-2013	Independent Director and Chairman of the Audit Committee	PTT Plc.
	Master of Comparative Law (MCL.) University of Illinois, U.S.A.		2010-2013	Independent Director and Chairman of the Audit Committee	Airways International Plc.
	Honorary doctor of laws, Ramkhamhaeng University		2010-2014	Independent Director and Chairman of the Audit Committee	Krung Thai Bank Plc.
	Honorary doctor of laws, Chulalongkorn University		Nov.2013-Jan2016	Independent Director and Member of the Audit Committee	Thai Oil Plc.
	Honorary doctor of laws, Yonok University		May2014-Jan2016	Chairman of the Audit Committee	Thai Oil Plc.
			2014-2017	Independent Director and member of the Audit Committee	Global Power Synergy Plc.
	The Certificate, Harvard Business School		2014-Present	Director and Chairman of the Audit Committee	Tanachart Insurance Plc.
	Degree Programs, National Defense College No.388		Apr2015-Present	Independent Director and Chairman of the Audit Committee	Quality House Plc.
	Advanced Certificate Course in Politics and Governance in Democratic Systems, King Prajadhipok's Institute			<b>Honor and Social roles</b> Council of State	Office of the Council of State
	Leadership Program (CMA No.5), Capital Market Academy			Professor emeritus	Chulalongkorn University
	Courses for senior executives at Energy Science (TEA 1), Thailand Energy Academy			Member of Property Committee	Chulalongkorn University
	Top Executive Program in Commerce and Trade, TEPCOT(No.5)			Member of Property Committee	Vajiravudh College
	Poompalungpandin Program,(No.1) Chulalongkorn University				
	Directors Certification Program (DCP35/ 2003), Thai Institute of Directors				
	Finance for Non-Finance Director (FN 7/2003), Thai Institute of Directors				
	Understanding the Fundamental of Financial Statements (UFS 1/ 2006), Thai Institute of Directors				
	Audit Committee Program (ACP 17/ 2007), Thai Institute of Directors				
	DCP Refresher Course (1/2008), Thai Institute of Directors				
	Financial Institutions Governance Program (FGP 4/2012), Thai Institute of Directors				
<b>Mr. Nitisit Jongphitakratana</b> 48 years of age -no relationship	Master of Law, Thammasat University	-	2006-Present	Secretary	TPI Polene Plc.
			2011-Present	Asst.Vice President Department	TPI Polene Plc.
			2006-2011	Manager Department	TPI Polene Plc.

NAME/AGE/ FAMILY RELATION AMONG DIRECTORS & EXECUTIVES	EDUCATIONAL BACKGROUND/TRAINING	% SHARE HOLDING*	WORK EXPERIENCE		
			DURATION	POSITION	COMPANY/ BUSINESS

## OTHER EXECUTIVES

<b>Mr. Prasert Ittimakin</b> 59 years of age -no relationship	M.B.A. Finance University of St. Thomas, U.S.A.	-	2001-Present	Senior Vice President Accounting and Finance Division	TPI Polene Plc.
	Bachelor of Accounting, Chulalongkorn University		1998-2001	Vice President Accounting and Finance Division	TPI Polene Plc.
			1990-1998	Vice President Corporate Finance Department	Asia Credit & Securities Plc.
<b>Miss Chularat Danwattanachai</b> 57 years of age -no relationship	M.B.A. Thammasart University	-	2001-Present	Vice President Accounting and Finance Division	TPI Polene Plc.
			1999-2001	Asst. Vice President Accounting and Finance Division	TPI Polene Plc.
			1989-1998	Asst. Vice President Corporate Finance Department	Asia Credit & Securities Plc.
<b>Mr. Pongsak Yiengsakun</b> 63 years of age -no relationship	Bachelor of Business Administration Banking and Finance, Chulalongkorn University	-	2012-Present	Vice President Financial Operation Department	TPI Polene Plc.
			2001-2012	Asst. Vice President Financial Operation Department	TPI Polene Plc.
			1992-2001	Manager of Finance Department	TPI Polene Plc.
<b>Mrs. Bussara Ketmanee</b> 55 years of age -no relationship	Bachelor of Accounting, Ramkhamhaeng University	-	2018-Present	Asst. Vice President Accounting Department	TPI Polene Plc.
			2012-2018	Manager of Accounting Department	TPI Polene Plc.

Remarks: \* Percentage of shareholding above includes shares held by spouses and offspring.

# Corporate Governance

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Throughout 2018, the Board of Directors of the Company operated in compliance with the principles of good corporate governance by carrying out their duties with transparency, ethics, and responsibility to shareholders, customers, employees, society and others stakeholders.

As the Company values ethical business conduct, we issued a Code of Business Conduct, which is constantly reviewed to make it more suitable for changed circumstances. The Company's Directors acknowledge best practice for directors of a listed company as their principle guideline. The Directors, the management and all levels of staff carry out their duties with honesty, integrity, and good ethics. All realize that the Company is a long-established, leading, reputable company with a track record of over 20 years. Corporate governance practices of the Company can be divided into 5 sections as follows:

## **Section 1. Stakeholder Rights**

The Company realizes and respects the importance of the rights of all shareholders. The Company has policies to protect shareholders fundamental rights and ensure equitable treatment under the law as follows:

### **1. Shareholders' Meeting**

The Company schedules an annual general meeting of the shareholders ("AGM") within 4 months of the annual closing date of its accounting books. In case there are emergency issues that might affect the interest of the shareholders and/or related to the terms and regulations or any legal issues, to be proposed for approval in the meeting. The extraordinary shareholders' meeting will be held as the case may be. In 2018, the Annual General Shareholders' meetings were held as follows:-

1.1 The Annual General Shareholders' meeting on April 25, 2018 at the Conference Room on the 9<sup>th</sup> floor of TPI Tower, 26/56 Chan Tat Mai Rd, Thungmahamek, Sathorn, Bangkok. A total of 14 directors attended the AGM.

1.2 The Extraordinary Shareholders' meeting no. 1/2561 on June 25, 2018 at the Conference Room on the 9<sup>th</sup> floor of TPI Tower, 26/56 Chan Tat Mai Rd, Thungmahamek, Sathorn, Bangkok. A total of 15 directors attended the meeting.

The Audit Committee of the Company and the Legal Advisor acted as the agents for the ballot throughout the meeting and the Chairman allocates sufficient time for each item and facilitates the meeting appropriately according to related governing laws and all respective agenda were proposed and resolved in the meeting.

### **2. Delivering Meeting Notices**

After the Company's Board of Directors approved and resolved the Annual General Shareholders Meeting, the Company will disclose the Invitation to the Annual General Shareholders Meeting with all relevant documents on the Company's website at <http://www.tpipolene.co.th> for shareholders' consideration in advance of the meeting.

The Company assigned Thailand Securities Depository Co., Ltd., its SEC Securities Registrar, to mail meeting notices together with details of the agenda and accompanying documents (both supplementary and supporting) for the decisions of the Board of Directors. The Securities Registrar mails the opinion of the Board, minutes of the previous meeting, the annual report, all meeting documents, and proxy forms designed by the Ministry of Commerce, to shareholders at least 7 days ahead of the meeting date. An invitation to the AGM is also announced in newspapers for 3 consecutive days in advance of the meeting.

### **3. Facilitating Shareholders**

The Company treats all shareholders in a fair manner. The Company always allows registration of shareholders at least one hour before each meeting. A barcode system summarizing details of each shareholder is printed on the registration form, or the proxy form, to facilitate registration and save time. A suitable reception is also extended to all shareholders.

### **4. Conduct of Shareholders' Meetings**

Before the meeting, the Chairman explains clearly the rules on voting and vote counting for individual agenda items. Once information has been disclosed for each item, the chairman allocates sufficient time for each item and facilitates the meeting appropriately. During the meeting, the chairman allows thorough expression of views and queries by shareholders before voting and summarizes the meeting's resolution on each agenda item. Minutes of the meeting must be completely and accurately recorded, with a summary of voting results on each item.



## 5. After the Shareholders' Meetings

The Company duly submits the resolution of the Shareholders' meeting to the SET one day after the meeting ends. The Company duly submits the minutes of the Shareholders' meeting to the SET, the Securities Registrar of Public Company, Department of Business Development, the Ministry of Commerce, within 14 days and also discloses the minutes of the Shareholders' meeting on the Company's website at [www.tpipolene.co.th](http://www.tpipolene.co.th)

## Section 2. Equitable Treatment of Shareholders

The Company values and treats all shareholders equally and fairly through the following actions:

**1. Conducting the meeting in sequence of agenda items as specified in the invitation** and not adding agenda items without notifying shareholders in advance, to ensure they have enough time to investigate before making their decisions.

**2. Appointing Proxies** to maintain the rights of those shareholders who cannot attend in person: they are able to appoint proxies, or to delegate their votes to any independent director in attendance.

In addition, the Company also discloses the format of the proxies together with all details and procedures on the Company's website at <http://www.tpipolene.co.th> in advance of the meeting.

**3. Encouraging shareholders to use ballots for every agenda item**, voting tickets are provided for each agenda item separately.

**4. All groups of shareholders can access the Company information** completely, accurately, transparently, and in a timely manner. The Company has established an Investor Relations Office to take responsibility for providing information in both Thai and English to all shareholders, equally and completely, to ensure that shareholders can make appropriate investment decisions. Corporate information is disclosed on the Company's website, as well as on the websites of the SET and the SEC to facilitate access by shareholders and other interested investors.

**5. Ensuring strict supervision of the use of inside information** by explicitly defining in writing the misuse of inside information as part of the Code of Conduct. In addition, in order to prevent any conflicts of interest, or misuse of inside information by the Board and Management, the Company has put in place internal information controls to supervise the use of inside information as follows:

1. Directors and Management will be regularly informed of related laws and regulations pertaining to misuse of inside information, through various communication channels.
2. The Company discloses in the TPIPL annual report the shareholdings of Directors, Management (and the holdings of management equivalents in Finance and Accounting Division) in compliance with the regulations of the Office of Securities and Exchange Commission.
3. The Directors and Management of the Company are fully responsible for submitting a report of their shareholdings in the Company, and those of their spouses and minors, in accordance with provisions contained in the Securities and Exchange Act B.E. 2535.
4. Any misuse of internal information shall be subject to disciplinary action, including dismissal, as announced in the Company's rules and regulations.

**6. Devising practical guidelines for potential conflict of interest** in its Good Corporate Governance and Code of Conduct for the Directors. Management and employees must strictly comply with these.

## Section 3. Stakeholder Roles

The Company is well aware of the roles of all stakeholders. The Company sets precise responsibilities to be prudent, fair, and respect the rights of all stakeholders, in operating its business. Hence, the Company has established a Code of Business Conduct emphasizing the balanced consideration of all stakeholders, which has been disclosed via <http://www.tpipolene.co.th>

TPI Polene has embraced the Code of Conduct as a policy for Directors, Management and all employees to put the Code into practice and to abide by strict moral guidelines.

All management levels have to strictly follow the Code of Conduct as best practice principles, and it is a strict policy to ensure that all employees under each relevant organization line will acknowledge, understand, and follow the Code of Conduct.

The Company has a strict policy to treat all stakeholders fairly as follows:

**1. Shareholders:** In its business operations, the Company concentrates on establishing the greatest benefit to shareholders. The accounting and financial systems are in place to ensure that any mistakes and irregularities will be identified in due course and that financial reports are accurate, adequate and reliable. The Company's continuously strong financial potential is demonstrated in its ability to make appropriate dividend payments to shareholders.

**2. Customers:** The Company places a great emphasis on customer satisfaction through the quality of its products and services, provided at reasonable prices. For the manufacturing of cement, plastic resin and ready-mixed concrete, the Company and its subsidiaries have also been awarded ISO 9001:2000 certifications from the International Organization for Standardization. In addition, TPI Group has gained recognition for the quality of all cement products from the Thai Industrial Standards Institute and the Office of Customer Protection Board.

In addition, the Company holds seminars for customers to enhance relationships and to educate them about the variety of products offered. We also develop customer interaction via certified agents that welcome all customer suggestions, as these lead to higher efficiency of product development, and maintain customer loyalty.

**3. Management and Employees:** The Company realizes the importance of human resources. Hence, the Company fosters development of all levels of management and staff with internal and external training to enhance their capabilities. The Company applies compensation systems which reward and benefit management and staff appropriately and in line with remunerations in other companies in the same industry.

In addition, the Company also focuses on the safety of its human resources by adopting Health and Safety Management standards. This is reflected in the attainment of the Health and Safety Management standard TIS 18001 certification from the Anglo Japanese American Registrars (AJA) for our cement plant. For our plastic resin and ready-mixed concrete businesses, the Company was also awarded TIS 18001 certifications. These systems have been implemented to reduce accidents in the workplace.

**4. Trade partners:** The Company ethically sets its business operation strategies, thus enhancing relationships with all trade partners through transparent and fair practices. The Company has a policy of benefit sharing and equitable treatment for trade partners and strictly adheres to contractual agreements made. The Company is independent, without strong involvement with any trade partners.

**5. Competitors:** The Company applies equitable treatment and abides by the framework of fair competition.

**6. Community and Society:** The Company, as a Thai Company, continues to be determined to discharge its responsibilities towards the nation, society and communities. Accordingly, the Company is continuously committed to promoting and supporting beneficial activities towards society, religion, education and youth by establishing a full-scale foundation under the name, "the Environment for Better Life Foundation" as detailed in section "TPI Polene and Society".

**7. Environmental Responsibility:** The Company acts as a good citizen, conscious and aware of being one part of this society. It continues to be determined to discharge its responsibilities towards relevant rules and regulations and support the community surrounding its facilities by eliminating problems and protecting the environment, thus providing better living standards for the communities near its plants. As reflected in its full support for environmental enhancement, the Company has received ISO 14001 certification for Environmental Management System as detailed in section "TPI Polene for Safety and Environment".

#### **Section 4. Information Disclosure and Transparency**

The Company is aware of its duty to conduct business in conformity with relevant rules and regulations as follows:

**1. Disclosure of Company information including financial reports** is executed accurately, completely and in a timely fashion as reflected in the Annual Report form (Form 56-1), the Company's Annual Report (Form 56-2) and other reports, which are carried out in compliance with the guidelines set by the SEC and the SET.

**2. A plant visit** is provided for interested institutional investors, shareholders and analysts to access information and have meetings with the Management of the Company. In addition, the Investor Relations Unit has been established to be responsible for communicating information to institutional investors, shareholders, analysts, and relevant authorities in an equitably and fair manner.

**3. Disclosure of Company information is made through approved communication** channels via the SET, the SEC and the Company's Internet website in Thai and in English.

**4. The Company pays close attention to the quality of the financial information it provides:** particularly in its accuracy and adequacy. In addition, all financial information conforms to generally-accepted accounting principles and is audited by independent auditors. Hence, the Company has provided a report of the Board of Director's responsibility for financial statements in this Annual Report.

5. Functions and responsibilities of the Board and Sub-Committees are disclosed: see above in the section “Management”. In addition, the number of meetings and meeting attendance of each member are disclosed in the section “Corporate Governance”, clause 5 “Responsibilities of the Board”.
6. Disclosure of remuneration to Directors and Management Remuneration: this is detailed above in the section “Management”. Remuneration levels are based on the operating results of the Company during the previous fiscal year; reflect duties and responsibilities fairly and reasonably; and are comparable to general practices in the industry.

## **Section 5. Responsibility of the Board**

The Board plays a key role in supervising corporate governance to create maximum benefits for the Company. Each director represents all shareholders, and takes part in promoting good corporate governance within the Company, and in maintaining the rights of, and creating benefits for, all shareholders and other stakeholders. Details as follows:

### **1. Structure of the Board**

#### **(1) Composition**

As of December 31, 2018, the Company’s Board of Directors consists of 14 directors, of whom 7 were management team members and 7 were non-management, of whom 6 were independent directors. This exceeds one-third of the Board.

#### **(2) Qualifications of the Company’s Directors**

The Company’s Board of Directors comprises qualified members who have skills, experience, honesty, ethics, and independence. They have capabilities in diverse fields, pertinent to the Company’s businesses and, accordingly, can safeguard the interests of all shareholders.

In addition, all Directors are aware of their duties, responsibilities and nature of the Company’s businesses. They perform their duties with honesty and prudence, and regularly update themselves on new knowledge. Directors attend each Board meeting with full responsibilities.

#### **(3) Definition of the Independent Director Qualification**

The Board of Directors has defined the qualification of Independent Directors in line with the requirements of SEC and SET. Details are contained in the section “Management”, above.

#### **(4) Segregation of the Power of the Chairman and the Chief Executive Officer**

The Company’s Board is well organized to ensure there is clear distinction between supervision, policy-making, and day-to-day business administrative roles. The positions of the Chairman of the Board and the Chief Executive Officer are separated. This ensures separation between governing and managing duties.

#### **(5) Independence of the Chairman**

The Chairman of the Board, as an independent director, is not a member or chairman of any sub-committee, and is thus able to express his views on business operations independently. This ensures a balance of power.

In addition, the Chairman’s leadership plays a key role in ensuring the Board’s efficiency and the Shareholder’s meeting promoting to be in compliance with good corporate governance.

#### **(6) Corporate Secretary**

A knowledgeable and experienced Secretary to the Board serves as an advisor to the Board regarding pertinent laws, relevant rules and regulations, and monitors compliance of the Board’s actions on a regular basis. In addition, the Secretary is also responsible for assisting in Board activities and coordinating with other relevant functions to comply with the Board’s resolutions and good corporate governance principles.

### **2. Sub-Committee:**

The Board of Directors has appointed Directors who have knowledge and skills suitable to be members of Sub-Committees to assist in important matters. The Sub-Committees consist of the Executive Management Committee and the Audit Committee.

The Executive Management Committee is composed of 7 members who are knowledgeable, capable, ethical and experienced in diverse fields. Duties and responsibility of the Executive Management Committee are contained in the section “Management”.

The Audit Committee consists of 3 Independent Directors. Members’ qualifications meet the requirements stipulated in relevant SEC and SET announcements. The Committee is assigned to perform checks on management and secure the balance of power in various business activities to ensure reliability and integrity, and serving the best interests of all stakeholders at all times. Duties and responsibilities of the Audit Committee are contained in the section “Management”.

### 3. Roles, Duties and Responsibilities of the Board

**(1) Good Corporate Governance and the Code of Business Conduct.** The Board of Directors values good corporate governance and maintains high standards of integrity and ethics. All Directors have responsibilities in carrying out their duties and are held accountable to the Company and its stakeholders. They perform their duties with integrity, in compliance with the governing laws and regulations of the Company, and based on professional standards. The Company conducts business in a transparent, honest and fair manner for the interests of all groups of stakeholders.

The Company also issued a Code of Business Conduct for its Board, Management, staff and all employees. These principles are strictly followed, together with the Company's rules and regulations, as detailed in Section 3: Stakeholder Roles.

**(2) Conflict of Interest:** The Board has a clear policy to execute transactions, which have potential conflicts of interest in a manner that is in the best interests of the Company and its shareholders. Transactions between the Company (and its subsidiaries) and anyone, with which a possible conflict of interest might occur, require approval under the rules and regulations imposed by the SEC and the SET concerning information disclosure. In addition, such transactions are subject to an approval process in which only unconnected persons may participate.

Details of connected transactions that may involve conflicts of interest (according to criteria of the SET and the SEC) must be disclosed in the Company's Annual Report; in the Annual Report form (Form 56-1) or declared in other reports. This also includes disclosure of information on connected transactions according to the general accepted accounting standard criteria. Details of connected transactions are disclosed in the section "Inter-Company Transactions".

In addition, pursuant to the Articles of Association, Directors shall notify the Company without delay of their interests in any contract executed with the Company or affiliated companies, and of their holding, and its increase or decrease, of shares or debentures of the Company.

**(3) Internal Control and Internal Audit:** The Board employs an appropriate, and effective, internal control system to ensure Management prevents and mitigates business risks, and produces accurate and reliable financial statements.

To protect the assets of the Company and shareholders' investments from potential loss, an internal audit unit has been set up as a separate division, responsible for auditing and monitoring the Company's operations for efficiency and effectiveness under a sufficient and appropriate internal audit system. The internal audit unit is independent and able to report its resultant audit openly. This allows management to be notified of problems and irregularities in a timely manner and to be able to establish measures to safeguard the Company's assets and shareholders' investments against fraud in the Company or its subsidiaries. This can also be applied to improve and develop the efficiency and effectiveness of the Company's operations.

In addition, an Audit Committee has been appointed to review and evaluate internal control systems, to examine disclosure and assessment of all relevant information for investors, and to ensure that the Company performs in compliance with regulations and governing laws.

At the Board of Directors' meeting no. 1/2019 held on January 31, 2019, attended by the Audit Committee and the Independent Directors, the Board evaluated five aspects of the sufficiency of the internal control systems of the Company and its subsidiaries. These were: the organization and environmental control system; the risk management system; Management control system; the information and communication system; and the monitoring system.

The resultant assessment showed that the internal control systems of the Company and its subsidiaries operated appropriately and sufficiently in all five aspects, thus mitigating business and operational risks and allowing the Company to manage its operations effectively and efficiently.

In addition, the Company and its subsidiaries have policies and measures in place to regulate business transactions with major shareholders, Directors and Management or connected persons so as to avoid conflicts of interest, in order to pursue the best interests of all parties concerned. (See details in the Audit Committee Report)

**(4) Meetings of the Board:** The Company arranges regular meetings of the Board at least once a month, and may hold special meetings as deemed appropriate, to continuously supervise management operations. The time allowed for each meeting is sufficient for the Board to consider all related matters. The Chairman and the Chief Executive Officer jointly establish and approve meeting agendas to ensure that all material issues are fully considered by the Board. Each Director may independently propose agenda items and freely expresses opinions. At meetings, Directors are encouraged to use discretion to consider all raised issues.

The Company convenes each meeting in compliance with the provisions of the Public Company Act. The minutes of each meeting are properly documented, are certified by the Board, and are systematically filed under tight security. In 2018, the Board of Directors and the Audit Committee convened meetings a total of 13 times and 5 times, respectively, with attendance as detailed below:

Name	Position	Number of Meeting Attendance	
		The Board of Directors	The Audit Committee
		13 Times / 2018	5 Times / 2018
1. Mr. Visith Noiphan <sup>1/</sup>	Chairman and Independent Director	2/13	-
2. Mr. Prachai Leophairatana	Director	12/13	-
3. Mr. Prateep Leopairut	Director	13/13	-
4. Dr. Pramuan Leophairatana	Director	13/13	-
5. Dr. Narasri Vaivanijkul <sup>2/</sup>	Independent Director and Audit Committee	7/10	3/5
6. Miss Malinee Leophairatana	Director	13/13	-
7. Dr. Chavin Iamsopana	Director	13/13	-
8. Mr. Prayad Liewphairatana	Director	11/13	-
9. Mrs. Orapin Leophairatana	Director	13/13	-
10. Mr. Manas Sooksmarn	Independent Director and Audit Committee	13/13	5/5
11. Mr. Pises Iamsakulrat	Independent Director and Audit Committee	10/12	3/5
12. Mr. Thavich Taychanavakul	Independent Director and Audit Committee	13/13	2/5
13. Mr. Tayuth Sriyuksiri	Director	11/13	-
14. Mr. Khantachai Vichakkana <sup>3/</sup>	Chairman and Independent Director	13/13	-
15. Mr. Chulasingh Vasantasingh	Independent Director	12/13	-
16. Mr. Supoj Singsaneï	Chairman of the Audit Committee and Independent Director	8/13	3/5

Remarks: 1/ Mr. Visith Noiphan, Director of the Company, resigned from the position of Chairman of the Board and Independent Director of the Company on June 25, 2018

2/ Dr. Narasri Vaivanijkul, Director of the Company resigned from the position of Chairman of the Audit Committee on June 25, 2018 and resigned from the position of Chairman of Director, Independent Director and the Audit Committee of the Company on August 30, 2018.

3/ At the Company's Board of Directors' meeting on June 25, 2018, it passed a resolution to approve an appointment of Mr. Khantachai Vichakkhana to be in the position of Chairman of the Board.

4/ Mr. Supoj Singsaneï has been in the position of Independent Director and the Audit Committee of the Company on April 25, 2018 and it was approved at the Company's Board of Directors' meeting on June 25, 2018 to be in the position of Chairman of the Audit Committee.

#### 4. Remuneration of Directors and Management

The Company rewards its Directors fairly and reasonably, taking into account directors' responsibilities and the Company's operating results. Directors' remuneration has been approved at the shareholders meeting.

The Company fairly remunerates its Management, taking into account their responsibilities, performance, the operating results of the Company, and comparability within the same field of business. Details of remuneration are disclosed in the section "Management".

#### 5. Training of Directors and the Executive

The Company continuously builds the corporate governance knowledge of its Directors and Management so they may carry out their business operations in compliance with good corporate governance principles. The Company supports all Directors to participate in training courses organized by the Thai Institute of Directors Association ("IOD"), so as to add to their knowledge concerning their roles in the Company, and apply such learning to their job performance.



## Report of the Board of Directors' Responsibilities for Financial Statements

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The Board of Directors of the Company are aware of their duties and responsibilities to ensure that the financial reports of the Company and its subsidiaries are accurate, complete, and transparent, and are prepared in compliance with generally accepted accounting principles, and reflect the application of an appropriate and consistent accounting policy. Such reports must be prepared prudently and on a reasonable basis, and must reflect the Company's financial position and operational performance fairly and precisely for the benefit of shareholders and general investors.

In this regard, the Board of Directors have entrusted an Independent Audit Committee to be responsible for the review of accounting policy and financial reports, internal controls, internal audit and risk management systems. Comments on these issues have been included in the Audit Committee Report, which thereby forms a part of this Annual Report.

The Board of Directors are of the opinion that the overall internal control systems of the Company and its subsidiaries have functioned satisfactorily and credibly to ensure that the financial statements of the Company and its subsidiaries present financial positions, operational results and financial cash flow which are accurate and reliable in all material aspects.

Sincerely Yours,



**Mr. Khantchai Vichakkana**  
Chairman of the Board



**Mr. Prachai Leopairatana**  
Chief Executive Officer

# Independent Auditor's Report

## To the Shareholders of TPI Polene Public Company Limited

### **Opinion**

I have audited the consolidated and separate financial statements of TPI Polene Public Company Limited and its subsidiaries (the "Group") and of TPI Polene Public Company Limited (the "Company"), respectively, which comprise the consolidated and separate statements of financial position as at 31 December 2018, and the consolidated and separate statements of 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 2018 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 requirements of 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 judgment, 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.

<b>Valuation of inventory</b>	
Refer to Note 3 and 8 to the financial statements.	
<b>The key audit matter</b>	<b>How the matter was addressed in the audit</b>
Inventory is a significant balance. There is slow moving in some type of inventory. There is a risk arising from the degree of judgment involved in assessing the net realisable value which is based on assumptions concerning future events and activities.  Due to the high level of management's judgment and the significant carrying amounts involved, this is one of the key judgmental areas that my audit is concentrated on.	My audit procedures in this area included, among others: <ul style="list-style-type: none"><li>• understanding the Group's business plan and process on estimate the net realisable value derived from business plan;</li><li>• considering the management's significant assumptions used in their assessment of the net realisable value of inventory, which included comparing them to internally and externally derived data; and</li><li>• evaluating the adequacy disclosure in accordance with the related Thai Financial Reporting Standards.</li></ul>

<b><i>Impairment assessment of property, plant and equipment in consolidated financial statements and loan to and investment in subsidiaries in separate financial statements</i></b>	
Refer to Note 4, 10 and 13 to financial statements.	
<b>The key audit matter</b>	<b>How the matter was addressed in the audit</b>
<p>The continuous loss in operation of two subsidiaries; TPI Polene Bio Organics Co.,Ltd. and TPI All Seasons Co., Ltd. indicated that property, plant and equipment and loan to and investment in subsidiaries may be impaired.</p> <p>Since the consideration of impairment of assets depend on the management's judgments and assumptions in respect to the forecast of operating results, discount rate and key assumptions used to estimate the recoverable amount of aforementioned business, this is one of the key judgmental areas that my audit is concentrated on.</p>	<p>My audit procedures in this area included, among others:</p> <ul style="list-style-type: none"> <li>• understanding the management's process of identifying impairment indicator and impairment testing and estimate recoverable amount;</li> <li>• evaluating key assumptions used in discounted future cash flows such as growth rate, future outcomes and considering the reasonableness of forecasts by comparing historical estimation with the actual results as well as assessing the appropriateness of discount rate used; and</li> <li>• evaluating the adequacy of disclosure in accordance with the related Thai Financial Reporting Standards.</li> </ul>

<b><i>Valuation of Exploration assets</i></b>	
Refer to Note 3 and 13 to the consolidated and separate financial statements.	
<b>The key audit matter</b>	<b>How the matter was addressed in the audit</b>
<p>A subsidiary, TPI Refinery (1997) Co., Ltd., recognises all costs associated with the exploration as exploration assets and will be charged to profit or loss in the period when there is no discovery of proved reserves or no discovery of commercially adequate reserves and no future exploration and assessment plan.</p> <p>Due to the future exploration and assessment plan including the operation as planned, high level of management's judgments involved. This is one of the key judgmental areas that my audit is concentrated on.</p>	<p>My audit procedures in this area included, among others:</p> <ul style="list-style-type: none"> <li>• understanding the preparation of management's future exploration plan;</li> <li>• considering the management-approved future exploration plans;</li> <li>• evaluating the assumptions used in management's valuation of exploration assets by comparing with the petroleum estimates, and budget;.</li> <li>• evaluating the adequacy of disclosure in accordance with the related Thai Financial Reporting Standards.</li> </ul>

<b><i>Recognition of deferred tax assets</i></b>	
Refer to Note 3 and 15 to the consolidated and separate financial statements.	
<b>The key audit matter</b>	<b>How the matter was addressed in the audit</b>
<p>The Group has recognised deferred tax assets for unused tax losses that it believes are recoverable.</p> <p>The recoverability of recognised deferred tax assets is in part dependent on the Group's ability to generate future taxable profits sufficient to utilise tax losses (before the latter expire).</p> <p>Due to the inherent uncertainty in forecasting the amount and timing of future taxable profits, this is one of the key judgmental areas that my audit is concentrated on.</p>	<p>My audit procedures in this area included, among others:</p> <ul style="list-style-type: none"> <li>• understanding the method of the management's recognition of deferred tax assets and the assessment of assumptions used in projecting the Group's future taxable profits;</li> <li>• considering the reasonableness of the forecast of future taxable profits by comparing the past forecast to the actual operating results and the operation plans and evaluating assumption used by management by comparing to operation plan and external information; and</li> <li>• evaluating the adequacy of disclosure in accordance with the related Thai Financial Reporting Standards.</li> </ul>

### ***Emphasis of Matter***

I draw attention to note 37 (1) to the financial statements, the uncertainty related to the outcome of lawsuit in relation to its operation of mining which is under consideration of the Court. My opinion is not modified in respect of this matter.

### ***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 judgment 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.



(Bunyarit Thanormcharoen)  
 Certified Public Accountant  
 Registration No. 7900

KPMG Phoomchai Audit Ltd.  
 Bangkok  
 28 February 2019



# Statement of financial position

## TPI Polene Public Company Limited and its Subsidiaries

(in thousand Baht)

		Consolidated		Separate	
		financial statements		financial statements	
Assets		31 December	31 December	31 December	31 December
	Note	2018	2017	2018	2017
<b>Current assets</b>					
Cash and cash equivalents	5	4,366,560	2,918,980	2,178,247	1,910,795
Current investments	6	4,260,652	3,790,167	300,000	15,604
Trade accounts receivable	4, 7	4,305,569	3,076,868	3,939,913	2,694,550
Other receivables		728,549	680,018	499,845	493,693
Short-term loans to related parties	4	-	-	268,801	274,576
Receivables and advances to related parties	4	60,833	57,927	238,262	147,064
Inventories	8	14,333,910	13,133,460	12,292,063	11,083,311
Other current assets		335,076	537,138	147,952	126,780
<b>Total current assets</b>		<b>28,391,149</b>	<b>24,194,558</b>	<b>19,865,083</b>	<b>16,746,373</b>
<b>Non-current assets</b>					
Investments in associates	9	772,197	745,865	229,500	229,500
Investments in subsidiaries	10	-	-	12,444,474	12,640,946
Long-term investments in related parties	11	45,870	45,870	45,870	45,870
Other long-term investments	6	62,090	36,153	35,440	19,053
Receivables and advances to related parties	4	-	-	421,984	421,984
Investment properties	12	373,688	374,688	74,044	74,044
Property, plant and equipment	13	79,455,918	76,551,024	50,060,551	50,338,019
Leasehold rights		113	383	-	-
Intangible assets	14	176,170	216,928	176,170	216,928
Advances payment for plant and equipment		460,569	267,435	299,215	109,311
Deferred tax assets	15	492,072	484,568	347,845	329,182
Other non-current assets	4	258,088	260,163	196,176	208,786
<b>Total non-current assets</b>		<b>82,096,775</b>	<b>78,983,077</b>	<b>64,331,269</b>	<b>64,633,623</b>
<b>Total assets</b>		<b>110,487,924</b>	<b>103,177,635</b>	<b>84,196,352</b>	<b>81,379,996</b>

The accompanying notes are an integral part of these financial statements.

# Statement of financial position

## TPI Polene Public Company Limited and its Subsidiaries

(in thousand Baht)

	Note	Consolidated financial statements		Separate financial statements	
		31 December 2018	31 December 2017	31 December 2018	31 December 2017
<b>Liabilities and equity</b>					
<b>Current liabilities</b>					
Bank overdrafts and short-term loans					
from financial institutions	16	2,643,969	2,178,403	1,685,614	1,844,119
Trade accounts payable	4, 17	3,001,798	2,818,257	2,910,219	2,796,225
Other payables	18	3,674,161	5,068,971	1,774,191	1,886,935
Short-term loans from related parties	4	-	-	44,217	375,627
Payables and advances from related parties	4	19,596	24,032	264,086	109,873
Current portion of long-term loans from					
financial institutions	16	1,576,515	751,049	1,576,515	751,049
Current portion of debentures	16	7,750,000	5,000,000	7,750,000	5,000,000
Interest payable		268,321	232,226	253,363	232,031
Current portion of finance lease liabilities	16	775	2,378	775	2,378
Income tax payable		84,847	44,623	-	-
Other current liabilities		200,298	96,997	69,704	32,064
<b>Total current liabilities</b>		<b>19,220,280</b>	<b>16,216,936</b>	<b>16,328,684</b>	<b>13,030,301</b>
<b>Non-current liabilities</b>					
Long-term loans from financial institutions	16	6,235,392	5,039,377	6,235,392	5,039,377
Debentures	16	32,250,000	28,000,000	28,250,000	28,000,000
Finance lease liabilities	16	-	775	-	775
Deferred tax liabilities	15	69,232	76,202	-	-
Non-current provisions for employee benefit	19	1,541,170	1,443,775	1,298,077	1,228,884
Other non-current liabilities		235,261	314,436	168,531	307,453
<b>Total non-current liabilities</b>		<b>40,331,055</b>	<b>34,874,565</b>	<b>35,952,000</b>	<b>34,576,489</b>
<b>Total liabilities</b>		<b>59,551,335</b>	<b>51,091,501</b>	<b>52,280,684</b>	<b>47,606,790</b>

The accompanying notes are an integral part of these financial statements.

# Statement of financial position

## TPI Polene Public Company Limited and its Subsidiaries

(in thousand Baht)

		Consolidated		Separate	
		financial statements		financial statements	
Liabilities and equity	Note	31 December 2018	31 December 2017	31 December 2018	31 December 2017
<b>Equity</b>					
Share capital:	20				
Authorised share capital		24,815,000	24,815,000	24,815,000	24,815,000
Issued and paid-up share capital		20,190,000	20,190,000	20,190,000	20,190,000
Treasury shares held by subsidiaries	21	-	(359,235)	-	-
Treasury shares	21	(1,682,625)	-	(1,682,625)	-
Additional paid in capital:					
Share premium on ordinary shares		60,600	60,600	60,600	60,600
Share premium on treasury shares	21	35,218	-	-	-
Other surpluses (deficits)		9,840,436	9,840,436	-	-
Retained earnings					
Appropriated					
Legal reserve	22	836,921	824,300	836,921	824,300
Treasury shares reserve	22	1,682,625	-	1,682,625	-
Unappropriated		12,409,100	14,212,355	10,828,299	12,698,394
Other components of equity		109,437	114,160	(152)	(88)
<b>Equity attributable to owners of the parent</b>		<b>43,481,712</b>	<b>44,882,616</b>	<b>31,915,668</b>	<b>33,773,206</b>
Non-controlling interests		7,454,877	7,203,518	-	-
<b>Total equity</b>		<b>50,936,589</b>	<b>52,086,134</b>	<b>31,915,668</b>	<b>33,773,206</b>
<b>Total liabilities and equity</b>		<b>110,487,924</b>	<b>103,177,635</b>	<b>84,196,352</b>	<b>81,379,996</b>

The accompanying notes are an integral part of these financial statements.

# Statement of comprehensive income

TPI Polene Public Company Limited and its Subsidiaries

(in thousand Baht)

		Consolidated financial statements		Separate financial statements	
		Year ended 31 December		Year ended 31 December	
	Note	2018	2017	2018	2017
<b>Income</b>	4, 23				
Revenue from sale of goods	32	34,993,161	29,088,352	25,764,300	21,602,243
Transportation income		1,284,354	1,254,582	1,270,873	1,230,148
Net foreign exchange gain		382,189	162,604	243,624	-
Investment income	24	81,197	107,384	2,616,797	3,373,822
Other income	25	573,739	382,802	674,724	454,469
<b>Total income</b>		<b>37,314,640</b>	<b>30,995,724</b>	<b>30,570,318</b>	<b>26,660,682</b>
<b>Expenses</b>	4, 29				
Cost of sales of goods	8	28,018,397	24,495,256	23,583,580	20,258,769
Cost of distributions and transportations	26	4,167,612	4,032,725	3,665,993	3,556,724
Administrative expenses	27	1,797,180	1,777,383	1,399,584	1,532,146
Net foreign exchange loss		-	-	-	49,113
Finance costs	30	1,719,358	1,647,192	1,681,534	1,640,105
<b>Total expenses</b>		<b>35,702,547</b>	<b>31,952,556</b>	<b>30,330,691</b>	<b>27,036,857</b>
Share of profit of associates	9	31,090	19,742	-	-
<b>Profit (loss) before income tax expense</b>		<b>1,643,183</b>	<b>(937,090)</b>	<b>239,627</b>	<b>(376,175)</b>
Tax (expense) income	31	(218,509)	240,723	12,783	282,133
<b>Profit (loss) for the year</b>		<b>1,424,674</b>	<b>(696,367)</b>	<b>252,410</b>	<b>(94,042)</b>
<b>Other comprehensive income (expense)</b>					
<b>Items that will be reclassified subsequently to profit or loss</b>					
Exchange differences on translating foreign operations		92	-	-	-
Gains (losses) on remeasuring available-for-sale investments		(72)	148	(80)	137
Share of other comprehensive income (loss) of associates	9	(4,758)	3,628	-	-
Income tax relating to items that will be reclassified	15, 31	16	(27)	16	(27)
<b>Total items that will be reclassified subsequently to profit or loss</b>		<b>(4,722)</b>	<b>3,749</b>	<b>(64)</b>	<b>110</b>

The accompanying notes are an integral part of these financial statements.

# Statement of comprehensive income

## TPI Polene Public Company Limited and its Subsidiaries

(in thousand Baht)

		Consolidated financial statements		Separate financial statements	
		Year ended 31 December		Year ended 31 December	
	Note	2018	2017	2018	2017
<b>Items that will not be reclassified to profit or loss</b>					
Gains (losses) on remeasurements of					
defined benefit plans	19	(40,542)	2,371	(29,323)	(3,795)
Income tax relating to items that					
will not be reclassified	15, 31	8,109	(424)	5,864	759
<b>Total items that will not be reclassified to profit or loss</b>		<b>(32,433)</b>	<b>1,947</b>	<b>(23,459)</b>	<b>(3,036)</b>
<b>Other comprehensive income (expense) for the year, net of tax</b>		<b>(37,155)</b>	<b>5,696</b>	<b>(23,523)</b>	<b>(2,926)</b>
<b>Total comprehensive income (expense) for the year</b>		<b>1,387,519</b>	<b>(690,671)</b>	<b>228,887</b>	<b>(96,968)</b>
<b>Profit (loss) attributable to:</b>					
Owners of the parent		323,781	(1,259,738)	252,410	(94,042)
Non-controlling interests		1,100,893	563,371	-	-
<b>Profit (loss) for the year</b>		<b>1,424,674</b>	<b>(696,367)</b>	<b>252,410</b>	<b>(94,042)</b>
<b>Total comprehensive income (expense) attributable to:</b>					
Owners of the parent		286,625	(1,254,043)	228,887	(96,968)
Non-controlling interests		1,100,894	563,372	-	-
<b>Total comprehensive income (expense) for the year</b>		<b>1,387,519</b>	<b>(690,671)</b>	<b>228,887</b>	<b>(96,968)</b>
<b>Basic earnings (loss) per share (in Baht)</b>	33	<b>0.016</b>	<b>(0.063)</b>	<b>0.013</b>	<b>(0.005)</b>

The accompanying notes are an integral part of these financial statements.



# Statement of change in equity

## TPI Polene Public Company Limited and its Subsidiaries

Consolidated financial statements										(in thousand Baht)		
Note	Other surpluses (deficits)		Retained earnings			Other components of equity			Equity attributable to owners of the Company	Non-controlling interests	Total equity	
	Issued and paid-up share capital	Treasury shares held by subsidiaries	Share premium	Shareholding changes in Group	Legal reserve	Unappropriated	Fair value changes in available-for-sale investments	Share of other comprehensive income (loss) of associates				Total other components of equity
Year ended 31 December 2017												
Balance at 1 January 2017												
	20,190,000	(399,235)	60,600	52,943	824,300	15,869,510	(70)	110,482	110,412	36,748,530	5,998	36,754,528
Transactions with owners, recorded directly in equity												
Distributions to owners of the parent												
34	-	-	-	-	-	(399,364)	-	-	-	(399,364)	(649,646)	(1,049,012)
Total distributions to owners of the parent												
	-	-	-	-	-	(399,364)	-	-	-	(399,364)	(649,646)	(1,049,012)
Changes in ownership interests in subsidiaries												
10	-	-	-	9,787,493	-	-	-	-	-	9,787,493	7,283,796	17,071,289
Acquisition of non-controlling interests without a change												
	-	-	-	9,787,493	-	-	-	-	-	9,787,493	7,283,796	17,071,289
Total changes in ownership interests in subsidiaries												
	-	-	-	9,787,493	-	(399,364)	-	-	-	9,388,129	6,634,148	16,022,277
Total transaction with owners, recorded directly in equity												
Comprehensive income (expense) for the year												
	-	-	-	-	-	(1,259,739)	-	-	-	(1,259,738)	563,371	(696,367)
	-	-	-	-	-	1,947	120	3,628	3,748	5,695	1	5,696
Total comprehensive income (expense) for the year												
	-	-	-	-	-	(1,257,791)	120	3,628	3,748	(1,254,043)	563,372	(690,671)
Balance at 31 December 2017												
	20,190,000	(399,235)	60,600	9,840,486	824,300	14,212,355	50	114,110	114,160	44,882,616	7,203,518	52,086,134

The accompanying notes are an integral part of these financial statements.

# Statement of change in equity

## TPI Polene Public Company Limited and its Subsidiaries

### Consolidated financial statements

(in thousand Baht)

Other surpluses (deficits)													(in thousand Bahá)			
Note	Retained earnings						Other components of equity				Equity attributable to owners of the Company	Non-controlling interests	Total equity			
	Issued and paid-up share capital	Treasury shares held by subsidiaries	Treasury shares	Share premium on ordinary share	Share premium on treasury shares	Shareholding changes in Group	Legal reserve	Treasury shares reserve	Unappropriated	Translating foreign operations				Fair value changes in available-for-sale investments	Share of other comprehensive income (loss) of associates	Total other components of equity
Year ended 31 December 2018																
Balance at 1 January 2018																
	20,190,000	(359,235)	-	60,600	-	9,840,436	824,300	-	14,212,355	-	50	114,110	114,160	44,882,616	7,203,518	52,086,134
Transactions with owners, recorded directly in equity																
Contributions by and distributions to owners of the parent																
21	-	359,235	(1,682,625)	-	-	35,218	-	1,682,625	(1,682,625)	-	-	-	-	(1,288,172)	-	(1,288,172)
34	-	-	-	-	-	-	-	-	(399,357)	-	-	-	-	(399,357)	(849,535)	(1,248,892)
Total transaction with owners, recorded directly in equity																
	-	359,235	(1,682,625)	-	-	35,218	-	1,682,625	(2,081,982)	-	-	-	-	(1,687,529)	(849,535)	(2,537,064)
Comprehensive income (expense) for the year																
Profit (loss)	-	-	-	-	-	-	-	-	323,781	-	-	-	-	323,781	1,100,893	1,424,674
Other comprehensive income (expense)	-	-	-	-	-	-	-	-	(32,433)	92	(57)	(4,758)	(4,723)	(37,156)	1	(37,155)
Total comprehensive income (expense) for the year																
	-	-	-	-	-	-	-	-	291,348	92	(57)	(4,758)	(4,723)	286,625	1,100,894	1,387,519
Transfer to legal reserve																
22	-	-	-	-	-	-	-	12,621	(12,621)	-	-	-	-	-	-	-
Balance at 31 December 2018																
	20,190,000	-	(1,682,625)	60,600	35,218	9,840,436	836,921	1,682,625	12,409,100	92	(7)	108,352	109,437	43,481,712	7,454,877	50,936,589

The accompanying notes are an integral part of these financial statements.

# Statement of change in equity

## TPI Polene Public Company Limited and its Subsidiaries

Separate financial statements							(in thousand Baht)
	Note	Retained earnings			Other components of equity		
		Issued and paid-up share capital	Share premium	Legal reserve	Unappropriated	Fair value changes in available-for-sale investments	
Year ended 31 December 2017							
Balance at 1 January 2017		20,190,000	60,600	824,300	13,199,272	(198)	
Transaction with owners, recorded directly in equity							
<i>Distributions to owners of the parent</i>							
Dividends	34	-	-	-	(403,800)	-	
Total transaction with owners, recorded directly in equity		-	-	-	(403,800)	-	
Comprehensive income (expense) for the year							
Loss		-	-	-	(94,042)	-	
Other comprehensive income (expense)		-	-	-	(3,036)	110	
Total comprehensive income (expense) for the year		-	-	-	(97,078)	110	
Balance at 31 December 2017		20,190,000	60,600	824,300	12,698,394	(88)	
						33,773,206	

The accompanying notes are an integral part of these financial statements.

# Statement of change in equity

## TPI Polene Public Company Limited and its Subsidiaries

Separate financial statements							(in thousand Baht)		
	Note	Issued and paid-up share capital	Treasury Share	Share premium	Retained earnings		Other components of equity		
					Legal reserve	Treasury Shares reserve		Unappropriated	Fair value changes in available-for-sale investments
Year ended 31 December 2018									
Balance at 1 January 2018		20,190,000	-	60,600	824,300	-	12,698,394	(88)	33,773,206
Transaction with owners, recorded directly in equity									
Distributions to owners of the Company									
Treasury shares purchased	21	-	(1,682,625)	-	-	1,682,625	(1,682,625)	-	(1,682,625)
Dividends	34	-	-	-	-	-	(403,800)	-	(403,800)
Total transaction with owners, recorded directly in equity		-	(1,682,625)	-	-	1,682,625	(2,086,425)	-	(2,086,425)
Comprehensive income (expense) for the year									
Profit (loss)		-	-	-	-	-	252,410	-	252,410
Other comprehensive income (expense)		-	-	-	-	-	(23,459)	(64)	(23,523)
Total comprehensive income (expense) for the year		-	-	-	-	-	228,951	(64)	228,887
Transfer to treasury shares reserve									
	22	-	-	-	12,621	-	(12,621)	-	-
Balance at 31 December 2018		20,190,000	(1,682,625)	60,600	836,921	1,682,625	10,828,299	(152)	31,915,668

The accompanying notes are an integral part of these financial statements.

# Statement of cash flows

## TPI Polene Public Company Limited and its Subsidiaries

(in thousand Baht)

	<b>Consolidated</b>		<b>Separate</b>	
	<b>financial statements</b>		<b>financial statements</b>	
	Year ended 31 December		Year ended 31 December	
	2018	2017	2018	2017
<b><i>Cash flows from operating activities</i></b>				
Profit (loss) for the year	1,424,674	(696,367)	252,410	(94,042)
<i>Adjustments to reconcile profit (loss) to cash receipts (payments)</i>				
Depreciation and amortisation	2,785,513	2,621,157	1,972,122	1,932,488
Interest income	(78,055)	(99,149)	(41,324)	(99,821)
Finance costs	1,719,358	1,647,192	1,681,534	1,640,105
Dividend income	(24)	(14)	(2,556,975)	(3,257,169)
Unrealised (gain) loss on foreign exchange	(244,400)	(70,948)	(228,811)	91,467
(Reversal of) bad and doubtful debt expense	(31,378)	13,538	(24,873)	24,898
Losses on decline in value of inventories	176,165	123,984	90,147	31,393
Provision for employees benefits	83,955	88,462	66,693	65,898
(Reversal of) provision for decommissioning	(134,035)	9,674	(138,922)	5,953
(Gain) loss on sale and write-off of plant and equipment	19,145	(8,701)	31,531	13,982
Impairment loss on investments in subsidiary	-	-	208,000	180,000
Reversal of loss on impairment of investment properties	-	(557)	-	-
Reversal of loss on impairment of assets under construction and installation	-	(2,154)	-	-
Share of profit of associates	(31,090)	(19,742)	-	-
Tax expense (income)	218,509	(240,723)	(12,783)	(282,133)
	5,908,337	3,365,652	1,298,749	253,019

The accompanying notes are an integral part of these financial statements.



# Statement of cash flows

## TPI Polene Public Company Limited and its Subsidiaries

(in thousand Baht)

	Consolidated financial statements		Separate financial statements	
	Year ended 31 December		Year ended 31 December	
	2018	2017	2018	2017
<i>Changes in operating assets and liabilities</i>				
Trade accounts receivable	(1,210,526)	(82,591)	(1,220,440)	(599,550)
Other receivables	(63,961)	(64,539)	(7,262)	24,272
Receivable and advances to related parties	(2,906)	(3,706)	(91,198)	71,982
Inventories	(1,376,615)	(1,533,369)	(1,298,899)	(1,330,919)
Other current assets	222,857	95,679	(4,570)	6,959
Other non-current assets	2,075	17,727	12,610	17,624
Trade accounts payable	187,533	603,006	113,994	201,220
Other payables	165,863	(282,608)	53,646	(205,825)
Payable and advances from related parties	(4,436)	(4,481)	154,213	14,683
Other current liabilities	103,301	(52,788)	37,640	(59,994)
Provision for employee benefit	(27,102)	(16,240)	(26,823)	(14,325)
Other non-current liabilities	57,249	3,352	-	(396)
Cash generated from (used in) operating activities	3,961,669	2,045,094	(978,340)	(1,621,250)
Income tax paid	(199,762)	(90,009)	(16,602)	(14,152)
<b>Net cash from (used in) operating activities</b>	<b>3,761,907</b>	<b>1,955,085</b>	<b>(994,942)</b>	<b>(1,635,402)</b>
<i>Cash flows from investing activities</i>				
Interest received	93,596	90,679	42,497	99,639
Dividend received	24	14	2,556,975	3,257,169
(Increase) decrease in current investment	(470,485)	(3,714,498)	(284,396)	2,065
Acquisition of property, plant and equipment	(6,663,019)	(6,458,077)	(1,430,062)	(2,147,717)
Acquisition of intangible assets	(500)	(12,031)	(500)	(12,031)
Proceeds from sale of plant and equipment	55,076	105,441	31,341	2,169
Advance payment for plant and equipment	(745,060)	(1,065,934)	(579,466)	(212,357)
Loans to related parties	-	-	(26,800)	(3,065,206)
Proceeds from repayment of loans to related parties	-	-	32,489	7,434,401
Acquisition of other long-term investments	(26,220)	-	(16,494)	-
Net cash inflow on disposal of other long-term investments	100	58	-	-
Net cash outflow on acquisition of subsidiaries	-	-	(11,528)	(3,600)
Net cash inflow on disposal of treasury shares held by subsidiaries	388,786	-	-	-
Cash outflow for decommissioning	(1,598)	(941)	-	-
Currency translation differences	92	-	-	-
<b>Net cash from (used in) investing activities</b>	<b>(7,369,208)</b>	<b>(11,055,289)</b>	<b>314,056</b>	<b>5,354,532</b>

The accompanying notes are an integral part of these financial statements.

# Statement of cash flows

## TPI Polene Public Company Limited and its Subsidiaries

(in thousand Baht)

	<b>Consolidated financial statements</b>		<b>Separate financial statements</b>	
	Year ended 31 December		Year ended 31 December	
	2018	2017	2018	2017
<b><i>Cash flows from financing activities</i></b>				
Finance cost paid	(1,741,568)	(1,732,660)	(1,718,790)	(1,691,998)
Dividend paid	(1,248,892)	(1,049,012)	(403,800)	(403,800)
Finance lease payments	(2,378)	(87,461)	(2,378)	(40,136)
Increase (decrease) in bank overdrafts and short-term loans				
from financial institutions	473,303	(3,431,235)	(158,505)	(2,873,947)
Proceeds from short-term loans from related parties	-	-	-	733,000
Repayment of short-term loans from related parties	-	-	(331,127)	(358,000)
Proceeds from long-term loans from financial institutions	3,000,000	-	3,000,000	-
Repayment of long-term loans from financial institutions	(751,049)	(3,238,113)	(751,049)	(741,485)
Proceeds from issue of debentures	12,000,000	4,000,000	8,000,000	4,000,000
Repayment of debentures	(5,000,000)	(3,000,000)	(5,000,000)	(3,000,000)
Proceeds from issue of ordinary shares of subsidiary	-	17,490,403	-	-
Payment of treasury shares	(1,682,625)	-	(1,682,625)	-
Transaction cost from issue of shares of subsidiary	-	(419,114)	-	-
<b>Net cash from (used in) financing activities</b>	<b>5,046,791</b>	<b>8,532,808</b>	<b>951,726</b>	<b>(4,376,366)</b>
Net increase (decrease) in cash and cash equivalents,				
before effect of exchange rates	1,439,490	(567,396)	270,840	(657,236)
Effect of exchange rate changes on				
cash and cash equivalents	8,090	20,781	(3,388)	15,758
<b>Net increase (decrease) in cash and cash equivalents</b>	<b>1,447,580</b>	<b>(546,615)</b>	<b>267,452</b>	<b>(641,478)</b>
Cash and cash equivalents at 1 January	2,918,980	3,465,595	1,910,795	2,552,273
<b>Cash and cash equivalents at 31 December</b>	<b>4,366,560</b>	<b>2,918,980</b>	<b>2,178,247</b>	<b>1,910,795</b>
<b>Supplemental disclosure of cash flows information</b>				
Other payables - plant and equipment	1,504,260	3,068,186	72,565	238,955

The accompanying notes are an integral part of these financial statements.

# Notes to the financial statements

## TPI Polene Public Company Limited and its Subsidiaries

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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 authorised for issue by the audit committee, as appointed by the Board of Directors of the Company, on 28 February 2019.

## 1 General information

TPI Polene Public Company Limited, the “Company”, is incorporated in Thailand and has its registered office at 26/56, TPI Tower, Chan Tat Mai Road, Tungmahamek, Sathorn, Bangkok.

The Company was listed on the Stock Exchange of Thailand in November 1990.

The Company operates in 3 major industries and has 18 distribution terminals around the country. It operates in the cement industry at Kang-Khoi, Saraburi and has 8 plants consisting of 4 cement manufacturing plants and 4 dry mortar manufacturing plants. It operates in the construction materials industry at AmphurChalermprakiet, Saraburi and has cement roof tiles and fibre cement board manufacturing plants. It operates in the plastic industry at AmphurMuang, Rayong and has 2 LDPE and EVA plastic manufacturing plants. Details of the Company’s subsidiaries as at 31 December 2018 and 2017 are given in note 10.

## 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 (“FAP”); and applicable rules and regulations of the Thai Securities and Exchange Commission.

The FAP has issued new and revised TFRS effective for annual accounting periods beginning on or after 1 January 2018. The initial application of these new and revised TFRS has resulted in changes in certain of the Group’s accounting policies. These changes have no material effect on the financial statements.

In addition to the above new and revised TFRS, the FAP has issued a number of new and revised TFRS which are not yet effective for current periods. The Group has not early adopted these standards in preparing these financial statements. Those new and revised TFRS that are relevant to the Group’s operations are disclosed in note 39.

### (b) Basis of measurement

The financial statements have been prepared on the historical cost basis except as stated in accounting policies.

### (c) Functional and presentation currency

The financial statements are prepared and presented in Thai Baht, which is the Company’s functional currency.

### (d) 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 accounting policies and the reported amounts of assets, liabilities, income and expenses. Actual results may differ from these estimates.

Estimates and underlying assumptions are reviewed on an ongoing basis. Revisions to accounting estimates are recognised prospectively.

Information about assumption and estimation uncertainties that have a significant risk of resulting in a material adjustments to the carrying amounts of assets and liabilities within the year ending 31 December 2019 is included in the following notes:

Note 8	Allowance for decline in value of inventories adjusted to net realisable value;
Notes 10 and 13	Impairment test: key assumptions underlying recoverable amounts;
Note 15	Recognition of deferred tax assets: availability of future taxable profit against which tax losses carried forward can be used;
Note 19	Measurement of defined benefit obligations: key actuarial assumptions; and
Note 37	Contingent liabilities: key assumptions about the likelihood and magnitude of an outflow of resources.

#### *Measurement of fair values*

A number of the Group's accounting policies and disclosures require the measurement of fair values, for both financial and non-financial assets and liabilities.

When measuring the fair value of an asset or a liability, the Group 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 (unadjusted) 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 (i.e. as prices) or indirectly (i.e. derived from prices).
- Level 3: inputs for the asset or liability that are not based on observable market data (unobservable inputs).

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 recognises transfers between levels of the fair value hierarchy at the end of the reporting period during which the change has occurred.

Further information about the assumptions made in measuring fair values is included in the following notes:

- Note 12 Investment property; and
- Note 35 Financial instruments

### **3 Significant accounting policies**

The accounting policies set out below have been applied consistently to all periods presented in these financial statements.

#### **(a) Basis of consolidation**

The consolidated financial statements relate to the Company and its subsidiaries (together referred to as the "Group") and the Group's interests in associates.

##### *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. Judgment is applied in determining the acquisition date and determining whether control is transferred from one party to another.

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 of 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 and share-based payment awards of the acquiree that are replaced mandatorily in the business combination. If a business combination results in the termination of pre-existing relationships between the Group and the acquiree, then the lower of the termination amount, as contained in the agreement, and the value of the off-market element is deducted from the consideration transferred and recognised in other expenses.

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.



### *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.

### *Interests in equity - accounted investees*

The Group's interests in equity-accounted investees comprise interests in associates.

Associates are those entities in which the Group has significant influence, but not control or joint control, over the financial and operating policies.

Interests in associates 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 significant influence.

### *Transactions eliminated on consolidation*

Intra-group balances and transactions, and any unrealised income or expenses arising from intra-group transactions, are eliminated in preparing the consolidated financial statements. Unrealised gains arising from transactions with equity-accounted investees 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) 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 at the reporting date are translated to the functional currency at the foreign exchange rates ruling at that date.

Foreign exchange differences arising on translation are recognised in the profit or loss.

### *Foreign operations*

The assets and liabilities of foreign operations, including goodwill and fair value adjustments arising on acquisition, 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 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 an associate or joint venture while retaining significant influence or joint control, the relevant proportion of the cumulative amount is reclassified to profit or loss.

**(c) Derivatives**

Derivatives are used to manage exposure to foreign exchange arising from operational activity. Derivatives are not used for trading purposes.

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.

The fair value of forward exchange contracts is based on their listed market price at the reporting date.

**(d) 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.

**(e) Trade and other accounts receivable**

Trade and other accounts receivable are stated at their invoice value less allowance for doubtful accounts.

The allowance for doubtful accounts is assessed primarily on analysis of payment histories and future expectations of customer payments. Bad debts are written off when incurred.

**(f) Inventories**

Inventories are measured at the lower of cost and net realisable value.

Cost of finished goods, diesel and natural gas, is calculated using the first in first out principle. Cost of other inventories are calculated using the weighted average cost principle. Cost 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.

**(g) Investments**

*Investments in associates and subsidiaries*

Investments in associates and subsidiaries in the separate financial statements of the Company are accounted for using the cost method. Investments in associates in the consolidated financial statements is accounted for using the equity method.

*Investments in other debt and equity securities*

Debt securities and marketable equity securities held for trading are classified as current assets and are stated at fair value, with any resultant gain or loss recognised in profit or loss.

Debt securities that the Group has the positive intent and ability to hold to maturity are classified as held-to-maturity investments. Held-to-maturity investments are stated at amortised cost, less any impairment losses. The difference between the acquisition cost and redemption value of such debt securities is amortised using the effective interest rate method over the period to maturity.

Marketable equity securities, other than those securities held for trading or intended to be held to maturity, are classified as available-for-sale investments. Available-for-sale investments are, subsequent to initial recognition, stated at fair value, and changes therein, other than impairment losses on available-for-sale monetary items, are recognised directly in equity. Impairment losses are recognised in profit or loss. When these investments are derecognised, the cumulative gain or loss previously recognised directly in equity is recognised in profit or loss.

Equity securities which are not marketable are stated at cost less any impairment losses.

The fair value of financial instruments classified as held-for-trading and available-for-sale is determined as the quoted bid price at the reporting date.

#### *Disposal of investment*

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 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.

#### **(h) Investment properties**

Investment properties are properties which are held to earn rental income, for capital appreciation or for both, but not for sale in the ordinary course of business, use in the production or supply of goods or services or for administrative purposes.

Investment properties are measured at cost less accumulated depreciation and impairment losses.

Cost includes expenditure that is directly attributable to the acquisition of the investment property. The cost of self-constructed investment property includes the cost of materials and direct labour, and other costs directly attributable to bringing the investment property to a working condition for its intended use and capitalised borrowing costs.

Depreciation is charged to profit or loss on a straight-line basis over the estimated useful lives of condominium which are 20 years.

#### *Reclassification to property, plant and equipment*

When the use of a property changes such that it is reclassified as property, plant and equipment, its historical cost becomes its cost for subsequent accounting.

#### **(i) 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. 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 and losses on disposal of an 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.

##### *Leased assets*

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.

##### *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.

##### *Exploration assets*

The Company follows the full cost method of accounting for petroleum and natural gas properties and related expenses whereby all costs associated with the exploration for productive and non-productive wells are treated as capitalised and will be

charged to profit or loss when the exploratory wells have not identified proved reserves or have identified proved reserves but have not been found to be commercially producible or have abandoned.

Costs of properties comprise total acquisition costs of petroleum rights or the portion of costs applicable to properties as well as the decommissioning costs.

#### *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 or on units of production method of relevant assets. The estimated useful lives are as follows:

Land improvement	5 years
Leasehold improvement	8 - 10 years
Buildings and structures	10 - 49 years and per lease period
Machinery and equipment for production(concrete)	3 - 10 years
Other machinery and equipment for production	5 - 40 years
Tools and factory equipment	3 - 30 years
Furniture, fixtures and office equipment	3, 5 and 10 years
Vehicles	5 - 25 years

Machinery and equipment for production of LDPE, construction materials and machine for melt sheets and mixer trucks calculate depreciation based on units of production.

No depreciation is provided on freehold land, assets under construction and installation, and major spare parts have not been issued.

Depreciation methods, useful lives and residual values are reviewed at each financial year-end and adjusted if appropriate.

### **(j) Intangible assets**

#### *Concession*

Cost of concessions on mining limestone and shale are include acquisition, exploration and development costs and are measured at cost less accumulated amortisation and accumulated impairment losses.

#### *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.

#### *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 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 the current and comparative periods are as follows:

Concessions	Life of concessions :	13 - 25 years
Software licenses		3 - 12 years
Development assets		5 years

Amortisation methods, useful lives and residual values are reviewed at each financial year-end and adjusted if appropriate.

**(k) Leasehold right**

Leasehold right that is acquired by the Company's subsidiary and has finite useful life is measured at cost less accumulated amortisation and impairment loss.

*Amortisation*

Amortisation is recognised in profit or loss on a straight-line basis over the period of the lease agreement. The period of the lease agreement is 10 years.

**(l) Impairment**

The carrying amounts of the Group's assets are reviewed at each reporting date to determine whether there is any indication of impairment. If any such indication exists, the asset's recoverable amounts are estimated.

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.

When a decline in the fair value of an available-for-sale financial asset has been recognised directly in equity and there is objective evidence that the value of the assets is impaired, the cumulative loss that had been recognised directly in equity is recognised in profit or loss even though the financial asset has not been derecognised. The amount of the cumulative loss that is recognised in profit or loss is the difference between the acquisition cost and current fair value, less any impairment loss on that financial asset previously recognised in profit or loss.

*Calculation of recoverable amount*

The recoverable amount of available-for-sale financial assets is calculated by reference to the fair value.

The recoverable amount of a non-financial asset is the greater of the assets' 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.

*Reversals of impairment*

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) Interest-bearing liabilities**

Interest-bearing liabilities are recognised at cost.

**(n) Trade and other accounts payable**

Trade and other accounts payable are stated at cost.

**(o) Employee benefits**

*Defined contribution plans*

Obligations for contributions to defined contribution plans are expensed as the related service is provided.

*Defined benefit plans*

A defined benefit plan is a post-employment benefit plan. The Group's net obligation in respect of defined benefit legal severance pay plan is calculated by estimating 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. The discount rate is the yield

at the reporting date on government bonds that have maturity dates approximating the terms of the Group's obligations and that are denominated in the same currency in which the benefits are expected to be paid.

The calculation of defined benefit obligations is performed annually by a qualified actuary using the projected unit credit method.

Remeasurements of the net defined benefit liability, actuarial gain or loss are recognised immediately in other comprehensive income. 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.

#### *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.

### **(p) Provisions**

A provision is recognised if, as a result of a past event, the Group 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 finance cost.

#### *Decommissioning costs*

The Group recorded provision for decommissioning cost whenever it is probable that there is an obligation as a result of the past event and reliable amount of obligation.

Decommissioning costs is based on discounting the expected future cash flows of provision for decommissioning costs. The estimates of decommissioning costs have been determined based on reviews and estimates by the Group's own engineers and managerial judgment.

### **(q) Treasury shares**

#### *Treasury shares*

When share capital recognised as equity is repurchased, the amount of consideration paid, including directly attributable costs, is classified as treasury shares and recognised as a deduction from equity. An equal amount is appropriated from retained earnings and taken to a reserve for treasury shares within equity. When treasury shares are sold, the amount received is recognised as an increase in equity by crediting the cost of the treasury shares sold, calculated using the weighted average method, to the treasury shares account and transferring the equivalent amount back from reserve for treasury shares to retained earnings. Surpluses on the sale of treasury shares are taken directly to a separate category within equity, 'Surplus on treasury shares'. Net deficits on sale or cancellation of treasury shares are debited to retained earnings after setting off against any remaining balance of surplus on treasury shares.

#### *Treasury shares held by a subsidiary*

When share capital recognised as equity is repurchased, the amount of consideration paid, including directly attributable costs, is classified as treasury shares held by a subsidiary and recognised as a deduction from equity. When treasury shares held by a subsidiary are sold, the amount received is recognised as an increase in equity by crediting the cost of the treasury shares held by a subsidiary sold, calculated using the weighted average method, to the treasury shares account. Surpluses on the sale of treasury shares held by a subsidiary are taken directly to a separate category within equity, 'Surplus on treasury shares held by a subsidiary'. Net deficits on sale or cancellation of treasury shares are debited to retained earnings after setting off against any remaining balance of surplus on treasury shares held by a subsidiary.



**(r) Revenue**

Revenue excludes value added taxes and is arrived at after deduction of trade discounts and volume rebates.

*Sale of goods and services rendered*

Revenue is recognised in profit or loss when the significant risks and rewards of ownership have been transferred to the buyer. No revenue is recognised if there is continuing management involvement with the goods or there are significant uncertainties regarding recovery of the consideration due, associated costs or the probable return of goods. Service income is recognised as services are provided.

*Loyalty programmes*

The Group has a customer loyalty programme whereby customers are awarded credits (Points) entitling customers to the right to qualify for a free gift from the Group. The fair value of the consideration received or receivable in respect of the initial sale is allocated between the Points and the other components of the sale. The amount allocated to the Points is estimated by reference to the fair value of the free gift. The fair value is estimated based on the amount of the gift adjusted to take into account the expected forfeiture rate. Such amount is deferred and revenue is recognised only when the Points are redeemed and the Group has fulfilled its obligations to supply the products. The amount of revenue recognised in those circumstances is based on the number of Points that have been redeemed in exchange for a free gift, relative to the total number of Points that is expected to be redeemed. Deferred revenue is also released to profit or loss when it is no longer considered probable that the Points will be redeemed.

*Investments*

Revenue from investments comprises rental income from investment properties and dividend and interest income from investments and bank deposits.

*Rental income*

Rental income from investment property is recognised in profit or loss on a straight-line basis over the term of the lease. Lease incentives granted are recognised as an integral part of the total rental income. Contingent rentals are recognised as income in the accounting period in which they are earned.

*Dividend income*

Dividend income is recognised in profit or loss on the date the Group's right to receive payments is established.

*Interest income*

Interest income is recognised in profit or loss as it accrues.

**(s) Finance costs**

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.

**(t) Lease payments**

Payments made under operating leases 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.

**(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 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 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 takes into account the impact of uncertain tax positions and whether additional taxes and interest may be due. The Group 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 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 presents basic earnings per share (EPS) data for its ordinary shares. Basic EPS is calculated by dividing the profit or loss attributable to ordinary shareholders of the Company by the weighted average number of ordinary shares outstanding during the year, adjusted for own shares held.

**(w) 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.

## **4 Related parties**

For the purposes of these financial statements, parties are considered to be related to the Group if the Group has the ability, directly or indirectly, to control or joint control the party or exercise significant influence over the party in making financial and operating decisions, or vice versa, or where the Group and the party are subject to common control or common significant influence. Related parties may be individuals or other entities.

Relationships with key management and related parties were as follows:

Name of entities	Country of incorporation/nationality	Nature of relationships
Key management personnel	Thailand	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.
TPI Concrete Co., Ltd.	Thailand	Subsidiary, 99.99% shareholding, more than 50% of directors are representatives of the Company
TPI Polene Power Public Co., Ltd.	Thailand	Subsidiary, 70.24% shareholding, more than 50% of directors are representatives of the Company (see note 10)
TPI All Seasons Co., Ltd.	Thailand	Subsidiary, 99.99% shareholding, more than 50% of directors are representatives of the Company
Thai Propoxide Co., Ltd.	Thailand	Subsidiary, 99.99% shareholding, more than 50% of directors are representatives of the Company
TPI Polene Bio Organics Co., Ltd.	Thailand	Subsidiary, 99.99% shareholding, more than 50% of directors are representatives of the Company
TPI Refinery (1997) Co., Ltd.	Thailand	Subsidiary, 99.99% shareholding, more than 50% of directors are representatives of the Company
Thai Nitrate Co., Ltd.	Thailand	Subsidiary, 99.99% shareholding, more than 50% of directors are representatives of the Company (see note 5, and 12)
TPI Healthcare Co., Ltd. (Formerly TPI Intertrade Co., Ltd.)	Thailand	Subsidiary, 99.99% shareholding, more than 50% of directors are representatives of the Company
TPI Commercial Co., Ltd.	Thailand	Subsidiary, 99.94% shareholding, more than 50% of directors are representatives of the Company
Zenith International Trading Co., Ltd.	Thailand	Subsidiary, 99.99% shareholding, more than 50% of directors are representatives of the Company
TPI Service Co., Ltd.	Thailand	Subsidiary, 95.10% shareholding, more than 50% of directors are representatives of the Company
Master Achieve (Thailand) Co., Ltd.	Thailand	Subsidiary, 99.96% shareholding, more than 50% of directors are representatives of the Company
TPI Bio Pharmaceuticals Co., Ltd. (Formerly TPI Tank Terminal Co.,Ltd.)	Thailand	Subsidiary, 99.99% shareholding, more than 50% of directors are representatives of the Company
TPI Polene Power Investment Co., Ltd.	Cambodia	Indirect subsidiary, 100% shareholding held by TPI Polene Power Public Co., Ltd., more than 50% of directors are representatives of the Company
Polene Plastic Co., Ltd.	Thailand	Indirect subsidiary, 99.99% shareholding held by Zenith International Trading Co., Ltd., more than 50% of directors are representatives of the Company
Mondo Thai Co., Ltd.	Thailand	Indirect subsidiary, 28.75% shareholding held by the Company and 54.52% shareholding held by TPI Concrete Co., Ltd., more than 50% of directors are representatives of the Company
BUI Life Insurance Public Co., Ltd.	Thailand	Associate, 25.00% shareholding, more than 20% of directors are representatives of the Company
United Grain Industry Co., Ltd.	Thailand	Associate, 19.00% shareholding, more than 20% of directors are representatives of the Company
Thai Special Steel Industry Public Co., Ltd.	Thailand	Indirect associate, 29.53% shareholding held by TPI Concrete Co., Ltd., more than 20% of directors are representatives of the Company
Thai Plastic Film Co., Ltd.	Thailand	Indirect associate, 99.99% shareholding held by United Grain Industry Co., Ltd., more than 20% of directors are representatives of the Company

Name of entities	Country of incorporation/nationality	Nature of relationships
Thai Plastic Products Co., Ltd.	Thailand	Indirect associate, 99.99% shareholding held by United Grain Industry Co., Ltd., more than 20% of directors are representatives of the Company
Pornchai Enterprise Co., Ltd.	Thailand	Co-director
TPI Holding Co., Ltd.	Thailand	Co-director
Leophairatana Enterprise Co., Ltd.	Thailand	Co-director
Bangkok Union Insurance Public Co., Ltd.	Thailand	Co-director
Lampang Food Products Co., Ltd.	Thailand	Co-director
Hong Yiah Seng Co., Ltd.	Thailand	Co-director
Saraburi Ginning Mill Co., Ltd.	Thailand	Co-director
Thai Petrochemical Industry Co., Ltd.	Thailand	Co-director
Rayong Forest Co., Ltd.	Thailand	Co-director
Hong Yiah Seng Real Estates and Investment Co., Ltd.	Thailand	Co-director
TPI EOEG Co., Ltd.	Thailand	Co-director

The pricing policies for transactions with related parties are explained further below:

Transactions	Pricing policies
Sale of goods	Market price
Transportation income	Market price
Energy service for electrical manufacturing income	Agreed price
Shared service income	Agreed price
Waste disposal income	Referred to market price
Purchase of raw materials and spare parts	Referred to market price
Purchase of electricity	Referred to market price
Purchase of refuse derived fuel (RDF) and steam	Agreed price
Purchase of goods for sales promotion	Market price
Acquisition of investment	Book value
Interest income	MLR-1.5%
Interest expense	1.5% and MLR-1.5%
Insurance premium	Market price
Paper bag production charge	2.0 - 2.6 Baht per bag

Significant transactions for the with related parties were as follows:

Years ended 31 December	Consolidated financial statements		Separate financial statements	
	2018	2017	2018	2017
<b>Subsidiaries</b>				
Sales of goods	-	-	13,773,109	10,238,728
Transportation income	-	-	218,173	186,576
Purchase of raw materials and spare parts	-	-	6,346,511	3,552,908
Purchase of electricity	-	-	832,109	570,263
Purchase of steam	-	-	31,208	35,111
Purchase of goods for sales promotion	-	-	1,046	1,614
Dividend income	-	-	2,556,952	3,257,155
Interest income	-	-	13,282	71,519
Interest expense	-	-	3,914	3,362
Waste disposal income	-	-	195,671	-
Other income	-	-	192,773	189,418
Administrative expenses	-	-	55,734	71,627

<i>Years ended 31 December</i>	<b>Consolidated financial statements</b>		<b>Separate financial statements</b>	
	2018	2017	2018	2017
<i>(in thousand Baht)</i>				
<b>Associates</b>				
Sale of goods	8,873	25,344	8,705	25,017
Transportation income	-	5	-	5
Purchase of raw materials	636,695	632,887	569,010	583,002
Other income	143	27	143	27
Insurance premium	20,466	19,405	14,979	13,870
Administrative expenses	2,457	2,992	1,497	1,426
<b>Other related parties</b>				
Sales of goods	1,308	1,063	299	192
Acquisition of investment (see note 10)	2,078	-	2,078	-
Transportation income	1	-	1	-
Other income	240	121	240	120
Insurance premium	185,601	165,174	110,967	108,102
Administrative expenses	111,107	104,849	97,520	91,425
<b>Key management personnel</b>				
Key management personnel compensation				
Short-term employee benefits	393,254	390,871	317,969	320,815
Post-employment benefits	6,556	14,898	6,085	10,208
<b>Total key management personnel compensation</b>	<b>399,810</b>	<b>405,769</b>	<b>324,054</b>	<b>331,023</b>

Balances as at 31 December with related parties were as follows:

<i>Trade accounts receivable - related parties</i>	<b>Consolidated financial statements</b>		<b>Separate financial statements</b>	
	2018	2017	2018	2017
<i>(in thousand Baht)</i>				
<b>Subsidiaries</b>				
TPI Concrete Co., Ltd.	-	-	747,610	555,875
TPI Polene Power Public Co., Ltd.	-	-	193,165	64,041
TPI All Seasons Co., Ltd.	-	-	249,924	215,366
Polene Plastic Co., Ltd.	-	-	1,832,210	1,062,508
TPI Polene Bio Organics Co., Ltd.	-	-	22,996	12,006
TPI Commercial Co., Ltd.	-	-	3,890	2,776
Thai Nitrate Co., Ltd.	-	-	333	78
<b>Associates</b>				
BUI Life Insurance Public Co., Ltd.	8	12	-	-
United Grain Industry Co., Ltd.	151	18	140	11
Thai Plastic Products Co., Ltd.	3,892	7,592	3,892	7,592
<b>Other related parties</b>				
Bangkok Union Insurance Public Co., Ltd.	13	24	-	5
Pornchai Enterprise Co., Ltd.	80	96	54	49
Lampang Food Products Co., Ltd.	4	3	4	3
Rayong Forest Co., Ltd.	886	824	-	-
Leophairatana Enterprise Co., Ltd.	-	37	-	-
<b>Total</b>	<b>5,034</b>	<b>8,606</b>	<b>3,054,218</b>	<b>1,920,310</b>

<i>Loans to related parties</i>	<i>Interest rate</i>		<i>Consolidated financial statements</i>		<i>Separate financial statements</i>	
	2018	2017	2018	2017	2018	2017
	<i>(% per annum)</i>					
<b>Subsidiaries</b>						
TPI Polene Bio Organics Co., Ltd.*	MLR-1.5	MLR-1.5	-	-	223,411	226,211
TPI All Seasons Co., Ltd.*	MLR-1.5	MLR-1.5	-	-	44,153	44,153
TPI Healthcare Co., Ltd.	MLR-1.5	MLR-1.5	-	-	-	2,889
			-	-	267,564	273,253
Accrued interest receivable			-	-	1,237	1,323
<b>Total</b>			-	-	<b>268,801</b>	<b>274,576</b>

\* Please see Note 10 impairment assessment for loan to and investment in subsidiaries

As at 31 December 2018, all short-term loans to related parties are promissory notes which have repayment schedules on demand.

Movements during the years ended 31 December of loans to related parties were as follows:

<i>Loans to related parties</i>	<i>Consolidated financial statements</i>		<i>Separate financial statements</i>	
	2018	2017	2018	2017
<b>Subsidiaries</b>				
At 1 January	-	-	273,253	4,642,448
Increase	-	-	26,800	3,065,206
Decrease	-	-	(32,489)	(7,434,401)
<b>At 31 December</b>	<b>-</b>	<b>-</b>	<b>267,564</b>	<b>273,253</b>

***Receivables and advances to related parties - current***

<b>Subsidiaries</b>				
TPI Concrete Co., Ltd.	-	-	3,257	3,070
TPI Polene Power Public Co., Ltd.	-	-	85,200	42,060
TPI All Seasons Co., Ltd.	-	-	32,356	11,889
TPI Refinery (1997) Co., Ltd.	-	-	66	64
Polene Plastic Co., Ltd.	-	-	14,002	5,189
TPI Polene Bio Organics Co., Ltd.	-	-	67,827	48,600
TPI Commercial Co., Ltd.	-	-	137	133
TPI Service Co., Ltd.	-	-	183	144
Thai Nitrate Co., Ltd.	-	-	165	165
Zenith International Trading Co., Ltd.	-	-	64	64
Mondo Thai Co., Ltd.	-	-	504	507
Thai Propoxide Co., Ltd.	-	-	64	-
TPI Polene Power Investment Co., Ltd.	-	-	34	-
<b>Associates</b>				
BUI Life Insurance Public Co., Ltd.	6,503	4,985	5,705	4,368
United Grain Industry Co., Ltd.	3,289	3,805	-	46
<b>Other related parties</b>				
Bangkok Union Insurance Public Co., Ltd.	49,856	48,070	28,074	30,259
Pornchai Enterprise Co., Ltd.	983	991	422	430
Rayong Forest Co., Ltd.	74	76	74	76
TPI Holding Co., Ltd.	64	-	64	-
TPI EOEG Co., Ltd.	64	-	64	-
<b>Total</b>	<b>60,833</b>	<b>57,927</b>	<b>238,262</b>	<b>147,064</b>



<i>Long-term investments in related parties</i>	<i>Consolidated financial statements</i>		<i>Separate financial statements</i>	
	2018	2017	2018	2017
<b>Related parties</b>				
Pornchai Enterprise Co., Ltd.	45,653	45,653	45,653	45,653
TPI Holding Co., Ltd.	217	217	217	217
<b>Total</b>	<b>45,870</b>	<b>45,870</b>	<b>45,870</b>	<b>45,870</b>
<b>Receivables and advances to related parties - non-current</b>				
<b>Subsidiary</b>				
Thai Propoxide Co., Ltd.	-	-	421,984	421,984

In 1997, the Company entered into an agreement to sell land to Thai Propoxide Co., Ltd. (a subsidiary) at the price of Baht 477 million, in consideration for a loan payable by August 2000, with interest of 16%. No payments of principal or interest were subsequently made by the subsidiary and consequently the Company deferred recording the gain on the sale land of Baht 40 million and interest income of Baht 155 million in income, and ceased accrued interest. The deferred gain and interest income are disclosed as non-current liabilities in the statement of financial position of the separate financial statements.

The subsidiary used the land as collateral for a bank loan, the proceeds of which were subsequently loaned to the Company. In 2000, the subsidiary's bank loan was assigned to the Company. Subsequently, in 2011, the land has been released by the bank as collateral and the subsidiary has sold a part of land to the Company and repaid a part of the land loan to the Company of Baht 68 million.

At 31 December 2018, the outstanding amount of accounts receivable from the subsidiary from the sale of land total Baht 422 million and the deferred gain on the sale of Baht 35 million and deferred interest income of Baht 134 million in the statement of financial position of the separate financial statements.

<i>Trade accounts payable - related parties</i>	<i>Consolidated financial statements</i>		<i>Separate financial statements</i>	
	2018	2017	2018	2017
<b>Subsidiaries</b>				
TPI Polene Power Public Co., Ltd.	-	-	4,759	8,949
TPI All Seasons Co., Ltd.	-	-	9,502	-
Polene Plastic Co., Ltd.	-	-	694,699	658,669
TPI Polene Bio Organics Co., Ltd.	-	-	347	270
Thai Nitrate Co., Ltd.	-	-	7,790	6,051
<b>Associate</b>				
United Grain Industry Co., Ltd.	2,033	1,421	-	-
Thai Plastic Film Co., Ltd.	71,661	65,216	71,170	65,041
Thai Plastic Products Co., Ltd.	131,610	97,700	126,342	92,436
<b>Total</b>	<b>205,304</b>	<b>164,337</b>	<b>914,609</b>	<b>831,416</b>

<i>Short-term loans from related parties</i>	<i>Interest rate</i>		<i>Consolidated financial statements</i>		<i>Separate financial statements</i>	
	2018	2017	2018	2017	2018	2017
<i>(% per annum)</i>						
<b>Subsidiaries</b>						
Thai Nitrate Co., Ltd.	MLR-1.5	1.5	-	-	-	320,000
TPI Refinery (1997) Co., Ltd.	MLR-1.5	MLR-1.5	-	-	43,873	55,000
			-	-	43,873	375,000
Accrued interest payable			-	-	344	627
<b>Total</b>			<b>-</b>	<b>-</b>	<b>44,217</b>	<b>375,627</b>

As at 31 December 2018, short-term loan from related party is promissory note which has repayment schedules on demand.

Movements during the years ended 31 December of short-term loans from related parties were as follows:

(in thousand Baht)

<b>Short-term loans from related parties</b>	<b>Consolidated financial statements</b>		<b>Separate financial statements</b>	
	2018	2017	2018	2017
<b>Subsidiaries</b>				
At 1 January	-	-	375,000	-
Increase	-	-	-	733,000
Decrease	-	-	(331,127)	(358,000)
<b>At 31 December</b>	<b>-</b>	<b>-</b>	<b>43,873</b>	<b>375,000</b>
<b>Payables and advances from related parties</b>				
<b>Subsidiaries</b>				
TPI Concrete Co., Ltd.	-	-	1,755	2,640
TPI Polene Power Public Co., Ltd.	-	-	249,296	85,686
TPI All Seasons Co., Ltd.	-	-	2,140	7,965
Polene Plastic Co., Ltd.	-	-	25	-
TPI Polene Bio Organics Co., Ltd.	-	-	280	1,178
<b>Associates</b>				
BUI Life Insurance Public Co., Ltd.	43	22	43	22
United Grain Industry Co., Ltd.	2,313	2,098	-	-
Thai Plastic Film Co., Ltd.	-	675	-	525
Thai Plastic Products Co., Ltd.	-	120	-	-
<b>Other related parties</b>				
Pornchai Enterprise Co., Ltd.	2,931	7,600	2,533	7,298
Bangkok Union Insurance Public Co., Ltd.	13,137	13,504	6,842	4,546
Hong Yiah Seng Co., Ltd.	1,172	13	1,172	13
<b>Total</b>	<b>19,596</b>	<b>24,032</b>	<b>264,086</b>	<b>109,873</b>

#### **Significant agreements with related parties**

##### **(a) Office building lease agreements**

The Company and its subsidiary have long-term office building lease agreements with a related company. Previously, the initial lease term for each lease agreement was for 3 years, with the lease being renewable. In July 1999, the Company and a subsidiary entered into a 90 years office building lease agreement with a related company to replace the expired original office building lease agreements in which the Company and a subsidiary made one payment for the whole lease period (the total rental for the 90 years term of the lease is Baht 40,000 per square meter, equivalent to a monthly rental, before discounting cash flows, of Baht 37 per square meter). The annual rental is deducted from the prepaid rentals. Subsequently, on 24 July 2001, the Company and its subsidiary agreed to sign the amendments in addition to the existing office building lease agreements with a related company. The initial period of the lease is for 30 years, commencing from the original date on which the rentals of each respective agreement were prepaid. The related party warranted that the lease would be renewable for another 2 subsequent periods of 30 years under the same conditions, including rental fee as set out in the original agreements.

On 25 August 2006, the Company and its subsidiary registered the lease with the Land Department.

Significant details of long-term office building lease agreements with a related company as at 31 December were as follows:

Type of agreement	(in thousand Baht)		
	Prepaid rentals	Remaining prepaid rentals 2018	2017
<b>The Company</b>			
30 years lease agreement			
(3 years for original agreement)	143,517	105,807	107,402
30 years lease agreement			
(90 years for original agreement)	29,669	23,076	23,405
	<u>173,186</u>	<u>128,883</u>	<u>130,807</u>
<b>Subsidiary</b>			
30 years lease agreement			
(3 years for original agreement)	47,000	34,520	35,040
30 years lease agreement			
(90 years for original agreement)	11,659	9,068	9,198
	<u>58,659</u>	<u>43,588</u>	<u>44,238</u>
<b>Total</b>	<u><b>231,845</b></u>	<u><b>172,471</b></u>	<u><b>175,045</b></u>

Should either party terminate the lease agreement, the unused prepaid rentals are refundable to the Companies. Both parties agreed in principle to execute a mortgage on the office building as security for the unused prepaid rentals. As at 31 December 2018, there was no mortgage agreement as security for the unused prepaid rentals, so the recoverability of prepaid rentals depends on the ability of the related company to repay.

**(b) Electricity supply agreement**

The Company entered into an electricity supply contract with a subsidiary company, to provide the waste heat to the subsidiary that will be used in the manufacturing process for electricity. The subsidiary company shall supply the electricity to the Company based on certain percentage as specified in the agreement. The agreement shall remain in full force and effect so long as, unless it is terminated by mutual agreement in writing of both parties.

**(c) Land lease agreement**

The Company and its subsidiaries entered into several land and office building space lease agreements with related parties for 3 years and 30 years as stated in each agreement. The details as at 31 December were as follows:

	Consolidated financial statements		Separate financial statements	
	2018	2017	2018	2017
<b>Non-cancellable operating lease commitments</b>				
Within one year	86,669	72,446	67,585	50,081
After one year but within five years	42,246	62,574	20,441	31,581
After five years	133,093	136,025	15,300	13,860
<b>Total</b>	<u><b>262,008</b></u>	<u><b>271,045</b></u>	<u><b>103,326</b></u>	<u><b>95,522</b></u>

The Company and subsidiaries had made several land rental agreements with its related parties which specified that lessee has to decommission the assets from rental area at the end of contract, causing lessee to set up the decommissioning costs as at 31 December 2018 in amount of Baht 169.5 million (2017: Baht 121.3 million).

As at 31 December 2017, the Company had guaranteed bank credit facilities and mortgaged land which was obligated by the Company as collateral on behalf of its subsidiary in amount of Baht 117.5 million. The Company terminated guaranteed bank credit facilities and redeemed collateral security aforementioned during the year 2018.

## 5 Cash and cash equivalents

	Consolidated financial statements		Separate financial statements	
	2018	2017	2018	2017
Cash on hand	7,439	7,929	4,017	5,149
Cash at banks - current accounts	42,139	45,573	24,148	30,584
Cash at banks - savings accounts	3,720,219	2,434,143	1,844,649	1,548,603
Cash at banks - savings accounts (Private funds)	66,800	5,034	11	159
Highly liquid short-term investments	529,963	426,301	305,422	326,300
<b>Total</b>	<b>4,366,560</b>	<b>2,918,980</b>	<b>2,178,247</b>	<b>1,910,795</b>

## 6 Other investments

	Consolidated financial statements		Separate financial statements	
	2018	2017	2018	2017
<b>Current investments</b>				
Short-term deposits with financial institutions	1,100,000	866,191	300,000	15,500
Equity securities held for trading (Mutual fund)	-	100,113	-	-
Debt securities held for trading	330,638	-	-	-
Debt securities held for trading (Private funds)	2,530,465	2,623,556	-	104
Other debt securities held to maturity	299,549	200,307	-	-
	<b>4,260,652</b>	<b>3,790,167</b>	<b>300,000</b>	<b>15,604</b>
<b>Other long-term investments</b>				
Long-term deposits with financial institutions	4,820	-	4,820	-
Equity securities available-for-sale	349	429	349	429
Other non-marketable equity securities	1,596	1,596	1,596	1,596
Other debt securities held-to-maturity	55,325	34,128	28,675	17,028
	<b>62,090</b>	<b>36,153</b>	<b>35,440</b>	<b>19,053</b>
<b>Total</b>	<b>4,322,742</b>	<b>3,826,320</b>	<b>335,440</b>	<b>34,657</b>

The Group set up private funds which are managed by 2 independent assets management companies. Those private funds have invested in fixed deposits with the financial institutions and debt securities which had high liquidity and rating as investment grade. As at 31 December 2018, value of private funds in the consolidated and separate financial statements totalling Baht 2,603 million and Baht 0.01 million, respectively (2017: Baht 2,634 million and Baht 0.3 million, respectively).

During 2017, a subsidiary entered into CIMB-Principal Daily Income Plus Fund (CIMB - PRINCIPAL DPLUS), to invest in onshore and offshore debt, financial instrument and/or cash deposits, rating of the instrument or issuer is at an investment grade. A subsidiary purchased 10 million units or amounting to Baht 100 million which its fair value as at 31 December 2017 is Baht 100 million.

Other debt securities held-to-maturity of the Group and the Company are pledged as collateral of Baht 22 million and Baht 12 million, respectively (2017: Baht 22 million and Baht 12 million, respectively).

Movements during the years ended 31 December of marketable equity and debt securities were as follows:

	<b>Consolidated financial statements</b>		<b>Separate financial statements</b>	
	2018	2017	2018	2017
<b>Equity/debt securities held for trading</b>				
At 1 January	2,723,669	2,169	104	2,169
Increase (Decrease)	135,048	2,718,255	(104)	(2,065)
Valuation adjustment	2,386	3,245	-	-
<b>At 31 December</b>	<b>2,861,103</b>	<b>2,723,669</b>	<b>-</b>	<b>104</b>
<b>Equity securities available-for-sale</b>				
At 1 January	429	292	429	292
Valuation adjustment	(80)	137	(80)	137
<b>At 31 December</b>	<b>349</b>	<b>429</b>	<b>349</b>	<b>429</b>

## 7 Trade accounts receivable

	<i>Note</i>	<b>Consolidated financial statements</b>		<b>Separate financial statements</b>	
		2018	2017	2018	2017
Related parties	4	5,034	8,606	3,054,218	1,920,310
Other parties		4,391,769	3,190,874	934,269	847,737
<b>Total</b>		<b>4,396,803</b>	<b>3,199,480</b>	<b>3,988,487</b>	<b>2,768,047</b>
Less allowance for doubtful		(91,234)	(122,612)	(48,574)	(73,497)
<b>Net</b>		<b>4,305,569</b>	<b>3,076,868</b>	<b>3,939,913</b>	<b>2,694,550</b>
Bad and doubtful debts expense for the year (Reversal of)		(31,378)	13,538	(24,923)	24,898

Aging analyses for trade accounts receivable were as follows:

	<b>Consolidated financial statements</b>		<b>Separate financial statements</b>	
	2018	2017	2018	2017
<b>Related parties</b>				
Within credit terms	4,960	8,519	1,768,782	990,098
Overdue:				
Less than 3 months	20	69	1,151,684	788,275
3 - 6 months	35	-	67,540	54,713
6 - 12 months	-	13	59,743	75,122
Over 12 months	19	5	6,469	12,102
	<b>5,034</b>	<b>8,606</b>	<b>3,054,218</b>	<b>1,920,310</b>
Less allowance for doubtful accounts	-	-	-	-
	<b>5,034</b>	<b>8,606</b>	<b>3,054,218</b>	<b>1,920,310</b>
<b>Other parties</b>				
Within credit terms	4,063,418	2,864,286	805,853	704,350
Overdue:				
Less than 3 months	230,759	190,506	78,569	69,115
3 - 6 months	2,324	8,722	1,033	347
6 - 12 months	309	2,441	237	1,190
Over 12 months	94,959	124,919	48,577	72,735
	<b>4,391,769</b>	<b>3,190,874</b>	<b>934,269</b>	<b>847,737</b>
Less allowance for doubtful accounts	(91,234)	(122,612)	(48,574)	(73,497)
	<b>4,300,535</b>	<b>3,068,262</b>	<b>885,695</b>	<b>774,240</b>
<b>Net</b>	<b>4,305,569</b>	<b>3,076,868</b>	<b>3,939,913</b>	<b>2,694,550</b>

The Group requires various customers to provide cash, bank and personal guarantees as collateral.

The normal credit term granted by the Group ranges from 30 days to 360 days.

## 8 Inventories

	Consolidated financial statements		Separate financial statements	
	2018	2017	2018	2017
Finished goods	3,342,247	3,173,023	2,176,740	1,938,532
Work in process	4,755,503	4,394,296	4,697,667	4,314,919
Raw materials and chemicals	1,722,746	1,530,826	1,436,056	1,354,951
Packages	418,607	417,785	326,421	338,122
Oil and coal	1,229,890	747,932	1,224,016	740,786
Spare parts and general supplies	3,179,641	2,897,314	2,520,755	2,412,482
Goods in transit	116,537	262,756	555	14,912
<b>Total</b>	<b>14,765,171</b>	<b>13,423,932</b>	<b>12,382,210</b>	<b>11,114,704</b>
Less allowance for decline in value	(431,261)	(290,472)	(90,147)	(31,393)
<b>Net</b>	<b>14,333,910</b>	<b>13,133,460</b>	<b>12,292,063</b>	<b>11,083,311</b>
Inventories recognised as an expense in cost of sales of goods				
- Cost	27,842,232	24,371,272	23,493,433	20,227,376
- Write-down to net realisable value	176,165	123,984	90,147	31,393
<b>Net</b>	<b>28,018,397</b>	<b>24,495,256</b>	<b>23,583,580</b>	<b>20,258,769</b>

## 9 Investments in associates

	Consolidated financial statements		Separate financial statements	
	2018	2017	2018	2017
At 1 January	745,865	722,495	229,500	229,500
Share of net profit of investments in associates	31,090	19,742	-	-
Share of other comprehensive income				
(loss) of investments in associates	(4,758)	3,628	-	-
<b>At 31 December</b>	<b>772,197</b>	<b>745,865</b>	<b>229,500</b>	<b>229,500</b>

The Group has not recognised loss relating to an investment in an indirect associate accounted for using the equity method where its share of loss exceeds the carrying amount of its investment. As at 31 December 2018, the Group's cumulative share of unrecognised loss was Baht 984million (2017: Baht981million), of which the Group's share of loss for the year ended 31 December 2018 was Baht 3 million (2017: Baht 3 million). The Group has no obligation in respect of this loss.

Investments in associates as at 31 December were as follows:

		Consolidated financial statements							
Type of business		Ownership interest		Paid-up capital		Cost		Equity method	
		2018	2017	2018	2017	2018	2017	2018	2017
		(%)		(in thousand Baht)					
<b>Associates</b>									
BUI Life Insurance Plc.	Life insurance	25.00	25.00	500,000	500,000	125,000	125,000	131,047	133,112
United Grain Industry Co.,Ltd.	Manufacture and sale of packaging	19.00	19.00	550,000	550,000	104,500	104,500	641,150	612,753
						229,500	229,500	772,197	745,865
<b>Indirect associates</b>									
Thai Special Steel Industry Plc.	Manufacture and sale of steel (in the process of Registering the dissolution)	29.53	29.53	4,220,000	4,220,000	1,246,200	1,246,200	-	-
Thai Plastic Film Co.,Ltd.	Manufacture and sale of packaging	19.00	19.00	40,000	40,000	-	-	-	-
Thai Plastic Products Co.,Ltd.	Manufacture and sale of packaging	19.00	19.00	60,000	60,000	-	-	-	-
<b>Total</b>						<b>1,475,700</b>	<b>1,475,700</b>	<b>772,197</b>	<b>745,865</b>

		Separate financial statements					
Type of business		Ownership interest		Paid-up capital		Cost	
		2018	2017	2018	2017	2018	2017
		(%)		(in thousand Baht)			
<b>Associates</b>							
BUI Life Insurance Plc.	Life insurance	25.00	25.00	500,000	500,000	125,000	125,000
United Grain Industry Co.,Ltd.	Manufacture and sale of packaging	19.00	19.00	550,000	550,000	104,500	104,500
<b>Total</b>						<b>229,500</b>	<b>229,500</b>



No dividend distribution from investments in associates held by the Group and the Company during years ended 31 December 2018 and 2017.

None of the Group's and the Company's associates are publicly listed and consequently do not have published price quotations.

All associates were incorporated in Thailand.

#### *Immaterial associates*

The following is summarised financial information for the Group's interest in immaterial associates based on the amounts reported in the Group's consolidated financial statements:

	(in thousand Baht)	
	2018	2017
Carrying amount of interests in immaterial associates	<b>772,197</b>	<b>745,865</b>
Group's share of:		
- Profit from continuing operations	31,090	19,742
- Other comprehensive income (loss)	(4,758)	3,628
- <b>Total comprehensive income (loss)</b>	<b>26,332</b>	<b>23,370</b>

## 10 Investments in subsidiaries

	(in thousand Baht)	
	<b>Separate financial statements</b>	
	2018	2017
At 1 January	13,203,196	13,199,596
Increase	11,528	3,600
	13,214,724	13,203,196
Less allowance for impairment of investments	(770,250)	(562,250)
<b>At 31 December</b>	<b>12,444,474</b>	<b>12,640,946</b>
Loss on impairment of investment	<b>208,000</b>	<b>180,000</b>

#### *Master Achieve (Thailand) Co., Ltd.*

On 29 March 2018, the Company's Board of Directors' meeting passed the resolution to approve the acquisition of shares in Master Achieve (Thailand) Co., Ltd., the main objective is to restructure the shareholding of the Group to support business expansion. Thereafter, on 30 March 2018, the Company obtained control of that company by acquiring 9,996 shares or equivalent to 99.96% of the paid-up share capital at the price of Baht 93.10 per share, in the amount of Baht 930,627.60 from related parties, thereby become a subsidiary of the Company.

#### *TPI Bio Pharmaceutical Co., Ltd.*

On 25 June 2018, the Company's Board of Directors' meeting passed the resolution to approve the acquisition of shares in TPI Bio Pharmaceutical Co., Ltd. (formerly TPI Tank Terminal Co., Ltd.), the main objective is to restructure the shareholding of the Group to support business expansion. Thereafter, on 26 June 2018, the Company obtained control of that company by acquiring 99,995 shares or equivalent to 99.99% of the paid-up share capital at the price of Baht 11.48 per share, in the amount of Baht 1,147,680 from related parties, thereby become a subsidiary of the Company.

Subsequently, on 26 July 2018, the Company's Board of Directors' meeting passed the resolution to approve payment for increasing of share capital in TPI Bio Pharmaceutical Co., Ltd. with 50% paid up of 900,000 ordinary shares at par value of Baht 10 each, in the amount of Baht 4.50 million which was paid to the subsidiary in July 2018.

#### *TPI Healthcare Co., Ltd.*

On 26 July 2018, the Company's Board of Directors' meeting passed the resolution to approve payment for increasing of share capital in TPI Healthcare Co., Ltd. (formerly TPI Intertrade Co., Ltd.) with 50% paid up of 990,000 ordinary shares at par value of Baht 10 each, in the amount of Baht 4.95 million which was paid to the subsidiary in July 2018. As a result, the Group's equity interest in that company increased from 99.97% to 99.99% of the paid-up share capital.

*TPI Service Co., Ltd.*

On 31 August 2017, the Company's Board of Directors' meeting passed the resolution to approve payment for increasing of share capital in TPI Service Co., Ltd. with 40% paid up of 9,000 ordinary shares at par value of Baht 100 each, in the amount of Baht 3.60 million which was paid to the subsidiary in October 2017. As a result, the Group's equity interest in that company increased from 51.00% to 95.10% of the paid-up share capital.

***Initial public offering of TPI Polene Power Public Co., Ltd. ordinary shares***

In March 2017, TPI Polene Power Public Co., Ltd. completed its Initial Public Offering by issuing 2,500 million new ordinary shares with an offering price of Baht 7 per share (par value of Baht 1 per share) on the Stock Exchange of Thailand. As a result of Initial Public Offering, the Group's ownership interest in TPI Polene Power Public Co., Ltd. decreased from 100.00% to 70.2544% which 70.2381% and 0.0163% shareholding held by the Company and its subsidiaries, respectively.

Details of the change in shareholders' equity are as follows:

	<i>(in thousand Baht)</i>
	<b>Consolidated financial statements</b>
Consideration received	17,500,000
Less Transaction costs from issuance of TPI Polene Power Public Co.,Ltd. ordinary shares	(419,114)
Less Cash outflow by subsidiary for purchasingTPI Polene Power Public Co., Ltd. ordinary shares	<u>(9,597)</u>
<b>Net</b>	<b>17,071,289</b>
Dilution of ownership interest to non-controlling interest	<u>(7,283,796)</u>
<b>Change in equity</b>	<b><u>9,787,493</u></b>



All subsidiaries were incorporated in Thailand, except TPI Polene Power Investment Co., Ltd. which was incorporated in Cambodia.

None of the Company's subsidiaries are publicly listed and consequently do not have published price quotations, except for TPI Polene Power Public Co., Ltd. which is listed on the Stock Exchange of Thailand. Based on the closing price of Baht 5.65 at 31 December 2018 (2017: Baht 8.15), the fair value of the Company's investment in TPI Polene Power Public Co., Ltd. was Baht 33,335 million (2017: Baht 48,085 million) that resulted the Company had the difference between fair value and carrying value of Baht 27,435 million (2017: Baht 42,185 million).

#### **Impairment assessment for loan to and investment in a subsidiaries**

The Company has assessed the recoverable amount of investment in TPI Polene Bio Organics Co., Ltd. and TPI All Seasons Co., Ltd. by determining discounted future cash flows. The key assumptions used to determine recoverable amount included sale volume and selling price, long-term growth rate derived from expectations of future outcomes taking into account past experience, adjusted for anticipated revenue growth and discount rate referred to weighted average cost of capital (WACC) of TPI Polene Bio Organics Co., Ltd. and TPI All Seasons Co., Ltd. at 8.10 % and 10.05 %, respectively (2017: 10.90 % and 11.17 %, respectively). Based on impairment assessment, the Company recognised loss on impairment of investment in TPI Polene Bio Organics Co., Ltd. amounting to Baht 208 million in 2018 financial statements (2017: Baht 180 million). As at 31 December 2018, allowance for impairment of investment in TPI Polene Bio Organics Co., Ltd. is Baht 770 million (2017: Baht 562 million).

## **11 Long-term investments in related parties**

	Type of business	Relationship	Ownership interest		Paid-up capital		Consolidated and Separate financial statements	
			2018	2017	2018	2017	2018	2017
			(%)				(in thousand Baht)	
<b>Related parties</b>								
Pornchai Enterprise Co., Ltd.	Real estate and service rental	Shareholder	0.65	0.65	4,599,920	4,599,920	45,653	45,653
TPI Holding Co., Ltd.	Holding company	Shareholder	0.001	0.001	4,044,573	4,044,573	217	217
<b>Total</b>							<b>45,870</b>	<b>45,870</b>

## **12 Investment properties**

	Consolidated financial statements		Separate financial statements	
	2018	2017	2018	2017
<b>Cost</b>				
At 1 January	390,394	627,203	74,044	514,605
Reclassification from (to) property, plant and equipments	-	(236,809)	-	(440,561)
<b>At 31 December</b>	<b>390,394</b>	<b>390,394</b>	<b>74,044</b>	<b>74,044</b>
<b>Depreciation and impairment losses</b>				
At 1 January	15,706	15,263	-	-
Depreciation charge for the year	1,000	1,000	-	-
(Reversal of) impairment losses	-	(557)	-	-
<b>At 31 December</b>	<b>16,706</b>	<b>15,706</b>	<b>-</b>	<b>-</b>
<b>Net book value</b>				
<b>At 1 January</b>	<b>374,688</b>	<b>611,940</b>	<b>74,044</b>	<b>514,605</b>
<b>At 31 December</b>	<b>373,688</b>	<b>374,688</b>	<b>74,044</b>	<b>74,044</b>

The fair value of investment properties of the Group and the Company as at 31 December 2018 of Baht 694 million and Baht 75 million, respectively (2017: Baht 689 million and Baht 75 million, respectively) was determined by independent professional valuers, at open market values on an existing use basis. The fair value measurement for investment property has been categorised as a Level 3 fair value.

Investment properties include land for rent, freehold land and condominiums.

## Measurement of fair value

### *Fair value hierarchy*

The fair value of investment property was determined by external, independent property valuers, having appropriate recognised professional qualifications and recent experience in the location and category of the property being valued. The valuers provide the fair value of the Group's investment property portfolio on a regular basis.

The fair value measurement of all investment property has been categorised as level 3 fair value based on the inputs to the valuation technique used.

### *Valuation technique and significant unobservable inputs*

The following table shows the valuation technique used in measuring the fair value of investment property, as well as the significant unobservable inputs used.

Valuation technique	Significant Unobservable inputs
Discounted cash flows; The valuation model considers the present value of net cash flows to be generated from the property, taking into account expected rental growth rate. The expected net cash flows are discounted using risk-adjusted discount rates. Among other factors, the discount rate estimation considers the quality of its location (prime vs secondary), tenant credit quality and lease terms.	<ul style="list-style-type: none"> <li>Contractually agreed lease income over the remaining period.</li> <li>Risk-adjusted discount rates</li> </ul>
<i>Market approach</i>	The adjusted quoted price and the actual selling price of comparable investment properties.

### 13 Property, plant and equipment

#### Cost

	At 1 January 2017	At 31 December 2017	At 31 December 2018
Additions	32,899	9,108	152,228
Transfers - net	278	353,382	1,997,306
Disposals	-	(11,123)	(169,330)
Reclassification from investment properties	236,809	-	-

#### At 31 December 2017 and 1 January 2018

	At 31 December 2017	At 31 December 2018
Additions	1,492,940	72,835
Transfers - net	939	1,146,528
Disposals	-	(88,688)

#### At 31 December 2018

#### Depreciation and impairment losses

	At 1 January 2017	At 31 December 2017	At 31 December 2018
Depreciation charge for the year	14	471,066	1,604,596
Reversal of impairment losses	-	-	-
Disposals	-	(1,852)	(94,945)

#### At 31 December 2017 and 1 January 2018

	At 31 December 2017	At 31 December 2018
Depreciation charge for the year	114	491,064
Disposals	-	(56,104)

#### Net book value

#### At 1 January 2017

	At 1 January 2017	At 31 December 2017	At 31 December 2018
Owned assets	3,200,923	10,355,891	41,253,436
Assets under finance lease	-	-	215,317

#### At 31 December 2017 and 1 January 2018

	At 31 December 2017	At 31 December 2018
Owned assets	3,470,895	10,238,044
Assets under finance lease	-	-

#### At 31 December 2018

	At 31 December 2018
Owned assets	4,964,660
Assets under finance lease	-

(in thousand Baht)

#### Consolidated financial statements

	Land and land improvement	Buildings and structures	Machinery and equipment for production	Tools and factory equipment	Office furniture, fixture and equipment	Vehicle	Major spare parts	Exploration assets	Assets under construction and installation	Total
At 1 January 2017	3,200,935	15,522,589	63,698,036	7,291,829	608,648	2,390,335	315,719	1,230,085	9,440,481	103,698,657
Additions	32,899	9,108	152,228	287,304	28,107	64,737	-	2,036	8,579,425	9,155,844
Transfers - net	278	353,382	1,997,306	439,348	3,438	2,459	148,519	-	(2,944,730)	-
Disposals	-	(11,123)	(169,330)	(20,737)	(2,281)	(14,326)	-	-	(2,484)	(220,281)
Reclassification from investment properties	236,809	-	-	-	-	-	-	-	-	236,809
At 31 December 2017 and 1 January 2018	3,470,921	15,873,956	65,678,240	7,997,744	637,912	2,443,205	464,238	1,232,121	15,072,692	112,871,029
Additions	1,492,940	72,835	199,152	498,726	18,697	822	10,640	12,637	3,415,651	5,722,100
Transfers - net	939	1,146,528	6,741,685	62,831	4,508	-	(2,575)	-	(7,953,916)	-
Disposals	-	(88,688)	(57,179)	(58,557)	(5,445)	-	-	-	-	(209,769)
At 31 December 2018	4,964,800	17,004,731	72,551,898	8,509,744	655,672	2,444,027	472,303	1,244,758	10,534,427	118,383,360
Depreciation and impairment losses	12	5,166,698	22,229,283	4,307,025	409,789	1,745,854	-	-	6,686	33,865,347
At 1 January 2017	14	471,066	1,604,596	401,392	43,638	59,645	-	-	-	2,580,351
Depreciation charge for the year	-	-	-	-	-	-	-	-	(2,154)	(2,154)
Reversal of impairment losses	-	(1,852)	(94,945)	(14,178)	(2,276)	(10,288)	-	-	-	(123,539)
At 31 December 2017 and 1 January 2018	26	5,635,912	23,738,934	4,694,239	451,151	1,795,211	-	-	4,532	36,320,005
Depreciation charge for the year	114	491,064	1,720,311	426,922	41,092	62,882	-	-	-	2,742,885
Disposals	-	(56,104)	(32,334)	(41,798)	(5,312)	-	-	-	-	(135,548)
At 31 December 2018	140	6,070,872	25,427,511	5,079,363	486,931	1,858,093	-	-	4,532	38,927,442
Net book value	3,200,923	10,355,891	41,253,436	2,984,804	197,086	367,604	315,719	1,230,085	9,433,795	69,339,343
At 1 January 2017	-	-	215,317	-	1,773	276,877	-	-	-	493,967
Assets under finance lease	3,200,923	10,355,891	41,468,753	2,984,804	198,859	644,481	315,719	1,230,085	9,433,795	69,833,310
At 31 December 2017 and 1 January 2018	3,470,895	10,238,044	41,939,306	3,303,505	186,761	644,050	464,238	1,232,121	15,088,160	76,547,080
Owned assets	-	-	-	-	-	3,944	-	-	-	3,944
Assets under finance lease	3,470,895	10,238,044	41,939,306	3,303,505	186,761	647,994	464,238	1,232,121	15,088,160	76,551,024
At 31 December 2018	4,964,660	10,933,859	47,134,387	3,421,381	168,741	582,573	472,303	1,244,758	10,529,895	79,452,557
Owned assets	-	-	-	-	-	3,361	-	-	-	3,361
Assets under finance lease	4,964,660	10,933,859	47,134,387	3,421,381	168,741	585,934	472,303	1,244,758	10,529,895	79,455,918



Separate financial statements										(in thousand Baht)
		Land and land improvement	Buildings and structures	Machinery and equipment for production	Tools and factory equipment	Office furniture, fixture and equipment	Vehicle	Major spare parts	Assets under construction and installation	Total
Cost	At 1 January 2017	2,532,333	14,579,057	48,889,032	7,058,915	513,370	2,333,821	233,268	1,919,520	78,059,316
	Additions	-	6,511	9,372	250,379	20,925	80,501	-	2,103,383	2,471,071
	Transfers - net	-	320,316	655,902	434,849	3,248	-	142,809	(1,557,124)	-
	Disposals	-	-	(15,549)	(17,122)	(1,353)	(7,278)	-	-	(41,302)
	Reclassification from investment properties	440,561	-	-	-	-	-	-	-	440,561
At 31 December 2017 and 1 January 2018		2,972,894	14,905,884	49,538,757	7,727,021	536,190	2,407,044	376,077	2,465,779	80,929,946
Depreciation and impairment losses	Additions	11,600	11,866	2,327	467,807	11,190	676	20,088	1,190,714	1,716,288
	Transfers - net	-	328,087	1,764,146	57,185	2,917	-	-	(2,152,335)	-
	Disposals	-	(49,912)	(31,477)	(56,569)	(2,396)	-	-	-	(140,354)
	At 31 December 2018	2,984,494	15,195,925	51,273,753	8,195,444	547,901	2,407,720	396,165	1,504,158	82,505,560
	Depreciation charge for the year	-	4,709,355	17,791,933	4,176,375	331,931	1,714,232	-	-	28,729,826
Net book value	At 1 January 2017	-	396,310	1,021,176	381,688	37,966	55,812	-	-	1,892,952
	Disposals	-	-	(6,889)	(10,761)	(1,349)	(6,152)	-	-	(25,151)
	At 31 December 2017 and 1 January 2018	-	5,105,665	18,806,220	4,547,302	368,548	1,763,892	-	-	30,591,627
	Depreciation charge for the year	-	397,954	1,033,856	404,766	34,901	59,387	-	-	1,930,864
	Disposals	-	(26,292)	(9,087)	(39,817)	(2,306)	-	-	-	(77,482)
At 31 December 2018	-	5,477,327	19,831,009	4,912,251	401,143	1,823,279	-	-	32,445,009	
Net book value										
At 1 January 2017		2,532,333	9,869,702	31,097,099	2,882,540	179,666	342,712	233,268	1,919,520	49,056,840
Owned assets		-	-	-	-	1,773	276,877	-	-	278,650
Assets under finance lease		2,532,333	9,869,702	31,097,099	2,882,540	181,439	619,589	233,268	1,919,520	49,335,490
At 31 December 2017 and 1 January 2018										
Owned assets		2,972,894	9,800,219	30,732,537	3,179,719	167,642	639,208	376,077	2,465,779	50,334,075
Assets under finance lease		-	-	-	-	-	3,944	-	-	3,944
At 31 December 2018		2,972,894	9,800,219	30,732,537	3,179,719	167,642	643,152	376,077	2,465,779	50,338,019
Owned assets		2,984,494	9,718,598	31,442,744	3,283,193	146,757	581,081	396,165	1,504,159	50,057,191
Assets under finance lease		-	-	-	-	-	3,360	-	-	3,360
At 31 December 2018		2,984,494	9,718,598	31,442,744	3,283,193	146,757	584,441	396,165	1,504,159	50,060,551

The gross amount of the Group and the Company's fully depreciated plant and equipment that was still in use as at 31 December 2018 amounted to Baht 15,681 million and Baht 12,380 million, respectively (2017: Baht 11,635 million and Baht 8,458 million, respectively).

### Security

At 31 December 2018 the Company's land, buildings, machinery and equipment with a net book value of Baht 23,807million. (2017: Baht23,008million) are mortgaged or pledged as collateral for the long-terms loan.

Capitalised borrowing costs relating to the acquisition of the construction of new factory of the Group and the Company as at 31 December 2018 are Baht 58 million and Baht 58 million, respectively (2017: Baht 83 million and Baht 51million, respectively), with capitalisation in the consolidated and separate financial statements of 2.1% - 5.3% (2017: 1.5% - 5.3% MLR-1.75).

### Impairment assessment for property plant and equipment

Two subsidiaries of the Company; TPI Polene Bio Organics Co., Ltd. and TPI All Seasons Co., Ltd. has continuous loss in operation which indicated the impairment in property, plant and equipment. The Group has assessed the recoverable amount base on value in use; determined by discounting future cash flows to be generated from the continuing use of assets. The key assumptions used to determine recoverable amount included sale volume and selling price, long-term growth rate derived from expectations of future outcomes taking into account past experience, adjusted for anticipated revenue growth and discount rate referred to weighted average cost of capital (WACC) of TPI Polene Bio Organics Co., Ltd. and TPI All Seasons Co., Ltd. at 8.10 % and 10.05 %, respectively (2017: 10.90 % and 11.17 %, respectively). Base on impairment assessment, the recoverable amount was estimated to be higher than its carrying amount and no impairment was required to the Company's financial statements. Increasing in discount rate and decreasing in long-term growth rate could cause the carrying amount to exceed the recoverable amount.

### Exploration assets

For the exploration assets which the net book value as at 31 December 2018 of Baht 1,245 million. (2017: Baht 1,232 million) In August 2016, a subsidiary has granted an extension of time until February 2020 for petroleum exploration. Base on the study of the consulting company and the assessment of a subsidiary, the area has high petroleum potential. If a subsidiary continue to explore and drill for the well, it is highly probable to find petroleum.

At present, the subsidiary is studying the potential of petroleum exploration to drill for the well by studying the information of existing well to identify the position of exist well. The management believe that the investment in the petroleum exploration of this two wells is still value according to the gas volumetric calculation in the CCOP Guidelines for Risk Assessment of Petroleum Prospect and the subsidiary is still in the process of exploration above. Hence, the cost associated with the exploration will be recognised as expense to profit or loss in the period when there is no discovery of proved reserves and no future exploration and assessment plan.

## 14 Intangible assets

(in thousand Baht)

	Consolidated and Separate financial statements			
	Cost of raw material resources and cost of concessions	Software licenses	Development assets	Total
<b>Cost</b>				
At 1 January 2017	734,564	48,421	38,628	821,613
Additions	1,123	10,908	-	12,031
<b>At 31 December 2017 and 1 January 2018</b>	<b>735,687</b>	<b>59,329</b>	<b>38,628</b>	<b>833,644</b>
Additions	500	-	-	500
<b>At 31 December 2018</b>	<b>736,187</b>	<b>59,329</b>	<b>38,628</b>	<b>834,144</b>
<b>Amortisation</b>				
At 1 January 2017	531,217	42,070	3,893	577,180
Amortisation for the year	30,228	1,587	7,721	39,536
<b>At 31 December 2017 and 1 January 2018</b>	<b>561,445</b>	<b>43,657</b>	<b>11,614</b>	<b>616,716</b>
Amortisation for the year	31,803	1,734	7,721	41,258
<b>At 31 December 2018</b>	<b>593,248</b>	<b>45,391</b>	<b>19,335</b>	<b>657,974</b>
<b>Net book value</b>				
At 1 January 2017	203,347	6,351	34,735	244,433
<b>At 31 December 2017 and 1 January 2018</b>	<b>174,242</b>	<b>15,672</b>	<b>27,014</b>	<b>216,928</b>
<b>At 31 December 2018</b>	<b>142,939</b>	<b>13,938</b>	<b>19,293</b>	<b>176,170</b>

## 15 Deferred tax

Deferred tax assets and liabilities as at 31 December were as follows:

(in thousand Baht)

	Consolidated financial statements			
	Assets		Liabilities	
	2018	2017	2018	2017
Total	1,122,445	1,121,960	(699,605)	(713,594)
Set off of tax	(630,373)	(637,392)	630,373	637,392
<b>Net deferred tax assets (liabilities)</b>	<b>492,072</b>	<b>484,568</b>	<b>(69,232)</b>	<b>(76,202)</b>

(in thousand Baht)

	Separate financial statements			
	Assets		Liabilities	
	2018	2017	2018	2017
Total	991,975	982,248	(644,130)	(653,066)
Set off of tax	(644,130)	(653,066)	644,130	653,066
<b>Net deferred tax assets</b>	<b>347,845</b>	<b>329,182</b>	<b>-</b>	<b>-</b>

Movements in total deferred tax assets and liabilities during the year were as follows:

(in thousand Baht)

	Consolidated financial statements		
	(Charged) / credited to:		
	At 1 January 2018	Profit or loss Other comprehensive income (Note 31)	At 31 December 2018
<b>Deferred tax assets</b>			
Allowance for doubtful account receivables	31,185	(6,483)	24,702
Allowance for decline in value of inventories	6,197	(796)	5,401
Allowance for impairment of assets	1,806	-	1,806
Provision for sales discount and sales promotional	7,059	1,041	8,100
Provision for employee benefit	281,016	11,123	300,248
Loss carry forward	794,424	(15,780)	778,644
Others	273	3,255	3,544
<b>Total</b>	<b>1,121,960</b>	<b>(7,640)</b>	<b>1,122,445</b>
<b>Deferred tax liabilities</b>			
Amortisation gap of concessions	(5,325)	601	(4,724)
Financial lease	(151,167)	4,434	(146,733)
Depreciation gap of assets	(466,492)	285	(466,207)
Property, plant and equipment	(90,610)	8,669	(81,941)
<b>Total</b>	<b>(713,594)</b>	<b>13,989</b>	<b>(699,605)</b>
<b>Net</b>	<b>408,366</b>	<b>6,349</b>	<b>422,840</b>

(in thousand Baht)

	Consolidated financial statements			
		(Charged) / credited to:		
	At 1 January 2017	Profit or loss	Other comprehensive income	At 31 December 2017
			(Note 31)	
<b>Deferred tax assets</b>				
Allowance for doubtful account receivables	29,473	1,712	-	31,185
Allowance for decline in value of inventories	4,124	2,073	-	6,197
Allowance for impairment of assets	2,348	(542)	-	1,806
Provision for sales discount and sales promotional	14,086	(7,027)	-	7,059
Provision for employee benefit	268,109	13,331	(424)	281,016
Loss carry forward	501,992	292,432	-	794,424
Others	609	(309)	(27)	273
<b>Total</b>	<b>820,741</b>	<b>301,670</b>	<b>(451)</b>	<b>1,121,960</b>
<b>Deferred tax liabilities</b>				
Amortisation gap of concessions	(5,935)	610	-	(5,325)
Financial lease	(141,197)	(9,970)	-	(151,167)
Depreciation gap of assets	(479,221)	12,729	-	(466,492)
Property, plant and equipment	(99,279)	8,669	-	(90,610)
<b>Total</b>	<b>(725,632)</b>	<b>12,038</b>	<b>-</b>	<b>(713,594)</b>
<b>Net</b>	<b>95,109</b>	<b>313,708</b>	<b>(451)</b>	<b>408,366</b>

(in thousand Baht)

		Separate financial statements		
		(Charged) / credited to:		
	At 1 January 2018	Profit or loss	Other comprehensive income (Note 31)	At 31 December 2018
<b>Deferred tax assets</b>				
Allowance for doubtful account receivables	21,371	(4,985)	-	16,386
Allowance for impairment of assets	900	-	-	900
Provision for sales discount and sales promotional	6,657	858	-	7,515
Provision for employee benefit	245,776	7,974	5,864	259,614
Loss carry forward	707,432	-	-	707,432
Others	112	-	16	128
<b>Total</b>	<b>982,248</b>	<b>3,847</b>	<b>5,880</b>	<b>991,975</b>
<b>Deferred tax liabilities</b>				
Amortisation gap of concessions	(5,325)	601	-	(4,724)
Financial lease	(85,900)	(359)	-	(86,259)
Depreciation gap of assets	(561,841)	8,694	-	(553,147)
<b>Total</b>	<b>(653,066)</b>	<b>8,936</b>	<b>-</b>	<b>(644,130)</b>
<b>Net</b>	<b>329,182</b>	<b>12,783</b>	<b>5,880</b>	<b>347,845</b>

	At 1 January 2018	Separate financial statements (Charged) / credited to:		(in thousand Baht)
		Profit or loss	Other comprehensive income (Note 31)	At 31 December 2018
<b>Deferred tax assets</b>				
Allowance for doubtful account receivables	17,000	4,371	-	21,371
Allowance for impairment of assets	900	-	-	900
Allowance for impairment of investment	76,400	(76,400)	-	-
Provision for sales discount and sales promotional	13,318	(6,661)	-	6,657
Provision for employee benefit	235,646	9,371	759	245,776
Loss carry forward	369,252	338,180	-	707,432
Others	139	-	(27)	112
<b>Total</b>	<b>712,655</b>	<b>268,861</b>	<b>732</b>	<b>982,248</b>
<b>Deferred tax liabilities</b>				
Amortisation gap of concessions	(5,935)	610	-	(5,325)
Financial lease	(79,907)	(5,993)	-	(85,900)
Depreciation gap of assets	(580,496)	18,655	-	(561,841)
<b>Total</b>	<b>(666,338)</b>	<b>13,272</b>	<b>-</b>	<b>(653,066)</b>
<b>Net</b>	<b>46,317</b>	<b>282,133</b>	<b>732</b>	<b>329,182</b>

Deferred tax assets arising from unused tax losses allowance for impairment of investment that has not been recognised in the separate financial statements as at 31 December 2018 amounting to Baht 154 million (2017: Baht 112.4 million).

Deferred tax assets arising from unused tax losses that has not been recognised in the consolidated and separate financial statements as at 31 December 2018 amounting to Baht 909.8 million and Baht 645.2 million, respectively (2017: Baht 462.3 million and Baht 273.4 million, respectively).

The tax losses expire in 2019 to 2023. The deductible temporary differences do not expire under current tax legislation. Deferred tax assets have not been recognised in respect of these items because it is not probable that future taxable profit will be available against which the Group can utilise the benefits therefrom.

#### *Recognition of deferred tax asset from tax loss*

In 2018 and 2017, the Group has entered into several agreements for many projects. As a result, management estimates future taxable profits and, as at 31 December 2018, the Group recognised deferred tax assets from tax losses in the consolidated and separate financial statements amounting to Baht 779 million and Baht 707 million, respectively (2017: Baht 794 million and Baht 707 million, respectively) because management considered it probable that future taxable profits would be available against which such losses can be used.

## 16 Interest-bearing liabilities

	Consolidated financial statements		Separate financial statements	
	2018	2017	2018	2017
<i>(in thousand Baht)</i>				
<b>Current</b>				
Bank overdrafts and short-term loans from financial institutions				
Unsecured	2,643,969	2,178,403	1,685,614	1,844,119
Current portion of long-term loans from financial institutions				
Secured	719,372	751,049	719,372	751,049
Unsecured	857,143	-	857,143	-
Current portion of debentures	7,750,000	5,000,000	7,750,000	5,000,000
Current portion of finance lease liabilities	775	2,378	775	2,378
<b>Total current interest-bearing liabilities</b>	<b>11,971,259</b>	<b>7,931,830</b>	<b>11,012,904</b>	<b>7,597,546</b>
<b>Non-current</b>				
Long-term loans from financial institutions				
Secured	4,092,535	5,039,377	4,092,535	5,039,377
Unsecured	2,142,857	-	2,142,857	-
Debentures	32,250,000	28,000,000	28,250,000	28,000,000
Finance lease liabilities	-	775	-	775
<b>Total non-current interest-bearing liabilities</b>	<b>38,485,392</b>	<b>33,040,152</b>	<b>34,485,392</b>	<b>33,040,152</b>
<b>Total</b>	<b>50,456,651</b>	<b>40,971,982</b>	<b>45,498,296</b>	<b>40,637,698</b>

The periods to maturity of interest-bearing liabilities, excluding finance lease liabilities, as at 31 December were as follows:

	Consolidated financial statements		Separate financial statements	
	2018	2017	2018	2017
<i>(in thousand Baht)</i>				
Within one year	11,970,484	7,929,452	11,012,129	7,595,168
After one year but within five years	37,051,577	28,285,010	33,051,577	28,285,010
After five years	1,433,815	4,754,367	1,433,815	4,754,367
<b>Total</b>	<b>50,455,876</b>	<b>40,968,829</b>	<b>45,497,521</b>	<b>40,634,545</b>

Secured interest-bearing liabilities as at 31 December were secured on the following net book value assets:

	Consolidated and Separate financial statements	
	2018	2017
<i>(in thousand Baht)</i>		
Land and buildings	6,067,625	6,369,831
Machinery and equipment	17,738,967	16,637,818
<b>Total</b>	<b>23,806,592</b>	<b>23,007,649</b>

As at 31 December 2018 the Group and the Company had unutilised credit facilities totalling Baht 143 million and Baht 108 million, respectively (2017: Baht 143 million and Baht 108 million, respectively).



### Finance lease liabilities

Finance lease liabilities as at 31 December were payable as follows:

(in thousand Baht)

	Consolidated financial statements					
	2018			2017		
	Future minimum lease payments	Interest	Present value of minimum lease payments	Future minimum lease payments	Interest	Present value of minimum lease payments
Within one year	1,716	941	775	2,503	125	2,378
After one year but within five years	-	-	-	794	19	775
<b>Total</b>	<b>1,716</b>	<b>941</b>	<b>775</b>	<b>3,297</b>	<b>144</b>	<b>3,153</b>

### Loan from financial institutions

On 25 January 2013 and 26 March 2013, the Company had signed 4 facility agreements for investment in the Fourth Cement Plant Project. As at 31 December 2018, 3 facility agreements remained and total amount was equivalent to Baht 6,608 million (2017: 3 facility agreements totaling Baht 6,608 million). The Company fulfilled the condition precedent of the Facility Agreements which enable the Company to disburse the loan from such Facility Agreements since 27 March 2013, as following financial institutions:

1. Foreign financial institutions in the total amount of Euro 114.5 million covered by Euler Hermes Deutschland AG (German Export Credit Agency of the German Ministry of Finance);
2. Foreign financial institution in the total amount of Euro 26.4 million covered by the Office of National Du Ducroire or ONDD (Belgian Export Credit Agency); and
3. Foreign financial institution in the total amount of Euro 13.0 million covered by the Office of National Du Ducroire or ONDD (Belgian Export Credit Agency)

As at 31 December 2018, the Company had long-term loans from financial institutions of Baht 4,301million (2017: Baht 5,629 million) for the project. Principal repayment shall be made in 6 - 12 years by half year repayment commencing the earlier of; 6 month from receiving of plant acceptance certificates or 3.5 years from the effective date of facility agreement. As at 31 December 2018, the Company has fully utilised its credit facilities. Interest rates for project is according to agreement rate (See note 35).

Long-term borrowings as mentioned above are secured by related land, buildings and equipment of each project. The credit utilisation agreements contain covenants with which the Group has to comply, pertaining to matters such as maintaining of certain financial ratios, maintaining of percentage of shares held by the major shareholder, and remaining as a public company listed on the Stock Exchange of Thailand.

In addition, on 22 November 2018, the Company entered into a loan agreement with a local financial institution for working capital and / or to repay the debt of the Company without collateral of Baht 3,000 million for a period of 3.5 years with equal repayment every 6 months from the first drawdown date. Interest rate is as specified in the contract. The loan agreement stipulates certain conditions that the Company must comply with, such as maintaining certain financial ratios, maintaining of percentage of shares held in a subsidiary and certain claims. As at 31 December 2018, loans from the said financial institution amounted of Baht 3,000 million.

## Debentures

As at 31 December 2018, the Group and the Company had the unsecured, unsubordinated debentures in registered form with debentures holders' representative, payable quarterly totalling Baht 40,000 million and Baht 36,000 million, respectively (2017: Baht 33,000 million and Baht 33,000 million, respectively) as follows:

Consolidated financial statements								
Issued Date	The period to maturity within one year		The period to maturity over one year		Total		Interest Rate	Term
	2018	2017	2018	2017	2018	2017		
	(in thousand Baht)							
							(%p.a.)	
17 January 2014	-	2,000,000	-	-	-	2,000,000	5.30	4.5 years
22 January 2015	3,000,000	-	-	3,000,000	3,000,000	3,000,000	4.85	4 years
22 January 2015	-	-	3,000,000	3,000,000	3,000,000	3,000,000	5.20	5 years
5 August 2015	-	3,000,000	-	-	-	3,000,000	4.10	3 years
5 August 2015	2,750,000	-	-	2,750,000	2,750,000	2,750,000	4.40	4 years
5 August 2015	-	-	2,205,000	2,205,000	2,205,000	2,205,000	4.65	5 years
5 August 2015	-	-	3,600,000	3,600,000	3,600,000	3,600,000	4.90	6 years
5 August 2015	-	-	4,000,000	4,000,000	4,000,000	4,000,000	5.20	7 years
1 April 2016	-	-	1,600,000	1,600,000	1,600,000	1,600,000	4.35	5 years
1 April 2016	-	-	1,200,000	1,200,000	1,200,000	1,200,000	4.60	6 years
1 April 2016	-	-	2,645,000	2,645,000	2,645,000	2,645,000	4.80	7 years
7 July 2017	2,000,000	-	-	2,000,000	2,000,000	2,000,000	3.20	2 years
7 July 2017	-	-	2,000,000	2,000,000	2,000,000	2,000,000	3.50	3 years
26 April 2018	-	-	8,000,000	-	8,000,000	-	3.30	3 years
28 November 2018	-	-	4,000,000	-	4,000,000	-	3.90	3 years
Total	7,750,000	5,000,000	32,250,000	28,000,000	40,000,000	33,000,000		

Issued Date	Separate financial statements							
	The period to maturity within one year		The period to maturity over one year		Total		Interest Rate	Term
	2018	2017	2018	2017	2018	2017		
	(in thousand Baht)							
17 January 2014	-	2,000,000	-	-	-	2,000,000	5.30	4.5 years
22 January 2015	3,000,000	-	-	3,000,000	3,000,000	3,000,000	4.85	4 years
22 January 2015	-	-	3,000,000	3,000,000	3,000,000	3,000,000	5.20	5 years
5 August 2015	-	3,000,000	-	-	-	3,000,000	4.10	3 years
5 August 2015	2,750,000	-	-	2,750,000	2,750,000	2,750,000	4.40	4 years
5 August 2015	-	-	2,205,000	2,205,000	2,205,000	2,205,000	4.65	5 years
5 August 2015	-	-	3,600,000	3,600,000	3,600,000	3,600,000	4.90	6 years
5 August 2015	-	-	4,000,000	4,000,000	4,000,000	4,000,000	5.20	7 years
1 April 2016	-	-	1,600,000	1,600,000	1,600,000	1,600,000	4.35	5 years
1 April 2016	-	-	1,200,000	1,200,000	1,200,000	1,200,000	4.60	6 years
1 April 2016	-	-	2,645,000	2,645,000	2,645,000	2,645,000	4.80	7 years
7 July 2017	2,000,000	-	-	2,000,000	2,000,000	2,000,000	3.20	2 years
7 July 2017	-	-	2,000,000	2,000,000	2,000,000	2,000,000	3.50	3 years
26 April 2018	-	-	8,000,000	-	8,000,000	-	3.30	3 years
Total	7,750,000	5,000,000	28,250,000	28,000,000	36,000,000	33,000,000		

## 17 Trade accounts payable

	Note	Consolidated financial statements		Separate financial statements	
		2018	2017	2018	2017
Related parties	4	205,304	164,337	914,609	831,416
Other parties		2,796,494	2,653,920	1,995,610	1,964,809
<b>Total</b>		<b>3,001,798</b>	<b>2,818,257</b>	<b>2,910,219</b>	<b>2,796,225</b>

## 18 Other payables

	Consolidated financial statements		Separate financial statements	
	2018	2017	2018	2017
Accrued expenses	730,156	739,727	567,426	581,064
Deposit from sales	371,662	368,373	306,285	327,331
Guarantee and deposits	293,255	283,395	285,640	278,357
Retention payable	111,550	153,294	51,844	110,804
Machine Payable	1,503,525	3,039,384	72,565	238,955
Others	664,013	484,798	490,431	350,424
<b>Total</b>	<b>3,674,161</b>	<b>5,068,971</b>	<b>1,774,191</b>	<b>1,886,935</b>

## 19 Non-current provisions for employee benefits

	Consolidated financial statements		Separate financial statements	
	2018	2017	2018	2017
<b>Statement of financial position</b>				
<b>Non-current provision for:</b>				
Post-employment benefits				
Defined benefit plan	<u>1,541,170</u>	<u>1,443,775</u>	<u>1,298,077</u>	<u>1,228,884</u>
<b>Year ended 31 December</b>				
<b>Statement of comprehensive income:</b>				
<b>Recognised in profit or loss:</b>				
Post-employment benefits	<u>83,955</u>	<u>88,462</u>	<u>66,693</u>	<u>65,898</u>
<b>Recognised in other comprehensive income:</b>				
Actuarial (gains) losses recognised in the year	<u>40,542</u>	<u>(2,371)</u>	<u>29,323</u>	<u>3,795</u>

### Defined benefit plan

The Group and the Company operate 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 defined benefit plans expose the Group to actuarial risks, such as longevity risk, interest rate risk and market (investment) risk.

Movement in the present value of the defined benefit obligations.

	Consolidated financial statements		Separate financial statements	
	2018	2017	2018	2017
At 1 January	1,443,775	1,373,924	1,228,884	1,178,236
<b>Include in profit or loss:</b>				
Current service cost and interest on obligation	83,955	88,462	66,693	65,898
<b>Included in other comprehensive income</b>				
Actuarial (gain) loss	40,542	(2,371)	29,323	3,795
<b>Other</b>				
Benefit paid by the plan	(27,102)	(16,240)	(26,823)	(14,325)
Transfer of employee benefit obligations	-	-	-	(4,720)
<b>At 31 December</b>	<b>1,541,170</b>	<b>1,443,775</b>	<b>1,298,077</b>	<b>1,228,884</b>

Actuarial gains and losses recognised in other comprehensive income were mainly arose from the change of discount rate and future salary growth.

### Actuarial assumptions

The following were the principal actuarial assumptions at the reporting date (expressed as weighted averages).

	Consolidated financial statements		Separate financial statements	
	2018	2017	2018	2017
Discount rate	3.00 - 3.36	3.00 - 3.21	3.12 - 3.26	3.00 - 3.13
Future salary growth	3.50 - 7.68	4.00 - 7.64	5.20-7.68	5.12 - 7.64

Assumptions regarding future mortality have been based on published statistics and mortality tables.

At 31 December 2018, the weighted-average duration of the defined benefit obligation was 23 years (2017: 23 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	
	Increase	Decrease	Increase	Decrease
<b>31 December 2018</b>				
Discount rate (1% movement)	(147,821)	175,527	(123,771)	146,867
Future salary growth (1% movement)	153,021	(132,393)	127,831	110,620
<b>31 December 2017</b>				
Discount rate (1% movement)	(146,014)	174,103	(124,571)	148,681
Future salary growth (1% movement)	153,164	(131,846)	130,580	(112,437)

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.

On 13 December 2018, the National Legislative Assembly passed a bill amending the Labor Protection Act 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 will amend its retirement plan in the period in which the amendment will have become law and is announced in the Royal Gazette. As a result of this change, the provision for retirement benefits as at that future period end as well as past service cost recognised during that period in the consolidated and the separate financial statements is estimated to increase by an amount of approximately Baht 603 million and Baht 512 million, respectively.

## 20 Share capital

Share capital			(thousand shares / thousand Baht)		
	Par value per share (in Baht)	2018		2017	
		Number	Amount	Number	Amount
<i>Authorised</i>					
<b>At 31 December</b>					
- ordinary shares	1	<u>24,815,000</u>	<u>24,815,000</u>	<u>24,815,000</u>	<u>24,815,000</u>
<i>Issued and paid-up</i>					
<b>At 31 December</b>					
- ordinary shares	1	<u>20,190,000</u>	<u>20,190,000</u>	<u>20,190,000</u>	<u>20,190,000</u>

## 21 Treasury shares

The meeting of the Plan Administrator held on 3 March 2003 approved the donation of 20 million ordinary shares at Baht 10 per share of the Company by assigning a subsidiary company to purchase shares of the Company on the Stock Exchange of Thailand at a price per share not exceeding Baht 17 and paid advances to the subsidiary company of Baht 393 million. In the first quarter of 2003, the subsidiary made purchases of the Company's shares on the Stock Exchange of Thailand 20 million shares totaling Baht 333.25 million. These shares are intended to be donated. As at 31 December 2017, the remaining balance of the treasury shares held by subsidiaries of 222.16 million shares at Baht 1 per share at cost of Baht 359.24 million is presented as a separate category within equity and recognised as a deduction from equity in the consolidated financial statements.

On 12 October 2018, the subsidiaries sold of 222.16 million ordinary shares of the Company to a related party to eliminate the cross shareholding within the Group, according the approving of the Board of Directors' meeting held on that date. The surplus on treasury shares of Baht 35.22 million is presented as a separate category within equity in the consolidated financial statements. The surplus on treasury shares represents the accumulated surplus on sale of treasury shares, net of any deficits on sale or cancellation of treasury shares. The surplus on treasury shares is not available for dividend distribution.

At the Board of Directors meeting held on 27 April 2018, it approved the Company's share repurchase for financial management purposes scheme, the maximum amount for the share repurchase is not greater than Baht 2,500 million, number of shares repurchased 1,009.50 million shares, at par value Baht 1 per share, or representing 5% of the total paid-up capital. The repurchase period has started from 16 July 2018 to 15 January 2019. As at 31 December 2018, the Company has repurchased the treasury shares of 857.81 million shares at the total cost of Baht 1,682.63 million.

At the present, the treasury shares program of the Company has been completed of 1,009.50 million shares at the total cost of Baht 1,983.89 million.

## 22 Reserves

Reserves comprise:

### ***Appropriations of profit and 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.

#### ***Treasury shares reserve***

The treasury shares reserve represents the amount appropriated from retained earnings equal to the cost of the Company's own shares held by the Company. The treasury shares reserve is not available for dividend distribution.

### ***Other components of equity***

#### **Currency translation differences**

The currency translation differences account within equity comprises all foreign currency differences arising from the translation of the financial statements of foreign operations.

### Fair value changes in available-for-sale investments

The fair value changes in available-for-sale investments account within equity comprises the cumulative net change in the fair value of available-for-sale investments until the investments are derecognised or impaired.

### Movements in reserves

Movements in reserves are shown in the statement of changes in equity.

## 23 Segment information

The Group has four reportable segments, as described below, which are the Group's strategic divisions. The strategic divisions offer different products and services, 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.

- Construction Materials
- Petrochemical & Chemicals
- Energy & Utilities
- Agriculture

Information regarding the results of each reportable segment is included below. Performance is measured based on segment profit before tax, as included in the internal management reports that are reviewed by the Group's CODM. Segment profit before tax is used to measure performance as management believes that such information is the most relevant in evaluating the results of certain segments relative to other entities that operate within these industries.

### (a) Reportable segment results

	Revenue from external customers		Inter-segment revenue		Total segment revenue		Reportable segment profit (loss) before income tax	
	2018	2017	2018	2017	2018	2017	2018	2017
Construction Materials	19,993,749	18,077,561	13,088,749	6,688,335	33,082,498	24,765,896	(3,125,904)	(4,318,725)
Petrochemical & Chemicals	8,176,511	6,684,190	7,560,894	7,471,675	15,737,405	14,155,865	1,098,480	962,475
Energy & Utilities	6,698,253	4,201,598	921,554	663,217	7,619,807	4,864,815	3,859,628	2,650,048
Agriculture	124,648	125,003	14,116	16,147	138,764	141,150	(239,694)	(156,467)
<b>Total</b>	<b>34,993,161</b>	<b>29,088,352</b>	<b>21,585,313</b>	<b>14,839,374</b>	<b>56,578,474</b>	<b>43,927,726</b>	<b>1,592,510</b>	<b>(862,669)</b>
Other gain (loss)							4,577	(11,146)
							1,597,087	(873,815)
Elimination of inter-segment (gain) loss							46,096	(63,275)
<b>Profit (loss) before income tax expense for the year</b>							<b>1,643,183</b>	<b>(937,090)</b>



**(b) Reportable segment financial position**

(in thousand Baht)

	<b>Segment assets</b>	
	2018	2017
Construction Materials	69,828,342	66,794,022
Petrochemical & Chemicals	8,529,204	8,250,993
Energy & Utilities	28,361,759	24,298,840
Agriculture	2,233,346	2,379,797
Others	463,552	426,915
	<b>109,416,203</b>	<b>102,186,567</b>
Unallocated assets	6,010,239	4,840,657
<b>Total</b>	<b>115,426,442</b>	<b>107,027,224</b>
Elimination of inter-segment assets	(4,938,518)	(3,849,589)
<b>Total assets</b>	<b>110,487,924</b>	<b>103,177,635</b>

**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.

(in thousand Baht)

**Geographical information**

	<b>Revenues</b>	
	2018	2017
Thailand	23,460,136	19,632,042
China	4,548,913	3,441,592
Bangladesh	1,155,077	1,544,070
Others	5,829,035	4,470,648
<b>Total</b>	<b>34,993,161</b>	<b>29,088,352</b>

The Group generates revenue from current assets located principally in Thailand.

**24 Investment income**

(in thousand Baht)

	<i>Note</i>	<b>Consolidated financial statements</b>		<b>Separate financial statements</b>	
		2018	2017	2018	2017
<b>Dividend income</b>					
Subsidiaries	4	-	-	2,556,952	3,257,155
Other parties		24	14	24	14
		<b>24</b>	<b>14</b>	<b>2,556,976</b>	<b>3,257,169</b>
<b>Interest income</b>					
Subsidiaries	4	-	-	13,282	71,519
Other parties		78,055	99,149	28,053	28,302
		<b>78,055</b>	<b>99,149</b>	<b>41,335</b>	<b>99,821</b>
<b>Others</b>					
Other investment income		3,118	8,221	18,486	16,832
		<b>3,118</b>	<b>8,221</b>	<b>18,486</b>	<b>16,832</b>
<b>Total</b>		<b>81,197</b>	<b>107,384</b>	<b>2,616,797</b>	<b>3,373,822</b>

## 25 Other income

	(in thousand Baht)			
	Consolidated financial statements		Separate financial statements	
	2018	2017	2018	2017
Rental trucks income	54,683	68,666	57,795	75,626
Income from sale of spare parts	74,710	35,368	86,590	64,587
Sale steam	8,556	9,328	8,556	9,328
Share services income	240	-	126,799	90,806
Waste disposal income	32,316	40,151	227,987	40,151
Others	403,234	229,289	166,997	173,971
<b>Total</b>	<b>573,739</b>	<b>382,802</b>	<b>674,724</b>	<b>454,469</b>

## 26 Cost of distributions and transportations

	(in thousand Baht)			
	Consolidated financial statements		Separate financial statements	
	2018	2017	2018	2017
Delivery expenses	2,504,187	2,213,580	2,280,103	2,045,845
Personnel expenses	745,267	671,024	611,948	536,400
Depreciation and amortisation	190,532	171,054	183,903	163,559
Maintenance expenses	65,772	75,511	60,486	70,298
Others	661,854	901,556	529,553	740,622
<b>Total</b>	<b>4,167,612</b>	<b>4,032,725</b>	<b>3,665,993</b>	<b>3,556,724</b>

## 27 Administrative expenses

	(in thousand Baht)			
	Consolidated financial statements		Separate financial statements	
	2018	2017	2018	2017
Personnel expenses	953,965	997,851	742,239	790,637
Depreciation and amortisation	28,356	38,139	15,731	16,144
Maintenance expenses	30,831	31,630	29,179	30,718
Others	784,028	709,763	612,435	694,647
<b>Total</b>	<b>1,797,180</b>	<b>1,777,383</b>	<b>1,399,584</b>	<b>1,532,146</b>

## 28 Employee benefit expenses

	(in thousand Baht)			
	Consolidated financial statements		Separate financial statements	
	2018	2017	2018	2017
<b>Management</b>				
Wages and salaries	346,944	346,620	290,308	293,268
Defined benefit plan	6,556	14,898	6,085	10,208
Others	46,310	44,251	27,661	27,547
	<b>399,810</b>	<b>405,769</b>	<b>324,054</b>	<b>331,023</b>
<b>Other employees</b>				
Wages and salaries	5,081,565	4,886,284	3,951,203	3,795,905
Defined benefit plan	77,399	76,256	60,608	55,690
Others	180,890	180,817	81,891	95,050
	<b>5,339,854</b>	<b>5,143,357</b>	<b>4,093,702</b>	<b>3,946,645</b>
<b>Total</b>	<b>5,739,664</b>	<b>5,549,126</b>	<b>4,417,756</b>	<b>4,277,668</b>

The defined contribution plans comprise provident funds established by some companies of the Group for its employees. Membership to the funds is on a voluntary basis. Contributions are made monthly by the employees at rates ranging from 3% to 10% of their basic salaries and by the Company at rates ranging from 3% to 10% 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.

## 29 Expenses by nature

The statements of comprehensive 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	
	2018	2017	2018	2017
<i>(in thousand Baht)</i>				
<b>Included in cost of sales of goods:</b>				
Changes in inventories of finished goods and work in progress	(530,431)	(2,288,337)	(620,956)	(2,270,532)
Raw materials and consumables used	13,922,624	11,902,052	7,999,823	7,965,112
Loss on decline in value of inventories	176,165	123,984	90,147	31,393
Depreciation of plant and equipment	2,538,724	2,385,002	1,745,859	1,727,093
Amortisation of intangible assets	26,631	25,692	26,631	25,692
<b>Included in distribution costs:</b>				
Depreciation of plant and equipment	182,811	163,333	176,181	155,838
Amortisation of intangible assets	7,721	7,721	7,721	7,721
<b>Included in administrative expenses:</b>				
Depreciation of plant and equipment	21,450	32,016	8,824	10,021
Amortisation of intangible assets	6,906	6,123	6,906	6,123

## 30 Finance costs

Finance costs		(in thousand Baht)			
		Consolidated financial statements		Separate financial statements	
	Note	2018	2017	2018	2017
<b>Interest expense :</b>					
Related party	4	-	-	3,914	3,362
Bank loans and overdrafts		152,568	190,904	130,248	151,097
Debentures		1,620,209	1,536,499	1,605,677	1,536,499
<b>Total interest expense</b>		<b>1,772,777</b>	<b>1,727,403</b>	<b>1,739,839</b>	<b>1,690,958</b>
Others		4,886	3,208	-	-
		<b>1,777,663</b>	<b>1,730,611</b>	<b>1,739,839</b>	<b>1,690,958</b>
Less: amounts included in the cost of qualifying assets:					
- Construction contracts work in progress	13	(58,305)	(83,419)	(58,305)	(50,853)
<b>Net</b>		<b>1,719,358</b>	<b>1,647,192</b>	<b>1,681,534</b>	<b>1,640,105</b>

## 31 Income tax

### Income tax recognised in profit or loss

<i>Income tax recognised in profit or loss</i>		<i>(in thousand Baht)</i>			
		Consolidated financial statements		Separate financial statements	
	<i>Note</i>	2018	2017	2018	2017
<b>Current tax expense</b>					
Current year		224,884	72,985	-	-
Adjustment of under provided in prior years		(26)	-	-	-
		<u>224,858</u>	<u>-</u>	<u>-</u>	<u>-</u>
<b>Deferred tax expense</b>					
Movements in temporary differences	15	(6,349)	(313,708)	(12,783)	(282,133)
		<u>(6,349)</u>	<u>(313,708)</u>	<u>(12,783)</u>	<u>(282,133)</u>
<b>Total tax expense(income)</b>		<b>218,509</b>	<b>(240,723)</b>	<b>(12,783)</b>	<b>(282,133)</b>

### Income tax recognised in other comprehensive income

(in thousand Baht)

	Consolidated financial statements					
	2018			2017		
	Before tax	Tax (expense) benefit	Net of tax	Before tax	Tax (expense) benefit	Net of tax
Net change in fair value of available-for-sale investment	(72)	16	(56)	148	(27)	121
Share of other comprehensive income (loss) of investments in associates	(4,758)	-	(4,758)	3,628	-	3,628
Defined benefit plan actuarial gains (losses)	(40,542)	8,109	(32,433)	2,371	(424)	1,947
<b>Total</b>	<b>(45,372)</b>	<b>8,125</b>	<b>(37,247)</b>	<b>6,147</b>	<b>(451)</b>	<b>5,696</b>

(in thousand Baht)

(In thousand Baht)

	Separate financial statements					
	2018			2017		
	Before tax	Tax (expense) benefit	Net of tax	Before tax	Tax (expense) benefit	Net of tax
Net change in fair value of available-for-sale investment	(80)	16	(64)	137	(27)	110
Defined benefit plan actuarial gains (losses)	(29,323)	5,864	(23,459)	(3,795)	759	(3,036)
<b>Total</b>	<b>(29,403)</b>	<b>5,880</b>	<b>(23,523)</b>	<b>(3,658)</b>	<b>732</b>	<b>(2,926)</b>

### Reconciliation of effective tax rate

Consolidated financial statements				
	2018		2017	
	Rate (%)	(in thousand Baht)	Rate (%)	(in thousand Baht)
Profit (loss) before income tax expense		1,643,183		(937,090)
Income tax using the Thai corporation tax rate	20	328,637	20	(187,418)
Income not subject to tax		(52,527)		(43,409)
Profit was derived from promoted activities		(621,313)		(398,323)
Expenses not deductible for tax purposes		93,813		97,661
Current year losses for which no deferred tax asset was recognised		469,925		290,766
Under provided in prior years		(26)		-
<b>Total</b>	<b>13</b>	<b>218,509</b>	<b>26</b>	<b>(240,723)</b>

Separate financial statements				
	2018		2017	
	Rate (%)	(in thousand Baht)	Rate (%)	(in thousand Baht)
Profit(loss) before income tax expense		239,627		(376,175)
Income tax using the Thai corporation tax rate	20	47,925	20	(75,235)
Income not subject to tax		(540,233)		(664,416)
Profit (loss) was derived from promoted activities		(18,120)		596
Expenses not deductible for tax purposes		113,465		123,473
Decognition of previously recognised deductible temporary difference		-		76,400
Current year losses for which no deferred tax asset was recognised		384,180		257,049
<b>Total</b>	<b>(5)</b>	<b>(12,783)</b>	<b>75</b>	<b>(282,133)</b>

## 32 Promotional privileges

By virtue of the provisions of the Industrial Investment Promotion Act of B.E. 2520, the Group has been granted privileges by the Board of Investment relating to chemical products, natural gas stations, power plants, plastic film products, organic fertilizer, concrete roof tile, masterbatch, compound plastic, compound rubber and fuel production from garbage and waste. The privileges granted include:

- (a) exemption from payment of import duty on machinery and equipment approved by the Board;
- (b) exemption from payment of corporate income tax for certain operations for a period of 3-8 years from the dates on which the income is first derived from such operations;
- (c) a 50% reduction in the normal income tax rate on the net profit derived from certain operations for a period of 5 years, commencing from the expiry date in (b) above;
- (d) a deduction of twice the actual transportation, electrical and water supply expenses for a period of 10 years from the respective revenues and a 25% reduction of the capital expenditure for the installation or the construction of the facilities in addition to the normal depreciation; and
- (e) losses occur during the period could be carried forward 5 years commencing from the expiry date of the privileges to deducted from the profit that occur after the period of exemption of cooperative income tax.

As a promoted company, the Group must comply with certain terms and conditions prescribed in the promotional certificates.

Summary of revenue from promoted and non-promoted businesses:

(in thousand Baht)

	Consolidated financial statements					
	2018			2017		
	Promoted business	Non-promote business	Total	Promoted business	Non-promote business	Total
Export sales	18,466	11,514,559	11,533,025	98,816	9,357,494	9,456,310
Local sales	5,737,955	39,307,496	45,045,451	4,109,035	30,362,381	34,471,416
Eliminations	(300,016)	(21,285,299)	(21,585,315)	(723,079)	(14,116,295)	(14,839,374)
<b>Total</b>	<b>5,456,405</b>	<b>29,536,756</b>	<b>34,993,161</b>	<b>3,484,772</b>	<b>25,603,580</b>	<b>29,088,352</b>

(in thousand Baht)

	Separate financial statements					
	2018			2017		
	Promoted business	Non-promote business	Total	Promoted business	Non-promote business	Total
Export sales	-	864,828	864,828	-	1,000,365	1,000,365
Local sales	336,185	24,563,287	24,899,472	416,770	20,185,108	20,601,878
<b>Total</b>	<b>336,185</b>	<b>25,428,115</b>	<b>25,764,300</b>	<b>416,770</b>	<b>21,185,473</b>	<b>21,602,243</b>

### 33 Basic earnings (loss) per share

The calculations of basic earnings (loss) per share for the years ended 31 December 2018 and 2017 were based on the profit (loss) for the years attributable to ordinary shareholders of the Company and the number of ordinary shares outstanding during the years, after adjusting the own shares held by subsidiaries. The calculations are as follows:

	Consolidated financial statements		Separate financial statements	
	2018	2017	2018	2017
<b>Profit (loss) attributable to ordinary shareholders of the Company (Basic)</b>	<b>323,781</b>	<b>(1,259,738)</b>	<b>252,410</b>	<b>(94,042)</b>
Number of ordinary shares outstanding at 1 January	20,190,000	20,190,000	20,190,000	20,190,000
Effect of own shares held by subsidiaries	(172,861)	(222,164)	-	-
Effect of treasury shares	(53,774)	-	(53,774)	-
<b>Weighted average number of ordinary shares outstanding (basic)</b>	<b>19,963,365</b>	<b>19,967,836</b>	<b>20,136,226</b>	<b>20,190,000</b>
<b>Earnings (loss) per share (basic) (in Baht)</b>	<b>0.016</b>	<b>(0.063)</b>	<b>0.013</b>	<b>(0.005)</b>

### 34 Dividends

At the annual general meeting of the shareholders of the Company held on 25 April 2018, the shareholders approved the appropriation of dividend from the Company's retained earnings of Baht 0.02 per share, amounting to Baht 403.80 million. The dividend was paid to the shareholders in May 2018.

At the annual general meeting of the shareholders of the Company held on 27 April 2017, the shareholders approved the appropriation of dividend from the Company's retained earnings of Baht 0.02 per share, amounting to Baht 403.80 million. The dividend was paid to the shareholders in May 2017.

### 35 Financial instruments

#### *Financial risk management policies*

The Group 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 does not hold or issue derivatives for speculative or trading purposes.

Risk management is integral to the whole business of the Group. The Group has a system of controls in place to create an acceptable balance between the cost of risks occurring and the cost of managing the risks. The management continually monitors the Group's risk management process to ensure that an appropriate balance between risk and control is achieved.

#### *Capital management*

The Board of Directors' policy is to maintain a strong capital base so as to maintain investor, creditor and market confidence and to sustain future development of the business. The Board monitors the return on capital, which the Group defines as result from operating activities divided by total shareholders' equity, excluding non-controlling interests and also monitors the level of dividends to ordinary shareholders.

#### *Interest rate risk*

Interest rate risk is the risk that future movements in market interest rates will affect the results of the Group's operations and its cash flows because loan interest rates are mainly floating. The Group is primarily exposed to interest rate risk from its borrowings.



The effective interest rates of interest-bearing financial liabilities as at 31 December and the periods in which those liabilities mature or re-price were as follows:

<b>Consolidated financial statements</b>					
	Effective Interest rate	Within 1 year	After 1 year but within 5 years	After 5 years	Total
	(% per annum)	(in thousand Baht)			
<b>2018</b>					
<b>Current</b>					
Bank overdrafts and short-term loans from financial institutions	2.10 to 3.15	2,643,969	-	-	2,643,969
Current portion of long-term loans from financial institutions	3.85, 3M EURIBOR+1.65, 6M EURIBOR+1.10, 6M USD LIBOR+2.20,	1,576,515	-	-	1,576,515
Current portion of debentures	3.20 to 4.85	7,750,000	-	-	7,750,000
<b>Non-current</b>					
Long-term loans from financial institutions	3.85, 3M EURIBOR+1.65, 6M EURIBOR+1.10, 6M USD LIBOR+2.20	-	4,801,577	1,433,815	6,235,392
Debentures	3.30 to 5.20	-	32,250,000	-	32,250,000
<b>Total</b>		<b>11,970,484</b>	<b>37,051,577</b>	<b>1,433,815</b>	<b>50,455,876</b>
<b>2017</b>					
<b>Current</b>					
Bank overdrafts and short-term loans from financial institutions	1.50 to 3.50	2,178,403	-	-	2,178,403
Current portion of long-term loans from financial institutions	3M EURIBOR+1.65, 6M EURIBOR+1.10, 6M USD LIBOR+2.20, MLR-1.75	751,049	-	-	751,049
Current portion of debentures	4.10 to 5.30	5,000,000	-	-	5,000,000
<b>Non-current</b>					
Long-term loans from financial institutions	3M EURIBOR+1.65, 6M EURIBOR+1.10, 6M USD LIBOR+2.20 MLR-1.75	-	2,930,010	2,109,367	5,039,377
Debentures	3.20 to 5.20	-	25,355,000	2,645,000	28,000,000
<b>Total</b>		<b>7,929,452</b>	<b>28,285,010</b>	<b>4,754,367</b>	<b>40,968,829</b>
<b>Separate financial statements</b>					
	Effective Interest rate	Within 1 year	After 1 year but within 5 years	After 5 years	Total
	(% per annum)	(in thousand Baht)			
<b>2018</b>					
<b>Current</b>					
Bank overdrafts and short-term loans from financial institutions	2.10 to 3.15	1,685,614	-	-	1,685,614
Current portion of long-term loans from financial institutions	3.85, 3M EURIBOR+1.65, 6M EURIBOR+1.10, 6M USD LIBOR+2.20,	1,576,515	-	-	1,576,515
Current portion of debentures	3.20 to 4.85	7,750,000	-	-	7,750,000
<b>Non-current</b>					
Long-term loans from financial institutions	3.85, 3M EURIBOR+1.65, 6M EURIBOR+1.10, 6M USD LIBOR+2.20	-	4,801,577	1,433,815	6,235,392
Debentures	3.30 to 5.20	-	28,250,000	-	28,250,000
<b>Total</b>		<b>11,012,129</b>	<b>33,051,577</b>	<b>1,433,815</b>	<b>45,497,521</b>
<b>2017</b>					
<b>Current</b>					
Bank overdrafts and short-term loans from financial institutions	1.50 to 3.50	1,844,119	-	-	1,844,119
Current portion of long-term loans from financial institutions	3M EURIBOR+1.65, 6M EURIBOR+1.10, 6M USD LIBOR+2.20	751,049	-	-	751,049
Current portion of debentures	4.10 to 5.30	5,000,000	-	-	5,000,000
<b>Non-current</b>					
Long-term loans from financial institutions	3M EURIBOR+1.65, 6M EURIBOR+1.10, 6M USD LIBOR+2.20	-	2,930,010	2,109,367	5,039,377
Debentures	3.20 to 5.20	-	25,355,000	2,645,000	28,000,000
<b>Total</b>		<b>7,595,168</b>	<b>28,285,010</b>	<b>4,754,367</b>	<b>40,634,545</b>

### Foreign currency risk

The Group is exposed to foreign currency risk relating to purchases and sales of goods, purchases of machine and equipment and loans which are denominated in foreign currencies.

At 31 December, the Group and the Company were exposed to foreign currency risk in respect of financial assets and liabilities denominated in the following currencies:

	Consolidated financial statements		Separate financial statements	
	2018	2017	2018	2017
<i>(in thousand Baht)</i>				
<b>United States Dollars</b>				
Cash and cash equivalents	1,238,379	130,546	48,694	27,984
Trade accounts receivable	1,062,718	834,778	37,343	53,252
Interest-bearing liabilities	(1,339,273)	(836,786)	(391,350)	(506,750)
Trade accounts payable	(423,766)	(306,858)	-	-
Other payables - machines	(1,452,649)	(2,879,884)	(33,006)	(105,862)
	<b>(914,591)</b>	<b>(3,058,204)</b>	<b>(338,319)</b>	<b>(531,376)</b>
<b>EURO</b>				
Cash and cash equivalents	305,935	324,466	305,030	324,012
Trade accounts receivable	14,651	9,901	-	-
Interest-bearing liabilities	(4,430,989)	(5,337,817)	(4,420,557)	(5,333,569)
Trade accounts payable	(7,860)	(14,425)	-	-
Other payables - machines	(52,835)	(159,500)	(39,559)	(133,092)
	<b>(4,171,098)</b>	<b>(5,177,375)</b>	<b>(4,155,086)</b>	<b>(5,142,649)</b>
<b>Others</b>				
Cash and cash equivalents	972	968	802	883
Trade accounts receivable	110,520	-	-	-
Trade accounts payable	(775)	(6,353)	-	-
Other payables - machines	(633)	-	-	-
	<b>110,084</b>	<b>(5,385)</b>	<b>802</b>	<b>883</b>
<b>Gross financial position exposure</b>	<b>(4,975,605)</b>	<b>(8,240,964)</b>	<b>(4,492,603)</b>	<b>(5,673,142)</b>
Currency forwards purchase				
-United States Dollar	876,062	-	-	-
-EURO	308,418	-	308,418	-
	<b>1,184,480</b>	<b>-</b>	<b>308,418</b>	<b>-</b>
<b>Net exposure</b>	<b>(3,791,125)</b>	<b>(8,240,964)</b>	<b>(4,184,185)</b>	<b>(5,673,142)</b>

### Credit risk

Credit risk is the potential financial loss resulting from the failure of a customer or counterparty to settle its financial and contractual obligations to the Group as and when they fall due.

Management has a credit policy in place and the exposure to credit risk is monitored on an ongoing basis. Credit evaluations are performed on obtaining sufficient collateral from customers before commencing trading. The collateral include bank guarantees, bill of exchange aval by banks, cash guarantees, or the personal guarantee by a creditworthy person. At the reporting date there were no significant concentrations of credit risk. The maximum exposure to credit risk is represented by the carrying amount of each financial asset in the statement of financial position. However, due to the large number of parties comprising the Group's customer base, Management does not anticipate material losses from its debt collection.

### Liquidity risk

The Group monitors its liquidity risk and maintains a level of cash and cash equivalents deemed adequate by management to finance the Group's operations and to mitigate the effects of fluctuations in cash flows.

### ***Fair values of financial assets and liabilities***

The following table shows the carrying amounts and fair values of financial assets and financial liabilities, including their levels in the fair value hierarchy for financial instruments measured at fair value. It does not include fair value information for financial assets and financial liabilities not measured at fair value if the carrying amount is a reasonable approximation of fair value.

		Consolidated financial statements			
		Fair value			
	Carrying value	Level 1	Level 2	Level 3	Total
		(in thousand Baht)			
31 December 2018					
Financial assets and financial liabilities measured at fair value					
Debt securities held for trading	330,638	-	330,638	-	330,638
Debt securities held for trading (Private funds)	2,530,465	-	2,530,465	-	2,530,465
Equity securities available-for-sale	349	349	-	-	349
Financial assets and financial liabilities not measured at fair value					
Current portion of debentures	7,750,000	-	7,777,075	-	7,777,075
Debentures	32,250,000	-	32,490,049	-	32,490,049
31 December 2017					
financial assets and financial liabilities measured at fair value					
Equity securities held for trading (Mutual fund)	100,113	-	100,113	-	100,113
Debt securities held for trading (Private funds)	2,623,556	-	2,623,556	-	2,623,556
Equity securities available-for-sale	429	429	-	-	429
Financial assets and financial liabilities not measured at fair value					
Current portion of debentures	5,000,000	-	5,039,776	-	5,039,776
Debentures	28,000,000	-	28,431,254	-	28,431,254
		Separate financial statements			
		Fair value			
	Carrying value	Level 1	Level 2	Level 3	Total
		(in thousand Baht)			
31 December 2018					
Financial assets and financial liabilities measured at fair value					
Equity securities available-for-sale	349	349	-	-	349
Financial assets and financial liabilities not measured at fair value					
Current portion of debentures	7,750,000	-	7,777,075	-	7,777,075
Debentures	28,250,000	-	28,473,301	-	28,473,301
31 December 2017					
Financial assets and financial liabilities measured at fair value					
Debt securities held for trading (Private funds)	104	-	104	-	104
Equity securities available-for-sale	429	429	-	-	429
Financial assets and financial liabilities not measured at fair value					
Current portion of debentures	5,000,000	-	5,039,776	-	5,039,776
Debentures	28,000,000	-	28,431,254	-	28,431,254

## Measurement of fair values

### Valuation techniques

The following tables show the valuation techniques used in measuring Level 2 fair values.

Type	Valuation technique
Equity securities held for trading (Mutual fund)	The net asset value as of the reporting date.
Debt securities held for trading	Thai Bond Market Association Government Bond Yield Curve as of the reporting date.
Foreign currency forward contracts	Market comparison technique: The fair values are based on broker quotes. Similar contracts are traded in an active market and the quotes reflect the actual transactions in similar instruments.
Debentures	A valuation technique incorporating observable market data which is adjusted with counterparty credit risk (excluding own credit risk) and other risks to reflect true economic value.

## 36 Commitments with non-related parties

	Consolidated financial statements		Separate financial statements	
	2018	2017	2018	2017
<i>(in thousand Baht)</i>				
<b>Capital commitments</b>				
Contracted but not provided for				
Agreements for construction, machine and equipment	<b>3,398,180</b>	<b>1,571,393</b>	<b>1,268,534</b>	<b>1,082,980</b>
<b>Non-cancellable operating lease commitments</b>				
Within one year	73,669	84,943	37,235	45,718
After one year but within five years	92,088	96,966	49,494	53,986
<b>Total</b>	<b>165,757</b>	<b>181,909</b>	<b>86,729</b>	<b>99,704</b>
<b>Other commitments</b>				
Unused letters of credit	787,187	1,106,746	181,900	579,894
Purchase agreement for raw material	263,446	1,404,120	-	113,678
Bank guarantees	356,323	358,645	259,934	302,073
<b>Total</b>	<b>1,406,956</b>	<b>2,869,511</b>	<b>441,834</b>	<b>995,645</b>

In addition, as at 31 December 2018, the Company has a commitment to transfer money to the Village Development Fund around the mining area of Baht 0.5 million per year according to the request for a concession in the totalling of Baht 11.5 million.

## 37 Contingent liabilities

As at 31 December 2018, the Company had the major lawsuits as follows:

- On 8 July 2015, Department of Primary Industries and Mines, Ministry of Industry, by the public prosecutor from Saraburi province, filed a lawsuit against the Company the Case No. SorWor.4/2559 of the Civil Court for violation in relation to its operation of mining outside its concession areas with damage claimed in the total amount of Baht 4,067 million (the public prosecutor amendment damage claim to amount of Baht 4,339 million). The Company opines that it has not committed any offence as accused by the public prosecutor. The above problem land, which has access to public way, is owned by other person, not by the Company. The outcome of lawsuit is uncertain because this case is in process of consideration by the Court.

On 25 November 2015, the public prosecutor filed a motion to the Court requesting for the transfer of the case to the Civil Court. Later on 30 August 2016, the Appeal Court has an order to transfer lawsuit to be under the jurisdiction of the Environmental Division of the Civil Court as the above mentioned case is considered to be an environmental lawsuit and shall be transferred to the Environmental Division of Civil Court, in which the Environmental Division of Civil Court thereafter issued the order of joinder directing the said case and other related cases to be tried together with the Case No. SorWor.6/2559 and set the hearing date to be taken on 31 January 2018 in order to consider the maps of disputed area. On 31 January 2018, the Court settled issues and specified

the Plaintiff's witness and Defendant's witness hearing to be taken during September and October 2018. At present, the public prosecutor had already presented the Plaintiff's witness at hearing and the case is pending the hearing of Defendant's witness, which have been scheduled to be additionally taken during July and August 2019.

In addition on 24 March 2016, Department of Primary Industries and Mines, the Ministry of Industry, by the public prosecutor from Saraburi province, filed 2 lawsuits against the Company the Case No. SorWor.6/2559 and SorWor.5/2559 of the Civil Court for the violation in relation to its operation of mining outside its concession areas claiming for the damages having the additional claimed amount at Baht 328 million and the breach of the terms and conditions of the Company's concession area claiming for the damages having the claimed amount at Baht 1,671 million. The Company opines that it is not guilty as claimed by the public prosecutor. At present, the outcome of lawsuit is uncertain because this case is in process of consideration by the Court.

On 14 December 2016, the Appeal Court has ordered the transfer of such lawsuits to be under the jurisdiction of the Civil Court. The Court passed an order that the Case No. SorWor.6/2559 shall be presented together with the Case No. SorWor.4/2559 and set the date to settle the issue hearing to be taken on 31 January 2018 in order to consider the maps of disputed area. On 31 January 2018, the Court settled issues and specified the Plaintiff's witness and Defendant's witness hearing to be taken during September and October 2018. At present, the hearing of Plaintiff's witness had been completed and the case is pending the hearing of Defendant's witness, which have been specified by the Court to be additionally taken during July and August 2019. In the Case No. SorWor.5/2559, the Court settled issues and specified the Plaintiff's witness and Defendant's witness hearing to be taken during August and September 2018. At present, the hearing of Plaintiff's witness had been completed and as for the hearing of Defendant's witness, the Court specified that they shall be further in May 2019.

In addition on 2 March 2017, Department of Primary Industries and Mines, Ministry of Industry, by the public prosecutor from Office of the Attorney General, filed a lawsuit against the Company the Case No. SorWor.1/2560 of the Civil Court for the breach of the terms and conditions of the Company's concession area and the violation in relation to its operation of mining outside its concession areas claiming for the damages having the claimed amount at Baht 345 million. The Company opines that it has not committed any offence as accused by the public prosecutor. The Court set the hearing date to be taken on 19 February 2018 in order to consider the maps of disputed and determine the legal issue. On 19 February 2018, the Court settled issues and specified the Plaintiff's witness and Defendant's witness hearing to be taken during November and December 2018. At present, the hearing of Plaintiff's witness had been completed and the case is pending the hearing of Defendant's witness, which have been specified by the Court to be additionally taken during September and October 2019. At present, the outcome of lawsuit is uncertain because this case is in process of consideration by the Court.

In addition on 21 June 2018, Department of Primary Industries and Mines, Ministry of Industry, by the public prosecutor from Office of the Attorney General, filed a lawsuit against the Company the Case No. SorWor.2/2561 of the Civil Court for the violation in relation to its operation of mining that the connection areas with the Case No. SorWor.1/2560; whereby, in this case, the Company have already been granted with permission from relevant responsible authority to dig well in the ground within area of land in which Certificate of Utilization (Nor. Sor. 3 Kor.) was issued, and used the soil obtained from digging of said well, to fill the road. The Plaintiff, however, brought the lawsuit against the Company and accused the Company of conducting mining operation over said land without permission and demanded that the Company fill the said land restore the land to its original condition to preserve the environment or else, the Company is demanded to pay damage claim in the total amount of Baht 72 million. The Company opines that it has not committed any offence as accused by the public prosecutor. The court specified a hearing date for settlement of issue to be taken on 18 March 2019. At present, the outcome of lawsuit is uncertain because this case is in process of consideration by the Court.

- 2) On 2 June 2017, The Central Administrative Court summoned the Company to be an interpleader of the case where a temple has filed a lawsuit against the government authorities. It has been claimed that the issuance of a mining concession certificates to the Company is not legitimate, therefore, it has requested for the revocation of such mining concession certificates. The Company has filed the answer to the plaint on 6 October 2017. The Central Administrative Court accepted the interpleader's answer and delivered the same to the Plaintiff in order for the Plaintiff to prepare objection statement to the interpleader's answer and submitted the same to the Court within a specified period of time. The Central Administrative Court delivered the objection statement to the interpleader's answer to the Company as the interpleader and the Company submit the additional answer to the objection statement to the interpleader's answer to the Central Administrative Court on 2 March 2018. This case is thus pending a view by the Central Administrative Court.

For all above lawsuit, the Company's legal consultant opines that, based on the Company's evidences and information, the Company has a chance to defend itself in the court trial depending on the consideration of each courts.

### 38 Events after the reporting period

At the meeting of the Board of Directors of the Company held on 28 February 2019, the Company's Board of Directors approved the submission for approval at the annual general meeting of the shareholders of the Company the appropriation of dividends from the Company's retained earnings at Baht 0.02 per share, totalling Baht 383.61 million. This dividend is subject to the approval of the Company's shareholders at the annual general meeting

An indirect subsidiary has participated the auction for solid waste disposal project of Bangkok Metropolitan and the Company is required to provide bank guarantee as collateral in amount of Baht 657million (5% of the project value).

### 39 Thai Financial Reporting Standards (TFRS) not yet adopted

A number of new and revised TFRS which relevant to the Group's operations are expected to have significant impact on the consolidated and separate financial statements on the date of initial application. Those TFRS become effective for annual financial reporting periods beginning on or after 1 January of the following years.

TFRS	Topic	Effective
TFRS 7*	Financial Instruments: Disclosures	2020
TFRS 9*	Financial Instruments	2020
TFRS 15	Revenue from Contracts with Customers	2019
TAS 32*	Financial Instruments: Presentation	2020
TFRIC 16*	Hedges of a Net Investment in a Foreign Operation	2020
TFRIC 19*	Extinguishing Financial Liabilities with Equity Instruments	2020

\* TFRS - Financial instruments standards

#### (a) TFRS 15 Revenue from contracts with customers

TFRS 15 establishes a comprehensive framework for determining whether, how much and when revenue is recognised. Revenue should be recognised when (or as) an entity transfers control over goods or services to a customer, measured at the amount to which the entity expects to be entitled. It replaces existing revenue recognition standards as follows:

- TAS 11 (revised 2017) *Construction Contracts*,
- AS 18 (revised 2017) *Revenue*,
- TSIC 31 (revised 2017) *Revenue-Barter Transactions Involving Advertising Services*,
- TFRIC 13 (revised 2017) *Customer Loyalty Programmes*,
- TFRIC 15 (revised 2017) *Agreements for the Construction of Real Estate*, and
- TFRIC 18 (revised 2017) *Transfers of Assets from Customers*.

Management has considered the potential impact of adopting and initially applying TFRS 15 on the consolidated and separate financial statements and found that there is no material impact on the financial statements in the period of initial application.

#### (b) TFRS - Financial instruments standards

These TFRS establish requirements related to definition, recognition, measurement, impairment and derecognition of financial assets and financial liabilities, including accounting for derivatives and hedge accounting.

Management is presently considering the potential impact of adopting and initially applying TFRS - Financial instruments standards on the consolidated and separate financial statements.





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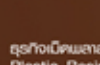
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