



60<sup>th</sup>  
Anniversary  
Thaioil

“  
**BONDING  
HUMAN  
LIFE**  
”



Thai Oil  
Public Company Limited  
Annual Report 2020  
(Form 56-1 One Report)



# 60 years

- in gradually developing firm foundation presently enables us to deliver various product values for better quality of life and sustainable future.

- **From Refinery to Better Quality of Life**

For nearly 60 years,  
Thaioil has grown alongside Thai society,  
ensuring energy security,  
supporting national economy growth  
and at the same time  
enhancing social quality of life.

Thaioil has been and will always be determined  
to deliver sustainable energy and chemicals  
to empower human life.



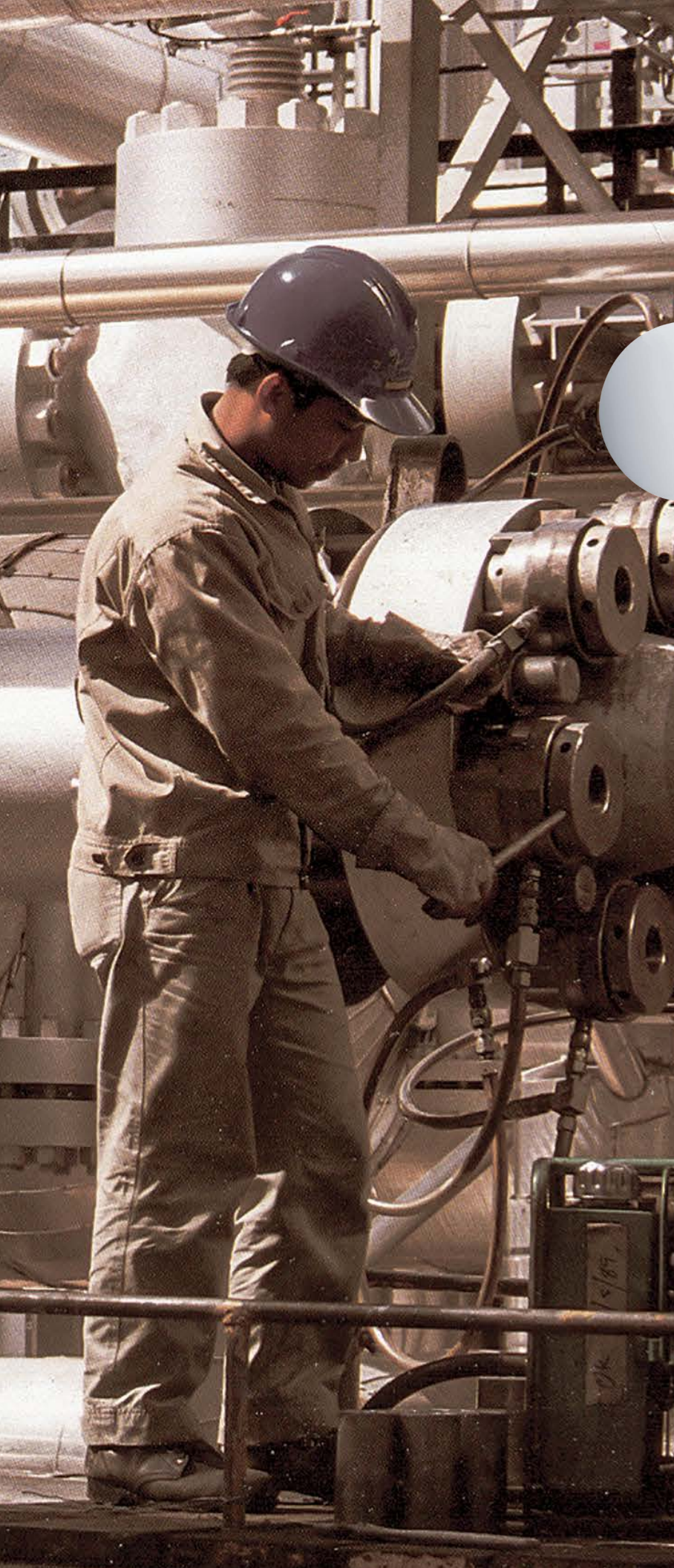


# CONTENT

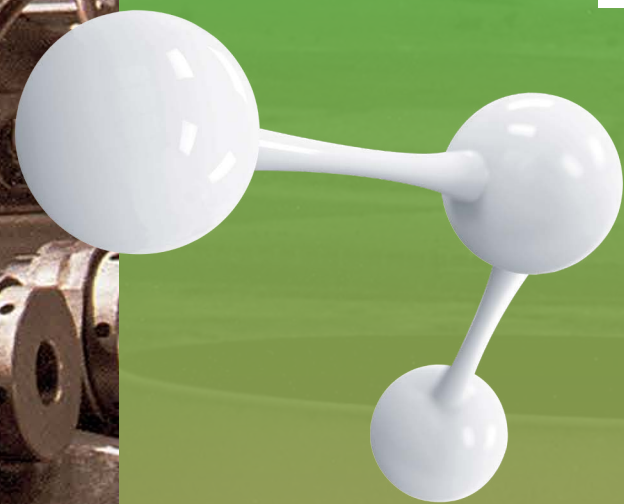
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Investors can find financial, related party transaction and company's past information in the Company's website [www.thaioilgroup.com](http://www.thaioilgroup.com) through Investor Relations channel on "Financial Information" and "Publication"



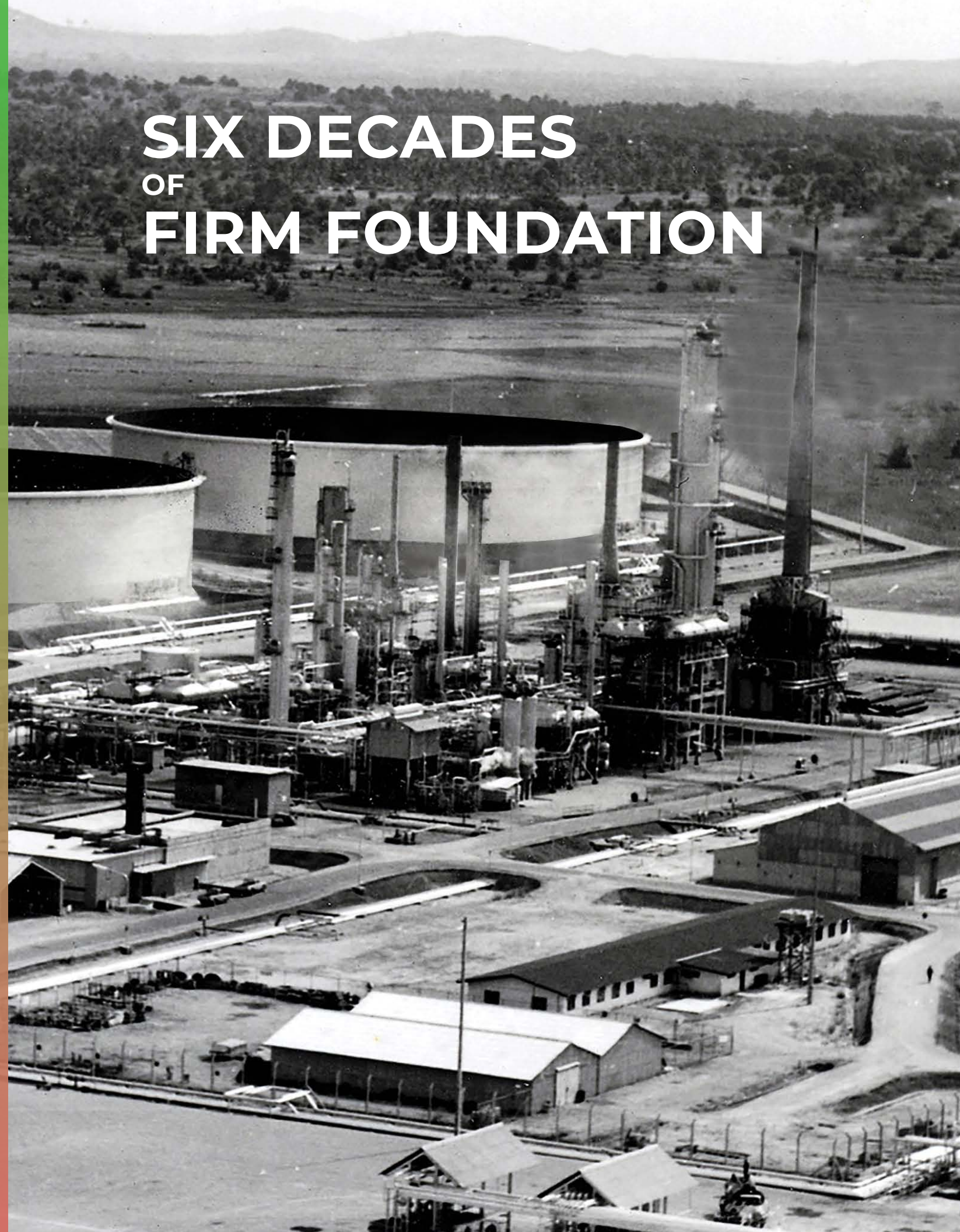


# 60<sup>th</sup> Anniversary Thaioil



With a humble beginning in 1961  
as the first privately-owned  
35,000 barrel-per-day refinery  
in the country,  
Thaioil has now collected  
massive experience,  
knowledge and expertise  
which have been passed on to  
the present generation  
and contributed to  
our leading operating efficiency.

# SIX DECADES OF FIRM FOUNDATION



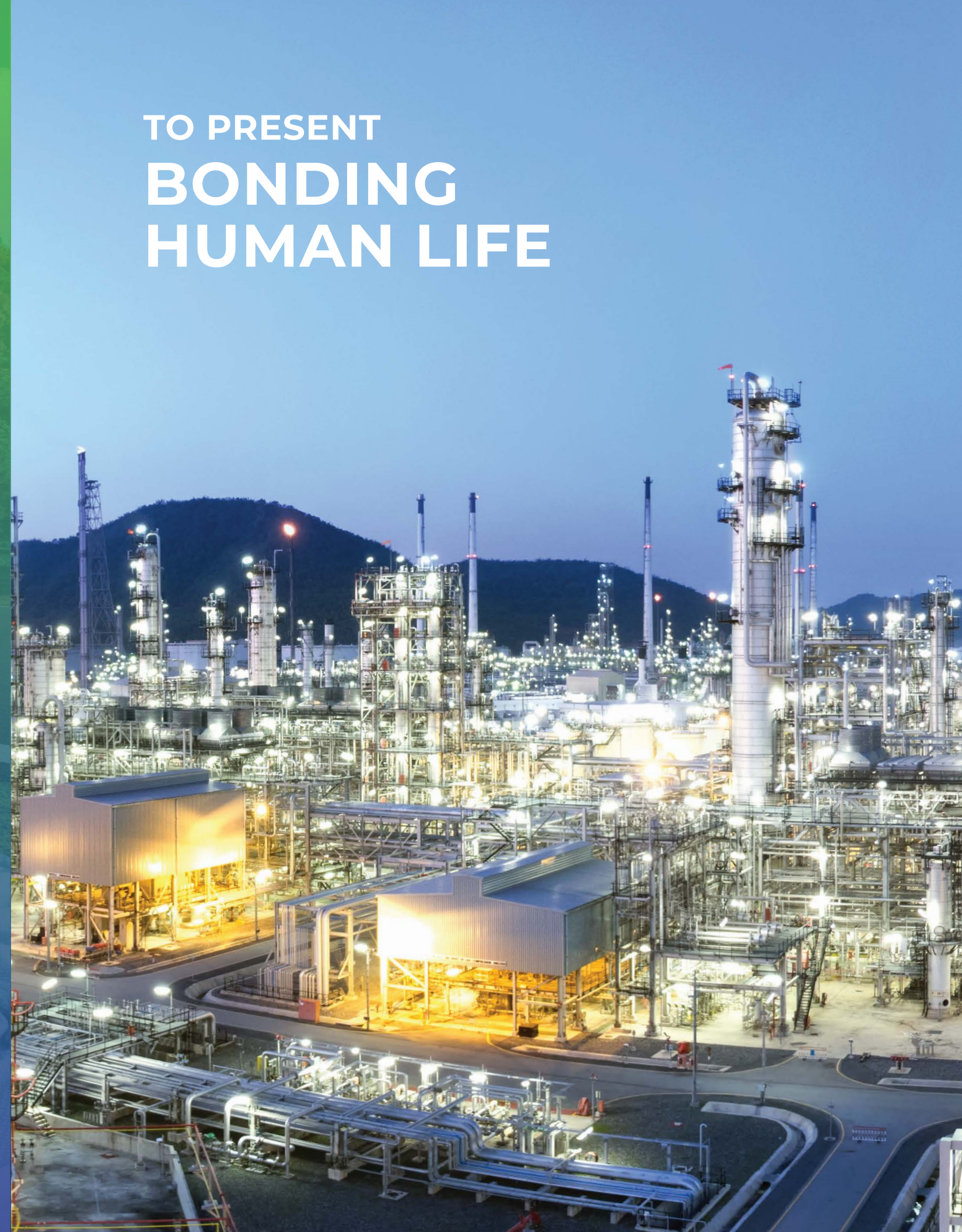


60<sup>th</sup>  
Anniversary  
Thaioil



Thaioil has now become  
one of the leading refineries  
in the region  
with the capacity of  
275,000 barrels per day,  
and has expanded to  
several related business,  
being able to deliver  
various products  
for better quality of life.

TO PRESENT  
**BONDING  
HUMAN LIFE**

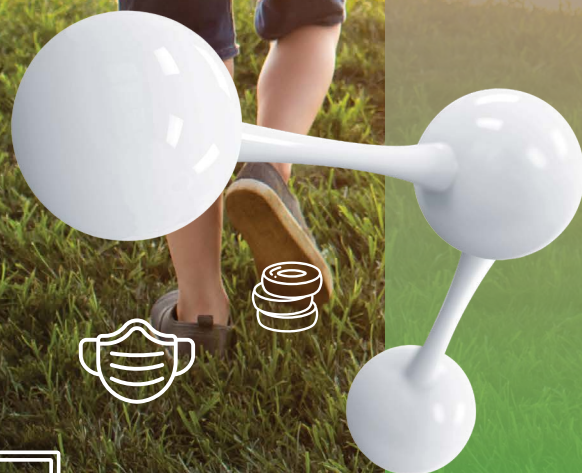






With the capacity expansion to 400,000 barrels per day after the completion of Clean Fuel Project, together with the improved operating efficiency and environmentally friendly products, Thaioil is now ready for the next chapter of new business in petrochemical and high-value products. Our determination to empower human life through sustainable energy and chemicals will be relentlessly pursued to accomplish our goal of being a centenary entity.

60<sup>th</sup>  
Anniversary  
Thaioil



# COMMITTED TO A SUSTAINABLE FUTURE



HIGH VALUE  
PRODUCTS



PETROCHEMICALS



AROMATICS



NEW  
BUSINESS



OLEFINS





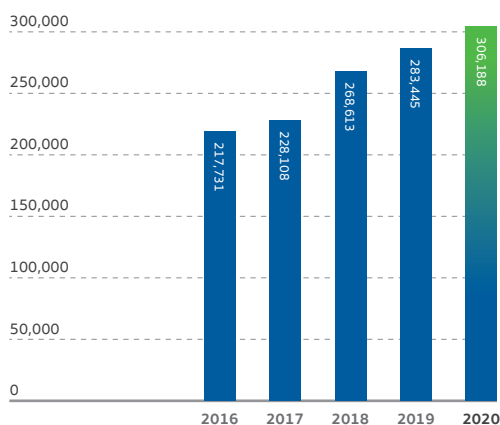
# FINANCIAL HIGHLIGHTS



**TOTAL ASSETS**

Million Baht

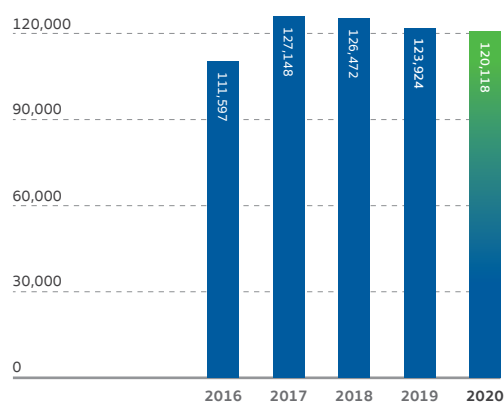
**306,188**



**TOTAL EQUITY**

Million Baht

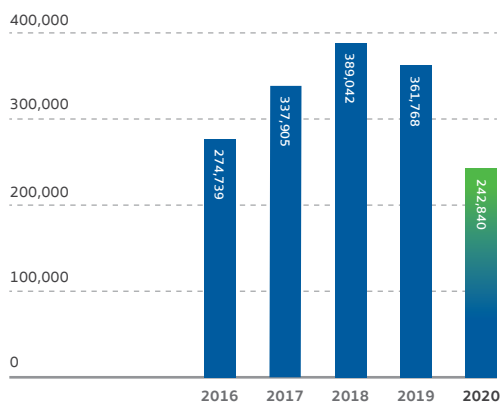
**120,118**



**SALES REVENUE**

Million Baht

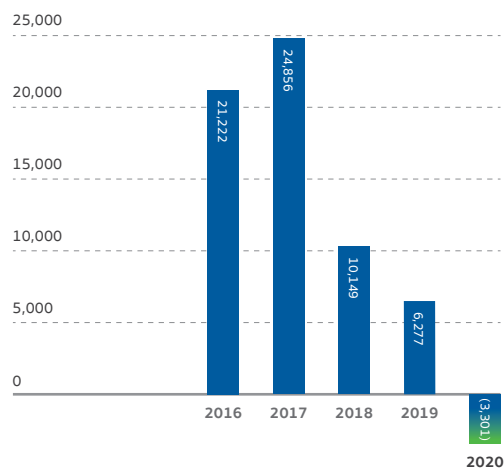
**242,840**



**NET PROFIT**

Million Baht

**(3,301)**





		2020	2019 <sup>(1)</sup>	2018	2017	2016
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### Operating Results

Sales Revenue	Million Baht	242,840	361,768	389,042	337,905	274,739
EBITDA	"	(2,055)	14,149	20,239	36,925	32,675
Net Profit/(Loss)	"	(3,301)	6,277	10,149	24,856	21,222
Basic Earnings/(Loss)	Baht/Share	(1.62)	3.08	4.97	12.18	10.40

### Financial Position

Total Assets	Million Baht	306,188	283,445	268,613	228,108	217,731
Total Liabilities	"	186,069	159,521	142,141	100,960	106,134
Total Equity	"	120,118	123,924	126,472	127,148	111,597

### Financial Ratios

Interest Coverage Ratio	Times	(0.5)	4.3	5.1	11.2	9.4
Current Ratio	"	4.0	3.5	4.3	3.8	3.4
Net Debt to Equity Ratio	"	0.7	0.3	-	-	0.1
Return on Equity	%	(2.8)	5.2	8.3	21.7	21.3
Return on Assets	"	(1.0)	2.4	4.2	11.4	10.5

### Stock Data

Annual Average	Baht/Share	43.95	68.26	86.88	84.23	66.70
Daily Closing Stock Price						
Market Capitalization	Million Baht	89,659	139,252	177,238	171,832	136,070
Dividend Payment	Baht/Share	0.70 <sup>(2)</sup>	1.50	2.65	5.25	4.50
Dividend Yield <sup>(3)</sup>	%	1.6	2.2	3.1	6.2	6.7
Book Value	Baht/Share	56.97	58.81	59.66	59.91	52.38

### Remark

<sup>(1)</sup> Re-presented the impact on the financial statements in accordance with Thai Financial Reporting Standards No. 5-Non-Current Assets Held for Sale and Discontinued Operations (TFRS 5).

<sup>(2)</sup> The dividend payment for the year 2020 at the rate of 0.70 Baht per share is to be proposed to the 2021 Annual General Meeting of Shareholders for approval

<sup>(3)</sup> Calculated from the annual average of the daily closing stock price.



# MESSAGE FROM THE BOARD OF DIRECTORS



Under the prevailing circumstances with changing industrial condition and highly volatile market, Thailoil turned its focus to work flexibility and proactive planning for production modification and process operation to speedily and optimally address the market demand.



Professor Dr. Supot Teachavorasinskun  
Chairman of the Board

Mr. Wirat Uanarumit  
Chief Executive Officer and President



## Dear Shareholders

In 2020, Thailoil and Subsidiaries have encountered various challenges, including the ongoing US-China trade war since 2019, the oil price war between Saudi Arabia and Russia early in the year (plunging the price by over 20 USD per barrel), and the COVID-19 pandemic causing recession to all economies worldwide with rippling effects on the industrial and energy sectors, in turn significantly plummeting petroleum product demand and the Gross Refining Margin to historic lows. Under the dire circumstances posing threat to business operations, the Board of Directors, executives, and all employees of Thailoil and Subsidiaries together utilized all knowledge, skills, proficiencies, and experiences to try and proactively manage business, with flexibility for work plan modification for best interests and efficiency.

### Efforts and Approach in Response to Severe Crises

Under the prevailing circumstances with changing industrial condition and highly volatile market, Thailoil turned its focus to work flexibility and proactive planning for production modification and process operation to speedily and optimally address the market demand. Operation uniformity relies on integration of every function's operation, which is made possible by flexible process of Thailoil Refinery, ranging from raw material procurement to product distribution. For instance, Thailoil lowered the proportion of jet fuels, which was highly affected by the national lockdown and restriction of international travel to 5-10 percent from the normal,

approximately 20 percent, and switched to production of gasoline and diesel, both of which had higher prices and were in market demand. Such execution maintained Thailoil's refining capacity utilization at 101 percent, exceeding the industry's average. In addition, the Company intensified the operation under measures enhancing process efficiency and controlling operating cost while increasing assorted profits. These efforts have put Thailoil and Subsidiaries in the 1<sup>st</sup> quartile among leading oil refineries in Asia-Pacific region considering cash cost, operational availability, and safety. It was estimated that the incremental profits were as high as THB 8.347 billion.



This coming year (2021) marks the most special occasion: 60 years of Thaipol's existence. Our collected and accumulated experience and proficiency form a robust foundation for continuous development. Initially started with refinery business, Thaipol has now grown and expanded its business to related ones, and is ready to move forward and launch new and sustainable energy and chemicals to pass on the values to and create a good quality of life for society.

Although Thaipol was affected by stock loss and bore the brunt of performance loss of THB 7.399 billion, the performance was still considered in a good condition. This was due to measures and efforts mentioned above and positive factors from the favorable current business structure that strives for a balance between the core refining business and related businesses, since several of Thaipol and Subsidiaries' businesses were not affected by COVID-19. The businesses of which were power, lube base oil, aromatics, solvent, and cleaning agent businesses. All aforementioned factors have enabled Thaipol to restore its performance to merely THB 3.301 billion loss despite such challenging and unfavorable business circumstances.

#### **Foundation for the Future: Strategic Projects**

While business circumstances were quite dull, Thaipol and Subsidiaries' strategic projects were considered on progress; this included the restructure of power and marine transportation businesses, TOP SPP's capacity expansion, oversea solvent distribution expansion,

investment in startups, and R&D innovation for commercialization. Other strategic projects on process of feasibility study have also shown positive trends. Projects under construction: namely, Clean Fuels Project and Euro 5 Fuels Project, have also made progress.

#### **COVID-19 Crisis: Business Continuity Management Measures and Plans**

The COVID-19 pandemic did not only affect Thaipol's performance, but also impacted Thaipol's business operation conditions. To prevent business disruption, Thaipol set up the I-COVID Center to implement preventive measures against the spread among its personnel and create a Business Continuity Plan covering business as usual and construction of investment projects that call for massive labor so as to stay prepared in case of more severe spread. Strict implementation of identified measures has shown highly satisfactory results, as no Thaipol and Subsidiaries' employee has been infected, and no business operation interrupted.



### Driving the Corporation Together

In parallel with plan implementation for business goals in 2020, businesses in other segments have achieved similar successes and progress; this included the issuance of USD 1 billion bonds with good coupon rates, the introduction of digital technology to enhance business efficiency, and the development of personnel potential.

### Toward Sustainable Success

To ensure the achievement of sustainable and balanced business goals, the Board of Directors has defined the vision for sustainability encompassing environmental, social and governance aspects, and driven the Company's business operation in various perspectives with balance to earn both national and international acceptance. Being listed as a member of Dow Jones Sustainability Indices 2020 for the eighth consecutive year, and recognized as Industry Leader for the sixth year in the Oil & Gas Refining and Marketing industry, was the great evidence of Thaipol personnel' determination to drive the organization to long-term success.

### Sixty Years of Bonding with Society

This coming year (2021) marks the most special occasion: 60 years of Thaipol's existence. Our collected and accumulated experience and proficiency form a robust foundation for continuous development. Initially started with refinery business, Thaipol has now grown and expanded its business to related ones, and is ready to move forward and launch new and sustainable energy and chemicals to pass on the values to and create a good quality of life for society.

The Board of Directors, executives, and all employees do appreciate the shareholders' support for Thaipol and Subsidiaries' businesses all through these years. We pledge to apply all knowledge, experience, and proficiency to do our best for the best interests of the shareholders and all stakeholders while exercising stewardship of the environment, society, and communities to ensure their sustainable growth and Thaipol's achievement of becoming a centenary organization.





## AUDIT COMMITTEE REPORT



### Dear Shareholders

Appointed by the Board of Directors (the Board), the current Audit Committee consists of four proficient and knowledgeable independent directors, all of whom command diverse expertise and experience. It is chaired by Police General Aek Angsanonont, with Associate Professor Dr. Pasu Decharin, Mr. Prapaisith Tankeyura, and Mr. Plakorn Wanglee serving as members. Mr. Prapaisith and Mr. Plakorn's qualifications are considered suitable for reviewing financial statements' credibility against the requirements of Securities and Exchange Commission of Thailand (SEC) and Stock Exchange of Thailand (SET).

The Committee independently performed as assigned by the Board and indicated in the charter, which is in line with the requirements and best practices for audit committees according to SEC and SET. This year, the Committee held eight meetings with full attendance, and consultations with the executives, the chief of Corporate Internal Audit, the internal auditor, and the external auditor. In addition, the Committee held one non-executive

meeting to freely discuss on the external auditor's performance, opinions, matters from financial report review and audit, as well as its collaboration with the Audit Committee and Corporate Internal Audit Department.

The performance highlights of this year are as follows:

#### 1. Financial Statements:

Collaborating with the external auditor and relevant executives, the Committee reviewed both separate and consolidated as well as quarterly and annual financial statements. It also examined the information disclosure of the external auditor's Key Audit Matters (KAMs) indicated in the auditors' report. To this end, the Committee reviewed the credibility of estimated figures, management's assumptions requiring discretion, transactions disclosure, and the impacts of financial reporting standard changes, to ensure that financial report preparation was accurately and credibly undertaken for the benefit of their users. The auditor has performed the auditing work and provided unqualified opinions.



## 2. Connected Transactions:

Having reviewed Thaioil and Subsidiaries' connected transactions or those posing potential conflicts of interest against SET's and SEC's announcements, the Committee concluded that Thaioil and Subsidiaries have observed regular business practices, fairness, and sensibility, prioritizing the interests of Thaioil and its shareholders. Such transactions were also promptly disclosed to SET as required.

## 3. Review of Compliance with Laws, Corporate Governance, Risk Management, and Internal Control:

The Committee reviewed management practices to ensure corporate governance, as well as laws and related regulations compliance. The Committee also closely monitored the Company's preparation for legal implementation before the actual enforcement of new legislation. This is to ensure the preparedness for risks and disruptions emerging at all times, the business continuity, and the efficient and effective development. The Committee strongly urged adoption of The Three Lines Model of the Institute of Internal Auditors (IIA) and the concept of Integrated Governance, Risk and Compliance (GRC) to enable sustainable integration of the corporation. It advocated proactive audit by the Corporate Internal Audit Department as well as the department flexibility under unforeseen circumstances, including E-meetings, remoting audit, as well as driving Continuous Control Monitoring and Audit System as a continual monitoring tool for all transactions under the Enterprise Resources Planning (ERP) system or other technological operating systems. Irregularities could then be promptly rectified. The Committee also endorsed the findings on internal control system sufficiency assessment as required by SEC to ensure that Thaioil commands appropriate and sufficient business internal control.

## 4. Internal Audit:

The Committee approved strategic plans, annual and long-term audit plans, plan execution, audit outcomes, and follow-ups as well as improvements of significant issues. It also assessed the independency of the internal audit, and pushed for the development and upgrading of Thaioil's internal audit with assurance and advice. The Committee constantly valued the Corporate Internal Audit Department's manpower preparation and personnel development to ensure their competency to perform efficiently and effectively. It advocated auditors' achievement of certificates for greater professionalism as well as the application of the audit management system on Cloud and data analytics tools to help internal audit eliminate time and place constraints. The Committee also advocated application of digitization to the audit process by developing automated audit and visualized reports, as well as the internal audit quality assessment while keeping up with changes in international internal audit professional standards. Finally, the Committee endorsed the transfer, appointment, and annual performance assessment of the Vice President Corporate Internal Audit.

## 5. Appointment of the External Auditor for 2021 and Approval for Audit Fee:

In selecting the external auditor, the Committee considered performance records, experience, independency, audit fees, and compliance with SEC's announcements. The Committee resolved to nominate PricewaterhouseCoopers ABAS Ltd. (PwC) as external auditor and the proposed audit fee for the Board's endorsement before submitting to the 2021 Shareholders' Annual General Meeting for approval.

In conclusion, this year the Audit Committee has performed its charter duties and responsibilities, fully



exercising diverse expertise with prudence and independency and providing creative views and advices. The Committee concluded that Thai Oil and Subsidiaries have valued efficient and effective business conduct, prepared credible and material financial reports aligning with financial reporting standards, along with complete and adequate disclosure of connected transactions with potential conflicts of interest. Thai Oil and Subsidiaries commanded sound corporate governance, sufficient risk management, and suitable and adequate internal control process in full compliance with applicable laws and regulations. Assessed by the Board, the Audit Committee's performance scored at level 5 or "Exemplary".

February 12, 2021

On behalf of the Audit Committee

A handwritten signature in blue ink, reading "Aek Angsanant". The signature is stylized with a large initial "A" and a long horizontal stroke.

(Police General Aek Angsanant)

Chairman of the Audit Committee

Thai Oil Public Company Limited



# RISK MANAGEMENT COMMITTEE REPORT



Ms. Chularat Suteethorn  
Chairman of the Risk Management Committee

## Dear Shareholders

To support Thaioil's Board of Directors (the Board) on the supervision of corporate risk management to achieve business goals, and to enhance confidence in and credibility of Thaioil among investors and stakeholders, the Board appointed the Risk Management Committee (RMC), consisting of three knowledgeable, competent, and experienced directors with sound understanding of the business as follows:

- |                                |   |
|--------------------------------|---|
| 1. Ms. Chularat Suteethorn     | Chairman of the<br>Risk Management<br>Committee |
| 2. Ms. Phannalin Mahawongtikul | Member of the<br>Risk Management<br>Committee   |
| 3. Mr. Wirat Uanarumit         | Member of the<br>Risk Management<br>Committee   |

## Performance Outcomes of 2020

The RMC held a total of eight meetings this year, with perfect attendance by all members. Mr. Auttapol Rerkpiboon chaired the first three meetings; after his resignation from the Board, Ms. Chularat Suteethorn was elected by the RMC to take the position and chaired the meetings.

The RMC defined and reviewed the corporate risk management framework, policy, and processes, performing as indicated in the Risk Management Committee Charter, as well as efficiently providing recommendations for proper risk management approaches to ensure their accordance with strategic directions and business plans. The Committee also consistently and effectively advocated and improved risk management practices throughout the Company on a par with international standards to forge corporate culture. The meetings this year are highlighted below.



1. Endorsed the amendment 2020 Key Risk Indicators (KRIs) and the strategic risk management plan for petrochemical investment, and monitored the outcomes of oil hedging together with those of Clean Fuel Project (CFP) foreign exchange hedging for Q4/2019
2. Endorsed the risk management plan for the issuance and offering of US dollar bonds, the liability management framework, and the adjusted target prices for oil hedging
3. Monitored oil hedging outcomes, updates on CFP, Thaioil Sriracha Buildings Project, Jetty Expansion Project (No. 7 and No. 8), and the outcomes of CFP foreign exchange hedging as well as corporate risk management for Q1/2020
4. Revised the RMC charter and corporate risk management policy, endorsed the risk management plan for the shareholding restructure in the power business, monitored the outcomes of oil hedging, CFP foreign exchange hedging, and corporate risk management for Q2/2020, and acknowledged the RMC's performance report for the first half of 2020
5. Endorsed the modification for oil hedging framework before tabling for the Board's approval, and monitored the outcomes of oil hedging, CFP foreign exchange hedging, and corporate risk management for Q3/2020
6. Endorsed the risk management plan for the guidelines on restructuring Thaioil's marine transportation business

7. Endorsed the 2021 corporate risks mitigation plans, and KRIs before tabling for the Board's approval, endorsed the risk management plan for TOP SPP Co., Ltd.'s power plant expansion project, and monitored the outcomes of corporate risk management for Q4/2020
8. Endorsed the addition of the 2021 KRIs, guidelines on restructuring Thaioil's marine transportation business and the risk management plan, and acknowledged 2020 RMS performance report

The RMC concluded that this year Thaioil has developed a comprehensive corporate risk management system for all aspects of risks and commanded continual risk management practices to cope with prevailing circumstances. The meetings were regularly arranged to review key and urgent risks, rendering Thaioil and Subsidiaries' risk management effectiveness. Thaioil could effectively and suitably manage key corporate risks to be within indicated risk appetite.

December 22, 2020

On behalf of the Risk Management Committee



(Ms. Chularat Suteethorn)

Chairman of the Risk Management Committee  
Thai Oil Public Company Limited

# CORPORATE GOVERNANCE COMMITTEE REPORT



Police General Aek Angsanonont  
Chairman of the Corporate Governance Committee

## Dear Shareholders

Good corporate governance (CG) and a code of conduct represent an integral part of the core mission to which Thai Oil Public Company Limited has always been strictly committed to ensure the Company's sustainable success and compliance with the corporate governance policy at both domestic and international levels. The Board of Directors (the Board) has therefore appointed the Corporate Governance Committee (the Committee), currently consisting of three directors, chaired by Police General Aek Angsanonont, along with Mr. Yongyut Jantararotai and General Kukiat Srinaka as members, to take charge of supervising, monitoring, and promoting the compliance of business conducts to CG and the code of conduct.

In 2020, the Committee held five meetings as planned with perfect attendance, carried out all their duties under the charter, and regularly reported the task outcomes to the Board as summarized below.

### 1. Development of CG Guidelines

The Committee conducts the annual review of its corporate governance policy and guidelines as well as its charter. In 2020, the Committee gave the approval to improve the guidelines for stricter, clearer, and more complete protection of the use of insight information.

Moreover, the Committee considered Annual General Meeting of Shareholders (AGM) planning in line with the corporate governance laws and regulations as well as various measures to prevent the spread of COVID-19.

### 2. Supervision, Promotion, and Monitoring of Compliance with the CG Policy, Anti-corruption Policy, and Code of Conduct

The Committee considered and endorsed Thailo's CG annual development plan including the code of conduct, anti-corruption, and treatment of stakeholders, which is proposed by management, provided comments



and suggestions, and monitored the implementation. Examples of key activities carried out in 2020 included the promotion of awareness and behavior of working with transparency, fairness, and auditability through role models; the cultivation of CG awareness through the activity **CG in DNA: Executive Quotes**; the improvement of information communication methods for investors in the form of Virtual and Conference Call; the standardization of **Service Level Agreement (SLA)**; the application of sustainable procurement standards ISO 20400: 2017; and the improvement of employees care through four Happiness Project consisting of health, financial, mental, and social cares.

Moreover, the Committee considered essential plans directly related to CG, such as granting the opportunity for shareholders to propose 2021 AGM agenda, and nominate candidates for director election, and endorsing the Board's 2019 performance evaluation and the evaluation form of the Board's 2020 performance.

### 3. Promotion of Corporate Social Responsibility (CSR) and Sustainable Development (SD)

The Committee endorsed the CSR development plan which covered communities surrounding the refinery and society in general. The CSR activities for communities surrounding the refinery includes education, public health, religion, culture and tradition, and the environment conservation. In 2020 the activity highlights were **"Thaioil Weaving Youth's Dream to Professional Athlete"** cooperated with renown sport clubs and a associations to inspire Thai youth to play sports and optimize free time away from drugs; and **"Thaioil's Refining Happiness Market"** held at the designated area of the office building as a channel to distribute products of OTOP project, community

enterprise, cooperatives, and other business operators to support the communities and generate incomes. This is one of many activities to improve the base-of-pyramid business and ease the economic impact from the COVID-19 outbreak. The social development projects included **the installation of solar power system** for two additional hospitals to solve the problems of electrical system, ensure power security, and reduce electricity expense.

With reference to sustainable development, the Committee reviewed Thaioil and Subsidiaries' sustainable management policy to suit synchronize and support the vision and business strategies on a par with international sustainable direction. The Committee also reviewed the long-term sustainable strategy that covered the environmental, social, and governance (ESG) to support the sustainable vision and goal of becoming the centenary company.

With strong determination to demonstrate standards of CG, social responsibility, and sustainability management through 2020, Thaioil is widely accepted at national and international levels. For example, the Company was listed as a Dow Jones Sustainability Indices (DJSI) member for the eighth consecutive year and recognized as Industry Leader among listed companies in Oil & Gas Refining and Marketing Industry for the sixth year. The Company was also listed among ASEAN Top 20 Publicly Listed Companies and Country Top 3 of Publicly Listed Companies in the ASEAN CG Scorecard 2019; was assessed with 2020 Corporate Governance Report (CGR) of Thai Listed Companies and achieved an "excellent" level (90 - 100 points) which is the highest level for the 12<sup>th</sup> consecutive year; achieved 100 AGM

Checklist Score for the fifth consecutive year; and earned Prime Minister's Industry Award 2020 for Corporate Social Responsibility from the Social and Community Development Project.

These achievements are evidence of the determination and commitment to promote, develop, and supervise Thaiphoil's operation based on good corporate governance in tandem with social responsibility and sustainable development, and in accordance with the Company's mission "To enrich stakeholders' well-being and deliver sustainable returns built upon innovation, technology, and resilient portfolio with top-class management and accountable corporate governance". This is to ensure that Thaiphoil will achieve sustainable growth, earn shareholders' conviction, generate value and benefits for stakeholders, and acquire international acceptance for further benefit of the country.

January 19, 2021

On behalf of the Corporate Governance Committee

A handwritten signature in blue ink that reads "Aek Angsanant". The signature is fluid and cursive, with the first name "Aek" and the last name "Angsanant" clearly distinguishable.

(Police General Aek Angsanant)

Chairman of the Corporate Governance Committee

Thai Oil Public Company Limited



# NOMINATION AND REMUNERATION COMMITTEE REPORT



Air Chief Marshal Suttipong Inseeyong  
Chairman of the Nomination and  
Remuneration Committee

## Dear Shareholders

The Board of Directors (the Board) appointed the Nomination and Remuneration Committee (NRC), which consists of at least three directors, the majority of whom must be independent directors. The current NRC is made up of Air Chief Marshal Suttipong Inseeyong (independent director, serving as chairman), Associate Professor Dr. Pasu Decharin (independent director), and Mr. Buranin Rattanasombat (director).

The NRC's duty is to recruit qualified people under Thail's process and criteria for nomination as Thail's directors and Chief Executive Officer (CEO) and President. The NRC also selects directors to serve on Board committees and reviews director remuneration models and criteria before proposing for the consideration of the Board and the Annual General Meeting of Shareholders (AGM) as required by law.

In 2020, the NRC completely executed all duties stated in the charter, arranging five meetings fully attended by all incumbent members (meeting attendances shown on page 103).

Below are the highlights of NRC's execution in 2020:

1. Reviewed the director recruitment approach to enhance Board diversity by adding guidelines that disregard differences in gender, age, race, nationality, place of birth, or origin as restrictions for the recruitment, which agrees with international corporate governance
2. Reviewed the directors' remuneration structure for the approval of the 2020 AGM. From the comparison with that of leading companies in similar industries, Thail's criteria and director's remuneration structure remained appropriate. The same amount as that of 2019 remuneration was proposed and already approved by the 2020 AGM.
3. Recruited and nominated experts as directors strictly under the process and criteria stated in the Corporate Governance and Code of Conduct Manual for the approval of the Board or the AGM as required by law. The NRC took into consideration the Directors' Pool

of the State Enterprise Policy Office and Institute of Directors (IOD) Charter. It also reviewed individual and overall qualification composition of the Board to suit Thail's size, category, complexity, and diversity of businesses, covering aspects of education, skills and proficiency, experience, and specialized competency related to Thail's businesses as well as independence as prescribed by the law and Thail's requirements.

4. Recruited and nominated directors for four Board committees, namely the Audit Committee, Corporate Governance Committee, Risk Management Committee, and NRC and tabled these lists for the Board to appoint in place of vacancies or directors with term completion.
5. Organized orientation and provided useful documents to newly appointed directors. In 2020, four new directors were appointed: namely Mr. Terdkiat Prommool, Mr. Buranin Rattanasombat, Mr. Plakorn Wanglee, and Professor Dr. Supot Teachavorasinskun

6. Assessed the performance of the CEO & President and tabled the proposed annual salary adjustment for the Board's consideration

7. Supported the granting opportunity for minor shareholders to propose agendas and nominate candidates as directors to nomination process at least three months before the 2021 AGM through Thail's website.

January 13, 2021

On behalf of the Nomination and Remuneration Committee

(Air Chief Marshal Suttipong Inseepong)

Chairman of the Nomination and Remuneration Committee  
Thai Oil Public Company Limited





## THAIOIL AND SUBSIDIARIES' VISION, MISSION AND STRATEGIES

Throughout more than 59 years of success and excellence in the energy business, Thaioil and Subsidiaries have determinedly refined knowledge and long-accrued experience to remain an organization with full potential for production, marketing, and management in the energy industry and in pursuit of proudly becoming a centenary entity.

This year Thaioil and Subsidiaries continued to focus on its **vision** of **Empowering Human Life through Sustainable Energy and Chemicals**, with the **mission** to **enrich stakeholders' well-being and deliver sustainable returns built upon innovation, technology and resilient portfolio, with top-class management and accountable corporate governance**. The goal is to promote sustainable corporate growth by extending the petroleum business into the petrochemical and high-value product businesses to meet future customers' needs, achieve top-quartile investment returns, lower earnings volatility through business diversification with due consideration for all stakeholders' interests and with governance-based business conduct to ensure the sustainability of the economy, society, and the environment.





To achieve the Vision and Mission, Thaipol and Subsidiaries set **strategic goals to become a robust energy and chemical company while being able to deliver sustainable returns and better quality of life to all stakeholders** through three key strategies and approaches as follows:

## 01

### Value Maximization

Value Maximization by integrating present and future business value chains and extending from oil refining (the current core business) through the pursuit of petrochemical investment and extension to high-value products to meet customers' needs. The execution can be divided into four business as follows:

**Refinery Business:** to enhance the strength in becoming a leading refinery in the region while supporting national energy security, with emphasis on sustainable business excellence.

**Aromatics Business:** to constantly pursue business growth opportunities with emphasis on extending the value chain to downstream businesses.

**Olefins Business:** to pursue business growth opportunities to the olefins business by leveraging the availability of feedstock which is by-products of oil refining in the future.

**High-value Product Business:** to enhance value to Thaipol and Subsidiaries' products by focusing on delivery of products tailored to customers' needs and satisfaction.

## 02

### Earnings Diversification

Earnings Diversification by diversifying the investment portfolio to secure revenue through pursuit of green business opportunities and innovative businesses in line with future trends for greater flexibility of investment portfolio. The execution can be divided into two businesses:

**Power Business:** to support power security for production process and generate secured income for Thaipol and Subsidiaries by investing in power business with emphasis on the renewable-energy base.

**New Businesses:** to pursue opportunities in green businesses and innovative businesses in line with future trends, involving production technology, sustainable technology, and technology involving future consumption of energy, by raising the ratio of innovative businesses through investment in Venture Capital Funds and direct investment in startup businesses, as well as commercialization of innovations created by Thaipol and Subsidiaries.

## 03

### Supply Chain Management as a Growth Platform

Supply Chain Management as a Growth Platform by integrating collaboration among Thaipol and Subsidiaries, ranging from supply of feedstock, customer service, to product delivery to regional customers via the optimization of distribution and logistics management, promotion of Thaipol and Subsidiaries' greater competitiveness, and accommodation of present and future investment projects.

To efficiently achieve these strategies, Thaipol and Subsidiaries had adopted 4Ps for effective execution: namely, 1) People, by grooming their potential to drive future businesses; 2) Patronage, by focusing on delivering value and answering to customers' and benefactors' needs by creatively co-creating businesses; 3) Partner, by forging collaboration with allies for joint business formation; and 4) Platform, by optimizing current knowledge and business platforms to enhance competitiveness. In addition, Thaipol and Subsidiaries value stewardship of the environment, society, and corporate governance to ensure the achievement of truly becoming a sustainable organization.



# 23 Awards and Certificates of our Achievements 2020



Member of  
Dow Jones  
Sustainability Indices  
Powered by the S&P Global CSA

**01** Dow Jones Sustainability Indices (DJSI) Membership for the 8<sup>th</sup> consecutive year with the recognition as Industry Leader in the Oil & Gas Refining and Marketing Industry for the 6<sup>th</sup> year

**SAM**  
Sustainability Award  
Gold Class 2020

**02** Top Sustainability Assessment Score in the Oil & Gas Refining and Marketing Industry for the 6<sup>th</sup> year



**03** The Prime Minister's Industry Award 2020 on Social Responsibility Category

**SET**

**04** Thailand Sustainability Investment (THSI) 2020 for the 6<sup>th</sup> consecutive year



Three awards of excellence at the 10<sup>th</sup> Asian Excellence Awards 2020 event:

**05** Asia's Best CEO

**06** Asia's Best CFO

**07** Best Investor Relations Company



**08** Model organization for Human Rights Award 2020



**09** The Asset ESG Corporate Award 2020



**10** Sustainability Disclosure Award 2020



**11** CSR-DIW Continuous Award for the 12<sup>th</sup> consecutive year, Department of Industrial Works, Ministry of Industry



**12** Greenhouse Gas Emission Reduction Model Organization 2020



**13** Environmental And Safety Governance Banner (Sak Chaisidhi Co., Ltd.)



ASEAN CG Scorecard Awards for listed companies

**14** Top 20 of ASEAN

**15** Top 3 of Thailand

**16** Among Top Assessment Scores



**17** 2<sup>nd</sup> renewal of CAC membership



**18** Excellence Rating; the Corporate Governance Report of Thai Listed Companies (CGR)



**19** Full score (100) against the AGM Checklist 2020



PTT Group Operational Excellence Award 2020

**20** Best Practice Project, Silver Award, for the TOP Green Tracking Project

**21** Zero Unplanned Shutdown of six processing units



**22** PTT Group Oil Logistics Excellence Award for Best Performance in Terminal Cost



**23** Sustainable Procurement Certificate ISO 20400:2017 from MASCI





## SUMMARY OF BUSINESS ACHIEVEMENTS IN 2020

Thaioil was committed to business excellence through operational excellence in parallel with prioritization of stakeholders' benefits, leading the Company to formulate proactive plans and strategies. Over the course of 2020, work processes have been adjusted to be more flexible and consequently more responsive to the volatile situation. This operational excellence together with cost control measures have consistently secured Thaioil and Subsidiaries a position in the 1<sup>st</sup> quartile with leading oil refineries in Asia Pacific in cash cost, operational availability, and safety.





## 1. Operational Excellence amid Volatile Global Economy

The year 2020 was a year of huge challenges from the persistent US–China trade war and the fluctuation of the world oil price caused by the oil price war, resulting in the downfall of the average crude price. The situation was aggravated by the outbreak of COVID-19, which structurally reshaped business conducts and ways of lives. Several countries announced a lockdown, causing petroleum product demand to nosedive, particularly that for jet fuels due to flight restriction across the globe. These factors have slowed down the economy around the world including Thailand, which relies heavily on exports, facing the decrease in overseas purchasing power. Moreover, the tourism sector was severely affected by the decreasing number of foreign tourists. As a result of the lower demand for petroleum products and the slow economy, Thailo and Subsidiaries posted a loss in its accounting gross refining margin (accounting GRM) of 1.9 USD per barrel. As for aromatics business, the performance was still pressured by oversupply due to new capacities, especially from China, while the demand dropped due to the COVID-19 pandemic. The lube base oil business also faced recession. The overall business posted an accounting gross integrated margin (accounting GIM) 0.1 USD per barrel.

Despite all circumstances, Thailo was committed to business excellence through operational excellence in parallel with prioritization of stakeholders' benefits, leading the Company to formulate proactive plans and strategies. Over the course of 2020, work processes have been adjusted to be more flexible and consequently more responsive to the volatile situation. This included adjustment to the crude procurement plan as well as



production and sales plan, the reduction in jet fuel production capacity, the liquidity management to accommodate the altered investment plans and the volatile financial situation, as well as cost control. All these attempts have saved Thailo more than THB 3.150 billion and maintained the operating cost at low level. Despite the lower demand for petroleum products because of the COVID-19 pandemic, Thailo successfully maintained its refinery utilization at 101 percent. This operational excellence has consistently secured Thailo and Subsidiaries a position in the 1<sup>st</sup> quartile with leading oil refineries in Asia Pacific in cash cost, operational availability, and safety.

Moreover, Thaipetroleum and Subsidiaries cultivate in all staff the awareness of safety, resulting in an excellent safety record compared to other leading companies in the industry, both national and international. Thaipetroleum also underlined the management of marketing strategies for commercial excellence through adjusting work processes to be more flexible and customer focused, expanded customer base while keeping good relations with existing customers, and executed proactive hedging to mitigate risks from volatile spread between crude and product. Above all, Thaipetroleum and Subsidiaries still maintained their position as the country's major fuel producer, with the distribution proportion of 31 percent of the total domestic demand of petroleum products.

Although the COVID-19 pandemic and oil price war had affected Thaipetroleum and Subsidiaries and caused a loss of THB 13.754 billion in Q1/2020, THB 10.772 billion of which was stock loss, with the aforementioned management endeavors, from the performance increased THB 10.453 billion during Q2/2020 to Q4/2020, resulting in a total loss of THB 3.301 billion for the entire 2020.

## **2. Achievement of Sustainable Business Management at National and International Level**

To sustain changes in industrial environment, which involve climate change, stricter environmental regulations, consumers' behavioral change regarding the use of technology, growth in demand for renewable energy, and development of disruptive innovation or technology, Thaipetroleum and Subsidiaries outlined the corporate vision and goal regarding sustainability with the focus on balanced and sustainable growth. In 2020, Thaipetroleum identified strategies and KPIs for short-term and long-term sustainability, which covered environmental, social, and governance aspects to ensure that business

goals can be attained together with sustainable and balanced growth in all aspects.

In addition, Thaipetroleum and Subsidiaries successfully maintained their position as a leader in the industry and in sustainability management in economic, social, and environmental aspects. The corporate governance standard has been elevated to ensure fairness, transparency, clarity, and auditability throughout the supply chain. To achieve this, Thaipetroleum and Subsidiaries has applied the integrated governance, risk, and compliance (GRC) management system to enhance operation efficiency, as well as promote anti-corruption and human rights. For the social aspect, Thaipetroleum and Subsidiaries have always valued relationship with communities surrounding the refinery, and managed complaints and other issues through efficient procedures, resulting in a high score in the community's satisfaction towards refinery. Importantly, Thaipetroleum and Subsidiaries also valued human resource development and staff engagement, considered key to long-term business success. For energy, the environment, and safety, Thaipetroleum and Subsidiaries prudently operated under its master plan for environmental and safety management to sustain the capacity expansion project on site. In 2020, Thaipetroleum and Subsidiaries carried out 19 energy efficiency improvement projects, which contributed to 746,264 gigajoules less energy consumption and less direct greenhouse gas (GHG) emissions by up to 51,084 tons of carbon dioxide equivalent per year. Thaipetroleum and Subsidiaries also joined the public sector in reducing GHGs at both business and national levels. The 239-MW combined-cycle power plant project of TOP SPP Co., Ltd. was assessed by the Thailand Voluntary Emission Reduction Program (T-VER) and received, for two consecutive years, approval for its carbon credit



certification of 315,387 tons of carbon dioxide equivalent in the category of clean fuels and high-efficiency technology at the international level. The accumulation of more than 643,271 tons of carbon dioxide equivalent was certified. (The carbon credit calculation period was between April 1, 2018 and March 31, 2025, totaling seven years as stated by project requirements.) The Low Emission Supporting Scheme project (LESS) is an energy efficiency improvement project selecting three energy efficiency sub-projects: 1) a study project to change the type of catalyst in the CCR unit to achieve energy reduction from less fuels; 2) a project to reduce the hydrogen-hydrocarbon ratio for energy reduction at HCU-1; and 3) a project to enhance heat exchange efficiency by injecting an anti-limescale substance into the heat exchanger of CDU-3 to save fuel. The attempt resulted in a reduction of GHGs of over 49,773 tons of carbon dioxide equivalent.

The achievement in sustainable business management has earned Thailoil and Subsidiaries the recognition at both national and international levels. In 2020, Thailoil was listed as a member of Dow Jones Sustainability Indices (DJSI) for the eighth consecutive year, and recognized as Industry Leader for the sixth year in the Oil & Gas Refining and Marketing Industry. Thailoil and Subsidiaries also received the platinum award, the highest level of ESG award in Asia earned by Thailand's companies, from the Asset ESG Corporate, and the award for 2020 Thailand Sustainability Investment from Stock Exchange of Thailand, recognizing Thailoil as one of the sustainable stock investments (SET THSI Index) for six consecutive years.

### **3. Achievement in Production Excellence and Integrated Management**

Thailoil and Subsidiaries focused on group integration management among the refining, aromatics, lube base oil,

and surfactant for cleaning products (Linear Alkyl Benzene: LAB) to enable alignment of production and distribution planning. This resulted in maximum efficiency and ability to produce higher value and quality products than those of conventional refineries to meet the market demand. Despite the COVID-19 outbreak in 2020, causing the domestic demand for jet fuel to drop by 90 percent the highest, the efficient and flexible operation has secured Thailoil and Subsidiaries' refinery utilization at 101 percent. Production processes have been adjusted to be in line with changing market demand. This included the adjustment of procurement to ensure that types and volumes of crude matched the signified production capacities. The production of jet fuels was reduced while production of other products, such as gasoline, diesel, and aromatics, was increased in response to market demand emphasizing maximum production efficiency and profit. The power, marine transport of petroleum and petrochemical products, and solvent businesses were also integrated to ensure strength of Thailoil and Subsidiaries' entire supply chain.

Under such circumstances, productivity improvement and cost reduction were crucial approach for Thailoil and Subsidiaries in 2020. This included margin improvement through such projects as Hydrocarbon Management Review, where benefits arose chiefly from refining various types of unconventional crude from new supply sources; the adjustment of crude procurement with types and volumes matching production processes to achieve higher ratios of high-value products; the improvement of process energy efficiency: the increase in domestic sales of petroleum products and sales in the Southeast Asian market; and the energy conservation and oil loss reduction. Additionally, LABIX Co., Ltd. managed to complete its major turnaround eight days earlier than



scheduled. All attempts toward productivity improvement have resulted in gross margin improvement by over THB 4.808 billion. For cost reduction, two major projects have been undertaken: 1) Orchestra - the operating cost management project - which included the reduction in consultant fee, manpower management, improvement of work processes to control manpower and overtime cost, proactive procurement to increase negotiation power, and reduction of operating costs in other various areas; and 2) Symphony - the project designed to lower the financial cost - which included search for new capital via new financial tools, working capital management, and value addition to surplus cash. Both projects helped reduce cost of around THB 1.043 billion.

In response to market demand and the prevailing situation, Thaioil and Subsidiaries received active

cooperation from all staff in stepping up the extraordinary efforts, brainstorming for plans and implementation to maintain the competitiveness, increase profit, and control operating costs. This resulted in affiliate companies' good performance and offset impacts of stock losses, leading to the increase of the overall 2020 performance of Thaioil and Subsidiaries. In this respect, digitalization has been implemented to cope with the current situation and enhance operating efficiency. Infrastructure and cyber security have been properly prepared to accommodate the work-from-home approach which was required amid the COVID-19 outbreak. Such infrastructure included online meeting system, virtual private networks, and the use of a digital clearance system to request approval to operate in the production unit to keep distancing among staff. Moreover, cyber



prevention and information technology systems were introduced to enhance productivity and competitiveness throughout the supply chain. This also increased work efficiency and created new experience for related stakeholders while reducing operating costs.

#### **4. Achievements in Proactive Marketing Strategy and Risk Management**

Thaioil and Subsidiaries prioritize marketing strategy management. The key to success was constant management of cordial and professional relationships with domestic and international customers together with meet-the-standard product quality, on-time delivery, product variety, quick and precise customer service and problem-solving, and the standard of product acceptance safety. All these successfully drove Thaioil and Subsidiaries' domestic distribution to 87 percent of total capacity and increased the sales volume through expanding market to Southeast Asian countries.

Thaioil and Subsidiaries also succeeded in expanding solvents and chemical businesses to target countries with a focus on both northern and southern Vietnam through terminals of TOP Solvent (Vietnam) LLC., as well as Indonesia through PT. Tirta Surya Raya (TSR). Thaioil is also currently conducting a feasibility study to extend cooperation with business allies to enhance business potential in target countries.

Recognizing inherent risk in business operation, Thaioil and Subsidiaries have adopted a proactive risk management to closely monitor all internal and external uncertainties that could affect businesses and investments both short term and long term. To mitigate impacts from volatile situations, the strategic management has been implemented in all aspects including project

operation, corporate governance, hedging aimed to prevent risks from spread fluctuation, and foreign exchange risk management.

#### **5. Achievement in Projects and Relentless Implementation of Strategic Plan**

Thaioil and Subsidiaries are strategy-focused organization that constantly review business strategies to ensure the achievement of the vision “Empower Human Life through Sustainable Energy and Chemicals” and keep up with the world changes and energy industry trends. In 2020, as market conditions and business surroundings were highly volatile, strategies needed to be clear and flexible.

In 2020, Thaioil and Subsidiaries successfully executed six key projects:

1. Jetty Expansion Project
2. Thaioil Sriracha Buildings Project
3. Signing of the memorandum of understanding (MOU) among PTT Group under Project ONE to enhance competitiveness
4. Corporate venture capital (CVC) investment, a key mechanism for pursuing the New S-Curve for Thaioil and Subsidiaries, with investment in two start-up companies in 2020
5. R&D commercialization - Three R&D projects were successfully commercialized and earned profits in 2020. The first project was Cyclopentane Purification Software - development of a simulation model of the cyclopentane production process of Sak Chaisidhi Co., Ltd. and sourcing of a production method that yields high-purity cyclopentane. The second project was Ultrasonic Scale Preventer (USP) - development of USP using ultrasonic waves to prolong the life of heat exchangers. The last project was Catalyst

Evaluation of Kerosene Hydrotreating - the development of a simulation model to test various catalysts for the kerosene hydrotreating unit to find the most suitable catalyst for the Sulfur Recovery Unit of LABIX Co., Ltd.

6. Shareholding restructuring in the power business - This targets a clearer, more agile, and more efficient business operation, ready to support further growth in power business. Thaipower sold its total shares directly held in Global Power Synergy Plc (GPSC) to PTT Plc, and took over the entire business of Thaipower Power Co., Ltd., thus assuming the ownership of a power plant and holding 20.78 percent of GPSC shares.

Moreover, Thaipower still has Clean Fuel Project (CFP) as an ongoing project designed to enhance competitiveness by improving process efficiency and adding value to green products. The expanding capacity from 275,000 to 400,000 barrels per day would add flexibility to process crude of greater diversity, resulting in greater economies of scale and crude cost reduction. CFP is currently under construction, with commercial operation planned for 2023. The ongoing project also includes CFP Crude Oil Tank Project (C-COT) to accommodate future increasing crude oil tank demand with completion scheduled in Q1/2021. Thaipower also has a project in the pipeline to revamp the facilities to produce Euro 5 fuel with the completion scheduled by the end of 2022, or approximately one year before the enforcement of government's Euro 5 emission standards expected on January 1, 2024.

Another ongoing project is the restructure of marine transportation business which accommodates long-term growth and strategy. Thaipower and the possible share purchaser would enter into joint ventures to support marine transport demand for future business. This also helps allocate the Company's existing marine resources

and fully improve that of other core businesses more efficiently. This project is scheduled to complete by Q2/2021.

Another ongoing project is investments in infrastructure and utilities, one of which is the construction of the new Bang Phra Reservoir raw water line to enhance capability and security of providing raw water to support future projects. The power and steam production capacity expansion of TOP SPP Co., Ltd. is also an ongoing project aimed to offset the SPP-PPA of Thaipower Power Co., Ltd., which is due to expire in 2023. The additional capacity also ensures Thaipower and Subsidiaries' power and steam supply security on the refinery's premises. Furthermore, Thaipower and Subsidiaries are looking for business expansion and investment opportunities with business allies, both within PTT Group and in Southeast Asian countries where demand for petroleum and petrochemical products is growing.

Thaipower and Subsidiaries have focused on promoting long-term sustainability by increasing the proportion of new businesses related to industrial trends and future energy transformation through constant commercialization of various R&D projects, such as development of the Compabloc Heat Exchanger Robot and Crude Compatibility Analysis, designed to support crude selection.

## **7. Excellence in Corporate Governance, Corporate Social Responsibility, and Stakeholder Stewardship**

In addition to being as a high-performance organization, Thaipower and Subsidiaries' top executives promote in the organization good corporate governance, responsibility for community, society, and environment, and sustainable development through business processes and various



activities. These have earned Thaiphoil and Subsidiaries widespread acceptance from the public as well as business and industrial sectors.

Moreover, Thaiphoil and Subsidiaries are constantly aware of and prioritize the safety of employees, operators, and communities surrounding the refinery. Thaiphoil's safety statistics have therefore been maintained as a leading global position, and Thaiphoil and Subsidiaries strongly believe that sustainable growth can be achieved only in parallel with environmental, community, and social development through target-oriented management under good corporate governance and code of conducts.

Key sustainability projects in 2020 included the installation of solar cell system for Koh Sichang Hospital in Chon Buri in honor of His Majesty the King, the solar cell for 40.5-KW power generation system for Thanyarak Hospital in Mae Hong Son. Other activities in this area are reforestation in honor of His Majesty King Rama X, Thaiphoil's Refining Happiness Market Project allowing community

enterprises, communities surrounding the refinery, and those affected by COVID-19 outbreak to sell merchandises at the designated area of Thaiphoil's office building, and 'Thaiphoil Weaving Youth's Dream to Professional Athletes' project to inspire children with sport interest. Amid the COVID-19 outbreak, PPE sets were donated to medical persons, hospitals and communities surrounding the refinery as well as other areas in need of virus prevention.

Thaiphoil and Subsidiaries are determined to apply their knowledge and expertise in energy leadership, coupled with operational excellence and good corporate governance as well as responsibility for society, the environment, and communities to maximize stakeholders' satisfaction, strengthen the business, and sustainably grow alongside Thai society.

All the aforementioned achievements have earned Thaiphoil and Subsidiaries awards from various leading organizations as shown under "Awards and Certificates of our Achievements 2020".

## 2020 Key Highlights

01

January - March



Thaioil provided support the organization of Refining and Petrochemicals World 2020 Conference where Thaioil had jointly exhibited its innovations.



Thaioil was granted an audience with Her Royal Highness Princess Maha Chakri Sirindhorn, Executive Vice President of Thai Red Cross Society, to humbly offer donation for the construction of 150-year commemorative building "Srisawarin Dhiranusorn" at Queen Savang Vadhana Memorial Hospital, Sriracha.



Thaioil held a thank-you party for its allies on the successful achievement of issuing us-dollar-denominated senior unsecured debentures totaling USD 565 million to accommodate the Company's investment.



Thaioil, in collaboration with GPSC, handed over "40.5 KW Solar Rooftop System" as part of its CSR to Thanyarak Hospital, Mae Hong Son, to strengthen the power reliability for medical service and help saving the hospital expenditure.



Thaioil arranged the Ceremony of Foundation Stone Laying of Clean Fuel Project Control Building, presided over by Mr. Sontirat Sontijirawong, Energy Minister.



Thaioil donated 70-percent concentration alcohol to Ministry of Energy in support of public health in the three southernmost provinces of Thailand.



Thaioil held the executives seminar on "Digital Transformation" to share and exchange knowledge, experience and opinions.



Thaioil and Subsidiaries delivered earnings from the activity "Sharing by Changing Gifts to Happiness" to "Fund for volunteer staff activities" for social contribution.

02

April - June



Thaioil donated Personal Protection Equipment, surgical masks, alcohol gel, and medical equipment to Bamrasnaradura Infectious Diseases Institute for medical personnel to treat COVID-19 patients.



Thaioil donated cleaning alcohol gel to Laem Chabang hospital in support of public health.



Thaioil donated Personal Protection Equipment to medical personnel of Phra Nang Klao Hospital, Rayong Hospital and Sawanpracharak Hospital.



Thaioil donated consumer goods to people living in Laem Chabang Municipality District, economically affected by COVID-19 pandemic.



Thaioil held 2020 Annual General Meeting of Shareholders.



Commencement of commercial operation of Thaioil Jetty Expansion project i.e. Jetty No. 7 and No. 8.



Thaioil, in collaboration with PTT Group, donated negative pressure mobile beds to hospitals in Chonburi province.



Thaioil signed the memorandum of understanding with GPSC regarding the cooperation on future investment in power business.



## 2020 Key Highlights (Continue)

03

July - September



Thaioil's Board of Directors visited the refinery in Sriacha, Chonburi, to follow up and get update on the refinery operation and progress of investment projects.



Thaioil, in collaboration with GPSC, handed over the solar cell system to Ko Sichang Hospital in honor of His Majesty King Maha Vajiralongkorn on energy conservation aspect.



Thaioil was granted an audience with Her Royal Highness Princess Maha Chakri Sirindhorn, to humbly offer donation for Rama IX Art Museum in creating "Visidsilapin Project" commemorating Her Royal Highness distinguishing talent for arts on the occasion of Her Royal Highness 5<sup>th</sup> Cycle Birthday Anniversary.



Thaioil and Subsidiaries, in collaboration with business allies and Laem Chabang Municipality, participated in forestation activity, commemorating His Majesty Maha Vajiralongkorn's 58<sup>th</sup> Birthday Anniversary on July 28, 2020.



Thaioil and Subsidiaries made first investment in startup company at WaveSense, involving with ultra-wide band radar used in mobility business, and another investment in Everactive, involving with battery-less wireless sensors



Thaioil and Subsidiaries held ceremony to offer 2020 Scholarship and Fund for School and Educational Institutes in Sriracha District and Laem Chabang Municipality, on an occasion of 59<sup>th</sup> company anniversary.



Thaioil celebrated 10<sup>th</sup> anniversary of Community Health and Learning Center, the activities included dental service, energy knowledge sharing, exhibition on public health and general knowledge from government sector, private sector, and community network.



Thaioil participated in 2020 ACT Day, organized by Anti-Corruption Organization of Thailand (ACT), to jointly express its strong intention on anti-corruption.



Major turnaround of LABIX Co., Ltd.'s plant, of which major activities consisted of Union Fining Unit's catalyst replacement and changing desorbents in Molex Unit.

04

October - December



Thaioil, in collaboration with PTT Group, held virtual conference of PTT Group CG Day 2020 under the theme "Step to the Future: CG-featured World in New Era".



Thaioil held Extraordinary General Meeting of Shareholders no. 1/2020 to approve the restructure of the Company's shareholding in power business.



Thaioil entered into the shares sales and purchase agreement with Phurich Marine Co., Ltd., a subsidiary of Prima Marine Plc, selling all its shares held in Thaioil Marine Co., Ltd.



Thaioil, in collaboration with PTT Group, offered support to Workation Thailand Project by Tourism Authority of Thailand, encouraging the spending of organizations to aid hotel and tourism sector affected by COVID-19 pandemic.



TOP SPP Co., Ltd. awarded the contract to the Engineering Procurement Construction and Commissioning Contractor (EPCC) and Project Management Contractor (PMC) for its power and steam production capacity expansion project.



Thaioil and Subsidiaries arranged the 2-day event "Thaioil's Refining Happiness Market" to provide opportunity for communities and small entrepreneurs to sell their products as part of CSR to support and ease the economic impact from COVID-19 pandemic.



Thaioil and Subsidiaries' executives were granted an audience with His Holiness the Supreme Patriarch to receive the new Sriracha office building nameplate. The building was honorably named with His Holiness benevolence as "Sathiwatsawirun Building".



Thaioil congratulated and granted plaques to the Clean Fuel Project (CFP) contractors for the achievement of 10 million manhours without any lost time accidents.



Thaioil, with Eastern Water Resources Development and Management Plc, signed the memorandum of cooperation agreement on water supply expansion and the sale and purchase agreement of raw water, to accommodate the Clean Fuel Project (CFP).



## KEY ACHIEVEMENTS AND DEVELOPMENTS DURING 2018-2020

During 2018-2020, there are several milestones and transformation of Thailoil and Subsidiaries as summarized below.

### 2018

#### Investment and Business Expansion

- >> Thailoil's Extraordinary General Meeting of Shareholders (EGM) No. 1/2018 resolved to approve the investment of approximately USD 4.825 billion in the Clean Fuel Project (CFP) to enhance the competitiveness of Thailoil by improving its production efficiency to increase product values by making them more environmentally friendly and to expand its oil refining capacity to be more flexible and able to refine more types and greater quantities of crude oil, which creates economies of scale and cost reduction. Moreover, this investment will enhance long-term national energy security and economic development. The project was approved by 99.91 percent of shareholders attending the meeting and entitled to vote.
- >> Thailoil Marine Co., Ltd. (TM), a wholly-owned subsidiary of Thailoil, acquired 45 percent of shares in TOP Maritime Service Co., Ltd. (TMS) from a non-interrelated existing shareholder, increasing TM's shareholding in TMS from 55 to 100 percent. TMS subsequently increased its registered capital by THB 250 million, bringing the total from THB 270 million to THB 520 million. This capital restructuring was executed to cope with the changing business environment.
- >> Thailoil entered a joint-venture agreement with the Ministry of Finance on the lease of state properties for 30 years from 2022 to 2052. The present value in 2022 was estimated at THB 12 billion.

- >> Saphthip Co., Ltd. (SAPTHIP), a subsidiary of Thailoil Ethanol Co., Ltd. (TET), established subsidiary Saphthip Green Energy Co., Ltd. to conduct biogas power plant business.
- >> TOP Solvent Co., Ltd. (TS) commenced operations of a new terminal for solvent and chemicals products located in the northern part of Vietnam in mid-October. The first-phase storage capacity was 50,000 tons per year, and rose to 200,000 tons per year in the second phase. The total investment was approximately VND 300 billion.

#### Financing

- >> TOP SPP Co., Ltd. (TOP SPP), a wholly-owned subsidiary of Thailoil, re-financed the inter-company loan of THB 8.5 billion from Thailoil to be in accordance with power business structure and enhance the efficiency of loan and borrowing cost financing after the completion of TOP SPP's power plant, intended to lower the overall project risk, especially construction risks. The refinancing also contributed to Thailoil and Subsidiaries' capital readiness for future projects.
- >> TOP Solvent (Vietnam) LLC. successfully secured a loan for the investment in solvent and chemical terminal expansion in the northern part of Vietnam from Siam Commercial Bank Plc (Ho Chi Minh City branch). The loan limit was USD 13.7 million with the tenor of 10 years. The deal was Thailoil and Subsidiaries' first long-term loan agreement in Vietnam.
- >> Thailoil and Thailoil Treasury Center Co., Ltd. (TTC) successfully completed liability management by issuing two debentures for oversea investors comprising of a debenture of USD 283,619,000 carrying



a coupon rate of 3.625 percent per annum with the tenor of five years, and a debenture of USD 327,587,000 carrying a coupon rate of 4.875 percent per annum with the tenor of 10 years to repurchase previous liabilities. This effort was part of the Global Medium Term Note Program (GMTN), Thaioil's most efficient financing program for capital management to accommodate operations and future growth in a timely manner.

- >> TTC issued senior unsecured debentures to foreign institutional investors for a total of USD 1 billion, fully guaranteed by Thaioil, comprising USD 400 million carrying a coupon rate of 4.625 percent per annum with the tenor of 10 years, and USD 600 million carrying a coupon rate of 5.375 percent per annum with the tenor of 30 years. The debenture subscription was completed on November 20, 2018. The proceeds would finance capital investment and general corporate purposes to accommodate future growth of Thaioil and Subsidiaries.

## Product Sales

- >> LABIX Co., Ltd. (LABIX) launched sales of new commercial products: WC3040 and WS3060 solvents. WC3040 is used in the thinner industry, rubber production and bitumen production. WS3060 is used in the production process of solvents for the mining industry.

## 2019

### Investment and Business Expansion

- >> The 2019 Annual General Meeting of Shareholders (AGM) resolved to approve the disposal of assets to transfer ownership in the Energy Recovery Unit (ERU), which is a part of the Clean Fuel Project (CFP), and the execution of the Relevant Agreements with Global Power Synergy Plc (GPSC) or wholly-owned subsidiaries of GPSC. This helped reduce the CFP

investment cost, improved its liquidity, and hence efficiently accommodated future investments. Moreover, the overall CFP investment return has improved substantially.

- >> As part of Thaioil and Subsidiaries' investment to strengthen business structures, TS acquired 15,410 common shares of Indonesian company PT. Tirta Surya Raya (TSR), or 67 percent of total outstanding shares, to expand the overseas market for solvent distribution.
- >> Under a resolution of TTC, TOP Ventures Co., Ltd. and TOP Ventures Hong Kong Limited were registered to pursue a Corporate Venture Capital (CVC) transaction through investments in Venture Capital (VC) Fund and/or startup businesses. The objective of these ventures is to expand investment in the business Thaioil and Subsidiaries have expertise as well as new business to accommodate business changes. TOP Ventures Co., Ltd. and TOP Ventures Hong Kong Limited are 100 percent-owned by TTC with a registered share capital of THB 35 million and HKD 1 respectively.
- >> Thaioil and Thaioil Power Co., Ltd. (TP) supported GPSC's plan to increase its registered capital by investing in GPSC's common shares at 8.91 and 20.78 percent respectively, and subscribed to additional shares issued by GPSC to maintain the shareholding proportion under the rules and conditions set forth by GPSC.

### Financing

- >> TTC issued senior unsecured debentures to foreign institutional investors for a total of USD 565 million, fully guaranteed by Thaioil, carrying a coupon rate of 3.50 percent per annum with a tenor of 30 years. These debentures have been rated BBB+ by Standard and Poor's and Baa1 by Moody's. The settlement date was completed on October 17, 2019.

## Production Processes

- >> Thailoil shut down Crude Distillation Unit 3 (CDU-3) and related production units for major turnaround and tie-in activities as scheduled by the CFP plan for 30 days, from mid-June to mid-July 2019. Other production units were running at normal levels during this period.

## 2020

### Investment and Business Expansion

- >> Thailoil assigned the memorandum of understanding in a purchase agreement and a water distribution zone expansion to support the CFP project. This development, expected to complete in 2022, would be a key effort in developing the potentiality of raw-water resource management for consumers in the Eastern Region and the CFP project in the future.
- >> TOP SPP signed an Engineering, Procurement, Construction and Commissioning Contract (EPC) with TTCL Plc for TOP SPP's power and steam production expansion project. The project period lasted approximately 27 months.

### Business Restructuring

- >> Thailoil's EGM No. 1/2020, held on October 28, 2020 resolved to approve the shareholding proportion adjustment and shareholding restructure in the power business group through the disposal of all ordinary shares directly held by Thailoil in GPSC (8.91 percent of all issued shares) to PTT Plc and an acceptance of the entire business transfer from TP. The transaction of shares to PTT was completed in December 2020, and the business transfer is expected to be finalized in Q1/2021. With the completion of both transactions, Thailoil's shareholding in GPSC will be 20.78 percent.

- >> On November 25, 2020, Thailoil's Board of Directors resolved to approve the restructuring of Thailoil's marine transportation business through the disposal of all common shares directly held in Thailoil Marine Co., Ltd. (TM) to Phurich Marine Co., Ltd., a subsidiary of Prima Marine Plc, leading to the termination of TM as a subsidiary of Thailoil. TM is holding shares in TOP Maritime Services Co., Ltd., TOP Nautical Star Co., Ltd., T.I.M. Ship Management Co., Ltd.; TOP-NTL Shipping Trust, and TOP-NTL Pte. Ltd.; the shares of which are expected to completely transferred by June 30, 2021. Moreover, under this restructuring, Thailoil will acquire all common shares in Thailoil Marine International Pte. Ltd. from TM before the execution of the transaction.

### Financing

- >> TTC issued senior unsecured debentures to foreign institutional investors for a total of USD 1 billion, fully guaranteed by Thailoil, comprising USD 400 million carrying a coupon rate of 2.50 percent per annum with the tenor of 10 years, and USD 600 million carrying a coupon rate of 3.75 percent per annum with the tenor of 30 years. These debentures were rated BBB+ by Standard and Poor's and Baa2 by Moody's. The pricing date was on June 11, 2020 and settlement date was on June 18, 2020.
- >> Thailoil successfully secured seven-year long-term loan limits from Siam Commercial Bank Plc of THB 7 billion and from TMB Bank Plc of THB 5 billion. The financing is aimed to provide financial investment readiness, strengthen operating cash flow, and accommodate future project developments of Thailoil.







## 2020 MARKET REVIEW



### Global Market and Economic Review

The International Monetary Fund (IMF) reported in October 2020 of the 2020 global economy contraction estimated by 4.4 percent, which was lower than the 4.3 percent economic contraction during the Great Depression in 1930 and the 2019 economic growth of 2.8 percent. With the COVID-19 outbreak, countries worldwide have exercised lockdowns or travel restrictions to restrain the pandemic, resulting in drastic impacts on economic activities including consumption, investment, manufacturing and exports, as well as recessions in many countries both developed and developing. Recession in developed countries is estimated at 5.8 percent, falling from the growth of 1.7 percent in the previous year, mainly due

to the severe economic impacts in the US and the EU caused by the inability to contain the COVID-19 outbreak. For developing countries, however, the economy is estimated to grow by 3.3 percent, slightly lower than the 3.7 percent expansion in the previous year due to the rapid economic recovery in China where COVID-19 situation has relatively been under control. Nevertheless, with concerns on global economic recession, central banks in several countries worldwide, led notably by the US Federal Reserve System (FED) and the European Central Bank (ECB), have launched series of large stimulus packages to maintain global economic growth.



### Crude Oil Market and Refining Industry

The 2020 average Dubai crude price was 42 USD per barrel, declining from 64 USD per barrel in 2019 as the COVID-19 pandemic caused global economic slowdown with direct impact on oil demand. The International Energy Agency (IEA) reported in December 2020 that global oil demand was forecasted to drop by 8.8 million barrels per day from the previous year's growth of 1.0 million barrels per day. The market also faced higher pressure from the increase of crude supply from Libya when the Libyan national oil company resumed operations of its oil production facilities and export following the ceasefire between the government and the opponents. The Libyan production stepped up from 0.12 million barrels per day during February-September 2020 to 1.2 million barrels per day during Q4/2020. Moreover, crude inventory including floating and onshore storages remained at a high level. The onshore crude inventory worldwide in November 2020 was 300 million barrels higher than the same period in 2019. However, crude price was supported from the production curtailment agreement among the OPEC nations and their allies at 9.7 million barrels per day during May-July 2020, and 7.7 million barrels per day during August-December 2020. These efforts helped balance the global crude market from excessive supply.

The refining industry also encountered a slowdown in 2020 compared to the previous year, mainly due to lower demand for petroleum products as the market was under pressure from the COVID-19 situation. The gasoline and diesel market declined correlating with the lower demand after countries worldwide exercising lockdown and limited public events as part of COVID-19 preventive measures. Jet fuel market was under extensive pressure

in both industry and transport sectors, especially when flights have been cancelled globally. However, fuel oil market experienced an upturn due to series of maintenance shutdown and refining capacity downsizing globally, reducing concerns over excessive supply to some extent.

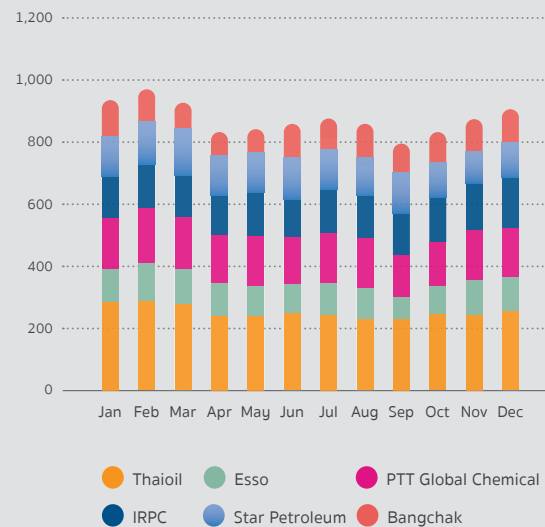
### Domestic Market for Petroleum Products

The domestic economic projection made by the Office of National Economic and Social Development Council (NESDC) for 2020 was 7.8 percent contraction, a significant drop from the 2.4 percent expansion recorded for 2019, due to the pressure from the COVID-19 pandemic beginning in Q1/2020 halting economic activities in consumption, investment, manufacturing and exports. The measures imposed by the Civil Aviation Authority of Thailand (CAAT) banning international flights from entering the kingdom since mid April 2020 had reduced the number of foreign tourists by 83.2 percent, a high contrast to the previous year's growth of 4.2 percent, leaving only 6.7 million tourists in 2020. However, Thai economy recovered better than expected, with activities and businesses resumed normal operations in Q3/2020 following the relaxation of the COVID-19 preventive measures, as well as the government's financial aids and economic stimulus packages such as the cash giveaway and rebate schemes for shopping, dining, and traveling including 'Chim Shop Chai', 'We Travel Together', and '50-50 co-payment'. Overall domestic consumption has been significantly improved in nearly all commodity categories. Nevertheless, the number of active COVID-19 cases both in Thailand and key trade partners have risen again in Q4/2020, potentially exerting pressure on the domestic economy, and must be monitored.

The domestic demand for petroleum products declined at an estimate of 12 percent following the private consumption slowdown during the government's COVID-19 preventive measures in Q2/2020. The petroleum product demand, however, was still supported with the government's cash giveaway and rebate schemes, such as 'Chim Shop Chai' and '50-50 co-payment'. Nonetheless, petroleum products' retail price remains low along with the global oil price, with consumption of gasoline dropping 1.5 percent despite rising consumption of gasohol 95 and gasohol E20. Consumption of gasohol 91 and gasohol E85 declined by 14.4 percent and 37.8 percent, respectively. Diesel consumption dropped by 1.5 percent along with the industry sector downturn after the lockdown measures were imposed, causing interruption of production and services, and resulting in the decline of

### 2020 Domestic Refinery Production

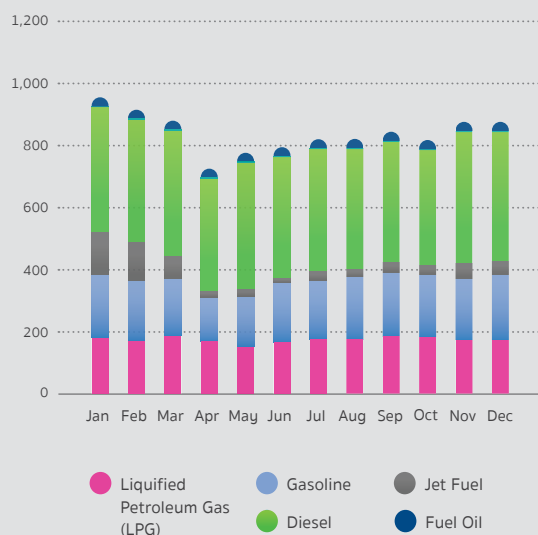
Thousand barrels/day



Source: Department of Energy Business, Ministry of Energy

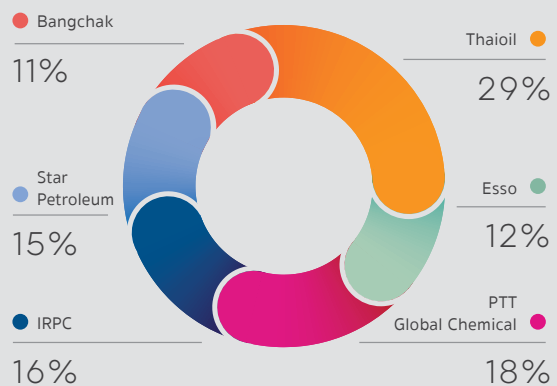
### 2020 Domestic Demand for Petroleum Products

Thousand barrels/day



Source: Department of Energy Business, Ministry of Energy

### 2020 Share of Refining Output



Source: Department of Energy Business, Ministry of Energy



transportation activities. Jet fuel demand experienced a steep decline of 61.7 percent due to an acute contraction of tourism following the CAAT restrictions of international flights since mid-April 2020 despite continual efforts by the government on economic stimulation and tourism promotion, such as STV (special tourist visa) long-stay program. Moreover, the Thai baht appreciation put further pressure to the tourism industry. Fuel oil demand dropped by 11.2 percent with the continuously decreasing activities in shipping, industry sector and electricity generation, all consequential to lower consumption and exports.

The 2020 average domestic refining throughput stood at 886,738 barrels per day, declining from 906,853 barrels per day during the same period in 2019, mainly due to the decline of domestic demand. Thailand still maintained the largest output share of 29 percent of the total domestic output.

### **Aromatics Market**

The 2020 paraxylene market experienced a slowdown compared to 2019 with supply surplus situation resulted from a new Chinese petrochemical complex commissioning in Q1/2020, and the commissioning of other petrochemical plants in Q3/2020 and Q4/2020. Additional supply from these new facilities totaled as high as 8.1 million tons per year, exerting pressure on other high-cost petrochemical plants to cut down production. Paraxylene demand, on the other hand, decreased by 3.3 million tons per year in 2020, compared to the expansion of 2.6 million tons per year in 2019, due mainly to the COVID-19 pandemic that caused a low demand for polyester despite the higher consumption of bottled water. This left a new record high of Chinese paraxylene inventory at over 4 million tons.

The 2020 benzene market experienced an upturn compared to 2019 with benzene price rising in Q1/2020 as the trade war between the US and China started to resolve. However, additional supply of 3.2 million tons per year from new petrochemical complexes in Q2/2020 and Q3/2020, together with the COVID-19 outbreak, put negative pressure on the benzene market. As the COVID-19 situation started to unwind in Q4/2020, and as refineries and aromatics plants lowering their production, regional supply became tighter and the benzene market situation started to ease up.

### **Lube Base Oil and Bitumen Market**

The lube base oil market was sluggish in 2020 being pressured by demand declining over 17 percent from 2019 due to the COVID-19 situation. Additional supply of lube base oil Group II and Group III from new production in China such as the Ningbo Bohui plant (300,000 tons per year production capacity) and the Qinhe Petrochemical plant (600,000 tons per year production capacity) continued to put pressure on the market. Meanwhile, the production cut from maintenance shutdown totaled 662,000 tons per year in 2020, which was even lower than 1,382,000 tons per year in 2019 with turnaround, leading to excessive supply of the lube base oil in the market.

The 2020 bitumen market in Asia was contracting from 2019, following the falling prices of crude oil due to the crude price war between Saudi Arabia and Russia. The sluggish global economy, lockdown policies for COVID-19 control, as well as government budget cuts and the late budget disbursements, all contributed to the decline in bitumen demand for road construction and repair despite the lockdown relaxation supporting bitumen demand in the region. However, the spread between bitumen and

fuel oil increased due to fuel oil price dropping and refining utilization rate cut following the falling regional demand for fuel oil.

### **Linear Alkyl Benzene (LAB) Market**

The 2020 LAB price declined from 2019 following the lower price of surfactant, pressured by the falling global oil price during the sluggish global economy. However, the average spread between the LAB product and surfactant significantly increased from that of 2019 due to the higher demand growth in Asia along with its population growth, improved living quality in developing countries, and increased public attention in hygiene during the COVID-19 outbreak. Moreover, the regional supply has dropped due to unplanned shutdown in China since mid-July 2020, contributing to the supply shortage in the second half of 2020.

### **Solvent Market**

The demand for industrial solvent went down following the domestic and global economic recession since early 2020, mainly due to the COVID-19 pandemic. This, together with the oversupply situation both domestically and internationally, resulted in continuously aggravated competition in the beginning of the year. The demand for toluene used in increasing octane value in gasoline also dropped in Q2/2020 due to the stagnation of land and air travels during the lockdowns. Moreover, since the demand for jet fuel decreased causing the producers to switch to other products such as white spirit. This led to using toluene and white spirit to produce more products in solvent industry, and leaving the market in a worsening oversupply situation.

For Thai market, the severe economic downturn resulted in an overall drop of solvent demand and consequentially lowering sales in solvent industry, especially in the domestic market. The international market also faced the same situation with the global economic slowdown, leading to severe price competition. The situation was exacerbated by supply surplus in the first half of the year, especially Asian countries, such as in China, Korea, and Japan, leading to more supply flooding the ASEAN market. However, production cut and maintenance shutdown in some plants led to shortages of some products. The shortages were worsened in Q4/2020 with shipping complications including delayed deliveries and significantly higher freight rates, especially in Isotank and full container load, deferring imports even further. This resulted in the increase of price for these solvent imports hence continued to rise until the end of the year.

### **Petroleum Transportation Industry**

Freight rates for vessels transporting crude oil, petroleum products and petrochemicals rose in the beginning of 2020 with the increased vessel costs following the enforcement by the International Marine Organization (IMO) of fuels with sulphur content below 0.5 percent. However, with the lockdown since late Q1/2020 and the trade war between the US and China, demand for vessels transporting petroleum products and petrochemicals in China and ASEAN countries contracted, and hence, put pressure on freight rates to stabilize. Freight rates for very large crude carrier (VLCC) also declined since late Q1/2020, but hiked up afterwards due to the higher demand for crude floating storage following a drastic drop of global crude price. For the latter half of the year 2020, freight rates decreased again due to the prolonged



crude demand stagnation since majority of the countries failed to contain COVID-19 outbreak. Demand for offshore supporting vessels for the offshore exploration and rose slightly in the first half of the year to accommodate old platform decommissioning activities, but later dropped due to the COVID-19 pandemic.

### **Ethanol Market**

The 2020 ethanol demand for gasohol production for domestic use declined to 4.1 million liters per day, a 6.8 percent drop from 2019, due to a drastic drop in travels as part of COVID-19 impacts and a major fall in gasoline demand despite lower retail price following the fall in global oil price. Moreover, sales of automobiles compatible with gasohol E20 and E85 contracted with the economic slowdown, as reflected in the lower consumer confidence indices and fewer gas stations offering gasohol E85. The government is nevertheless continuing their efforts to promote ethanol consumption as part of the energy conservation plan to promote gasohol E20 as primary petrol.

The 2020 domestic ethanol supply remained higher than demand, despite the reduction in ethanol inventory of 33.3 percent from the previous year, due to the lower molasse-based ethanol production. In 2019/2020 sugarcane cropping season, the yield totaled only 75 million tons, much lower than the 2018/2019 season with the yield of 131 million ton, due to the unusual drought or El Niño. Ethanol production from cassava increased slightly with farm expansion, resulting in higher proportion of cassava-based ethanol in the overall supply.

The 2020 ethanol price was a 5.5 percent increase to an average of 23.2 THB per liter, compared to 22.0 THB

per liter in 2019, due to the increase of feedstock cost following the decrease of raw materials yield due to drought.

### **Power Industry**

As of November 2020, the total domestic power generating capacity stood at 45,477.87 megawatts or 4 percent increase from 2019; with 35.26 percent of total capacity was from the Electricity Generating Authority of Thailand (EGAT), 31.33 percent from independent power producers (IPPs), 20.83 percent from small power producers (SPPs) and 12.58 percent imported.

Peak power demand of EGAT (excluding power generated by IPPs for their own use and/or direct sales) was recorded on March 12, 2020, at 28,637 megawatts or 7.18 percent drop from 2019 mainly because of the COVID-19 situation.

With actual records during January 1-November 30, 2020, and December 2020 projection, the estimated total contractual power generating capacity of EGAT (excluding power generated by IPPs for their own use and/or direct sales) would total 192,096 million units, 2.92 percent lower than 2019 and 4.41 percent lower than 2020 plan. Of this plan, natural gas is accounted for 59 percent of all electricity generation, 23.8 percent from coals, 15.6 percent from renewables, and 1.6 percent from other sources such as palm oil, diesel, fuel oil and imports from the Électricité du Laos and from Malaysia. Power consumers consisted of 43 percent industrial sector, 29 percent households, 24 percent businesses and 4 percent others.



## MARKETING AND COMPETITION

### Product Sales

In 2020, Thailoil's total product sales was 18,617 million liters, divided into different products as follows:

Products (Million liters/year)	2020		2019		2018	
	Sales	% of total sales	Sales	% of total sales	Sales	% of total sales
LPG	685	4	795	4	939	4
Unleaded Gasoline <sup>(1)</sup>	3,564	19	3,241	15	3,114	15
Light Naphtha	79	0	465	2	539	3
Isomerase/Reformate	2,232	12	2,077	10	2,372	11
Jet/Kerosene	2,616	14	4,479	21	4,668	22
Low-speed Diesel/ high-speed Diesel	7,005	38	7,520	36	6,813	33
Fuel Oil <sup>(2)</sup>	1,409	8	1,421	7	1,555	7
Long Residue	1,000	5	965	5	1,038	5
Sulfur	28	0	40	0	46	0
<b>Total</b>	<b>18,617</b>	<b>100</b>	<b>21,003</b>	<b>100</b>	<b>21,084</b>	<b>100</b>

#### Remarks:

<sup>(1)</sup> Including Gasohol sales

<sup>(2)</sup> Including Refinery Slop Oil

This year Thailoil sold about 87.1 percent of its total refined products domestically to PTT Oil and Retail Business Plc (PTTOR, 35.4 percent), Shell Company of Thailand Ltd. (Shell, 4 percent), Chevron Thailand Exploration and Production Ltd. (Chevron, 2 percent), Thai Paraxylene Co., Ltd. (TPX, 12 percent), Thai Lube Base Plc (TLB, 5.4 percent), Bangchak Corporation Plc (BCP, 0.7 percent), PTG Energy Plc (PTG, 17 percent), SUSCO Plc (SUSCO, 1 percent) and other traders (9 percent). Another 12.8 percent of Thailoil's product sales was for export. The details of types and volumes of Thailoil's products sold in 2018, 2019, and 2020, along with their percentage comparison against Thailoil's total sales are as follows:



Products sold and percentage comparison of total sales (Million liters/year)	2020		2019		2018	
	Sales	% of total sales	Sales	% of total sales	Sales	% of total sales
<b>Domestic</b>						
PTTOR	6,614	35	7,742	37	7,491	36
Shell	835	4	1,240	6	1,124	5
Chevron	327	2	748	3	809	4
TPX	2,232	12	2,077	10	2,372	11
TLB	1,000	6	965	4	1,038	5
BCP	128	1	103	1	106	1
PTG	3,210	17	3,390	16	2,853	14
SUSCO	272	1	958	4	918	4
Others <sup>(1)</sup>	1,641	9	1,299	6	1,379	6
<b>Total</b>	<b>16,259</b>	<b>87</b>	<b>18,522</b>	<b>88</b>	<b>18,090</b>	<b>86</b>
<b>Export</b>						
PTTOR	1,020	6	1,107	5	1,124	5
Others <sup>(2)</sup>	1,377	7	1,381	7	1,872	9
<b>Total</b>	<b>2,397</b>	<b>13</b>	<b>2,488</b>	<b>12</b>	<b>2,996</b>	<b>14</b>
<b>Total sales</b>	<b>18,656</b>	<b>100</b>	<b>21,010</b>	<b>100</b>	<b>21,086</b>	<b>100</b>

**Remarks:**

<sup>(1)</sup> Including Refinery Slop Oil

<sup>(2)</sup> Including sales to PTT International Trading Pte. Ltd., Singapore, wholly owned by PTT Plc

Thaioil sells refined products to PTTOR under Product Offtake and Crude Oil Supply Agreement (POCSA) under which both companies agreed to buy and sell refined products at market prices following the procedures of product volumes setting and terms and requirements specified in POCSA. The agreement of which requires PTTOR to propose types and volumes of desired products at least 49.99 percent of Thaioil's refining capacity; Thaioil will then notify PTTOR of the types and volumes possibly delivered by an agreed time. In addition, if Thaioil has surplus products, PTTOR is eligible to buy them before others at market prices under the terms of POCSA. PTTOR is to buy Thaioil's products mostly for

domestic sales. Thaioil must identify production goals, both commercial and technical, to closely match PTTOR's demand, which is stated in the terms and requirements for product purchase. This agreement can be terminated by either party by sending a written notification to its counterpart no less than 12 months in advance. However, the counterparty cannot file the declaration of intention to terminate POCSA before the tenth year after its enforcement. Thaioil signed an amendment to the agreement in 2013 to extend the enforcement period of POCSA, meaning the intention of POCSA termination cannot be filed for another ten years.

Other surplus products such as unleaded gasoline, are exported through PTTOR and other oil traders. Thailoil has exported the refined products considering suitability and favorable market conditions both domestic and regional.

### Product Pricing

Domestic petroleum product pricing is referenced to the Singapore market prices at for the particular time of the same products, which are benchmarked to the ex-refinery prices. Such Singapore market prices reflect regional supply and demand and are set daily in US dollars. Thailoil sells its products domestically on an import parity basis and exports them on an export parity basis.

### Product Delivery

Thailoil sells refined products to its customers at the refinery with the prices calculated as free on board (FOB), thus enabling buyers to access delivery networks conveniently and manage cost efficiently.

There are three channels for product sales and distribution detailed as follows:

- 1) Tankers: Thailoil distributes and transports about 28 percent of its product sales by tankers chartered by customers. This year the Company has expanded from six to eight jetties to increase the marine distribution capacity and accommodate more diverse tanker sizes.
- 2) Pipelines: Thailoil distributes and transports about 29 percent of its product and semi-finished product sales by pipelines connecting the refinery with depots in the North and the Northeast to sustain regional demand.
- 3) Lorries: Thailoil distributes and transports about 43 percent of its products by lorries, and its dispensing stations operate around the clock, thus enabling

domestic buyers and those in the Indochinese countries to take a variety of products, and increasing their competitiveness to address the rising demand of customers. In addition, due to Thailoil's location near areas of high oil consumption, the Company can deliver products at low costs to the country's major markets, including Bangkok Metropolis and provincial hubs.

## Refining Industry Competitiveness in 2020 and Outlook

### Competitiveness

In 2020, there are six major refineries in Thailand: Thai Oil Plc (Thailoil), Bangchak Corporation Plc (BCP), Esso (Thailand) Plc (Esso), PTT Global Chemical Plc (GC), Star Petroleum Refining Plc (SPRC), and IRPC Plc, with a combined refining capacity of 1,232,000 barrels per day. BCP and Esso are the two integrated operators with their own service stations, whereas the rest operate only the refining business under offtake agreements and/or free-market delivery to sell various products. Thailoil's major and secondary competitors are domestic and regional refineries, especially those national and international integrated oil companies with several petroleum businesses. Notably, international companies with exploration and production of crude oil, oil refineries, and marketing, are considered Thailoil's major competitors because of their integrated businesses, with massive investment and resources and the ability to consistently procure crude oil, causing them to thrive in volatile markets and price competition quite efficiently.

The oil refining business is highly competitive both in pricing and product yields. Thailoil's advantage stems from its complex refinery with sophisticated refining system and its largest size in the country, enabling the production of high-value products at one of the highest



proportions in Asia. Thaipetchem also can leverage its refining flexibility, since the distillation units are connected to petrochemical and lube base oil units, which in turn enable the maneuverability of production in response to volatile market prices. For example, Thaipetchem can hike its output of various grades of gasoline to meet domestic demand for gasohol 91, gasohol 95, and E20. Thaipetchem is the sole domestic refiner of gasohol 95 and holds most of market shares in Indochina region. Thaipetchem can produce gasoline and diesel of high quality as required by standards while adjusting the volumes of jet fuels and diesel in line with prevailing market circumstances. In view of the COVID-19 pandemic this year, Thaipetchem successfully lowered its output of jet fuels by about 48 percent, the lowest on record, to meet only domestic needs while adjusting the outputs of diesel and gasoline so as to maintain its competitiveness. At the same time, to respond to public policy, Thaipetchem increased the sales of high-speed diesel as promoted by the public sector, including more sales of B20 high-speed diesel for trucks and buses from Q4/2018, and sales of B10 high-speed diesel for private cars in December 2019. The public sector pushed for the B10 grade to become the standard high-speed diesel in place of the B7 grade. To this end, Thaipetchem's oil distribution station is capable of efficiently accommodating individual diesel dispensation. As for fuel oil, Thaipetchem can produce various grades to meet the demand of the industrial and transport sectors, and start producing and distributing low-sulfur fuel oil with up to 0.5 ppm in Q4/2019, so that the quality of fuel oil for marine vessels complies with the quality standard of vessel fuel oil under International Convention on the Prevention of Pollution from Ships by the International Maritime Organization (IMO).

## PRODUCTION PROCESS AND DEVELOPMENT



In 2020, Thai Oil Plc had total refining capacity of crude oil and other raw materials equaled 277,204 barrels per day, or 101 percent of the nameplate capacity, while Thai Lube Base Plc (TLB) and Thai Paraxylene Co., Ltd. (TPX) commanded 235,897 tons per year (88 percent) and 591,730 tons per year (71 percent) in capacities. Processing surfactants for cleaning agents (Linear Alkyl Benzene: LAB), LABIX Co., Ltd., (LABIX) produced 124,050 tons per year or 103 percent of the capacity. In July and August, LABIX, underwent a major turnaround to inspect and maintenance, which were efficiently carried out.

However, the spread of COVID-19 affected all economic sectors, including petroleum and petrochemical industries, which was reflected in the significant decrease in the overall demand for petroleum and petrochemical products, especially jet fuels. Thailoil therefore adjusted process to mitigate the impacts of such situation, resulting in a lower production rate than the target. However, to maintain the capability and improve the competitiveness, Thailoil has executed many projects to intensively increase production efficiency as detailed below:



### Thai Oil Plc

>> Received a certificate for the Low Emission Support Scheme (LESS) of the Thailand Greenhouse Gas Management Organization (Public Organization) from activities to increase energy efficiency and reduce greenhouse gas emissions.

>> Continued executing Productivity Improvement Plan by implementing the margin improvement project by managing operation cost (Orchestra Project) and the finance cost reduction and management project (Symphony Project), resulting in cost benefits valued at 1.81 USD per barrel or approximately THB 5.851 billion. Thaioil also included activities that maximize potential benefit by fostering close cooperation between Corporate Commercial Function and Manufacturing Function to enable prompt production processes adjustment in responding to changing market environment, ensure the highest economic value. The productivity improvement created additional 1.22 USD per barrel, or approximately THB 3.946 billion, resulting in the total incremental benefit which is much higher than the target. The detail of value creation activities are as follows:

- Adjusted production to accommodate a wide variety of crude oil and market volatility. Thaioil also utilized crude storage tanks and chartered tankers to procure different types of crude oil at low prices in advance, which could be drawn to the processes at the right time and obtain maximum economic values.
- Reduced the production of jet fuels by more than half of the target by reducing the distillation temperature and adjusting the quality of kerosene so that it could be further used to produce more aromatics, gasoline, diesel and fuel oil. As a result,

the refinery only reduced its capacity to just 10-20 percent of the maximum capacity. In addition, there were short-term quick-win projects including the installation of piping and control equipment to transfer some portion of high-sulphur kerosene for quality improvement at Hydrotreating Unit-1 before mixing with diesel.

- Increased the distillation temperature of the High Vacuum Unit-3 and transfer short residue from the High Vacuum Unit-1 for further distillation at the High Vacuum Deep Cut Unit to increase Vacuum Gas Oils (VGO), used as feedstock for the Hydrocracking Unit-1/2.
- Imported additive compounds to mix with gasoline and adjusted the process between aromatics and gasoline by duly tuning the octane number of the platformate to increase the gasoline yield, resulting in higher economic value
- Developed a formula for fuel oil containing 0.5 percent sulphur by weight in accordance with the International Maritime Organization (IMO), using Hydrocracker Bottom, which costs less than diesel, as a mixture component
- Managed the use of the Crude Distillation Unit-1 furnace effectively to make it possible to postpone maintenance for its pipes and avoid the loss of business opportunities from the shutdown.
- Successfully solved the pressure drop across the Continuous Catalyst Regeneration Platformer Unit-2, consequently avoiding a loss of business opportunities due to the shutdown.
- Increased the capacity of diesel production by improving the quality of Gasoil Hydrodesulphurization Unit-2/3 to be higher than the base design capacity.

- Changed catalysts in Gasoil Hydrodesulphurization Unit-2 in August, earlier than planned schedule due to efficient planning and execution.
  - Managed the use of short residue with high sulphur and lower economic value for fuel in processes without affecting the environment and neighboring communities.
  - Increased the ability of vessel loading with the higher capacity to accommodate larger tankers after the completion of the Jetty Expansion Project.
- >> Implemented energy conservation and oil loss prevention by pursuing 11 improvement projects for energy consumption efficiency, leading to energy saving of 529,051 gigajoules (GJ) valued approximately THB 56 million. Highlights included:
- Improved processes to increase the energy efficiency of Continuous Catalyst Regeneration Platformer Unit-1/2 by adding proper amount of chloride into the catalysts to improve their efficiency, thus reducing working temperature; reducing the pressure in the fractionation towers to use less energy; and reducing the volume of Recycled Gas and consequently resulting to less ultra-high pressure steam for compressors while controlling the coke elimination target.
  - Increased the energy efficiency of Hydrocracking Unit-1 by planning to use some of compressors at a high-accelerated level to be able to cease operation of other compressors when lower production demanded. This resulted in the lower overall energy consumption and the optimized pressure of fractionation towers.
  - Increased the energy efficiency of Hydrocracking Unit-2 by duly controlling the volume of hydrogen

for hydrocarbon feeders to reduce the acceleration of compressors, lowering the use of ultra-high pressure steam and enabling due pressure control in fractionation towers.

- Reviewed the production efficiency of Hydrogen Manufacturing Unit 1/2 and selected more suitable one to operate by comparing their performance and other limitations to meet lower hydrogen demand due to lower overall output. This effort optimized the sufficiency of hydrogen demand, energy consumption and cost.
- Increased the energy efficiency of the crude distillation unit by duly controlling the steam stripping and establishing a plan to clean heat exchangers at the right time to reduce fuel consumption while maximizing the production capacity.

#### **Thai Lube Base Plc**

- >> Implemented a faster and more precise feedstock testing procedure, enabling the purchase of new high economic value long residue and increasing the utilization of imported long residue, in turn lowering the overall production cost.
- >> Produced new special grade bitumen (40/50) with higher quality and price than the regular grade bitumen (60/70) to serve customers' need.
- >> Developed a new formula for bitumen production by using short residue with low prices to mix with bitumen to increase product value.
- >> Studied and implemented two process improvement projects to increase energy efficiency, leading to energy saving of 19,835 GJ valued approximately THB 4 million. Highlights included:





- Installed a heat exchanger at the MP Refining Unit to reduce energy consumption.
- Developed an effective plan to clean the heat exchanger of the Vacuum Distillation Unit to reduce fuel consumption, thus enabling a consistent production capacity.

#### Thai Paraxylene Co., Ltd.

- >> Carried out efficient production resulting in 100-percent operational availability.
- >> Studied and implemented five process improvement projects to increase energy efficiency, leading to energy saving of 193,037 GJ valued approximately THB 51 million. Highlights included:
  - Adjusted the quantity of non-aromatics in mixed xylenes, making it possible to adjust the energy consumption ratio of the Parex Unit and Continuous Catalyst Regeneration Platformer Unit-1/2 to maximize the benefit in line with gasoline and aromatics markets.
  - Optimized the ratio of solvent recovery for the processes and product quality to reduce energy consumption.
  - Increased the efficiency of paraxylene recovery (PX recovery) of the Parex Unit to reduce the quantity of paraxylene that circulates in the system, resulting in reduced energy consumption.
  - Controlled the incoming temperature of the xylene isomerization unit (Isomar Unit) based on catalyst performance to reduce fuel consumption in the furnace.
  - Reduced the recycled gas of the Isomar Unit, thus reducing the fuel consumption in the heating furnace and the consumption of electricity by compressors.

- Duly adjusted the quantity of extract used in the production of Paraxylene (Parex Unit), resulting in increased energy efficiency.

#### LABIX Co., Ltd.

- >> Imported concentrated normal paraffin for surfactant of Linear Alkyl Benzene (LAB) production and minimized the impact of quality changes of kerosene, resulting from Thaioil adjusting processes to reduce the jet fuel production in mid-2020.
- >> Executed the major turnaround of the LAB Complex to enhance production efficiency, and completed sooner than planned schedule due to efficient planning and execution. Efficiency improvement projects carried out during the shutdown are as follows:
  - Changed catalysts in the Union Fining Unit to reduce the amount of light-end yield caused by the catalysts reaction, thus producing more feed to Molex Unit and consequently increasing the production capability of LAB.
  - Changed desorbents of Molex Unit to increase the fractionation efficiency and normal paraffin recovery, resulting in increased production capability of LAB and reduced desorbent-feeding ratios, thus reducing process energy consumption by lowering the amount of reused desorbent, leading to energy saving of 4,341 GJ valued approximately THB 1 million.
  - Replaced pressure control valves of the distillation towers, enabling the pressure reduction in the fractionation towers of raffinate and desorbents in Molex Unit, and the energy reduction of the reboiler at the distillation towers.



- Cleaned the air fan cooler of Paraffin Column, thus increasing the efficiency of the fractionation and reducing the amount of alkyl benzene impurity in the reflux from the fractionation towers to the Pacol unit, thus increasing the production efficiency of LAB.
- Improved the efficiency of other production units by cleaning heat exchangers and the cooling water system to prepare for highest production efficiency.

#### **Thaioil Power Co., Ltd.**

- >> Successfully achieved higher availability and utilization rates than planned to meet customers' demand.
- >> Carried out planned maintenance of plant machinery, including combustion inspection and hot-gas path inspection to ensure high plant reliability and machinery efficiency.
- >> Carried out maintenance of power generators concurrently with Thaioil's turnaround, thus preserving its power distribution opportunities to meet customers' demand.
- >> Measured heat rates of gas turbine generators and regularly cleaned compressors to maintain good rate of fuel consumption per production unit, resulting in higher efficiency of gas turbine generators than the target.
- >> Controlled maintenance costs at an appropriate level and in line with the target.
- >> Controlled production processes to achieve energy conservation goals and reduce costs such as:
  - Used the heat recovery steam generator to produce ultra-high-pressure steam instead of the direct-fired ultra-high-pressure steam generator.

- Increased the usage cycle of the demineralization unit in boiler feed water to reduce the consumption of regenerative chemicals.

#### **TOP SPP Co., Ltd.**

- >> Successfully achieved higher availability and utilization rates than planned to meet customers' demand.
- >> Carried out planned maintenance of gas turbine generator, including combustion inspection and hot-gas path inspection to increase the reliability and the efficiency of fuel consumption per production unit (heat rate).
- >> Measured heat rates of gas turbine generators and regularly cleaned compressors to maintain good rates of fuel consumption per production unit, resulting in a higher efficiency of gas turbine generators than the target.
- >> Optimized the power and steam generating units to meet customers' needs by adjusting the operation of the steam turbine condensing power generator in Project 2 to increase higher-pressure steam production.
- >> Successfully prepared and coordinated for a third party to measure primary energy saving (PES) indices at both power generation projects as required by PPAs. It was found that both power and steam generation projects operate with higher PES indices than the established values, resulting in maximum rate of fuel saving (FS).
- >> Installed a wastewater treatment unit to treat water generated from the projects for further reuse.
- >> Controlled maintenance costs at an appropriate level to meet the target.



>> Controlled production processes to achieve energy conservation goals and reduce costs such as:

- Used a heat recovery steam generator to produce ultra-high-pressure steam instead of a direct-fired ultra-high-pressure steam generator.
- Increased the usage cycle of the demineralization unit in the boiler feed water to reduce the consumption of regenerative chemicals.

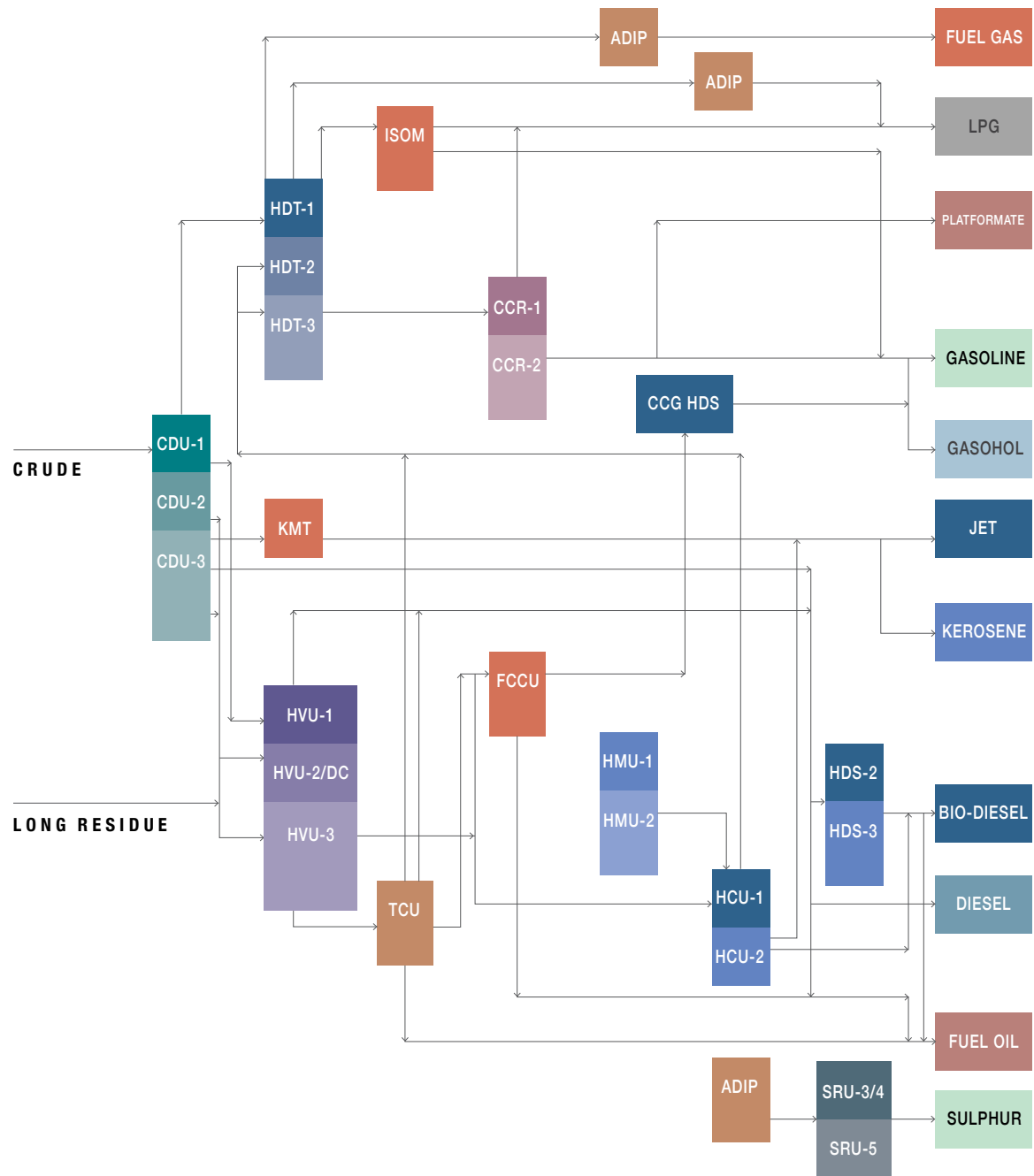
#### Refining Performance Appraisal

Due to the aforementioned executions and performance, Thairoil and Subsidiaries have maintained excellent overall refining capability. All subsidiaries demonstrated high levels of operational availability, achieved plant utilization goals, excelled in and continuously improved energy efficiency except for Thairoil, which achieved lower utilization rate than its target. This is because

petroleum products especially jet fuels were continuously affected by COVID-19 outbreak, causing lower energy efficiency because the production units were operated at significantly lower rates than the design, which resulted in deteriorating performance even with intensive production efficiency improvements were undertaken.

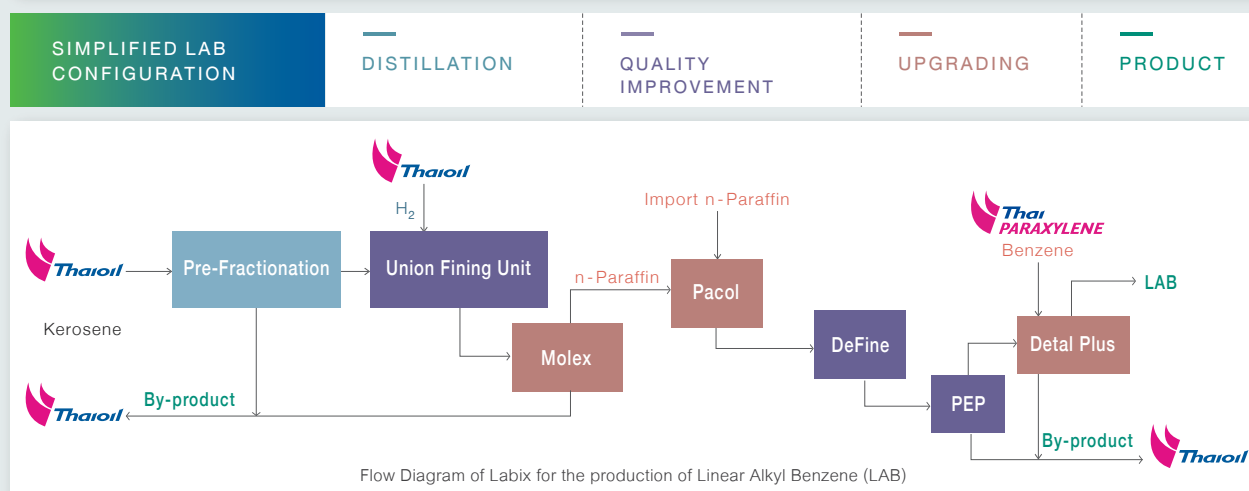
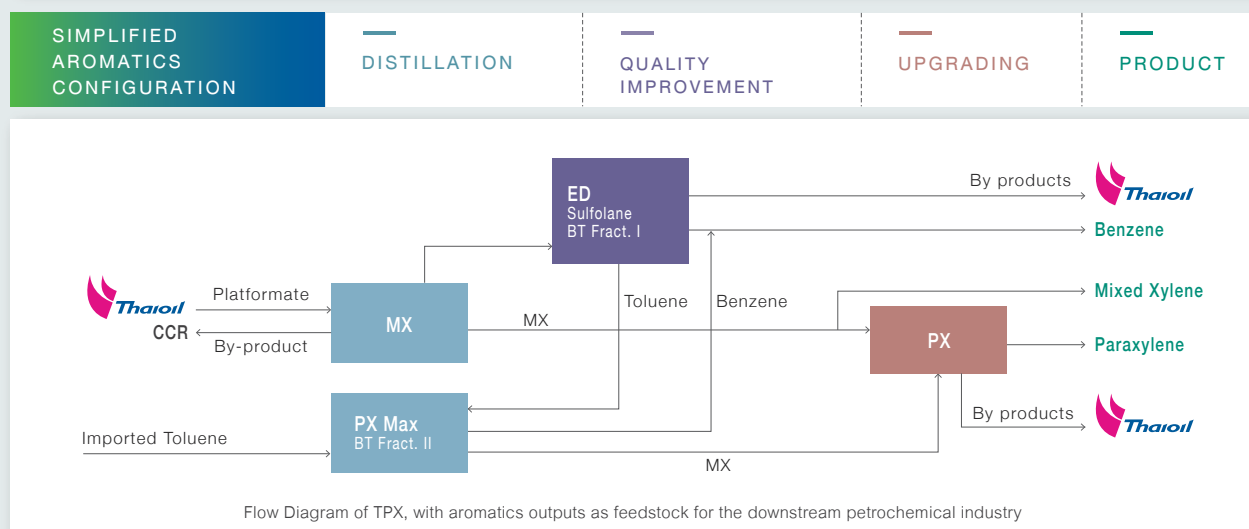
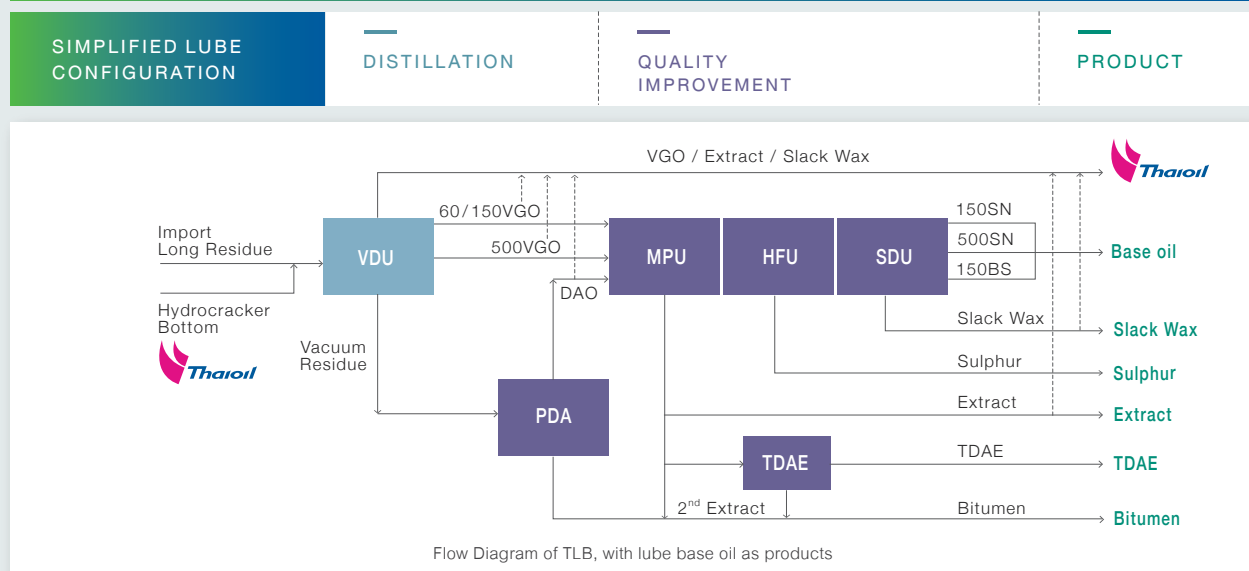
However, Thairoil took its opportunities when some parts of the distillation unit were operated at lower levels, to improve the efficiency of machinery and equipment. This will prepare Thairoil and Subsidiaries to resume high production rates with excellent efficiency when demand of petroleum products recovers. Hence, it can be concluded that Thairoil and Subsidiaries have continued striving for continuous improvement and development of petroleum refining capability to maintain its position as a leading refinery in the Asia Pacific region.

## CRUDE AND FEEDSTOCK REFINING PROCESSES



Flow Diagram of Thailoil Refinery

## INCLUDING PETROCHEMICAL AND LUBRICATING OIL PROCESSING OF THAI OIL AND SUBSIDIARIES



Details related to the production processes of petroleum products from crude oil and other feedstock, including the production of lubricants and petrochemicals of Thai Oil and Subsidiaries, are disclosed on the Company's website ([www.thaioilgroup.com](http://www.thaioilgroup.com)) under "Thai Oil and Subsidiaries' Business" with subtopic Refining business, Lube base oil business, Petrochemical business, and Other businesses.





## 2021 MARKET OUTLOOK

### Global Market and Economic Outlook

The International Monetary Fund (IMF) reported in October 2020 that the 2021 global economy is projected to recover from 2020 with a 5.2 percent growth. This forecast was made with the expectation that the COVID-19 pandemic would finally be contained, and many countries tended to relax the preventive measures. The approval of COVID-19 vaccines in the US, the EU, and the UK is also a significant factor contributing to the global economic recovery. The global economy growth is expected in both developed and developing countries. For developed countries, the 2021 average growth is projected at 3.9 percent year-on-year, with the EU expanding 5.2 percent and the US 3.1 percent, following the new stimulation policies and the consequential recuperation in consumption and economies. As for developing countries, the average growth is expected at 6 percent, with strong economic rebounds in China and India at 8.2 and 8.8 percent, respectively. Nevertheless, it is the most likely that the 2021 global economy growth would face risks of economic slowdown, including uncertainties from the trade war between the US and China, and other elevated geopolitical conflicts.

### Crude Oil Market and Refining Industry

#### Crude Oil Market

The 2021 average price of Dubai crude oil is projected in a range of 45-55 USD per barrel with the market anticipation that the COVID-19 situation would ease up and the economic activities would recover. The global crude demand is expected to grow at 5.8 million barrels per day, predicted by the International Energy Agency

(IEA) in December 2020, following the 5.2 percent global economic growth forecast made by the IMF in October 2020. It is believed that with the economic stimulus, both the fiscal and monetary policies, aimed to relieve the economic impact from COVID-19 in the past year, and the relaxation of the area control measures as well as the satisfying progress of vaccine development, all contribute to the market confidence that oil consumption will rebound if the vaccines are efficient and sufficient for the global population. At present, Pfizer-BioNTech and Moderna have reported the efficacy of their vaccines is higher than 94 percent. The first dosages have been distributed in the UK, Canada and the US since December 2020.

However, the 2021 crude oil price will continue to be under pressure from the increasing supply with OPEC and allies planning to lessen the oil production control to conform with the upside demand projection. The OPEC meeting held on December 3-4, 2020 reached the agreement to lower the production cuts from 7.7 million barrels per day during August-December 2020 to 7.2 million in January 2021. The assembly also planned to monthly meetings to determine the appropriate level of the production cuts to reflect demand. On the other hand, production increase of 0.53 million barrels per day is expected from the non-OPEC countries including Norway and Brazil.

#### Refining Industry

The refining industry will be driven partly by the increasing demand in 2021 once the COVID-19 situation starts to



unwind, and partly by the economic stimulus released by many governments worldwide to encourage investment and employment, thus increasing the demand for gasoline and diesel in travels, transports and industry. However, jet fuels will continue to be suppressed despite domestic travel recovery, since international flights are expected to be limited, and unable to reach the previous level prior to COVID-19 situation before the end of 2021, with countries still imposing strict controls over inbound tourists. The demand for low sulphur fuel oil will continue to be driven by the shipping industry, whereas the high sulphur fuel oil market is expected to stabilize as worldwide refineries continue to curtail production with concern over low consumption due to the COVID-19 situation.

### **Domestic Market for Petroleum Products**

Thai 2021 economy is predicted to expand at 3.2 percent, reported by the Bank of Thailand (BOT) in December 2020, with key contributors including domestic demand growth both driven by the public and private sector, the economic stimulation measures by the government, the recovery of global economy and trades, together with the unusually low growth in 2020 following the COVID-19 pandemic. The expected growth for exports is 5.7 percent, private consumption 2.8 percent and investment 4.9 percent. Nevertheless, the economic growth is still highly uncertain, depending on the COVID-19 new wave and the preventive and responsive measures, as well as the vaccine efficacy and distribution.

The overall 2021 petroleum products consumption is estimated to rise by 0.8 percent, with the expected

growth of gasoline, diesel, fuel oil, and LPG at 0.8, 1.1, 18.3 and 1.0 percent respectively. Jet fuel consumption is projected to decline further by 12.5 percent.

### **Aromatics Market**

The 2021 paraxylene market has a positive outlook compared to 2020 due to demand estimated to recover by 2.4 million tons after the COVID-19 situation unwinds. The expected growth of global and Chinese economies at 5.2 and 8.2 percent respectively leads to more regional demand for polyester and fabric. On the other hand, the new supply added to the market from China is estimated at 1.9 million tons which is still less than the increasing demand. The supply surplus in 2021 is therefore expected to be reduced.

The 2021 benzene market will also experience a positive outlook compared to 2020 with demand rising by 1.6 million tons as Chinese and the US economies are expected to recover at 8.2 and 3.1 percent respectively, leading to higher demand from automotive and electronic industries which are key consumers of benzene products. Despite, the additional supply of around 1.3 million tons from new production commissioning, supply growth is still lower than additional demand. It is therefore likely to see overall regional production increase in the future.

### **Lube Base Oil and Bitumen Market**

The lube base oil market is likely to remain under pressure in 2021 with continual addition of new supply into the market including new facilities of lube base oil Group II and Group III such as the Hainan Handi refinery in China (1,000,000 tons per year production capacity). The market also faces further concerns from the US-China trade war. However, the demand is projected to recover after the COVID-19 situation subsides, and the lower level

of competition in the lube base oil Group II and Group III markets as crude and diesel prices recover, thus raising the feedstock price. Consequently, the price of lube base oil Group II, which related more to diesel, is likely to increase and the price of lube base oil Group I will be under lower pressure.

The bitumen market is projected to slow down compared to 2020 as regional demand growth is limited with low rate of road construction and repair during the partial economic recovery, whereas 2021 supply is expected to increase with crude price, especially in the second half of the year as economic activities tend to recover with COVID-19 resolving.

### **Linear Alkyl Benzene (LAB) Market**

The 2021 LAB market is projected to slow down slightly as the regional supply shortage situation is expected to subside in the second half of 2021 with the re-opening of the Chinese production unit facing unplanned shutdown since mid 2020 and a new LAB plant in Saudi Arabia fully operating (120,000 tons per year production capacity). Nonetheless, the LAB demand will continue to grow with the expected global economic recovery and the continuously growing population. The increasing demand for detergent products due to the growing hygiene awareness during the COVID-19 situation also contributes to a healthy growth of the overall demand for LAB products in Asia and the Middle East.

### **Solvent Market**

The 2021 solvent market can be categorized into product groups as follows:

>> Hydrocarbon Solvent (HCS) Group: Supply of HCS in Asia is expected to stabilize while the demand increase, especially in China after COVID-19 was



remarkably contained in the latter half of 2020. Asian demand is projected to recover despite huge downturns in 2020 in some countries. The demand for this product group in Thailand is expected to increase with economic growth, especially in the automotive industry, compensating a bigger and unusual drop in the previous year compared to other countries in the region.

- >> Toluene-Xylene-White Spirit (TXW) Group: Supply for the TXW is expected to rise in Asia, especially in China where existing refineries expansion and new refineries are expected, leading to an oversupply situation. On the other hand, demand is still expected to grow compared to 2020 despite the continuing COVID-19 situation in 2021 yet with the anticipation of better management to control the situation.
- >> Chemical Solvent Group (ChemSol): Similar to other product groups, the ChemSol market is expected to be in an oversupply situation as Chinese producers expand their production capacity, resulting in more severe price competition in the ASEAN countries who source ChemSol product group mainly from China. Thailand imports more than 40 percent of ChemSol from China, and tends to increase in the future. Price competition will exacerbate as producers in Singapore and Malaysia attempt to maintain their market share.
- >> Non-Solvent and Food Ingredient and Cleaning Group: The growth of food and beverage industries, including exports to international markets, have been strong and are expected to continue along with the economic expansion. Cleaning industry growth is also projected to remain positive due to the necessity for living and for maintaining factory hygiene to meet international standards. If the COVID-19 situation

persists, demands for this product group will continue to rise even though the growth will not be as high as that of 2020.

### **Petroleum Transportation Industry**

The freight rates for marine transportation of crude, petroleum products and petrochemicals in 2021 are expected to increase with the higher ship owners' costs to comply with the regulation imposed by MARPOL 73/78 (The International Convention for the Prevention of Pollution from Ships, 1973) on installing ballast water management system. Freight demand is projected to hike up significantly with the anticipation that the vaccines will contain new waves of COVID-19 pandemic, leading to the equilibrium of supply and demand. As for demand for vessels used in offshore exploration and drilling activities, especially for offshore supporting vessels, it is projected to increase with higher offshore exploration and production activities in the region, driven by higher crude oil price.

### **Ethanol Market**

The 2021 ethanol demand is projected to slightly grow, driven by the promotion of the Department of Energy Business for gasohol E20 to become a primary petrol nationwide, leading to more ethanol proportion blended in fuel. Moreover, the readjustment of the spread between gasohol 95 and gasohol E20 aimed as incentive for consumer to use more E20, is likely to drive up domestic demand for ethanol.

For the 2021 ethanol supply, production from cassava is expected to gain higher share of overall ethanol production, as production from molasses dropped following the estimate of lower sugar cane yield in milling process in 2020/2021. The overall ethanol



production capacity in 2021 is expected to be on a par with that of 2020 at 6.3 million liters per day with no plan of additional capacity added to the market. However, with supply still above domestic demand, the overall market in 2021 will remain in a surplus.

The ethanol price in 2021 is expected to soar from that of 2020 with estimated sugarcane yield from 2020/2021 cropping season in milling process at 68 million tons, falling from the yield in last season at 75 million tons. The inclement weather and low water level in the major reservoirs led to drought in many sugar cane field areas and the one-month delay of cane milling process to December 2020. Many farmers also quit sugar cane farming as the initial price was not worth planting new shoots. The lower sugarcane yield resulted in the continuously declining molasses for ethanol production. Moreover, the increasing demand for cassava chips in China will also drive cassava chips price higher. These two contributing factors will cause ethanol price to rise. However, ethanol price is still pressured by declining cassava roots price, following the increase amount of cassava released to the market since October 2020 totaling 29.9 million tons, compared to 29.0 million tons in the previous year, due to the farming area expansion. The declining gasoline demand with the second wave of COVID-19 outbreak in 2021 is also another factor exerting pressure on 2021 ethanol price.

## Power Industry

The BOT has projected the 2021 gross domestic product (GDP) to grow 3.6 percent from 2020. The Electricity Generation Authority of Thailand (EGAT) has subsequently projected 2021 peak electricity consumption at 29,479 megawatts, a 2.94 percent increase from 2020. The 2021 total contractual power generating capacity within the EGAT system is estimated at 200,134 million units, a 4.18 percent increase from 2020.

The share of power generating capacity within the EGAT system (excluding power generated by independent power suppliers for their own use and/or direct sales), categorized by power supplier, includes 32.8 percent by EGAT, 22.9 percent by independent power producers (IPPs), 27 percent by small power producers (SPPs) and 16.2 percent from imports. Categorized by fuel type, natural gas is expected to account for 58.1 percent of all power generation, 23.4 percent from coal, 17.6 percent from renewables and 1 percent from others.



## FUTURE PROJECTS



To fulfil the corporate vision “**Empowering Human Life through Sustainable Energy and Chemicals**”, Thaioil and Subsidiaries focus on achieving sustainable growth following the corporate missions and strategic directions. This has been executed through investments in various projects to enhance the competitiveness where Thaioil has expertise to expand its capacities, to sustain businesses from petroleum to petrochemicals and high-value products, to raise the efficiency and competitiveness, and to create new products to meet consumers' needs. A diversified investment portfolio has been instituted to reduce the dependence on petroleum refining and obtain a stable revenue stream from the power business. Thaioil and Subsidiaries also seeked green business opportunities and innovative businesses in line with

future trends to increase the flexibility of their investment portfolio, as well as developed the infrastructure and utilities for greater security in the distribution and delivery of products and services. Thaioil also extended the investment to countries with economic potential, such as Southeast Asian countries, to embrace new business opportunities. Finally, Thaioil and Subsidiaries focused on investment plans that fit dynamic market conditions to ensure the maximum benefit for the organization and stakeholders.

### Ongoing Projects

#### Clean Fuel Project (CFP)

To improve production process and raise competitiveness in response to higher demand both in Thailand and

countries in the ASEAN Economic Community, where imports of petroleum products tend to continuously increase, Thailo launched CFP to enhance its competitiveness by upgrading production process to produce environmentally friendly products. This included the construction of a refining unit that converts fuel oil to diesel and jet fuels, expanding its capacity from 275,000 to 400,000 barrels per day and increasing operating flexibility. Through CFP, Thailo is able to process a larger volume and more diverse types of crude, thus resulting in economies of scale and lower costs. CFP also supports the national energy security and can drive the country's economy in the long term. In order to accommodate the increasing need for crude oil tanks after CFP commercially operates, the Company has constructed nine crude oil tanks with the total capacity of 700 million liters (4.4 million barrels), three-kilometer pipelines from the tanks to the refinery, the power distribution substation, and the water and crude pumping station. These are expected to complete in Q1/2021.

The CFP investment is worth USD 4.825 billion, and selling Energy Recovery Unit (ERU) has lowered the CFP investment cost by USD 757 million, thus totaling the investment cost of less than USD 4.174 billion. The project is currently under construction and the commercial operation is expected in 2023.

#### **Production of Euro 5 Standard Fuels**

To address the government's policy to change domestic fuel specifications to the Euro 5 standard, effective from January 1, 2024, Thailo has started improving its Hydrodesulphurization Unit, and expected the completion of project by the end of 2022. The project is considered one of the approaches to enhance Thailo's competitiveness.

#### **New Bang Phra Reservoir Raw Water Line**

To increase efficiency and security, while replacing

existing the long-serving water pipeline and pumping stations of the raw water delivery system to support increasing water consumption, Thailo has constructed a new water pipeline and pumping stations from Bang Phra Reservoir to the refinery. It is expected to be completed in 2021.

#### **TOP SPP Co., Ltd. Expansion**

Since the power purchase agreement (SPP-PPA) under Thailo Power Co., Ltd., is to expire in 2023, Thailo and Subsidiaries have decided to expand the capacity of TOP SPP Co., Ltd.'s power and steam unit instead, to ensure the supply security of power and steam on Thailo Refinery premises. It is expected that construction will complete and the commercial operation will start in Q2/2023.

#### **Corporate Venture Capital (CVC) through TOP Ventures Co., Ltd.**

The investment in the form of Corporate Venture Capital (CVC), is one of the mechanism to seek new business opportunities for Thailo and Subsidiaries. on the corporate growth is expected from four new forms of businesses: 1) New Products, New Services and New Markets, 2) New Business Model, 3) New Normal, and 4) New to Us through the following investment options: 1) production and management technologies to develop products and services for other future industries, 2) sustainable technologies to enhance business with due regard for environmental conservation and better quality of life, and 3) transportation technologies, logistics and new energy sources.

Thailo has invested in some Venture Capital Fund; for example, Rhapsody Venture Partners involving applied science and engineering in which the Company is interested; and Grove Venture of Israel involving

production technology startups that provides access for the Company to new technologies to enhance production process efficiency and safety. This year Thailoil has invested for the first time in two startup companies: namely, WaveSense Co., Ltd., and Everactive Co., Ltd. WaveSense focuses on high-precision positioning sensors for the mobility business. Everactive focuses on a sensor system for Industrial IOT that requires no batteries or electrical cables with wireless signal transmission capability.

## **Projects under Feasibility Study**

### **Petrochemical Business Investment**

Since more petrochemical feedstock of Light Naphtha and Heavy Naphtha are expected after CFP fully operates, to expand Thailoil and Subsidiaries' value chain, Thailoil together with companies in PTT Group conducted a feasibility study of petrochemical investment for mutual benefit. The initial study has already been completed, and suitable investment options are underway.

### **Expansion of Solvent and Chemicals Business**

Thailoil and Subsidiaries aim to increase sales volumes and maintain market shares of the domestic solvent and chemical product portfolio through TOP Solvent Co., Ltd., and their distribution platform. Thailoil also focuses on expanding customer bases to new countries with high economic potential in Southeast Asia through joint ventures and acquisitions as well as cooperation with manufacturing partners to diversify product portfolio, and thus meet customers' needs.

### **High-Value Products**

Thailoil has established a goal to increase the production ratio of high-value products by implementing a strategic plan to leverage regular commodities into products of

higher value, thus attracting new customers with specific needs. Thailoil and Subsidiaries have conducted studies to add value to existing commodities, ranging from light-end products to heavy-end products by emphasizing delivery of products that meet the needs and satisfaction of customers in chemical, surfactant, and lube base oil businesses, as well as support new downstream customers with specific needs, such as the food industry, pharmaceuticals, cosmetics, solvents, rubber products, and cleaning products.

### **Investigating Investment in the Power Sector**

Thailoil has a strategy to increase investment in the power business which generates a stable income structure to diversify risks from the oil refining and petrochemical businesses, through cooperation among companies in PTT Group to drive the strategic growth opportunities of Global Power Synergy Plc. Thailoil also seeks opportunities for investing in businesses related to energy efficiency and new energy sources, as well as focuses on investing in domestic and international power businesses related to renewable energy, such as solar farms and wind power plants.

### **Investment in Green Businesses**

To continue the momentum of sustainable businesses, Thailoil and PTT Group jointly studied the expansion of bio-based businesses and renewable energy as well as other green businesses to create balance among financial returns, value addition, and support of greenhouse gas reduction to lower environmental impacts. Thailoil, together with other business partners, also plans to further conduct feasibility studies of green businesses.





## RISK FACTORS AND CORPORATE RISK MANAGEMENT

For the efficiency of risk management and handling of potential impacts on business to maintain business competitiveness in such volatile times, Thailo and Subsidiaries have applied universally accepted risk management practices under The Committee of Sponsoring Organizations of the Treadway Commission Enterprise Risk Management 2017 (COSO ERM) and ISO 31000:2018 (Risk Management Principles and Guidelines) to deal with risk factors. Thailo focuses on integrated risk management for Thailo and Subsidiaries to control risk of the seven aspects under the Risk Appetites. The seven aspects include performance and investment, compliance, safety occupational health environment, reputation, fraud & corruption, ICT security, and the Clean Fuel Project (CFP). Thailo then links such risk appetites to the formulation of strategic plans, investment, and business plans to align with corporate objectives and goals. Key risk factors associated with stakeholders' expectations, both internal and external, are identified and applied with setting. Moreover, key risks and early-warning key risk indicators (KRIs) are identified to closely track risks and risk management outcomes. Such outcomes are reported to the Risk Management Steering Committee (RMSC), the Risk Management Committee (RMC), and the Board of Director (the Board) to efficiently and effectively supervise and corporate risk management. In addition, Thailo sets the risk management as one of the key performance indicators (KPIs) for Thailo and Subsidiaries' executives.

In 2020, the COVID-19 pandemic has affected countries all over the world, and many of which announced a

country lockdown to prevent and contain the disease, resulting in significantly decreasing demand for all petroleum products, especially jet fuels. Moreover, the US-China trade war and the crude oil price war happening around the same period has caused the economic slowdown worldwide. These factors directly impact the Company's business goals and operations, prompting Thailo and Subsidiaries to define such factors as corporate key risks.

Today various threats and incidents catastrophes tend to pose increasing severity and lead to business interruption, so Thailo has put in place business continuity management plans (BCPs) for all critical and support processes as defined by ISO 22301:2012. Various simulated disasters are defined for BCP drills in collaboration with the refinery's regular emergency drills. Thailo also promotes sound knowledge and positive attitudes among employees to improve their capability of risk management and business continuity management (BCM) and to prepare their readiness to deal with risk factors by assessing all employees' knowledge and attitude annually and thoroughly on par with international standards and good corporate governance. The latest employee engagement survey showed employees' high confidence in corporate risk management processes, which has supported the achievement of corporate risk management goal achievement, and eventually contributed to a successful corporate risk culture.

Thailo remains committed to sustainable growth by developing for a system to ensure integrated governance, risk, and compliance (GRC) practices to forge ahead with

ethics and good corporate governance in parallel with systematic risk management, and compliance with laws and corporate regulations.

## Corporate Risks and Risk Management Measures

Thaioil promotes systematic monitoring and revision of risk management measures and their effectiveness. Thaioil and Subsidiaries' 2020 risks profile, risk management measures, and KRI monitoring outcomes were presented for the RMC's endorsement before tabling to the Board for approval. Thaioil and Subsidiaries' risks were divided into five key areas and eight risks, with preventive or mitigation measures or plans identified to ensure the achievement of target and set.

## Strategic Risks

### 1. Loss of Competitiveness Risk

Because of the highly competitive refining business especially in production costs resulting from more efficient technology, refining capacity growth in Asia Pacific region, and the digitalization applied to increase capability, Thaioil, in order to maintain its competitiveness among leading regional refineries, needs to develop its refining capability by executing margin improvement projects such as Hydrocarbon Management Review, process energy efficiency improvement, and increase of petroleum product sales proportion in domestic and Southeast Asian market. Also, it defined measures under the Orchestra Project to curb operating expenses in parallel with the Symphony Project to trim the finance costs. The measures of which include manpower administration, work process modification, proactive purchasing strategic application for hiring and purchasing bargaining power, operating cost control, reduction of interest expenses, value

increase of surplus cash, and debt restructure. Greater technological advancement encourages Thaioil to enhance our capability by transforming Thaioil into a digital refinery to increase competitiveness, sustain changes, and quickly and precisely address customers' expectation with digital tools.

### 2. Sustainable Business Growth Risks

Thaioil has defined its investment strategies for business growth and pursuit of business opportunities in both refining and non-refining through various strategic projects for growth and overall business sustainability. Thaioil particularly values risk management of CFP because it is a massive project that is pivotal to corporate growth and sustainability. Project risk management was undertaken with contractors and applicable stakeholders in occupational health and safety, including communities surrounding the refinery; project operation period; investment capital administration; and quality. Although CFP was affected by the COVID-19 situation this past year, the project management team had prepared risk mitigation measures to ensure that the project period remain unchanged by prioritizing the importance of engineering and procurement & hiring to sustain the changing situations.

For investment projects on logistics, Thaioil completed the Jetty Expansion Project commissioning on April 20, 2020, aimed to enhance work safety, reduce the density of the jetty, and accommodate large vessels, and sales of future products. Additionally, Thaioil has other strategic projects to accommodate its growth, including investment in the Corporate Venture Capital (CVC) and startup businesses, the Petrochemical Study Project, and a Chemical Distributor Project to expand oversea distribution platform for chemical and solvent.

## Commercial Risks

### 3. Market/Commercial Risks

This year crude oil prices and price spreads of petroleum products and crude oil were highly volatile due to the COVID-19 situation, especially the spreads of jet fuels, kerosene, and diesel, which are key factors directly impacting Thailo's profitability, prompting Thailo to adjust strategies and deploy more proactive margin hedging by managing risks from crack spreads and stock losses, and managing inventory at proper level. The Hedging Steering Committee is responsible for regularly considering strategic plans and defining goals for margin hedging transaction under a hedging scope approved by the RMC and the Board so as to minimize impacts from such risks.

As for commercial risks, Thailo values the management of risks arising from reliance on major customers. Thailo sells petroleum products to PTT Oil and Retail Business Plc (PTTOR) under the Product Offtake and Crude Oil Supply Agreement (POCSA), under which the products are sold at market prices following product volume definition procedures. This enables Thailo to know the product volumes in advance and incorporate them in the production planning to address customers' demand. Thailo also sells these products to other oil traders both domestic and international, as well as to Thai Paraxylene Co., Ltd., and Thai Lube Base Plc for feedstock.

In addition, Thailo has brainstormed ideas for incremental profits to sustain price volatility and maintain gross integrated margin (GIM) while controlling operating expenses by executing strategic cost management which was considered one of measures to counter the COVID-19 situation.

## Financial Risks

### 4. Financial Risks

Fluctuation in foreign exchange rates affects Thailo's business performance since payment for Thailo's costs (crude oil and other raw materials/feedstock) is in US dollars. To reduce this risk exposure, the debt structure in US dollars for Thailo and Subsidiaries was re-arranged to ensure natural hedge between debt structure and revenue structure. Thailo also engages in forward contracts for transactions, loan withdrawals, and loan repayment in line with actual expense, and develops new financial instruments to add options and flexibility for securing loans through the money and capital markets. Thailo also structures capital for secure growth, where the movement of money and capital markets are closely monitored, and a plan to extend crude credit terms with key partners has been made to increase Thailo's cash flow. In addition, Thailo successfully issued 1-billion-USD debentures through Thailo Treasury Center Co., Ltd. in a long-term loan acquisition marked by efficient cost management to sustain investment as planned, as well as for working capital and general operating expenses.

## Operations Risks

### 5. Business Disruption Risks

The risks of severe incidents affecting business or causing interruption could arise from external factors, including natural disasters, security threats, IT system threats, as well as internal factors, for instance, unplanned shutdowns due to equipment breakdown, and accidents that could harm the environment and communities, including oil spills and major accidents. All of which do not only affect business, but also have impacts on corporate image, communities, society, and the environment. Thailo has therefore defined measures to prevent and



mitigate impacts with additional measures on safety, security, occupational health, and the work environment for employees and relevant parties, and collaboration with all sectors-neighboring communities and local governments. The intention is to monitor operation, prevent accidents, and establish cooperation on equipment and resources to ease potential impacts. Also, Thailoil constantly stages emergency and BCP drills, reviews and improves its emergency plans, and improves BCM Thailoil guidelines in ISO 22301:2012. In addition, the Company develops communication guidelines and educates relevant sectors by regularly organizing meetings and workshops, and employing diverse communication channels to boost confidence in its performance. Thailoil emphasizes process safety management and promotes safety activities for operators and suppliers to cover all work processes to ensure their strictness and continuously safe business operation.

As for security threats, Thailoil extends cooperation with government agencies, military and police units, and local authorities on tracking intelligence and security situations inside and outside the premise. Thailoil joins meetings with PTT Group to map out joint security operation at the policy and local levels. The goal is business continuity and protection of life, refinery properties, and neighboring communities.

As for IT system threats, Thailoil has added system safety measures to prevent external threats, including compliance with the ISO 27001 information security standard, continual system monitoring and audit, and communication of measures and guidelines to relevant parties. These systems are regularly tested by third-party experts to detect deficiencies and pursue additional

protective guidelines. Moreover, Thailoil has executed the security maturity levels assessment following the international standard and the hiring of a third-party expert to undertake information risks through vulnerability assessment. Thailoil also stages a BCP drill under the IT disaster recovery plan to ensure smooth business operation and continuous satisfaction of customers and stakeholders without affecting communities, society, and the environment.

Apart from the aforementioned factors, the external key factors impacting Thailoil's business, included drought and the COVID-19 pandemic, prompting Thailoil to closely monitor situations and project potential impacts on Thailoil and Subsidiaries' operations and devise preventive and mitigation measures. Thailoil also modified its process to cope with prevailing situations and established collaboration with external agencies (public sector, private sector, and the public) and strictly abided by public-sector policies, regulations, and requirements. As a result, the implementation of measures successfully covered all stakeholders. As for drought, Thailoil modified its water consumption plans through proper allocation of water, additional measures for water consumption reduction, and commissioning of the desalination unit to cut down freshwater consumption and increase its water management capability. As a result, Thailoil and Subsidiaries could maintain business continuity.

## 6. Regulation Risks

Changes in the government's policies focusing on economic growth in parallel with development of society, communities, and the environment do affect current businesses, business expansion, and investment in new projects under Thailoil and Subsidiaries' strategic plans.

Thaioil has therefore monitored and investigated laws and regulations to ensure that the Company's operation complies with the laws, regulations, announcements, rules, and the public sector's directives that bind businesses by systematically monitoring public policy changes and emerging legislation to promptly cope with changes. The efforts include cultivating awareness of the importance of legal compliance among employees and operators and conducting self-assessment to verify the efficiency and effectiveness of compatibility between its business and applicable public policies, rules, and legislation.

In addition, Thaioil appointed a task force on the Personal Data Protection Act (PDPA) to supervise and steer personal data management in line with the PDPA Act B.E.2562 (2019) to assure data owners of the Company's data security. Actions taken included communication, education, and counseling for corporate personnel and development of information systems and personal data management of higher efficiency.

## 7. Community and Stakeholder Risks

Thaioil prioritizes business conduct in parallel with community development for a better quality of life via its Corporate Social Responsibility (CSR) projects for communities surrounding the refinery and remote areas on such many aspects as education, environment conservation, energy, and natural resources to achieve the position of "admiration, acceptance, and trust by communities and society". There were four major group as follows:

### 1. Community Management

- A forestation project to add more green space in honor of HM the King.
- A project on supplementary occupation and income increase (second year) to sustainably develop

economy in communities surrounding Thaioil and Subsidiaries.

- A project on Thaioil weaving youths' dreams to become professional athletes under the cooperation with the Thailand Swimming Association, PTT Blue Wave Chonburi Futsal Club, and PTT Academy Football Club to promote neighboring youths' quality of life.

### 2. Society Management

- The CONNEXT ED project under the government's Sarn Palung Pracha Rath Project (public-private cooperation) in basic education and leadership development (E5) in collaboration with PTT Group.
- The Sustainable Energy for Health Care (Strategic CSR) Project, namely a project to install a solar power generation system for Laem Chabang Hospital, Amphoe Si Racha, Chonburi.

### 3. Employee Voluntary Culture

- The 60 Years Thaioil Project (You Start ... We Fulfill), designed to spur public awareness on the part of employees and contractors to do the voluntary activities.

### 4. CSR Networking & Branding

- PTT Group Disaster Management under a project called "Unite to Combat COVID-19, Get through the Crisis with PTT Group", under which Thaioil sponsored 10,500 face shields and provided a public health budget worth THB 14.5 million.

Thaioil provided opportunities for stakeholders to take part in administration through the "3 Coordinates, 5 Participates" strategy involving Thaioil, communities, and local entities jointly conceptualizing, acting, problem-solving, learning, and developing so that all

sectors may together undertake public service with unified goals. Thailoil also complies with the process for handling environment impact complaints if its operation affects community lifestyles, and the community administration through the CFP Support Center to coordinate and handle community complaints about the new project, thus ensuring that Thailoil commands management measures to ease environmental impacts affecting communities. Thailoil is also committed to running its businesses with equitable treatment of all stakeholders for the sustainable mutual benefit.

## Corporate Risks

### 8. Human Capital Risks

To sustain the CFP and the New S-Curve, Thailoil restructured its organization and headcount while modifying its recruitment strategies and fast-tracking personnel capability improvement to keep pace with business needs. Measures to mitigate risks included proactive recruitment through accessing HR sources in an integrated and sustainable way; HR development planning to fulfil Thailoil's future demand by designing essential knowledge bodies and enhance such knowledge for related personnel; technological application in support of data communication and corporate relations nurturing, which upgrades communication efficiency and address the needs of all personnel; additional welfare diversity to cater to personnel's expectations; modification of personnel administration for greater flexibility and agility to fulfill Thailoil's needs; and promotion of compliance with human rights principles at work sites.

### Emerging Risks

Political, economic, social, environmental, legal, and technological factors with possible changes affecting

business, are most likely to post emerging risks to the organization:

#### 1. Climate Change

Climate change is becoming increasingly critical. This is evident in the 23<sup>rd</sup> meeting of member states under the United Nations treaty on climate change, held from November 6-17, 2017, to define new regulations, rules, and work scopes under the agreement on greenhouse gas reduction, to which Thailand agreed on cutting 20-25 percent by 2030 from the base year (2015). Thailand was committed to tracking, reviewing, and submitting its participation goals for solving global warming every five years. Later on April 6, 2018, the Office of the Prime Minister issued an announcement on the National Reform Plan requiring public agencies to improve laws on climate change, to be enforced within three years. In five years, suitable economic mechanisms conducive for the private sector's reduction of greenhouse gas emissions, must be identified. Moreover, the government has enforced encouraging the change in daily work as part of the climate change solution; for example, mass transit development and promotion, as well as reduction of plastic bag usage. Changes in public policies, laws, and regulations concerning climate change, which have not been clearly defined of mechanism and enforcement, are regarded as the business transition risk.

**Mitigation:** To handle this risk, Thailoil has defined plans for current and future businesses through market re-segmentation. Direct and indirect greenhouse gas emission reduction (scope 1 and scope 2) is to be achieved through higher process energy efficiency and investment in a new crude oil distillation unit under CFP with modern, highly efficient technologies converting fuel oil into jet fuels and diesel while elevating the capability



for heavy crudes in refining processes. At the same time, with CFP in place, the refining units aged over 50 years will be decommissioned, resulting in the greenhouse gas reduction both from business as usual (BAU) and market re-segmentation. The market re-segmentation focuses more on, aimed to reduce the aviation and transport businesses, aimed to reduce the gasoline output while increasing the diesel output to meet future demand. In addition, various goals have been set, for instance, planning for long-term greenhouse gas reduction goals based on BAU, which lead to annual energy reduction and long-term goals, applying Solomon Energy Intensity Index (EII). Thaipol also monitors and participate in planning for greenhouse gas reduction with PTT Group, including participation in providing recommendations on a draft act on climate change. Thaipol also develops a greenhouse gas life cycle inventory in collaboration with Petroleum Institute of Thailand as a database for participating in the Carbon Footprint Project for products; Thaipol has also investigated guidelines and methods of a project entitled Thailand Voluntary Emission Reduction Program (T-VER) to prepare for changes in laws on climate change. Thaipol assesses and pursues suitable guidelines for deciding carbon prices and carbon credit certification in approaching a future low-carbon society and then modifies plans to achieve greenhouse gas reduction goals. Finally, Thaipol has developed portfolio restructuring to increase the non-refining investment to cut down on such emissions in the next phase. This includes TOP SPP Expansion Project, to expand power and steam production.

## 2. Technology Disruption: Alternative Energy over Petroleum

Technological changes leading to the consumption of alternative energy instead of petroleum is likely to take

place swiftly, directly affecting the energy industry. Currently, the development and improvement of technologies for alternative-energy production in replacement of petroleum happen at a quick pace; the example include cars powered by electricity and hydrogen. In 2018 some European car manufacturers set goals to cut down or suspend manufacturing of internal-combustion automobiles. The public sector has also issued regulations promoting alternative energy in place of petroleum. Electric Vehicles (EV) are tangibly promoted through the Thailand Integrated Energy Blueprint (TIEB 2015) under the Energy Efficiency Plan (EEP 2015). The promotional approaches include support on EV charger stations and formulation of an infrastructural plan for EVs. Should consumers change their behavior and widely and swiftly adopt EVs, it would most likely impact the oil industry with long-term revenue and growth reduction, not being able to timely adjust the business.

**Mitigation:** Thaipol has already started constructing CFP, due for completion by 2023, to improve its refining efficiency by focusing on producing more diesel and jet fuels. Also, it has developed a portfolio restructure to increase its non-refining investment over the long term to generate 50 percent income from such businesses while pursuing new investment opportunities, including specialty products. Thaipol addresses the trend of future technological development through Earning Diversification strategies, including start-up business investment through venture capital (VC) funds, to increase capability for manufacturing technology, green and human technology, or hydrocarbon disruption technology. Today Thaipol is investing in two VC funds and two startup companies while seeking additional investment

opportunities to maintain the revenue growth for Thailoil and Subsidiaries, and ensure the achievement of goals.

### 3. Risks of Urbanization

The Eastern Economic Corridor (EEC) is the government's strategic plan with the main goal to promote investment, and upgrade domestic industries' competitiveness, and realize long-term economic growth. The first phase of EEC aims to promote three provinces including Chonburi, Rayong, and Chachoengsao, leading to expansion of communities, labor migration, and urbanization. This could lead to the problem of resources allocation between the industrial sector and the public and a potential rise of conflicts or complaints, thus jeopardizing the Company's current businesses and business growth under the strategic plans.

**Mitigation:** To mitigate the above impacts and enable Thailoil to grow sustainably alongside communities while pursuing business excellence, Thailoil is committed to become a leading refinery over the next four years by leveraging world-class management systems, advanced technology, and professional teams. Since 2019, Thailoil has run the Refinery in the City Project with a focus on developing environmental, social, and governance (ESG) aspects under the long-term plan:

1. **Environmental Management:** This relies on a robust environmental management system to create cost-effective resource management and mitigate environmental impacts from production process. This would bolster confidence among communities and stakeholders. The environment management includes green construction and implementation of technology with filing complaints procedures to increase efficiency to respond to stakeholders' expectations more quickly.
2. **Community Engagement:** Community relations is mobilized through CSR and Created Shared Value (CSV) activities that are compatible with surrounding community activities. Thailoil will also drive the Circular Economy and Green Society in the community.
3. **QSHE Governance Compliance:** This relies on the improvement and promotion of operating strength and development of future essential management systems to supervise and audit operation to ensure strict compliance with various laws and requirements through the integrated governance, risk and compliance systematic approaches for maximum unity and operation efficiency.

## INTERNAL CONTROLS

Thaioil realizes the importance of the internal control system under the framework of The Committee of Sponsoring Organizations of Treadway Commission 2013 (COSO 2013) and applies the principles of the Three Lines Model with the corporate risk management and internal control. This is to ensure efficient and effective structure design and process, credibility of financial and other reports, and full compliance with laws and regulations. The Board of Directors (the Board) therefore appointed a unit responsible for annually following up and reviewing the adequacy of internal control system, and assigned the Audit Committee to review the internal control assessment.

This year the Board examined the assessment which applies the Securities and Exchange Commission of Thailand (SEC) approaches and is prepared by Thaioil's executives and subsequently reviewed by the Audit Committee, and concluded that this year Thaioil's internal control system was indeed adequate and suitable for its business operations while accomplishing the objectives of internal control. The assessment of five compositions of the internal control are as follows:

### 1. Control Environment

Thaioil commands a sound, adequate, and suitable-for-business internal control environment, operating under good corporate governance and code of conducts. Below are the operation highlights:

1.1 Defining written policies and protocols under the good corporate governance and code of conducts, which include the definition of the code of conduct

for directors, executives, and employees focusing on integrity and the observance of the code. Everyone at Thaioil including directors, executives, and employees are obliged to comply with such policies and requirements. In 2020, Thaioil has undergone the annual assessment of Corporate Governance Report of Thai Listed Companies (CGR) by Thai Institute of Director Association (IOD) for the 12<sup>th</sup> consecutive year, Thaioil scored top marks at Excellent level. Also, for the eighth consecutive year, the Company remained a certified member of Dow Jones Sustainability Indices (DJSI) and the leader of the Oil & Gas Refining and Marketing Industry for the sixth year. Also, the Company has earned the ISO 20400 certificate for Sustainable Procurement - Guidance from Management System Certification (Thailand) (MASCI) under the Industrial Development Foundation, a network institute of the Ministry of Industry.

1.2 Defining the code of conduct governing conflicts of interest and requiring all employees to annually file their conflicts of interest through the electronic reporting system. Thaioil stresses its code on giving and accepting gifts, assets, or other benefits so as to remind executives and employees to comply with the defined guidelines and code of conduct. This year, the cultivation of ethics awareness and transparent, fair, and auditable work behavior was promoted through Executive Quotes (Tone at the Top).

1.3 Identifying the anti-corruption policy as one of the corporate governance guidelines to declare Thaioil's



commitment to business conduct with fairness, integrity, and transparency under the good corporate governance. The Company also promoted employees' awareness of legal compliance through Thaioil and Subsidiaries' compliance policy, assessed employees' laws and related regulations compliance, and reviewed work processes to ensure comprehensive compliance with laws.

- 1.4 Clearly dividing responsibilities of the Board and executives to ensure the Board's independence. The Board's roles duties and responsibilities involve the review and endorsement of key strategies and policies, definition of objectives, financial goals, risks, plans, and budgets. The Board also exercises supervision to ensure legal compliance and efficient and effective business operation as laid out in policies and plans.
- 1.5 Structuring the organization emphasizing the efficient internal control with checks and balances through the segregation of key functions, whose authority, duties, and responsibilities are independent of one another. Each function has its own a top executive. Thaioil's organization structure is regularly revisited to keep pace with its strategies and work plans. Moreover, the compliance function is appointed to oversee conformance to related laws, rules and regulations to ensure checks and balances as well as audit of work processes.
- 1.6 Defining the HR Policy to enhance employees' competency in a systematic and sustainable way, duly embracing aspects of personnel attraction, development, and retention and engagement. The

Company also values the process of fair performance management reflecting the ability to perform against Key Performance Indicators (KPIs). To stress executives and employees' awareness of good corporate governance, Thaioil added KPIs for legal compliance of functional work process as well as the implementation of risk preventive measures. This year, personnel recruitment strategies were reviewed to keep up with changing environment and prevailing business needs. This included creating relations with educational institutions as well as efficiently applying digitalization to sustain future business expansion plans and challenges posed by competition with the external labor market. Finally, the readiness and qualification of successors in management and section head levels were thoroughly assessed.

- 1.7 Driving Thaioil forward with Integrated Governance, Risk and Compliance (GRC) to ensure business operation with ethics and good governance while adopting systematic risk management and complying with laws and corporate regulations. This year, Thaioil and Subsidiaries' GRC taskforce was appointed to drive the GRC integration with the core operational process.

## 2. Risk Assessment

Thaioil values and incorporate risk management throughout the entire organization. To this end, the Board assigned the Risk Management Committee (RMC), consisting of proficient directors, to devise corporate risk management policies and supervise to institute protocols and processes for the organizational, functional, and operational levels of Thaioil and Subsidiaries to ease

impacts on businesses and ensure corporate objective achievement. Moreover, the Risk Management Steering Committee (RMSC), consisting of the Chief Executive Officer (CEO) and President, executive vice presidents, and managing directors of affiliates, is appointed and assigned to review, monitor, and audit Thaioil and Subsidiaries' risk management outcomes and business continuity management to ensure that they are in line with the corporate risk management policy and that such management is efficient and suitable for business conduct and growth.

To this end, Thaioil devised the risk management plan embracing risk assessment, analysis, and review in line with its strategic and business plans under its objectives and goals. Such plan takes into account external and internal factors, including domestic political situations, world economy, laws, regulations, government policies, stakeholders' expectations, and the ongoing COVID-19 pandemic. Thaioil also defined risk appetites and Key Risk Indicators (KRIs) to help monitor and report the outcomes of each unit and affiliate against the defined goals. The risk management measures are monitored to ease the impacts on business conducts, and the corruption risk assessment has started for units engaging public agencies. To this end, the risk data including key risks, risk mitigation, and KRIs has been recorded in the Risk Management Information System (RMIS) while KPIs and KRIs are compiled on the same database known as Performance and Risk Online (PRO). To address volatile oil prices and exchange rates, Thaioil has revised and enhanced risk management measures such as margin hedging, inventory hedging, and foreign-exchange risk management. Internal control measures also undergo revision to accommodate such change.

Each year, process owners are to assess prevailing parameters affecting internal control and further develop improvement plan or enhance control for alignment and update.

### 3. Control Activities

Efficient and effective control activities help Thaioil mitigate risks within risk appetite. The key control measures are as follows:

- 3.1 Internal control policies, including work protocols, manuals, and clear procedures, and Corporate Authorization Procedures (CAPs) define fund limits and approval authority hierarchy, including budgets, personnel administration, material purchase and procurement, contract administration, commerce, finance and treasury, accounting, and asset transfer and amortization.
- 3.2 Internal control measures with due regard for sound control principles, including segregation of duties, approval, review, and document filing, ensure efficient and effective conduct, credible reports and compliance with applicable laws and regulations. This year, Thaioil developed Risk and Control Self-Assessment (RCSA) form for applicable units to assess its key procedures' risks, conduct control measures following defined framework plan and policy, and follow up the implementation of control improvement plans under a given timeframe to monitor the adequacy and suitability of internal control.
- 3.3 Control measures for regularly monitoring transactions involving of the Board and executives, provide guidelines for informing the intention to purchase

and/or sale of Thailoil securities, both their own purchase or sale and related persons', to the Company Secretary at least one working day before the actual transaction and the change of Thailoil security holding to SEC within three working days.

3.4 Preventive measures of the ongoing COVID-19 pandemic, which has impacted Thailoil's goal achievement directly, have prompted Thailoil to develop work standards, including public health measures and Business Continuity Planning (BCP), to cover risks and repercussions in the short term and long term. Also, Thailoil has defined cost management measures to support its performance outcomes affected by economic volatility and the COVID-19 pandemic.

3.5 Preventive and monitoring control activities, both manual and automated system and inherent in work processes, require all executives to supervise and inspect their units' work processes to ensure the efficiency and propriety under work regulations with suitable, concise, and auditable internal controls. Also the Continuous Control and Monitoring System (CCMS) has been implemented to automatically prevent and monitor control activities.

3.6 The development of technology-related control activities helps clearly define IT policy for each IT work category: namely, application of digital technology and communication, cybersecurity, and social media policies, cybersecurity framework is based on the framework of the National Institute of Standard Technology (NIST) of the US. Thailoil's policies have passed maturity assessment by

third-party consultants along with other PTT Group companies. As for information security management, the Company earned ISO 27001 from Management System Certification Institute (MASCI) for its practices and master plans. Thailoil Group Digital Steering Committee has been appointed to define the direction and policy and efficiently drive digital and strategic management by developing the Enterprise Architecture Project linking business to technology. This project aims to improve work process and management systems, supervise corporate data application, define a master plan for five-year (2020-2024) digital infrastructure, and improve the data center for higher operating efficiency and continuity, thus accommodating future growth. Finally, the Company staged the annual business continuity drill for cyber-attacks, designed to handle cyber-threats, emergencies in process, and operating continuity amid the ongoing COVID-19 pandemic by way of incident simulation to ensure the ability to handle and mitigate impacts on business if undesirable incidents happen.

3.7 TOP Group Affiliates Management (TAM) policy and TOP Way of Conduct help steer Thailoil and Subsidiaries' management in the same directions through joint deliberation and decision-making on critical matters and regular monitoring subsidiaries' businesses. To this end, Thailoil executives are assigned as managing directors or managers of subsidiaries, or nominated as directors. As a result, Thailoil has regularly participated in setting policy, acknowledging information, and monitoring performance outcomes against KPIs.



#### 4. Information & Communication

Thaioil values information and communication technology systems that systematically support business execution, operation, management, and financial reports to accommodate the Board and executives' decision making. And to support efficient and effective internal control. Thaioil has defined information and communication technology (ICT) policy and protocols, and in 2020, entering the 60<sup>th</sup> year of operation, the Company adopted a 60<sup>th</sup> Anniversary emblem, aiming for positive image and confidence among all stakeholders, both internal and external, direct and indirect.

In order to supervise and ensure appropriate internal communication for employees to receive prompt, complete, and accurate information, Thaioil has developed an internal communication manual as well as defining efficient guidelines for managing contents and practical communication channels. To this end, the Company has clearly appointed responsible parties for each internal communication channel, including the intranet, e-mail, e-Newspaper, and internal bulletin (Akaee). The Company has also provided a learning channel for employees through Micro Learning, and communication channel between executives and employees to ensure the goal achievement as planned. To properly accommodate the Board's decision making, the critical information such as meeting paper, is communicated and sent to the Board at least seven days prior to the meeting date.

As for external communication, Thaioil updates through public relation channels and advertisement through the printed media, radio ads, commercial films, website, and social media such as Facebook, to ensure that external

stakeholders can therefore access key information more conveniently and speedily. Thaioil also realizes the importance of communication during crisis situation and sets up crisis communication center to distribute accurate information rapidly and suitably when crisis happens. This year, for the first time, the Company underwent a full-fledged crisis communication drill.

Finally, Thaioil has defined complaint-filing and whistleblowing measures in writing, which include complaint handling, fact investigation, conclusion, clear identification of complaint-filing channels, and whistleblowers and related parties protection. This is to enable employees and third parties to report or provide related information on unlawful acts, fraud, or pursuit of illegal benefits.

#### 5. Monitoring Activities

It is Thaioil executives' duty and responsibility to oversee and audit internal work systems to ensure efficiency and conformance to policies, requirements, and work regulations under the concise internal control system. Thaioil equally values the management of Security, Safety, Occupational Health and Environment (SSHE) by requiring executives to undergo annual self-assessment to revise its operation as required, safeguarding and minimizing losses from safety and the occupational health of employees, contractors, and processes.

To ensure stakeholders of Thaioil's operation under an efficient and effective management system, with timely preparation of accurate, transparent, and credible financial and other reports and strict compliance with laws and

regulations, Enterprise Risk Management section is tasked with annually monitoring of internal controls. To elaborate, at the corporate level, executives conduct the assessment via SEC's internal control adequacy assessment forms; at the process level, process owners assess using CSA form. Should there be changes in tasks or work processes during the year, the Enterprise Risk Management section is to duly update work procedures and control measures. In addition, the Company applies CCMS to monitor internal control and identify irregular transactions in the system each month and regularly report them to process owners as well as executive meetings to ensure that they realize the importance of compliance with business processes and internal control mechanisms. At the same time, Corporate Internal Audit department formulates annual audit plans based on key risks, change, or increase in work processes or systems, and requests from executives and the Audit Committee (if any) to verify the adequacy and suitability of each activity.

## SUSTAINABILITY



Thaioil reports the details on sustainability management and the results covering environmental, social, and governance aspects in the 2020 Integrated Sustainability Report.

For more information:



### Sustainability Management Policy and Goals

In order to support the vision and accommodate business strategies to grow overseas, as well as the United Nations Sustainable Development Goals (UN SDGs) while reflecting environmental, social, and governance (ESG) aspects of global issues which have become more vital to stakeholders and the business operations, Thaioil reviewed and launched the policy on 2020 sustainable management along with strategies and goals involving ESG operations, as detailed below:

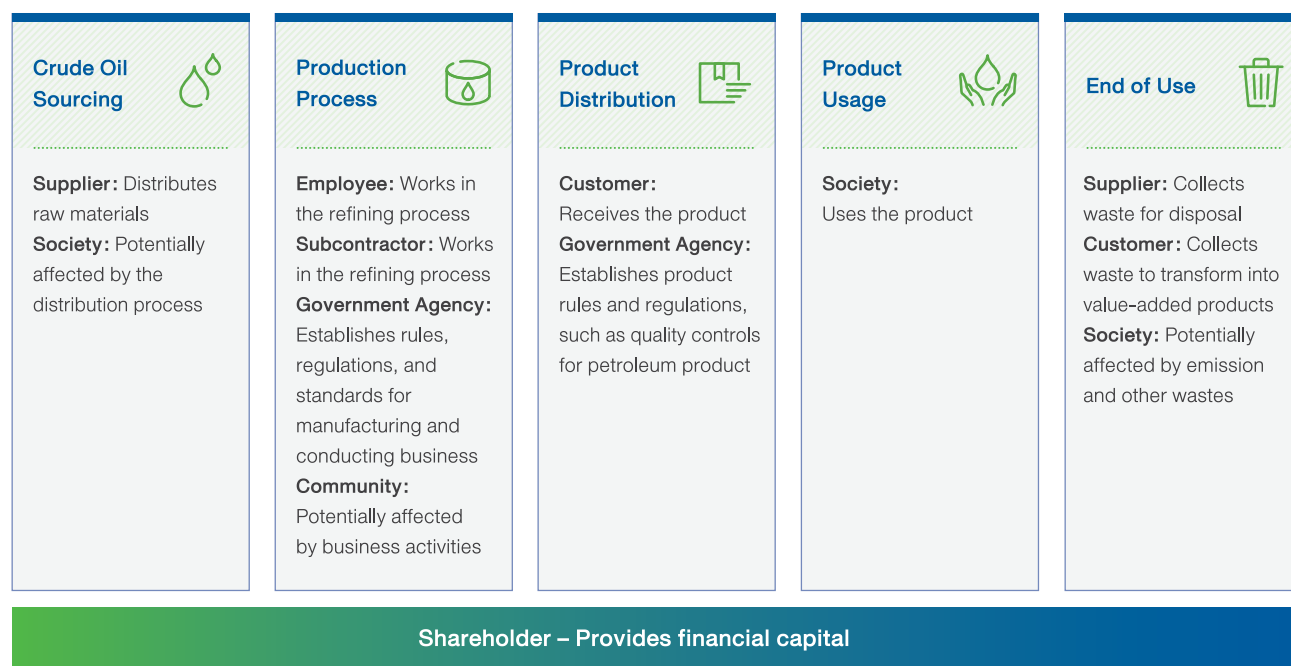
 (E : Environmental)	 (S : Social)	 (G : Governance)
Towards Green Economy	Towards Better Quality of Life	Towards Good Governance
Support for green economy	Developing capability of communities and the society to forge closer bond and long-term mutual growth	Creating transparency through governance, risk, and compliance strategy (GRC)
Reducing greenhouse gas emissions from the business-as-usual (BAU) 15 percent by 2030	Creating social return on investment (SROI) at no less than double of the social investment by 2030	Achieving zero violation of laws and corporate rules
Maintaining revenues proportion from the business and environment-friendly products at no less than 25 percent of net income, as of 2023 onwards		



## Management of Impacts on Stakeholders along the Business Value Chain

Thaioil identified its stakeholders through analysis of their involvement in the supply chain, i.e. from crude receiving to waste disposal. Impacts and influence from one stakeholder to another were looked into the diagram below:

Diagram of the stakeholders identification throughout the supply chain:



Considering throughout the supply chain, Thaioil divides its stakeholders into six main groups, and appoints internal unit responsible for constant interaction with each stakeholder to find out their views and expectations from business operations. This internal unit also devises appropriate methods for regular stakeholder engagement, especially during COVID-19 outbreak where communication channels have changed to online form more and more.

## Sustainability Management in Environmental Aspect

Thaioil and Subsidiaries have developed environmental management system, imposing a policy on **quality, security, safety, occupational health, the environment, energy management, and corporate social responsibility (QSHE-Energy-CSR Policy)** with a framework for implementation. Meanwhile, ISO 14001:2015 has been adopted together with the establishment of a systematic environmental database to control, mitigate impacts and preserve the good environment in parallel with the sustainable business growth.

In 2020, Thaioil and Subsidiaries initiated the Operation Excellence to Business Excellence Project (O2Bx) aimed for being 'Partner for Life' with excellence in three main areas, namely:

- >> Excellent Impact Management
- >> Excellence Compliance
- >> Creating Shared Value (CSV)

Thaioil and Subsidiaries Environmental Master Plan for 2017-2021 therefore consists of various environmental development projects, involving environmental management system and natural resource management in the production process and end products, as detailed below:

<b>Environmental Management System</b>	<b>Environmental Audit</b>	<p>Operations under ISO 14001:2015 have been strictly executed along with continuous improvement of the management system as well as development of an efficient internal system for data collection and review, to minimize any possible error in data transmission and to facilitate data validation. The Compliance Unit is responsible for driving the assessment of compliance with laws and regulations while developing some tools or systems that help enhance work efficiency.</p> <p>In 2020, Thaioil and Subsidiaries were reported with zero major non-compliance case, following assessment against laws and regulations concerning the environment by the Management System Certification Institute (Thailand) (MASCI).</p>
	<b>Management Information Solutions</b>	<p>Thaioil's Environmental Database Center, which manages information concerning air quality, industrial waste, incidents, and sustainability, is intended to be a one-stop information service center. In 2020, the center carried out some additional projects, including environmental management accounting (EMA), of which IT technology is being developed to enhance systematic management of environmental issues.</p>
<b>Natural Resource Management and Climate Change Action</b>	<b>Climate Change Action</b>	<p>To control and reduce greenhouse gas emissions and to conserve natural resources, Thaioil has set greenhouse gas emissions targets in its Clean and Green Strategy, which focuses on energy efficiency, investment in green business, and green revenue growth in a move towards green economy and the goal of Partner for Life. To this end, Thaioil and Subsidiaries have set up the Energy and Loss Committee (E&amp;L) since 2012 to assess risks and seek for opportunity to plan and control process with systematic control and monitoring. Thaioil aims to be in the 1<sup>st</sup> quartile in the refining</p>

	<p>industry in Asia Pacific in energy consumption, which has direct and significant results in greenhouse gas emissions.</p> <p>In 2020, the combined-cycle co-generation power plant operated by TOP SPP Co., Ltd. was assessed for certification of its additional 315,287 tonnes of carbon dioxide equivalents (tCO<sub>2</sub>e) of carbon credit, which brought accumulated certified carbon credit to 643,271 tCO<sub>2</sub>e under Thailand Voluntary Emission Reduction (T-VER) Project. The attempt successfully reduced greenhouse gas emissions from power and steam co-generation by using clean fuel and technology of international standards.</p>
Water Resource Management	<p>Water resource management is under the Thailoil CE WE GO Project (Thailoil Circular Economy-WE GO Theme) initiated to minimize risk from water shortage in the production process while preventing conflicts with nearby communities. Thailoil is prepared for reporting its auditable water consumption to the public. Moreover, in business continuity planning, a review was specifically made to water management in case of water shortage in the production system. Water management is carried out in collaboration with PTT Group Water Committee and Water War Room for the Eastern Region to assess risk and to define prevention measures in line with the government policy or in line with water consumption pattern in the neighborhood as a preparation for water shortage situation. Thailoil also has six desalination units to reduce consumption of natural freshwater while raising the long-term water management capability.</p> <p>In 2020, Thailoil and Subsidiaries ran additional water management projects, including the 3Rs in Process Project, the water study for sustainability project, and the Save Water Campaign to build awareness of water saving to step up efficient water consumption among staff and contractors, as well as a project to increase water management capability and efficiency to cope with floods around the refinery premises.</p>



	<b>Biodiversity Management</b>	<p>From responsibility for habitation and natural resources around the refinery, Thailoil and Subsidiaries have continuously operated in accordance with measures entailed in the environmental impact assessment (EIA). Thailoil joined PTT Group Biodiversity and Ecosystem Service in making a review of the manual on biodiversity and ecosystem management, to use as guidelines and to ensure that Thailoil operations will not produce any adverse effect on the ecosystem, considered one of the nation's precious resources.</p>
<b>Process Improvement for Environmental Quality</b>	<b>Eco-Efficiency Performance</b>	<p><b>Air Quality Management</b></p> <p>Air Quality Management at Thailoil and Subsidiaries starts from design, maintenance planning, control of sulphur contents in fuels from the beginning of the process, control of combustion by using low-emission fuels, selection of equipment and clean production process, and selection of combustion technology that is efficient and emits low nitrogen, to undertaking projects to minimize impacts on the environment and communities as well as keeping continuous emission control and air quality monitoring to minimize environmental impacts at source.</p> <p>In 2020, Thailoil and Subsidiaries executed a project to reduce impacts on the environment and communities under the O2Bx, which involved Smell Potential Sources Review; water treatment system roofing project to keep control of volatile organic compounds, of which engineering design is underway; White Smoke Monitoring Project; TOP Green Tracking Project; and PM 2.5 Project, which adopted the 4C concept of control, contain, clean, and check in the system management to minimize environmental impacts at source.</p> <p><b>Water Quality Management</b></p> <p>Thailoil and Subsidiaries aim to reduce the volume of water discharge by adopting the 3Rs strategy: reduce, reuse, recycle.</p>

		<p>This is an efficient way of natural resource consumption and water treatment control. Chemical Oxygen Demand (COD) is monitored round the clock.</p> <p><b>Industrial Waste Management</b></p> <p>To systematically manage industrial waste, Thaipol and Subsidiaries arrange waste inventory and reduce the amount of industrial waste from the beginning, applying circular economy and the 3Rs strategy (reduce, reuse, recycle) in waste management, storage control, transport to safe disposal as stipulated by law and as defined by academic principles. With the aforementioned operation strictly implemented, Thaipol and Subsidiaries achieved the target of zero landfill in 2020.</p>
	<b>Sustainable Supplier and Contractor Program</b>	<p>Managing suppliers and contractors is an important factor for achieving sustainability. It demonstrates responsibility for managing impacts on the society and the environment caused by operations of suppliers and contractors. Thaipol and Subsidiaries therefore identified guidelines for suppliers and contractors in the environmental and social aspects. Suppliers and Contractors are required to comply with rules in support of sustainable environmental management throughout the supply chain.</p> <p>In 2020, Thaipol and Subsidiaries achieved ISO 20400: 2017 Sustainable Procurement Standards-the first in Thailand to apply such standards in the procurement of all products and services (except crude procurement).</p>

## Sustainability Management in Social Aspect

Thaioil and Subsidiaries are always committed to a sustainable organization, valuing business growth along with the responsibility for society as well as safety and occupational health. Thaioil always takes into consideration impacts on all stakeholders, treats stakeholders equally and fairly, and respects stakeholders' rights. Thaioil and Subsidiaries have reflected the sustainable organization's practices through policies formulation, risk assessment, and measures identification to control and minimize impacts, and results monitoring and reporting for further improvement. A number of activities and projects have been initiated to cultivate corporate cultures and to create awareness of honesty, perseverance, patience, and social responsibility to ensure balance and social improvement.

### Safety and Occupational Health

"To be an organization with no harm to employees, contractors, and relevant stakeholders" is a business goal of Thaioil and Subsidiaries. Executives are to make commitment and provide support of resources through the five-year plan on occupational health, safety, emergency and crisis response. A dedicated unit has been entrusted to drive the plan. A committee responsible for safety, occupational health, and work environment has also been established, consisting of representatives of staff at the operating level, to follow up performance while working on future plan in a systematic manner.

Furthermore, Thaioil and Subsidiaries highly values safety culture, which is recognized as a success factor to achieve the above-mentioned goals. The former Safe White Green strategy has thus been adjusted into All Safe White Green strategy, to raise awareness and develop leadership regarding work safety among staff

and contractors at all levels. In this regard, the Management Walk and Talk activity was executed by executives along with the QSHE Roll Out activity organized at each operating site alternately, particularly during the maintenance shutdown period as well as at construction sites. Such activities aim to campaign for fostering awareness and calling for participation from operators at their actual workplace.

Thaioil and Subsidiaries, in 2020, followed the five-year plan on occupational health, safety, and emergency and crisis response with strong commitment to achieving the corporate target of 'No Harm, No Leak, Goal Zero'. A review was also made to the management system of occupational health, safety, assessment of risks that may bring about disasters, the permit approval system, and work processes entailing high risks. Moreover, work procedures, safety checklist before starting work, risk assessment, and contractor safety management have been documented. Operators of some specific types of work as well as those whose work involve safety have been upgraded with the required knowledge according to their respective work permits. All of these have been communicated to all involved in order to achieve efficient and effective implementation. Importantly, a systematic analysis is conducted into work results and lessons learned from serious accidents. All proactive KPIs were assessed and assured that one is in line with others so that compliance can be monitored. High-ranking officers revisit safety performance on a regular basis.

### Human Rights

Thaioil and Subsidiaries are strongly determined to do a business that recognizes human rights management throughout the value chain. The organization stands firm on principles of international organizations advocating human rights, including the United Nations Global



Compact (UNGC), United Nations Universal Declaration of Human Rights (UNUDHR), United Nations Framework and Guiding Principles on Business and Human Rights (UNGPs), the International Covenant on Civil and Political Rights, the International Covenant on Economic, Social, and Culture Rights, and the International Labour Organization's (ILO) Declaration on Fundamental Principles and Rights at Work. In this respect, Thaipol and Subsidiaries introduced the two following policies on human rights:

- >> Thaipol Group Human Rights Policy in the Workplace—launched in 2015 to protect employees' human rights
- >> Thai Oil Group Business and Human Rights Policy—launched in 2016 together with guidelines on suppliers' human rights, aiming to support human rights and prevent risks for Thaipol and suppliers from any activity which may violate human rights.

These two policies are against illegal labour, child labour, and forced labour in domestic businesses, as well as international regulation compliance for oversea businesses. Policy and Practice information are available on Thaipol's website under Sustainability topic "I: Our Well-Being" and "Human Rights".

In 2020, Thaipol's business activities, which embrace 100 percent of Thaipol's core business plus those in partnership with others, were assessed against Human Rights Due Diligence (HRDD) to see their actions regarding human rights on both internal and external stakeholders. The assessment was based on UN Guiding Principles on Business and Human Rights. Results of the assessment was approved by executives overseeing Thaipol's value chain and were closely and systematically monitored by Thaipol Group Human Rights Working Team.

## Social Responsibility

Thaipol and Subsidiaries are convinced that organizational sustainability stems from growing the business in the right balance with communities and the society. The Board of Directors (the Board) launched the policy on 'Thaipol and Subsidiaries' social and environmental responsibility' together with guidelines for implementation and continuous monitoring. Some executives and a dedicated unit have been assigned to be responsible for community and social development strategies, long-term plan, and field work on community relations around the operating site and some remote communities. Work results are to be presented to the Board every six months to ensure goal achievement. Thaipol aspires to raise the capacity of communities and society to forge close bond while moving forward together.





## RESEARCH AND DEVELOPMENT

Thaioil established an New S-Curve Business Development Department consisting of a R&D/Product Development Section (R&D), Commercialization Section, and Corporate Venture Capital Section. In addition, a committee was appointed to drive forward Thaioil and Subsidiaries' R&D efforts, chaired by Chief Executive Officer and President, with related executive vice presidents as the committee members. This committee defines policies and mobilizes R&D into tangible actions in accordance with and in supportive of the strategic master plan since 2013.

Thaioil's core policy for R&D focuses on technological and emerging business development to enhance competitiveness and foster sustainability for Thaioil and Subsidiaries in both short term and long term through development of processes and services. The R&D unit has forged a collaboration network with leading national institutes, including the Petroleum and Petrochemical College of Chulalongkorn University, National Science and Technology Development Agency, King Mongkut's University of Technology Thonburi, Suranaree University of Technology, Vidyasirimethi Institute, and PTT Innovation Institute, to coordinate specialized proficiency in various disciplines to jointly develop technology and research to meet the demand of the industry sector.

Since the key product of Thaioil and Subsidiaries are refined products with specific laws to regulate and control quality. Thaioil, thus, initially focused on R&D for greater production efficiency and cost reduction together with innovation development to meet operation needs or solve operation problems. Later, when Thaioil and Subsidiaries adopted new key strategies, focusing on developing emerging businesses and the R&D unit

then adjusted its approach in line with such strategies. To this end, Thaioil structured the R&D unit to be compatible with the strategies and serve as a tool for developing high-value products together with other subsidiaries. This year Thaioil and Subsidiaries' samples of completed research realized into execution included the test of catalyst efficiency in search of the most suitable catalyst for LABIX Co., Ltd.'s Kerosene Hydrotreating, a Linear Alkyl Benzene (LAB) process. The simulation device for catalyst testing developed by Thaioil's R&D team in collaboration with the Petroleum and Petrochemical College of Chulalongkorn University, was implemented. The resulted catalyst from the test was applied in the process and increased the Molex feed while lowering adsorbent losses, thus benefiting Thaioil THB 24.5 million per year.

For the past three years (2018-2020), Thaioil and Subsidiaries spent THB 21 million, THB 28 million, and THB 82 million respectively for R&D. Most of the R&D expenditure in 2020 is the investment in the design of the simulation plant for catalyst testing for new process units which are currently under construction.

### Fostering Innovation

Thaioil relentlessly values corporate innovation by encouraging employees of Thaioil and Subsidiaries to leverage their creativity and realize into innovation useful and beneficial to the organization, customers, and stakeholders. During 2019-2020, the Company staged a contest on outstanding innovations with up to 96 project entries; the estimate of which could benefit Thaioil and Subsidiaries around THB 1.025 billion. For example, Lorry Queue Algorithm Improvement Project, the winning



Valve Control Instrument Design

entry in 2020, helps solve problems of excessive time queueing for loading at the distribution station in 2017-2018-sometimes days-due to the high number of customers. The engineering team thus studied the Queue Algorithm to improve the queue system with a new model, leveraging the Stable Matching Algorithm and significantly improve the efficiency of lorry queueing system, resulting in faster fuel loading than before with no more days of waiting, high customers' satisfaction, and increasing oil sales volumes by lorry loading by 471 million liters per year compared to the volume before the improvement.

### Intellectual Property

During 2013-2020, Thailoil commanded a total of 25 items of intellectual property. This year it filed for one design patent and one petty patent.

#### 1. Patent on “Valve Control Instrument Design”

Thailoil filed for a product design patent in Thailand under the name “Valve Control Instrument Design”. This tool is a sizeable valve switch with a new shape of reduction gear. Its design replaces valve handles driven by an air wrench, thus efficiently lowering the number of operators from 10 to just one operator.

#### 2. Petty patent on “Dispenser Verification System”

Thailoil filed for a petty patent under the name “Dispenser Verification System” to protect the application, characteristics, components, mechanism, structure, and process of the Precise Loading Arm Connection Enhancement (PLACE), a system that prevents errors in fuel dispensation into oil tankers.



Dispenser Verification System for Lorry Loading

A dispenser control locates the tank truck, its fuel receptacle position, and dispenser location for a given fuel through compiled high-resolution images. Should the dispenser be located at a wrong position, the system will refuse to dispense the fuel and inform the customer of the error, thus preventing errors made by the tanker's chauffeur.

### Digital Technology Management

Thailoil has formulated its digital technology strategies in line with its policies by forming a center of excellence to develop personnel capabilities, as well as applying digital technology across the supply chain, from crude purchase to product sales. Thailoil also updated its policies and protocols for IT system application by designing enterprise architecture that illustrates the connection between business and digital technology implementation for work program improvement plans, management and supervision of corporate data application, and integration of the centralized data platform to accommodate Thailoil and Subsidiaries' current businesses and in the future. This enables data analysis to become more efficient and enable decisions to be made faster. In addition, Thailoil has continuously applied lessons learned from its past digital projects to its improvement of services and implementation of new digital projects. Thailoil has also stressed the advocacy of corporate culture to encourage the corporation to widely apply digital technology and enhance competitiveness in every aspect to foster security and sustainability, and accommodate future growth.



## HUMAN RESOURCE AND ORGANIZATION DEVELOPMENT



Due to the situation of the COVID-19 pandemic, the global public health crisis and challenge that has caused severe, rapid, and widespread impacts on business operations. Thailoil has reviewed its business strategy under the Agile Way of Work approach, prioritizing customers. The approach of which was identified as business guidelines, to continuously develop and adjust the organization. Considered as the key driver, Thailoil's employees have been prepared to be ready to move forward and achieve business goals as specified in business strategies through human resource management and development as detailed below:

1. **Strategic Workforce Planning** is implemented to ensure the readiness to support business growth and maintain the Workforce Productivity Competitiveness in the same industry. The workforce planning includes enhancing the ability to recruit quality personnel under the recruitment plan to support business expansion and the Clean Fuel Project (CFP), and increasing staff competency and ability to respond to the organization's future strategy with high potential through constantly improving enhancement of staff efficiency and effectiveness.

Moreover, in a highly competitive labor market situation, where behaviors and needs of applicants have become more diverse, Thaipol has developed a recruitment strategy and executed through Thaipol Energy Service Co., Ltd., to address and be in line with the changes. This focuses on introducing marketing ideas and technology to create new experiences for the applicants so as to attract and bond with high-potential candidates to join Thaipol and Subsidiaries. Thaipol also creates networks with leading educational institutions and external partners to co-develop and produce quality personnel to address the needs of Thaipol and Subsidiaries and the domestic labor market.

**2. Employees Development with Continuous Enhancement of Learning Experience for all Employees** is ensured to support business growth and accelerate the development of employee capability to acquire knowledge, ability, and essential skills for the future through key personnel development projects as follows:

**2.1 Employee development project based on core competencies** consisting of business excellence, commercial excellence, leadership, agility, innovation, and digitalization through various core competency developmental programs such as:

- >> Empathetic Leadership Development Program aimed to develop practical leadership skills for all supervisors
- >> Digital Transformation for Executives Program aimed to develop leadership skills in using digital technology within the organization
- >> Subject Matter Expert (SME) & Center of Excellence (COE) Program aimed to strengthen operational excellence by developing specialized personnel that are essential for the organization

>> Dynamic Career Track Program aimed to develop employees' extensive knowledge and skills and their readiness to grow alongside business growth.

**2.2 Online Learning System Development Project (Thaipol Academy)** incorporates modern learning technologies such as Micro Learning and Augmented Reality Learning and create a variety of more interesting learning contexts to develop core, functional, and soft competencies to address modern learning needs through online learning. That way, employees are able to learn anywhere, any time.

**2.3 Organizing the "Learning and Innovation Day"** to encourage employees to recognize the importance of learning, and apply modern learning tools for work efficiency and innovation within the organization.

**3. Promoting Employee Well-being** through the following key projects and activities:

**3.1 Establishing I-COVID Center** to serve as a management center to prevent the spread of COVID-19 within the organization, responsible for issuing measures such as self-protection and social responsibility awareness promotion, providing hygiene kits, hygienic cleaning buildings and office space, temperature screening all persons entering and leaving office, assessing possible risks of infection through health declaration before granting access to the office, promoting self-quarantine in case of possible infection, announcing Work from Home Policy to prevent possible infection, and so on. Also, I-COVID Center set out various measures to

prevent the virus from spreading to key sites, which could cause disruptions of the business by identifying Mission Critical Activity Group, so as to boost employees' confidence in their well-being and career security.

**3.2 New office building project** is designed to address the needs of all employee generations by providing synergy space for learning, innovation, and collaborative teamwork. The building design and work environment allocation are aimed for staff to produce creative work and successfully operate with maximum efficiency. This includes the allocation of basic amenities that support the lifestyles of staff of all gender and age, such as the fitness room, yoga room, and lactation room to increase employees' happiness and convenience.

### 3.3 Four Happiness for Employee Well-being Project

- >> Health well-being encourages staff to constantly exercise and maintain their health. This includes the development of Health Meter Application to provide staff with access to health data analysis, health data record, medical care, and advice to further improve one's own health
- >> Mental well-being provides programs to promote better mental quality, stress management and happiness, such as programs to help analyze and to provide knowledge for employees to understand and care for themselves. Thailo also provides counseling and advice from superiors as well as recommendations of podcasts that would empower the mind and the joy of work. Moreover, the development of OOCA Application will provide psychiatric and mental health advice by specialists and psychiatrists.

>> Financial well-being through Flexi-benefits Project under allows staff to switch welfare items that do not suit their lifestyles to those more suitable, such as healthcare, education, and other skills development; for instance, language, music, sports, tourism, and others. This program includes employees' financial health care up until retirement.

>> Social well-being connects employees by organizing various activities in which employees can give back to society. Also, the development of an application system as a tool for quicker and more convenient communication within the organization and for a channel that connect colleagues with similar interests and personal lifestyles to promote happiness within the working society.

As a concrete result of HR management, in 2020, Thailo earned Thailand HR Innovation Award from Thailand Productivity Institute, National Institute of Development Administration, and Personnel Management Association of Thailand. This award labels the Company as a model organization for the development of innovation for human resource development and management that can effectively cope with the COVID-19 pandemic. Thailo also received Human Rights Award from Rights and Liberties Protection Department, Ministry of Justice, which emphasizes the quality of Thailo's valued HR management.





## CORPORATE GOVERNANCE POLICY

Thaioil is committed to conduct business in compliance with good corporate governance principles and business ethics with utmost transparency and scrutiny, therefore, the Board of Directors (the Board) established the Corporate Governance (CG) policy, by assigning the Corporate Governance Committee to regularly monitor and promote business operations in compliance with governance and business ethics standard as well as to regularly review relevant corporate governance policy, principles, and practices.

### Policy and Practices in Relevant to the Board

#### Nomination and Appointment of the Board

##### Nomination Criteria

In selecting and considering an appropriate Director Candidate, the Directors must be fully qualified with the Public Company Limited Act, in which Thaioil will not bring diversity factors such as gender, race, ethnicity, country of origin, or nationality as Directors' qualification restrictions. Thaioil also values independence of the Directors, their conflict of interest, and their expertise. Thaioil developed Board Skill Matrix in accordance with the Board Diversity Policy to create a wide range of expertise in line with Thaioil's strategic directions. Thaioil also searched and selected qualified Directors through the State Enterprise Policy Office's Directors Pool and the IOD Chartered Directors. As of December 31, 2020, eight out of 15 Thaioil Directors' name were included in the State Enterprise Policy Office's Directors Pool.

##### Independent Directors' Qualifications

Independent Directors shall be independent from major shareholders and Thaioil's executives. They shall also

have adequate access to financial-related and business information in order to provide a free opinion to protect the best interest of minor shareholders. Thaioil clearly defined Independents Directors' qualification that is in consistent and more intense than the requirement of the Capital Market Supervisory Board, for instance, shareholding of no more than 0.5 percent of the total number of shares with voting rights of Thaioil, its parent company, subsidiary, affiliate, major shareholder or controlling person, including shares held by their related persons. Additionally, Thaioil defined Independents Directors' term of office, in which each Independent Director shall serve no more than six consecutive years from the date of the appointment. These qualifications can also be found in Thaioil's CG and CoC Manual, which is publicly disclosed via Thaioil's website.

##### Appointment of New Directors

- To appoint Directors to replace those who have completed their terms, Thaioil provides an opportunity for shareholders to propose qualified Directors Candidates, in accordance with relevant laws and Thaioil's requirements, by announcement through Thaioil's website well before the Annual General Meeting of Shareholders (AGM). Afterward, the Nomination and Remuneration Committee (NRC) selects and proposes to the Board for consideration of the names of qualified candidates prior to the Shareholders' approval in the AGM. After the Board's endorsement, the list of qualified candidates is proposed to the AGM, individually. In this process each director must receive more than half of the total number of votes of Shareholders attending the AGM and having the right to vote.

• **To appoint Directors in case of vacancy due to reasons other than expiration of term**, the NRC considers criteria and nominates qualified persons, in accordance with the law and regulations, to fill the vacant posts and proposes them to the Board for consideration. With votes of no less than three-fourths of the remaining Directors, a selected Director will serve only the remainder of the term of the replaced Director.

• **The appointment of Director as Member of the Board-Committees**, the NRC considers qualified Director as a Member of the Board-Committee to fill vacancies. This must be done in accordance with the Board-Committees' Charters. The names of selected Directors are to be proposed to the Board for consideration and approval.

### Directors Remuneration

Thaioil has established remuneration policies for the Board and Board-Committees. The remuneration is considered through the comparison with the Board's performance, roles, and responsibilities; the Company's performance; benefits to the shareholders; the overall business circumstances; as well as the organizations with equal size in the same industry. The Board's remuneration criteria must be attractive. The Nomination and Remuneration Committee is in charge of setting the annual compensation, and make recommendation to the Board for consideration and approval before presenting the AGM for approval.

In 2020, the Company found that the Company's Board of Directors Remuneration Structure and Criteria is appropriate and in conformance with practices implemented by other organizations in the same industry, resulting in the proposal of the same remuneration rate as the year 2019, which has been approved by the 2020 Annual General Meeting of Shareholders. The remuneration of directors is disclosed individually in "The 2020 Director's Remuneration" on page 101

### 2020 Remuneration Structure

#### Board's Remuneration <sup>(1)</sup>

Retainer Fee	50,000 Baht/Month
Per-Attendance Fee	40,000 Baht/Meeting
(for Directors who attend the meeting)	

#### Board-Committees' Remuneration <sup>(1)</sup>

Per-Attendance Fee	45,000 Baht/Meeting
(for Directors who attend the meeting)	

Special Bonus for the Board <sup>(2)</sup>	25 Million Baht
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Other Remunerations	- None -
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### Remark:

<sup>(1)</sup> Chairman of the Board and Chairman of the Board-Committees shall receive retainer fee of 25 percent higher than the directors.

<sup>(2)</sup> The special bonus is for the Board of Directors in office in the year 2019 including those directors who resigned or whose term completed during 2019. The bonus is allocated due to each director's office period. The Chairman of the Board shall receive the bonus of 25 percent higher than the directors.

## Directors Remuneration in 2020

No.	Name-Surname	Meeting Fee	Board of Directors Fee	Board-Committees				Total Remunerations	Annual Bonus for 2019 Performance <sup>(1)</sup> (Paid in April 2020)	(THB)
				Audit Committee	Nomination and Remuneration Committee	Corporate Governance Committee	Risk Management Committee			
1	Prof. Dr. Supot Teachavorasinskun	50,000.00	54,032.26	-	-	-	-	104,032.26	-	
2	Pol. Gen. Aek Angsanant	640,000.00	600,000.00	258,750.00	-	281,250.00	-	1,780,000.00	1,709,681.95	
3	Assoc. Prof. Dr. Pasu Decharin	600,000.00	600,000.00	360,000.00	225,000.00	-	-	1,785,000.00	1,709,681.95	
4	Mr. Praphaisith Tankeyura	600,000.00	600,000.00	360,000.00	-	-	-	1,560,000.00	571,455.35	
5	Mr. Plakorn Wanglee	80,000.00	100,000.00	90,000.00	-	-	-	270,000.00	-	
6	ACM Suttipong Inseepong	640,000.00	600,000.00	-	281,250.00	-	-	1,521,250.00	1,709,681.95	
7	Dr. Buranin Ratanasombat	120,000.00	171,666.67	-	90,000.00	-	-	381,666.67	-	
8	Ms. Chularat Suteethorn	640,000.00	600,000.00	-	-	-	416,250.00	1,656,250.00	1,709,681.95	
9	Mr. Yongyut Jantararotai <sup>(2)</sup>	640,000.00	600,000.00	-	-	225,000.00	-	1,465,000.00	1,709,681.95	
10	Gen. Kukiat Srinaka	640,000.00	600,000.00	-	-	225,000.00	-	1,465,000.00	1,709,681.95	
11	Ms. Phannalin Mahawongtikul	560,000.00	600,000.00	-	-	-	360,000.00	1,520,000.00	1,709,681.95	
12	Mr. Praphon Wongtharua	640,000.00	600,000.00	-	-	-	-	1,240,000.00	1,498,899.25	
13	Mr. Terdkiat Prommool	120,000.00	150,000.00	-	-	-	-	270,000.00	-	
14	Ms. Duangporn Thiengwatanatham	600,000.00	600,000.00	-	-	-	-	1,200,000.00	1,709,681.95	
15	Mr. Wirat Uanarutit	640,000.00	600,000.00	-	-	-	360,000.00	1,600,000.00	571,455.35	
<b>Directors who Complete the Term in 2020 AGM/Resign during the Year 2020</b>										
1	Mr. Auttapol Rerkpiboon	440,000.00	350,000.00	-	135,000.00	-	168,750.00	1,093,750.00	1,709,681.95	
2	Mr. Kanit Si	480,000.00	423,333.33	281,250.00	-	-	-	1,184,583.33	1,709,681.95	
3	Mr. Preecha Pocatanawa	480,000.00	450,000.00	-	-	-	-	930,000.00	1,241,275.94	
4	Prof. Dr. Thosaporn Sirisumphand	750,000.00	687,500.00	-	-	-	-	1,437,500.00	2,137,102.44	
<b>Directors who Resign during the Year 2019 (Received Annual Bonus for 2019 Performance)</b>										
1	Mr. Suchalee Sumamal	-	-	-	-	-	-	-	-	
2	Mr. Noppadol Pinsupa	-	-	-	-	-	-	-	140,521.80	
3	Mr. Chen Nanchaisiri	-	-	-	-	-	-	-	604,243.76	
4	Mr. Atikom Terbsiri	-	-	-	-	-	-	-	1,138,226.61	
<b>Total</b>		<b>9,360,000.00</b>	<b>8,986,532.26</b>	<b>1,350,000.00</b>	<b>731,250.00</b>	<b>731,250.00</b>	<b>1,305,000.00</b>	<b>22,464,032.26</b>	<b>25,000,000.00</b>	

### Remarks:

<sup>(1)</sup> Special Bonus for 2019 Company Performance as resolved by the 2020 Annual General Meeting of Shareholders on June 10, 2020 paid to the directors on June 23, 2020

<sup>(2)</sup> Resigned from directorship, effective from February 1, 2021 onwards.



(THB)

No.	Name-Surname	2020 Remuneration Subsidiaries' Directors			Total Remuneration
		Thai Lube Base Plc	Thai Paraxylene Co., Ltd.	Thaioil Power Co., Ltd.	
1	Mr. Wirat Uanarumit	72,000.00	270,000.00	375,000.00	717,000.00

### Board Meetings

Board meetings are scheduled in advance each year. The Board have been informed of the 2021 Board Meetings schedule in November 2020, so that the Directors can schedule themselves to attend. Meeting invitations, draft of minutes of the previous meeting, and current meeting documents are delivered to Directors at least seven days or at least five business days in advance of the Board meeting date, with exception to urgent matters. The Board sets a policy that requires no less than two-thirds of the current Board members in attendance and vote counts to make a quorum, unless where there is an urgent need to conduct a meeting which may otherwise jeopardize Thaioil's operation, or in the event of an urgent call for a meeting, or any other reasons where the Board deems appropriate.

During Board meetings, Chairman of the Board serves as the Chairman of the meeting, encouraging all Directors to openly discusses and express their opinions. High-level executives are invited to attend Board meetings to provide additional relevant information and allow the Board to get to know them, which will be useful for the review of succession plans.

In 2020, Thaioil managed a total of 16 Board Meetings with one Strategic Thinking Session (STS). Additionally, Thaioil managed one Non-Executive Directors Meeting without the executives and one Independent Directors Meetings to encourage all Directors to independently discuss, recommend, and openly express their opinions during these meetings without the Company's executives. The details on the Board's meeting attendance can be found on the chart of Meeting Attendance of Board of Directors, Board-Committees, and Shareholders' Meeting in 2020.

## Meeting Attendance of the Board of Directors, Board-Committees, and Shareholders' Meeting in 2020

Name-Surname	Board of Directors Meeting (16 times) <sup>(1), (2)</sup>	Audit Committee Meeting (8 times)	Nomination and Remuneration Committee Meeting (5 times)	Corporate Governance Committee Meeting (5 times)	Risk Management Committee Meeting (8 times)	Annual General Meeting of Shareholders (AGM) (1 time)	Extraordinary General Meeting of Shareholders (EGM) (1 time)	Independent Directors Meeting (1 time)	Non-Executive Directors Meeting (1 time)
1 Prof. Dr. Supot Teachavorasinskun	1/1					N/A	N/A	1/1	
2 Pol. Gen. Aek Angsanant	16/16	5/5		5/5		1/1	1/1	1/1	1/1
3 Assoc. Prof. Dr. Pasu Decharin	15/16	8/8	5/5			1/1	1/1	1/1	1/1
4 Mr. Praphaisith Tankeyura	15/16	8/8				1/1	1/1	1/1	1/1
5 Mr. Plakorn Wanglee	2/2	2/2				N/A	N/A	1/1	
6 ACM Sutipong Inseeyong	16/16		5/5			1/1	1/1	1/1	1/1
7 Dr. Buranin Rattanasombat	3/3		2/2			N/A	1/1	1/1	1/1
8 Ms. Chularat Suteethorn	16/16				8/8	1/1	1/1	1/1	1/1
9 Mr. Yongyut Jantararat <sup>(3)</sup>	16/16			5/5		1/1	1/1	1/1	1/1
10 Gen. Kukiat Srinaka	16/16			5/5		1/1	1/1	1/1	1/1
11 Ms. Phannalin Mahawongtikul	14/16				8/8	1/1	1/1	1/1	
12 Mr. Praphon Wongtharua	16/16					1/1	1/1		1/1
13 Mr. Terdkiat Prommol	3/3					N/A	1/1		1/1
14 Ms. Duangporn Thiengwatanatham	15/16					1/1	1/1	1/1	1/1
15 Mr. Wirat Unanarumit	16/16				8 / 8	1/1	1/1		
<b>Directors who resigned during the year 2020</b>									
1 Mr. Auttapol Rerkpiboon	11/11		3/3		3/3	1/1	N/A		
2 Mr. Kanit Si	12/12	5/5				1/1	N/A		
3 Mr. Preecha Pocatanaawat	12/13					1/1	N/A		
4 Prof. Dr. Thosaporn Sirisumphand	15/15					1/1	1/1		1/1
<b>Average Meeting Attendance of Board of Director (Percent)</b>	<b>97.5</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>			

### Remark:

N/A means not attend since the director resigned or was appointed during the year 2020.

<sup>(1)</sup> In 2020, Thai Oil Plc arranged the total of 16 meetings, 12 of which were scheduled meetings, and 4 of which were extras to the scheduled meetings.

<sup>(2)</sup> The reason for absence from meetings was due to directors' urgent and necessary assignments or the Company's urgent calls for extra meetings. Directors would submit absence letter prior to the meeting.

<sup>(3)</sup> Resigned from directorship, effective from February 1, 2021 onwards.





Information of Directors, Executive Officers and Control Executives as of February 1, 2021

Name	Subsidiaries								Indirect Subsidiaries										Jointly-Controlled Entity of Subsidiaries		Associates				Related Companies						
	Thai Lube Base Pk Co., Ltd.	Thai Paraxylene Co., Ltd.	Thai Oil Marine Co., Ltd.	Thai Oil Energy Services Co., Ltd.	Thai Oil Solvent Co., Ltd.	Thai Oil Ethanol Co., Ltd.	Thai Oil Power Co., Ltd.	Thai Oil Treasury Center Co., Ltd.	TOP SPP Co., Ltd.	TOP Solvent Co., Ltd.	Sak Chasathi Co., Ltd.	TOP Solvent (Vietnam) LLC	Saspho Co., Ltd.	Saspho Green Energy Co., Ltd.	Saspho Marine International Pte. Ltd.	TOP Maritime Co., Ltd.	LABX Co., Ltd.	TOP Ventures Co., Ltd.	TOP Ventures Hong Kong Ltd.	TOP Ventures America LLC	PT. Tirta Surya Raya	TOP-NTL Pte. Ltd.	TOP Nautical Star Co., Ltd.	PTT Digital Solutions Co., Ltd.		PTT Energy Solutions Co., Ltd.	Global Power Synergy Pte.	Ubon Bio Ethanol Pte.	TJM Ship Management Co., Ltd.	Thai Petroleum Pipeline Co., Ltd.	Sam Pong Social Enterprise Co., Ltd.
32 Mr. Nuttapon Meerit	*																														
33 Ms. Duangporn Teerapabpaisit	*																														
34 Ms. Torsang Chalpravat	*							*			*																				
35 Ms. Tarika Devahastin	*							*		*	*																				
36 Mr. Nikorn Kongnok	*																														
37 Mr. Nitas Krongvanichayakul	*												*		*																
38 Ms. Prapin Thongnium	*																														
39 Mr. Phumchit Tassanaprasert	*																														
40 Mr. Mongkol Janchookiat	*																														
41 Ms. Runglita Manesarachun	*							*																							
42 Mr. Luck Saraya									*																						
43 Mr. Worachart Ruangragool	*		*			*										*							*								
44 Ms. Wanwisa Yanchinda	*		*			*									*		*														
45 Mr. Vivat Wongnirund	*																														
46 Mr. Sarunyut Limwongse	*																														
47 Mr. Somborn Chauyokbiap	*																														
48 Ms. Somporn Bunluesiruang	*																														
49 Mr. Santi Wasanasiri	*	*	*	*																											
50 Ms. Suchada Deechaiya	*		*																*												
51 Ms. Sudarat Orrattanasakul	*																														
52 Mr. Anawat Chansaksong	*	*																													
53 Ms. Acharee Tiyaibhom	*										*																				
54 Mr. Udom Wongsinopphakhun	*								*		*																				
55 Ms. Pattaralada Sa-Ngessing ***	*		*					*	*				*						*												

Notes: \* = Chairman \* = Director \* = Chief Executive Officer or Managing Director \* = Executive Officer

\* Resigned from directorship, effective from February 1, 2021 onwards. \*\* Secondment to Thai Oil Pk effective as from January 1, 2021 \*\*\* Ended secondment to Thai Oil Pk effective as from January 1, 2021

<sup>(1)</sup> Thai Oil Treasury Center Co., Ltd. founded on September 29, 2017, is a subsidiary of Thai Oil Pk, in which Thai Oil holds 100% of shares.

<sup>(2)</sup> TOP Solvent Co., Ltd. is a subsidiary of Thai Oil Solvent Co., Ltd. (TOS), in which TOS holds 100% of shares.

<sup>(3)</sup> Sak Chaisidhi Co., Ltd. is a subsidiary of TOP Solvent Co., Ltd. (TS), in which TS holds 80.52% of shares.

<sup>(4)</sup> TOP Solvent Vietnam LLC is a subsidiary of TOP Solvent Co., Ltd. (TS), in which TS holds 100% of shares.

<sup>(5)</sup> Sagpho Co., Ltd. is a subsidiary of Thai Oil Ethanol Co., Ltd. (TET), in which TET holds 50% of shares.

<sup>(6)</sup> Sagpho Green Energy Co., Ltd. is a subsidiary of Sagpho Co., Ltd. (SAP), in which SAP holds 100% of shares.

<sup>(7)</sup> Thai Oil Marine International Pk, Ltd. is a subsidiary of Thai Oil Marine Co., Ltd. (TM), in which TM holds 100% of shares.

<sup>(8)</sup> TOP Maritime Service Co., Ltd. is a subsidiary of Thai Oil Marine Co., Ltd. (TM), in which TM holds 100% of shares.

<sup>(9)</sup> LABX Co., Ltd. is a subsidiary of Thai Paraxylene Co., Ltd. (TPX), in which TPX holds 75% of shares.

<sup>(10)</sup> TOP Ventures Co., Ltd. is a subsidiary of Thai Oil Treasury Center Co., Ltd. (TTC), in which TTC holds 100% of shares.

<sup>(11)</sup> TOP Ventures Hong Kong Ltd. is a subsidiary of Thai Oil Treasury Center Co., Ltd. (TTC), in which TTC holds 100% of shares.

<sup>(12)</sup> TOP Ventures America LLC is a subsidiary of TOP Ventures Hong Kong Ltd. in which TOP Ventures Hong Kong Ltd. holds 100% of shares.

<sup>(13)</sup> PT. Tirta Surya Raya is a subsidiary of TOP Solvent Co., Ltd. (TS), in which TS holds 67% of shares.

<sup>(14)</sup> TOP-NTL Pk, Ltd. is a jointly-controlled entity of Thai Oil Marine Co., Ltd. (TM), in which TM holds 50% of shares.

<sup>(15)</sup> TOP Nautical Star Co., Ltd. is a jointly-controlled entity of Thai Oil Marine Co., Ltd. (TM), in which TM holds 35% of shares.

<sup>(16)</sup> Global Power Synergy has become public company limited since 27 November 2014.

<sup>(17)</sup> Ubon Bio Ethanol Pk is an associate company of Thai Oil Ethanol Co., Ltd. (TET), in which TET holds 21.28% of shares, become Pk on April 23, 2018

<sup>(18)</sup> T.J.M. Ship Management Co., Ltd. is an associate company of Thai Oil Marine Co., Ltd. (TM), in which TM holds 33% of shares.

<sup>(19)</sup> Thai Petroleum Pipeline Co., Ltd. is a related company of Thai Oil Pk, in which Thai Oil holds 9.19% of shares.

<sup>(20)</sup> Sam Palung Social Enterprise Co., Ltd. is a related company of Thai Oil Pk, in which Thai Oil holds 15% of shares.

## Directors' Development

### Orientation of New Directors

Thaioil encourages high-level executives to personally provide information on the nature of Thaioil and Subsidiaries' businesses along with essential data that are beneficial to the performance of the Directors. In addition, Thaioil prepares a welcoming package for new Directors to provide essential information before the start of their duties.

### Performance Development of the Board

Thaioil promotes the development of Directors by encouraging Directors to attend trainings conducted by the Thai Institutes of Directors Association (IOD), other courses and seminars as part of continuous development to support their duties as members of the Board. In addition, Thaioil invites external experts to the Board meetings to share their knowledge and experience with the Directors. In 2020, Thaioil organized a sharing session, under the topic of "Cybersecurity in the Boardroom", presented by Mr. Prinya Hom-anek, Special Consultant to National Cyber Security Committee. Additionally, Thaioil organizes a Board meeting and/or site visit at the Thaioil Refinery to visit and oversee refinery operations.

## Director's Training Course in year 2020

No.	Name	Training Courses in 2020
1	Prof. Dr. Supot Techavorasinskun	>> Special Lecture by Mr. Prinya Hom-anek, Special Consultant to National Cyber Security Committee: "Cybersecurity in the Boardroom"
2	Pol. Gen. Aek Angsanant	>> Special Lecture by Mr. Prinya Hom-anek, Special Consultant to National Cyber Security Committee: "Cybersecurity in the Boardroom"
3	Asso. Prof. Dr. Pasu Decharin	>> Director Leadership Certification Program (DLCP 0/2020) >> Special Lecture by Mr. Prinya Hom-anek, Special Consultant to National Cyber Security Committee: "Cybersecurity in the Boardroom"
4	Mr. Praphaisith Tankeyura	>> Successful Formulation & Execution of Strategy (SFE 33/2020) >> Special Lecture by Mr. Prinya Hom-anek, Special Consultant to National Cyber Security Committee: "Cybersecurity in the Boardroom"

No.	Name	Training Courses in 2020
5	Mr. Plakorn Wanglee	>> Special Lecture by Mr. Prinya Hom-anek, Special Consultant to National Cyber Security Committee: “Cybersecurity in the Boardroom”
6	ACM Suttipong Inseeyong	>> IT Governance and Cyber Resilience Program (ITG 14/2020) >> Special Lecture by Mr. Prinya Hom-anek, Special Consultant to National Cyber Security Committee: “Cybersecurity in the Boardroom”
7	Dr. Buranin Rattanasombat	>> Special Lecture by Mr. Prinya Hom-anek, Special Consultant to National Cyber Security Committee: “Cybersecurity in the Boardroom”
8	Ms. Chularat Suteethorn	>> Boards that Make a Difference (BMD 10/2020) >> Risk Management Program for Corporate Leaders (RCL 21/2020) >> IT Governance and Cyber Resilience Program (ITG 14/2020) >> 2020 PTIT Special Lecture: “Thailand’s Destiny: Water Crisis and Development Philosophy” >> Special Lecture by Mr. Prinya Hom-anek, Special Consultant to National Cyber Security Committee: “Cybersecurity in the Boardroom”
9	Mr. Yongyut Jantararotai <sup>(1)</sup>	>> Special Lecture by Mr. Prinya Hom-anek, Special Consultant to National Cyber Security Committee: “Cybersecurity in the Boardroom”
10	Gen. Kukiatt Srinaka	>> The Executive Program in Energy Literacy for a Sustainable Future, Class 15, Thailand Energy Academy >> 2020 PTIT Special Lecture: “Thailand’s Destiny: Water Crisis and Development Philosophy” >> Special Lecture by Mr. Prinya Hom-anek, Special Consultant to National Cyber Security Committee: “Cybersecurity in the Boardroom”
11	Ms. Phannalin Mahawongtikul	>> The Executive Program in Energy Literacy for a Sustainable Future, Class 15, Thailand Energy Academy >> Strategic Board Master Class (SBM 9/2020) >> Special Lecture by Mr. Prinya Hom-anek, Special Consultant to National Cyber Security Committee: “Cybersecurity in the Boardroom”



No.	Name	Training Courses in 2020
12	Mr. Praphon Wongtharua	>> Ethical Leadership Program (ELP 19/2020) >> Strategic Board Master Class (SBM 9/2020) >> Special Lecture by Mr. Prinya Hom-anek, Special Consultant to National Cyber Security Committee: "Cybersecurity in the Boardroom"
13	Mr. Terdkiat Prommool	>> Special Lecture by Mr. Prinya Hom-anek, Special Consultant to National Cyber Security Committee: "Cybersecurity in the Boardroom"
14	Ms. Duangporn Thiengwatanatham	>> 2020 PTIT Special Lecture: "Thailand's Destiny: Water Crisis and Development Philosophy" >> Special Lecture by Mr. Prinya Hom-anek, Special Consultant to National Cyber Security Committee: "Cybersecurity in the Boardroom"
15	Mr. Wirat Uanarumit	>> Special Lecture by Mr. Prinya Hom-anek, Special Consultant to National Cyber Security Committee: "Cybersecurity in the Boardroom"

Remark: <sup>(1)</sup> Resigned from directorship, effective from February 1, 2021 onwards.

### Directors' Term Completion and Resignation During 2020

No.	Name	Training Courses in 2020
1	Prof. Dr. Thosaporn Sirisumphand	>> IOD Chairman Forum: "Leading Boardroom Through Disruption: What Directors Should Know?"

Remark: Prof. Dr. Thosaporn Sirisumphand resigned from Directorship, effective from December 1, 2020 onwards.

## Board's Performance Assessment

Thaioil conducts the Board's performance assessment annually, under good corporate governance practice. Thaioil's Board Assessment divided into three parts, namely:

- 1) Board and Board-Committees Assessment
- 2) Individual Director Assessment (Self-Assessment)
- 3) Individual Director Assessment (Peer-Assessment)

Thaioil has guidelines to be evaluated by independent advisors every 3 years in accordance with the guidelines of the Corporate Governance Principles for Listed Companies 2017 (CG Code), which was implemented in 2019 by AON Hewitt (Thailand) Co., Ltd.

In 2020, the Corporate Governance Committee approved the 2020 Board's Performance Assessment Form. These assessment forms are delivered to all Directors to evaluate, and return to the Company for further evaluation. This year, Thaioil presented the result of the assessment and comments to the Corporate Governance Committee and the Board, respectively, to acknowledge and provide recommendations for further improvements.

### Board's Performance Assessment Criteria

The Board's performance assessment comprised of three parts, covering comprehensive range of significant issues, such as Board's composition, qualifications, and performance; Board's roles and responsibilities; Board's supervision and monitoring; reporting and information disclosure; risk management and internal control; Board's development; etc. The evaluation criteria are divided into 5 levels as follows:

- Level 1 - Need significant improvement
- Level 2 - Partially meet expectations
- Level 3 - Meet expectations
- Level 4 - Exceed expectations
- Level 5 - Exemplary (Best Practice)

The 2020 Board's Performance Assessment can be summarized as follows:

Evaluation		2020
<b>Part 1:</b>	<b>Board and Board-Committees Assessment (total)</b>	<b>4.7</b>
-	Audit Committee	4.8
-	Corporate Governance Committee	4.9
-	Nomination and Remuneration Committee	4.8
-	Risk Management Committee	4.8
<b>Part 2:</b>	<b>Individual Director Assessment (Self-Assessment)</b>	<b>4.9</b>
<b>Part 3:</b>	<b>Individual Director Assessment (Peer-Assessment)</b>	<b>4.9</b>
<b>Average Rating (Part 1-3)</b>		<b>4.8</b>

The overall result of the 2020 Board Assessment indicated an average rating with an average score of "4.8".

## Policies and Guidelines Relating to Shareholders and Stakeholders

### Shareholders

Thaioil values the protection of shareholders' rights, thus provides opportunities for shareholders to exercise their fundamental rights as abide by law. In addition to fundamental rights, **Thaioil promotes the exercise of shareholders' rights extensively** by allowing them to propose agenda items for the AGM and to propose and nominate Director Candidates in advance of the AGM, etc.

### The 2020 Annual General Meeting of Shareholders (AGM)

Due to the COVID-19 Outbreak, Thailoil postponed the organization of AGM from regular schedule in April of each year, to June 10, 2020 from 14.00 hrs. at the Synergy Hall and nearby meeting rooms, Energy Complex, Building C, 5<sup>th</sup> - 6<sup>th</sup> Floor, where shareholders can easily and conveniently travel to by private cars and public transportations. Thailoil established extensive action plans to reduce the risk of COVID-19 infections, these actions includes disinfection of the event area before the meeting date, provide pre-screening for body temperature exceeding 37.5 °C, and seating with a suitable social distancing requirements, etc.

### Treatment of Shareholders at the AGM

In the AGM, Thailoil organized the AGM based on AGM Checklists, developed by the Thai Investors Association, Thai Listed Company Association, and the Securities and Exchange Commission of Thailand (SEC). This year, Thailoil received a full score of 100 points, reflecting its continual commitment in organizing its AGMs with highest CG standards. Such practices include:

>> **Published the 2020 AGM invitation notice**, both in Thai and English language, through Thailoil's website for **more than 30 days prior to the date of AGM** (May 5, 2020). Thailoil also **distributed the invitation notice** along with the 2019 Annual Report and the 2019 Integrated Report, in QR Code format, **21 days before the meeting** (May 18, 2020).

**For institutional investors**, Thailoil facilitated the AGM registration process by contacting institutional investors to coordinate in the preparation of proxy forms prior to the date of AGM.

>> Thailoil values the shareholders' voting right of **one share equals one vote**. For greater convenience of voting and ballot counting, Thailoil prepared separate

ballots for each agenda item. Specifically, on the **agenda of new Directors' appointment**, Thailoil provided **separate ballot for each of the Director**.

>> **To increase transparency for voting process**, Thailoil **allowed shareholders, as volunteers, to witness the ballot counting process**, along with having independent legal counselors to audit such process.

>> To facilitate foreign shareholders, Thailoil provided staff to serve as Thai-English translator for questioning and commenting process to ensure unified understandings.

### Equitable Treatment of Shareholders

All shareholders are entitled to identical treatment and protection of fundamental rights. By recognizing such importance, Thailoil provides channels to ensure that the shareholders are treated equally and fairly. Such practices demonstrates as follows:

>> **Provided an opportunity for shareholders to propose meeting agenda and nominate Director Candidates**, in which the criteria and procedures are publicized on SET's electronic system and Thailoil's website, from September 20 to December 31, 2019. The proposed meeting agenda and the list of nominated Director Candidates will be considered in accordance to criteria specified by Thailoil. Thailoil also **provided an opportunity for the shareholders to submit questions prior to the AGM**, as specified in the AGM invitation notice.

In the 2020 AGM, none of the shareholders has proposed meeting agenda or nominate Director Candidate to be elected as Thailoil's Director. All of these information has been disclosed in the AGM invitation notice.

>> Provide a channel for all shareholders, both major and minor shareholders, investors, institutional investors, and analysts to provide advice, comments, and other inquires directly via e-mail at [ir@thailoilgroup.com](mailto:ir@thailoilgroup.com) or

by telephone at 0-2797-2961 (Direct Line). Thailoil's Investor Relations Section is responsible for providing information as well as organized shareholders meeting through SET's events, such as "SET Opportunity Day", which were organized after the announcement of financial statements each quarter.

### **Roles toward the Stakeholders**

Thailoil is committed to conduct its business with fairness and utmost regards to the impact and treat to all stakeholders, based on equality. Thailoil established policies and ethical guidelines for each group of stakeholders in its Corporate Governance and Code of Conduct Manual, which can be downloaded from Thailoil's website.

### **Policies and Practices in Relevant to the Stakeholders**

In 2020, Thailoil organized various activities and projects in accordance with the policy and plans for all stakeholders. The following are summarised below:

#### **Shareholders, Investors, and Analysts**

In addition to the information in the "Rights of Shareholders" and "Equitable Treatment of Shareholders" sections, Thailoil organized various activities for the domestic and foreign shareholders, investors and analysts, including Roadshow and Company Visit in Virtual and Conference Call format. Thailoil also communicated important information through "TOP IR Mobile Application" to timely and conveniently provide all Stakeholders' access to information.

#### **Customers**

Thailoil is committed to strengthening customer satisfaction and confidence by delivering quality products based on their requirements along with honoring agreements and conditions made with customers on a fair, complete, prompt and factual basis,

as well as foster a sustainable relationship between the customers and Thailoil through various programs in 2020. These programs included the establishment of commercial standards through Service Level Agreement (SLA) and regular customer visits, to foster good relationships and received further suggestions for improvement. Each year, Thailoil launched customer satisfaction survey and organized workshops with relevant agencies to brainstorm work process improvement, enhance customers' satisfaction, and create greater relationship. Thailoil provided "Customers Relations Management Section" to supervise and communicate directly to the customers. If the customers found that the Company is being unfair or become unsatisfied with its services, customers can file complaint directly through e-mail at [crm@thailoilgroup.com](mailto:crm@thailoilgroup.com).

#### **Business Partners**

Thailoil strictly observed the procurement and service policy and guidelines, by publishing Thailoil and Subsidiaries' Procurement Policy as tool to drive all Subsidiaries' businesses in the same strategic direction. The procurement and selection process are pre-screened based on a clearly defined regulations and criteria. The selection methods and outcomes were systematically recorded. Thailoil also published its Supplier Code of Conduct and the Code of Conduct on Purchasing, to ensure that all operations were carried out professionally, transparently, and fairly.

Thailoil set up "Suppliers Relationship Management Section" to directly supervise and communication with the business partners. This year, Thailoil organized several activities, for instance, applying the ISO 20400:2017 on Sustainable Procurement Standards, communication of No Gift Policy to all business partners, communication of protection, prevention, and surveillance measures of COVID-19, as well as launched satisfaction survey to



gain views of Thail and Subsidiaries' business partners toward business practices.

### Employees

Employees are classified as an important group of stakeholders that are important in driving the organization. Thail is committed to fostering and strengthening good corporate culture and good working environment, providing fair returns, together with adhering to the principles of universal human rights on the basis of fairness and equality. To ensure corporate-wide coverage, Thail executed the following programs:

- >> Thail strictly complied with the Universal Declaration of Human Rights at national and international levels, labor law, and regulations. Thail refrained from practicing unlawful labor; thus treated all employees equally with respect to human dignity and the rights of liberty, and equality, in which Thail established "Human Rights in Workplace Policy" to tangibly support the human rights principles. Furthermore, Thail established "Human Rights Policy for Suppliers" to enhance its business operations, covering society, community, and the supply chain across Thail and Subsidiaries.
- >> **Thail has a fair remuneration and welfare policy** which is comparable to peers, appropriate with knowledge, capacity, responsibility, and related to the performance of each employee. That is why Thail annually reviewed the remuneration structure to assure that its remuneration remained in the industry's top quartile. To make sure that employees' remuneration is **aligned with short-term and long-term corporate performance**, Thail considered salary adjustment for the executives and employees once a year by utilizing the four dimensions of Balance Scorecard Concept, namely: financial and sustainability, stakeholders, internal process, and learning and development to develop Corporate Key Performance

Indicator (Corporate KPI), which is cascaded down to each employee's KPI (Individual KPI). This included current short-term performance and overall performance based on long-term strategies to lay the foundation for future business growth. Thanks to this evaluation, the remuneration of executives and employees is in line with both short-term and long-term corporate performance. Furthermore, Thail defined variable bonus payment linked to yearly performance and employee performance (for Section Managers upward) to motivate them to achieve annual corporate goals.

- >> Thail is committed to enhancing the abilities of its employees to support business growth, in which Thail promoted employees attendance in the in-house, local, and overseas training. Such trainings included Leadership Development in Action Course, to develop leadership skills among Company's leaders. In 2020, Thail and Subsidiaries' employees spent an average of 54 training hours per person. Additionally, Thail developed and implemented Thail Academy Programs such as Micro-Learning and Augmented Reality Learning, as learning tools, which can be accessible through mobile, in corresponding with the ever-changing circumstances.

The details of human resources management can be found in "Human Resources and Organizational Development" Section on page 96-98.

### Creditors

Thail professionally and disciplinary operated its businesses in accordance with the mutual agreements with the creditors. It is our responsibility to issue guarantees along with financial reports to our creditors with integrity and consistency. In case of failure to comply with terms and conditions, Thail will immediately inform the creditors on the solutions and in order to prevent possible damage.

### **Business Competitors**

Thaioil complied with the rules of fair competition and treated business competitors fairly under the Competition Law Framework. Thaioil refrained from dishonesty or improperly seeking confidential information on business competitors. Thaioil refrained from defaming business competitors through slander. Additionally, Thaioil refrained from involving in any activities that may lead to set the limitation or reduction of business competition.

### **Community, Society, and Environment**

Thaioil established policies on Quality, Security, Safety, Occupational Health, Environment, Energy, and Social Responsibility Management to bolster quality of lives for the community, the society, and the environment. This considered as factors to ethically and transparently drive Thaioil's businesses.

For Corporate Social Responsibility (CSR), Thaioil is determined to reduce risk and negative impact due to its operation. Thaioil also fosters good relationship with neighboring and remote communities and improves their quality of lives. Thaioil, therefore, implemented its social responsibility under four frameworks: education, energy and natural resources, environmental conservation, and quality of life.

*(The detail of Quality, Security, Safety, Occupational Health, Environment, Energy, and Social Responsibility Management Policies and Thaioil and Subsidiaries' CSR implementation activities was disclosed in the Integrated Report 2020)*

### **Policies and Practices of Non-Infringement of Intellectual Properties and Copyrights**

Thaioil established the “Code of Conduct: Intellectual Properties”, in which it requires all Thaioil and Subsidiaries' employees must maintain commercial secrets, formulae,

product process and sensitive business procedures by ensuring the safest storage and preventing leaks, while refraining from exploiting these for personal gains without the owners' prior approval or without giving them due compensation. Thaioil also has the “Code of Conduct: Application of Information and Communication Technology”, which strictly prohibited the installation and the use of illegal computer software in workplace.

### **Disclosure and Transparency**

#### **Information Disclosure**

Thaioil values disclosure of information to stakeholders on key matters both financial information and non-financial information. The information must be presented in an accurate, complete, simple, timely, and transparent manner, in both Thai and English languages, through SEC and SET's electronic portal and Thaioil's website at [www.thaioilgroup.com](http://www.thaioilgroup.com), which are easily and publicly accessible.

Other information disclosure channels, in both Thai and English, in 2020 included:

- >> Public channels such as newspapers, magazines, executive interviews, news scoop, and press releases
- >> Press Conference on CFP Project.

#### **Investor Relations**

Thaioil established Investor Relations Section, as a focal point, to facilitating effective communication with the shareholders and investors, including institutional shareholders, minor shareholders, analysts, and relevant regulatory authorities to ensure that information disclosed are correct, reliable, and adequate information in a fair, transparent, and comprehensive matter.

In 2020, Thaioil's executives met and shared essential information to the shareholders, investors, and analysts in the following events:

### Meeting with Investors/Shareholders

Domestic Company Visit	Physical: 2times Virtual & Audio: 4times
Domestic Conference Call	6times
Domestic Roadshow	Physical: 1 time Virtual & Audio: 13times
International Company Visit	Physical: 2times Virtual & Audio: 26times
International Conference Call	5times
International Roadshow	Virtual & Audio: 15times
SET's Opportunity Day	7 times (in Thai 4 times/ in English 3 times)
SET in the City	Cancelled due to COVID-19 pandemic
Analyst Meeting	4 times
Information provided via telephone (average per day)	5 times

Interested parties, shareholders, or investors can request for information from Thailoil's Investor Relations Section via direct e-mail at [ir@thailoilgroup.com](mailto:ir@thailoilgroup.com) or telephone at 0-2797-2961 (Direct).

### Business Code of Conduct

Thailoil established its code of conduct, based on good corporate governance principles and practices, such as code of conduct relating to the stakeholders; code of conduct on purchasing; compliance with the law and regulations; the respect for cultures and customs, etc. The code of conduct is designed to frame business conduct for the Board, executives, and employees to complying and adhering to. The Board and executives are required to be ethical leaders and role models in performing duties with integrity, honesty, fairness, transparency and scrutiny to promote sustainable CG culture within the organization.

### Corporate Governance and Code of Conduct Manual

With approval of the Board, Thailoil published its **Corporate Governance and Code of Conduct Manual (CG and CoC Manual)**. The current version is the fourth revision, consisting of CG principles, business ethics, anti-corruption policy, and other relevant practical guidelines. The manual are distributed to the Board, executives, and employees of Thailoil and Subsidiaries. Upon receiving, **they are required to study the content and sign the "Acknowledgment Form"**, as a sign of commitment to adhere to CG policy and principles. Additionally, Thailoil disclosed its CG and CoC Manual in Thailoil's website for all stakeholders and the interested public to easily access such information.

### Communications, Guidelines and Enforcement

In order to cultivate knowledge, understanding, and emphasize the importance of corporate governance for Thailoil and Subsidiaries' employees, Thailoil launched various promotional activities, including corporate governance and code of conduct orientation program for new employees; CG in DNA: Executive Quotes to raise awareness and promote transparent, fair, and openness to scrutiny; PTT Group CG Day 2020; communications on No Gift Policy, etc. For details under the topic of "Anti-Corruption" can be found in the Integrated Report 2020.

### Good Corporate Governance and Code of Conduct Guidelines and Enforcement

Thailoil defines the duties and responsibilities for the **Directors, executives, and all employees to acknowledge and comply with the policies and terms indicated in Thailoil's CG and CoC Manual**. They are also subjected to comply with code of conduct in regards to whistle-blowing measures and mechanisms as well as internal audit processes. If the Directors, executives, or employees violate the corporate governance principles, they will face strict disciplinary punishment. If it is suspected that

they have violated any law, regulations, rules, and requirements laid down by the government sector, they will be handed to public officials for prosecution.

### Compliance with the Law, Rules, and Regulations

To express Thairoil's intention to act in accordance with the law, legal framework, business ethics, and transparency, Thairoil published Thairoil and Subsidiaries' Compliance Policy for all employees to adhere and comply with all operations. Thairoil also established Compliance Section to support Thairoil and Subsidiaries' business operations, in accordance with the law, regulations, announcements, as well as systematically monitoring the changes in government policies and newly issued laws. To enable Thairoil to cope with the changes, Thairoil constantly raise awareness of the importance of complying with the law for employees understanding. Moreover, Thairoil conducted self-assessment survey to examine the efficiency and effectiveness of Thairoil and Subsidiaries' business operations in relevant to the law, rules, and regulations.

### Changes and Improvements of Corporate Governance

Thairoil regularly reviewed its policies, principles, and practices in relevant to corporate governance. In 2020, Thairoil reviewed good corporate governance policies, principles, and guidelines based on the criteria of the SEC and SET, as well as corporate governance assessment have been developed from various institutions over the years. Thairoil found no significant change, thereby making Thairoil's CG policy and principles still consistent and appropriate.

However, in 2020, Thairoil reviewed and update the following guidelines:

- >> Stringently and comprehensively review the policy to prevent the use of inside information to purchase

or sell the Company's securities (more information on page 117.)

- >> Review Thairoil and Subsidiaries' Sustainability Management Policy to appropriately and consistently support Thairoil's visions and business strategy, in accordance with global sustainability trend.
- >> Reviewed the Board Diversity approaches and qualifications criteria for directors nomination, emphasizing on the practice of not limiting, restricting, or taking into account differences in gender, race, ethnicity, country of origins, or nationality, which agrees with international corporate governance.
- >> Amended the Audit Committee Charter to be up-to-date and in line with the International Audit Profession Framework.
- >> Amended the Risk Management Committee Charter and the Corporate Risk Management Policy to be up-to-date and in line with the current Risk Management Committee's duties.

However, in some cases, Thairoil set guidelines to the appropriateness of its business nature and environment, for instance, **the number of Directors on the Board** should consist of 5-12 directors. As of December 31, 2020, Thairoil's Board consisted of 15 Directors. This follows Thairoil's Articles of Association, which indicates that the Board is to contain no less than five and no more than 15 Directors to enable the Board to command a proper size for its complexity. Additionally, **the Cumulative Voting**, where Thairoil's Articles of Association indicates that the nomination of Director requires shareholders' resolution by majority vote and that each shareholder has voting counts equivalent to their shareholding. Thairoil constantly protects the rights of minor shareholders by providing them the opportunities to nominate Director Candidate in advance.





## CORPORATE GOVERNANCE REPORT

### Supervision of Thairoil and Subsidiaries' Operations

Thairoil Group Affiliates Management (TAM) Policy has been defined with explicit roles and responsibilities of assigned representatives to manage all subsidiaries, in order to assure that they conform to strategic directions. This would in-turn lead to the achievements of long-term goals and sustainable growth. The TAM Policy includes Subsidiaries' management, duties and responsibilities of assigned representatives. **The Corporate Governance and Anti-Corruption Policies are parts of Thairoil and Subsidiaries' policies which require the adherence to TAM.**

### Connected Transactions or Acquisition or Disposal of Assets

Thairoil established its Connected Transaction Policy on a fair and at arm's length basis and in compliance with the rules and regulations of the Securities and Exchange Commission of Thailand (SEC) and accounting standards. **The Audit Committee then provided opinions on the suitability of connected transactions.** Any matters or particular connected transactions required specific expertise, Thairoil will secure the opinions from a qualified person. **These opinions will be proposed to Thairoil's Board of Directors (the Board) or Annual General Meeting of Shareholders (AGM) for case-by-case approval.**

In case of Thairoil or its subsidiaries (companies in which Thairoil, directly or indirectly, has a shareholding of more than 50 percent of the registered paid-up capital) involves in a connected transaction or an activity in which substantial assets of Thairoil are acquired or disposed of, according to regulations of Stock Exchange of Thailand (SET), Thairoil is obliged to take actions stipulated by SET, which requires approval from the shareholders to

enter a connected transaction or to acquire or dispose of substantial assets of Thairoil, with a majority vote of no less than three-fourths of the shareholders or proxies attending the meeting, and entitled to vote excluding the votes of shareholders with conflicts of interest.

### Prevention of Conflict of Interest

The Board set the policy and guidelines for directors regarding the Board Meeting, in which the directors who have direct or potential conflict of interest shall leave the meeting, unless the Chairman grants the permission for such directors to stay to provide information for other directors asking questions. However, such directors must abstain from voting on that particular agenda item.

In addition, Thairoil published a "Code of Conduct: Conflict of Interest" in the Corporate Governance (CG) and Code of Conducts (CoC) Manual. All Thairoil's employees are required to report their conflict of interest via an electronic system on their first day at Thairoil, and report yearly, or each time a suspected conflict exists. In 2020, Thairoil received 100 percent responses with two unsure cases of conflicts. After a careful investigation, these unsure cases were concluded not in conflict with Thairoil and Subsidiaries' interests.

### Policies on the Board's Vested Interest Disclosure and the Purchase or Sell of Company's Shares

To comply with the Capital Market Supervisory Board's Announcement, Tor Jor 2/2009, regarding the report on vested interests of directors, executives, and related parties, **Thairoil set a policy for the directors, managing directors, and the first four high-level executives, counting from managing director and including those who held**

positions equivalent to the 4<sup>th</sup> level of executive position and those who held executive positions in finance and accounting, vice presidents or equivalent, are required to report their changes of interests regarding Thailoil and Subsidiaries from the first time they took position, review them quarterly, and update them annually. Such information is for internal use only.

Thailoil also required the directors and executives, as defined by SEC, to report the intention to purchase or sell the Company's shares either by self, by spouse, or by cohabiting couples, and minor child to the Company Secretary at least one working day in advance and report the Company's securities holding, when first assuming the position and each time any changes happen to SEC within three working days after the purchase, sell, or transfer of securities has been made, according to the section 59 of the Securities and Exchange Act. The Board requires the directors to inform their shareholding information at each Board Meeting, along with disclosing shareholding information of the directors and executives at the beginning of the year, at the year end, and at any time during the year when changes happen in the annual report. The detail of 2020 directors and executives' shareholding information is shown on page 146-147 and page 158-159.

### Use of Inside Information

Thailoil is fully aware that the supervision on the use of inside information is crucial and necessary for all listed companies. For that, Thailoil operates under cautious and preventive measures to ensure fair treatment of shareholders and avoid the misuse of inside information. Such practices are as follows:

- >> Establishes "Code of Conduct: Maintaining Confidential Information and Use of inside Information" as detailed in the CG and CoC Manual

- >> Notifies regulations and policies relating to the use of inside information to the Board, executives and employees through various channels, for instance, in the agenda of matters to be informed by Chairman at each Board Meeting, etc.

- >> Establishes a "Personal Non-Disclosure Agreement" between Thailoil, its executives, and employees, who have involved with ongoing projects and projects that have not yet disclosed information to the public, so as to be cautious when using such information.

- >> In compliance with the CG principles on buying or selling shares and equal accessibility of information, Thailoil sent a written notification to the directors and executives, requesting their cooperation not to buy, sell, or transfer shares at least one month prior to the submission of the financial report to SET each quarter.

In 2020, Thailoil reviewed the policy to ensure its strictness and competitiveness and to prevent the use of inside information for purchase or sell the Company's shares. Such policy states that, "Thailoil prohibited the directors and executives, including their close persons to buy, sell, or transfer the Company's shares or to enter into derivatives in connection with the Company's shares, at least one month prior to the submission of the performance report to SET or until such internal information, which may affect the price of the Company's shares, has been disclosed to the public".

### Anti-Corruption

Thailoil establishes and enforces through all the organization an explicit "Anti-Corruption Policy" comprising of definitions, roles and responsibilities, implementations, and measures. The Board, executives, and employees are required to acknowledge and





comply with this policy. The Anti-Corruption Policy has been annually reviewed to improve and keep pace with the changing circumstances.

In addition to this policy, Thailoil defined guidelines relating to anti-corruption matters in its CG and CoC Manual, such as code of conduct on conflicts of interest, etc. The Anti-Corruption Policy and relevant code of conducts are also incorporated in the Manual, distributed to all directors, executives, and employees. Thailoil has realized the anti-corruption policies, practices, and measures into concrete actions as follows:

**>> Communication, Knowledge Sharing, and Continual Trainings on Anti-Corruption both internal and external:**

Internal activities, Thailoil held employees' orientation and participated in PTT Group CG Day 2020; CG in DNA: Executive Quotes, to raise awareness and promote transparent, fair, and auditable behaviors. The "No Gift Policy" was communicated to promote all employees not to accept gifts or any other hospitalities, through various channels such as e-newsletter, the Company's website, as well as bulletin boards at various locations both Bangkok Office and Sriracha Refinery.

External activities, Thailoil distributed a conforming letter for business partners, customers, financial institutions, and relevant third party for their cooperation to refrain from offering gifts and hospitalities to Thailoil and Subsidiaries' executives and employees, along with essential policies and practices in relevant to anti-corruption matters. Thailoil also extended invitation to business partners and customers to participate in PTT Group CG Day 2020, Supplier Relations Management Seminar (SRM Seminar), and the Analysts' Meeting to cultivate mutual understandings among Thailoil and all stakeholders.

**>> Establishes Corporate Strategic Risk Department to perform risk management for Thailoil and Subsidiaries**, comprising of strategic planning processes, investments and operations in all aspects, and anti-corruption. The Department focused on risk management of Thailoil and Subsidiaries under five risk appetites: namely, performance and investment; legal compliance; safety, occupational health, and environment; reputation; fraud and anti-corruption.

**>> Establishes an internal control system to prevent corruption risks**; for instance, the explicit establishment of Corporate Authorization Procedures, as a standard criteria for approval of business transactions. Moreover, Thailoil established the Corporate Internal Audit Department with responsibilities to monitor and evaluate other units' operations as well as financial activities, to ensure that Thailoil and Subsidiaries' operations are in compliance with protocols, rules, and regulations.

**>> Directly under the Audit Committee and independent from Thailoil and Subsidiaries' executives**, the Corporate Internal Audit Department is responsible for **monitoring and evaluating the implementation of anti-corruption policy** of other units' operations covering such key issues as commercial promotions, procurement, financial reports, etc. This Department also reviews operations to ensure their compliance with protocols, rules, and regulations, and provides recommendations for improvements of greater effectiveness and better internal control system in order to prevent potential fraud and corruption.

To demonstrate Thailoil's commitment in countering corruption, as a listed company, it is the Company's responsibility to foster confidence among shareholders



and stakeholders. Not only internal activities, but Thailoil also participates in projects of external associations and receives membership certifications in countering corruption. The details are as follows:

>> Thailoil became a **“Certified Company”** for the Private Sector Collective Action Coalition against Corruption (CAC) in April 4, 2014; the certification is valid for three years. **Thailoil received re-certification from the CAC in 2017 and 2020, respectively.** This certification proved Thailoil’s commitment to transparently operate its businesses while promote good image and boost confidence among the stakeholders.

#### Whistle-Blowing Measures

Thailoil established **whistle-blowing measures and whistle-blower protection mechanism**, and published in the CG and CoC Manual and the Company’s website. This allows all stakeholders to monitor the performance of the directors, executives, and employees of Thailoil and Subsidiaries, to ensure the compliance with the law, regulations, corporate governance principles, business code of conduct, and refrain from doing any actions that may lead to fraud and corruption.

Those who experience violation of their rights and are affected by Thailoil and Subsidiaries’ operations, stakeholders, employees, related officers, and relevant persons that come across or are aware of such clues, are to filing a complaint or whistle-blowing report through the available channels below. Complainants must explicitly spell out “confidential” when filing matters through these channels.



**Chairman of the Board or**

**Chairman of the Corporate Governance Committee or**

**Chairman of the Audit Committee or**

**Chief Executive Officer and President or**

**Company Secretary**

Thai Oil Public Company Limited

555/1 Energy Complex Building A, 11<sup>th</sup> Floor

Viphavadi Rangsit Road, Chatuchak, Chatuchak,

Bangkok 10900



[cgcoordinate@thailoilgroup.com](mailto:cgcoordinate@thailoilgroup.com)

(Manager-Corporate Secretary and Governance will acknowledge receipt of the matter and duly forward it to responsible parties)

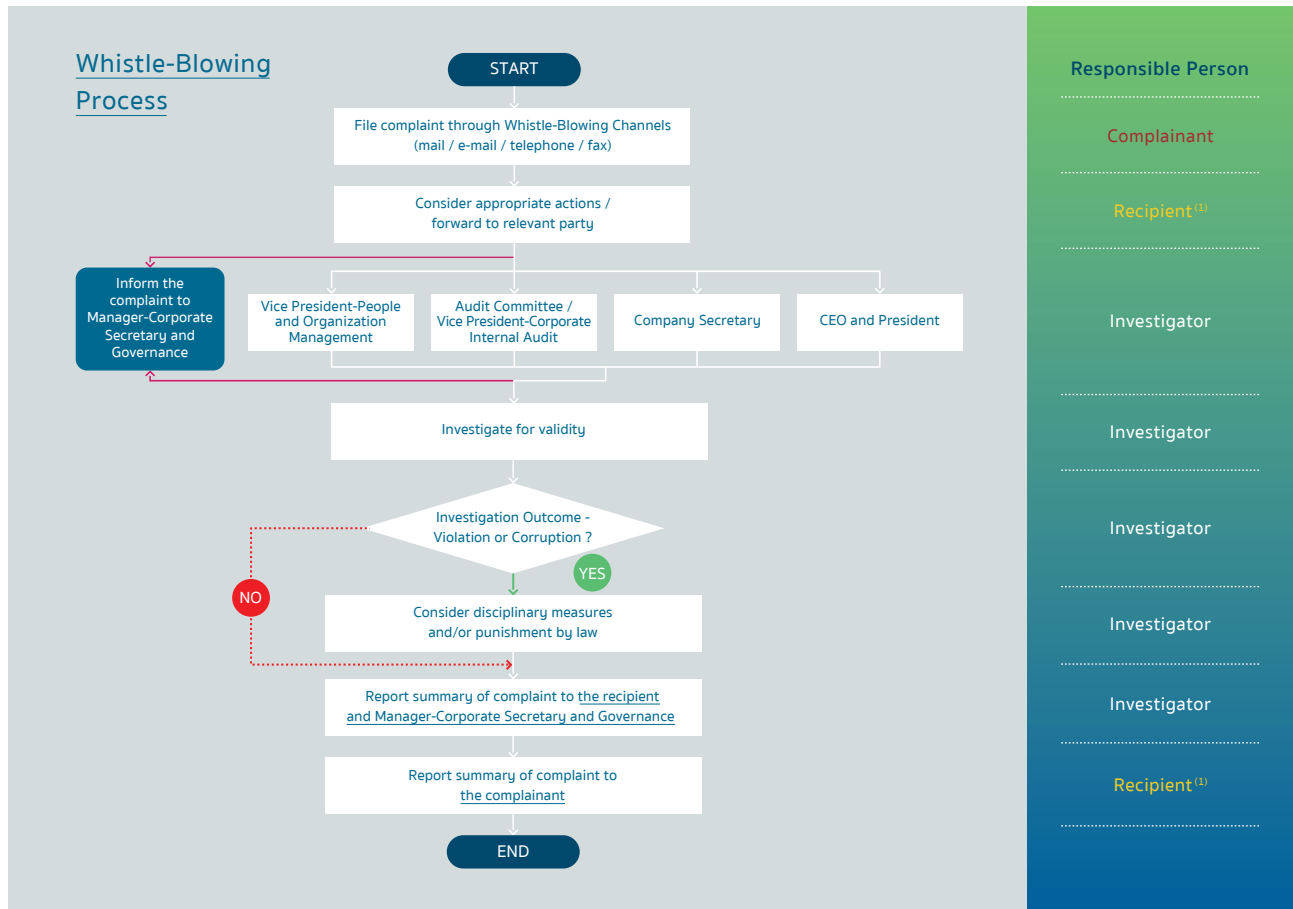


+66(0) -2797-2900, +66(0) -2797-2999,

+66(0) -2299-0000 ext. 73320, 73325



+66(0) -2797-2973



Remark : <sup>(1)</sup> Chairman of the Board, Chairman of the Corporate Governance Committee, Chairman of the Audit Committee, Chief Executive Officer and President, Company Secretary

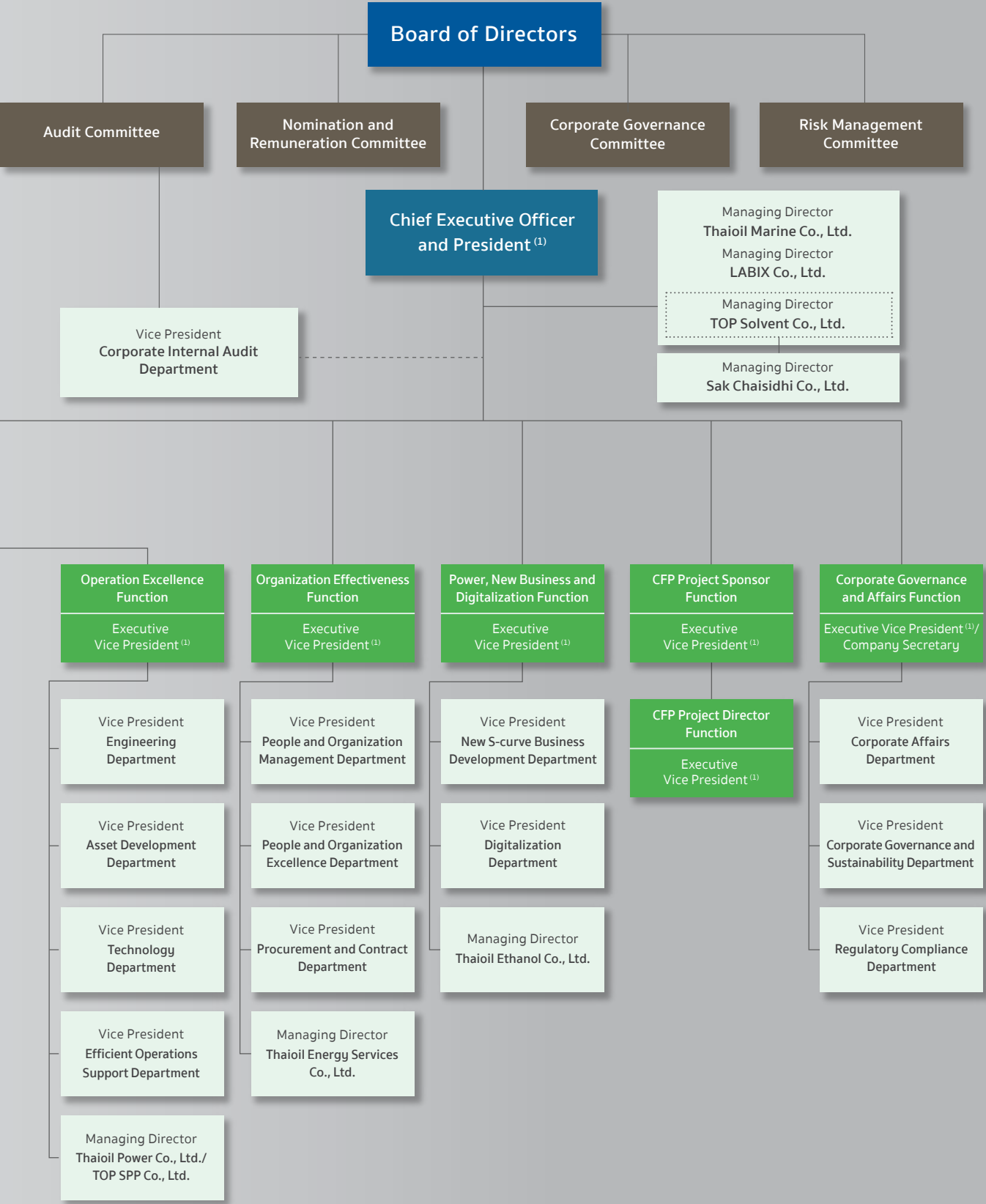
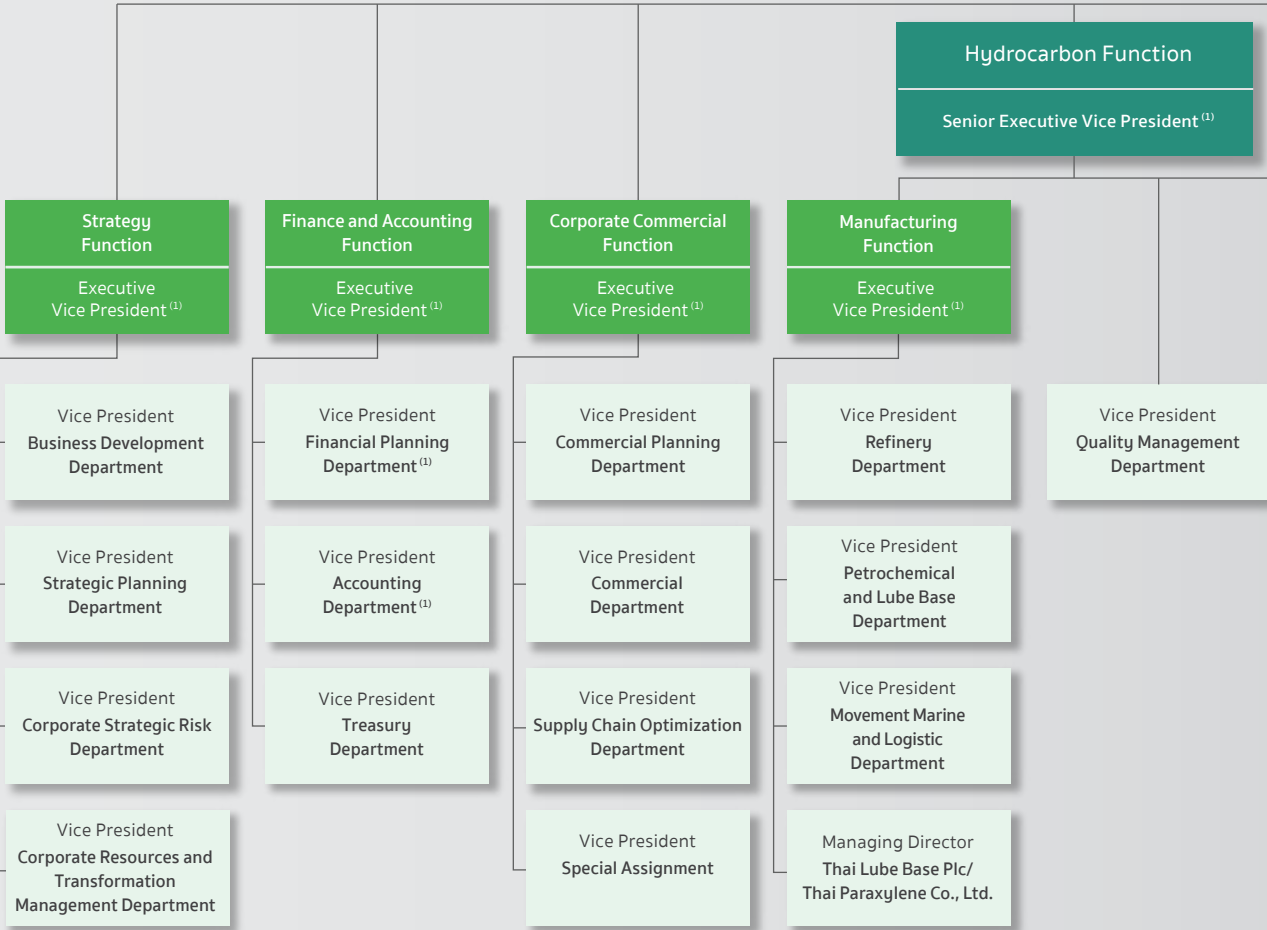
## Complainants, Whistle-Blowers, and Relevant Parties' Protection

Complainants or whistle-blowers of legal violation or non-compliance are to be suitably and fairly protected by Thaioil, which implies no change in job titles, job nature, workplaces, job relief, threats, harassment, dismissal, or any unfair acts. Thaioil will keep their complaints information confidential and not disclose them to unrelated parties, except when required by the law.

In 2020, Thaioil received four complaints from the whistle-blowing channel; and appointed the investigation committee to fully investigate the facts, and found that two cases were qualified as compliants. After thorough investigations, it was found that none of the complaints were misconducts and corruption cases. Thaioil has notified the complainants about the outcome, yet taken observations and suggestions from the investigation committee into consideration to improve working processes for greater efficiency.

# ORGANIZATION STRUCTURE

As of February 1, 2021



Remark <sup>(1)</sup> The position is considered managerial executives as defined by SEC announcement.



## BOARD OF DIRECTORS

**PROFESSOR DR. SUPOT TEACHAVORASINSKUN**  
Independent Director (Non-Executive)  
and Chairman of the Board  
Age 55 Yrs.



### Director Term Duration

- >> Independent Director (Non-Executive) (Appointed on November 25, 2020 and effective from December 1, 2020: 1 month)
- >> Independent Director (Non-Executive) and Chairman of the Board (Elected on December 22, 2020)

### Board-Committee Term Duration

- None -

### Education

- >> Bachelor of Engineering (Civil Engineering), Chulalongkorn University
- >> Master of Engineering (Civil Engineering), University of Tokyo
- >> Doctor of Engineering (Civil Engineering), University of Tokyo

### Director Training Courses of Thai Institute of Directors Association (IOD)

- >> Director Certification Program (DCP 269/2019)
- >> Financial Statements for Director (FSD 32/2019)

### Other Trainings

- >> The Executive Program in Energy Literacy for a Sustainable Future, Class 10, Thailand Energy Academy
- >> Special Lecture by Dr. Prinya Hom-Anek, Special Consultant to National Cyber Security Committee: "Cybersecurity in the Boardroom"

### Working Experience in the 5 Preceding Years

- |                     |  |
|---------------------|--|
| 2014 - June 2016    | Head of Civil Engineering Department,<br>Faculty of Engineering, Chulalongkorn University<br>Head of Center of Excellence in Earthquake Engineering<br>and Vibration, Department of Civil Engineering,<br>Faculty of Engineering, Chulalongkorn University |
| July 2016 - Present | Dean, Faculty of Engineering, Chulalongkorn University   |

### Current Positions

#### 1. Listed Company (1)

- >> Independent Director and Chairman of the Board, Thai Oil Plc

#### 2. Public Company

- None -

#### 3. Limited Company

- None -

#### 4. Other Organizations/Institutions (1)

- >> Dean, Faculty of Engineering, Chulalongkorn University

#### 5. State Enterprise

- None -

% of Shareholding in Thaioil

- None -

Conflict of Interest

- None -

Family Relation with Other Directors

- None -

Dispute in the 10 Preceding Years

- None -



## POLICE GENERAL AEK ANGSAANANT

Independent Director (Non-Executive),  
Chairman of the Audit Committee  
and Chairman of the Corporate Governance Committee  
Age 64 Yrs.



### Director Term Duration

- >> Independent Director (Non-Executive) (Elected on April 7, 2017: 3 years 2 months)
- >> Independent Director (Non-Executive) (Re-elected on June 10, 2020: 6 months)

### Board-Committee Term Duration

- >> Member of the Corporate Governance Committee (Appointed on May 26, 2017 and completed the term in the 2020 Annual General Meeting of Shareholders: 3 years 1 month)
- >> Chairman of the Corporate Governance Committee (Elected on June 21, 2017 and completed the term in the 2020 Annual General Meeting of Shareholders: 3 years)
- >> Member of the Corporate Governance Committee (Appointed on June 23, 2020: 6 months)
- >> Member of the Audit Committee (Appointed on June 23, 2020: 6 months)
- >> Chairman of the Corporate Governance Committee (Elected on September 10, 2020: 3 months)
- >> Chairman of the Audit Committee (Elected on September 18, 2020: 3 months)

### Education

- >> Bachelor of Law (1<sup>st</sup> Class Honor), Ramkhamhaeng University
- >> Master of Law, Chulalongkorn University
- >> Barrister-at-Law, The Institute of Legal Education, Thai Bar Association
- >> Certificate of Senior Police Command, Police College Bramshill, United Kingdom

### Director Training Courses of Thai Institute of Directors Association (IOD)

- >> Director Certification Program (DCP 111/2008)
- >> Board Matters and Trends (BMT 4/2017)
- >> Role of the Chairman Program (RCP 42/2018)
- >> Ethical Leadership Program (ELP 16/2019)
- >> Corporate Governance for Capital Market Intermediaries (CGI 22/2019)

### Other Trainings

- >> The Joint State-Private Sector Course, Class 4414, National Defence College
- >> Capital Market Academy Leader Program, Class 7, Capital Market Academy
- >> The Program for Senior Executives on Justice Administration, Batch 8, Judicial Training Institute, National Justice Academy
- >> Advanced Administration Program, Class 34, Institute of Administration Development
- >> Advanced Certificate Course in Politics and Governance in Democratic Systems for Executives, Class 7, King Prajadhipok's Institute
- >> Public Director Certification Program, Public Director Institute (PDI), Class 3, King Prajadhipok's Institute
- >> Training Course on Good Governance for Directors and Executives of State-Owned Enterprises and Public Organization, Class 3, King Prajadhipok's Institute
- >> The Executive Program in Energy Literacy for a Sustainable Future, Class 1, Thailand Energy Academy
- >> Training Course on Administrative Justice for Executives, Class 3, Office of the Administration Courts of Thailand
- >> Top Executive Program in Commerce and Trade (TEPCoT), Class 3, Commerce Academy, University of the Thai Chamber of Commerce
- >> Detective, Class 50, Investigation School, The Royal Thai Police

- >> Police Senior Command Course, Class 14, The Royal Thai Police
- >> Advanced Political and Electoral Development Program (APED), Class 2, Office of The Election Commission of Thailand
- >> Metropolis Development Program, Class 1, Institute of Metropolitan Development
- >> The Public Legal Executive Training Program, Class 1, Office of the Council of State
- >> The Rule of Law for Democracy, Class 1, College of the Constitutional Court
- >> Executive Program Good Governance for Sustainable Development, Class 1, Office of the Public Sector Development Commission
- >> ASEAN Executive Management Programme (AseanEx), Class 2, Office of the Civil Service Commission, The Secretariat of the Prime Minister, Office of The National Economic and Social Development Board, Ministry of Foreign Affairs and Sasin Graduate Institute of Business Administration of Chulalongkorn University
- >> Business Revolution and Innovation Network (BRAIN), Class 1, The Federation of Thai Industries
- >> Thailand Insurance Leadership Program, Class 7, Office of Insurance Admission
- >> 2018 PTIT Special Lecture: "The Dawn of a New Energy Era & The Transition to High Noon"
- >> Independent Director Forum 1/2019: "Tips and Tricks for Dealing with Questions in AGM"
- >> Thailand's 10<sup>th</sup> National Conference on Collective Action against Corruption "Innovation in the Fight against Corruption"
- >> Special Lecture by Dr. Prinya Hom-Anek, Special Consultant to National Cyber Security Committee: "Cybersecurity in the Boardroom"

### Working Experience in the 5 Preceding Years

- 2010 - 2015 Deputy Commissioner General, The Royal Thai Police
- 2015 - 2016 Permanent Secretary, Office of the Permanent Secretary, The Prime Minister's Office

### Current Positions

#### 1. Listed Company (3)

- >> Independent Director, Chairman of the Audit Committee and Chairman of the Corporate Governance Committee, Thai Oil Plc
- >> Independent Director and Member of the Audit Committee, Royal Orchid Hotel (Thailand) Plc
- >> Independent Director and Chairman of the Board, Nex Point Plc

#### 2. Public Company (2)

- >> Independent Director and Chairman of the Board, Big C Supercenter Plc
- >> Director and Chairman of Nomination and Remuneration Committee, Glow Energy Plc

#### 3. Limited Company

- None -

#### 4. Other Organizations/Institutions (3)

- >> Member of Committee of Property Management Office, Thai Red Cross Society
- >> Member of Ramkhamhaeng University Council
- >> Member of King Mongkut's Institute of Technology Ladkrabang Council

#### 5. State Enterprise

- None -

% of Shareholding in Thaioil

- None -

Conflict of Interest

- None -

Family Relation with Other Directors

- None -

Dispute in the 10 Preceding Years

- None -

**ASSOCIATE PROFESSOR DR. PASU DECHARIN**

Independent Director (Non-Executive),  
Member of the Audit Committee  
and Member of the Nomination and Remuneration Committee  
Age 52 Yrs.

**Director Term Duration**

>> Independent Director (Non-Executive) (Elected on April 11, 2018:  
2 years 8 months)

**Board-Committee Term Duration**

>> Member of the Audit Committee (Appointed on April 27, 2018: 2 years 8 months)  
>> Member of the Nomination and Remuneration Committee  
(Appointed on August 30, 2019 and effective from September 20, 2019:  
1 year 3 months)

**Education**

>> Bachelor of Business Administration (Management),  
Faculty of Commerce and Accountancy, Chulalongkorn University  
>> Master of Business Administration (General Management),  
University of Colorado (Boulder), USA  
>> Ph. D. in Management of Technology,  
School of Management, Asian Institute of Technology

**Director Training Courses of Thai Institute of Directors Association (IOD)**

>> Director Accreditation Program (DAP 121/2015)  
>> Director Certification Program (DCP 280/2019)  
>> Director Leadership Certification Program (DLCP 0/2020)

**Other Trainings**

>> Executive Development Program (EDP), Class 3,  
Thai Listed Companies Association (TLCA)  
>> Leadership Development Program (LDP), Class 6,  
Thai Listed Companies Association (TLCA)  
>> Audit Committee Forum: "Strategic Audit Committee:  
Beyond Figure and Compliance"  
>> Special Lecture by Dr. Prinya Hom-Anek, Special Consultant to  
National Cyber Security Committee: "Cybersecurity in the Boardroom"

**Working Experience in the 5 Preceding Years**

2011 - Mar 2019 Dean, Faculty of Commerce and Accountancy,  
Chulalongkorn University  
1993 - Present Lecturer, Faculty of Commerce and Accountancy,  
Chulalongkorn University

**Current Positions****1. Listed Company (3)**

>> Independent Director, Member of the Audit Committee  
and Member of the Nomination and Remuneration Committee, Thai Oil Plc  
>> Independent Director, Member of the Audit Committee  
and Member of the Risk Oversight Committee, Siam Commercial Bank Plc  
>> Independent Director, Member of the Audit Committee  
and Member of the Governance and Nomination Committee,  
Siam Cement Plc

**2. Public Company (1)**

>> Independent Director, Aksorn Education Plc

**3. Limited Company (1)**

>> Independent Director and Chairman of the Board, Warrix Sports Co., Ltd.

**4. Other Organizations/Institutions**

- None -

**5. State Enterprise**

- None -

% of Shareholding in Thaioil

- None -

Conflict of Interest

- None -

Family Relation with Other Directors

- None -

Dispute in the 10 Preceding Years

- None -

**MR. PRAPHAISITH TANKEYURA**  
Independent Director (Non-Executive)  
and Member of the Audit Committee  
Age 66 Yrs.



#### Director Term Duration

- >> Independent Director (Non-Executive) (Appointed on August 30, 2019 and effective from September 1, 2019: 9 months)
- >> Independent Director (Non-Executive) (Re-elected on June 10, 2020: 6 months)

#### Board-Committee Term Duration

- >> Member of the Audit Committee (Appointed on August 30, 2019, effective from September 20, 2019 and completed the term in the 2020 Annual General Meeting of Shareholders: 9 months)
- >> Member of the Audit Committee (Appointed on June 23, 2020: 6 months)

#### Education

- >> Bachelor of Statistics (Applied Statistics for Business), Faculty of Commerce and Accountancy, Chulalongkorn University
- >> Master of Business Administration (Finance), Florida State University, USA

#### Director Training Courses of Thai Institute of Directors Association (IOD)

- >> Director Certification Program (DCP 249/2017)
- >> Advanced Audit Committee Program (AACP 29/2018)
- >> Role of the Chairman Program (RCP 43/2018)
- >> Board Matters and Trends (BMT 7/2019)
- >> Board Nomination and Compensation Program (BNCP 7/2019)
- >> Successful Formulation & Execution of Strategy (SFE 33/2020)

#### Other Trainings

- >> Cyber Resilience Leadership, Class 3/6, Bank of Thailand
- >> Corporate Governance for Directors and Senior Executives of Regulator, State Enterprises and Public Organizations, Class 18, King Prajadhipok's Institute
- >> Special Lecture by Dr. Prinya Hom-Anek, Special Consultant to National Cyber Security Committee: "Cybersecurity in the Boardroom"

#### Working Experience in the 5 Preceding Years

- |                |  |
|----------------|--|
| 2012 - 2018    | Director and Chief Executive Officer, Maboonyong Real Estate Co., Ltd. |
| 2005 - Present | Managing Director, Boathouse Hua Hin Co., Ltd.                         |
| 2014 - Present | Chairman of Advisory Board, JWS Construction Co., Ltd.                 |

#### Current Positions

##### 1. Listed Company (3)

- >> Independent Director and Member of the Audit Committee, Thai Oil Plc
- >> Independent Director, Chairman of the Audit Committee, Corporate Governance and Corporate Social Responsibilities, and Member of Nomination and Remuneration Committee, Krungthai Card Plc
- >> Independent Director and Chairman of the Audit Committee, Meta Corporation Plc

##### 2. Public Company

- None -

##### 3. Limited Company (1)

- >> Governor Performance Evaluation Subcommittee, Islamic Bank Asset Management Co., Ltd.

##### 4. Other Organizations/Institutions

- None -

##### 5. State Enterprise

- None -

% of Shareholding in Thailoil

- None -

Conflict of Interest

- None -

Family Relation with Other Directors

- None -

Dispute in the 10 Preceding Years

- None -

**MR. PLAKORN WANGLEE**  
Independent Director (Non-Executive)  
and Member of the Audit Committee  
Age 54 Yrs.



#### Director Term Duration

>> Independent Director (Non-Executive) (Appointed on October 22, 2020 and effective from November 1, 2020: 2 months)

#### Board-Committee Term Duration

>> Member of the Audit Committee (Appointed on October 22, 2020 and effective from November 1, 2020: 2 months)

#### Education

>> Bachelor of Accounting, Chulalongkorn University  
>> Master of Business Administration (Finance), University of San Francisco, USA

#### Director Training Courses of Thai Institute of Directors Association (IOD)

>> Director Certification Program (DCP 229/2016)

#### Other Trainings

>> National Defence Course, Class 62, National Defence College  
>> The Executive Program in Energy Literacy for a Sustainable Future, Class 8, Thailand Energy Academy  
>> Training Course on Good Governance for Directors and Executives of State-Owned Enterprises and Public Organization, Class 14, King Prajadhipok's Institute  
>> Capital Market Academy Leader Program, Class 10, Capital Market Academy  
>> Special Lecture by Dr. Prinya Hom-Anek, Special Consultant to National Cyber Security Committee: "Cybersecurity in the Boardroom"

#### Working Experience in the 5 Preceding Years

2012 - 2016 Senior Executive Vice President, Corporate and Institutional Clients, Standard Chartered Bank (Thai) Plc  
2016 - Present President and Chief Executive Officer, Standard Chartered Bank (Thai) Plc, Thailand and Representative Offices

#### Current Positions

##### 1. Listed Company (2)

>> Independent Director and Member of the Audit Committee, Thai Oil Plc  
>> Independent Director, Member of the Audit Committee, and Member of the Nomination and Remuneration Committee, U City Plc

##### 2. Public Company (1)

>> President and Chief Executive Officer, Standard Chartered Bank (Thai) Plc, Thailand and Representative Offices

##### 3. Limited Company (1)

>> Independent Director, Thanathip Co., Ltd.

##### 4. Other Organizations/Institutions

- None -

##### 5. State Enterprise

- None -

% of Shareholding in Thaioil

- None -

Conflict of Interest

- None -

Family Relation with Other Directors

- None -

Dispute in the 10 Preceding Years

- None -



## AIR CHIEF MARSHAL SUTTIPONG INSEYONG

Independent Director (Non-Executive)  
and Chairman of the Nomination and Remuneration Committee  
Age 63 Yrs.



### Director Term Duration

- >> Independent Director (Non-Executive) (Appointed on January 22, 2016 and effective from February 1, 2016: 1 year 2 months)
- >> Independent Director (Non-Executive) (Re-elected on April 7, 2017: 3 years 2 months)
- >> Independent Director (Non-Executive) (Re-elected on June 10, 2020: 6 months)

### Board-Committee Term Duration

- >> Member of the Corporate Governance Committee (Appointed on April 27, 2016 and completed the term in the 2017 Annual General Meeting of Shareholders: 1 year)
- >> Chairman of the Corporate Governance Committee (Elected on November 21, 2016 and completed the term in the 2017 Annual General Meeting of Shareholders: 5 months)
- >> Member of the Nomination and Remuneration Committee (Appointed on April 28, 2017 and completed the term in the 2020 Annual General Meeting of Shareholders: 3 years 2 months)
- >> Chairman of the Nomination and Remuneration Committee (Elected on May 17, 2017 and completed the term in the 2020 Annual General Meeting of Shareholders: 3 years 1 months)
- >> Member of the Nomination and Remuneration Committee (Appointed on June 10, 2020: 6 months)
- >> Chairman of the Nomination and Remuneration Committee (Elected on June 16, 2020: 6 months)

### Education

- >> Bachelor of Science in Aeronautical Engineering, The Royal Thai Air Force Academy
- >> Bachelor of Political Science Program in International Relations and Comparative Government and Politics, Sukhothai Thammathirat Open University

### Director Training Courses of Thai Institute of Directors Association (IOD)

- >> Director Accreditation Program (DAP 114/2015)
- >> Financial Statements for Directors (FSD 37/2018)
- >> Advanced Audit Committee Program (AACP 31/2018)
- >> Director Certification Program (DCP 267/2018)
- >> IT Governance and Cyber Resilience Program (ITG 14/2020)

### Other Trainings

- >> Pilot Training Course, Flying Training School, The Royal Thai Air Force
- >> Flight Safety Course, The Royal Thai Air Force
- >> Air Command and Staff College Course, The Royal Thai Air Force
- >> Air War Course, The Royal Thai Air Force
- >> National Defence Course, Class 52, National Defence College
- >> The Executive Program in Energy Literacy for a Sustainable Future, Class 13, Thailand Energy Academy
- >> Advanced Master of Management (AMM), Class 3, Graduate School of Public Administration, National Institute of Development Administration
- >> Independent Director Forum 1/2019: "Tips and Tricks for Dealing with Questions in AGM"
- >> Special Lecture by Dr. Prinya Hom-Anek, Special Consultant to National Cyber Security Committee: "Cybersecurity in the Boardroom"

### Working Experience in the 5 Preceding Years

- |                     |  |
|---------------------|--|
| Oct 2015 - Sep 2016 | Commander of Directorate of Air Operations Control, The Royal Thai Air Force |
| Oct 2016 - Sep 2017 | Assistant Commander-in-Chief, The Royal Thai Air Force                       |
| Oct 2017 - Sep 2018 | Deputy Chief of Defence Forces, The Royal Thai Armed Forces                  |

### Current Positions

#### 1. Listed Company (1)

- >> Independent Director and Chairman of the Nomination and Remuneration Committee, Thai Oil Plc

#### 2. Public Company

- None -

#### 3. Limited Company

- None -

#### 4. Other Organizations/Institutions (1)

- >> Military Supreme Court

#### 5. State Enterprise

- None -

% of Shareholding in Thailoil

- None -

Conflict of Interest

- None -

Family Relation with Other Directors

- None -

Dispute in the 10 Preceding Years

- None -

**MS. CHULARAT SUTEETHORN**  
 Director (Non-Executive)  
 and Chairman of the Risk Management Committee  
 Age 66 Yrs.



#### Director Term Duration

- >> Independent Director (Non-Executive) (Appointed on September 20, 2013: 1 year 7 months)
- >> Independent Director (Non-Executive) (Re-elected on April 3, 2015: 3 years)
- >> Independent Director (Non-Executive) (Re-elected on April 11, 2018: 1 year 5 months)
- >> Director (Non-Executive) (September 20, 2019: 1 year 3 months)

#### Board-Committee Term Duration

- >> Member of the Audit Committee (Appointed on September 20, 2013 and completed the term in the 2015 Annual General Meeting of Shareholders: 1 year 7 months)
- >> Member of the Audit Committee (Appointed on April 24, 2015 and completed the term in the 2018 Annual General Meeting of Shareholders: 3 years)
- >> Chairman of the Audit Committee (Elected on February 12, 2016 and completed the term in the 2018 Annual General Meeting of Shareholders: 2 years 2 months)
- >> Member of the Nomination and Remuneration Committee (Appointed on April 27, 2016 and completed the term in the 2018 Annual General Meeting of Shareholders: 2 years)
- >> Member of the Nomination and Remuneration Committee (Appointed on April 11, 2018 and vacated on September 20, 2019: 1 year 5 months)
- >> Member of the Audit Committee (Appointed on April 27, 2018 and vacated on September 20, 2019: 1 year 5 months)
- >> Chairman of the Audit Committee (Elected on May 10, 2018 and vacated on September 20, 2019: 1 year 4 months)
- >> Member of the Risk Management Committee (Appointed on August 30, 2019 and effective from September 20, 2019: 1 year 3 months)
- >> Chairman of the Risk Management Committee (Appointed on August 13, 2020: 4 months)

#### Education

- >> Bachelor of Economics (Banking and Finance) (2<sup>nd</sup> Class Honors), Kasetsart University
- >> Master of Development Studies (Economic Policy and Planning), Institute of Social Studies, The Netherlands

#### Director Training Courses of Thai Institute of Directors Association (IOD)

- >> Director Accreditation Program (DAP 40/2005)
- >> Director Certification Program (DCP 72/2006)
- >> Finance for Non-Finance Directors (FND 28/2006)
- >> Financial Statements for Directors (FSD 10/2010)
- >> Audit Committee Program (ACP 39/2012)
- >> Role of the Chairman Program (RCP 28/2012)
- >> Financial Institutions Governance Program (FGP 4/2012)
- >> Role of the Nomination and Governance Committee (RNG 3/2012)
- >> Anti-Corruption for Executive Program (ACEP 10/2014)
- >> Advanced Audit Committee Program (AACP 15/2014)
- >> Director Certification Program Update (DCPU 4/2015)
- >> Role of the Compensation Committee (RCC 20/2015)
- >> Ethical Leadership Program (ELP 7/2017)
- >> Board Nomination and Compensation Program (BNCP 1/2017)
- >> Board Matters and Trends (BMT 6/2018)
- >> Boards that Make a Difference (BMD 10/2020)
- >> Risk Management Program for Corporate Leaders (RCL 21/2020)
- >> IT Governance and Cyber Resilience Program (ITG 14/2020)

#### Other Trainings

- >> Civil Service Executive Program: Visionary and Moral Leadership, Class 41, Office of the Civil Service Commission
- >> Training in Development Assistance, Canada
- >> Training course on Administrative Court and its Procedures Matter, The Administrative Court
- >> Strategic Thinking and Executive Action, Kellogg Executive Program, Northwestern University, USA
- >> The Joint State-Private Sector Course, Class 19, National Defence College
- >> Advanced Security Management Program, Class 1, National Defence College
- >> Capital Market Academy Leader Program, Class 12, Capital Market Academy
- >> Top Executive Program in Commerce and Trade (TEPCoT), Class 5, Commerce Academy, University of the Thai Chamber of Commerce
- >> The Executive Program in Energy Literacy for a Sustainable Future, Class 3, Thailand Energy Academy
- >> Thammasat Leadership Program, Class 4, Thammasat University
- >> Advanced Certificate Course in Politics and Governance in Democratic Systems for Executives, Class 18, King Prajadhipok's Institute
- >> Training Course on Good Governance for Directors and Executives of State-Owned Enterprises and Public Organization, Class 11, King Prajadhipok's Institute
- >> Audit Committee Seminar-Get Ready for the Year End
- >> Seminar "PTT Group AC Forum 2017: Infinite AC Challenge"
- >> Lecture "Resource Revolution: Another Chapter in the 4<sup>th</sup> Industrial Revolution"

- >> Seminar: "Key Audit Matters"
- >> Seminar: EY Center for Board Matters Seminar in topic  
"Top Priorities in Digitalization: The Next Move"
- >> 2018 PTIT Special Lecture: "The Dawn of a New Energy Era &  
The Transition to High Noon"
- >> Independent Director Forum 1/2019: "Tips and Tricks for Dealing with  
Questions in AGM"
- >> IOD National Director Conference 2019: "Board of the Future"
- >> Thailand Insurance Leadership Program, Class 9,  
Office of Insurance Commission
- >> 2020 PTIT Special Lecture:  
"Thailand's Destiny: Water Crisis and Development Philosophy"
- >> Special Lecture by Dr. Prinya Hom-Anek, Special Consultant to  
National Cyber Security Committee: "Cybersecurity in the Boardroom"

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#### Working Experience in the 5 Preceding Years

- 2010 - 2014 Director and Chairman of the Investment Committee,  
Deposit Protection Agency
- 2011 - 2014 Executive Director, Thailand Tobacco Monopoly
- 2012 - 2014 Director, Chairman of the Risk Management Committee,  
and Member of the Corporate Governance,  
the Government Savings Bank  
Director-General, Public Debt Management Office,  
Ministry of Finance
- 2014 - 2015 Vice Minister for Finance, Ministry of Finance

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#### Current Positions

##### 1. Listed Company (3)

- >> Director and Chairman of the Risk Management Committee, Thai Oil Plc
- >> Director, MFC Asset Management Plc
- >> Director, Country Group Holdings Plc

##### 2. Public Company - None -

##### 3. Limited Company (1)

- >> Independent Director and Member of the Audit Committee,  
D.T.C. Enterprise Co., Ltd.

##### 4. Other Organizations/ Institutions (1)

- >> Chairman of the Board, Neighbouring Countries Economic Development  
Cooperation Agency (Public Organization)

##### 5. State Enterprise - None -

% of Shareholding in Thaioil 10,000 shares  
equivalent to 0.00049%

Conflict of Interest - None -

Family Relation with Other Directors - None -

Dispute in the 10 Preceding Years - None -

**DR. BURANIN RATTANASOMBAT**

Director (Non-Executive)

and Member of the Nomination and Remuneration Committee

Age 53 Yrs.

**Director Term Duration**

&gt;&gt; Director (Non-Executive) (Appointed on September 18, 2020: 3 months)

**Board-Committee Term Duration**>> Member of the Nomination and Remuneration Committee  
(Appointed on September 18, 2020: 3 months)**Education**>> Bachelor of Science, Prince of Songkhla University  
>> Master of Business Administration, Chulalongkorn University  
>> Ph.D. (Management), Silpakorn University**Director Training Courses of Thai Institute of Directors Association (IOD)**>> Company Secretary Program (CSP 40/2011)  
>> Director Certification Program (DCP 174/2013)**Other Trainings**

>> Capital Market Academy Leader Program, Class 30, Capital Market Academy

>> Public and Private Chief Innovation Leadership, National Innovation Agency (Public Organization)

>> Advanced Security Management Program, Class 10, The Association of National Defence College of Thailand Under The Royal Patronage of His Majesty The King

>> PTT Leadership Development Program (IMD Business School) 2018

>> Senior Executive Education Program, School of Management, MIT

>> Leadership Succession Program (LSP), Class 8, Institute of Research and Development for Public Enterprises (IRDPE)

>> CMA-Greater Mekong Subregion (CMA-GMS) 2016, Capital Market Academy

>> Foreign Affairs Executives Programme, Class 7, Devawongse Varopakarn Institute of Foreign Affairs, Ministry of Foreign Affairs

>> PTT Leadership Development Program, Harvard Business School, Harvard University, USA

>> Advanced Certificate Course in Public Administration and Law for Executives, Class 12, King Prajadhipok's Institute

>> Executive Development Program (EDP), Thai Listed Companies Association

>> Special Lecture by Dr. Prinya Hom-Anek, Special Consultant to National Cyber Security Committee: "Cybersecurity in the Boardroom"

**Working Experience in the 5 Preceding Years**

2015 - 2018 Executive Vice President, Lubricant Business, PTT Plc

2018 - 2019 Senior Executive Vice President, Lubricant Business, PTT Oil and Retail Business Co., Ltd.

2019 - May, 2020 Senior Executive Vice President, Corporate Strategy, Innovation and Sustainability, & Chief Transformation Officer, PTT Oil and Retail Business Co., Ltd.

June 2020 - Present Senior Executive Vice President, Downstream Business Group Alignment, PTT Plc

**Current Positions****1. Listed Company (2)**

>> Independent Director and Member of the Nomination and Remuneration Committee, Thai Oil Plc

>> Senior Executive Vice President, Downstream Business Group Alignment, PTT Plc

**2. Public Company**

- None -

**3. Limited Company (2)**

>> Director and Chairman of the Board, Thai Petroleum Pipeline Co., Ltd.

>> Director and Chairman of the Board, Innobic (Asia) Co., Ltd.

**4. Other Organizations/Institutions (3)**

>> President Representative in IMT-GT Joint Business Council (Indonesia-Malaysia-Thailand Growth Triangle), The Federation of Thai Industries

>> Vice President, Industry Promotion Division, The Federation of Thai Industries

>> Director, Asia Logistics & Supply Chain Council, The Federation of Thai Industries

**5. State Enterprise**

- None -

% of Shareholding in Thai oil

- None -

Conflict of Interest

- None -

Family Relation with Other Directors

- None -

Dispute in the 10 Preceding Years

- None -



## GENERAL KUKIAT SRINAKA

Independent Director (Non-Executive)  
and Member of the Corporate Governance Committee  
Age 60 Yrs.



### Director Term Duration

- >> Independent Director (Non-Executive) (Appointed on November 23, 2018 and effective from January 1, 2019: 4 months)
- >> Independent Director (Non-Executive) (Re-elected on April 10, 2019: 1 year 8 months)

### Board-Committee Term Duration

- >> Member of the Audit Committee (Appointed on July 19, 2019 and vacated on September 20, 2019: 2 months)
- >> Member of the Corporate Governance Committee (Appointed on August 30, 2019 and effective from September 20, 2019: 1 year 3 months)

### Education

- >> Bachelor of Science, Chulachomklao Royal Military Academy
- >> Master of Public Administration, Burapha University

### Director Training Courses of Thai Institute of Directors Association (IOD)

- >> Director Certification Program (DCP 275/2019)

### Other Trainings

- >> National Defence Course, Class 57, National Defence College
- >> Joint Staff College, Class 48
- >> The Executive Program in Energy Literacy for a Sustainable Future, Class 15, Thailand Energy Academy
- >> 2020 PTIT Special Lecture:  
"Thailand's Destiny: Water Crisis and Development Philosophy"
- >> Special Lecture by Dr. Prinya Hom-Anek, Special Consultant to National Cyber Security Committee: "Cybersecurity in the Boardroom"

### Working Experience in the 5 Preceding Years

- |                     |   |
|---------------------|---|
| 2016                | Commanding General of 1 <sup>st</sup> Corps                 |
| 2017                | Commanding General of 1 <sup>st</sup> Army Area             |
| 2018 - Sep 2019     | Assistant Commander-in-Chief, The Royal Thai Army           |
| Oct 2019 - Sep 2020 | Deputy Permanent Secretary for Defence, Ministry of Defence |

### Current Positions

#### 1. Listed Company (1)

- >> Independent Director and Member of the Corporate Governance Committee, Thai Oil Plc

#### 2. Public Company

- None -

#### 3. Limited Company

- None -

#### 4. Other Organizations/Institutions

- None -

#### 5. State Enterprise

- None -

% of Shareholding in Thailoil

- None -

Conflict of Interest

- None -

Family Relation with Other Directors

- None -

Dispute in the 10 Preceding Years

- None -

**MR. YONGYUT JANTARAROTAI**

Director (Non-Executive)

and Member of the Corporate Governance Committee

(Resigned from Directorship: February 1, 2021)

Age 61 Yrs.

**Director Term Duration**

- >> Director (Non-Executive) (Elected on April 2, 2014: 3 years)
- >> Director (Non-Executive) (Re-elected on April 7, 2017: 3 years 2 months)
- >> Director (Non-Executive) (Re-elected on June 10, 2020: 6 months)

**Board-Committee Term Duration**

- >> Member of the Corporate Governance Committee  
(Appointed on April 25, 2014 and completed the term in the 2017 Annual General Meeting of Shareholders: 3 years)
- >> Member of the Corporate Governance Committee  
(Appointed on May 26, 2017 and completed the term in the 2020 Annual General Meeting of Shareholders: 3 years 1 month)
- >> Member of the Corporate Governance Committee  
(Appointed on June 23, 2020: 6 months)

**Education**

- >> Bachelor of Engineering (Civil Engineering), Kasetsart University

**Director Training Courses of Thai Institute of Directors Association (IOD)**

- >> Corporate Governance for Executives Program (CGE 5/2015)
- >> Financial Statements for Directors (FSD 31/2016)
- >> Director Certification Program (DCP 237/2017)
- >> Board Matters and Trends (BMT 5/2018)
- >> Ethical Leadership Program (ELP 16/2019)

**Other Trainings**

- >> Civil Service Executive Program: Visionary and Moral Leadership, Class 59, Office of the Civil Service Commission
- >> The Joint State-Private Sector Course, Class 22, National Defence College
- >> Training Course on Government Fiscal Management for Executives, Class 1, Comptroller General's Department
- >> Training Course on Administrative Justice for Executives, Class 6, Office of the Administrative Courts of Thailand
- >> Academic Seminar: "Money Laundering in Daily Life that We Must Have"
- >> The Executive Program in Energy Literacy for a Sustainable Future, Class 10, Thailand Energy Academy
- >> Special Lecture by Dr. Prinya Hom-Anek, Special Consultant to National Cyber Security Committee: "Cybersecurity in the Boardroom"

**Working Experience in the 5 Preceding Years**

Oct 26, 2015 - Sep 15, 2017	Inspector General, Ministry of Energy
Oct 16, 2017 - Oct 11, 2018	Deputy Permanent Secretary, Ministry of Energy
Oct 12, 2018 - Sep 2020	Director General, Department of Alternative Energy Development and Efficiency, Ministry of Energy

**Current Positions**

1. Listed Company	- None -
2. Public Company	- None -
3. Limited Company	- None -
4. Other Organizations/Institutions	- None -
5. State Enterprise	- None -
% of Shareholding in Thaioil (as of resignation date)	- None -
Conflict of Interest	- None -
Family Relation with Other Directors	- None -
Dispute in the 10 Preceding Years	- None -

**MS. PHANNALIN MAHAWONGTIKUL**  
 Director (Non-Executive)  
 and Member of the Risk Management Committee  
 Age 56 Yrs.



#### Director Term Duration

- >> Director (Non-Executive) (Appointed on September 28, 2018 and effective from October 1, 2018: 2 years 9 months)
- >> Director (Non-Executive) (Re-elected on June 10, 2020: 6 months)

#### Board-Committee Term Duration

- >> Member of the Risk Management Committee  
 (Appointed on September 28, 2018 and effective from October 1, 2018: 2 years 9 months)
- >> Member of the Risk Management Committee  
 (Appointed on June 23, 2020: 6 months)

#### Education

- >> Bachelor of Science in Accounting, Thammasat University
- >> Master of Business Administration, Thammasat University

#### Director Training Courses of Thai Institute of Directors Association (IOD)

- >> Corporate Governance: Regulation and Disclosure (CG PTTEP/2017)  
 (PTTEP In-house Course)
- >> Director Certification Program (DCP 279/2019)
- >> Strategic Board Master Class (SBM 9/2020)

#### Other Trainings

- >> Leadership Succession Program (LSP), Class 6,  
 Institute of Research and Development for Public Enterprises
- >> CMA-Greater Mekong Subregion (CMA-GMS), Class 1,  
 Capital Market Academy
- >> PTT-HBS Leadership Development Program (HBS) II,  
 Harvard Business School, USA
- >> NIDA-Wharton Executive Leadership Program (ELP),  
 The Wharton School, University of Pennsylvania, USA
- >> Executive Program for Senior Management (EX-PSM), Class 3,  
 Fiscal Policy Research Institute Foundation
- >> Executive Development Program (EDP), Class 2,  
 Thai Listed Companies Association
- >> Leadership Development Program (LDP) III,  
 PTT Leadership and Learning Institute (PLLI)
- >> IOD National Director Conference 2019: "Board of the Future"
- >> Capital Market Academy Leader Program, Class 24,  
 Capital Market Academy
- >> The Executive Program in Energy Literacy for a Sustainable Future, Class 15,  
 Thailand Energy Academy
- >> Special Lecture by Dr. Prinya Hom-Anek, Special Consultant to  
 National Cyber Security Committee: "Cybersecurity in the Boardroom"

#### Working Experience in the 5 Preceding Years

- |                     |   |
|---------------------|---|
| Jan 2016 - Sep 2018 | Executive Vice President, PTT Plc secondment to PTT Exploration and Production Plc as Senior Executive Vice President, Finance and Accounting Group |
| Oct 2018 - Apr 2019 | Chief Financial Officer (Act.), PTT Plc   |
| Apr 2019 - Present  | Chief Financial Officer, PTT Plc  |

#### Current Positions

##### 1. Listed Company (2)

- >> Director and Member of the Risk Management Committee, Thai Oil Plc
- >> Chief Financial Officer, PTT Plc

##### 2. Public Company

- None -

##### 3. Limited Company

- None -

##### 4. Other Organizations/Institutions

- None -

##### 5. State Enterprise

- None -

% of Shareholding in Thailoil

- None -

Conflict of Interest

- None -

Family Relation with Other Directors

- None -

Dispute in the 10 Preceding Years

- None -

**MR. PRAPHON WONGTHARUA**

Director (Non-Executive)

Age 60 Yrs.

**Director Term Duration**

&gt;&gt; Director (Non-Executive) (Appointed on February 15, 2019: 1 year 10 months)

**Board-Committee Term Duration**

- None -

**Education**

- >> Bachelor of Engineering (Mechanical Engineering), King Mongkut's University of Technology North Bangkok
- >> Master of Engineering (Mechanical Engineering), Chulalongkorn University

**Director Training Courses of Thai Institute of Directors Association (IOD)**

- >> Director Certification Program (DCP 218/2016)
- >> Financial Statements for Directors (FSD 31/2016)
- >> Boards that Make a Difference (BMD 4/2017)
- >> Risk Management Program for Corporate Leaders (RCL 13/2018)
- >> IT Governance and Cyber Resilience Program (ITG 8/2018)
- >> Advanced Audit Committee Program (AACP 32/2019)
- >> Successful Formulation & Execution of Strategy (SFE 31/2019)
- >> Ethical Leadership Program (ELP 19/2020)
- >> Strategic Board Master Class (SBM 9/2020)

**Other Trainings**

- >> Systematic Problem Solving and Decision Making (SPSDM), Office of the Civil Service Commission in cooperation with ACI Consultants Co., Ltd.
- >> Joint Staff College, Class 45
- >> Civil Service Executive Program: Visionary and Moral Leadership, Class 55, Office of the Civil Service Commission
- >> National Defence Course, Class 56, National Defence College
- >> Inspector General Training Program 2015
- >> The Executive Program in Energy Literacy for a Sustainable Future, Class 8, Thailand Energy Academy
- >> Capital Market Academy Leader Program, Class 27, Capital Market Academy
- >> The Leadership Grid
- >> 2019 PTIT Special Lecture: "Revisiting the Resource Revolution Arsenal & Defining Thailand's Destiny"
- >> Top Executive Program in Commerce and Trade (TEPCoT), Class 12, Commerce Academy, University of the Thai Chamber of Commerce
- >> Special Lecture by Dr. Prinya Hom-Anek, Special Consultant to National Cyber Security Committee: "Cybersecurity in the Boardroom"

**Working Experience in the 5 Preceding Years**

- |                     |   |
|---------------------|---|
| Aug 2015 - Oct 2016 | Deputy Permanent Secretary, Ministry of Energy  |
| Oct 2016 - Oct 2018 | Director General, The Department of Alternative Energy Development and Efficiency, Ministry of Energy |
| Oct 2018 - Present  | Inspector General, Ministry of Energy   |

**Current Positions****1. Listed Company (1)**

- >> Director, Thai Oil Plc

**2. Public Company**

- None -

**3. Limited Company**

- None -

**4. Other Organizations/Institutions**

- None -

**5. State Enterprise**

- None -

% of Shareholding in Thailoil

- None -

Conflict of Interest

- None -

Family Relation with Other Directors

- None -

Dispute in the 10 Preceding Years

- None -



**MR. TERDKIAT PROMMOOL**  
 Director (Non-Executive)  
 Age 55 Yrs.



#### Director Term Duration

>> Director (Non-Executive) (Appointed on September 18, 2020  
 and effective from October 1, 2020: 3 months)

#### Board-Committee Term Duration

- None -

#### Education

>> Bachelor of Engineering (Chemical Engineering), Chulalongkorn University  
 >> Master of Engineering (Industrial & Manufacturing Systems Engineering),  
 The University of Missouri-Columbia, USA

#### Director Training Courses of Thai Institute of Directors Association (IOD)

>> Director Certification Program (DCP 223/2016)

#### Other Trainings

>> Leadership Succession Program (LSP), Class 10/2019,  
 Institute of Research and Development for Public Enterprises  
 >> Special Lecture by Dr. Prinya Hom-Anek, Special Consultant to  
 National Cyber Security Committee: "Cybersecurity in the Boardroom"

#### Working Experience in the 5 Preceding Years

2015 - 2018	Executive Vice President, Planning and Risk Control, PTT Plc
2018 - Sep 2020	Managing Director, PTT Digital Solutions Co., Ltd.
Oct 2020 - Present	Senior Executive Vice President, Organization Management and Sustainability, PTT Plc

#### Current Positions

##### 1. Listed Company (2)

>> Director, Thai Oil Plc  
 >> Senior Executive Vice President, Organization Management and Sustainability,  
 PTT Plc

##### 2. Public Company

- None -

##### 3. Limited Company

- None -

##### 4. Other Organizations/Institutions

- None -

##### 5. State Enterprise

- None -

% of Shareholding in Thaioil

- None -

Conflict of Interest

- None -

Family Relation with Other Directors

- None -

Dispute in the 10 Preceding Years

- None -

**MS. DUANGPORN THIENGWATANATHAM**  
 Director (Non-Executive)  
 Age 59 Yrs.



#### Director Term Duration

- >> Director (Non-Executive) (Appointed on September 28, 2018 and effective from October 1, 2018: 7 months)
- >> Director (Non-Executive) (Re-elected on April 10, 2019: 1 year 8 months)

#### Board-Committee Term Duration

- None -

#### Education

- >> Bachelor of Engineering (Chemical Engineering), Chulalongkorn University
- >> Master of Chemical Engineering, The University of British Columbia, Canada
- >> Master of Business Management, Sasin Graduate Institute of Business Administration of Chulalongkorn University

#### Director Training Courses of Thai Institute of Directors Association (IOD)

- >> Director Certification Program (DCP 135/2010)
- >> Financial Statements for Directors (FSD 8/2010)
- >> The Board's Role in Mergers and Acquisitions (M&A 2/2012)
- >> Board Matters and Trends (BMT 8/2019)
- >> Director Development Program (DDP 1/2019) (PTT In-house Course)

#### Other Trainings

- >> PTT Executive Leadership Program, General Electric, New York, USA
- >> Enterprise Risk Management Framework, PricewaterhouseCoopers
- >> Strategic Marketing Management, Stanford Graduate School of Business, USA
- >> 2018 PTIT Special Lecture: "Clean Energy and Smart Transportation: Global Trend for Sustainable World"
- >> 2019 PTIT Special Lecture: "Revisiting the Resource Revolution Arsenal & Defining Thailand's Destiny"
- >> 2020 PTIT Special Lecture: "Thailand's Destiny: Water Crisis and Development Philosophy"
- >> Special Lecture by Dr. Prinya Hom-Anek, Special Consultant to National Cyber Security Committee: "Cybersecurity in the Boardroom"

#### Working Experience in the 5 Preceding Years

Jan - Sep 2016	Executive Vice President, Downstream Business Group Planning, PTT Plc
Oct 2016 - Mar 2017	Executive Vice President, Downstream Business Group Collaboration, PTT Plc
Apr - Dec 2017	Executive Vice President, PTT Research and Technology Institute, PTT Plc
Jan - Sep 2018	Executive Vice President, Innovation Institute, PTT Plc
Oct 2018 - Apr 2019	Senior Executive Vice President (Act.), Downstream Business Group Alignment, PTT Plc
Apr - Oct 2019	Senior Executive Vice President, Downstream Business Group Alignment, PTT Plc
Nov 2019 - Present	Senior Executive Vice President, Corporate Governance and Regulatory Affairs, PTT Plc

#### Current Positions

##### 1. Listed Company (2)

- >> Director, Thai Oil Plc
- >> Senior Executive Vice President, Corporate Governance and Regulatory Affairs, PTT Plc

##### 2. Public Company

- None -

##### 3. Limited Company (1)

- >> Director and Chairman of the Board, Sarnpalung Social Enterprise Co., Ltd.

##### 4. Other Organizations/Institutions (1)

- >> Executive Director, Vidyasirimedhi Institute of Science and Technology

##### 5. State Enterprise

- None -

% of Shareholding in Thailoil 600 shares equivalent to 0.00003%

Conflict of Interest - None -

Family Relation with Other Directors - None -

Dispute in the 10 Preceding Years - None -

**MR. WIRAT UANARUMIT**

Director (Executive), Member of the Risk Management Committee,  
Chief Executive Officer and President  
and the Secretary to the Board of Directors  
Age 58 Yrs.



**Director Term Duration**

>> Director (Executive) (Appointed on June 21, 2019  
and effective from September 1, 2019: 1 year 4 months)

**Board-Committee Term Duration**

>> Member of the Risk Management Committee  
(Appointed on June 21, 2019 and effective from September 1, 2019:  
1 year 4 months)

**Education**

>> Bachelor of Engineering (Electrical Engineering), Chulalongkorn University  
>> Master of Business Administration (Financial Management),  
Pennsylvania State University, USA

**Director Training Courses of Thai Institute of Directors Association (IOD)**

>> Director Certification Program (DCP 8/2001)  
>> Audit Committee Program (ACP 38/2012)  
>> Director Certification Program Update (DCPU 5/2015)  
>> Ethical Leadership Program (ELP 7/2017)

**Other Trainings**

>> The Joint State-Private Sector Course, Class 2556, National Defence College  
>> Advanced Security Management Program, Class 2,  
The National Defence College Association of Thailand  
Under the Royal Patronage of His Majesty The King  
>> Advanced Certificate Course in Politics and Governance in Democratic  
Systems for Executives, Class 20, King Prajadhipok's Institute  
>> The Programme for Senior Executives on Justice Administration, Batch 16,  
Judicial Training Institute, National Justice Academy  
>> Capital Market Academy Leader Program, Class 4, Capital Market Academy  
>> The Executive Program in Energy Literacy for a Sustainable Future, Class 13,  
Thailand Energy Academy  
>> Executive Management with Business Development and Investment, Class 2,  
Institute of Business and Industrial Development  
>> Rule of Law for Democracy, Class 6, College of the Constitutional Court  
>> Executive Development Program (EDP), Class 1,  
Thai Listed Companies Association  
>> Advanced Management Program, INSEAD Business School,  
INSEAD Executive Education, France  
>> Advanced Management Program, Class 184, Harvard Business School,  
Harvard University, USA  
>> GE Global Customer Summit Crotonville  
>> Thailand CG Forum: "Governance as a Driving Force for Business Sustainability",  
The Stock Exchange of Thailand  
>> Special Lecture by Dr. Prinya Hom-Anek, Special Consultant to  
National Cyber Security Committee: "Cybersecurity in the Boardroom"

**Working Experience in the 5 Preceding Years**

May 2014 - Sep 2016	Chief Financial Officer, PTT Plc
Oct 2016 - Aug 2019	Chief Operating Officer, Upstream Petroleum and Gas Business Group, PTT Plc
Sep 2019 - Present	Chief Executive Officer and President, Thai Oil Plc

**Current Positions**

**1. Listed Company (3)**

>> Director, Member of the Risk Management Committee,  
Chief Executive Officer and President,  
and the Secretary to the Board of Directors, Thai Oil Plc  
>> Director and Member of the Risk Management Committee,  
Global Power Synergy Plc  
>> Chief Operating Officer, PTT Plc

**2. Public Company**

- None -

**3. Limited Company (3)**

>> Director and Chairman of the Board, Thai Paraxylene Co., Ltd.  
>> Director and Chairman of the Board, LABIX Co., Ltd.  
>> Director and Chairman of the Board, Thailoil Power Co., Ltd.

**4. Other Organizations/Institutions (13)**

>> Director, The Federation of Thai Industries  
>> Vice President-Economic and academic work,  
The Federation of Thai Industries  
>> Advisory Committee, Promoting and Supporting Office of Industries,  
The Federation of Thai Industries  
>> Director, The Joint Standing Committee on Commerce, Industry and Banking  
>> Director, National Economic Reform Steering Committee  
>> Director, Power for Sustainable Future Foundation  
>> Member of Council, Vidyasirimedhi Institute of Science and Technology  
>> Executive Director, Thailand Swimming Association  
>> Member of Trustee (as Company Representative),  
Petroleum Institute of Thailand  
>> Council of Trustee, Thailand Business Council of Sustainable Development  
>> Executive Director, Thailand Energy Academy  
>> Advisor to the President, Association of Capital Market Academy  
>> Director and Member of Audit Committee, Thailand Management Association

**5. State Enterprise**

- None -

% of Shareholding in Thailoil

- None -

Conflict of Interest

- None -

Family Relation with Other Directors

- None -

Dispute in the 10 Preceding Years

- None -

**MR. AUTTAPOL RERKPIBOON**

Director (Non-Executive),  
Chairman of the Risk Management Committee  
and Member of the Nomination and Remuneration Committee  
(Resigned from Directorship: August 1, 2020)  
Age 55 Yrs.

**Director Term Duration**

- >> Director (Non-Executive) (Elected on April 11, 2018: 1 year)
- >> Director (Non-Executive) (Re-elected on April 10, 2019: 1 year 4 months)

**Board-Committee Term Duration**

- >> Member of the Nomination and Remuneration Committee  
(Appointed on September 28, 2018, effective from October 1, 2018  
and completed the term in the 2019 Annual General Meeting of Shareholders:  
6 months)
- >> Member of the Risk Management Committee (Appointed on September 28,  
2018, effective from October 1, 2018 and completed the term in  
the 2019 Annual General Meeting of Shareholders: 6 months)
- >> Chairman of the Risk Management Committee (Elected on October 11, 2018  
and completed the term in the 2019 Annual General Meeting of Shareholders:  
6 months)
- >> Member of the Nomination and Remuneration Committee  
(Appointed on May 31, 2019: 1 year 1 month)
- >> Member of the Risk Management Committee  
(Appointed on May 31, 2019: 1 year 1 month)
- >> Chairman of the Risk Management Committee  
(Elected on June 11, 2019: 1 year 2 months)

**Education**

- >> Bachelor of Engineering (Civil Engineering), Chulalongkorn University
- >> Master of Economics Program, National Institute of Development Administration
- >> Diploma of Petroleum Management, College of Petroleum Studies,  
Oxford University, United Kingdom (British Council Scholarship)

**Director Training Courses of Thai Institute of Directors Association (IOD)**

- >> Company Secretary Program (CSP 14/2005)
- >> Director Certification Program (DCP 173/2013)

**Other Trainings**

- >> Executive Development Program (EDP), Class 1,  
Thai Listed Companies Association
- >> National Defence Course, Class 58, National Defence College  
Advanced Certificate Course in Politics and Governance in Democratic  
Systems for Executives, Class 14, King Prajadhipok's Institute
- >> Capital Market Academy Leader Program, Class 20, Capital Market Academy
- >> The Executive Program in Energy Literacy for a Sustainable Future, Class 12,  
Thailand Energy Academy
- >> TIJ Executive Program on Rule of Law and Development (RoLD), Class 2
- >> NIDA-Wharton Executive Leadership Program 2009,  
The Wharton School, University of Pennsylvania, USA
- >> PTT Executive Leadership Program, General Electric, New York, USA

**Working Experience in the 5 Preceding Years**

- |                        |  |
|------------------------|--|
| Oct 2015 - Sep 2017    | Senior Executive Vice President, Oil Business Unit,<br>PTT Plc           |
| Oct 2017 - 12 May 2020 | Chief Operating Officer,<br>Downstream Petroleum Business Group, PTT Plc |
| 13 May 2020 - Present  | President and Chief Executive Officer, PTT Plc                           |

**Current Positions****1. Listed Company (2)**

- >> Director, President and Chief Executive Officer,  
and the Secretary to the Board of Directors, PTT Plc
- >> Director, PTT Exploration and Production Plc

**2. Public Company (1)**

- >> Director and Chairman of the Board, PTT Oil and Retail Business Plc

**3. Limited Company**

- None -

**4. Other Organizations/Institutions (1)**

- >> Member of Payment Systems Committee, Bank of Thailand

**5. State Enterprise**

- None -

% of Shareholding in Thai oil

- None -

(as of resignation date)

Conflict of Interest

- None -

Family Relation with Other Directors

- None -

Dispute in the 10 Preceding Years

- None -



**MR. KANIT SI**

Independent Director (Non-Executive)  
and Chairman of the Audit Committee  
(Resigned from Directorship: September 15, 2020)  
Age 70 Yrs.

**Director Term Duration**

- >> Independent Director (Non-Executive) (Appointed on January 26, 2018, and effective from February 1, 2018: 1 year 2 months)
- >> Independent Director (Non-Executive) (Re-elected on April 10, 2019: 1 year 5 months)

**Board-Committee Term Duration**

- >> Member of the Corporate Governance Committee  
(Appointed on April 27, 2018 and completed the term in the 2019 Annual General Meeting of Shareholders: 1 year)
- >> Member of the Corporate Governance Committee  
(Appointed on May 31, 2019 and vacated on September 20, 2019: 3 months)
- >> Member of the Audit Committee (Appointed on August 30, 2019 and effective from September 20, 2019: 1 year)
- >> Chairman of the Audit Committee (Elected on September 20, 2019: 1 year)

**Education**

- >> Bachelor of Engineering (Gold Medal), Chulalongkorn University
- >> Master of Business Administration (Finance and Quantitative Method), University of New Orleans, USA

**Director Training Courses of Thai Institute of Directors Association (IOD)**

- >> Director Certification Program (DCP 28/2003)
- >> Finance for Non-Finance Directors (FND 5/2003)
- >> Ethical Leadership Program (ELP 16/2019)
- >> Advanced Audit Committee Program (AACP 36/2019)

**Other Trainings**

- >> Capital Market Academy Leader Program, Class 9, Capital Market Academy
- >> The Executive Program in Energy Literacy for a Sustainable Future, Class 12, Thailand Energy Academy
- >> Global Leadership Development Program (GLDP), International Centre of Leader in Finance (ICLIF) 2004
- >> 2018 PTIT Special Lecture: "The Dawn of a New Energy Era & The Transition to High Noon"
- >> Audit Committee Forum: "Strategic Audit Committee: Beyond Figure and Compliance"

**Working Experience in the 5 Preceding Years**

1995 - Present Senior Executive Vice President, Bangkok Bank Plc

**Current Positions****1. Listed Company (2)**

- >> Senior Executive Vice President, Bangkok Bank Plc
- >> Independent Director, Member of the Nomination, Compensation and Corporate Governance Committee and Member of the Sustainability and the Risk Management Committee, Indorama Ventures Plc

**2. Public Company (2)**

- >> Director, Indorama Polyester Industries Plc
- >> Director, TPT Petrochemicals Plc

**3. Limited Company (1)**

- >> Director, HMC Polymers Co., Ltd.

**4. Other Organizations/Institutions**

- None -

**5. State Enterprise**

- None -

% of Shareholding in Thailoil (By Spouse)  
(as of resignation date)

20,000 shares  
(equivalent to 0.00098%)

Conflict of Interest

- None -

Family Relation with Other Directors

- None -

Dispute in the 10 Preceding Years

- None -

**MR. PREECHA POCATANAWAT**

Director (Non-Executive)

(Resigned from Directorship: October 1, 2020)

Age 60 Yrs.

**Director Term Duration**

&gt;&gt; Director (Non-Executive) (Appointed on April 10, 2019: 1 year 6 months)

**Board-Committee Term Duration**

- None -

**Education**

>> Bachelor of Laws and Bachelor of Business Administration,  
Ramkhamhaeng University

>> Barrister-at-Law, The Institute of Legal Education, Thai Bar Association

**Director Training Courses of Thai Institute of Directors Association (IOD)**

&gt;&gt; Director Certification Program (DCP 261/2018)

**Other Trainings**

>> Leadership Development Program II (LDP) 2014, China

>> Strategy and Innovation for Business in Asia Program (SIBA), Class 4/2015,  
College of Management, Mahidol University

>> Senior Executive Certificate in Anti-Corruption Strategic Management,  
Class 8/2017, Sanya Dharmasakti National Anti-Corruption Institute

>> Leadership Development Program III (LDP) 2018, Singapore

>> IRDP Leadership & Effective Corporate Culture Program 2018,  
Institute of Research & Development for Public Enterprises

>> Management Development Program 3 (MDP) Level 13 - 14  
Business Management

>> IOD National Director Conference 2019: "Board of the Future"

**Working Experience in the 5 Preceding Years**

2015 - Sep 2018	Executive Vice President, Corporate Human Resources, PTT Plc
Oct 2018 - Apr 2019	Senior Executive Vice President (Act.), Organization Management and Sustainability, PTT Plc
Apr 2019 - Sep 2020	Senior Executive Vice President, Organization Management and Sustainability, PTT Plc

**Current Positions**

1. Listed Company	- None -
2. Public Company	- None -
3. Limited Company	- None -
4. Other Organizations/Institutions	- None -
5. State Enterprise	- None -
% of Shareholding in Thai oil (as of resignation date)	- None -
Conflict of Interest	- None -
Family Relation with Other Directors	- None -
Dispute in the 10 Preceding Years	- None -

**PROFESSOR DR. THOSAPORN SIRISUMPHAND**  
 Director (Non-Executive)  
 and Chairman of the Board  
 (Resigned from Directorship: December 1, 2020)  
 Age 60 Yrs.



#### Director Term Duration

- >> Independent Director (Non-Executive) (Appointed on May 25, 2012: 2 years 11 months)
- >> Independent Director (Non-Executive) (Re-elected on April 3, 2015: 3 years)
- >> Chairman of the Board and Independent Director (Non-Executive) (Elected on April 7, 2017: 1 year and Re-elected on April 11, 2018: 4 months)
- >> Chairman of the Board and Director (Non-Executive) (Since August 23, 2018: 2 year 3 months)

#### Board-Committee Term Duration

- >> Member of the Corporate Governance Committee (Appointed on June 22, 2012 and completed the term in the 2015 Annual General Meeting of Shareholders: 2 years 10 months)
- >> Chairman of the Corporate Governance Committee (Elected on August 31, 2013 and completed the term in the 2015 Annual General Meeting of Shareholders: 1 year 8 months)
- >> Member of the Nomination and Remuneration Committee (Appointed on September 26, 2014 and completed the term in the 2015 Annual General Meeting of Shareholders: 7 months)
- >> Member of the Nomination and Remuneration Committee (Appointed on April 24, 2015: 2 years)
- >> Member of the Corporate Governance Committee (Appointed on April 24, 2015: 2 years)
- >> Chairman of the Corporate Governance Committee (Elected on July 22, 2015 and resigned from the Position of Chairman of the Corporate Governance Committee on August 19, 2016: 1 year 1 month)
- >> Chairman of the Nomination and Remuneration Committee (Elected on April 19, 2016: 1 year)
- >> Board-Committee Directorship (Member of the Corporate Governance Committee and Chairman of the Nomination and Remuneration Committee ends since being elected as the Chairman of the Board (April 7, 2017))

#### Education

- >> Bachelor of Public Administration (Honors), Chulalongkorn University
- >> Master of Public Administration, Pi Alpha Alpha (National Honor Society for Public Affairs and Administration), Northern Illinois University, USA
- >> Ph.D. in Policy Analysis, Public Administration and Comparative Politics, Northern Illinois University, USA

#### Director Training Courses of Thai Institute of Directors Association (IOD)

- >> Director Certification Program (DCP 80/2006)
- >> Finance for Non-Finance Directors (FND 30/2006)
- >> Director Certification Program Update (DCPU 4/2015)

#### Other Trainings

- >> Capital Market Academy Leader Program, Class 10, Capital Market Academy
- >> The Programme for Senior Executives on Justice Administration, Batch 15, Judicial Training Institute, National Justice Academy
- >> The Executive Program in Energy Literacy for a Sustainable Future, Class 4, Thailand Energy Academy
- >> Corporate Governance: Effectiveness and Accountability in the Boardroom 2014, Kellogg School of Management, Northwestern University, USA
- >> IOD Chairman Forum: "The Role of Chairman in Leading Strategic Risk Oversight"
- >> Global Anti-corruption and Integrity Forum 2018, OECD, Paris, France
- >> Seminar: "How to Transform Your Business to Become an Exponential Company in a Digital Era", Faculty of Commerce and Accountancy, Chulalongkorn University
- >> IOD Chairman Forum: "Leading Boardroom Through Disruption: What Directors Should Know?"

#### Working Experience in the 5 Preceding Years

- |                         |   |
|-------------------------|---|
| 2014 - Sep 2016         | Advisor, Prime Minister's Office  |
| Oct 2016 - Jun 28, 2018 | Secretary General, the Public Sector Development Commission             |
| Jun 29, 2018 - Sep 2020 | Secretary General, the National Economic and Social Development Council |

#### Current Positions

1. **Listed Company (1)**
  - >> Independent Director and Chairman of the Board, PTT Plc
2. **Public Company** - None -
3. **Limited Company** - None -
4. **Other Organizations/Institutions (5)**
  - >> Member of Council of State
  - >> Member of Chulalongkorn University Council
  - >> Director, the National Strategy Committee
  - >> Director, the Public Sector Development Commission
  - >> Director, the National Science and Technology Development Agency
5. **State Enterprise (1)**
  - >> Chairman of the Board, Tourism Authority of Thailand

- |  |          |
|--|----------|
| % of Shareholding in Thai oil (as of resignation date) | - None - |
| Conflict of Interest                                   | - None - |
| Family Relation with Other Directors                   | - None - |
| Dispute in the 10 Preceding Years                      | - None - |

## Management Structure

The management structure of Thai Oil Plc, comprised of:

- >> The Board of Directors (the Board)
- >> The Board appointed four Board-Committees to scrutinize and supervise the Company's operations; they are the Audit Committee, the Nomination and Remuneration Committee, the Corporate Governance Committee, and the Risk Management Committee
- >> Executives, in which the Chief Executive Officer (CEO) and President is the highest ranking official.

### The Board of Directors (as of December 31, 2020)

Thaioil's Board of Directors consisted of 15 Directors, with

- >> Fourteen Non-Executive Directors, seven of them are Independent Directors
- >> One Executive Director, namely the CEO and President

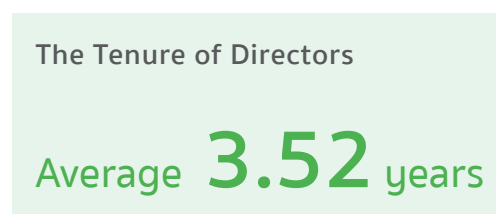
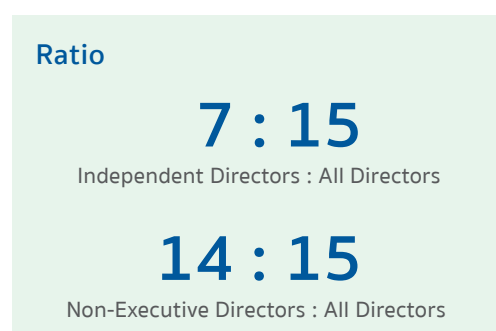
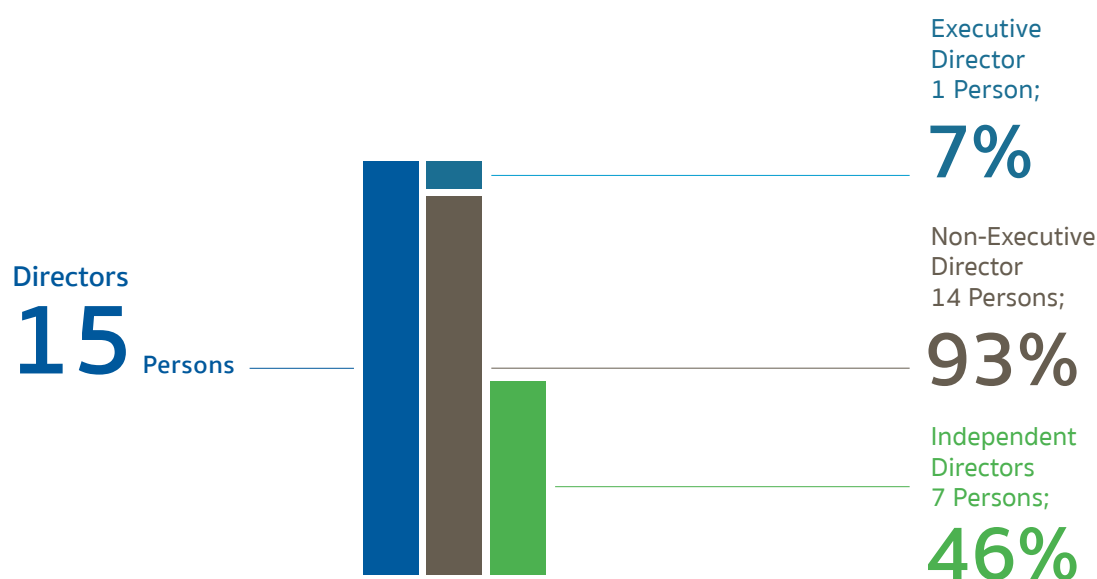
## Board Composition

Appointed by the Shareholders' votes at the Annual General Meeting of Shareholders (AGM), the Board must be qualified and must not have prohibited characteristics specified by the Public Company Limited Act. According to the Company's Articles of Association, the Board shall consist of at least five members and not more than 15 members, all of whom

must be capable and generally-accepted. Furthermore, Thaioil set a policy for the Board's diversity in genders, skill, professions, and specialization (Skill Matrix); namely energy, petroleum, petrochemical, engineering, financial accounting, security, information technology and digital, business management, organization management, corporate governance, innovation and environment. Furthermore, the Board should consist of at least three directors with knowledge in the Company's business, at least one director in the law, and at least one director in financial and accounting. Additionally, Independent Directors must also be fully qualified by Thaioil's Independent Directors' Qualification, which is in consistent and stricter than the requirement of the Capital Market Supervisory Board. The details can be found in this one report on page xxx. Moreover, the Board must consists of Independent Directors of at least one-third of all Directors and the number must be at least three. To date, the number of Thaioil's Independent Directors exceeded that required by law.

To assure that the Board devotes their time and effort to perform their duties for the highest benefit of the Company, the Board approved the amendment of the criteria of the number of directorship in listed companies, in which Thaioil's Directors can serve no more than three listed companies.





### Board Expertise



Remark: Information as of December 31, 2020

Shareholding Report of the Board of Directors in 2020  
(Inclusive of Spouse, Unmarried Partner, and Minor)  
Information as of December 31, 2020

No.	Name - Surname	No. of Share (shares)			Remark
		as of December 31, 2019	as of December 31, 2020	Addition/(Reduction) During the Year (shares)	
1	Prof. Dr. Supot Teachavorasinskun	N/A	-	N/A	New director, Effective on December 1, 2020. (Not holding any share of the Company)
2	Pol. Gen. Aek Angsanant	-None-	-None-	-No Change-	-
3	Assoc. Prof. Dr. Pasu Decharin	-None-	-None-	-No Change-	-
4	Mr. Praphaisith Tankeyura	-None-	-None-	-No Change-	-
5	Mr. Plakorn Wanglee	N/A	-None-	N/A	New director, Effective on November 1, 2020. (Not holding any share of the Company)
6	ACM Suttipong Inseeyong	-None-	-None-	-No Change-	-
7	Dr. Buranin Rattanasombat	N/A	-None-	N/A	New director, Effective on September 18, 2020. (Not holding any share of the Company)
8	Ms. Chularat Suteethorn	10,000	10,000	-No Change-	-
9	Mr. Yongyut Jantararotai	-None-	-None-	-No Change-	-
10	Gen. Kukiat Srinaka	-None-	-None-	-No Change-	-
11	Ms. Phannalin Mahawongtikul	-None-	-None-	-No Change-	-
12	Mr. Praphon Wongtharua	-None-	-None-	-No Change-	-
13	Mr. Terdkiat Prommool	N/A	-None-	N/A	New director, Effective on October 1, 2020. (Not holding any share of the Company)
14	Ms. Duangporn Thiengwatanatham	600	600	-No Change-	-
15	Mr. Wirat Uanarumit	-None-	-None-	-No Change-	-

Remark: N/A means no information since the director was appointed during the year 2020

### Directors who Resigned and Completed the Term during the Year 2020

No.	Name - Surname	No. of Share (shares)			Remark
		as of December 31, 2019	as of December 31, 2020	Addition/(Reduction) During the Year (shares)	
1	Mr. Auttapol Rerkpiboon	-None-	N/A	N/A	Resigned on August 1, 2020. (Not holding any share of the Company during his directorship in year 2020)
2	Mr. Kanit Si	-None-	N/A	N/A	Retire from the directorship, Effective on September 15, 2020. (Not holding any share of the Company during his directorship in year 2020)
	By Spouse, Unmarried Partner, and Minor	20,000	N/A	N/A	The spouse does not have any trading transaction of the Company share during the period of directorship in year 2020
3	Mr. Preecha Pocatanawat	-None-	N/A	N/A	Resigned on October 1, 2020. (Not holding any share of the Company during his directorship in year 2020)
4	Prof. Dr. Thosaporn Sirisumphand	-None-	N/A	N/A	Resigned on December 1, 2020. (Not holding any share of the Company during his directorship in year 2020)

**Remark:** N/A means no information since the director was resigned during the year 2020

### Authorized Directors

According to the Company's Articles of Association, 1. The CEO and President or 2. Two (2) authorized directors shall sign with affixation of the Company's seal to represent the Company. The Board has the right to prescribe and rectify the list of the Company's authorized directors.

Through the Board of Directors Meeting No. 8/2020 on Thursday, August 20, 2020, the Board has approved directors having authority to sign on behalf of the Company, namely Mr. Wirat Uanarumit, CEO and

President, signing with affixation of the Company's seal; or, Ms. Duangporn Thiengwatanatham, Ms. Phannalin Mahawongtikul, and Dr. Buranin Rattanasombat, any two of the three representative directors jointly sign together with the affixation of the Company's seal. This is effective as of August 20, 2020.

### Board of Directors Roles and Responsibility

Thaioil clearly separate roles and responsibilities of the **Board and the Executives**, in line with the Corporate Governance and Code of Conduct Manual. The Board has the roles and responsibilities as follows:

- 1) Define the business vision and be responsible for the Company's and executives' performance outcomes to give the business long-term continuity and provide for employees' development plans and executives' continuity;
- 2) Review and endorse significant strategies and policies with a focus on business objectives, financial targets, risks, work programs and budgets, and ensure that the executives efficiently and effectively follow policies and plans;
- 3) Review and endorse actions required by law, and serve as leaders/role models for performance, compliance with the law, and alignment with corporate governance guidelines;
- 4) Provide assurance of the accounting system, financial reporting, and audits by efficiently and effectively forging processes for suitable internal control and audit, and oversee financial reporting and monitoring progress;
- 5) Institute a corporate risk management policy by seeking quarterly risk management reports from the executives via the Audit Committee, and encouraging the Company to conduct risk management system assessment at least once a year, while paying due attention to warning signs and anomalies;
- 6) Oversee and resolve potential conflicts of interest and connected transactions, and set practical guidelines to prevent them with a focus on maintaining the best interests of the shareholders and stakeholders at large; institute transaction guidelines prohibiting stakeholders with vested interests from decision-making on such matters; and establish standard procedures and thorough information disclosure of all potential conflicts of interest;

- 7) Promote a written code of conduct for directors, executives, and employees to ensure full understanding of the Company's business standards, including earnest, periodic follow-ups of compliance;
- 8) Conduct the annual performance appraisal and decide compensation for the CEO and President.

#### **Chairman of the Board's Roles and Responsibilities**

Stated in the Corporate Governance and Code of Conduct Manual, roles and responsibilities of the Chairman of the Board (the Chairman) are as follows:

- 1) By oneself or assign a delegate, calls the meetings of the Board with meeting notices sent at least seven days prior to the meeting date so that the directors may have adequate time to study, review, and make proper decisions in each Board of Directors Meeting;
- 2) Jointly with the CEO and President, defines the agenda of each meeting;
- 3) Ensures the efficiency of each meeting by allocating enough time for the executives to present information, encouraging and allowing directors' queries and expression of free views, controlling the issues under discussion, and summarizing the meeting's resolutions;
- 4) Plays a key role in encouraging the Board's conformance to corporate governance principles, including identifying themselves, refraining from voting, and leaving the meeting in case of having conflicts of interest in any agenda;
- 5) Informs the Board all significant matters;
- 6) Encourages the Board to attend shareholders' meetings and presides over such meetings to ensure the meeting efficiency and address shareholders' queries;



- 7) Encourages the Board to perform their duties under the scope of authority given by laws, and the corporate governance.

### CEO and President's Roles and Responsibilities

Assigned by the Board, CEO and President is tasked to conduct the Company's business under roles and responsibilities as follows:

- 1) Prepares and proposes to the Board five-year and 10-year business plans, including the Company's strategic imperatives;
- 2) Prepares and provides to the Board information relevant to the Company business and activities, as well as other information needed;
- 3) Manages the Company business and activities under the approved plans and budgets, as well as business strategies;
- 4) Structures and manages the organization under guidelines given by the Board;
- 5) Fine-tunes the Company's POSITIVE culture in support of its vision, mission, and strategic imperatives;
- 6) Executes all other tasks assigned by the Board;
- 7) Delegates authority and/or assigns others to act on his or her behalf, or both, under the rules, terms, principles, and orders given by the Board or the Company, or both;
- 8) Prepares and presents the significant company business performance and activity reports as well as other reports required by the Board;
- 9) Represents the Company in external contacts.

### Board's Approval Authority

The Board is authorized to approve Thaioil's businesses under the scopes given by law and in accordance to Thaioil's Articles of Association and the Shareholders'

resolutions. An approval framework has been clearly defined for the Board and the executives on various matters, including human resources administration, finance, accounting, etc.

- >> Authority concerning the Company's business, for instance, approve the Company's vision, mission, corporate value, business strategy, financial goals, budget and plans. Thaioil required the Board to consider and review the Company's vision, mission, and business strategy at least once a year through Strategic Thinking Session (STS), which is held annually. Moreover, the executives must report work progress, in accordance with the strategic plan, to the Board on a quarterly basis, so that the Board are informed on the progress and review appropriateness of the projects, in line with ever-changing circumstances. In addition, the Board approved investment project worth THB 300 million or more, along with changes in capital structure and amendment of accounting policies.
- >> Authority concerning the Shareholders, for instance, consider and cast vote on dividend payment, financial statements and notes to the financial statements, provide opinion of the auditor, annual report, information in preparation for the Shareholders' meeting, call for the Shareholder's meeting, appointment of Company's auditors, approval of audit fees and issuance of ordinary shares.
- >> Authority concerning the Board and Senior Executives, for instance, consider and cast vote on appointment of Directors and members of the Board-Committees, approval of Board-Committees' Charter amendment, the appointment and performance evaluation for the CEO and President, as well as disclosing their related transactions, which must be consider and approved by the Board.

## Information on Board-Committees

The Board appointed Board-Committees to scrutinize and supervise the Company's operations, in accordance to assigned roles and responsibilities. The Board also defined qualifications, terms of office, roles and responsibilities, reporting, and evaluation of each of the Board-Committee's Charter. Additionally, the Board required each Board-Committees to report their progress on a regular basis. Thaioil Board-Committees' Charters are publicly disclosed in Thaioil's website.

### 1) The Audit Committee

Appointed by the Board, the Audit Committee consisted of fully qualified members against the SEC and SET's requirement of Securities and Exchange Commission of Thailand (SEC) and Stock Exchange of Thailand (SET) with a minimum of three Independent Directors and at least one of whom must be adequately qualified and experienced in reviewing the credibility of financial statements.

The Audit Committee, as of December 31, 2020, consisted of four Independent Directors as follows:

Name-Surname	Position
1. Pol. Gen. Aek Angsanant	Chairman of the Audit Committee (Independent)
2. Assoc. Prof. Dr. Pasu Decharin	Member of the Audit Committee (Independent)
3. Mr. Praphaisit Tankeyura <sup>(1)</sup>	Member of the Audit Committee (Independent)
4. Mr. Plakorn Wanglee <sup>(1)</sup>	Member of the Audit Committee (Independent), graduated in accounting major.

<sup>(1)</sup> Directors with qualified knowledge and experience in accounting and finance to review the reliability of financial statement

Ms. Prapin Thongnium, Vice President Corporate Internal Audit, the Chief of Thaioil's Internal Audit Section, serves as Secretary to the Audit Committee.

The Audit Committee reviews the efficiency and effectiveness of corporate governance, risk management, and internal control processes; reviews the Company's financial reporting process to ensure accuracy, credibility, and sufficient information and in compliance with the Thai Financial Accounting Standards; reviews the connected transactions or transactions that may lead to conflict of interest and information disclosure as required by law, rules, and regulations of SET; considers to select, nominate, re-elect, and terminate the Company's external auditors and to propose the auditors fee; reviews and provides opinions on internal audit plan and system to meet internationally accepted standard; considers the independence of the Corporate Internal Audit Department including the adequacy of the budget and workforce of this Department; and approves the appointment, rotation, and evaluates the annual performance of Vice President-Corporate Internal Audit Department.

In 2020, the Audit Committee performed its duties under the aforementioned roles as shown in the Audit Committee Report on page 14-16.

### 2) The Nomination and Remuneration Committee

Appointed by the Board, the Nomination and Remuneration Committee consisted of at least three Directors, most of whom must be Independent Directors and must not be the Company's executive. All of the members are fully qualified as Directors in accordance with the Nomination and Remuneration Committee Charter.

The Nomination and Remuneration Committee, as of December 31, 2020, consisted of three Directors as follows:

Name-Surname	Position
1. ACM Suttipong Inseepong	Chairman of Nomination and Remuneration Committee (Independent)
2. Assoc. Prof. Dr. Pasu Decharin	Member of the Nomination and Remuneration Committee (Independent)
3. Dr. Buranin Rattanasombat	Member of the Nomination and Remuneration Committee

Mr. Viroj Meenaphant, Executive Vice President Corporate Governance and Affairs and Company Secretary, serves as Secretary to the Nomination and Remuneration Committee

The roles and responsibilities of the Nomination and Remuneration Committee are as follows:

**Nomination Role** - Considers the Board's composition and qualifications of individual Director for the Board; selects qualified Directors to take position in the Board-Committees and table their names to the Board for consideration and approval in case of vacancy; considers the qualifications of the CEO and President to suit the Company's business management in order to achieve its objectives; develops and reviews the succession plan of CEO and President as continuous preparation plan for readiness and successor to ensure business continuity of management and operations.

**Remuneration Role** - Reviews and proposes remuneration form and criteria to suit the responsibilities of the Board by taking the Company's overall performance into consideration to motivate and retain Directors with competency, quality, and potentiality prior to table them to the AGM for shareholders' approval; and conducts the performance evaluation and considers an appropriate remuneration for the CEO and President before proposing to the Board for approval.

In 2020, the Nomination and Remuneration Committee performed its duties under the aforementioned roles as shown in the Nomination and Remuneration Committee Report on page 22-23.

### 3) The Corporate Governance Committee

Appointed by the Board, the Corporate Governance Committee consisted of at least three Non-Executive Directors, most of whom must be Independent Directors. All of the members are fully qualified as Directors in accordance with the Corporate Governance Committee Charter.

The Corporate Governance Committee, as of December 31, 2020, consisted of three Directors as follows:

Name-Surname	Position
1. Pol. Gen. Aek Angsanant	Chairman of the Corporate Governance Committee (Independent)
2. Gen. Kukiat Srinaka	Member of the Corporate Governance Committee (Independent)
3. Mr. Yongyut Jantararotai	Member of the Corporate Governance Committee

Mr. Viroj Meenaphant, Executive Vice President Corporate Governance and Affairs and Company Secretary, serves as Secretary to the Corporate Governance Committee

The Corporate Governance Committee defines corporate governance policies, practices, and related operations including sustainability management and corporate social responsibility aspects to conform to principles, standards, and requirements stipulated by the governing bodies and other recognized institutions domestically and internationally; supervises and monitors the Company's operations to ensure compliance with established policies and practices.

In 2020, the Corporate Governance Committee performed its duties under the aforementioned roles as shown in the Corporate Governance Committee Report on page 19-21.

#### 4) The Risk Management Committee

Appointed by the Board, the Risk Management Committee consisted of a minimum of three Directors, with the CEO and President serving a member. All of the members are fully qualified as Directors in accordance with the Risk Management Committee Charter.

The Risk Management Committee, as of December 31, 2020, consisted of three Directors as follows:

Name-Surname	Position
1. Ms. Chularat Suteethorn	Chairman of the Risk Management Committee
2. Ms. Phannalin Mahawongtikul	Member of the Risk Management Committee
3. Mr. Wirat Uanarumit	Member of the Risk Management Committee/ Chief Executive Officer and President

Mr. Pongpun Amornvivat, Executive Vice President Strategy serves as Secretary to the Risk Management Committee

The Risk Management Committee defines and reviews risk management framework, risk management policies and process; as well as suitably and effectively suggests guidelines to risk management relating to the Company's business to correspond with business strategies, business plans, and volatile circumstances; continuously promotes and develops risk management and tools in all levels across the organization to encourage risk management culture in organization; supervises, monitors, and reviews key risk management plans and report.

In 2020, the Risk Management Committee performed duties under the aforementioned roles as shown in the Risk Management Committee Report on page 17-18.



# EXECUTIVES

As of February 1, 2021 <sup>(1)</sup>



**Mr. Wirat Uanarumit**

Chief Executive Officer and President



**Mr. Bandhit Thamprajamchit** <sup>(2)</sup>

Senior Executive Vice President Hydrocarbon  
and Executive Vice President Manufacturing (Act.)



**Mr. Jeerawat Pattanasomsit** <sup>(2)</sup>

Executive Vice President Power, New Business  
and Digitalization and Vice President  
New S-Curve Business Development (Act.)



**Mr. Chatapong Wungtanagorn**

Executive Vice President Corporate Commercial  
and Vice President Commercial Planning (Act.)



**Mr. Charlee Balmongkol**

Executive Vice President CFP Project Director



**Mr. Pongpun Amornvivat** <sup>(2)</sup>

Executive Vice President Strategy



**Ms. Runnapa Janchookiat**

Executive Vice President Operation Excellence  
and Vice President Technology (Act.)



**Ms. Wanida Boonpiraks** <sup>(3)</sup>

Executive Vice President Finance and Accounting



**Mr. Viroj Meenaphant**

Executive Vice President Corporate Governance  
and Affairs, Vice President Corporate Affairs (Act.)  
and Company Secretary



**Mr. Viroj Wongsathirayakhun**

Executive Vice President  
Organization Effectiveness, Vice President  
People and Organization Management (Act.)  
and Managing Director,  
Thaioil Energy Services Co., Ltd.



**Mr. Surachai Saengsamran**

Executive Vice President CFP Project Sponsor



**Ms. Jariya Oonmeechai**

Vice President, Special Assignment (Act.)



**Mr. Jumpon Thapanapong <sup>(2)</sup>**

Vice President Corporate Resources &  
Transformation Management



**Mr. Chet Prongchit**

Vice President Movement Marine and Logistic



**Mr. Narongsak Chaviengpob**

Vice President Engineering



**Mr. Nattapong Tumsaroj**

Vice President Business Development



**Mr. Nuttapon Meerit <sup>(2)</sup>**

Vice President Refinery



**Ms. Duangporn Teerapabpaisit <sup>(2)</sup>**

Senior Vice President assigned as  
Managing Director, Thaioil Solvent Co., Ltd.  
and TOP Solvent Co., Ltd.



**Ms. Torsang Chaipravat** <sup>(2)</sup>  
Vice President Financial Planning



**Ms. Tarika Devahastin** <sup>(2)</sup>  
Vice President Treasury



**Mr. Nikom Kongnok**  
Vice President Corporate Governance  
and Sustainability



**Mr. Nitas Krongvanitchayakul** <sup>(2)</sup>  
Senior Vice President assigned as  
Managing Director, LABIX Co., Ltd.



**Ms. Prapin Thongnium** <sup>(2)</sup>  
Vice President Procurement and Contract



**Mr. Phumchit Tatsanaprasert**  
Vice President Quality Management  
and Vice President Efficient Operations Support (Act.)



**Mr. Mongkol Janchookiat** <sup>(2)</sup>  
Vice President Digitalization



**Ms. Rungtip Maneesarachun** <sup>(2)</sup>  
Vice President Corporate Internal Audit



**Mr. Worrachart Ruangtragool** <sup>(2)</sup>  
Vice President assigned as  
Managing Director, Thaioil Marine Co., Ltd.,  
TOP Maritime Service Co., Ltd.  
and Thaioil Ethanol Co., Ltd.



**Ms. Wanwisa Yanchinda**

Vice President Accounting



**Mr. Vivat Wongnirund**

Vice President assigned as Managing Director,  
SAK Chaisidhi Co., Ltd.



**Mr. Sarungy Limwongse**

Vice President Petrochemical and Lube Base



**Mr. Sarayut Jitprasertngam**

Vice President Regulatory Compliance



**Mr. Somboon Chuaykoblap**

Vice President Corporate Strategic Risk



**Ms. Somporn Bunluesriruang**

Vice President Supply Chain Optimization



**Mr. Santi Wasanasiri**

Vice President assigned as Managing Director,  
Thai Lube Base Plc and Thai Paraxylene Co., Ltd.



**Ms. Suchada Deechaiya**

Vice President People and  
Organization Excellence



**Ms. Sudarat Orrattanasakul <sup>(4)</sup>**

Vice President, Special Assignment





**Mr. Anawat Chansaksoong**

Vice President Commercial



**Ms. Acharee Tiyaabhorn<sup>(2)</sup>**

Vice President Strategic Planning



**Mr. Udom Wongsirinopphakhun**

Vice President Asset Development,  
and Managing Director, Thailoil Power Co., Ltd.  
and TOP SPP Co., Ltd.



**Ms. Pattaralada Sa-NGasang**

Executive Vice President Finance and Accounting

(End of secondment as of December 31, 2020)

**Remarks:**

<sup>(1)</sup> Management's Biography and Shareholding Report are shown in the Company's website at [www.thailoigroup.com](http://www.thailoigroup.com)

<sup>(2)</sup> As of December 31, 2020

- Mr. Bandhit Thamprajamchit assigned as Senior Executive Vice President Refinery and Petrochemical
- Mr. Jeerawat Pattanasomsit assigned as Executive Vice President Manufacturing and Vice President Refinery (Act.)
- Mr. Pongpun Amornvivat assigned as Executive Vice President Strategy and Executive Vice President Innovation and Digitalization (Act.)
- Mr. Jumpon Thapanapong assigned as Vice President Corporate Resources & Transformation Management and Vice President New S-Curve Business Development (Act.)
- Mr. Nuttapon Meerit assigned as Vice President, Special Assignment
- Ms. Duangporn Teerapabpaisit assigned as Senior Vice President performing the duty of Managing Director, LABIX Co., Ltd.
- Ms. Torsang Chaipravat assigned as Vice President Strategic Planning
- Ms. Tarika Devahastin assigned as Vice President Financial Planning

- Mr. Nitas Krongvanitchayakul assigned as Senior Vice President performing the duty of Managing Director, Thailoil Ethanol Co., Ltd.
- Ms. Prapin Thongnium assigned as Vice President Corporate Internal Audit
- Mr. Mongkol Janchookiat assigned as Vice President Procurement and Contract
- Ms. Rungtip Maneesarachun assigned as Vice President Treasury
- Mr. Worrachart Ruangtragool assigned as Vice President performing the duty of Managing Director, Thailoil Marine Co., Ltd. and TOP Maritime Service Co., Ltd.
- Ms. Acharee Tiyaabhorn assigned as Vice President performing the duty of Managing Director, Thailoil Solvent Co., Ltd. and TOP Solvent Co., Ltd.
- <sup>(3)</sup> Ms. Wanida Boonpiraks assigned as Executive Vice President Finance and Accounting as from January 1, 2021
- <sup>(4)</sup> Ms. Sudarat Orrattanasakul ended of assignment as Vice President Regulatory Compliance on January 31, 2021

## Shareholding Report of Company's High-Level Executives in 2020

(Inclusive of Spouse, Unmarried Partner, and Minor)

Information as of February 1, 2021

No.	Name - Surname Of High-Level Executives, Executive Finance & Accounting	No. of Share (shares)			Remark
		as of December 31, 2019	as of February 1, 2021	Addition/(Reduction) (shares)	
1	Mr. Wirat Uanarumit	-None-	-None-	-No Change-	-
2	Mr. Bandhit Thamprajamchit	7,200	7,200	-No Change-	-
3	Mr. Jeerawat Pattanasomsit	-None-	-None-	-No Change-	-
4	Mr. Chatapong Wungtanagorn	97,400	97,400	-No Change-	-
5	Mr. Charlee Balmongkol	-None-	-None-	-No Change-	-
6	Mr. Pongpun Amornvivat	17,100	43,000	25,900	-
7	Ms. Wanida Boonpiraks	N/A	-None-	N/A	New Executive, Effective on January 1, 2021 (Not holding any share of the Company)
8	Mr. Viroj Meenaphant	-None-	-None-	-No Change-	-
9	Mr. Viroj Wongsathirayakhun	21,600	21,600	-No Change-	-
10	Mr. Surachai Saengsamran	98,500	98,500	-No Change-	-
11	Ms. Rungnapa Janchookiat	-None-	-None-	-No Change-	-
	By Spouse, Unmarried Partner, and Minor	100	100	-No Change-	-
12	Ms. Tarika Devahastin	-None-	-None-	-No Change-	-
13	Ms. Wanwisa Yanchinda	N/A	5,000	N/A	New Executive, Effective on April 1, 2020 (No trading transactions of Company shares since appointed - February 1, 2021.
14	Ms. Torsang Chaipravat	N/A	-None-	N/A	New Executive, Effective on January 1, 2021 (Not holding any share of the Company)

Remark: N/A means no information since the executive was appointed during the year 2020.

### Executives who Ended Their Duties in 2020

No.	Name - Surname Of High-Level Executives, Executive Finance & Accounting	No. of Share (shares)			Remark
		as of December 31, 2019	as of December 31, 2020	Addition/(Reduction) (shares)	
1	Ms. Pattaralada Sa-NGasang	-None-	-None-	-No Change-	-
2	Ms. Rungtip Maneesarachun	-None-	-None-	-No Change-	-

### Nomination, Appointment, Position-Holding Policy, and Succession Plan for Chief Executive Officer (CEO) and President

To nominate and appoint qualified persons to fill the vacant position of the highest level of executives (the CEO and President), the Nomination and Remuneration Committee (NRC) is to consider the qualifications, experiences, and potential conflicts of qualified persons that will prove beneficial to Thaioil and submit them to the Board of Director (the Board) for consideration and approval.

Additionally, in order to bolster shareholders' and investors' confidence that Thaioil and Subsidiaries' business will continue its excellence, Thaioil has established a succession plan for this position. A qualified person must meet the criteria and is ready for the position in the future. Thaioil annually reviewed on its succession plan.

The Board allowed the CEO and President to serve as Director of subsidiary companies to ensure a unity and to mutually support Thaioil and Subsidiaries' operations for maximum efficiency and effectiveness. The Board defined guidelines for Thaioil's executives and employees that were invited to serve in other companies, agencies,

or entities in Thaioil's CG and CoC Manual. It states that, if the CEO and President is to be appointed as a member of a committee, he or she is to inform or seek endorsement from the Board for acknowledgment or endorsement, prior to assuming the position.

### CEO and President's Performance Assessment

Thaoil executed the CEO and President's Performance Assessment annually. The NRC is in charge of the annual performance assessment of the CEO and President. The CEO and President's performance assessment has two parts (each part has a different weight percentage) as follows:

Part 1 - Corporate Key Performance Indicators

Part 2 - Leadership Competency

The performance appraisal outcome influences the salary raise for the CEO and President and is to be presented to the Board for further approval.

### Compensation for the CEO and President

Thaoil defined a clear criteria in regards to the remuneration of the CEO and President and is agreed by the CEO and President in advance. Each year, the NRC appraises the CEO and President's annual performance. The NRC then recommends its findings to the Board for

endorsement, and the Chairman then informs the CEO and President on the decision. The compensation policy also links the CEO and President's performance to overall short-term performance and long-term operating performance to set foundation for future growth to an attractive level and comparable to companies in the same industry, under a clear and transparent guidelines. Additionally, Thaioil utilizes the four dimensions of Balance Scorecard concept: namely, financial and sustainability, stakeholders, internal process, and learning and development, to develop Corporate Key Performance Indicators (Corporate KPI), which is also linked to the CEO and President's Performance.

#### Executives' Remuneration

As of the fiscal year ended on December 31, 2020, the remuneration of 35 executives totalled to THB 246.50 million. This comprises of remuneration in the forms of month salaries and allowances of THB 166.80 million, special bonus of THB 26.80 million, provident fund contributions of THB 19.21 million, retirement gratuity fund payments of THB 20.10 million, and other payments of THB 13.59 million.

**Remark:** The remuneration for 35 executives as of December 31, 2020, excludes the following executives who work in the subsidiary companies:

Ms. Acharee Tiyaabhorn

Ms. Duangporn Teerapabpaisit

Mr. Vivat Wongnirund

Mr. Worrachart Ruangtragool

Mr. Nitas Krongvanitchayakul  
(partially included while divided by the proportion of the managing position of companies within Thaioil and Subsidiaries)

Mr. Viroj Wongsathirayakhun  
(partially included while divided by the proportion of the managing position of companies within Thaioil and Subsidiaries)

Mr. Santi Wasanasiri  
(partially included while divided by the proportion of the managing position of companies within Thaioil and Subsidiaries)

Mr. Sarunyu Limwongse  
(partially included while divided by the proportion of the managing position of companies within Thaioil and Subsidiaries)

Ms. Torsang Chaipravat  
(partially included while divided by the proportion of the managing position of companies within Thaioil and Subsidiaries)

Mr. Udom Wongsirinopphakhun  
(partially included while divided by the proportion of the managing position of companies within Thaioil and Subsidiaries)





## EXECUTIVE BIOGRAPHY (DISCLOSURE REQUIRED BY LAW)

### Person Taking the Highest Responsibility in Finance and Accounting and Person Supervising Accounting

**Person Taking the Highest Responsibility in Finance and Accounting:** Executive Vice President Finance and Accounting

#### Brief Biography

**Name:** Ms. Pattaralada Sa-Ngasang  
(End Secondment on December 31, 2020)

**Education:** >> Bachelor of Accountancy,  
Thammasat University  
>> Mini Master of Business  
Administration, National Institute of  
Development Administration  
>> Master of Business Administration,  
Thammasat University

#### Working Experience in the 5 Preceding Years

Jan 2013-Jan 2015	Vice President Strategic Planning
Feb-Sep 2015	Senior Vice President Financial Planning
Oct 2015-Dec 2020	Executive Vice President Finance and Accounting
Jan 2020-Present	Executive Vice President Finance and Accounting (Act.), PTT Global Chemical Plc

#### Training:

##### Thai Institute of Directors Association (IOD)

>> Director Certification Program (DCP 151/2011)  
>> Role of the Chairman Program (RCP 39/2016)  
>> Strategic Board Master Class (SBM 1/2017)

#### Other Trainings

>> Leadership Succession Program (LSP), Class 11,  
Institute of Research and Development for  
Public Enterprises

>> Executive Development Program (EDP),  
Thai Listed Companies Association  
>> Capital Market Academy Leader Program,  
Capital Market Academy  
>> National Defence Course, National Defence College  
>> Lecturer to Orientation Course-CFO Focus on Financial Reporting, Class 8, the Federation of Accounting Professions under the Royal Patronage of His Majesty the King

#### Brief Biography

**Name:** Ms. Wanida Boonpiraks  
(Effective on January 1, 2021)

**Education:** >> Bachelor of Accountancy,  
Chulalongkorn University  
>> Master of Business Administration  
(Finance), University of St. Thomas,  
USA

#### Working Experience in the 5 Preceding Years

Oct 2014-Oct 2016	Finance and Accounting Manager, Global Power Synergy Plc
Nov 2016-Jan 2018	Chief Financial Officer, Global Power Synergy Plc
Feb 2018-Mar 2020	Executive Vice President Finance and Accounting, Global Power Synergy Plc
April-Dec 2020	Chief Financial Officer, Global Power Synergy Plc
Jan 2021-Present	Executive Vice President Finance and Accounting, Thai Oil Plc

**Training:****Thai Institute of Directors Association (IOD)**

>> Director Certification Program (DCP 195/2014)

**Other Trainings**

- >> Executive Development Program (EDP), Class 9, Thai Listed Companies Association
- >> CFO Certification Program, Class 9, the Federation of Accounting Professions under the Royal Patronage of His Majesty the King
- >> Leadership Development Program II (LDP II), PTT Leadership and Learning Institute
- >> Orchestrating Winning Program (OWP) 2018, IMD Business School, Switzerland
- >> Leadership Development Program III (LDP III), IMD Business School, Singapore

**Person Supervising Accounting:**

Vice President Accounting

**Name:** Ms. Wanwisa Yanchinda

**Education:** >> Bachelor of Accountancy, Bangkok University  
>> Master of Business Administration, Ramkhamhaeng University

**Others:** >> Certified public accountant

**Working Experience in the 5 Preceding Years**

Jan 2016-Mar 2020	Accounting Manager-Consolidation
Apr 2020-Sep 2020	Vice President Account (Act.)
Oct 2020-Present	Vice President Account

**Training:****Thai Institute of Directors Association (IOD)**

>> Director Certification Program (DCP 299/2020)

**Other Trainings**

- >> Modern Banking Executive Development Program (MOBEX)
- >> Chief Financial Officer Certification Program
- >> Strategic CFO in Capital Markets Program
- >> Finance Transformation
- >> Leadership Development Program I&II (LDP I&II), Thai Oil Plc
- >> Certificate of Tax Law, Class 1

Person taking the highest responsibility in finance and accounting and person supervising accounting are qualified as required by Securities and Exchange Commission of Thailand and Stock Exchange of Thailand, with education and experience relating to finance and/or accounting, and the continuous participation in training courses on accounting at least 6 hours per year.

**Company Secretary**

The Board of Directors (the Board) appointed the Company Secretary to take responsibilities in providing advices to the Board and executives regarding the applicable laws and regulations that the Board must recognize and act upon, the corporate governance policies as well as the arrangement of the Board meetings and the Meeting of Shareholders. The Company Secretary must monitor and coordinate to ensure that the Board and shareholders' resolutions are fully complied. The Company Secretary is also assigned to keep the Company's important documents as required by the laws. In the Board of Directors Meeting No. 9/2018 held on September 28, 2018, the Board passed the resolution on appointing Mr. Viroj Meenaphant as the Company Secretary, effective from October 1, 2018.

### Brief Biography

**Name:** Mr. Viroj Meenaphant  
**Education:** >> Bachelor of Engineering  
 (Chemical Engineering),  
 Chulalongkorn University

### Working Experience in the 5 Preceding Years

May 2015-Sep 2018	Assistant Executive Vice President Corporate Governance
Oct-Dec 2018	Assistant Executive Vice President Corporate Governance and Company Secretary
Jan 2019	Executive Vice President Corporate Governance and Affairs (Act.), and Company Secretary
Feb-June 2019	Executive Vice President Corporate Governance and Affairs (Act.), Vice President Corporate Affairs (Act.), and Company Secretary
Jul 2019-Present	Executive Vice President Corporate Governance and Affairs, Vice President Corporate Affairs (Act.), and Company Secretary

### Training:

#### Thai Institute of Directors Association (IOD)

>> Company Secretary Program (CSP 31/2009)  
 >> Director Certification Program (DCP 185/2014)

### Other Trainings

>> Leadership Development Program (LDP II: 2018)  
 >> Executive Development Program (EDP),  
 Thai Listed Companies Association  
 >> 2020 PTIT Special Lecture: "Thailand's Destiny:  
 Water Crisis and Development Philosophy"  
 >> ACSN 2<sup>nd</sup> webinar 2020, Board of the Future:  
 "How will the role of the Company Secretary evolve"

>> Special Lecture by Dr. Prinya Hom-Anek,  
 Special Consultant to National Cyber security Committee:  
 "Cybersecurity in the Boardroom"

### Chief of the Internal Audit: Vice President Corporate Internal Audit

The appointment, removal, and replacement of the Chief of the Internal Audit Unit must be considered and approved by the Audit Committee. The Committee also assesses the performance of the Chief of the Internal Audit against the responsibilities indicated in the Audit Committee Charter.

In the Audit Committee Meeting No. 12/2014 on December 17, 2014, the Committee appointed Ms. Prapin Thongnium as the Chief of the Internal Audit Unit due to qualified knowledge, competency, experience, and continuous improvement through various trainings.

### Brief Biography

**Name:** Ms. Prapin Thongnium  
**Education:** >> Bachelor of Accountancy,  
 Thammasat University  
 >> Master of Business Administration,  
 Burapha University

### Working Experience in the 5 Preceding Years

2007-2014	Vice President Accountancy
2015-2020	Vice President Corporate Internal Audit
2021-Present	Vice President Procurement and Contract

### Training:

#### Thai Institute of Directors Association (IOD)

>> Board Reporting Program (BRP 21/2016)  
 >> Anti-Corruption: The Practical Guide (ACPG 46/2018)

### Other Trainings

>> Blockchain Technology for Auditors  
 >> Cloud Security Knowledge  
 >> Online Training COVID-19 Fraud & Cyber Security  
 Insights  
 >> Data Governance Framework and Guidelines (DGF)  
 by ACIS

In the Audit Committee Meeting No. 7/2020 on December 15, 2020, the Committee appointed Ms. Rungtip Maneesarachun in replacement of Ms. Prapin Thongnium which will be transferred to other duties as (effective on January 1, 2021) as the Chief of the Internal Audit Unit due to qualified knowledge, competency, experience, and continuous improvement through various trainings.

#### Brief Biography

**Name:** Ms. Rungtip Maneesarachun  
(Effective on January 1, 2021)

**Education:** >> Bachelor of Accountancy,  
Thammasat University  
>> Graduate Certificate in Auditing,  
Thammasat University  
>> Bachelor of Laws,  
Sukhothai Thammathirat  
Open University  
>> Master of Business Administration  
Program, Thammasat University  
>> Master of Arts Program in English  
for Careers, Thammasat University

#### Working Experience in the 5 Preceding Years

2012-2013	Liability and Financial Risk Management Manager
2013-2016	Finance and Commercial Support Manager
2017-2020	Vice President Treasury
Jan 2021-Present	Vice President Corporate Internal Audit

#### Training:

**Thai Institute of Directors Association (IOD)**  
>> Director Certification Program (DCP 245/2017)

#### Other Trainings

>> Modern Banking Executive Development (MOBEX),  
Class 16, Thai Banking Academy  
>> Management Development Program (MDP), Class 22  
Thailand Management Association  
>> Leadership Development Program (LDP1), Class 2, PTT  
>> Financial Executive Development Program (FINEX),  
Class 27, Thai Banking Academy  
>> COSO Internal Control-Integrated Framework (2013)

#### Chief of the Compliance:

Vice President Regulatory Compliance

#### Brief Biography

**Name:** Ms. Sudarat Orrattanasakul

**Education:** >> Bachelor of Business Administration,  
Assumption University  
>> Master of Business Administration  
(International Program)  
Bangkok University

#### Working Experience in the 5 Preceding Years

Jan 2015-Dec 2018	Vice President- Commercial Planning
Jan 2019-2020	Vice President Regulatory Compliance
Feb 2021-Present	Vice President, Special Assignment

#### Training:

**Thai Institute of Directors Association (IOD)**  
>> Director Certification Program (DCP 249/2017)  
>> Financial Statements for Directors (FSD 36/2018)

#### Other Institutes

>> Leadership Development Program II (LDP II: 2018)



The Company appointed Mr. Sarayut Jitprasertngam as Vice President Regulatory Compliance in replacement of Ms. Sudarat Orrattanasakul which will be transferred to other duties, Mr. Sarayut will be responsible for law and regulatory compliance, effective from February 1, 2021

#### Brief Biography

**Name:** Mr. Sarayut Jitprasertngam  
(Effective on February 1, 2021)

**Education:** >> Bachelor of Laws,  
Thammasat University  
>> Master of Laws,  
University of Nottingham

#### Working Experience in the 5 Preceding Years

Sep 2016-Aug 2018	Specialist Investment and corporate legal affairs department, PTT Plc
Sep 2018-Jan 2021	Vice President Investment and corporate legal affairs department, PTT Plc
Feb 2021-Present	Vice President Regulatory Compliance, Thai Oil Plc

#### Training:

Thai Institute of Directors Association (IOD) -None-

#### Other Trainings

>> Asia Pacific Disputes Summit Singapore 2019  
>> Corporate Legal Counsel Forum 2018

#### Investor Relations Manager:

Mr. Nuttapol Nopparatwong

Communication Channel for Investors Relations Section



**Thai Oil Public Company Limited**

**Investor Relations**

555/1 Energy Complex Building A, 11<sup>th</sup> floor,  
Vibhavadi Rangsit Road, Chatuchak,  
Chatuchak, Bangkok 10900



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## ASSETS AND SHAREHOLDERS INFORMATION

### Registered and Paid-up Capitals

#### Ordinary Shares

On the share registration book closing date as of September 8, 2020, Thailoil's registered capital was THB 20,400,278,730 and the paid up capital was THB 20,400,278,730, comprised of 2,040,027,873 ordinary shares at the par value of THB 10 per share

#### Shareholders

As of September 8, 2020, the major shareholders (holding 0.50 percent and more of paid up capital) are as follows:

Major Shareholders	Number of Shares	Shareholding Percentage
1. PTT PUBLIC COMPANY LIMITED <sup>(1)</sup>	918,565,183	45.027 %
2. THAI NVDR COMPANY LIMITED <sup>(2)</sup>	128,324,764	6.290 %
3. SOCIAL SECURITY OFFICE	73,611,400	3.608 %
4. SIAM MANAGEMENT HOLDING COMPANY LIMITED	61,200,000	3.000 %
5. GIC PRIVATE LIMITED	57,369,091	2.812 %
6. SOUTH EAST ASIA UK (TYPE C) NOMINEES LIMITED	53,996,840	2.647 %
7. STATE STREET EUROPE LIMITED	46,563,289	2.282 %
8. THE BANK OF NEW YORK MELLON	23,991,426	1.176 %
9. THE BANK OF NEW YORK (NOMINEES) LIMITED	12,382,400	0.607 %
10. K20 SELECT LONG TERM EQUITY FUND	12,051,000	0.591 %
<b>Total</b>	<b>1,388,055,393</b>	<b>68.040 %</b>

#### Remark:

- <sup>(1)</sup> As a major shareholder of Thailoil, PTT Plc, whose major shareholder is Ministry of Finance, participates in formulating the Company's management and operational policies via Directors nominated to Thailoil's Board of Directors and casting their votes in Board meetings. As of December 31, 2020, there are five Directors from a total of 15 who are also holding position as PTT executives.
- <sup>(2)</sup> Thai NVDR Co., Ltd., a subsidiary of the Stock Exchange of Thailand with the objective of promoting investor's investment, particularly foreign investors, in order to invest in common stock of listed companies without being restricted by the foreign shareholding limit which does not have the rights to vote at meetings of listed companies.

## Issuance of Other Financial Instruments

### Debentures

On June 18, 2020, Thailoil Treasury Center Co., Ltd., wholly owned by Thailoil, issued Senior Unsecured Bonds for foreign institution investors worth USD 1 billion in total, fully guarantee by the Company. USD 400 million carrying a coupon rate of 2.5 percent per annum, with the tenor of 10 years and USD 600 million carrying a coupon rate of 3.75 percent per annum, with the tenor of 30 years. These debentures were given credit ratings of BBB+ and Baa2 respectively by Standard and Poor's (S&P) and Moody's.

As of December 31, 2020, Thailoil and Subsidiaries had issued nine sets of debentures with denomination in dollars totaling USD 3,565 million. All of them are senior unsecured bond, detailed below:

Debenture set No.	Type of instrument	Issuance date	Maturity	Coupon rate (% per annum)	Value (USD Million)	Credit rating (S&P's/Moody's)
1.	Rule 144A/ Regulation S	April 10, 2018	2023	3.625	216	BBB+/Baa1
2.			2043	4.875	173	
Total value					389	

Table 1: Debentures with denomination in US dollars issued by Thai Oil Plc

Debenture set No.	Type of instrument	Issuance date	Maturity	Coupon rate (% per annum)	Value (USD Million)	Credit rating (S&P's/Moody's)
1.	Rule 144A/ Regulation	April 10, 2018	2023	3.625	284	BBB+/Baa1
2.			2043	4.875	328	
3.		November 20, 2018	2028	4.625	400	BBB+/Baa1
4.			2048	5.375	600	
5.		October 17, 2019	2049	3.500	565	BBB+/Baa1
6.		June 18, 2020	2030	2.500	400	BBB+/Baa2
7.			2050	3.750	600	
Total value					3,176	

Table 2: Debentures with denomination in US dollars issued by Thailoil Treasury Center Co., Ltd.  
(Guaranteed by Thai Oil Plc)

Thaioil also issued four other sets of debentures, also Senior Unsecured Bonds, with denomination in THB worth altogether THB 20,500 million. The debentures were given credit rating of AA- level by Fitch Ratings (Thailand) as detailed below:

Debenture set No.	Type of instrument	Issuance date	Maturity	Coupon rate (% per year)	Value (THB Million)	Credit rating (Fitch)
1.	II/HNW	March 12, 2014	2021	4.610	3,000	AA- (Stable Outlook)
2.	PP10	April 30, 2010	2022	4.800	3,000	AA- (Stable Outlook)
3.	II/HNW	March 12, 2014	2024	4.840	7,000	AA- (Stable Outlook)
4.	II/HNW	March 23, 2012	2027	5.050	7,500	AA- (Stable Outlook)
Total value					20,500	

Earnings from such debenture issuance were intended for long-term investment, business expansion, debt repayment, and/or working capital as well as for other purposes.

### Dividend Policy

The Company's dividend payout policy is to pay at least 25 percent of the consolidated net profit after deductions of all categories of reserves as specified in applicable law and the Company's Articles of Association. Each year, the dividend payments are subjected to Thaioil and Subsidiaries' cash flows and investment plans and other necessities and factors the Board of Directors (the Board) deems appropriate. The Board may consider paying the annual dividend with approval from the Annual General Meeting of Shareholders (AGM), except to the payment of interim dividend, which the Board has the authority to approve periodically when the Company's profit deems appropriate. The interim dividend payment shall be reported at the following AGM.

The Dividend Policy for Subsidiaries of Thaioil shall be considered by the Board of each subsidiary, and later proposed to each subsidiary's AGM for approval each

year. Consideration shall be made on investment plans and other requirements, such as adequacy of cash flow of each company after deducting reserve funds in compliance with the law.

### Dividend Payout Information

Year	2014 <sup>(1)</sup>	2015	2016	2017	2018	2019
Earnings (Baht per share)	(2.03)	5.97	10.40	12.18	4.97	3.08
Dividend (Baht per share)	1.16	2.70	4.50	5.25	2.65	1.50
Dividend Payout (%)	N/A	45.0	43.0	43.0	53.0	49.0

#### Remark:

<sup>(1)</sup> Revised in accordance with Thai Financial Reporting Standards 10 (TFRS 10) on Consolidated Financial Statements, which is effective for Annual Accounting periods beginning on or after January 1, 2015, having a restatement on Statement of Financial Position as of December 31, 2013 and 2014 as well as Statement of Income and Statement of Cash Flows as of December 31, 2014.

### Legal Disputes

As of December 31, 2020, Thaioil and Subsidiaries were not engaged in any pending legal dispute that may affect over 5 percent of shareholders' equity nor any dispute that may cause significant impacts on the business.





## RELATIONSHIP WITH MAJOR SHAREHOLDER

Thaioil's major shareholder is PTT Plc, the national energy company that engages in integrated petroleum and petrochemical businesses covering from upstream to downstream products. Currently, PTT Plc directly holds shares in three domestic refineries: namely, Thai Oil Plc 45.03 percent, PTT Global Chemical Plc 47.68 percent, and IRPC Plc 47.55 percent.

Thaioil engages in transactions and business collaboration with PTT Plc and companies in PTT Group, including purchase and sale of raw materials, feedstock, and products with one another. In these transactions, market-based pricing as well as raw material and product quantity setting procedure are applied, while all terms and conditions are as specified in the agreements.

THAIOIL AND SUBSIDIARIES’  
BUSINESS STRUCTURE



Thaioil is Thailand’s largest refinery and supplier of petroleum products. Founded in 1961, we operate one of the leading efficient refineries in Asia Pacific with the current capacity of 275,000 barrels per day.

Thaioil operates under the Operational Excellence principle, operating as an integrated group of businesses in oil refinery, petrochemicals and lube base oil with supporting businesses, e.g. power generation, solvents, marine and pipeline transportation, renewable energy generation, LAB: an intermediate in the production of surfactants, business in the area of International Business Center and Treasury Center, as well as recruitment services for Thaioil and Subsidiaries. Thaioil leads the Thai refinery industry through a well-planned and integrated production process, yielding optimum efficiency. Our product quality are high, rated in the top quartile of refineries in Asia Pacific, at lower production costs, giving Thaioil a recognized competitive advantage.



## CORPORATE INFORMATION

### Thai Oil Public Company Limited

Monogram	TOP
Registration Number	0107547000711
Business	<p>Thaioil is Thailand's largest refinery and supplier of petroleum products. Founded in 1961, we operate one of the leading efficient refineries in Asia Pacific with the current capacity of 275,000 barrels per day.</p> <p>Thaioil operates under the Operational Excellence principle, operating as an integrated group of businesses in oil refinery, petrochemicals and lube base oil with supporting businesses, e.g. power generation, solvents, marine and pipeline transportation, renewable energy generation, LAB: an intermediate in the production of surfactants, business in the area of International Business Center and Treasury Center, as well as recruitment services for Thaioil and Subsidiaries. Thaioil leads the Thai refinery industry through a well-planned and integrated production process, yielding optimum efficiency. Our product quality are high, rated in the top quartile of refineries in Asia Pacific, at lower production costs, giving Thaioil a recognized competitive advantage.</p>
Registered Capital	<p>THB 20,400,278,730</p> <p>Comprising 2,040,027,873 fully paid-up common shares of 10 THB per share</p>
Number of Employees (As of December 31, 2020)	<p>641 persons under Thai Oil Public Company Limited</p> <p>1,118 persons under Thaioil Energy Services Company Limited</p>
Address	<p><b>Bangkok Office</b></p> <p>555/1 Energy Complex Building A, 11<sup>th</sup> Floor, Vibhavadi Rangsit Road, Chatuchak, Chatuchak, Bangkok 10900, Thailand</p> <p>Telephone : +66(0) -2797-2999, +66(0) -2797-2900, +66(0) -2299-0000</p> <p>Fax : +66(0) -2797-2970</p> <p><b>Sriracha Office and Refinery</b></p> <p>42/1 Moo 1, Sukhumvit Road Km.124, Tungsukla, Sriracha, Chonburi 20230, Thailand</p> <p>Telephone : +66(0) -3840-8500, +66(0) -3835-9000</p> <p>Fax : +66(0) -3835-1554, +66(0) -3835-1444</p>
Website	<a href="http://www.thaioilgroup.com">www.thaioilgroup.com</a>
Investor Relations	<p>Telephone : +66(0) -2797-2961</p> <p>e-mail : <a href="mailto:ir@thaioilgroup.com">ir@thaioilgroup.com</a></p>

## General Information of the Subsidiaries

Company Name and Address	Registration Number	Business	Registered Capital (THB)	Type of Shares	Number of Shares (Issued)	Value of Share (THB per share)	Shareholding (%)
<b>Lube Base Oil Business</b> <b>Thai Lube Base Public Company Limited</b> 555/1 Energy Complex Building A, 11 <sup>th</sup> Floor, Vibhavadi Rangsit Road, Chatuchak Chatuchak, Bangkok 10900, Thailand Tel : +66(0) -2299-0000, +66(0) -2797-2999 Fax : +66(0) -2797-2970	0107539000090	Lube base oil manufacturer and distributor	1,757,890,730	Common	175,789,073	10	100
<b>Petrochemical Business</b> <b>Thai Paraxylene Company Limited</b> 105/12 Moo 2 Sukhumvit Road, Tungskula, Sriracha, Chonburi 20230, Thailand Tel : +66(0) -3835-1317-9, +66(0) -3835-1878 Fax : +66(0) -3835-1320	0105539103288	Upstream petrochemical manufacturer and distributor	2,572,414,160	Common	257,241,416	10	100
<b>LABIX Company Limited</b> 555/1 Energy Complex Building A, 11 <sup>th</sup> Floor, Vibhavadi Rangsit Road, Chatuchak, Chatuchak, Bangkok 10900, Thailand Tel : +66(0) -2299-0000, +66(0) -2797-2999 Fax : +66(0) -2797-2974	0105556110246	LAB (an intermediate in the production of surfactants such as detergents) manufacturer and distributor	4,654,965,000	Common	465,496,500	10	75 (Shareholding through Thai Paraxylene Co., Ltd.)
<b>Thaioil Solvent Company Limited</b> 555/1 Energy Complex Building A, 11 <sup>th</sup> Floor, Vibhavadi Rangsit Road, Chatuchak, Chatuchak, Bangkok 10900, Thailand Tel : +66(0) -2299-0000, +66(0) -2797-2999 Fax : +66(0) -2797-2970	0105551116050	Investment in solvent and petrochemical manufacturing and distributor business	1,250,000,000	Common	125,000,000	10	100



Company Name and Address	Registration Number	Business	Registered Capital (THB)	Type of Shares	Number of Shares (Issued)	Value of Share (THB per share)	Shareholding (%)
<b>TOP Solvent Company Limited</b> 555/1 Energy Complex Building A, 11 <sup>th</sup> Floor, Vibhavadi Rangsit Road, Chatuchak, Chatuchak, Bangkok 10900, Thailand Tel : +66(0) -2299-0000, +66(0) -2797-2999 Fax : +66(0) -2797-2983	0105551116491	Solvent and petrochemical products distributor	1,200,000,000	Common	120,000,000	10	100 (Shareholding through Thailoil Solvent Co., Ltd.)
<b>Sak Chaisidhi Company Limited</b> 555/1 Energy Complex Building A, 11 <sup>th</sup> Floor, Vibhavadi Rangsit Road, Chatuchak, Chatuchak, Bangkok 10900, Thailand Tel : +66(0) -2299-0003, +66(0) -2797-2993 Fax : +66(0) -2797-2983	0105527011880	Hydrocarbon solvent manufacturer and distributor	180,000,000	Common	1,800,000	100	80.52 (Shareholding through TOP Solvent Co., Ltd.)
<b>TOP Solvent (Vietnam) Limited Liability Company</b> Go Dau Industrial Zones, Long Thanh District, Dong Nai Province, Vietnam Tel : +84-83827-9030-4 Fax : +84-83827-9035	472043000745 (Registered in Vietnam)	Solvent and petrochemical products distributor in Vietnam	373,520,000,000 VND	Common	-	-	100 (Shareholding through TOP Solvent Co., Ltd.)
<b>PT. Tirta Surya Raya</b> Synergy Building Lt. 12 unit 09 Jl. Jalur Sutera Barat No.17, Kel. Panunggangan Timur, Kec. Pinang, Kota Tangerang, Banten Province, Indonesia Tel : +62-21808-21308 Fax : +62-21808-21307	9120102163812 (Registered in Indonesia)	Solvent and petrochemical products distributor in Indonesia	23,000,000,000 IDR	Common	23,000	1,000,000 IDR per share	67 (Shareholding through TOP Solvent Co., Ltd.)

Company Name and Address	Registration Number	Business	Registered Capital (THB)	Type of Shares	Number of Shares (Issued)	Value of Share (THB per share)	Shareholding (%)
<b>Power Generation Business</b> <b>Thaioil Power Company Limited</b> 555/1 Energy Complex Building A, 11 <sup>th</sup> Floor, Vibhavadi Rangsit Road, Chatuchak Chatuchak, Bangkok 10900, Thailand Tel : +66(0) -2299-0000 +66(0) -2797-2999 Fax : +66(0) -2797-2970	0105539103296	Power and steam generator and distributor	2,810,000,000	Common	281,000,000	10	73.99
<b>Global Power Synergy Public Company Limited</b> 555/2 Energy Complex Building B, 5 <sup>th</sup> Floor, Vibhavadi Rangsit Road, Chatuchak Chatuchak, Bangkok 10900, Thailand Tel : +66(0) -2140-4600 Fax : +66(0) -2140-4601	0107557000411	Operate power generation business, including invest and develop future projects in power business	28,197,293,710	Common	2,819,729,367	10	20.78 (Shareholding through Thaioil Power Co., Ltd.)
<b>TOP SPP Company Limited</b> 555/1 Energy Complex Building A, 11 <sup>th</sup> Floor, Vibhavadi Rangsit Road, Chatuchak Chatuchak, Bangkok 10900, Thailand Tel : +66(0) -2299-0000, +66(0) -2797-2999 Fax : +66(0) -2797-2974	0105556198933	Power and steam generator and distributor	3,500,000,000	Common	350,000,000	10	100
<b>Transportation Business</b> <b>Thaioil Marine Company Limited</b> 223/97 Country Complex Building A, 22 <sup>nd</sup> Floor, Sanphawut Road, Bangna, Bangkok 10260, Thailand Tel : +66(0) -2361-7500 Fax : +66(0) -2361-7498-9	0105541047578	Provide marine transportation of petroleum and petrochemical products	970,000,000	Common	97,000,000	10	100

Company Name and Address	Registration Number	Business	Registered Capital (THB)	Type of Shares	Number of Shares (Issued)	Value of Share (THB per share)	Shareholding (%)
<b>Thaioil Marine International Private Limited</b> 391A Orchard Road #12-01104, #12-05 & 12-10, Ngee Ann City Tower A, Singapore 238873 Tel : +65-6734-6540 Fax : +65-6734-3397, +65-6734-5801	201021606H (Registered in Singapore)	Investment in marine transportation of crude oil and petroleum products	9,000,000 USD	Common	9,000,000	1 USD per share	100 (Shareholding through Thaioil Marine Co., Ltd.)
<b>TOP Maritime Service Company Limited</b> 223/97 Country Complex Building A, 22 <sup>nd</sup> Floor, Sanphawut Road, Bangna, Bangkok 10260, Thailand Tel : +66(0) -2361-7500 Fax : +66(0) -2361-7498-9	0115554017087	Marine transportation services for crew and supplies	520,000,000	Common	5,200,000	100	100 (Shareholding through Thaioil Marine Co., Ltd.)
<b>T.I.M. Ship Management Company Limited</b> 223/18-20 Country Complex Building A, 8 <sup>th</sup> Floor, Sanphawut Road, Bangna, Bangkok 10260, Thailand Tel : +66(0) -2745-7711 Fax : +66(0) -2745-7713	0105551087343	Ship management and international- standard fleet development services as well as crew development consultation (technical operation and marine transportation quality)	3,000,000	Common	30,000	100	33.3 (Shareholding through Thaioil Marine Co., Ltd.)
<b>TOP-NTL Private Limited</b> 6 Temasek Boulevard #32-03 Suntec Tower Four, Singapore 038986 Tel : +65-6361-0382 Fax : +65-6361-0377	201202478W (Registered in Singapore)	Trustee management	20,000 SGD	Common	20,000	1 SGD per share	50 (Shareholding through Thaioil Marine Co., Ltd.)

Company Name and Address	Registration Number	Business	Registered Capital (THB)	Type of Shares	Number of Shares (Issued)	Value of Share (THB per share)	Shareholding (%)
<b>TOP-NTL Shipping Trust</b> 6 Temasek Boulevard #32-03 Suntec Tower Four, Singapore 038986 Tel : +65-6361-0382 Fax : +65-6361-0377	2012002 (Registered in Singapore)	Trust business primarily involved in managing and providing ship management services	1,894,000 SGD	Common	1,894,000	1 SGD per share	50 (Shareholding through Thailoil Marine Co., Ltd.)
<b>TOP Nautical Star Company Limited</b> 88 Soi Bangna-Trad 30, Bangna-Trad Road, Bangna, Bangkok, 10260, Thailand Tel : +66(0) -2331-0080-5 Fax : +66(0) -2331-0086	0105556123275	Large vessels provider for storage and transportation of crude oil, feedstock, and petroleum products	150,000,000	Common	1,500,000	100	35 (Shareholding through Thailoil Marine Co., Ltd.) 30 (Shareholding through TOP-NTL Shipping Trust)
<b>Thai Petroleum Pipeline Company Limited</b> 2/8 Moo 11, Lumlukka Road, Ladsawai, Lumlukka, Pathumthani 12150, Thailand Tel : +66(0) -2034-9199 Fax : +66(0) -2533-2687	0105534002696	Pipeline transportation of petroleum products	8,479,000,000	Common	84,790,000	100	9.19
<b>Other Business</b> <b>Thailoil Energy Services Company Limited</b> 555/1 Energy Complex Building A, 11 <sup>th</sup> Floor, Vibhavadi Rangsit Road, Chatuchak, Chatuchak, Bangkok 10900, Thailand Tel : +66(0) -2299-0000, +66(0) -2797-2999 Fax : +66(0) -2797-2970	0105550078006	Recruiting management service	40,000,000	Common	4,000,000	10	100



Company Name and Address	Registration Number	Business	Registered Capital (THB)	Type of Shares	Number of Shares (Issued)	Value of Share (THB per share)	Shareholding (%)
<b>Thaioil Ethanol Company Limited</b> 555/1 Energy Complex Building A, 11 <sup>th</sup> Floor, Vibhavadi Rangsit Road, Chatuchak Chatuchak, Bangkok 10900, Thailand Tel : +66(0) -2299-0000, +66(0) -2797-2999 Fax : +66(0) -2797-2970	0105551121754	Investment in ethanol business and alternative energy	1,450,000,000	Common	145,000,000	10	100
<b>Sapthip Company Limited</b> 68 Soi Santipap, Sap Road, Sipraya, Bangrak, Bangkok 10500, Thailand Tel : +66(0) -2233-0444-5 Fax : +66(0) -2233-0441	0105539017543	Cassava-based ethanol manufacturer and distributor	800,000,000	Common	8,000,000	100	50 (Shareholding through Thaioil Ethanol Co., Ltd.)
<b>Sapthip Green Energy Company Limited</b> 49 Moo 6, Nikomlamalai, Chaibadan Lopburi 15130, Thailand Tel : +66(0) -3646-2438 Fax : +66(0) -3846-2475	0165561000615	Power from biogas, generator and distributor	25,000,000	Common	2,500,000	10	50 (Shareholding through Sapthip) Co., Ltd.)
<b>Ubon Bio Ethanol Public Company Limited</b> 333 Moo 9, Nadee, Navear, Ubonratchatani 34160, Thailand Tel : +66(0) -4525-2777 Fax : +66(0) -4525-2776	03455500000315	Cassava-based and molasses-based ethanol manufacturer and distributor	2,740,000,000	Common	2,740,000	1,000	21.28 (Shareholding through Thaioil Ethanol) Co., Ltd.)

Company Name and Address	Registration Number	Business	Registered Capital (THB)	Type of Shares	Number of Shares (Issued)	Value of Share (THB per share)	Shareholding (%)
<b>PTT Digital Solutions Company Limited</b> 555/1 Energy Complex Building A, 4 <sup>th</sup> - 5 <sup>th</sup> Floor, Vibhavadi Rangsit Road, Chatuchak, Chatuchak, Bangkok 10900, Thailand Tel : +66(0) -2140-2000 Fax : +66(0) -2140-2999	0105549076496	IT and communication services	150,000,000	Common	15,000,000	10	20
<b>PTT Energy Solutions Company Limited</b> 888 Green Building, Mapchalood-Leamson Road, Huai Pong, Mueng Rayong, Rayong 21150, Thailand Tel : +66(0) -3897-8300 Fax : +66(0) -3897-8333	0105554075621	Engineering technique consultation and other services	150,000,000	Common	1,500,000	100	20
<b>Thaioil Treasury Center Company Limited</b> 555/1 Energy Complex Building A, 11 <sup>th</sup> Floor, Vibhavadi Rangsit Road, Chatuchak, Chatuchak, Bangkok 10900, Thailand Tel : +66(0) -2299-0000, +66(0) -2797-2999 Fax : +66(0) -2797-2974	0105560167273	The engaging in treasury center for Thaioil and Subsidiaries	956,200,000	Common	46,939,000	10	100
<b>TOP Ventures Company Limited</b> 555/1 Energy Complex Building A, 11 <sup>th</sup> Floor, Vibhavadi Rangsit Road, Chatuchak, Chatuchak, Bangkok 10900, Thailand Tel : +66(0) -2299-0000, +66(0) -2797-2999 Fax : +66(0) -2797-2974	0105562147342	Investments in Corporate Venture Capital and/or Startup Business	35,000,000	Common	875,000	10	100 (Shareholding through Thaioil Treasury Center Co., Ltd.)

Company Name and Address	Registration Number	Business	Registered Capital (THB)	Type of Shares	Number of Shares (Issued)	Value of Share (THB per share)	Shareholding (%)
<b>TOP Ventures Hong Kong Limited</b> 18 <sup>th</sup> Floor, One Exchange Square 8 Connaught Place, Central, Hong Kong Tel : +852-2582-2912 Fax : +852-2912-2600	2860983 (Registered in Hong Kong)	Investments in Corporate Venture Capital and/or Startup Business	1 HKD  10,800,001 USD	Common	1	1 HKD per share  10,800,001 USD per share	100 (Shareholding through Thaioil Treasury Center Co., Ltd.)
<b>TOP Ventures America Limited Liability Company</b> The Corporation Trust Company 1209 Orange Street, Wilmington, Delaware 19801 Tel : +1(888)-724-9870	7559091 (Registered in USA)	Investments in Corporate Venture Capital and/or Startup Business	10,700,002 USD	Common	1	10,700,002 USD per share	100 (Shareholding through TOP Ventures Hong Kong Limited)
<b>Sarn Palung Social Enterprise Company Limited</b> 555/1 Energy Complex Building A, 10 <sup>th</sup> Floor, Vibhavadi Rangsit Road, Chatuchak, Chatuchak, Bangkok 10900, Thailand Tel : +66(0) -2537-2971 Fax : +66(0) -2537-2978	0105560151628	Support execution of social enterprise of PTT Group	10,000,000	Common	1,000,000	10	15

## Reference

### Securities Registrar

Thailand Securities Depository Company Limited (TSD)  
The Stock Exchange of Thailand Building,  
93 Ratchadaphisek Road, Dindaeng,  
Bangkok 10400, Thailand  
Tel : +66(0) -2009-9999 (Call center)  
Fax : +66 0) -2009-9991

### Debenture Registrar and Principal Paying Agent

Thai Military Bank Public Company Limited  
Registrar and Principal Paying Agent  
Securities Services and Fund Operations  
3000 Head Office, Floor 5 A, Phahonyothin Road,  
Chompon, Chatuchak, Bangkok 10900, Thailand  
Tel : +66(0) -2299-1830  
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### Bangkok Bank Public Company Limited

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or

#### Office of Registration Services

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## PRODUCTS AND SERVICES OF THAIOIL AND SUBSIDIARIES

Thaioil Refinery is the country's largest single-site refinery with the highest complexity and capacity to generate value-added products. It is a leading complex refinery with the capacity to produce and distribute wholesale petroleum products (about 275,000 barrels per day of crude run capacity or approximately 25 percent of the entire domestic refining capacity). Integrated with petrochemical and lube base oil facilities, Thaioil is capable of refining a large variety of crude oil and feedstock and therefore able to optimize values from a wide range of products from petroleum products to petrochemicals and lube base oil products to meet customers' and market demand. This capability equips Thaioil with higher competitiveness compared to that of competitors. Moreover, the refining complexity and technologies also allow flexibility for maintenance shutdowns (turnarounds) for each distillation unit without shutting down the entire system, thus providing the ability to maintain production and continuously address customers' demand, unlike other refineries in Thailand.

Another competitive advantage is the geographic location of its facilities in Sriracha District, Chon Buri Province, which is an ideal distribution center for petroleum products to all domestic regions and throughout the Indochina Peninsula, through fully equipped systems of marine and land transport as well as pipeline. Thaioil's focus areas for product distribution cover both domestic and regional markets.

Thai Lube Base Plc (TLB) was established in 1997 to produce and distribute lube base oil products with a

capacity of 267,015 tons per year. Its primary product is lube base oil Group I which, when blended with additives, can be turned into lube oil or lubricating oil for machinery moving parts such as pistons and shafts, providing lubrication as well as cooling. TLB also produces bitumen with the capacity of 350,000 tons per year; the bitumen is used as road surface, footpaths, parking space and airfields. The aromatic extract, a by-product from the distillation process, can yield treated distillate aromatics extract (TDAE) (capacity of 67,520 tons per year) by recycling it in the aromatic extracting unit to eliminate carcinogens and air pollutants. The end product is used in the automotive tire industry and production of specialties such as slack wax, a raw material for multiple consumer products including candles, shoe waxes, gloss coatings, cosmetics and adhesives used for plywood.

Thai Paraxylene Co., Ltd. (TPX) commenced operations in 2002 as a producer and distributor of basic or upstream petrochemicals with a paraxylene capacity of 527,000 tons per year and 259,000 tons of benzene per year. Paraxylene is used as feedstock for the intermediate petrochemical industry to produce purified terephthalic acid (PTA), which is the monomer in the downstream petrochemical industry for polyester fiber or synthetic fiber used in manufacturing of clothes, plastic bottles commonly known as polyethylene terephthalate (PET) such as drinking water bottles and soda bottles, as well as other consumer products such as film, food containers, plastic bags for heat preservation. Benzene is the key feedstock for styrene monomer, phenol and cyclohexene, which are monomers for plastic components for containers, electronics and automobiles.

LABIX Co., Ltd. (LABIX), a joint venture between TPX and Mitsui & Co., Ltd. with 75 percent and 25 percent shareholding respectively, commands the first linear alkyl benzene (LAB) manufacturing plant in Thailand and the first fully integrated producer in Southeast Asia, as well as the largest LAB trader in Asia. With commercial commencement in Q1/2016, it boasted the most advanced technologies and was designed to be environmentally friendly. LAB is a key surfactant for detergents and cleaning products, and LABIX operation can help reduce trade deficits and expenses from importing LAB, increase revenue for the country, and strengthen national competitiveness in preparation for the ASEAN Economic Community.

Additionally, Thailoil invested in the solvent business to increase its product value chain through its wholly-owned subsidiary Thailoil Solvent Co., Ltd. (TOS), and TOS's wholly owned subsidiary TOP Solvent Co., Ltd. (TS), a distributor of solvents and chemicals in domestic and overseas markets. Moreover, TS holds 80.52 percent shares in Sak Chaisidhi Co., Ltd. (SAKC), a manufacturing plant of high-quality hydrocarbon solvents for industrial use, and 100 percent shares in TOP Solvent (Vietnam) LLC., a distributor of solvents and chemicals in Vietnam with terminals in both southern and northern Vietnam. Moreover, TS has established a Myanmar representative office in Yangon to support the distribution of products in Myanmar, and entered into a partnership in establishing PT. Tirta Surya Raya, with 67 percent of total shares held by TS, to distribute solvents and chemicals in Indonesia.

The solvents and chemicals sold by TOS and its subsidiaries are as follows:

>> Hydrocarbon solvents: Solvents consist of hydrogens and carbons such as paraffins and aromatics for



such industrial uses as paint, polymer and automobile tire industries.

- >> Chemical solvents: Solvents consist of alcohols, ketone, ester, glycol and ether groups used in paint industry and coating activities.
- >> Other chemicals: Non-solvent chemicals such as the glycol group, monomer group and other additives used in paints, binders and resins.
- >> Specialty chemical products: Chemicals used in food and beverage industries such as acid regulators, sugar substitutes, and functional ingredients for nutritional objectives.

Thailoil also invests in the cogeneration power business generating power and steam to support Thailoil and Subsidiaries' core businesses, leading to higher work efficiency and securing revenue stream. Thailoil's power and steam businesses were invested through subsidiaries and joint ventures as follows:

- 1) Thaipower Co., Ltd. (TP), Thaipower's subsidiary with 74 percent shareholding, is a natural gas-fired cogeneration power and steam plant with a capacity of 118 megawatts (MW) and 216 tons of steam per hour. Of these outputs, 41 MW of power is contracted to the Electricity Generating Authority of Thailand (EGAT) for 25 years, to expire in 2023, and the remaining power and steam are distributed within Thaipower and Subsidiaries. TP's sales and purchase agreement is a take-or-pay provision with an average of 70 percent minimum electricity and 85 percent for steam offtake.
- 2) TOP SPP Co., Ltd., a wholly owned subsidiary of Thaipower, runs two gas-fired cogeneration power and steam plants with a total capacity of 239 MW of power and 497 tons of steam per hour. The company has two power purchasing agreements (PPAs) with EGAT at a combined power demand of 180 MW, or 90 MW each, both with a 25-year term. The commercial operation dates along with the contract commencements with EGAT were April 1 and June 1, 2016 respectively. The revenue from EGAT is estimated at 54 percent of total revenue, and the remaining 46 percent of total revenue is from distributing power and steam to Thaipower and Subsidiaries.
- 3) Global Power Synergy Plc (GPSC) is a company with 20.78 percent of total shares held by TP. GPSC is the operator and investor of utility production and distribution. The total generating capacity, fully operating and under construction, is 5,026 MW of power, 2,876 tons per hour of steam, 7,372 cubic meters per hour of water for industrial use, and 15,400 refrigeration tons of chilled water.

To strengthen its capability in core businesses, Thaipower also invests in ethanol production and distribution through wholly-owned Thaipower Ethanol Co., Ltd. (TET). Ethanol is blended with gasoline to produce a variety of gasohol including gasohol E10, E20 and E85, containing 10, 20 and 85 percent of ethanol respectively. TET invests in two subsidiaries:

- 1) Sapthip Co., Ltd., 50 percent-owned by TET, produces and distributes cassava-based ethanol for fuel production with a capacity of 200,000 liters per day. The company has an ongoing expansion project which will add another 20,000 liters per day of capacity within 2021. Sapthip also owns another subsidiary, Sapthip Green Energy Co., Ltd., a power producer from biogas at 2.4 MW capacity.
- 2) Ubon Bio Ethanol Plc, a company with 21.28 percent shares held by TET, produces and distributes cassava-based and molasses-based ethanol for fuel production and industrial uses with the capacity of 400,000 liters per day. Ubon Bio Ethanol currently has two subsidiaries: 1) Ubon Sunflower Co., Ltd., the producer of food-grade and industrial-grade tapioca starch with 700 tons per day in capacity. The company also produces biogas from processed water and tapioca residue, which is used as renewable fuel, and generates power for the group and distributes to the Provincial Electricity Authority (PEA), 2) Ubon Bio Agricultural Co., Ltd., the distributor of agricultural and organic products such as coffee beans, rice, tapioca starch, tapioca chips, soil stabilizer from cassava residue and Napier grass. The company also provides livestock management and agricultural land lease.



## RAW MATERIAL PROCUREMENT

### Crude Procurement

Crude oil - main feedstock for oil refining - is procured by Thairoil from both domestic and overseas sources, taking into consideration estimated yields from each type of crude against market demand at a given time to ensure maximum returns. Thairoil has a policy to diversify crude procurement from different various sources to reduce dependence on any particular supplier in case crude cannot be delivered. Two types of crude sale-purchase agreement, i.e. term contract and spot contract, are made to ensure balance between crude procurement security and opportunity to make profit from crude market fluctuation.

During 2020, crude imports accounted for 82 percent of the total volume of crude and other raw materials used in the refining process. A majority of the crude, or 57 percent, was procured from the Middle Eastern countries such as

UAE, Qatar, Saudi Arabia, among others. Crude imports from the Far Eastern region, including Malaysia, Brunei, Indonesia, Vietnam, and Russia, accounted for 10 percent, imports from North America 9 percent, Africa 14 percent, and Europe (North Sea and Mediterranean) 1 percent. The remaining 9 percent was from domestic sources. Domestic crude is transported by rail and by vessel while imported crude is shipped to the refinery directly. With the single buoy mooring anchored offshore, Thairoil has been able to receive crude and other raw materials delivered by large vessels, which has increased oil movement efficiency while reducing the unit cost of crude shipping.

The following table shows costs of crude oil and other raw materials procured from various sources (excluding by-products from Thai Lube Base Plc and Thai Paraxylene Co., Ltd.).

Source of crude and other raw materials	2020 (THB Million)	% of the total volume	2019 (THB Million)	% of the total volume	2018 (THB Million)	% of the total volume
Middle East	67,307	57	143,481	67	188,599	70
Far East	13,005	10	21,919	10	32,048	12
Thailand	11,395	9	10,149	5	26,958	10
Africa	21,931	14	6,559	3	6,950	2
Europe	2,688	1	13,667	6	6,322	2
North America	14,103	9	19,676	9	9,853	4
<b>Total volume</b>	<b>130,429</b>	<b>100</b>	<b>215,451</b>	<b>100</b>	<b>270,731</b>	<b>100</b>

Crude oil trading normally depends on the crude market situation and production capacities, and 50 percent of the total crude oil at Thailoil is purchased from PTT Plc under Product Offtake and Crude Oil Supply Agreement. The other 50 percent is sourced from other suppliers under term contracts and spot contracts with the credit term of 30 days from the bill of lading date, which is the practice generally accepted.

### Other Raw Materials

Thailoil imports additives and colorants for some products to address the market demand and law requirements while Thai Lube Base Plc procures long residue - a raw material for lube base oil production - from Thailoil as well as from other domestic and overseas suppliers. Thai Paraxylene Co., Ltd. imports mixed xylene and toluene as feedstock for aromatics production. Meanwhile, Labix Co., Ltd. imports normal paraffin to increase the production of Linear Alkyl Benzene (LAB) - the raw material for producing detergent and cleaning agent - to its full capacity whenever economic value is anticipated.







## FACTORS AND EVENTS IMPACTING FINANCIAL POSITION OR OPERATIONS

### 1. Gross Refining Margin (GRM) and Gross Integrated Margin (GIM)

For Thailoil's refining business, the performance bottom line is primarily the GRM in USD per barrel calculated from the price spread between a given petroleum product and crude oil, subtracting landed costs and process fuel costs. When GRM is included with the gross margin from Thai Lube Base Plc (lube base oil and bitumen business), Thai Paraxylene Co., Ltd. (aromatics business), and LABIX Co., Ltd. (Linear Alkyl Benzene business), the result is GIM.

Factors affecting Thailoil and Subsidiaries' GRM and GIM are described below.

#### Manageable Factors

- >> Complexity: Thailoil Refinery is a complex refinery which can produce high-value products such as unleaded gasoline (light products) and diesel fuel and jet fuel (middle distillates) with the highest yield rate per one barrel of crude oil; therefore, the Company's GRM is higher than that of a simple refinery, which yields less proportion of high-value products.
- >> Utilization rate: Thailoil is committed to maintaining the utilization rate at no less than 100 percent on average each year, which is achieved by duly managing processes throughout the value chain.
- >> Crude oil and other raw material sources: Thailoil plans crude purchase by leveraging its Linear Programming model (LP model) to select the types, volumes, and prices of crude, thus ensuring the most cost-effective

and suitable crude for the refinery configuration, as well as the maximum commercialized product value with minimum crude and other raw material cost. Thailoil also commands a location advantage in its ability to receive crude from very large vessels, thus lowering the freight cost per unit.

- >> Domestic and international sales proportion of petroleum products: Thailoil's advantageous location near areas with high fuel demand yields low transport costs. Thailoil also commands various distribution channels to address both domestic and international demand, focusing on domestic sales. For international market, the products are exported to CLMV countries: namely Cambodia, Laos, Myanmar, and Vietnam—all of which have high product demand.

#### Factors Beyond Thailoil's Control

- >> Fluctuation of the prices of crude, petroleum products, aromatics, lube base oil, and intermediate in the production of surfactant could arise from international political problems, political stability of major oil-producing countries, worldwide economies, oil reserves around the world, the volume of crude oil, other raw materials and feedstock, and petroleum products, and price speculation by hedge funds.
- >> Thailand's and other countries' supply.
- >> Outputs of other refineries in Thailand and Asia Pacific.
- >> Transport costs of crude, other raw materials and feedstock, and petroleum products.

- >> Climate change, natural disasters, and pandemic, among others.
- >> Competition from alternative energy sources.
- >> Impacts of public-sector regulations, including specification of fuel products and price control.

Thaioil and Subsidiaries remain committed to enhancing the efficiency and developing the capability of its production, including due planning for refining and selling to maintain its competitiveness and maximizing its operating flexibility, to address severely volatile market conditions while pursuing opportunities to enter new markets despite the volatility of the refining industry caused by price factors of crude and petroleum products. However, due to the structure of Thaioil and Subsidiaries, which integrates the refining, aromatics, lube base oil, and intermediate in the production of surfactant businesses, leads to revenue structure robust and flexible enough to sustain fluctuation in world economy and markets. In addition, Thaioil constantly engages in strategic planning for margin improvement via productivity improvement and cost reduction through key projects, including the Hydrocarbon Management Review Project and the Orchestra Project.

## 2. Foreign Currency Exchange Rates

Fluctuation of the Thai baht against US dollar currency could impact Thaioil and Subsidiaries' bottom line because most of the production costs from the import of crude or raw materials and feedstock, and the revenue from the sales of petroleum products and petrochemicals are based on US dollar. Moreover, changes in foreign exchange rates could impact the Company's profits

because it could lead to a discrepancy between cost and revenue. Therefore, to increase efficiency in managing risks and mitigating fluctuation of foreign exchange rates, Thaioil and Subsidiaries' assets and liabilities are structured with proportion of US dollar appropriate to the revenue structure (natural hedge). It also engages in buying and selling foreign currencies under forward contracts for trading transaction and deploys other financial instruments, including cross-currency swap contracts to minimize fluctuation of converting liabilities in dollars that could affect profit.

## 3. Interest Rates

Thaioil and Subsidiaries' THB-denominated loan contain fixed and floating interest rates. The floating interest rate is one impacted by market interest rate fluctuations. Baht-denominated loans are of floating rates tied to Fixed Deposit Rates (FDR), Minimum Loan Rate (MLR), Thai Baht Interest Rate Fixing (THBFIX), or an average rate as defined in each loan contract. As of December 31, 2020, the maximum floating rate for THB-denominated loans was no more than 3.99 percent, whereas Thaioil and Subsidiaries' USD-denominated loan was fixed interest rates, thus immune to market fluctuation.

## 4. Seasons

Seasons are one of factors dictating fluctuations in the supply and prices of petroleum products. For example, most supply of petroleum products in the monsoon season receive more pressure than in other seasons, whereas supply and prices of diesel could rise in the winter season due to the use of diesel as fuel for heating in Japan, South Korea, EU, and the US. The supply and

prices of gasoline tend to rise in the summer due to the use of gasoline for travel in the US.

## **5. Environmental, Social and Governance (ESG)**

ESG management also plays a key role in long-term business and sustainable growth to ensure a license to operate from all stakeholders of businesses, including communities surrounding the refinery, society, or business partners. Thaipol has defined a vision and framework of sustainable operation embracing ESG to drive business, enhance competitiveness, and closely monitor the implementation. The commitment to ESG has earned Thaipol the membership of the Dow Jones Sustainability Indices (DJSI) for the eighth consecutive year and the recognition as Industry Leader in the Oil & Gas Refining and Marketing industry for the sixth year.

## SUMMARY OF THAIOIL AND SUBSIDIARIES' ASSET USED IN BUSINESS OPERATIONS



### Primary Fixed Assets under the Ownership of Thaioil and Subsidiaries

As of December 31, 2020, the primary business assets under the ownership of Thaioil and Subsidiaries-after cumulative depreciation and allowance for impairment losses as shown in the financial statement amounted to THB 145,225 million:

Description	Net book value after cumulative depreciation and allowance for impairment losses (THB Million)
Land	7,339
Buildings <sup>(1)</sup>	4,725
Leasehold improvement	212
Oil refinery and equipment	102,063
Power plant	17,504
Power transmission system	193
Lube base oil plant and equipment	8,507
Petrochemical plant	36,052
Machinery, tools and equipment	7,259
Oil tankers, liquid chemicals vessels, and passenger vessels <sup>(1)</sup>	3,434
Furniture, fixtures, office equipment, etc. <sup>(1)</sup>	1,041
Vehicles <sup>(1)</sup>	15
Construction work in progress <sup>(1)</sup>	76,177
<b>Total Cost</b>	<b>264,521</b>
Less-Cumulative depreciation and allowance for impairment losses	(116,932)
<b>Total-Net value after cumulative depreciation and allowance for impairment losses</b>	<b>147,589</b>
<b>Total-Net book value of primary fixed assets</b>	<b>147,589</b>
Less-Classified as non-current assets held for sale	(2,364)
<b>Total-Net book value of primary fixed assets</b>	<b>145,225</b>

Remark:

<sup>(1)</sup> Classified as non-current assets held for sale

### Thai Oil Plc

As of December 31, 2020, Thairoil fixed assets are mainly land, building, oil refinery, machinery and equipment, of which the Company took ownership are as listed below:

Description	Net book value (THB Million)	Obligation (THB)
Land	4,924	-
Building	3,402	-
Oil refinery and equipment	102,192	-
Machinery, tools and factory equipment	1,448	-
Furniture, fixtures, and office equipment, etc.	627	-
Construction work in progress	76,219	-
<b>Total cost</b>	<b>188,812</b>	-
Less-Cumulative depreciation and allowance for impairment losses	(76,915)	-
<b>Total-Net book value after cumulative depreciation and allowance for impairment losses</b>	<b>111,897</b>	-
<b>Total-Net book value of primary fixed assets</b>	<b>111,897</b>	-

### Subsidiaries

As of December 31, 2020, Thairoil's 22 subsidiaries, include Thai Paraxylene Co., Ltd., Thai Lube Base Plc, Thairoil Power Co., Ltd., TOP SPP Co., Ltd., Thairoil Solvent Co., Ltd., TOP Solvent Co., Ltd., Sak Chaisidhi Co., Ltd., TOP Solvent (Vietnam) LLC., PT. Tirta Surya Raya, Thairoil Ethanol Co., Ltd., Sapthip Co., Ltd., Sapthip Green Energy Co., Ltd., Thairoil Marine Co., Ltd., TOP Maritime Service Co., Ltd., Thairoil Marine International Pte. Ltd., Thairoil Energy Services Co., Ltd., Thairoil Treasury Center Co., Ltd., TOP Ventures Co., Ltd., TOP Ventures Hong Kong Limited, and TOP Ventures America LLC., of such subsidiaries, there are several primary fixed assets such as land, office buildings, power plants, factories, and machinery as detailed below:



Description	Net book value (THB Million)	Obligation (THB Million)
Land	2,415	-
Buildings <sup>(1)</sup>	1,323	-
Leasehold improvement	212	-
Power plants, factories, machinery, and factory tools and equipment	67,745	<ul style="list-style-type: none"> <li>- Land, machinery, buildings, and wastewater residue treatment unit of Sapthip Co., Ltd. have been used as collateral to secure a loan of THB 141 million from a financial institution.</li> <li>- Petrochemical plant of LABIX Co., Ltd. has been used as collateral to secure a loan of THB 5,400 million from a number of financial institutions.</li> <li>- Power production plant machinery and equipment of TOP SPP Co., Ltd. has been used as collateral to secure a loan of THB 8,500 million from a number of financial institutions.</li> </ul>
Power transmission systems	193	-
Oil tankers and liquid chemicals vessels, and passenger vessels <sup>(1)</sup>	3,434	Passenger vessels of TOP Maritime Service Co., Ltd. have been used as collateral to secure a loan of THB 858 million from a number of financial institutions.
Furniture, fixtures, and office equipment, etc. <sup>(1)</sup>	372	-
Vehicles <sup>(1)</sup>	15	-
<b>Total cost</b>	<b>75,709</b>	-
Less-Cumulative depreciation and allowance for impairment losses	(40,017)	-
<b>Total-Net book value after cumulative depreciation and allowance for impairment losses</b>	<b>35,692</b>	-
<b>Total-Net book value of primary fixed assets</b>	<b>35,692</b>	-
Less-Classified as non-current assets held for sale	(2,364)	-
<b>Total-Net book value of primary fixed assets</b>	<b>33,328</b>	-

Remark:

<sup>(1)</sup> classified as non-current assets held for sale

## Investment Properties

As of December 31, 2020, investment properties which can generate profit from rental or from value appreciation or both under the ownership of Thaioil and Subsidiaries registered a net value-after cumulative depreciation and allowance for impairment losses-of THB 103 million, as shown in the financial statements.

## Intangible Assets

### Right of use Water Pipelines and Natural Gas Pipelines

Under the water consumption contract Thaioil made with Eastern Water Resources Development and Management Plc, Thaioil is entitled to pipe water from the Nong Pla Lai-Nong Khaw and Nong Khaw-Laem Chabang water pipelines to the oil refining system. Permission has also been granted by relevant agencies to lay connecting pipes through their land to Thaioil's water receiving point.

Additionally, Thaioil is entitled to share the use of gas pipelines belonging to PTT Plc for gas delivery to Thaioil's fuel plant on the refinery premises for 15 years. The pipeline fee is included as part of the monthly gas consumption charge, base on calculation formula specified in the agreement. The agreement can be renewed by Thaioil giving a written notification to PTT Plc no less than six months in advance.

### Right under Land and Building Rental Contracts

Thaioil is entitled to use land belonging to the Treasury Department, Ministry of Finance as oil refinery and staff housing sites. Located in Chonburi Province, the land, occupying 1,499 rai, 3 ngan, and 26 square wah (accounting for 65 percent of the total area of Thaioil refinery in Sriracha), is under a 30-year lease due for expiration on September 10, 2022. The rental is to increase by 15 percent every five years. The rental for the period of September 2012-September 2017 was around THB 201 million per year and around THB 231 million per year for the period of September 2017-September 2022.

On August 21, 2018, Thaioil entered into a land lease agreement with the Treasury Department, Ministry of Finance, for which Thaioil has to pay rental yearly for 30 years from 2022 to 2052. The annual rental for September 2022-September 2025 will be worth around THB 384 million. The total rental throughout the contract period, with an increase of 10 percent every three years, will be approximately THB 21,321 million. On the contract signing day, Thaioil had already paid THB 2,962 million in advance.

The Treasury Department has allowed Thaioil to allocate part of the rented land, accounting for 8 percent of the total refinery area, to subsidiaries and other company related to Thaioil. In this respect, Thaioil will have to pay additional rental of around THB 7 million to the Treasury Department. Thaioil has moreover allowed subsidiaries and other related companies to lease 10 percent of the refinery area with a rental period and sublease period equal to the remaining validity of the rental contract Thaioil holds with the Treasury Department.

### Right to Obtain Investment Promotion Privileges

Thaioil's subsidiaries received investment promotion privileges from Thailand's Board of Investment (BOI) under the Investment Promotion Act B.E. 2520 (1977). In addition to the right to operate the business, Thaioil's subsidiaries are given the right to hire foreign highly-skilled specialist into the Kingdom at the number and for certain period defined by BOI and are permitted for oversea remittance of foreign currencies. The privileges also include the right to be exempt from import duties for machinery and equipment, the right to exclude dividends from BOI-promoted businesses that are exempt from corporate income tax in the calculation of income tax throughout the specified period, and the right to be exempt from corporate income tax for the net profit during the specified period, which varies with each business detailed below:

- >> Thailoil Marine Co., Ltd. (TM) has obtained BOI privileges for its marine transportation business with exemption from corporate income tax for March 20, 2015-March 19, 2023, May 31, 2016-May 30, 2024, and January 11, 2019-January 10, 2027. TM has also received tax deduction for its net return on investment by 50 percent of the usual rate for five years from the date after the eight-year period.
- >> TOP Maritime Service Co., Ltd. has obtained BOI privileges for its marine transportation service for crew boats and their baggage with exemption from corporate income tax for June 18, 2012-June 17, 2020, October 5, 2012-October 4, 2020, March 14, 2014-March 13, 2022, October 14, 2014-October 13, 2022, and September 2, 2015-September 1, 2023.
- >> Sak Chaisidhi Co., Ltd. (SAKC) has obtained BOI privileges for the production of aliphatic hydrocarbon and production of aromatic hydrocarbon products. SAKC is exempt from corporate income tax for eight years, starting from May 12, 2014-May 11, 2022. SAKC is also entitled to corporate income tax deduction from its net profit derived from operations by 50 percent from the usual rate, as of the ending date of corporate income tax exemption. Moreover, SAKC is entitled to deduction of electricity and piped water charge at twice the expenditure for ten years.
- >> LABIX Co., Ltd. has obtained BOI privileges for Linear Alkyl Benzene (LAB) production and its by-products with corporate tax exemption from the combined profit derived from the operations with BOI promotion by no more than 100 percent of the investment cost for seven years, starting from February 25, 2016-February 24, 2023.
- >> TOP SPP Co., Ltd. (TOP SPP) has obtained BOI privileges for power and steam production with corporate income tax exemption for its combined

net profit derived from operations with BOI promotion by no more than 100 percent of the investment cost for eight years, starting from November 25, 2015-November 24, 2023. TOP SPP is also entitled to exemption from import duties for November 25, 2015-February 26, 2019. TOP SPP commands a capacity of 246.5 MW of electricity and 343 tons per hour of steam.

#### Investment in Equity Shares of Subsidiaries and Affiliates

As of December 31, 2020 and December 31, 2019, financial investment in equity shares of Thailoil's subsidiaries and affiliates, using the cost method according to separate financial statements, amount of total THB 15,038 million and THB 22,867 million respectively.

#### Policy on Investment in Subsidiaries

Thailoil has a policy on investment in subsidiaries and on future investment in businesses that support to Thailoil or strengthen Thailoil and Subsidiaries.

To supervise subsidiaries, Thailoil as a shareholder will appoint a representative to participate in the shareholders' meeting as proxy or representative and exercise the voting right at the shareholders' meeting according to the Board's principles or guidelines.

Moreover, Thailoil will appoint representatives to as directors and/or managing director of subsidiaries. The positions of representatives include Chairman of the Board, managing director, director, executives or experts with the required knowledge and experience suitable for and without any direct conflict of interest with the business. The appointed representatives will manage subsidiaries under rules, regulations, and guidelines specified in the articles of association of each given subsidiary and related laws.



## INSURANCE

Thaioil and Subsidiaries have formulated strategies and policies on managing insurance following international standards, including risk analysis, study and identification of insurance types, financial coverage determination, and selection of a proficient and skilled insurer with a proof of financial security that correspond with Thaioil and Subsidiaries' asset risk management and revenues to ensure highest benefit. Insurances issued to cover business risks are as follows:

- >> Physical loss or damage and business interruption insurance
- >> Third-party liability insurance
- >> Miscellaneous insurance
- >> Construction all risks insurance
- >> Marine cargo insurance
- >> Environmental liability insurance.

Details of insurance coverage are summarized below:

- >> Physical loss or damage insurance for refinery covers damage to assets belonging to Thaioil or in the custody of Thaioil, such as oil refinery, oil depot, and equipment, etc.
- >> Business interruption insurance covers profit loss from business interruption, including damage caused by fire, lightning, explosion, natural disasters, and machine breakdown, exclusive of threats from war, terrorism, politics, and nuclear weapons, etc.
- >> Third-party liability insurance covers public liability, pollution liability, and product liability under a coverage limit.

- >> Miscellaneous insurance covers damage to miscellaneous assets such as office buildings, office equipment, employee residence, staff activity club, petrol stations, vehicles, and cash, etc.
- >> Construction all risks insurance covers damage to assets under construction caused by accidents, threats or natural disasters, damage to machines during installation, or damage during machine commissioning.
- >> Marine cargo insurance covers damage to crude, petroleum products, machinery and parts, chemical products, and other equipment during marine, land, or air transportation.
- >> Environmental liability insurance covers potential damage to the environment as well as restoration cost under a coverage limit.

The aforementioned insurances cover business operation worldwide inclusive of Thailand, excluding countries with trade sanctions. Insurance policies will be renewed on a yearly basis.

## PRIVILEGES, LICENSES, AND INVESTMENT PROMOTIONS

### Investment Promotion and Privileges

Thai Oil Plc has obtained privileges under the investment promotion from the Board of Investment (BOI) following the criteria and procedures defined in the Investment Promotion Act B.E. 2520 (1977), being entitled to rights and privileges from oil refining business which include import duty exemption for machinery and equipment, hiring foreign highly-skilled specialists into the Kingdom at the number and for a certain period defined by BOI, and permission for overseas remittance of foreign currency. Currently, Thail's Clean Fuel Project (CFP-the project to expand refining capacity) has obtained the investment promotion privilege through the exemption of import duty for machinery and equipment used in the project; and the power generation from renewable resources and sulfuric acid production is granted an exemption of corporate income tax on the net profit of promoted businesses up to 100 percent of capital investment. The exemption of which lasts eight years for the power generation business and three years for sulfuric acid production; and also be exempted from import duty.

Thail's subsidiaries have also received BOI privileges from their business operation, including corporate income tax exemption on net profit for certain periods, depending on types of businesses promoted, import duty exemption for machinery and equipment, hiring foreign highly-skilled specialists into the Kingdom, permission for overseas remittance of foreign currency, and exclusion of dividends received from promoted businesses from taxable income during the exemption. Details for each company are outlined below:



>> TOP SPP Co., Ltd. has obtained the investment promotion for the power and steam business with the capacity of 239.65 megawatts (MW) and 445.90 tons of steam per hour through corporate income tax exemption on net profit for eight years from November 25, 2015-November 24, 2023, of up to 100 percent of capital investment.

>> LABIX Co., Ltd. has obtained the investment promotion for the production of linear alkyl benzene (LAB) and its by-products through corporate income tax exemption on net profit for seven years from



February 25, 2016-February 24, 2023, of up to 100 percent of capital investment.

### Business licenses

The petroleum industry and power industry are governed by the Ministry of Energy, following the direction set by National Energy Policy Council (NEPC), chaired by the Prime Minister, with Energy Policy and Planning Office (EPPO) as secretary. NEPC and EPPO are responsible for policy formulation, defining management plans and guidelines relating to Thailand's energy. The NEPC resolutions approved by the cabinet are further applied and formulated into operational plans of agencies under the Ministry of Energy, including the Department of Energy Business (DOEB), the Oil Fuel Fund Office (OFFO) (previously the Energy Fund Administration Institute-EFAI), and the Department of Alternative Energy Development and Efficiency (DEDE). In 2007, the Ministry of Energy was restructured to accommodate the changing environment for maximum efficiency by segregating policy making units and regulatory control units, with the regulators also overseeing the power and natural gas businesses. An Energy Regulatory Commission (ERC) has therefore been established to regulate power and natural gas businesses under the state policy framework, with the Office of Energy Regulatory Commission (OERC) as a secretary overseeing the administration for ERC, including studying, collecting and analyzing data, as well as publishing information related to energy businesses, its competitive landscape, estimated power demand and relevant information.

### Oil Refining Business Rules and Regulations

#### Pricing Mechanism of Petroleum Products

Thailand's pricing mechanism and price equilibrium of petroleum products are referenced to specific product

prices in the Singapore spot market, commonly accepted as a standard for Thai ex-refinery prices. In general, the domestic sales is structured on an import parity basis, literally equal to the Singapore spot price of the same products plus the expenses of transporting the products to Thailand, which includes insurance fee, shipment (cargo) fee, import duty, crude loss during freight and administration fee. This basis leads to variation among different products due to different product qualification in the two countries. Each refinery defines its own ex-refinery prices.

The wholesale prices of petroleum products are made up of the ex-refinery prices using the Mean of Platts (MOPS) basis, excise tax, municipal tax, contributions to the Oil Fund and Energy Conservation Fund and value-added tax (VAT), all of which are collected by respective authorities. The taxes and fund support are further passed on to applicable agencies. The same export parity basis applies to exports, using Singapore spot price for the product in question based on the MOPS, plus or minus an adjustment subject to the market environment. Nevertheless, the government has occasionally requested domestic refineries to maintain retail prices of certain products. These prices sold to retailers can therefore be the state-regulated prices which can be lower than the ex-refinery prices. In such case, the refineries would be compensated by the Oil Fund on the differences of prices between market and regulated prices.

In 2020, Energy Policy Management Committee (EPMC) under EPPO issued measures to ease the impacts of the COVID-19 outbreak; such measures include:

>> Approval of an adjustment to the ex-refinery pricing mechanism of high-speed diesel to encourage

oil traders for more B10 biodiesel blending following the government policy to use it as the national primary fuel, with B7 and B20 high-speed biodiesel as optional fuels

- >> Approval to maintain the retail price of liquefied petroleum gas (LPG) for three more months (from October 1-December 31, 2020) with the retail price capped at 318 THB per 15-kilogram tank and the ex-refinery wholesale price fixed at 14.3758 THB per kilogram excluding VAT
- >> Approval to maintain the retail price of natural gas for vehicles (NGV) for public transport vehicles (taxis, tuk tuks and private vans in Bangkok and the vicinity, cars, minibuses, two-rows vans, private buses, buses, private vans and taxis in provincial areas) at 13.62 THB per kilogram, unless the retail price of NGV is lower than 13.62 THB per kilogram, the NGV price for public transport vehicles shall adjust accordingly, effective from November 16-December 31, 2020.

#### Legal Oil Reserves

The Fuel Trade Act B.E. 2543 (2000) states that oil traders under Article 7 shall hold a certain level of oil inventory as legal oil reserve at all times, with types and amounts as announced by the Director General of DOEB. Oil refiners as defined by Article 7 of the Fuel Trade Act B.E. 2543 (2000) shall, therefore, reserve the oil inventory with types and amounts as regulated.

In 2020, DOEB issued a Notification on Identification of Types and Quantity of Oil Reserves, Guidelines, Procedures and Conditions on Fuel Inventory Calculation B.E. 2563 (2020), demanding that oil traders under Article 7 shall reserve crude oil in stock at 4 percent from May 1, 2020-April 30, 2021, and 5 percent from May

1, 2021 onward. The notification also demands levels of reserves of each petroleum product, including those fuels in the gasoline group, ethanol, diesel group, biodiesel, fuel oil group, kerosene, and jet fuel group, effective as from May 1, 2020. Furthermore, DOEB issued the second Notification on Identification of Types and Quality of Oil Reserves, Guidelines, Procedures and Conditions on Fuel Inventory Calculation, to adjust the amount of LNG and natural gas reserves, effective from January 1, 2021 onward.

#### Oil Fund and Energy Conservation Fund

The Oil Fund was established by the order of the Prime Minister authorized by the Royal Decree on Remedy and Prevention of Shortage of Fuel Oils B.E. 2516 (1973) to find mitigation and prevention for fuel shortage and to maintain retail fuel price stability to minimize impacts from global volatility of fuel prices on the economy and the people. Under this order, producers and distributors of fuel oil shall contribute to or be compensated by the Oil Fund according to the production or distribution levels as defined by EPMC or as adjusted in line with the energy situation.

The Oil Fund Act B.E. 2562 (2019) was promulgated to ensure the adequate size of Oil Fund to follow the objectives to help efficiently balance and maintain fuel oil price at an appropriate level in case of energy crisis to enhance national security of energy and economy. The Oil Fund Administration Committee is responsible for defining guidelines, channels, rates for fund contribution and compensation, as well as reporting to NEPC.

The current fund contribution and/or compensation rates are defined by the Notification of the Oil Fund Administration Committee No. 33 B.E. 2563 (2020) on



contribution, compensation, returned contribution, and returned compensation rates, issued on September 30, 2020, with effective date as from October 1, 2020, onward:

- >> 6.58 THB per liter contribution from gasoline
- >> 0.62 THB per liter contribution from gasohol 95
- >> 0.62 THB per liter contribution from gasohol 91
- >> 2.28 THB per liter compensation for gasohol E20
- >> 7.13 THB per liter compensation for gasohol E85
- >> 0.10 THB per liter contribution from kerosene
- >> 2.50 THB per liter compensation for basic high-speed diesel
- >> 1.00 THB per liter contribution from high-speed diesel B7
- >> 4.16 THB per liter compensation from high-speed diesel B20

- >> 1.20 THB per liter contribution from low-speed diesel
- >> 0.06 THB per liter contribution from fuel oil.

The estimated balance of the Oil Fund on December 6, 2020 was THB 28.474 billion net, consisting of THB 37.175 billion for the Oil Fund and THB (8,701) million for the LPG fund.

Source: The Oil Fuel Fund Office (OFFO), Ministry of Energy

**Energy Conservation Fund** was founded under the Energy Conservation Promotion Act B.E. 2535 (1992) to serve as an investment source for administration and subsidization, with a focus on energy conservation, as well as prevention and mitigation of environmental problems arising from energy usage. Energy producers and distributors share the responsibility for contributing to the fund at the rates stated by EPMC, with the Excise Department, the Customs Department and the Department of Mineral Fuels responsible for fund collection.

NEPC issued a notification in early 2020 on Energy Conservation Fund Contribution Rates from Indigenous Fuels and Imported Fuels B.E. 2563 (2020). The notification includes contribution rates for a variety of gasoline both produced and distributed, and imported for domestic use. The quality of which is specified by DOEB following the regulations on fuel oil trade. The contribution rates are detailed as follows:

- >> 0.10 THB per liter from gasoline
- >> 0.10 THB per liter from gasohol
- >> 0.07 THB per liter from kerosene
- >> 0.10 THB per liter from high-speed diesel
- >> 0.10 THB per liter from low-speed diesel
- >> 0.07 THB per liter from fuel oil.

### Quality Specifications of Petroleum Products

The quality specifications of petroleum products are defined by DOEB, Ministry of Energy, to ensure that all users could access quality products most suitable for and least negative impact on engines, and that the air pollution arising from incomplete combustion is prevented. All quality specifications are published under the Fuel Trading Act B.E. 2543 (2000) and Fuel Trading Act (No. 2) B.E. 2550 (2007). All fuels commercially traded in the country shall possess qualifications and quality as specified by these laws.

There are currently 13 types with fuels commercially traded in Thailand with specific characteristics and qualities. These include NGV, LPG, gasoline, basic gasoline, ethanol convertible, gasohol, kerosene, diesel, fatty acid methyl ester biodiesel, biodiesel for agro-engines (community biodiesel), fuel oil, and lubricant. During 2020, DOEB issued two notifications defining characteristics and qualities for each specification of fuels commercially traded. The first announcement (characteristics and quality specifications of diesel B.E. 2563 (2020), fully enforced from October 1, 2020 onward) redefined the commercial trade name of high-speed diesel blended with 7 percent by volume of fatty acid methyl ester biodiesel ('normal speed diesel') to 'B7 high-speed diesel', and redefined high-speed diesel blended with 10 percent by volume of fatty acid methyl ester ('B10 high-speed diesel') to 'high-speed diesel'. The second announcement (characteristics and quality specifications of diesel B.E. 2563 (2020) (No. 2)) specifies in Table 2 and Table 3 the list of vehicles certified by automakers the compatibility with high-speed diesel and B20 high-speed diesel.

### Power Business Regulatory Controls

Thailand promulgated the Energy Business Act B.E. 2550 (2007), enforced since December 11, 2008, to supervise and regulate the businesses of power and natural gas. The act authorizes the formation of Energy Regulatory Commission (ERC) as the 'regulator', comprising seven commissioners, with one appointed as chairman. ERC's regulatory controls include granting of a variety of permits and licenses for energy businesses, identifying service fees of licensee, penalty and revocation of licenses, and specifying various performance standards including safety, service quality, and consumer protection. ERC also set up an Office of the Energy Regulatory Commission (OERC) as its secretariat in charge of all the administrative work, collection of fees, handling complaints from the public, conducting research and studies, collecting analyzing and publishing information on energy business, and forecasting power demand.

Under this act, a 'Power Development Fund' was initiated to provide funds for distributing power to remote community areas where power is inadequate or unavailable or where impacts arise from power development. The fund is also designed to compensate power developers who non-commercially provide power to disadvantageous users to ensure power service for all, and to compensate users who have to pay excessive energy bills. The fund also promotes the renewables consumption and production technologies, particularly those with minimal impacts on the environment. Adminstrated by OERC, the fund consists of contributions from licensees on their licensing fees regulated by ERC, collected fines and donations.

For the procurement of power, Ministry of Energy through Electricity Generating Authority of Thailand (EGAT) has drawn Power Development Plan (PDP) with the policy framework of power system security, diversified sources of fuel supply, import of power from neighbor countries, and domestic energy demand forecast. The current power development plan, PDP2018 for 2018-2037, was endorsed by NEPC on January 24, 2019 and approved by the Cabinet on April 30, 2019. With a dynamic energy environment, a revision had been made to the plan. PDP2018 Rev.1 was endorsed by NEPC on March 19, 2020; however, the Cabinet has not yet approved. Moreover, this revision has not been updated with the COVID-19 outbreak, which subsequently impacts Thailand's gross domestic product (GDP), power reserves, and demand for power and natural gas. This leads to the cancellation or postponement of PDP2018 Rev.1 and continues using PDP 2018 while the revision is anticipated after COVID-19 outbreak subsides.

The PDP2018 comprises four major components:

- 1) Promotion of power plants under the national policy,
  - >> Power generation from renewables, particularly from community waste
  - >> Pracharath biomass power plants in the three southernmost provinces.
- 2) Core fossil-fuel power plants allocated based on necessity and adequacy to maintain national security on power supply for all regions, with EGAT as the responsible agency.
- 3) Renewables power plants under the alternative energy development plan (AEDP), with the promotion of power generated from renewable sources including biomass, biogas, community solar programs, floating solar farm and other renewables, with power purchase programs reviewed annually to maintain retail power price.

- 4) Energy conservation under the Energy Efficiency Plan (EEP), designed under the energy conservation policy, with proven quality and most competitive pricing, benchmarked with grid parity prices (prices of power directed from the grid).

The PDP2018 has adjusted the proportion of fuels used for power generation, increasing natural gas and decreasing coal. The development plan also reduces the proportion of power imports from neighboring countries, and increases power generation from renewables and solar power, while lowering the capacity of power generated from biomass and biogas. Nuclear power is removed from the plan.



## EMPLOYEE INFORMATION

Headcount (excluded executives) of Thai Oil Plc (TOP)  
and Thail Energy Services Co., Ltd. (TES)

Key Function	Number of Employees			
	As of December 31, 2019		As of December 31, 2020	
	TOP	TES	TOP	TES
Enterprise Risk Management	4	6	-	-
Corporate Strategies Risks Department	-	-	3	7
Movement Marine and Logistics Department	54	56	53	81
Technology Department	9	32	10	36
Refinery Department	179	183	162	221
Treasury Department	6	13	5	13
Commercial Department	14	24	14	25
Corporate Affairs Department	14	22	14	23
Procurement and Contract Department	13	22	11	22
Quality Management Department	14	20	14	20
Supply Chain Optimization Department	7	17	4	18
Accounting Department	15	28	14	31
Petrochemical and Lube Base Department	10	129	11	144
Business Development Department	2	11	2	13
Asset Development Department	13	26	13	26
Financial Planning Department	6	12	7	12
Commercial Planning Department	4	13	3	12
Engineering Department	101	138	99	169
Efficient Operations Support Department	29	62	29	68
New S-Curve Business Development Department	3	9	3	8
Corporate Resources and Transformation Management Department	3	8	1	7
Digital	10	7	9	10
Clean Fuel Project	43	55	56	61
Regulatory Compliance Department	3	5	2	4
Corporate Governance and Sustainability Department	11	11	11	13

Key Function	Number of Employees			
	As of December 31, 2019		As of December 31, 2020	
	TOP	TES	TOP	TES
Corporate Internal Audit Department	4	5	2	7
People and Organization Management Department	21	34	20	33
People and Organization Excellence Department	2	8	2	8
Executive Support	1	-	-	-
Strategy Function	1	-	-	-
Finance and Accounting Function	4	4	4	4
Manufacturing Function	27	6	28	6
Strategic Planning Department	-	15	-	16
<b>Total</b>	<b>627</b>	<b>981</b>	<b>606</b>	<b>1,118</b>

**Remark:**

Organization restructuring was ongoing from January 1-December 31, 2020, so the number of employees of each function in 2019 approximates the number of all functions after restructuring.

Thaioil's employees were divided into four groups:

1. Junior employees consisted of technicians, operators, and administrators
2. Supervisory employees consisted of team leaders, assistant engineers, and semi-professionals
3. Senior employees consisted of section heads, engineers, senior engineers, and professionals
4. Management.

**Headcount Change (Excluding Executives)**

**During the Past Three Years:**

**Thai Oil Plc**

- >> as of December 31, 2018, a total of 652
- >> as of December 31, 2019, a total of 627
- >> as of December 31, 2020, a total of 606

**Thaioil Energy Services Co., Ltd.**

- >> as of December 31, 2018, a total of 803
- >> as of December 31, 2019, a total of 981
- >> as of December 31, 2020, a total of 1,118

**Labor Disputes During the Past Three Years**

Thaioil had no major labor dispute during the past three years. As of December 31, 2020, there are 480 members of the Union of Thai Oil Refinery Company; there was no protest or strike.

**Good Labor Practice (Labor Rights and Equality)**

Thaioil and Subsidiaries respect the rights of labor and all stakeholders without discrimination of conceptuality and points of view, race, religion, gender, gender preference, nationality, age, disability or any human

rights status. Thailoil and Subsidiaries comply with fair treatment under sensible human rights and extensive application to all of their operations while refraining from injustice, discrimination, threat, and infringement of rights.

In order to achieve one of the main objectives of sustainability business operations, Thailoil retains high-potential employees. Thailoil and Subsidiaries annually consider fair remuneration and welfare comparable to similar industries and leading companies in Thailand as well as refraining from discrimination while allowing freedom of association as a society to bargain. In 2019, bilateral negotiation on demands was collaboratively held with decent labor relations between Thailoil and the Union of Thai Oil Refinery Company without mediators (labor officers who mediate disputes between the Company and the Union when labor demands cannot be settled) and the agreement is reached on the condition of employment. The schedule for next demand submission is in 2021.

#### Freedom of Association

- >> 74.689 percent of employees were members of the Union of Thai Oil Refinery Company.
- >> No labor claims were filed in 2020, and 100 percent of the Company's business processes were audited in 2020.

#### Employees' Remuneration (Excluding Executives)

##### Total Employees' Remuneration

Employees' remuneration consist of salary and allowance, overtime payment, welfare, annual pay, and other financial aid, including contribution to the provident fund. Thailoil also provided housing allowance, medical treatment, education for children, and other benefits such as annual leave, military service leave,

maternity leave, or funeral grant, etc. Moreover, Thailoil recognizes employees' desire for post-retirement financial security, and therefore, the retirement fund project was implemented. To elaborate, a sum of money was offered, depending on employee's service years, and that employees are entitled to request such money every 10 years. Thailoil contributed to the project every month.

The total employees' remunerations in the fiscal year ending December 31, 2020 are as follows:

##### Thailoil's Employees' Remuneration

Type of Remuneration	Remuneration (THB million)	
	2019	2020
Salary and Allowance	908.00	918.30
Special Rewards	255.60	111.16
Contribution to Provident Fund	90.10	93.62
Retirement (Gratuity) Fund	135.97	128.02
Overtime	126.29	73.97
Miscellaneous	675.83	335.17
<b>Total</b>	<b>2,191.79</b>	<b>1,660.24</b>

##### Thailoil Energy Service Co., Ltd.'s Employees' Remuneration

Type of Remuneration	Remuneration (THB million)	
	2019	2020
Salary and Allowance	813.80	867.53
Special Rewards	189.21	119.86
Contribution to Provident Fund	41.18	48.18
Overtime	5.50	61.59
Miscellaneous	225.70	214.94
<b>Total</b>	<b>1,275.39</b>	<b>1,312.10</b>

### Provident Fund

Other than the remuneration described above, Thailoil set up a Provident Fund in 1990 under the Provident Fund Act B.E. 2530 (1987). Thailoil contributed 15 percent of employees' salary to the fund with options for each employee to contribute 5-15 percent of the salary. About 578 employees or 95.38 percent of the total Thailoil employees and 1,017 employees or 90.97 percent of Thailoil Energy Services Co., Ltd. joined the fund.

The key to the management and investment of the Member Companies of Thai Oil Group-Registered Provident Fund is sustainability growth. As a result, an important role of the Provident Fund's Board is to carefully select a fund management company whose administration system abilities were to appropriately, securely, and beneficially administer the fund. The following criteria were taken into account:

- >> Administration system, in which the Fund's Board considered the decision-making process for investment, including data used by the fund manager for investment, asset allocation, investment procedures in assets which might cause conflicts of interests, membership records, receipt and payment of members, disclosure of information and channels, information to be disclosed, operating system, complaint system, and other services such as E-application and mobile application, etc.
- >> Security, which provides confidence that administration of the fund continues in any circumstances by considering past performances, experience and expertise of executives and the fund manager, policies, execution, especially those of provident fund management, including criminal records and damage insurance.

Each criterion would be scored and weighed equally; however, this could change as necessary. In case of selection of a new fund management company, the Board would follow the Procurement Policy of Thailoil and Subsidiaries.

## REVENUE STRUCTURE

Thaioil's core earnings were derived from our oil refinery business. Other revenue contributors were the lube base oil refinery, petrochemical, power generation, marine transportation service, solvent, ethanol and other businesses.

(Unit: THB million)

			For the year ended December 31							
			Ownership Interest		2020		2019		2018	
					(Reclassification)		(Reclassification)			
Operator <sup>(1)</sup>	(%)		Amount	%	Amount	%	Amount	%		
A. Net Sales										
1. Oil refinery	TOP	-	252,375	97	377,547	102	407,952	104		
2. Lube base oil refinery	TLB	100	14,039	5	18,243	5	20,959	5		
3. Petrochemical	TPX	100	36,676	14	52,198	14	66,701	17		
4. Power generation	TP/TOP SPP	74/100	10,786	5	11,770	4	11,734	3		
5. Marine transportation services	TM	100	659	-	660	-	621	-		
6. Solvent	TOS	100	8,188	4	9,102	3	9,992	3		
7. Ethanol	TET	100	1,631	1	1,473	-	1,477	-		
8. Others	TES/TTC	100	5,792	2	4,295	1	1,925	-		
Less: Eliminations			(82,233)	(32)	(110,962)	(30)	(129,195)	(33)		
Total			247,913	96	364,326	99	392,166	99		
B. Net Derivative Gain on Hedging <sup>(2)</sup>										
1. Oil refinery	TOP	-	-	-	-	-	-	-		
2. Petrochemical	TPX	100	193	-	569	-	-	-		
3. Others	TTC	100	26	-	-	-	-	-		
Total			219	-	569	-	-	-		
C. Net Foreign Exchange Gain										
1. Oil refinery	TOP	-	1,692	-	1,847	-	430	-		
2. Lube base oil refinery	TLB	100	10	-	1	-	14	-		
3. Petrochemical	TPX	100	75	-	22	-	159	-		
4. Power generation	TP/TOP SPP	74/100	2	-	4	-	3	-		
5. Marine transportation services	TM	100	-	-	-	-	10	-		
6. Solvent	TOS	100	14	-	-	-	11	-		
7. Ethanol	TET	100	1	-	2	-	-	-		
8. Others	TES/TTC	100	-	-	8	-	-	-		
Total			1,794	-	1,884	-	627	-		



(Unit: THB million)

			For the year ended December 31					
			2020		2019		2018	
					(Reclassification)		(Reclassification)	
Operator <sup>(1)</sup>	Ownership Interest (%)		Amount	%	Amount	%	Amount	%
D. Other Revenues <sup>(3)</sup>								
1. Oil refinery	TOP	-	12,159	5	3,467	1	3,705	1
2. Lube base oil refinery	TLB	100	80	-	83	-	87	-
3. Petrochemical	TPX	100	185	-	316	-	299	-
4. Power generation	TP/TOP SPP	74/100	2,212	1	1,237	-	1,024	-
5. Marine transportation services	TM	100	103	-	55	-	163	-
6. Solvent	TOS	100	23	-	19	-	16	-
7. Ethanol	TET	100	22	-	3	-	20	-
8. Others	TES/TTC	100	285	-	79	-	68	-
Less: Eliminations			(5,602)	(2)	(2,369)	-	(2,467)	-
Total			9,467	4	2,890	1	2,915	1
Total revenues (A-D)			259,393	100	369,669	100	395,708	100
Revenue for the period from continuing operations			259,393	100	369,669	100	395,708	100
Revenue for the period from discontinuing operations			441	-	450	-	-	-
Total revenues			259,394	100	370,119	100	395,708	100

Remarks:

<sup>(1)</sup> TOP is Thai Oil Plc

TLB is Thai Lube Base Plc

TPX is Thai Paraxylene Co., Ltd. having respective interests in LABIX Co., Ltd.

TP is Thairoil Power Co., Ltd.

TOP SPP is TOP SPP Co., Ltd.

TM is Thairoil Marine Co., Ltd. having respective interests in Thairoil Marine International Pte. Ltd. and TOP Maritime Service Co., Ltd.

TOS is Thairoil Solvent Co., Ltd. having respective interests in TOP Solvent Co., Ltd., Sak Chaisidhi Co., Ltd., TOP Solvent (Vietnam) LLC. and PT. Tirta Surya Raya

TET is Thairoil Ethanol Co., Ltd. having respective interests in Sapthip Co., Ltd.

TES is Thairoil Energy Services Co., Ltd.

TTC is Thairoil Treasury Center Co., Ltd. having respective interests in TOP Ventures Co., Ltd., TOP Ventures Hong Kong Limited and TOP Ventures America LLC.

<sup>(2)</sup> Petrochemical have net derivative gain on hedging in 2020 and 2019 but oil refinery and petrochemical have net derivative loss on hedging in 2018.<sup>(3)</sup> Comprises received interests, export tax subsidy, revenues from services provided to subsidiary companies, land lease, single buoy mooring service fee, oil storage tank lease, revenue from disposal of scrap, gain on disposal of investments, revenues from reclassified an investment, share of profit of joint ventures and associates.

## RELATED PARTY TRANSACTIONS

For fiscal years 2019 and 2020, Thailoil and/or Subsidiaries engaged in key business transactions with subsidiaries and related parties with common major shareholders and/or directors, as shown in the notes to financial statements. All related party transactions are based on market prices or, in the absence of reference market price, the prices mutually agreed in the contracts. The relationships among parties are listed as follows:

Company	Relationship with Thailoil as at December 31, 2020
PTT Plc (PTT)	>> Major shareholder, holding 45.03 percent of Thailoil's total shares
Thai Paraxylene Co., Ltd. (TPX)	>> Wholly owned by Thailoil >> Common director: Mr. Wirat Uanarumit >> Thailoil's executives on TPX's Board: Mr. Bandhit Thamprajamchit and Mr. Santi Wasanasiri
Thai Lube Base Plc (TLB)	>> Wholly owned by Thailoil >> Thailoil's executives on TLB's Board: Mr. Bandhit Thamprajamchit, Mr. Nattapong Tumsaroj, Ms. Rungtip Maneesarachun, Mr. Santi Wasanasiri and Mr. Anawat Chansaksoong
Thailoil Marine Co., Ltd. <sup>(1)</sup> (TM)	>> Wholly owned by Thailoil >> Thailoil's executives on TM's Board: Mr. Chatapong Wungtanagorn, Mr. Viroj Meenaphant, Mr. Nattapong Tumsaroj, Mr. Worrachart Ruangtragool, Ms. Wanwisa Yanchinda and Ms. Suchada Deechaiya
Thailoil Energy Services Co., Ltd. (TES)	>> Wholly owned by Thailoil >> Thailoil's executives on TES's Board: Mr. Bandhit Thamprajamchit, Mr. Viroj Meenaphant, Mr. Viroj Wongsathirayakhun, Mr. Surachai Saengsamran and Ms. Pattaralada Sa-Ngasang
Thailoil Solvent Co., Ltd. (TOS)	>> Wholly owned by Thailoil >> Thailoil's executives on TOS' Board: Mr. Chatapong Wungtanagorn, Ms. Tarika Devahastin and Ms. Acharee Tiayabhorn
Thailoil Ethanol Co., Ltd. (TET)	>> Wholly owned by Thailoil >> Thailoil's executives on TET's Board: Mr. Bandhit Thamprajamchit, Mr. Pongpun Amornvivat, Mr. Viroj Meenaphant, Mr. Nitas Krongvanitchayakul and Ms. Pattaralada Sa-Ngasang,

Company	Relationship with Thaioil as at December 31, 2020
Thaioil Power Co., Ltd. (TP)	>> 26.01 percent owned by PTT and 73.99 percent owned by Thaioil >> Common director: Mr. Wirat Uanarumit >> Thaioil's executives on TP's Board: Mr. Bandhit Thamprajamchit, Mr. Jeerawat Pattanasomsit, Mr. Pongpun Amornvivat and Mr. Udom Wongsirinopphakhun
TOP SPP Co., Ltd. (TOP SPP)	>> Wholly owned by Thaioil >> Thaioil's executives on TOP SPP's Board: Mr. Charlee Balmongkol Mr. Pongpun Amornvivat, Ms. Rungtip Maneesarachun and Mr. Udom Wongsirinopphakhun
TOP Solvent Co., Ltd. (TS)	>> Wholly owned by TOS >> Thaioil's executives on TS's Board: Mr. Chatapong Wungtanagorn, Mr. Surachai Saengsamran, Mr. Nattapong Tumsaroj, Ms. Tarika Devahastin and Ms. Acharee Tiyaabhorn
Sak Chaisidhi Co., Ltd. (SAKC)	>> 80.52 percent owned by TS >> Thaioil's executives on SAKC's Board: Mr. Jeerawat Pattanasomsit, Mr. Chatapong Wungtanagorn, Ms. Runghana Janchookiat, Ms. Torsang Chaipravat, Ms. Tarika Devahastin, Mr. Vivat Wongnirund and Ms. Acharee Tiyaabhorn,
TOP Solvent (Vietnam) LLC. (TSV)	>> Wholly owned by TS >> Thaioil's executives on TSV's Board: Mr. Chatapong Wungtanagorn, Ms. Tarika Devahastin and Ms. Acharee Tiyaabhorn
PT. Tirta Surya Raya <sup>(2)</sup>	>> 67 percent owned by TS
Thaioil Treasury Center Co., Ltd. (TTC)	>> Wholly owned by Thaioil >> Thaioil's executives on TTC's Board: Mr. Pongpun Amornvivat, Mr. Viroj Meenaphant, Ms. Torsang Chaipravat, Ms. Rungtip Maneesarachun and Ms. Pattaralada Sa-NGasang
TOP Ventures Co., Ltd. <sup>(3)</sup>	>> Wholly owned by TTC >> Thaioil's executives on TOP Ventures Co., Ltd.'s Board: Mr. Santi Wasanasiri and Ms. Pattaralada Sa-NGasang
TOP Ventures Hong Kong Limited <sup>(4)</sup>	>> Wholly owned by TTC >> Thaioil's executives on TOP Ventures Hong Kong Limited's Board: Mr. Pongpun Amornvivat and Mr. Santi Wasanasiri

Company	Relationship with Thaioil as at December 31, 2020
TOP Ventures America LLC. <sup>(5)</sup>	>> Wholly owned by TOP Ventures Hong Kong Limited >> Thaioil's executives on TOP Ventures America LLC.'s Board: Mr. Pongpun Amornvivat and Mr. Santi Wasanasiri
Sapthip Co., Ltd. (SAPTHIP)	>> 50 percent owned by TET >> Thaioil's executives on SAPTHIP's Board: Mr. Pongpun Amornvivat, Ms. Rungrapa Janchookiat, Mr. Nitas Krongvanitchayakul and Ms. Pattaralada Sa-NGasang,
Sapthip Green Energy Co., Ltd.	>> Wholly owned by SAPTHIP >> Thaioil's executive on SAPTHIP's Board: Mr. Jumpon Thapanapong
Ubon Bio Ethanol Plc	>> 21.28 percent owned by TET >> Thaioil's executives on Ubon Bio Ethanol Plc's Board: Mr. Pongpun Amornvivat and Ms. Pattaralada Sa-NGasang
TOP Maritime Service Co., Ltd. <sup>(1)</sup> (TMS)	>> Wholly owned by TM >> Thaioil's executives on TMS's Board: Mr. Chatapong Wungtanagorn, Mr. Viroj Meenaphant, Mr. Nitas Krongvanitchayakul, Mr. Worrachart Ruangtragool and Ms. Wanwisa Yanchinda
LABIX Co., Ltd. (LABIX)	>> 75 percent owned by TPX >> Common director: Mr. Wirat Uanarumit >> Thaioil's executives on LABIX's Board: Mr. Bandhit Thamprajamchit, Mr. Chatapong Wungtanagorn, and Ms. Duangporn Teerapabpaisit
PTT Digital Solutions Co., Ltd. (PTTDG)	>> 20 percent owned by PTT and 20 percent owned by Thaioil >> Thaioil's executive on PTTDG's Board: Mr. Pongpun Amornvivat
PTT Energy Solutions Co., Ltd. (PTTES)	>> 40 percent owned by PTT and 20 percent owned by Thaioil >> Thaioil's executive on PTTES's Board: Ms. Rungrapa Janchookiat
Global Power Synergy Plc <sup>(6)</sup> (GPSC)	>> 31.72 percent owned by PTT >> 20.78 percent owned by TP (73.99 percent of TP owned by Thaioil) >> Common director: Mr. Wirat Uanarumit >> Thaioil's executive on GPSC's Board: Mr. Bandhit Thamprajamchit
Energy Recovery Unit Co., Ltd. <sup>(7)</sup>	Wholly owned by GPSC

Company	Relationship with Thaioil as at December 31, 2020
Sarn Palung Social Enterprise Co., Ltd. (PTTSE)	>> 20 percent owned by PTT and 15 percent owned by Thaioil >> Common director: Ms. Duangporn Thiengwatanatham >> Thaioil's executive on PTTSE's Board: Mr. Viroj Meenaphant
PTT Oil and Retail Business Plc (PTTOR)	>> Wholly owned by PTT
PTT Treasury Center Co., Ltd.	>> Wholly owned by PTT
PTT International Trading Pte. Ltd.	>> Wholly owned by PTT
PTT Tank Terminal Co., Ltd.	>> Wholly owned by PTT
PTT Exploration and Production Plc (PTTEP)	>> 63.79 percent owned by PTT
PTTEP Energy Development Co., Ltd.	>> Wholly owned by PTTEP
PTTEP International Ltd.	>> Wholly owned by PTTEP
Energy Complex Co., Ltd. (EnCo)	>> 50 percent owned by PTT
PTT Global Chemical Plc (GC)	>> 47.68 percent owned by PTT
IRPC Plc (IRPC)	>> 47.55 percent owned by PTT
Thai Petroleum Pipeline Co., Ltd. (Thappline)	>> 40.40 percent owned by PTTOR and 9.19 percent owned by Thaioil >> Common director: Dr. Buranin Rattanasombat >> Thaioil's executive on Thappline's Board: Mr. Chatapong Wungtanagorn
GC Glycol Co., Ltd.	>> Wholly owned by GC
PTT Phenol Co., Ltd.	>> Wholly owned by GC
Vencorex (Thailand) Co., Ltd.	>> Wholly owned by GC



Company	Relationship with Thailoil as at December 31, 2020
<b>NPC Safety and Environmental Service Co., Ltd.</b>	>> Wholly owned by GC
<b>Global Green Chemicals Plc</b>	>> 72.29 percent owned by GC
<b>Thai Tank Terminal Ltd.</b>	>> 51 percent owned by GC
<b>PTT MCC Biochem Co., Ltd.</b>	>> 50 percent owned by GC

**Notes:**

- <sup>(1)</sup> Thailoil disposed all shares in TM including all of its subsidiaries and associates: TOP Nautical Star Co., Ltd., T.I.M. Ship Management Co., Ltd., TOP-NTL Shipping Trust, and TOP-NTL Pte. Ltd., to Phurich Marine Co., Ltd. in December, 2020.
- <sup>(2)</sup> TS acquired 15,410 additional shares by entering into a share purchase agreement with PT. Tirta Surya on August 6, 2019, bringing TS's total shares to 67 percent.
- <sup>(3)</sup> TTC founded TOP Ventures Co., Ltd. on August 27, 2019.
- <sup>(4)</sup> TCC founded TOP Ventures Hong Kong Limited on August 7, 2019.
- <sup>(5)</sup> TTC founded TOP Ventures America LLC. on August 13, 2019.
- <sup>(6)</sup> Thailoil disposed of all its GPSC common shares, 8.91 percent of the total, to PTT on December 3, 2020.
- <sup>(7)</sup> GPSC founded Energy Recovery Unit Co., Ltd. on May 7, 2019.

# 1. Related Party Transactions between Thailoil and/or Subsidiaries with Major Shareholders

Related Party Transactions	Amount	
	2019 Fiscal Year (THB Million)	2020 Fiscal Year (THB Million)
<b>Transaction Items with Thailoil</b>		
Sales revenue from petroleum products	1,929	-
Other income		
- Other revenues	2	15
- Gain from disposal of investment in the associate	-	8,965
Expenses		
- Oil and natural gas products	116,149	67,462
- Asset purchase	1	6
Other expenses	121	83
Other receivables	1	1
Right of use assets	-	8
Trade account payables	11,598	4,123
Other payables	-	48
Lease liabilities	-	7
<b>Transaction Items with TP</b>		
Expenses on natural gas	2,717	2,409
Trade account payables	226	173
<b>Transaction Items with TM</b>		
Income from transportation	-	1
Other expenses	1	1
<b>Transaction Items with TLB</b>		
Expenses on natural gas	495	213
Trade account payables	23	18
<b>Transaction Items with TOP SPP</b>		
Expenses on natural gas	4,661	4,141
Trade account payables	406	308
<b>Transaction Item with TS</b>		
Revenue from solvent products	9	5

Related Party Transactions	Amount	
	2019 Fiscal Year (THB Million)	2020 Fiscal Year (THB Million)
<b>Transaction Items with SAKC</b>		
Expenses on natural gas	73	54
Other expenses	1	-
Trade account payables	7	3
<b>Transaction Items with LABIX</b>		
Expenses on natural gas	673	494
Trade account payables	49	44

## 2. Related Party Transactions with Subsidiaries (less than 100 percent shareholding) and Other Related Companies

Thaioil and/or Subsidiaries (less than 100 percent shareholding) have related party transaction with subsidiaries and related companies are listed as follows:

### 2.1 Related Party Transaction items between Thaioil and Subsidiaries (less than 100 percent shareholding) and Related Companies.

Related Party Transactions	Amount	
	2019 Fiscal Year (THB Million)	2020 Fiscal Year (THB Million)
<b>Transaction Items with TP</b>		
Revenues		
- Revenue from utility services under the service agreements providing utility infrastructure	851	827
- Revenue from rental as agreement and sub-lease rental	3	1
- Revenue from dividend	676	894
Expenses		
- Expense on power and steam from TP under the power and steam purchasing agreement	1,730	1,669
- Other expenses	-	1
Trade account receivables	40	46
Other receivables	23	24
Finance lease receivables	-	2
Trade account payables		
- Expense on power and steam from TP under the power and steam purchasing agreement	139	126

Related Party Transactions	Amount	
	2019 Fiscal Year (THB Million)	2020 Fiscal Year (THB Million)
Other payables	-	37
Other non-current liabilities	-	3
<b>Transaction Items with GPSC</b>		
Revenues		
- Revenue from sales of high-speed diesel	3	-
- Revenue from services and compensation on construction and laying of pipeline for water supply and sales and purchase agreement of fuel oil reserve	20	18
- Revenue from sub-lease rental	8	-
- Revenue from interest of finance lease	-	2
- Dividend income	174	327
Expenses		
- Other expenses	25	16
- Purchase of assets	6	-
Trade account receivables	4	-
Other receivables	2	2
Finance lease receivables	-	6
Other non-current liabilities	-	10
<b>Transaction Item with Energy Recovery Unit Co., Ltd.</b>		
Other non-current liabilities	440	2,192
<b>Transaction Items with PTTES</b>		
Expenses		
- Expenses on service from PTTES under the service agreement on technical energy solution	88	127
Purchase of assets	9	-
Other payables	-	26
<b>Transaction Items with Thappline</b>		
Other income	-	154
Dividend income	160	157
Expenses		
- Expenses on transport and logistic and other services provided by Thappline under the service agreement on fuel oil transport via pipeline and other related expenses	54	39

Related Party Transactions	Amount	
	2019 Fiscal Year (THB Million)	2020 Fiscal Year (THB Million)
Other payables	5	4
<b>Transaction Items with PTTDG</b>		
Dividend income	18	19
Expenses		
- Expenses on technical services and information technology solutions under the service agreement	229	250
Purchase of assets	54	85
Other receivables	-	17
Other payables	50	74
<b>Transaction Items with GC</b>		
Other income	1	-
Expenses on petroleum products	484	294
Other expenses	2	-
Other receivables	1	-
<b>Transaction Items with IRPC</b>		
Other income	4	-
Other expenses	177	118
Other payables	9	11
Purchase-sale of crude oil and feedstock for legal reserve	2,240	-
<b>Transaction Items with PTTOR</b>		
Revenue from petroleum products	164,543	108,486
Other income	15	10
Expenses on petroleum products	259	49
Other expenses	1	5
Trade account receivables	8,940	5,965
Trade account payables	88	15
Other payables	-	1
<b>Transaction Item with GC Maintenance and Engineering Co., Ltd.</b>		
Other expenses	-	1



Related Party Transactions	Amount	
	2019 Fiscal Year (THB Million)	2020 Fiscal Year (THB Million)
<b>Transaction Item with NPC Safety and Environmental Services Co., Ltd.</b>		
Other expenses	-	1
<b>Transaction Items with EnCo</b>		
Expenses		
- Other expenses	66	64
- Interest expense-finance lease	-	2
Rights of use assets	-	20
Other non-current assets	-	14
Other payables	1	1
Finance lease liabilities	-	21
<b>Transaction Items with Global Green Chemicals Plc</b>		
Expenses on petroleum products	1,225	1,813
Other expenses	2	-
Trade account payables	97	146
<b>Transaction Items with PTT International Trading Pte. Ltd.</b>		
Revenue from petroleum products	325	1,221
Other income	14	6
Expenses on petroleum products	11,133	1,443
Expenses on oil price crack spread swap contract	28	-
Other expenses	1	-
Trade account receivables	16	-
Trade account payables	702	286
Other payables	22	5

## 2.2 Related Party Transactions among Subsidiaries and between Subsidiaries and Related Companies

Company	Related Party Transactions	Amount	
		2019 Fiscal Year (THB Million)	2020 Fiscal Year (THB Million)
TM	<b>Transaction Items with IRPC</b>		
	- Purchase of petroleum products from IRPC	37	34
	- Trade account payables	2	2
	<b>Transaction Items with PTTOR</b>		
	- Transport and delivery of petroleum products	1	-
	- Purchase of petroleum products	6	23
	- Trade account payables	-	3
TMS	<b>Transaction Items with PTTEP</b>		
	- Transport services of crews and utilities in the Gulf of Thailand	111	140
	- Trade account receivables	25	22
	<b>Transaction Items with PTTEP International Co., Ltd.</b>		
	- Transport services of crews and utilities in the Gulf of Thailand	7	20
	- Trade account receivables	5	4
	<b>Transaction Item with PTTEP Energy Development Co., Ltd.</b>		
	- Transport services of crews and utilities in the Gulf of Thailand	1	-
TP	<b>Transaction Items with TPX</b>		
	- Sales and delivery, and stocking of power and steam for TPX under the power and steam sales and purchase agreement	1,094	1,030
	- Purchase of steam under the steam sales and purchase agreement	29	31
	- Trade account receivables	93	90
	- Trade account payables	3	3
	<b>Transaction Items with TLB</b>		
	- Sales of power and steam for TLB under the power and steam sales and purchase agreement	651	617
	- Trade account receivables	55	50

Company	Related Party Transactions	Amount	
		2019 Fiscal Year (THB Million)	2020 Fiscal Year (THB Million)
	<b>Transaction Items with GPSC</b>		
	- Dividend income	405	762
	- Purchase of raw water	22	-
	- Trade account payables	1	-
	<b>Transaction Items with PTT Treasury Center Co., Ltd.</b>		
	- Interest expense	27	113
	- Other payables	27	1
	- Current portion of long-term loans	3,999	3,999
	<b>Transaction Items with TTC</b>		
	- Interest expense	78	322
	- Other payables	78	2
	- Current portion of long-term loans	11,381	11,381
<b>TOP SPP</b>	<b>Transaction Item with GPSC</b>		
	- Revenue from power reserve under the sales and purchase of power reserve agreement	1	1
<b>TLB</b>	<b>Transaction Items with IRPC</b>		
	- Sales of by-products	5	-
	- Purchase of by-products	192	-
	<b>Transaction Items with PTTOR</b>		
	- Sales of lube base oil	2,690	2,086
	- Purchase of lube base oil	11	10
	- Trade account receivables	68	112
	- Other payables	1	1
<b>TPX</b>	<b>Transaction Items with IRPC</b>		
	- Sales of petrochemical products	596	742
	- Purchase of aromatic products	44	-
	- Trade account receivables	11	67
	<b>Transaction Item with PTTOR</b>		
	- Purchase of aromatic products	2	2

Company	Related Party Transactions	Amount	
		2019 Fiscal Year (THB Million)	2020 Fiscal Year (THB Million)
	<b>Transaction Item with GC</b>		
	- Purchase of aromatic products	55	-
	<b>Transaction Items with PTT International Trading Pte. Ltd.</b>		
	- Sales of aromatic products	4,496	1,850
	- Trade account receivables	343	339
<b>TS</b>	<b>Transaction Items with IRPC</b>		
	- Sales of solvent products	90	50
	- Purchase of solvent products	1,100	767
	- Trade account receivables	8	7
	- Trade account payables	85	69
	<b>Transaction Items with PTTOR</b>		
	- Purchase of solvent products	12	11
	- Trade account payables	1	1
	<b>Transaction Items with GC</b>		
	- Sales of solvent products	174	94
	- Purchase of solvent products	9	13
	- Trade account receivables	8	16
	- Trade account payables	-	2
	<b>Transaction Items with PTT Phenol Co., Ltd.</b>		
	- Purchase of solvent products	119	166
	- Trade account payables	6	13
	<b>Transaction Items with PTT MCC Biochem Co., Ltd.</b>		
	- Sales of solvent products	-	7
	- Purchase of solvent products	14	14
	<b>Transaction Items with Vencorex (Thailand) Co., Ltd.</b>		
	- Sales of solvent products	21	11
	- Trade account receivables	1	1

Company	Related Party Transactions	Amount	
		2019 Fiscal Year (THB Million)	2020 Fiscal Year (THB Million)
SAPTHIP	<b>Transaction Items with PTTOR</b>		
	- Sales of ethanol products	720	543
	- Purchase of petroleum products	3	3
	- Trade account receivables	55	62
	- Trade account payables	-	1
SAKC	<b>Transaction Items with IRPC</b>		
	- Purchase of feedstock	324	141
	- Trade account payables	4	5
	<b>Transaction Items with GC</b>		
	- Purchase of feedstock	2,104	1,291
	- Trade account payables	206	130
	<b>Transaction Item with PTT Tank Terminal Co., Ltd.</b>		
	- Storage tank service expense	20	22
	<b>Transaction Items with Thai Tank Terminal Co., Ltd.</b>		
	- Storage tank service expense	17	17
	- Other payables	-	1
TOP Solvent (Vietnam) LLC.	<b>Transaction Items with IRPC</b>		
	- Purchase of solvent products	680	439
	- Trade account payables	32	56
	<b>Transaction Items with PTT Phenol Co., Ltd.</b>		
	- Purchase of solvent products	33	143
	- Trade account payables	-	16
	<b>Transaction Items with GC Glycol Co., Ltd.</b>		
	- Purchase of solvent products	22	24
	- Trade account payables	1	1
LABIX	<b>Transaction Item with Thai Tank Terminal Co., Ltd.</b>		
	- Storage tank service expense	11	2



## Summary of Related Party Transaction Materiality

### Related Party Transactions between Thailoil and/or Subsidiaries with Major Shareholders

#### 1) Related Transactions with PTT

##### Transaction Characteristics

>> Under the Product Offtake and Crude Oil Supply Agreement (POCSA) between Thailoil and PTT, petroleum products are traded at market prices expedited with specific procedures with quantities, processes, conditions, and terms of payment stipulated in the agreement. Under the mutual agreement, PTT shall notify, the types and quantities of products PTT needs to dispose domestically and/or internationally, at no less than 49.99 percent of the Thailoil's refining capacity. Thailoil, in return, shall notify the types and quantities of products able to be delivered within the timeframe of ordering and delivery. The agreement provides a special privilege to PTT as the priority buyer up to 100 percent of all the refined products. Under the same agreement, PTT is also committed to provide, and Thailoil to accept, crude oil and/or feedstock totalling 49 percent of Thailoil refining capacity.

This agreement can be terminated due to various reasons including 12-month in advance written notice by either party, but not during the first 10-year period beginning July 28, 2014.

On May 10, 2018, PTT entered into the deed of novation to transfer partial rights duties and responsibilities to PTTOR except the procurement of crude oil and feedstock to Thailoil's refinery process. The agreement is effective from July 1, 2018 onwards.

>> Thailoil entered into two natural gas supply agreements with PTT, the 10-year agreement (2014-2023) and

the 15-year agreement (2007-2022). Under these agreements, PTT must supply natural gas to Thailoil for its refining operations for specific contract quantities. Thailoil can modify the quantity by prior notice to PTT. Pricing is calculated monthly with a formula stipulated in the agreement comprising prices of natural gas and the tariff rate for the pipeline, a standard natural gas pricing mechanism. Each party can exercise the rights to extend the contract term by a written notice no less than six months in advance.

>> Thailoil and PTT occasionally enter into crude forward contracts to effectively manage the hedging of spreads between crude oil and refined products. After each procurement, PTT and Thailoil are mutually obliged to settle the surplus or different portion between the fixed and float mechanism to ensure proper hedging of highly volatile oil prices.

>> Thailoil entered into a land lease agreement with PTT for a 15-year (September 2011-August 2026) period to fabricate and install storage tanks for crude oil and refined products. Without a one-month written notice before the end of contract term, the agreement will automatically be extended for another 15 years.

>> Thailoil and PTT entered into a 20-year agreement on jetty and petroleum pipeline transport service, with service fee as indicated in the agreement. The 20-year agreement, from 2017 through to 2036, can be terminated only after the first 10 years counting from the first day of the agreement with a written notice sent at least three years in advance. Both parties can extend the agreement by sending a written notice at least one year in advance. The extension is allowed at five years.

- >> A 20-year agreement between Thailoil and PTT was effective on May 5, 2018 for Thailoil to provide pipeline loading of jet fuels to PTT with a service pricing formula clearly stipulated in the agreement. The agreement can be terminated only after the first ten years counting from the effective date by sending a written notice at least three years in advance. The agreement can be extended, on the other hand, by either party sending a written notice at least one year in advance. The extension agreement is allowed for another five years.
  - >> To maintain liquidity, Thailoil have entered into an uncommitted unsecured short-term loan agreement with a PTT, with loan coverage of up to THB 2,000 million. The agreement calls for BIBOR (Bangkok Interbank Offered Rate) or LIBOR (London Interbank Offered Rate) plus the interest margin referenced to the published short-term loan interest, short-term return on investment, and credit ratings of both parties, with no collateral. The agreement will end in December 2021.
- 2) Transaction Items among Thailoil's Subsidiaries and PTT Transaction Characteristics**
- >> TP entered into a 25-year agreement with PTT (1998-2022) for the procurement and supply of natural gas for power generation. TP is obliged to either buy the minimum contract quantity, or pay for the natural gas as stipulated in the agreement. The natural gas price is the market price. The agreement can be extended by sending a written notice to the counter party at least one year in advance.
  - >> TM and PTT occasionally enter into an agreement on business-as-usual basis to provide marine services for oil and chemicals with a market price mechanism and terms comparable to other service providers.
  - >> SAKC entered into a natural gas supply agreement with PTT with a quantity and pricing formula as specified in the agreement. The 10-year agreement is effective from January 1, 2019 and will end on December 31, 2028. Either party can seek for agreement extension with a written notice sent to the counter party no less than six months prior to the end of the agreement.
  - >> TLB entered into a natural gas supply agreement with PTT with a quantity and pricing formula as specified in the agreement. The effective date of the agreement is April 1, 2017 and the agreement will last until December 31, 2026. An extension can be made by sending a written notice to the counter party at least six months before the end of the agreement.
  - >> TOP SPP and PTT entered into a two-phase natural gas supply agreement; the first phase is from the agreement effective date to the day prior to the commercial operation date (COD) and the second phase is for a 25-year term during 2016-2041 starting from COD to supply natural gas for TOP SPP to generate power. The take-or-pay term is applied with a market price mechanism. The agreement can be extended by sending a written notice to the counter party at least one year before the end of agreement.
  - >> LABIX entered into a natural gas sales and purchase agreement with PTT. Under the agreement, PTT is obliged to supply natural gas to LABIX at a certain quantity and price as specified in the agreement until the end of the agreement in October 2025. A written notice sent to the counter party at least six months is needed to extend the terms of the agreement.

## **Related Party Transaction Items between Thaioil and Subsidiaries (less than 100 percent shareholding) or other Related Companies**

### **1) Transaction Items with TP**

#### **Transaction Characteristics**

- >> Thaioil entered into a 24-year service and supply agreement with TP, effective April 1, 1998. Under the agreement, Thaioil is obliged to provide maintenance and repair services, procure and supply feedstock and parts including fuel oil reserve to TP. With a land lease involved, the agreement will expire either at the end of the 24-year term or when the land lease is terminated, whichever comes first. The service fee is a cost-plus on an arm's length basis. The agreement can be terminated by either party on various grounds with a prior written notice.
- >> Thaioil entered into a 24-year public infrastructure use agreement with TP on April 1, 1998. The agreement will expire either at the end of 24 years or when the land lease is terminated, whichever comes first. Under the agreement, Thaioil is obliged to provide rights of use of land assets and/or basic infrastructure utility including distribution of power, steam, water for industrial use, control system, and others within the power plant area; while TP is obliged to pay for all the utilities and service fees at 2 percent of its monthly total revenue. The agreement can be terminated by either party on various grounds with a prior written notice.
- >> Thaioil and TP entered into a land lease and sublease agreement for the rights of use of parts of the land property under lease agreement with the royal property granted by the Ministry of Finance and parts of land property owned by Thaioil in Sriracha for construction of a power plant and managing power generation

business and related activities. The agreement period is from December 1996 to September 2022, totaling 25 years and 9 months. The land rental is based on a yearly basis, adjusted every five years, strictly complying with the price schedule posted by the Royal Property. The rights of use of property, building, component parts and equipment, exclusive the plant, will belong to Ministry of Finance and/or Thaioil at the end of the land lease and sublease, as applicable.

- >> Thaioil and TP entered into a 25-year (1998-2022) sales and purchase of power and steam agreement, with a termination clause by written notice from either party. Under the agreement, TP is obliged to distribute power and steam to Thaioil at the quantity specified in the agreement under a market price mechanism.
- >> Under group restructuring, Thaioil entered into an Entire Business Transfer agreement with TP, scheduled for February 1, 2021 at the transfer price of about THB 26,773 million (actual price to be adjusted by a third-party assessor on the actual transfer date). The transfer includes all the assets, liabilities, rights, duties and obligations, contracts and agreements, permits and licenses of TP physically booked on the transfer date. The transfer is designed and mandated for Thaioil to fully operate the entire TP's business uninterrupted.

### **2) Transaction Items with GPSC**

#### **Transaction Characteristics**

- >> Since July 28, 1998, Thaioil has provided organizational support including human resources, training and development, recruitment of personnel, coordination with government authorities and related activities to GPSC under a service agreement. The service fee

is cost-plus on an arm's length basis. The contract term will end at the same time as the power purchase agreement (PPA) between GPSC and the Electricity Generating Authority of Thailand (EGAT). The agreement can be terminated by either party with a 120-day prior written notice.

- >> Also since July 28, 1998, Thaipol has entered into a 25-year agreement to obtain compensation of the construction cost of pipeline to supply water to GPSC, with a clause of possible earlier termination in case the PPA between GPSC and EGAT expires. The water pipeline was earlier constructed by Thaipol to supply water for use in its refining units at Sriracha. Under the agreement between Thaipol and GPSC, GPSC is obliged to compensate part of the construction cost by annual instalments on a cost-plus and an arm's length basis.
- >> With an existing land lease agreement between Thaipol and the Royal Property, executed by the Ministry of Finance, Thaipol signed a 25-year 9-month sublease agreement (December 1996-September 2022) with GPSC for rights of the latter's use of land assets to construct a power plant and manage the power generation business and related activities. The agreement involves annual land lease payment with price adjustment every five years under the price schedule posted by the Royal Property. At the end of the sublease agreement, the rights of property, buildings and facilities, and equipment, except the power plant, will belong to the Ministry of Finance.
- >> Thaipol and GPSC mutually entered into a 25-year fuel oil reserve sales and purchase agreement (August 2000 - August 2025). Under the agreement, Thaipol is obliged to supply fuel oil reserve to GPSC on notified demand with the service fee on a cost-plus and an

arm's length basis. The agreement is considered terminated if the power sales and purchase agreement between GPSC and EGAT is extended or the agreement reaches the end of term.

### 3) Transaction Items with Thapline

- >> A 20-year service agreement between Thaipol and Thapline was signed on May 17, 1994. Under the agreement, Thapline is obliged to provide petroleum pipeline loading at a cost stipulated in the agreement. The agreement can be extended if needed, or terminated after 20 years or goals achieved, which have not been met.

### 4) Transaction Items with PTTDG

- >> Thaipol entered into a 2-year agreement with PTTDG. Under the agreement ending December 2020, PTTDG is obliged to provide technology and telecommunication services and solutions under service fees stipulated in the agreement. The agreement can be periodically extended upon mutually agreed terms and can be terminated by either party with a written notice sent no less than 180 days before expiry. (The agreement is currently under the extension process.)

### 5) Transaction Items with PTTE

- >> Thaipol and PTTE entered into a 3-year service agreement, whereby PTTE is obliged to provide technical solutions and advice on matters related to energy and petrochemical businesses at a service charge defined in the agreement. The current agreement is set to expire in December 2022.

### 6) Transaction Items with EnCo

- >> Thaipol is under a 3-year property lease agreement with EnCo for its office space. The existing agreement

will expire in November 2021 and can be renewed on a 3-year basis, with rental fees and related service charges and conditions set forth in the agreement.

#### 7) Transaction Items with Energy Recovery Unit Co., Ltd.

- >> As support of power and steam to Clean Fuel Project (CFP), Thaioil entered into a sales and purchase agreement of the Energy Recovery Unit (ERU) with Energy Recovery Unit Co., Ltd., at a purchase price stipulated in the agreement. After the closing date and Thaioil's certifying the completion of CFP construction by the contractor with a provisional acceptance certificate (PAC), and all related permits and licenses are granted by respective authorities to both the buyer and the seller, Thaioil will transfer the rights of use of the ERU asset to Energy Recovery Unit Co., Ltd., expected in 2023.
- >> Thaioil and Energy Recovery Unit Co., Ltd. entered into a fuel oil and utilities supply agreement to procure and deliver oil residue, fuel oil, and utilities for ERU. The agreement period is 25 years since the closing date. The counter parties can extend the agreement for another five years.
- >> Thaioil and Energy Recovery Unit Co., Ltd. also entered into a 25-year agreement. Under the agreement, Thaioil will purchase power, steam and related by-products generated by the energy recovery unit (ERU) after the closing date. The agreement can be mutually extended for another 5-year period.
- >> A related 25-year agreement was signed between Thaioil and Energy Recovery Unit Co., Ltd., under which Thaioil is obliged to provide commissioning and all related maintenance services of the ERU after the closing date. The agreement can be mutually extended for another 5-year period.

### Related Party Transaction Items between Subsidiaries or Related Companies and Subsidiaries or Related Companies

#### Transaction Characteristics

- >> TP and GPSC signed on January 6, 2000 a 25-year sales and purchase agreement of backup power. Under the agreement, TP is obliged to provide backup power for GPSC as demanded at cost-plus prices on an arm's length basis. The agreement can be terminated upon the expiry of the PPA between GPSC and EGAT or at the end of the contract term, whichever comes first. Either party can also terminate the agreement with a prior written notice.
- >> TP entered into a 25-year power and steam sales and purchase agreement with TPX and TLB. Under the agreement ending 2022, TP is obliged to distribute power and steam at the mutually agreed quantity with the prices of power and steam referenced to the market. The agreement is take-or-pay in nature, with a minimum daily contract quantity of power and steam. The agreement can be terminated by either party with a prior written notice.
- >> Under a 4.5-year agreement with PTT Treasury Center Co., Ltd., TP obtained a financial loan of THB 4,000 million to purchase common shares of GPSC on its capital increase to maintain TP's shareholding in GPSC at 2.82 percent fixed interest.
- >> Also, under a 4.5-year agreement with TTC, TP obtained a financial loan of up to THB 11,385 million to acquire common shares of GPSC on its capital increase to maintain TP's shareholding in GPSC at 2.66 percent fixed interest.
- >> TP and TPX entered into a 25-year agreement ending 2022 for TPX to distribute steam at the contractual



quantity at the market price. The agreement can be terminated by either party upon a prior written notice.

- >> SAKC and IRPC entered into a 1-year agreement with a renewable option, ending December 31, 2020. Under the agreement, IRPC is obliged to provide feedstock to SAKC at the contractual quantity and pricing under the formula referenced to the market. Either party can terminate the agreement upon written notice sent no less than three months before the expiry. (The agreement is under a renewal process.)
- >> SAKC signed a feedstock sales and purchase agreement with GC on March 1, 2005. GC is obliged to supply feedstock to SAKC at the contractual quantity and pricing under the formula referenced to the market. Either party can terminate the agreement upon written notice sent no less than eighteen months before the expiry.
- >> SAPTHIP and PTTOR entered into a 10-year agreement on sales of ethanol products. PTTOR is obliged to supply ethanol products at the contractual quantity and pricing formula stipulated in the agreement. The agreement, ending in June 2021, can be extended upon written notice sent not less than 6 months prior to the expiry.

#### Opinion from the Audit Committee on Related Party Transactions

The Audit Committee does not have any difference in opinion from that of the Board of Directors.

#### Policy on Future Related Party Transactions

Thaioil is fully committed to full compliance with laws, rules and regulations set forth by the Securities and Exchange Commission (SEC) and the Stock Exchange of Thailand (SET), including the generally acceptable accounting principles on the disclosure of related parties and entities and related party transactions defined by the Federation of Accounting Professions.

In case of any accounting disagreement and discrepancy on related transactions with either persons or entities, the Audit Committee is in charge of reviewing and making decisions on the appropriateness of such transactions. Should any transactions need specific knowledge and expertise, Thaioil is to acquire comments and suggestions on such transaction from third party with relevant proficiency, such as external auditor or independent asset assessor and individuals or entities involved in such transaction. The opinions from the Audit Committee or proficient third party will be used as insights and information for the approval of the Board or the Shareholder as deemed applicable. This is to ensure that such transaction is not considered illegal transfer of benefit among and between Thaioil, subsidiaries, joint ventures and associates, or related parties and shareholders, but the transaction prioritizing the maximum benefit of each and every shareholder especially minor shareholders.



## MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL POSITION AND OPERATING RESULTS

### Operating Results-Consolidated Financial Results

		2020	2019 <sup>(1)</sup>	+/(−)
Gross Integrated Margin (GIM)	USD/barrel	2.4	4.7	(2.3)
<u>excluding</u> Stock Gain/(Loss) <sup>(1)</sup>				
Gross Integrated Margin (GIM)	"	0.1	5.2	(5.1)
<u>including</u> Stock Gain/(Loss) <sup>(1)</sup>				
Sales Revenue <sup>(2)</sup>	Million Baht	242,840	361,768	(118,928)
Net Derivative Gain/(Loss) on Hedging	"	(174)	359	(533)
<b>EBITDA</b>	"	<b>(2,055)</b>	<b>14,149</b>	<b>(16,204)</b>
Net Gain/(Loss) on Fair Value Measurement of Financial Instruments <sup>(3)</sup>	"	(5)	-	(5)
Net Foreign Exchange Gain/(Loss) <sup>(4)</sup>	"	1,784	1,778	6
Gain from Sale of Investment in Associates	"	5,801	-	5,801
Finance Costs	"	(4,292)	(3,224)	(1,068)
Reversal of Income Tax/(Expense)	"	647	(1,240)	1,887
<b>Net Profit/(Loss)</b>	"	<b>(3,301)</b>	<b>6,277</b>	<b>(9,578)</b>
Basic Earnings/(Loss)	Baht/Share	(1.62)	3.08	(4.70)
Stock Gain/(Loss)	"	(7,399)	1,581	(8,980)
Reversal/(Write-Down) on Crude and Petroleum Product Inventory <sup>(5)</sup>	"	(549)	659	(1,208)

#### Remarks:

<sup>(1)</sup> GIM includes Thailoil Refinery, Thai Lube Base Plc, Thai Paraxylene Co., Ltd. and LABIX Co., Ltd.

<sup>(2)</sup> Re-presented the impact on the financial statements in accordance with Thai Financial Reporting Standards No. 5-Non-Current Assets Held for Sale and Discontinued Operations (TFRS 5).

<sup>(3)</sup> Fair value measurement of financial instruments in accordance with Thai Financial Reporting Standards No. 9-Financial Instruments (TFRS 9), which is effective from January 1, 2020.

<sup>(4)</sup> Including net foreign exchange gain/(loss) on foreign currency assets and liabilities in 2020 and 2019 of THB 1,991 million and THB 1,607 million, respectively.

<sup>(5)</sup> Including reversal/(write-down) of allowance for decline in value of crude and petroleum product inventories adjusted to net realizable value and reversal/(write-down) of petroleum product at cost.

For the year 2020, Thailoil and Subsidiaries maintained elevated levels of outputs. Thailoil Refinery posted 101 percent in utilization rate. The production rate of aromatics business, Linear Alkyl Benzene (LAB) business and lube base oil business, were 71 percent, 103 percent and 88 percent respectively. For the operating results comparing the year 2020 with 2019, Thailoil and Subsidiaries posted sales revenue of THB 242,840 million, a decrease of THB 118,928 million mainly due to weaker prices and total sales volumes of products due to the oil price war and the COVID-19 outbreak. Despite an improvement in LAB margin. The declines in petroleum product spreads over Dubai crude oil despite of considerably lower crude premiums, notably the spreads of jet/kerosene and diesel. The paraxylene spread over ULG95 and by-product of lube base oil and bitumen spread over fuel oil both fell, as well as the decreasing sales of Treated Distillate Aromatics Extract (TDAE), contributed to a drop in GIM excluding stock gain/(loss) for Thailoil and Subsidiaries by 2.3 USD per barrel to 2.4 USD per barrel. This year saw THB 7,399 million in stock losses against THB 1,581 million in stock gain last year. In addition, this year there was a net derivative loss on hedging instruments of THB 174 million against THB 359 million in profit last year. Still, the operating costs of Thailoil and Subsidiaries this year plunged, unlike last year, due to major turnaround expenses. Also, this year Thailoil and Subsidiaries executed the cost management program, a measure during COVID-19 situation, resulting in THB 2,055 million in EBITDA loss against the EBITDA of THB 14,149 million of 2019. Thailoil and Subsidiaries posted THB 1,784 million in net foreign exchange gain, thanks to Thai Baht appreciation. The finance costs amounted to THB 4,292 million, a rise of THB 1,068 million including the THB 5,801 million gain from sale of investment in Global Power

Synergy Plc (GPSC). For the year, Thailoil and Subsidiaries therefore registered a net loss of THB 3,301 million against THB 6,277 million in net profit last year.

This year Thailoil disclosed to Stock Exchange of Thailand (SET) its shareholding restructuring in the group of power and marine transportation business. With the completion of such restructuring in the power business, Thailoil will increase net cash flow which help support liquidity and strengthen the Company's financial position while increasing its capital for future investment opportunities. Thailoil expects that profit contribution from power business can be achieved as targeted. As for the marine transportation business restructuring, this would accommodate long-term growth and strategies while enable Thailoil to increase efficiency and flexibility in driving the Company's core business forward.

### **Results by Company for the Year 2020 Compared to 2019**

Thailoil Refinery (Thailoil) reported throughput of 101 percent, decreased from the prior year by 6 percent and had sales revenue of THB 247,302 million, dropped by THB 128,099 million in line with lower product sales volume and average product selling prices due to COVID-19 pandemic. Domestic sales accounted for 87 percent and Indochinese sales 10 percent while exports accounted for 3 percent. GIM excluding stock gain/(loss) amounted to 0.4 USD per barrel, significantly dropped by 2.7 USD per barrel, mainly due to eroding petroleum product spreads, notably gasoline, jet/kerosene, and diesel. This was because of weak demand amid COVID-19 pandemic and international travel restrictions despite big drops in crude premiums. In addition, the collapse in crude oil prices resulted in oil stock loss of 2.3 USD per barrel or THB 7,399 million

against THB 1,581 million in stock gain last year. Moreover, there was the write-down on crude oil and petroleum products of THB 549 million and reversal on crude oil and petroleum products inventory of THB 659 million in the previous year. The operating costs for the year 2020 were considerably reduced from last year, which had seen a major turnarounds. This year Thairoil implemented its cost management program during COVID-19 situation. Incorporating the net realized loss on financial instruments of THB 359 million, larger by THB 149 million than the previous year, EBITDA loss this year totaled THB 10,689 million against the EBITDA of THB 5,902 million last year. Still, Thairoil's had net foreign exchange gain of THB 1,692 million, reduced by THB 155 million from the prior year. Thairoil posted a gain of THB 8,965 million from the sale of investment in GPSC while it recognized impairment loss from the restructuring of the marine transportation business of THB 162 million. Offsetting with depreciation, finance costs and reversal of income tax expenses, Thairoil posted a net loss of THB 6,099 million (including dividend income, it had net loss of THB 1,488 million) in 2020 against a net profit THB 2,161 million in 2019.

**Thai Lube Base Plc (TLB)** had utilization rate of 88 percent, boosted by 5 percent from last year and sales revenue of THB 14,039 million, decreased by THB 4,204 million mainly due to the lower average product selling price tracking crude oil price. TLB had Product-to-Feed Margin of 79 USD per ton, down 10 USD per ton, due to the lower spreads of by-products, mostly tied to diesel and fuel oil prices. Furthermore, sales volume of TDAE, a high-value specialty product, decreased from last year due to COVID-19 pandemic. Therefore, TLB had EBITDA of THB 1,304 million, reduced by THB 139 million. Offsetting with depreciation and income tax expenses,

TLB posted a net profit of THB 910 million, down THB 157 million from last year.

**Thai Paraxylene Co., Ltd. (TPX)** posted an aromatics plant utilization rate of 71 percent, increased by 1 percent from last year. TPX had sales revenue of THB 26,727 million, decreased by THB 8,871 million mainly due to lower product selling prices tracking with crude oil price. TPX had Product-to-Feed Margin of 77 USD per ton, decreased by 4 USD per ton mainly due to the plummeting paraxylene spread over ULG95, in turn due to COVID-19 pandemic and the startup of new paraxylene plants. TPX posted higher total sales volume as well as lower major turnaround expenses because it had major turnaround in 2019. Incorporating net realized gain on financial instruments of THB 244 million, decreased by THB 322 million, TPX posted THB 3,063 million in EBITDA, rose by THB 371 million. In addition, TPX had an increase in net gain on fair value measurement of financial instruments of THB 8 million, and had net foreign exchange gain of THB 76 million. In the end, TPX posted a net profit THB 1,609 million, increased by THB 600 million from last year.

**LABIX Co., Ltd. (LABIX)** reported a capacity utilization rate of 103 percent, decreased by 10 percent. This year's sales revenue dropped with the prices of LAB and its feedstock and the total sales volume that dropped as a result of a planned major turnaround. The gross margin, however, registered a rise with rising LAB demand, notably during COVID-19 pandemic despite planned major turnaround expenses and a net realized loss from financial instruments of THB 60 million. LABIX posted THB 893 million in EBITDA, higher by THB 122 million. Offsetting with losses on asset write off of THB 177 million and the lower finance costs of THB 57 million, LABIX posted a net loss of THB 99 million against a net loss of THB 131 million in 2019.

For this year, the aromatics business group (including its 75% equity in LABIX) had total sales revenue of THB 36,676 million. EBITDA of THB 3,956 million and total net profit of THB 1,535 million.

**Thaioil Power Co., Ltd. (TP)** had sales revenue of THB 4,132 million, decreased by THB 259 million due to the lower average selling price following natural gas price. However, plunges in natural gas and fuel oil prices, main feedstocks, caused TP to report EBITDA of THB 775 million, a rise of THB 94 million. Add to this the rise in finance costs of THB 329 million from TP's borrowing to purchase new ordinary shares in proportion to the shareholding in GPSC. Offsetting with depreciation and income tax expenses, TP incurred THB 29 million in net loss (excluding its share of profit from investment in GPSC) against last year's net profit of THB 253 million.

**TOP SPP Co., Ltd. (TOP SPP)** had sales revenue of THB 6,654 million, reduced by THB 725 million due to lower sales volume tracking customers' demand together with lower average selling prices tracking natural gas price. However, plunges in the prices of natural gas and fuel oil, main feedstocks, causing TOP SPP to earn THB 1,738 million in EBITDA, increased by THB 15 million. Offsetting with depreciation, finance cost and income tax expenses, TOP SPP posted a net profit of THB 884 million, an increment of THB 19 million from last year.

Besides, Thaioil and Subsidiaries booked a share of the profit from their investment in GPSC (without non-controlling interest) of THB 1,783 million, rise of THB 797 million and booked a profit this year from the power business of THB 2,645 million, increased by THB 609 million from last year.

**Thaioil Solvent Co., Ltd. (TOS)** posted a utilization rate of 112 percent and solvent sales volume increased by

approximately 14,000 tons due to higher sales volume in Vietnam, Indonesia, and other countries. The average solvent selling price per unit tracking crude oil prices, causing TOS to record sales revenue of THB 8,188 million, decreased by THB 914 million. In 2020 the business group's gross profit margin rose with sales volume of both high value products and some products which had supply shortage, which gave it THB 632 million in EBITDA, an increment of THB 202 million. In 2020 the business group posted a net foreign exchange gain of THB 14 million against a loss of THB 106 million last year due to adjustment to other components of equity relating to short-term loan repayment from subsidiary TOP Solvent (Vietnam) LLC. of THB 82 million. Offsetting with depreciation, finance costs and income tax expenses, TOS posted a net profit of THB 310 million, increased by THB 285 million from last year.

**Thaioil Marine Co., Ltd. (TM)** reported service revenue of THB 659, dropped by THB 1 million. However, the sharply reduced in selling and administrative expenses caused TM's EBITDA to rise by THB 92 million to THB 160 million. TM's share of profit from investing in TOP-NYK MarineOne Pte. Ltd. rose THB 68 million, whereas that from investing in TOP-NTL Pte. Ltd., TOP-NTL Shipping Trust, TOP Nautical Star Co., Ltd., and T.I.M. Ship Management Co., Ltd., decreased by THB 15 million. Offsetting with depreciation, finance costs and income tax expenses, TM posted a net loss of THB 20 million against a net loss of THB 216 million in 2019.

In this regard, according to the approval of the Board of Directors of the Company to restructure the marine transportation business by divesting all shares in TM, resulting in TM ceases to be a subsidiary of the Company. It is expected that the share transfer will be completed by June 30, 2021. In this restructuring, Thaioil



will purchase all shares in Thailoil Marine International Pte. Ltd. from TM before divesting all its shares in TM to the buyer. In December 2020, the Company classified TM's investment as assets held for sale under TFRS 5.

**Thailoil Ethanol Co., Ltd. (TET)** booked THB 1,631 million in sales revenue, increased by THB 158 million from Sapthip Co., Ltd., due to the rising ethanol selling price

and sales of alcohols products. As a result, TET reported EBITDA of THB 225 million, rose by THB 65 million. Additional, TET posted THB 19 million in its share of profit from investing in Ubon Bio Ethanol Plc, against a share of loss of THB 9 million in 2019. Therefore, TET posted net consolidated profit of THB 44 million against consolidated net loss of THB 10 million in 2019.

## Analysis of Consolidated Financial Position

Unit: THB Million

Financial Position	December 31, 2020	December 31, 2019	+/(−)
Total Assets	306,188	283,445	22,743
Total Liabilities	186,069	159,521	26,548
Total Equity	120,118	123,924	(3,806)

### Total Assets

As of December 31, 2020, Thailoil and Subsidiaries posted THB 306,188 million in total assets, increased by THB 22,743 million or 8.0 percent. The main reasons are as follows.

- >> Cash, cash equivalents and short-term investments decreased by THB 5,256 million, mainly due to investment in several projects as planned offsetting cash received from issuance of USD-denominated debentures of USD 1,000 million.
- >> Other current assets declined by THB 15,191 million due to the decreased in trade accounts receivables of THB 9,673 million and inventories of THB 7,831 million following lower finished products sales volume and lower average crude oil price in December 2020 than that of the same month of 2019. Thailoil and Subsidiaries had a reduced prepaid corporate income tax by THB 1,020 million due to tax refund and tax adjustment for the year 2019. At the same time, non-current assets classified as held for sale rose by THB 2,763 million

from the reclassification of investment in TM under the restructured marine transportation business.

- >> Non-current assets rose by THB 43,190 million due to a THB 38,666 million rise in the net value of property, plant and equipment mainly from several project investments according to business plan. In addition, there was a rise in deferred tax asset of THB 2,007 million due mainly to net loss in 2020. Moreover, Thailoil and Subsidiaries booked THB 14,279 million in right-of-use assets according to Thai Financial Reporting Standards No. 16-Leases (TFRS 16), most of these were land lease agreements. The investment in associated decreased by THB 7,921 million mainly from sale of investment in GPSC resulting from the power business restructuring.

### Total Liabilities

As of December 31, 2020, Thailoil and Subsidiaries incurred THB 186,069 million in total liabilities, went up by THB 26,548 million or 16.6 percent. This was mainly due to

>> Current liabilities reduced by THB 16,653 million mainly due to a drop in trade account payables of THB 15,498 million tracking significantly lower feedstock purchases and crude oil price in December 2020 than those in December 2019. In addition, other payables decreased by THB 3,357 million because account payable of Clean Fuel Project (CFP) construction with were due in January 2020 while short-term borrowing from financial institutions dropped THB 863 million. However, non-current liabilities classified as held for sale surged THB 1,576 million with investment reclassification of TM owing to the restructuring of the marine transportation business. Moreover, Thailoil and Subsidiaries booked current portion of lease liabilities of THB 839 million under TFRS 16.

>> Non-current liabilities surged THB 15,644 million mainly due to their net booking under lease liabilities of THB 11,272 million according to TFRS 16, derivatives liabilities of THB 1,832 million according to TFRS 9, and other non-current liabilities rose by THB 2,416 million due to cash received from the prepayment of the Energy Recovery Unit (ERU) from GPSC THB 2,192 million tracking project milestone and long-term provision for decommissioning cost of THB 625 million under Thai Financial Reporting Standards No. 37- Provisions, Contingent Liabilities and Contingent Assets (TFRS 37).

>> Long-term borrowings and debentures (including current portions) rose THB 27,566 million mainly due to

- The USD-denominated debentures of Thailoil Treasury Center Co., Ltd. (TTC) increased since, in June 2020, TTC issued Senior Unsecured Notes to foreign institutional investors for the total amount of USD 1,000 million or equivalent to THB 29,906 million as at December 31, 2020, which were fully guaranteed by the Company. The debentures comprised of USD 400 million carrying a coupon rate of 2.50 percent

per annum with the tenor of 10 years, and USD 600 million carrying a coupon rate of 3.75 percent per annum with the tenor of 30 years.

- TM's Baht-denominated borrowings decreased by THB 1,459 million because the borrowings were reclassified to non-current liabilities classified as held for sale due to the restructuring of the marine transportation business.
- Baht-denominated and other currencies borrowings of LABIX, TOP SPP, and TOP Solvents Co., Ltd. decreased, as repayment was made as scheduled.

### Total Equity

As of December 31, 2020, Thailoil and Subsidiaries posted THB 120,118 million in total equity, decreased by THB 3,806 million or 3.1 percent from December 31, 2019, This resulted from total comprehensive expense for the year 2020 of Baht 3,108 million, dividends paid of Baht 1,399 million and loss from the first time adoption on new financial reporting standards of Baht 744 million offsetting with gain from sale of investment of Baht 1,445 million.

### Analysis of Cash Flow and Financial Ratios

As of December 31, 2020, Thailoil and Subsidiaries commanded THB 2,435 million in cash flow from operating activities consisting of net loss from continuing operations for the year 2020 of THB 2,595 million, net cash generated from adjustments to reconcile profit/(loss) to cash of THB 820 million, net cash generated from changes in operating assets and liabilities of THB 4,522 million, income tax received of THB 26 million, and net cash used in operating activities from discontinued operations of THB 338 million. However, Thailoil and Subsidiaries had cash flows used in investing activities of THB 47,490 million as a consequence of net repayment of short-term investments of THB 17,221 million and purchase of property, plant and equipment of THB 48,377 million which the Company spent

THB 47,578 million in main projects such as CFP, Jetty Expansion Project and Thailoil Sriracha Buildings Project. The rest of Baht 799 million was used by subsidiaries for various purposes such as purchase of catalyst of TPX and purchase of absorbent for replacement during scheduled maintenance shutdown of LABIX. Besides, Thailoil and Subsidiaries had dividend income of THB 1,281 million mainly from GPSC. In addition, in Q4/2020, Thailoil and Subsidiaries had cash receipts from sale of investments in an associate and a joint venture of THB 17,029 million.

Nevertheless, Thailoil and Subsidiaries had cash flows generated from financing activities of THB 20,575 million. These were mainly attributable to net proceeds from debenture of THB 30,997 million. Meanwhile, there were finance costs paid of THB 6,262 million, dividends paid of THB 1,399 million, net repayment of short-term

loans of THB 522 million, net repayment of long-term loans from financial institutions of THB 637 million and repayment of principal of lease of THB 1,159 million.

According to the mentioned cash flows activities, Thailoil and Subsidiaries reported cash and cash equivalents dipped by THB 24,480 million from December 31, 2019. Furthermore, Thailoil and Subsidiaries recorded gain on effect of exchange rate changes of THB 2,870 million. Hence, including cash and cash equivalents at the beginning of the year of THB 74,854 million, Thailoil and Subsidiaries had cash and cash equivalents of THB 53,244 million as of December 31, 2020. Including deposits at a financial institution used as collateral and short-term investments of THB 327 million and THB 18,110 million, respectively, Thailoil and Subsidiaries had cash, cash equivalents, deposits at a financial institution, and short-term investments of THB 71,681 million.

## Financial Ratios

		2020	2019
Current Ratio	Time	4.0	3.5
Interest Coverage Ratio <sup>(1)</sup>	"	(0.5)	4.3
Long-term Loans/Total Capitalization	%	56.5	48.5
Long-term Loans/Total Equity	Time	1.3	0.9
Total Liabilities/Total Equity	"	1.5	1.3
Net Debt/Equity	"	0.7	0.3

### Remarks:

<sup>(1)</sup> Excluding depreciation and amortization

- From 2020 onwards, Thailoil and Subsidiaries have booked lease liabilities under TFRS 16.
- Including finance costs paid to bondholders by TTC.

In 2020, Thailoil and Subsidiaries commanded a current ratio of 4.0 against 0.5 last year along with an interest coverage ratio of minus 0.5 against 4.8 last year. This is because of the inferior performance this year. Based on cash flow, current ratio and other ratios of this year in the table above, one can be confident, that Thailoil and Subsidiaries command enough liquidity for their

operations, investment, and debt repayment in addition to compliance with key loan terms today.

For the year 2020, Thailoil and Subsidiaries commanded higher long-term loans to total capitalization, long-term loans to total equity, and total liabilities to total equity than last year. This is mainly because of the issuance of debentures worth THB 31,120 million.

## Outstanding Consolidated Liabilities (Short-Term and Long-Term)

As of December 31, 2019 and 2020

Unit: THB Million

	For the year ended December 31	
	2020	2019
Short-term loans from financial institutions	713	1,576
Long-term loans from financial institutions with payment due within one year	953	1,336
Long-term loans from financial institutions	12,121	13,884
Long-term loans from other businesses	279	219
Portion of long-term loans from related businesses with payment due within one year	3,999	-
Long-term loans from related businesses	-	3,999
Portion of loans with redemption within one year	3,000	-
Debentures	123,837	97,184
<b>Total</b>	<b>144,902</b>	<b>118,198</b>

## Details of Long-Term Borrowing and Outstanding Debentures as of December 31, 2020

by Company and Denomination

Unit: THB Million

	Thai Oil Plc	LABIX Co., Ltd.	Thaioil Power Co., Ltd.	TOP SPP Co., Ltd.	Thaioil Solvent Co., Ltd.	Thaioil Marine Co., Ltd.	Thaioil Ethanol Co., Ltd.	Thaioil Treasury Center Co., Ltd.	Total
USD-denominated Debentures <sup>(1)</sup>	11,604	-	-	-	-	-	-	94,733	106,337
THB-denominated Debentures	20,500	-	-	-	-	-	-	-	20,500
THB-denominated Borrowings	-	4,870	3,999	7,609	487	-	105	-	17,070
Other currencies denominated Borrowing <sup>(1)</sup>	-	-	-	-	282	-	-	-	282
<b>Total</b>	<b>32,104</b>	<b>4,870</b>	<b>3,999</b>	<b>7,609</b>	<b>769</b>	<b>-</b>	<b>105</b>	<b>94,733</b>	<b>144,189</b>

### Remarks:

<sup>(1)</sup> Including foreign exchange gain/(loss) from foreign currency-denominated liabilities revaluation

## Capital Expenditure by Company for the Year 2019 and 2020

Unit: THB Million

	For the year ended December 31	
	2020	2019
Thai Oil Plc	47,578	26,017
Thai Paraxylene Co., Ltd.	96	1,285
LABIX Co., Ltd.	283	7
Thai Lube Base Plc	95	74
Thaioil Power Co., Ltd.	2	2
Thaioil Marine Co., Ltd.	30	34
Thaioil Solvent Co., Ltd.	24	119
Thaioil Ethanol Co., Ltd.	124	124
Thaioil Energy Services Co., Ltd.	-	-
TOP SPP Co., Ltd.	1	1
<b>Total</b>	<b>48,407</b>	<b>27,531</b>
Continuing operation	48,377	27,497
Terminated operation	30	34
<b>Total</b>	<b>48,407</b>	<b>27,531</b>

In 2020 Thaioil and Subsidiaries incurred THB 48,407 million in capital expenditure, split up into Thaioil's portion of THB 47,578 million and subsidiaries' portion of THB 655 million, for the following key projects

- >> THB 41,238 million for CFP.
- >> THB 525 million for Thaioil Sriracha Buildings Project.
- >> THB 449 million for Jetty Expansion Project.
- >> THB 215 million for Digital Transformation Project.
- >> THB 135 million for New Bang Phra Reservoir Raw Water Line
- >> THB 84 million for Fire-Extinguishing Water Improvement Project.
- >> THB 39 million for Crude Oil Tank Construction Project.

In 2019 Thaioil and Subsidiaries incurred THB 27,531 million in capital expenditure, split up into Thaioil's portion

of THB 26,017 million and subsidiaries' portion of THB 1,646 million, for the following key projects

- >> THB 19,460 million for CFP.
- >> THB 1,561 million for Jetty Expansion Project.
- >> THB 708 million for Thaioil Sriracha Buildings Project.
- >> THB 613 million for Fire-Extinguishing Water Improvement Project.
- >> THB 210 million for Crude Oil Tank Construction Project.
- >> THB 1,646 million for other investment projects of subsidiaries, including a project to construct a solvent distribution center in Vietnam by TOP Solvent (Vietnam) LLC. of THB 1,646 million.

Investors can review data under “Discussion and analysis of financial position and operating results” in Form 56-1 at [www.thaioilgroup.com](http://www.thaioilgroup.com) under Investor Relations topic “Financial Information”.





## SUMMARY OF FINANCIAL DATA

Summary of consolidated financial statements of Thai Oil Plc and Subsidiaries for the period 2018-2020

### Statement of Financial Position

Unit: THB Million

Statement of Financial Position	As at December 31		
	2018	2019 <sup>(1)</sup>	2020
<b>Assets</b>			
<b>Current Assets</b>			
Cash and cash equivalents	33,741	74,854	53,244
Deposits at financial institutions as collaterals	300	325	327
Short-term investments	73,221	1,757	18,110
Trade accounts receivable, net	24,359	22,466	12,702
Current portion of finance lease receivable, net	-	-	8
Other receivables	1,382	1,288	1,082
Short-term loans to related parties	45	-	-
Inventories, net	28,739	30,292	22,461
Derivative assets	-	-	251
Prepaid corporate income tax	937	1,269	248
Value-added tax receivables	630	752	1,043
Assets held for sale	-	-	2,763
Other current assets	1,389	1,673	1,990
<b>Total current assets</b>	<b>164,743</b>	<b>134,676</b>	<b>114,229</b>
<b>Non-current assets</b>			
Financial assets measured at fair value through profit or loss	-	-	461
Financial assets measured at fair value through other comprehensive income	-	-	77
Available-for-sale investments	361	383	-
Investments in associates	14,316	32,442	24,521
Investments in joint ventures	625	617	-

Unit: THB Million

Statement of Financial Position	As at December 31		
	2018	2019 <sup>(1)</sup>	2020
Other long-term investments	780	820	-
Investments properties, net	103	103	103
Property, plant and equipment, net	79,929	106,559	145,225
Rights-of-use assets, net	-	-	14,729
Intangible assets, net	3,045	3,152	3,243
Deferred tax assets	629	671	2,678
Other non-current assets	4,082	4,022	922
<b>Total non-current assets</b>	<b>103,870</b>	<b>148,769</b>	<b>191,959</b>
<b>Total assets</b>	<b>268,613</b>	<b>283,445</b>	<b>306,188</b>
<b>Liability and equity</b>			
<b>Current liabilities</b>			
Short-term loans from financial institutions	2,392	1,576	713
Trade account payable	21,844	25,015	9,517
Other payables	3,872	9,106	5,749
Current portion of the long-term loans from financial institutions, net	1,549	1,336	953
Current portion of the long-term loans from related parties	-	-	3,999
Derivative liabilities	-	-	109
Current portion of debentures, net	3,000	-	3,000
Current portion of lease liabilities, net	-	-	839
Excise duty payables	4,815	1,418	1,727
Income tax payables	549	216	439
Liabilities related to assets held for sale	-	-	1,575
<b>Total current liabilities</b>	<b>38,021</b>	<b>38,667</b>	<b>28,620</b>
<b>Non-current liabilities</b>			
Long-term loans from financial institutions, net	14,838	13,884	12,121
Long-term loans from a third parties	216	219	279
Long-term loans from related parties	-	3,999	-
Debentures, net	85,065	97,184	123,837
Derivative liabilities	-	-	1,832

Unit: THB Million

Statement of Financial Position	As at December 31		
	2018	2019 <sup>(1)</sup>	2020
Lease liabilities, net	-	-	11,272
Deferred tax liabilities	37	125	135
Other non-current liabilities	3,964	5,443	7,973
<b>Total non-current liabilities</b>	<b>104,120</b>	<b>120,854</b>	<b>157,449</b>
<b>Total liabilities</b>	<b>142,141</b>	<b>159,521</b>	<b>186,069</b>
<b>Equity</b>			
Share capital			
Authorised share capital <sup>(2)</sup>	20,400	20,400	20,400
Issued and paid-up share capital	20,400	20,400	20,400
Share premium on ordinary shares	2,456	2,456	2,456
Retained earnings			
Legal reserve	2,040	2,040	2,040
Other reserves	245	245	245
Unappropriated	96,400	97,997	93,645
Other surpluses (and deficits)	304	(3,361)	(2,117)
Other surplus held for sale	-	-	101
Other components of equity	(133)	196	(534)
Other components of equity held for sale	-	-	(6)
<b>Total equity of the parent company</b>	<b>121,712</b>	<b>119,973</b>	<b>116,230</b>
Non-controlling interests	4,760	3,951	3,889
<b>Total equity</b>	<b>126,472</b>	<b>123,924</b>	<b>120,118</b>
<b>Total liabilities and equity</b>	<b>268,613</b>	<b>283,445</b>	<b>306,188</b>

**Notes:**<sup>(1)</sup> Figures adjusted under new accounting classification<sup>(2)</sup> Authorised share capital, issued and paid-up share capital 2,040,027,873 ordinary shares, at par value of THB 10 each, for a total of THB 20,400 million as at the year-end of 2018-2020

## Statement of Income

Unit: THB Million

Statement of Income	For the year ended December 31		
	2018	2019 <sup>(1)</sup>	2020
<b>Revenues</b>			
Revenue from sales and services	389,042	361,768	242,840
Subsidy from oil fuel fund	3,123	2,147	5,073
Net derivative from hedging	-	359	-
Net foreign exchange gain	627	1,778	1,784
Gain on disposal of investments in associate	-	-	5,801
Dividend received	157	167	14
Other income	1,719	1,560	1,100
<b>Total revenue</b>	<b>394,668</b>	<b>367,779</b>	<b>256,612</b>
<b>Expenses</b>			
Cost of sale of goods and services	(375,950)	(355,113)	(255,300)
Selling expenses	(423)	(405)	(538)
Administrative expenses	(2,358)	(2,141)	(2,112)
Net loss from financial instruments	(821)	-	(178)
<b>Total expenses</b>	<b>(379,552)</b>	<b>(357,659)</b>	<b>(258,128)</b>
Share of profits of joint ventures and associates	1,193	1,276	2,566
<b>Profit (loss) before finance costs and income tax expense</b>	<b>16,309</b>	<b>11,396</b>	<b>1,050</b>
Financial costs	(3,511)	(3,224)	(4,292)
Finance costs from debenture repurchase	(431)	-	-
<b>Profit (loss) before income tax expense</b>	<b>12,367</b>	<b>8,172</b>	<b>(3,242)</b>
Income tax benefits (expenses)	(1,983)	(1,240)	647
<b>Net profit (loss) for the period from continuing operations, net of tax</b>	<b>10,384</b>	<b>6,932</b>	<b>(2,595)</b>
Profit (loss) for the period from discontinued operations, net of tax	0	(416)	(287)
<b>Net profit (loss) for the year</b>	<b>10,384</b>	<b>6,516</b>	<b>(2,882)</b>

Unit: THB Million

Statement of Income	For the year ended December 31		
	2018	2019 <sup>(1)</sup>	2020
<b>Other comprehensive income</b>			
Gains (Losses) from remeasurements of post-employment benefit obligation, net of tax	-	(289)	(40)
Changes in fair value of available-for-sale investments, net of tax	(11)	8	-
Cash flow hedges, net of tax	-	-	(654)
Cost of hedging, net of tax	-	-	355
Exchange differences on translating of financial statements	(31)	352	154
Share of other comprehensive expense of an associate accounted for using the equity method, net of tax	(12)	(38)	(48)
Other comprehensive income (expense) for the year from discontinued operations, net of tax	-	(4)	8
<b>Other comprehensive income (expense), net after tax</b>	<b>(54)</b>	<b>29</b>	<b>(225)</b>
<b>Total comprehensive income (expense) for the year</b>	<b>10,330</b>	<b>6,545</b>	<b>(3,107)</b>
<b>Profit (loss) attributable to</b>			
Owners of the parents	10,149	6,277	(3,301)
Non-controlling interests	235	239	419
<b>Net profit (loss) for the year</b>	<b>10,384</b>	<b>6,516</b>	<b>(2,882)</b>
<b>Total comprehensive income (expense) attribute to</b>			
Owner of the parent	10,097	6,312	(3,519)
Non-controlling interests	233	233	412
<b>Total comprehensive income (expense) for the year</b>	<b>10,330</b>	<b>6,545</b>	<b>(3,107)</b>
<b>Basic earnings (loss) per share (Baht)</b>	<b>4.97</b>	<b>3.08</b>	<b>(1.62)</b>



## Statement of Cash Flows

Unit: THB Million

Statement of Cash Flows	For the year ended December 31		
	2018	2019 <sup>(1)</sup>	2020
<b>Cash flow from operating activities</b>			
Net profit (loss) for the year from continuing operations	10,384	6,932	(2,595)
Adjustments to reconcile profit (loss) to cash:			
Allowance for (reversal of) decline in value of inventories adjusted to net realisable value	1,350	(1,255)	215
Depreciation and amortization	7,264	6,923	7,554
Expected credit loss	-	-	2
Financial cost	3,511	3,224	4,292
Financial cost from the repurchase of debentures	431	-	-
Unrealised gain (loss) on foreign exchange	428	(1,808)	(2,234)
Share of profit of joint ventures and associates, net	(1,193)	(1,276)	(2,566)
Gain from investment reclassification	-	-	(154)
Dividend income	(157)	(167)	(14)
Gain on lease termination	-	-	(1)
Gain on debt modification	-	-	(2)
Loss from the changes in the ownership interests in an associates	-	3	-
Gain on disposal of investment in associate	(2)	(4)	(5,801)
Loss from changes in fair value of financial asset	-	-	9
(Gain) loss from changes in fair value of derivatives	-	-	(4)
(Gain) loss on disposal of property, plant and equipment	-	(1)	-
Loss on write-off of property, plant and equipment	3	66	182
Reversal of impairment loss on property, plant and equipment, and investment property	-	(11)	-
Amortisation of advance receipts for land lease and others	(25)	(23)	(12)
Income tax expenses (benefit)	1,983	1,240	(647)
	<b>23,977</b>	<b>13,843</b>	<b>(1,776)</b>

Unit: THB Million

Statement of Cash Flows	For the year ended December 31		
	2018	2019 <sup>(1)</sup>	2020
<b>Changes in operating assets and liabilities</b>			
Trade account receivable	(2,061)	1,940	9,705
Other receivables	(919)	(274)	437
Receivables from oil fuel fund	-	(284)	(317)
Value added tax receivables	121	(129)	(291)
Inventories	2,752	(301)	7,589
Other non-current assets	(2,952)	(53)	(44)
Trade account payable	2,977	3,089	(15,445)
Other payables	142	(519)	897
Excise duty payables	30	(3,397)	309
Other non-current liabilities	221	1,139	1,683
Income tax received (paid)	(5,975)	(1,798)	26
Cash used in operating activities of discontinued operations	-	(169)	(338)
<b>Net cash generated from operating activities</b>	<b>18,313</b>	<b>13,087</b>	<b>2,435</b>
<b>Cash flow from investing activities</b>			
Dividend received	772	763	1,281
Payments for deposits at a financial institutions used as collaterals	(299)	(25)	(1)
Proceeds from (repayment of) short-term investments, net	(21,597)	72,285	(17,221)
Purchase of available-for-sale investments	(5)	-	-
Proceeds from disposal of available-for-sale investments	2,737	-	-
Proceeds from short-term loans to a third party	45	45	-
Purchase of financial assets measured at fair value through other comprehensive income	-	-	(78)
Purchase of financial assets measured at fair value through profit and loss	-	-	(53)
Purchase of other long-term investments	-	(41)	-
Proceeds from long-term loans to saving co-operative of employees	46	46	43
Payment for long-term loans to saving co-operative of employees	-	(34)	(7)
Purchase of property, plant and equipment	(7,864)	(27,497)	(48,377)
Proceeds of disposal of property, plant and equipment	129	1	-

Unit: THB Million

Statement of Cash Flows	For the year ended December 31		
	2018	2019 <sup>(1)</sup>	2020
Payments for rights-of-use assets	-	-	(40)
Purchase of intangible assets	(131)	(218)	(273)
Net cash payment of acquisition of investments in subsidiaries		(39)	-
Proceeds from disposal of investments in an associate	-	-	17,029
Payment for investments in an associate	-	(21,972)	-
Cash generated from investing activities of discontinued operations	-	29	208
<b>Net cash generated from (used in) investing activities</b>	<b>(26,167)</b>	<b>23,343</b>	<b>(47,490)</b>
<b>Cash flow from financing activities</b>			
Financial costs paid	(3,371)	(3,174)	(6,262)
Financial costs paid for repurchase of debenture	(57)	-	-
Dividend paid to shareholders	(11,006)	(4,626)	(1,399)
Proceeds from short-term loans from financial institutions	29,127	6,723	6,209
Repayment of short-term loans from financial institutions	(27,623)	(7,783)	(6,731)
Proceeds from long-term loans from related parties	-	3,999	-
Proceeds from long-term loans from financial institutions	14,944	109	66
Repayment of long-term loans from financial institutions	(8,007)	(1,115)	(763)
Proceeds from long-term loans from third parties	-	3	60
Proceeds from debentures and borrowings	51,634	17,036	31,120
Payment for debenture and loans financing fee	-	(55)	(123)
Redemption of debenture	(20,076)	(3,000)	-
Repayment of principal of lease	-	-	(1,159)
Cash generate from (used in) financing activities of discontinued operations	-	12	(442)
<b>Net cash generated from financing activities</b>	<b>25,565</b>	<b>8,129</b>	<b>20,575</b>
<b>Net increase (decrease) in cash and cash equivalents</b>	<b>17,711</b>	<b>44,560</b>	<b>(24,480)</b>
Effect of exchange rate changes	407	(3,447)	2,870
Cash and cash equivalents at the beginning of the year	15,623	33,741	74,854
<b>Cash and cash equivalent at the end of the year</b>	<b>33,741</b>	<b>74,854</b>	<b>53,244</b>
<b>Non-cash items</b>			
Payables on purchase of property, plant and equipment	567	6,225	2,024
Payables on purchase of intangible assets	243	344	324
Non-cash changes in the right-of-use assets	-	-	629

## Key Financial Ratios

Financial Ratios		2018	2019 <sup>(1)</sup>	2020
<b>Liquidity ratios</b>				
Liquidity ratio	time	4.3	3.5	4.0
Quick ratio	"	3.5	2.6	2.9
Cash flow current ratio	"	0.5	0.3	0.1
Receivable current ratio	"	16.7	15.5	13.8
Average debt collection period	day	21.6	23.3	26.1
Inventory turnover period	time	12.2	12.0	9.7
Average selling period	day	29.5	29.9	37.2
Payable current ratio	time	18.4	15.2	14.8
Loan repayment period	day	19.5	23.8	24.3
Cash Cycle	"	31.5	29.5	38.9
<b>Profitability ratios</b>				
Gross profit margin	%	5.6	3.6	(2.1)
Operating profit margin	"	5.2	3.8	(0.8)
Other profit margin	"	1.4	1.6	5.4
Cash to profit margin	"	90.5	94.6	(118.4)
Net profit margin	"	2.6	1.8	(1.1)
Return on equity	"	8.3	5.2	(2.8)
Interest Bearing Debt to EBITDA Ratio	time	5.3	8.4	(76.4)
Debt coverage ratio	"	2.9	4.8	(0.2)
<b>Efficiency ratios</b>				
Return on assets	%	4.2	2.4	(1.0)
Return on fixed assets	"	21.4	13.8	3.6
Asset turnover	time	1.6	1.3	0.9
<b>Financial policy ratios</b>				
Total debt to equity ratio	time	1.1	1.3	1.5
Net debt to equity ratio	"	0.0	0.3	0.6
Share price to book value	"	1.5	1.2	0.8
Interest coverage ratio	"	5.1	4.3	(0.5)
Dividend payout ratio <sup>(2)</sup>	%	53	49	N/A

**Note:**

<sup>(1)</sup> Figures adjusted under new accounting classification

<sup>(2)</sup> Dividend payment for 2018, 2019 and 2020 was 2.65, 1.50 and 0.70 baht per share, respectively. Thaioil will present and seek approval for the 2020 dividend payment in the Annual General Meeting from the shareholders.

## Credit Terms

Valuing credit administration by Thailoil and Subsidiaries, Thailoil appointed a Credit Committee to map out a policy and guidelines for governing, monitoring, administering, and analyzing credit for business partners and suppliers which would be the most suitable and based on the same standard for each business in Thailoil and Subsidiaries. For maximum efficiency, the committee meets at least quarterly to define business partners' and suppliers' qualifications and criteria for credit analysis. Their risks, both qualitative and financial, are scrutinized. In addition, the committee defines the approach for controlling individual partners' credit lines and follows up on their payment to ensure that they can indeed pay punctually the agreed amounts so as to manage cash flow and liquidity.

Analysis of the ratio of average debt collection periods and payment periods in the table above follows the Company's policy.

## Key Operating Information

Statement of Cash Flows	For the year ended December 31		
	2018	2019	2020
1. Refining Capacity (thousand barrels per day)	275	275	275
2. Intake Feedstock (thousand barrels per day) <sup>(1)</sup>	310	295	277
3. Refining Utilization (percent) <sup>(2) (3)</sup>	113	107	101
4. Gross Refining Margin - Refinery (USD per barrel) <sup>(4)</sup>	4.7	3.1	0.4
5. Integrated Intake Feedstock (thousand barrels per day) <sup>(5)</sup>	313	300	281
6. Gross Integrated Margin (USD per barrel) <sup>(6)</sup>	6.9	4.7	2.4
6.1 Gross Refining Margin - Refinery (USD per barrel)	4.6	3.0	0.4
6.2 Gross Margin - Aromatics and Intermediate in the production of surfactants (USD per barrel)	1.8	1.1	1.5
6.3 Gross Margin - Lube base oil (USD per barrel)	0.5	0.6	0.5
7. Operating Cost - Refinery (USD per barrel) <sup>(7)</sup>	1.5	1.9	1.5



**Notes:**

- <sup>(1)</sup> Calculated from Intake of refinery feedstock for each period divided by the number of days of such period. After the disposal of mixed xylenes units to Thai Paraxylene Co., Ltd. on April 1, 2005, the average intake feedstock of each period excludes by-products from Thai Lube Base Plc, Thai Paraxylene Co., Ltd. and LABIX Co., Ltd., which become Thairoil Refinery's feedstock for refining and blending for refined products.
- <sup>(2)</sup> Calculated from 275,000 barrels per day refining capacity for the selected period.
- <sup>(3)</sup> Calculated from intake feedstock divided by refining capacity.
- <sup>(4)</sup> Gross Refining Margin excludes impact of oil stock, using average sales price converted into US dollars by the exchange rate announced by the Bank of Thailand for such specific period and calculated in unit value by using intake feedstock.
- <sup>(5)</sup> Calculated by integrated intake feedstock of the refinery, aromatics, an intermediate in the production of surfactants, and lube base oil in each period, divided by the number of days of such period.
- <sup>(6)</sup> Gross Integrated Margin is calculated from gross margin from Thairoil Refinery, Thai Lube Base Plc, Thai Paraxylene Co., Ltd., and LABIX Co., Ltd., excluding the impact of oil stock, divided by the average exchange rate of each period, and further divided by intake feedstock.
- <sup>(7)</sup> Including expenses on employees, maintenance, catalysts, insurance, land lease, and others.



## BOARD OF DIRECTORS' RESPONSIBILITY ON FINANCIAL REPORTING

The accompanying financial statements of Thai Oil Public Company Limited and the consolidated financial statements of Thai Oil Public Company Limited and its subsidiaries have been prepared in conformity with the requirements of the Public Company Act B.E. 2535 (1992), the Securities and Exchange Act B.E. 2559 (2016), the Announcement of the Department of Business Development (No. 2) dated October 11, 2016 issued in accordance with Section 11, Paragraph 3 of the Accounting Act B.E. 2543 (2000), and the Financial Reporting Standards prescribed by the Federation of Accounting Professions under the Royal Patronage of His Majesty the King.

The Board of Directors is responsible for the financial statements which have been prepared to provide

assurance that the financial position, results of operations and cash flows are presented accurately, an effective internal control system has been established, accounting records have been properly and adequately maintained to safeguard assets and prevent fraud and other irregularities with material implications, suitable accounting policies have been selected in the preparation of the financial statements and consistently applied in accordance with Financial Reporting Standards, and key information has been adequately disclosed in the notes to the financial statements. The independent auditor has expressed opinion on the financial statements of Thai Oil Public Company Limited and the consolidated financial statements of Thai Oil Public Company Limited and its subsidiaries in the Auditor's Report.

(Professor Dr. Supot Teachavorasinskun)  
Chairman of the Board

(Mr. Wirat Uanarumit)  
Chief Executive Officer and President



# INDEPENDENT AUDITOR'S REPORT

## To the shareholders and the Board of Directors of Thai Oil Public Company Limited

### My opinion

In my opinion, the consolidated financial statements and the separate financial statements present fairly, in all material respects, the consolidated financial position of Thai Oil Public Company Limited (the Company) and its subsidiaries (the Group) and the separate financial position of the Company as at 31 December 2020, and its consolidated and separate financial performance and its consolidated and separate cash flows for the year then ended in accordance with Thai Financial Reporting Standards (TFRS).

### What I have audited

The consolidated financial statements and the separate financial statements comprise:

- the consolidated and separate statements of financial position as at 31 December 2020;
- the consolidated and separate statements of comprehensive income for the year then ended;
- the consolidated and separate statements of changes in equity for the year then ended;
- the consolidated and separate statements of cash flows for the year then ended; and
- the notes to the consolidated and separate financial statements, which include significant accounting policies and other explanatory information.

### Basis for opinion

I conducted my audit in accordance with Thai Standards on Auditing (TSAs). My responsibilities under those standards are further described in the Auditor's responsibilities for the audit of the consolidated and separate financial statements section of my report. I am independent of the Group and the Company in accordance with the Code of Ethics for Professional Accountants issued by the Federation of Accounting Professions that are relevant to my audit of the consolidated and separate financial statements, and I have fulfilled my other ethical responsibilities in accordance with these requirements. I believe that the audit evidence I have obtained is sufficient and appropriate to provide a basis for my opinion.

### Key audit matters

Key audit matters are those matters that, in my professional judgement, were of most significance in my audit of the consolidated and separate financial statements of the current period. These matters were addressed in the context of my audit of the consolidated and separate financial statements as a whole, and in forming my opinion thereon, and I do not provide a separate opinion on these matters.

Key audit matter	How my audit addressed the key audit matter
<b>Goodwill impairment assessment</b>	
<p>Refer to note 9.1 - Estimation of impairment of goodwill and note 22 - Goodwill.</p>	<p>I carried out the following audit procedures to assess the impairment test of goodwill prepared by management.</p>
<p>The Group had goodwill of Baht 545.58 million which arose from the historical acquisition of a solvent and petrochemical distribution business in Socialist Republic of Vietnam.</p>	<ul style="list-style-type: none"> <li>Assessed the appropriateness of management's identification of the CGUs.</li> </ul>
<p>The management tested the impairment of goodwill annually at the level of a cash generating unit (CGU) and assessed its recoverable amount by applying the value-in-use model which involves significant management judgements in respect to the future operating results of business, projected cash flows and the discount rate applied to the projected cash flows. Key assumptions applied in assessing the value-in-use model are:</p>	<ul style="list-style-type: none"> <li>Held discussions with the management to understand the basis for the assumptions applied and evaluated whether the goodwill impairment testing process and assumptions used had been applied consistently across the Group.</li> </ul>
<ul style="list-style-type: none"> <li>revenue growth rates, expected changes to working capital, overhead costs and long-term growth rate in the business.</li> <li>discount rates calculated from capital structure, market risk and beta from available information in its industry.</li> </ul>	<ul style="list-style-type: none"> <li>Challenged management's significant assumptions used in goodwill impairment testing, especially in respect to the revenue growth rates, expected changes to working capital, overhead costs and long-term growth rate to the business. My procedures included comparing those assumptions to the external sources and management's approved business plan.</li> </ul>
<p>From the result of impairment testing, management determined that no impairment was recognised in the 2020 financial year.</p>	<ul style="list-style-type: none"> <li>Assessed the reasonableness of the business plan by comparing the plans of 2020 with actual results.</li> </ul>
<p>I focused on the valuation of goodwill due to the significant value and the fact that the determination of value-in-use depends on a number of assumptions (e.g. revenue growth rates, expected changes to working capital and overhead costs to the businesses, and the discount rates). These assumptions involve significant judgement made by the management in assessing the possibility of future business plans.</p>	<ul style="list-style-type: none"> <li>Assessed the discount rate using the work of Auditor's expert which considered and compared information with the independence data obtained from available public information of companies in the same industry sector to see whether the discount rate used by the management was within the acceptable range.</li> <li>Tested the sensitivity analysis of the key assumptions used in the discounted cash flows projection, such as long-term growth rate and discount rate, to assess the sensitivity impact and the impact from changes in these key assumptions.</li> </ul> <p>As a result of the procedures performed, I noted that the key assumptions used by management in assessing the possibility of future business plans are within the reasonable range.</p>

Key audit matter	How my audit addressed the key audit matter
<b>Restructuring of the marine transport business unit</b>	
<p>Refer to note 32 - Non-current assets held for sale and discontinued operations.</p>	
<p>On 25 November 2020, the Company's Board of Directors approved the restructuring of the Company's marine transport business unit by disposing all of its directly held ordinary shares in Thail Marine Company Limited to another company. The Group expects this restructuring to be completed in June 2021.</p>	<p>I carried out the following audit procedures to assess the management's reclassification and measurement of the assets held for sale and liabilities related to the assets held for sale:</p>
<p>As at 31 December 2020, the management classified the associated assets and liabilities of this business unit as assets held for sale of Baht 2,763 million and the liabilities related to assets held for sale of Baht 1,576 million.</p>	<ul style="list-style-type: none"> <li>• Examined the documentation to support the assessment under the classification criteria of the assets held for sale and discontinued operations prepared by management.</li> <li>• Held discussions with management to understand the contractual terms in the share purchase agreement, including the price structure and related costs to sell, to determine the assumptions applied in the management's measurement.</li> <li>• Challenged management's significant assumptions used in the valuation, especially in the estimations of the cash and liabilities of the marine transportation business unit.</li> <li>• Assessed the reasonableness of management's key assumptions applied in the impairment determination.</li> <li>• Tested the asset impairment calculation.</li> <li>• Examined the accuracy and completeness of the management's presentation of assets held for sale and discontinued operations in the financial statements and the note to the financial statements.</li> </ul>
<p>This reclassification was measured at the lower of its carrying amount and fair value less costs to sell. The key assumptions applied in assessing the fair value was the business unit's expected cash and liabilities. This measurement conforms with Thai Financial Reporting Standards 5: Non-current assets held for sale and discontinued operations. Moreover, the management presented the result of this business unit as discontinued operations in the 2020 financial statements and provide comparative information of 2019 financial statements. As a result, from reclassifying this business unit to assets held for sale, the Company recognised a write-down of Baht 162 million of investments in Thail Marine Company Limited.</p>	<p>As a result of the procedures performed, I noted that the classification and measurement of the assets held for sale and discontinued operations conform with Thai Financial Reporting Standards 5 and that the key assumptions used in the fair value measurement are reasonable.</p>
<p>I focused on the reclassification and measurement of assets held for sale and the liabilities related to assets held for sale because the significant valuation of the assets and liabilities related to the restructuring of the marine transport business unit and the management used assumptions in determining the fair values as well as the appropriateness of classification of this transaction.</p>	



## Other information

The directors are 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.

My opinion on the consolidated and separate financial statements does not cover the other information and I do 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 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. If, based on the work I have performed, I conclude that there is a material misstatement of this other information, I am required to report that fact. I have nothing to report in this regard.

## Responsibilities of the directors for the consolidated and separate financial statements

The directors are responsible for the preparation and fair presentation of the consolidated and separate financial statements in accordance with TFRS, and for such internal control as the directors determine 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, the directors are 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 the directors either intend

to liquidate the Group and the Company or to cease operations, or has no realistic alternative but to do so.

The audit committee assists the directors in discharging their responsibilities for overseeing the Group's and the Company's financial reporting process.

## Auditor's responsibilities for the audit of the consolidated and separate financial statements

My objectives are to obtain reasonable assurance about whether the consolidated and separate financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditor's report that includes my opinion. Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with TSAs will always detect a material misstatement when it exists. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of these consolidated and separate financial statements.

As part of an audit in accordance with TSAs, I exercise professional judgement and maintain professional scepticism 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.

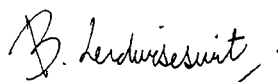
- Obtain an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Group's and the Company's internal control.
- Evaluate the appropriateness of accounting policies used and the reasonableness of accounting estimates and related disclosures made by the directors.
- Conclude on the appropriateness of the directors' 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's 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 the audit committee 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 the audit committee 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 the audit committee, 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.

PricewaterhouseCoopers ABAS Ltd.



**Boonrueng Lerdwiseswit**

Certified Public Accountant (Thailand) No. 6552

Bangkok

12 February 2021



# STATEMENT OF FINANCIAL POSITION

Thai Oil Public Company Limited

As at 31 December 2020

(Baht)

	Notes	Consolidated financial statements		Separate financial statements	
		2020	2019	2020	2019
Assets					
Current assets					
Cash and cash equivalents	11	53,243,895,741	74,854,227,157	47,499,997,830	71,042,494,404
Deposits at financial institutions					
used as collaterals	12	326,938,826	325,490,108	-	-
Short-term investments	15	18,110,217,480	1,757,198,402	18,110,166,076	1,757,147,380
Trade accounts receivable, net	13	12,702,208,871	22,465,507,253	13,000,843,838	23,633,527,215
Other receivables	14	1,081,741,409	1,287,783,429	1,039,584,623	1,173,423,156
Current portion of finance					
lease receivables, net		8,284,039	-	10,644,507	-
Current portion of long-term					
loans to related parties	41	-	-	12,081,334,798	-
Receivables from oil fuel fund		1,989,938,617	1,672,503,239	1,989,938,617	1,672,503,239
Short-term loans to related parties	41	-	-	275,586,651	3,220,801,950
Inventories, net	16	22,461,135,960	30,292,424,978	19,140,337,318	26,657,406,141
Derivative assets	8	250,554,259	-	250,554,259	-
Prepaid corporate income tax		248,459,621	1,268,667,630	99,381,102	1,146,450,472
Value added tax receivables		1,042,696,176	752,487,659	738,934,005	243,487,143
Assets held for sale	17, 32	2,763,089,715	-	807,801,520	-
Total current assets		114,229,160,714	134,676,289,855	115,045,105,144	130,547,241,100

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



# STATEMENT OF FINANCIAL POSITION

Thai Oil Public Company Limited

As at 31 December 2020

(Baht)

	Notes	Consolidated financial statements		Separate financial statements	
		2020	2019	2020	2019
Assets (Continued)					
Non-current assets					
Financial assets measured at					
fair value through profit or loss	8, 15	461,321,776	-	347,329,900	-
Financial assets measured at					
fair value through other					
comprehensive income	8, 15	76,592,780	-	1,500,000	-
Available-for-sale investments		-	382,545,317	-	382,545,317
Investments in subsidiaries	17	-	-	14,044,809,019	15,014,809,002
Investments in joint ventures	18	-	617,494,075	-	-
Investments in associates	18	24,520,580,319	32,441,826,592	993,269,921	7,852,111,863
Other long-term investments		-	820,475,807	-	820,475,807
Long-term loans to related parties	41	-	-	-	11,781,334,798
Finance lease receivables, net		-	-	1,019,875,281	-
Investment properties, net	19	102,520,270	102,520,270	1,141,368,248	1,141,368,248
Property, plant and equipment, net	20	145,225,038,756	106,559,156,720	111,896,766,258	68,321,456,357
Right-of-use assets, net	21	14,729,188,952	-	13,609,782,330	-
Goodwill	22	764,161,599	765,013,432	-	-
Intangible assets, net	23	2,478,791,194	2,386,881,501	828,928,808	649,079,255
Deferred tax assets	24	2,677,601,668	670,855,534	2,450,088,066	556,743,979
Deferred land lease arrangement, net		-	3,217,652,692	-	3,154,138,346
Other non-current assets		922,701,841	803,815,608	793,645,778	649,600,879
Total non-current assets		191,958,499,155	148,768,237,548	147,127,363,609	110,323,663,851
Total assets		306,187,659,869	283,444,527,403	262,172,468,753	240,870,904,951

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



# STATEMENT OF FINANCIAL POSITION

Thai Oil Public Company Limited

As at 31 December 2020

(Baht)

	Notes	Consolidated financial statements		Separate financial statements	
		2020	2019	2020	2019
Liabilities and equity					
Current liabilities					
Short-term loans from					
financial institutions	25	713,474,109	1,576,140,678	-	-
Short-term loans from related parties	41	-	-	57,323,391	2,467,426,531
Trade accounts payable	26	9,516,855,447	25,015,153,158	10,731,422,349	27,134,381,690
Other payables	27	5,748,645,394	9,106,115,537	5,335,047,070	8,530,649,715
Current portion of long-term loans					
from financial institutions, net	28	952,972,268	1,335,895,120	-	-
Current portion of long-term loans					
from related parties	41	3,998,847,362	-	-	-
Derivatives liabilities	8	109,100,485	-	129,726,164	-
Current portion of debentures, net	29	3,000,000,000	-	3,000,000,000	-
Current portion of lease liabilities, net	30	839,326,101	-	792,530,123	-
Excise duty payables		1,726,582,934	1,417,726,777	1,725,755,597	1,417,726,777
Income tax payables		438,810,195	215,015,835	-	-
Other current liabilities		-	652,238	-	652,238
Liabilities related to assets					
held for sale	32	1,575,603,381	-	-	-
Total current liabilities		28,620,217,676	38,666,699,343	21,771,804,694	39,550,836,951

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





# STATEMENT OF FINANCIAL POSITION

Thai Oil Public Company Limited

As at 31 December 2020

(Baht)

	Notes	Consolidated financial statements		Separate financial statements	
		2020	2019	2020	2019
Liabilities and equity (Continued)					
Non-current liabilities					
Long-term loans from					
financial institutions, net	28	12,120,966,580	13,884,311,639	-	-
Long-term loans from a third party	28	279,437,500	219,437,500	-	-
Long-term loans from related parties	41	-	3,998,847,362	95,134,535,133	65,366,055,503
Debentures, net	29	123,836,786,719	97,184,200,848	29,104,199,013	32,129,435,098
Derivatives liabilities	8	1,831,711,497	-	1,297,404,288	-
Lease liabilities, net	30	11,271,706,839	-	11,143,999,005	-
Deferred tax liabilities	24	134,763,328	124,916,226	-	-
Employee benefit obligations	31	4,700,968,166	4,586,029,274	3,897,859,382	3,954,907,138
Other non-current liabilities		3,272,669,869	856,576,209	3,689,683,958	1,149,139,617
Total non-current liabilities		157,449,010,498	120,854,319,058	144,267,680,779	102,599,537,356
Total liabilities		186,069,228,174	159,521,018,401	166,039,485,473	142,150,374,307

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



# STATEMENT OF FINANCIAL POSITION

Thai Oil Public Company Limited

As at 31 December 2020

(Baht)

		Consolidated financial statements		Separate financial statements	
	Notes	2020	2019	2020	2019
Liabilities and equity (Continued)					
Equity					
Share capital					
Authorised share capital					
- 2,040,027,873 ordinary shares					
at par value of Baht 10 each		20,400,278,730	20,400,278,730	20,400,278,730	20,400,278,730
Issued and paid-up share capital					
- 2,040,027,873 ordinary shares					
at paid-up of Baht 10 each		20,400,278,730	20,400,278,730	20,400,278,730	20,400,278,730
Share premium on ordinary shares		2,456,261,491	2,456,261,491	2,456,261,491	2,456,261,491
Other deficits		(2,117,542,948)	(3,361,230,760)	-	-
Other surplus held for sale	32	100,556,041	-	-	-
Retained earnings					
Appropriated					
- Legal reserve		2,040,027,873	2,040,027,873	2,040,027,873	2,040,027,873
- Other reserves		244,500,000	244,500,000	244,500,000	244,500,000
Unappropriated		93,645,317,073	97,996,594,207	71,193,998,608	73,513,426,297
Other components of equity		(534,595,620)	196,306,468	(202,083,422)	66,036,253
Other components of					
equity held for sale	32	(5,838,725)	-	-	-
Equity attributable to the owners					
of the parent		116,228,963,915	119,972,738,009	96,132,983,280	98,720,530,644
Non-controlling interests	17.3, 33	3,889,467,780	3,950,770,993	-	-
Total equity		120,118,431,695	123,923,509,002	96,132,983,280	98,720,530,644
Total liabilities and equity		306,187,659,869	283,444,527,403	262,172,468,753	240,870,904,951

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



# STATEMENT OF INCOME

Thai Oil Public Company Limited

For the year ended 31 December 2020

(Baht)

	Notes	Consolidated financial statements		Separate financial statements	
		2020	2019 Re-presented	2020	2019
Revenue from sales and services	10, 41	242,839,964,812	361,768,246,721	247,301,868,692	375,400,619,826
Subsidy from oil fuel fund		5,073,199,938	2,147,366,790	5,073,199,938	2,147,366,790
<b>Total revenue</b>		<b>247,913,164,750</b>	<b>363,915,613,511</b>	<b>252,375,068,630</b>	<b>377,547,986,616</b>
Cost of sales of goods and services		(255,300,038,168)	(355,113,147,868)	(267,161,842,857)	(374,844,362,993)
<b>Gross profit (loss)</b>		<b>(7,386,873,418)</b>	<b>8,802,465,643</b>	<b>(14,786,774,227)</b>	<b>2,703,623,623</b>
Dividend income		14,426,635	167,106,044	4,611,088,935	2,493,896,889
Net gain (loss) from financial instruments		(179,069,833)	358,864,902	(398,276,840)	(210,628,354)
Net foreign exchange gain		1,784,371,673	1,778,040,786	1,692,370,999	1,847,435,026
Gain on disposal of investment in associate	18	5,801,433,508	-	8,964,512,221	-
Other income	34	1,100,238,496	1,560,452,772	3,194,215,259	3,466,515,162
Selling expenses		(538,453,745)	(404,947,419)	(39,983,021)	(60,645,947)
Administrative expenses		(2,111,935,100)	(2,141,376,596)	(2,400,838,996)	(2,398,584,521)
Share of profit of joint ventures and associate	18	2,565,634,549	1,276,417,415	-	-
<b>Profit before finance costs and income tax expense</b>		<b>1,049,772,765</b>	<b>11,397,023,547</b>	<b>836,314,330</b>	<b>7,841,611,878</b>
Finance costs		(4,292,004,926)	(3,224,112,459)	(3,788,385,258)	(2,660,072,989)
<b>Profit (loss) before income tax expense</b>	10	<b>(3,242,232,161)</b>	<b>8,172,911,088</b>	<b>(2,952,070,928)</b>	<b>5,181,538,889</b>
Income tax benefit (expense)	36	646,760,727	(1,240,363,476)	1,464,056,821	(526,174,798)
<b>Profit (loss) for the period from continuing operations, net of tax</b>		<b>(2,595,471,434)</b>	<b>6,932,547,612</b>	<b>(1,488,014,107)</b>	<b>4,655,364,091</b>
Profit (loss) for the period from discontinued operations, net of tax		(286,705,095)	(416,143,115)	-	-
<b>Net profit (loss) for the year</b>		<b>(2,882,176,529)</b>	<b>6,516,404,497</b>	<b>(1,488,014,107)</b>	<b>4,655,364,091</b>

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



# STATEMENT OF INCOME

Thai Oil Public Company Limited

For the year ended 31 December 2020

(Baht)

	Notes	Consolidated financial statements		Separate financial statements	
		2020	2019	2020	2019
		Re-presented			
<b>Profit (loss) attributable to:</b>					
Owners of the parent		(3,301,407,395)	6,276,681,543	(1,488,014,107)	4,655,364,091
- continuing operations		(3,014,702,300)	6,692,824,658	(1,488,014,107)	4,655,364,091
- discontinued operations		(286,705,095)	(416,143,115)	-	-
Non-controlling interests		419,230,866	239,722,954	-	-
Net profit (loss) for the year		(2,882,176,529)	6,516,404,497	(1,488,014,107)	4,655,364,091
Basic earnings (loss) per share					
from continuing operations	38	(1.48)	3.28	(0.73)	2.28
Basic earnings (loss) per share	38	(1.62)	3.08	(0.73)	2.28

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



# STATEMENT OF COMPREHENSIVE INCOME

Thai Oil Public Company Limited

For the year ended 31 December 2020

(Baht)

	Notes	Consolidated financial statements		Separate financial statements	
		2020	2019	2020	2019
		Re-presented			
Net profit (loss) for the year		(2,882,176,529)	6,516,404,497	(1,488,014,107)	4,655,364,091
Other comprehensive income (expense)					
Items that will be reclassified subsequently to profit or loss					
Changes in fair value of available-for-sale investments, net of tax		-	8,273,516	-	8,273,516
Cash flow hedges, net of tax	7	(654,238,634)	-	(557,330,168)	-
Cost of hedging, net of tax	7	355,246,746	-	355,246,746	-
Exchange differences on translation of financial statements		154,265,918	352,293,648	-	-
Share of other comprehensive expense of an associate accounted for using the equity method, net of tax		(5,742,643)	(35,645,251)	-	-
<b>Total items that will be reclassified subsequently to profit or loss</b>		<b>(150,468,613)</b>	<b>324,921,913</b>	<b>(202,083,422)</b>	<b>8,273,516</b>
Items that will not be reclassified subsequently to profit or loss					
Gain (Loss) from remeasurements of post-employment benefit obligations, net of tax		(39,764,087)	(288,997,758)	29,078,698	(243,658,190)
Share of other comprehensive expense of an associate accounted for using the equity method, net of tax		(43,274,598)	(3,254,228)	-	-
<b>Total items that will not be reclassified subsequently to profit or loss</b>		<b>(83,038,685)</b>	<b>(292,251,986)</b>	<b>29,078,698</b>	<b>(243,658,190)</b>
Other comprehensive income (expense) for the year from continuing operations, net of tax		(233,507,298)	32,669,927	(173,004,724)	(235,384,674)
Other comprehensive income (expense) for the year from discontinued operations, net of tax		8,145,238	(4,569,656)	-	-
<b>Total comprehensive income (expense) for the year</b>		<b>(3,107,538,589)</b>	<b>6,544,504,768</b>	<b>(1,661,018,831)</b>	<b>4,419,979,417</b>
<b>Total comprehensive income (expense) attributable to:</b>					
Owners of the parent		(3,519,383,409)	6,311,590,748	(1,661,018,831)	4,419,979,417
- continuing operations		(3,240,823,552)	6,732,303,519	(1,661,018,831)	4,419,979,417
- discontinued operations		(278,559,857)	(420,712,771)	-	-
Non-controlling interests		411,844,820	232,914,020	-	-
<b>Total comprehensive income (expense) for the year</b>		<b>(3,107,538,589)</b>	<b>6,544,504,768</b>	<b>(1,661,018,831)</b>	<b>4,419,979,417</b>

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







# STATEMENT OF CHANGES IN EQUITY

Thai Oil Public Company Limited

For the year ended 31 December 2020

(Baht)

	Separate financial statements									
	Retained earnings					Other components of equity				
	Issued and paid-up share capital	Share premium	Appropriated - legal reserve	Appropriated - other reserves	Unappropriated	Changes in fair value of available-for- sale investments	Cash flow hedges	Cost of hedging	Total equity	
Opening balance as at 1 January 2019	20,400,278,730	2,456,261,491	2,040,027,873	244,500,000	73,487,768,327	57,762,737	-	-	98,686,599,158	
Dividend	-	-	-	-	(4,386,047,931)	-	-	-	(4,386,047,931)	
Total comprehensive income for the year	-	-	-	-	4,655,364,091	-	-	-	4,655,364,091	
Net profit for the year	-	-	-	-	4,655,364,091	-	-	-	4,655,364,091	
Other comprehensive income (expense) for the year	-	-	-	-	(243,658,190)	8,273,516	-	-	(235,384,674)	
Closing balance as at 31 December 2019	20,400,278,730	2,456,261,491	2,040,027,873	244,500,000	73,513,426,297	66,036,253	-	-	98,720,530,644	
Opening balance as at 1 January 2020	20,400,278,730	2,456,261,491	2,040,027,873	244,500,000	73,513,426,297	66,036,253	-	-	98,720,530,644	
Impact from the first time adoption of new financial reporting standards	5	-	-	-	159,508,103	(66,036,253)	-	-	93,471,850	
Opening balance as at 1 January 2020 - restated	20,400,278,730	2,456,261,491	2,040,027,873	244,500,000	73,672,934,400	-	-	-	98,814,002,494	
Dividend	-	-	-	-	(1,020,000,383)	-	-	-	(1,020,000,383)	
Total comprehensive income (expense) for the year	-	-	-	-	(1,488,014,107)	-	-	-	(1,488,014,107)	
Net loss for the year	-	-	-	-	(1,488,014,107)	-	-	-	(1,488,014,107)	
Other comprehensive income (expense) for the year	-	-	-	-	29,078,698	-	(557,330,168)	355,246,746	(173,004,724)	
Closing balance as at 31 December 2020	20,400,278,730	2,456,261,491	2,040,027,873	244,500,000	71,193,998,608	-	(557,330,168)	355,246,746	96,132,983,280	

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



# STATEMENT OF CASH FLOWS

Thai Oil Public Company Limited

For the year ended 31 December 2020

(Baht)

	Notes	Consolidated financial statements		Separate financial statements	
		2020	2019	2020	2019
		Re-presented			
Cash flows from operating activities					
Net profit (loss) for the year from continuing operations		(2,595,471,434)	6,932,547,612	(1,488,014,107)	4,655,364,091
Adjustments to reconcile profit (loss) to cash:					
Allowance for (reversal of) decline in value of inventories adjusted to net realisable value	16	215,410,093	(1,255,176,302)	309,839,354	(1,312,869,399)
Depreciation and amortisation	35	7,554,003,386	6,923,303,322	4,603,292,506	3,747,128,900
Expected credit loss	13	2,255,615	-	-	-
Finance costs		4,292,004,926	3,224,112,459	3,788,385,258	2,660,072,989
Unrealised gain on foreign exchange		(2,233,574,484)	(1,808,298,854)	(2,279,369,390)	(1,792,848,621)
Share of profit of joint ventures and associates, net		(2,565,634,549)	(1,276,417,415)	-	-
Gain from investment reclassification	18	(153,773,021)	-	(153,773,021)	-
Dividend income		(14,426,635)	(167,106,044)	(4,611,088,935)	(2,493,896,889)
Gain on lease termination		(1,088,207)	-	(1,088,207)	-
Gain on debt modification	28	(1,877,328)	-	-	-
Gain on disposal of investment in associate	18	(5,801,433,508)	(3,781,987)	(8,964,512,221)	(3,781,987)
Impairment loss on investment in a subsidiary	32	-	-	162,198,463	-
Loss from the change in the ownership interests in an associate	-	2,919,431	-	-	-
Reversal of impairment loss on property, plant and equipment and investment property	19, 20	-	(11,656,205)	-	(11,656,205)
Loss from changes in fair value of financial assets		9,012,028	-	35,215,417	-
(Gain) loss from changes in fair value of derivatives		(4,173,183)	-	3,639,089	-
(Gain) loss on disposal of property, plant and equipment		5,177	(540,745)	7,804	(523,830)
Loss on write-off of property, plant and equipment		182,373,854	66,102,090	1,866,055	14,655,627
Amortisation of advance receipts for land lease and others		(12,611,706)	(23,617,059)	(137,872,096)	(149,412,722)
Income tax expense (benefit)		(646,760,727)	1,240,363,476	(1,464,056,821)	526,174,798
		(1,775,759,703)	13,842,753,779	(10,195,330,852)	5,838,406,752

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



# STATEMENT OF CASH FLOWS

Thai Oil Public Company Limited

For the year ended 31 December 2020

(Baht)

	Notes	Consolidated financial statements		Separate financial statements	
		2020	2019	2020	2019
		Re-presented			
<b>Changes in operating assets and liabilities</b>					
Trade accounts receivable		9,705,195,521	1,939,935,369	10,631,505,521	1,557,142,564
Other receivables		437,099,733	(274,030,772)	80,220,700	(119,831,888)
Receivables from oil fuel fund		(317,435,379)	(283,570,748)	(317,435,379)	(283,570,748)
Inventories		7,588,665,994	(300,873,742)	7,207,229,468	(920,894,425)
Value added tax receivables		(291,127,560)	(128,739,517)	(495,446,862)	(206,727,131)
Other non-current assets		(44,477,832)	(53,115,834)	(116,358,660)	(34,583,680)
Trade accounts payable		(15,445,224,039)	3,089,397,995	(16,394,044,697)	3,562,917,307
Other payables		896,828,487	(518,901,787)	952,528,688	(401,256,824)
Excise duty payables		308,856,158	(3,397,091,362)	308,028,820	(3,397,091,362)
Other non-current liabilities		1,683,570,395	1,137,927,073	1,920,214,239	1,108,784,005
Cash generated from (used in)					
operating activities		2,746,191,775	15,053,690,454	(6,418,889,014)	6,703,294,570
Income tax received (paid)		26,465,251	(1,797,935,105)	638,255,866	(809,070,284)
Cash used in operating activities					
of discontinued operations	32	(337,909,217)	(168,557,465)	-	-
Net cash generated from (used in)					
operating activities		2,434,747,809	13,087,197,884	(5,780,633,148)	5,894,224,286

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



# STATEMENT OF CASH FLOWS

Thai Oil Public Company Limited

For the year ended 31 December 2020

(Baht)

	Notes	Consolidated financial statements		Separate financial statements	
		2020	2019	2020	2019
		Re-presented			
<b>Cash flows from investing activities</b>					
Dividend received		1,280,574,513	763,067,614	4,611,088,935	2,493,896,889
Payments for deposits at a financial institution used as collaterals		(1,448,718)	(25,272,227)	-	-
Proceeds from (repayment of) short-term investments, net		(17,221,437,470)	72,284,629,882	(17,221,437,089)	72,091,429,893
Purchase of financial assets measured at fair value through other comprehensive income		(78,233,381)	-	(6,243,378)	-
Proceeds from disposal of financial assets measured at fair value through profit or loss		-	-	48,084,458	-
Purchase of financial assets measured at fair value through profit or loss		(53,077,056)	-	-	-
Purchase of other long-term investments		-	(40,603,906)	-	(40,603,907)
Payments for short-term loans to related parties	41	-	-	(655,885,646)	(1,029,395,550)
Proceeds from short-term loans to related parties	41	-	-	3,592,474,296	2,078,500,000
Proceeds from short-term loans to a third party		-	45,000,000	-	-
Payments for long-term loans to related parties	41	-	-	(700,000,000)	(11,381,334,798)
Proceeds from long-term loans to related parties	41	-	-	400,000,000	

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





# STATEMENT OF CASH FLOWS

Thai Oil Public Company Limited

For the year ended 31 December 2020

(Baht)

	Notes	Consolidated financial statements		Separate financial statements	
		2020	2019	2020	2019
		Re-presented			
<b>Cash flows from investing activities (Continued)</b>					
Proceeds from long-term loans to savings co-operative of employees		42,888,126	46,185,118	39,024,641	46,185,118
Payments for long-term loans to savings co-operative of employees		(6,888,358)	(34,385,784)	(6,888,358)	(34,385,784)
Proceeds from disposal of property, plant and equipment		17,178	540,772	14,000	523,832
Purchase of property, plant and equipment		(48,376,681,065)	(27,496,910,281)	(47,577,660,599)	(26,016,560,982)
Payments for right-of-use assets		(40,215,372)	-	(40,215,372)	-
Purchase of intangible assets		(272,945,916)	(217,724,051)	(268,055,625)	(213,474,741)
Net cash payment for acquisition of investments in subsidiaries		-	(38,779,966)	-	(459,390,000)
Proceeds from disposal of investment in an associate and joint venture		17,029,148,584	-	16,756,624,084	-
Payments for investment in an associate		-	(21,971,689,097)	-	(6,591,506,936)
Cash generated from investing activities of discontinued operations	32	208,045,790	29,366,635	-	-
Net cash generated from (used in) investing activities		(47,490,253,145)	23,343,424,709	(41,029,075,653)	30,943,883,034

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



# STATEMENT OF CASH FLOWS

Thai Oil Public Company Limited

For the year ended 31 December 2020

(Baht)

	Notes	Consolidated financial statements		Separate financial statements	
		2020	2019	2020	2019
		Re-presented			
<b>Cash flows from financing activities</b>					
Finance costs paid		(6,262,022,479)	(3,174,457,357)	(5,995,967,205)	(2,703,069,927)
Dividends paid to the shareholders of the parent	39	(1,020,000,383)	(4,386,047,931)	(1,020,000,383)	(4,386,047,931)
Dividends paid to non-controlling interests		(379,427,933)	(239,969,054)	-	-
Proceeds from short-term loans from financial institutions	25	6,208,981,946	6,723,241,219	-	-
Repayment of short-term loans from financial institutions	25	(6,731,025,454)	(7,782,775,768)	-	-
Proceeds from short-term loans from related parties	41	-	-	-	960,874,423
Repayment of short-term loans from related parties	41	-	-	(2,410,103,140)	-
Proceeds from long-term loans from related parties	41	-	3,998,847,362	31,139,872,196	17,061,833,572
Proceeds from long-term loans from financial institutions	28	66,562,397	108,889,243	-	-
Repayment of long-term loans from financial institutions	28	(763,086,373)	(1,115,388,254)	-	-
Proceeds from long-term loans from third parties	28	60,000,000	3,000,000	-	-
Proceeds from debentures	29	31,120,138,337	17,037,010,000	-	-
Payment for debentures and loans financing fee	29, 41	(123,277,229)	(54,750,129)	(130,754,831)	-
Redemption of debenture	29	-	(3,000,000,000)	-	(3,000,000,000)
Repayment of principal of lease		(1,159,447,984)	-	(1,152,071,041)	-
Cash generated from (used in) financing activities of discontinued operations	32	(441,921,008)	11,646,543	-	-
<b>Net cash generated from (used in) financing activities</b>		<b>20,575,473,837</b>	<b>8,129,245,874</b>	<b>20,430,975,596</b>	<b>7,933,590,137</b>

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



# STATEMENT OF CASH FLOWS

Thai Oil Public Company Limited

For the year ended 31 December 2020

(Baht)

	Notes	Consolidated financial statements		Separate financial statements	
		2020	2019 Re-presented	2020	2019
Net increase (decrease) in					
cash and cash equivalents		(24,480,031,499)	44,559,868,467	(26,378,733,205)	44,771,697,457
Cash and cash equivalents at					
the beginning of the year		74,854,227,157	33,741,253,152	71,042,494,404	29,868,078,023
Effect of exchange rate changes		2,869,700,083	(3,446,894,462)	2,836,236,631	(3,597,281,076)
Cash and cash equivalents					
at the end of the year	11	53,243,895,741	74,854,227,157	47,499,997,830	71,042,494,404
Cash and cash equivalents are as follows:					
- Cash on hand		809,135	2,112,236	210,000	230,000
- Deposits at financial institutions					
maturities within three months		53,243,086,606	74,852,114,921	47,499,787,830	71,042,264,404
		53,243,895,741	74,854,227,157	47,499,997,830	71,042,494,404

## Supplementary informations related to cash flow

Payables on purchase of property,					
plant and equipment		2,024,254,747	6,224,952,259	1,997,721,524	6,035,121,780
Payables on purchase of intangible assets		324,176,404	344,437,751	-	3,800
Non-cash changes in right-of-use assets		629,378,889	-	457,859,567	-



# NOTES TO THE FINANCIAL STATEMENTS

Thai Oil Public Company Limited

For the year ended 31 December 2020

## 1 General information

Thai Oil Public Company Limited (the Company) is a public limited company which is incorporated and domiciled in Thailand and is listed on the Stock Exchange of Thailand. The address of the Company's registered offices and refinery plant as follows:

Head office	555/1 Energy Complex Building A, 11 <sup>th</sup> Floor, Vibhavadi Rangsit Road, Kwang Chatuchak, Khet Chatuchak, Bangkok 10900, Thailand
Sriracha office and refinery plant	42/1 Moo 1, Sukhumvit Road Km. 124, Tambol Tungsukla, Amphur Sriracha, Chonburi 20230, Thailand

For reporting purposes, the Company and its subsidiaries are referred to as the Group.

The principal business operations of the Group is oil refinery and distributions, petrochemicals, lube base oil and other businesses in domestic and overseas.

These Group consolidated financial statements were authorised for issue by the board of directors on 12 February 2021.

## 2 Significant events during the current year

### Coronavirus Disease 2019 outbreak

The outbreak of Coronavirus Disease 2019 (COVID-19) in early 2020 resulted in a drop in domestic energy demand and adversely affected the operating results of the Group for the period ended 31 December 2020. Demand declined for diesel oil in the industrial and transportation sectors and demand for jet fuel oil fell sharply. The lockdown measures in many countries imposed to curb the spread of COVID-19 had a severe impact on the economy and demand for oil. Crude oil also remains oversupplied, which has caused a decline in the average Dubai crude oil price. However, the Group and the Company has benefited from the lower cost of crude oil purchased.

In the fourth quarter of 2020, crude oil prices dropped significantly comparing to the same period of prior year but rose from the third quarter of 2020 on the back of higher global oil demand after several asian countries resumed their economic activities, especially China and India. The supply of crude oil from crude oil exporters and allies (OPEC Plus) remain stable, however, the crude oil market remains under pressure from second outbreaks taken place in Europe and the Americas. This cause several countries to enforce cities shutdown again to control the pandemic, including Thailand which increase the measure to prevent the pandemic at the end of 2020.



# NOTES TO THE FINANCIAL STATEMENTS

Thai Oil Public Company Limited

For the year ended 31 December 2020

The Group has paid special attention to the COVID-19 pandemic for planning and responding to demand and supply in this situation to minimise the impact on the Group. Currently, the Group still has sufficient cash, working capital and liquidity to continue operating the business.

## 3 Basis of preparation

The consolidated and separate financial statements have been prepared in accordance with Thai Financial Reporting Standards (TFRS) and the financial reporting requirements issued under the Securities and Exchange Act.

The consolidated and separate financial statements have been prepared under the historical cost convention except as disclosed in the accounting policies below.

The preparation of financial statements in conformity with TFRS requires management to use certain critical accounting estimates and to exercise its judgement in applying the Group's accounting policies. The areas involving a higher degree of judgement or complexity, or areas that are more likely to be materially adjusted due to changes in estimates and assumptions are disclosed in note 9.

An English version of the consolidated and separate financial statements have been prepared from the statutory financial statements that are in the Thai language. In the event of a conflict or a difference in interpretation between the two languages, the Thai language statutory financial statements shall prevail.

## 4 New and amended financial reporting standards

### 4.1 New and amended financial reporting standards that are effective for accounting period beginning on or after 1 January 2020 and have significant impacts to the Group

#### a) Financial instruments

The new financial reporting standards relate to financial instruments are:

TAS 32	Financial instruments: Presentation
TFRS 7	Financial instruments: Disclosures
TFRS 9	Financial instruments
TFRIC 16	Hedges of a Net Investment in a Foreign Operation
TFRIC 19	Extinguishing Financial Liabilities with Equity Instruments





# NOTES TO THE FINANCIAL STATEMENTS

Thai Oil Public Company Limited

For the year ended 31 December 2020

The new financial reporting standards related to financial instruments introduce new classification and measurement requirements for financial instruments as well as provide derecognition guidance on financial assets and financial liabilities. The new guidance also provides an option for the Group to apply hedge accounting to reduce accounting mismatch between hedged item and hedging instrument. In addition, the new rule provides detailed guidance on financial instruments issued by the Group whether it is a liability or an equity and requires extensive details disclosure on financial instruments and related risks.

The new classification requirements of financial assets require the Group to assess both i) business model for holding the financial assets; and ii) cash flow characteristics of the asset whether the contractual cash flows represent solely payments of principal and interest (SPPI). The classification affects the financial assets' measurement. The new guidance requires assessment of impairment of financial assets as well as contract assets and recognition of expected credit loss from initial recognition.

On 1 January 2020, the Group has adopted the financial reporting standards related to financial instruments in its financial statements. The impact from the first-time adoption has been disclosed in note 5.

## **b) TFRS 16, Leases**

TFRS 16, Leases will result in almost all leases where the Group is a lessee, being recognised on the balance sheet as the distinction between operating and finance leases is removed. A right-of-use asset and a lease liability will be recognised, with exception on short-term and low-value leases.

On 1 January 2020, the Group has adopted the new lease standard in its financial statements. The impact from the first-time adoption has been disclosed in note 5.

## **4.2 New and amended financial reporting standards that are effective for accounting period beginning or after 1 January 2021 to the Group**

Certain amended financial reporting standards have been issued that are not mandatory for current reporting period and have not been early adopted by the Group.



# NOTES TO THE FINANCIAL STATEMENTS

Thai Oil Public Company Limited

For the year ended 31 December 2020

**a) Revised Conceptual Framework for Financial Reporting** added the following key principals and guidance:

- Measurement basis, including factors in considering difference measurement basis
- Presentation and disclosure, including classification of income and expenses in other comprehensive income
- Definition of a reporting entity, which can be a single entity or a compose of several entities and do not necessarily be a legal entity, and
- Derecognition of assets and liabilities

The amendment also includes the revision to the definition and the basis in grouping of an asset and liability in the financial statements. In addition, it clarifies the objectivity of the management and procuring the economic resources of the Group, conservatism principle and uncertainty of measurement basis in the financial reporting.

**b) Amendment to TFRS 3, Business combinations** amended the definition of a business which requires an acquisition to include an input and a substantive process that together contribute to the ability to significantly create outputs. The definition of the term 'outputs' is amended to focus on goods and services provided to customers and to exclude the reference to the ability to reduce cost from the definition.

**c) Amendment to TFRS 9, Financial instruments and TFRS 7, Financial instruments: disclosures** amended to provide a relief from applying specific hedge accounting requirements to the uncertainty arising from interest rate benchmark reform such as Interbank offer rates - IBORs. The amendment also requires the disclosure of hedging relationships directly affected by the uncertainty.

**d) Amendment to TAS 1, Presentation of financial statements and TAS 8, Accounting policies, changes in accounting estimates and errors** amended the definition of materiality and make it consistant on both the Thai Financial Reporting Standards and the Conceptual Framework for Financial Reporting. It also clarified when information is material and incorporates some of the guidance in TAS 1 about immaterial information.



# NOTES TO THE FINANCIAL STATEMENTS

Thai Oil Public Company Limited

For the year ended 31 December 2020

- e) **Amendment to TFRS 16, Leases** amended to provide a practical expedient where lessees are exempted from having to consider individual lease contracts to determine whether rent concessions occurring as a direct consequence of the COVID-19 pandemic are lease modifications. It applies to rent concessions that reduce lease payments due from 1 June 2020 to 30 June 2021. The amendment is effective for the annual accounting period beginning on or after 1 June 2020 where early application is permitted. The Group and the Company has chosen to early apply the exemption for the current reporting period. The impacts from the exemptions is immaterial.

The Group's management is currently assessing the impact of initial adoption of the standards listed in a) – d).

## 5 Impacts from initial application of the new and revised financial reporting standards

The Group and the Company have adopted TAS 32 Financial Instruments: Presentation, TFRS 7 Financial Instruments: Disclosure, TFRS 9 Financial Instruments and TFRS 16 Leases on the Group's consolidated financial statements and the Company's separate financial statements for the first time from 1 January 2020 by applying the modified retrospective approach. The comparative figures have not been restated. The reclassifications and the adjustments arising from the changes in accounting policies were therefore recognised in the statement of financial position as of 1 January 2020.

The new accounting policies applied were disclosed in note 6.



# NOTES TO THE FINANCIAL STATEMENTS

Thai Oil Public Company Limited

For the year ended 31 December 2020

The impact of first-time adoption of new financial reporting standards on the consolidated and separate statements of financial position are as follows:

(Million Baht)

	Consolidated financial statements			
	31 December 2019	TFRS 9 and TAS 32	TFRS 16	1 January 2020
<b>Financial position</b>				
<b>Current assets</b>				
Current portion of finance				
lease receivables, net	-	-	9	9
Other receivables	1,288	-	(210)	1,078
Derivative assets	-	137	-	137
<b>Non-current assets</b>				
Financial assets measured at				
fair value through profit or loss	-	383	-	383
Financial assets measured at fair value				
through other comprehensive income	-	41	-	41
Finance lease receivables, net	-	-	9	9
Available-for-sale investments	383	(383)	-	-
Investments in associates (Note 18)	32,442	343	(81)	32,704
Other long-term investments	820	(820)	-	-
Right-of-use assets	-	-	16,012	16,012
Deferred tax assets	671	57	2	730
Deferred land lease arrangement, net	3,217	-	(3,217)	-
Other non-current assets	804	-	123	927
<b>Total assets affected</b>	<b>39,625</b>	<b>(242)</b>	<b>12,647</b>	<b>52,030</b>



# NOTES TO THE FINANCIAL STATEMENTS

Thai Oil Public Company Limited

For the year ended 31 December 2020

(Million Baht)

	Consolidated financial statements			
	31 December 2019	TFRS 9 and TAS 32	TFRS 16	1 January 2020
<b>Current liabilities</b>				
Other payables	9,106	-	(5)	9,101
Current portion of lease liabilities, net	-	-	1,114	1,114
<b>Non-current liabilities</b>				
Derivative liabilities	-	413	-	413
Lease liabilities, net	-	-	11,633	11,633
Other non-current liabilities	857	-	(6)	851
<b>Total liabilities affected</b>	<b>9,963</b>	<b>413</b>	<b>12,736</b>	<b>23,112</b>
<b>Equity</b>				
Unappropriated retained earnings	97,997	135	(74)	98,058
Other components of equity	196	(711)	-	(515)
<b>Equity attributable to the owners of the parent</b>	<b>98,193</b>	<b>(576)</b>	<b>(74)</b>	<b>97,543</b>
Non-controlling interests	3,951	(79)	(15)	3,857
<b>Total equity affected</b>	<b>102,144</b>	<b>(655)</b>	<b>(89)</b>	<b>101,400</b>





# NOTES TO THE FINANCIAL STATEMENTS

Thai Oil Public Company Limited

For the year ended 31 December 2020

(Million Baht)

	Separate financial statements			(million Baht)
	31 December 2019	TFRS 9 and TAS 32	TFRS 16	1 January 2020
Financial position				
Current assets				
Current portion of finance lease				
receivables, net	-	-	11	11
Other receivables	1,173	-	(223)	950
Derivative assets	-	137	-	137
Non-current assets				
Financial assets measured at				
fair value through profit or loss	-	383	-	383
Financial assets measured at fair value				
through other comprehensive income	-	41	-	41
Finance lease receivables, net	-	-	1,142	1,142
Available-for-sale investments	383	(383)	-	-
Investments in associates (Note 18)	7,852	779	-	8,631
Other long-term investments	820	(820)	-	-
Right-of-use assets	-	-	14,849	14,849
Deferred tax assets	557	(22)	2	537
Deferred land lease arrangement, net	3,154	-	(3,154)	-
Other non-current assets	650	-	22	672
Total assets affected	14,589	115	12,649	27,353



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(Million Baht)

	Separate financial statements			1 January 2020
	31 December 2019	TFRS 9 and TAS 32	TFRS 16	
<b>Current liabilities</b>				
Other payables	8,531	-	(24)	8,507
Derivative liabilities	-	13	-	13
Current portion of lease liabilities, net	-	-	1,100	1,100
<b>Non-current liabilities</b>				
Lease liabilities, net	-	-	11,596	11,596
Other non-current liabilities	1,149	-	(15)	1,134
<b>Total liabilities affected</b>	<b>9,680</b>	<b>13</b>	<b>12,657</b>	<b>22,350</b>
<b>Equity</b>				
Unappropriated retained earnings	73,513	168	(8)	73,673
Other components of equity	66	(66)	-	-
<b>Total equity affected</b>	<b>73,579</b>	<b>102</b>	<b>(8)</b>	<b>73,673</b>



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## 5.1 Financial instruments

The total impact on the Group's and the Company's unappropriated retained earnings as of 1 January 2020 are as follows:

(Million Baht)			
	Notes	Consolidated financial statements	Separate financial statements
Unappropriated retained earnings as of			
31 December 2019 (as previously reported)		97,997	73,513
Reclassifications of equity investments from available-for-sale to investments at fair value through profit or loss (FVPL)	a	66	66
Fair value adjustments on derivatives	c	137	124
Impact adjustments from an associate	f	(43)	-
Increase in deferred tax assets related to the above adjustments		(25)	(22)
Total adjustments to opening unappropriated retained earnings from adoption of TFRS 9		135	168
Unappropriated retained earnings as of 1 January 2020 after reflecting TFRS 9 adoption (before impact from TFRS 16)		98,132	73,681



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The impact of these changes on the Group's and the Company's equity as of 1 January 2020 are as follows:

(Million Baht)

Consolidated financial statements - Equity						
	Notes	Changes in fair value of available-for- sale investment	Cash flow Hedge Reserve	Share of other comprehensive income (expense) of associates	Non- controlling interests	Effect on retained earnings
Balance as of						
31 December 2019						
(Previously reported)		66	-	(30)	3,951	97,997
Reclassify investments from						
available-for-sale to FVPL	a	(66)	-	-	-	-
Fair value adjustments on						
derivatives	c	-	(413)	-	-	-
Impact adjustments from						
associate	f	-	-	(314)	(79)	-
Increase in deferred tax assets						
related to the above adjustments		-	82	-	-	-
Total adjustments to opening						
retained earnings from adoption						
of TFRS 9 (from the table above)		-	-	-	-	135
<b>Total impact</b>		<b>(66)</b>	<b>(331)</b>	<b>(314)</b>	<b>(79)</b>	<b>135</b>
Opening balance as of 1 January						
2020 - TFRS 9 adoption		-	(331)	(344)	3,872	98,132



# NOTES TO THE FINANCIAL STATEMENTS

Thai Oil Public Company Limited

For the year ended 31 December 2020

(Million Baht)

	Notes	Separate financial statements - Equity	
		Changes in fair value of available-for-sale investment	Effect on retained earnings
Balance as of 31 December 2019			
(Previously reported)		66	73,513
Reclassify investments from			
available-for-sale to FVPL	a	(66)	-
Total adjustments to opening retained			
earnings from adoption of TFRS 9			
(from the table above)		-	168
<b>Total impact</b>		<b>(66)</b>	<b>168</b>
Opening balance as at 1 January 2020			
- TFRS 9 adoption		-	73,681



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As of 1 January 2020 (the date of TFRS 9 initial application), the management has assessed which business models apply to the financial assets and financial liabilities, and has classified its financial instruments into the appropriate TFRS 9 categories as follows.

(Million Baht)

		Consolidated financial statements			
	Notes	Available- for-sale investments	General investments	FVPL	FVOCI
Financial assets					
Balance as at 31 December 2019					
(Previously reported)		383	41	-	-
Reclassify investments from					
available-for-sale to FVPL	a, d	(383)	-	383	-
Reclassify general investments to FVOCI	b, d	-	(41)	-	41
Derivative fair value	c	-	-	137	-
Opening balance as at					
1 January 2020 - TFRS 9 adoption		-	-	520	41
Financial liabilities					
Balance as at 31 December 2019					
(Previously reported)		-	-	-	-
Derivative fair value	c	-	-	413	-
Opening balance as at					
1 January 2020 - TFRS 9 adoption		-	-	413	-





# NOTES TO THE FINANCIAL STATEMENTS

Thai Oil Public Company Limited

For the year ended 31 December 2020

(Million Baht)

		Separate financial statements			
	Notes	Available- for-sale investments	General investments	FVPL	FVOCI
Financial assets					
Balance as at 31 December 2019					
(Previously reported)		383	41	-	-
Reclassify investments from					
available-for-sale to FVPL	a, d	(383)	-	383	-
Reclassify general investments to FVOCI	b, d	-	(41)	-	41
Derivative fair value	c	-	-	137	-
Opening balance as at 1 January 2020 -					
TFRS 9 adoption		-	-	520	41
Financial liabilities					
Balance as at 31 December 2019					
(Previously reported)		-	-	-	-
Derivative fair value	c	-	-	(13)	-
Opening balance as at 1 January 2020 -					
TFRS 9 adoption		-	-	(13)	-

- (a) Reclassification from available-for-sale to financial assets at fair value through profit or loss (FVPL)

As of 1 January 2020 the Group and the Company reclassified available-for-sale investments to financial assets at FVPL of Baht 383 million because their cash flows do not represent solely payments of principal and interest (SPPI).

Gains on fair value related to the Group and the Company of Baht 66 million were transferred from the AFS reserve to retained earnings on 1 January 2020.



# NOTES TO THE FINANCIAL STATEMENTS

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For the year ended 31 December 2020

- (b) Reclassification from general investments to financial assets at fair value through other comprehensive income (FVOCI)

As of 1 January 2020 the Group and the Company reclassified general investments in equity instruments that were previously measured at cost of Baht 41 million to FVOCI on 1 January 2020 as they were held as long-term strategic investments.

- (c) Derivatives and hedging activities

Before 1 January 2020 the Group and the Company did not recognise derivatives as assets or liabilities in the financial statements. The derivative contracts and related fair values were disclosed in the note.

As of 1 January 2020, the Group and the Company began applying hedge accounting for the first time. The interest rate swaps qualified as cash flow hedges as disclosed in note 7.1.1.

As of 1 January 2020, the Group recognised derivative assets and liabilities of Baht 137 million and Baht 413 million respectively with a corresponding adjustment to retained earnings and cash flow hedge reserve in equity, respectively in the consolidated financial statements .

As of 1 January 2020, the Company recognised derivative assets and liabilities of Baht 137 million and Baht 13 million, respectively with the corresponding adjustment to the retained earnings in the separate financial statements.



# NOTES TO THE FINANCIAL STATEMENTS

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The Group and the Company recognised adjustments of the fair value of the derivatives in cash flow hedges reserve and retained earnings as follows.

(Million Baht)

	<b>Consolidated financial statements</b>	
	<b>Cash flow hedges reserve</b>	<b>Retained earnings</b>
<b>As of 1 January 2020</b>		
Interest rate swaps - cash flow hedges	(331)	-
Oil price crack spread swap and time swap contracts		
- held for trading	-	137
<b>Total derivative</b>	<b>(331)</b>	<b>137</b>

(Million Baht)

	<b>Separate financial statements</b>
	<b>Retained earnings</b>
<b>As of 1 January 2020</b>	
Oil price crack spread swap and time swap contracts - held for trading	124
<b>Total derivative</b>	<b>124</b>



# NOTES TO THE FINANCIAL STATEMENTS

Thai Oil Public Company Limited

For the year ended 31 December 2020

(d) Reclassifications of financial instruments on adoption of TFRS 9

As of 1 January 2020, the date of initial application, the measurement and carrying amounts of reclassified financial assets and financial liabilities were as follows.

Consolidated financial statements					
	Measurement categories		Carrying amounts		
	Previously reported (TAS 105 and other TAS)	New (TFRS 9)	Previously reported Million Baht	New Million Baht	Difference Million Baht
<b>Current financial assets</b>					
Current portion of finance lease receivables, net	Unrecognised	Amortised cost	-	9	9
Derivative assets	Unrecognised	FVPL	-	137	137
<b>Non-current financial assets</b>					
Available-for-sale investments	Available for sale	FVPL	383	383	-
Other long-term investments	Cost less impairment	FVOCI	41	41	-
Finance lease receivables, net	Unrecognised	Amortised cost	-	9	9
<b>Current financial liabilities</b>					
Current portion of lease liabilities, net	Unrecognised	Amortised cost	-	1,114	1,114
<b>Non-current financial liabilities</b>					
Derivative liabilities	Unrecognised	FVPL	-	413	413
Lease liabilities, net	Unrecognised	Amortised cost	-	11,633	11,633



# NOTES TO THE FINANCIAL STATEMENTS

Thai Oil Public Company Limited

For the year ended 31 December 2020

Separate financial statements					
	Measurement categories		Carrying amounts		
	Previously reported (TAS 105 and other TAS)	New (IFRS 9)	Previously reported Million Baht	New Million Baht	Difference Million Baht
<b>Current financial assets</b>					
Current portion of finance					
lease receivables, net	Unrecognised	Amortised cost	-	11	11
Derivative assets	Unrecognised	FVPL	-	137	137
<b>Non-current financial assets</b>					
Available-for-sale investments	Available for sale	FVPL	383	383	-
Other long-term investments	Cost less impairment	FVOCI	41	41	-
Finance lease receivables, net	Unrecognised	Amortised cost	-	1,142	1,142
<b>Current financial liabilities</b>					
Derivative liabilities	Unrecognised	FVPL	-	13	13
Current portion of lease					
liabilities, net	Unrecognised	Amortised cost	-	1,100	1,100
<b>Non-current financial liabilities</b>					
Lease liabilities, net	Unrecognised	Amortised cost	-	11,596	11,596



# NOTES TO THE FINANCIAL STATEMENTS

Thai Oil Public Company Limited

For the year ended 31 December 2020

(e) Impairment of financial assets

The Group and the Company have following financial assets that are subject to the expected credit loss model:

- cash and cash equivalents
- deposits at financial institutions used as collaterals
- trade and other receivables
- finance lease receivables
- loans to related parties; and
- debt investments carried at amortised cost

The Group was required to revise its impairment methodology under TFRS 9.

As of 1 January 2020, management assessed the impact of impairment of these financial assets, if any as immaterial.

(f) Impact adjustments from an associate

As of 1 January 2020, the Group recognised the impact of the first time adoption of new financial reporting standards on an investment in an associate using the equity method to retained earnings of Baht 43 million, other components of equity of Baht 314 million and non-controlling interests of Baht 79 million as a result of a gain from the fair value measurement of investments in equity and derivative instrument in the financial statements of the associate.

## 5.2 Leases

On adoption of TFRS 16, the Group recognised lease liabilities in relation to leases which had previously been classified as 'operating leases' under the principles of TAS 17 Leases for leases of land, buildings, equipment, oil tankers and vehicles with lease terms more than 12 months. These liabilities were measured at the present value of the remaining lease payments, discounted using the lessee's incremental borrowing rate as of 1 January 2020. The weighted average lessee's incremental borrowing rate that the Group and the Company applied to the lease liabilities on 1 January 2020 was 4.52% and 4.53%, respectively.





# NOTES TO THE FINANCIAL STATEMENTS

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For the year ended 31 December 2020

The Group measured right-of-use assets at the amount equal to the lease liability that was calculated from the incremental borrowing rate from the remaining lease period as at 1 January 2020, adjusted by the amount of any prepaid or accrued lease payments relating to that lease recognised in the statement of financial position as at 31 December 2019. There were no onerous lease contracts that would have required an adjustment to the right-of-use assets at the date of initial application.

For leases previously classified as finance leases, the Group recognised the carrying amount of the lease asset and lease liability immediately before transition as the carrying amount of the right of use asset and the lease liability at the date of initial application. The measurement principles of TFRS 16 are only applied after that date. The remeasurements to the lease liabilities were recognised as adjustments to the related right-of-use assets immediately after the date of initial application.

(Million Baht)

	Consolidated financial statements	Separate financial statements
Operating lease commitments disclosed as a		
31 December 2019	22,824	22,464
Add/(less): adjustments relating to		
previously disclosed commitments	(109)	217
(Less): discounted using the lessee's incremental		
borrowing rate at the date of initial application	(9,911)	(9,930)
(Less): short-term leases recognised on a straight-line		
basis as expense	(5)	(5)
(Less): low-value leases recognised on a straight-line		
basis as expense	(52)	(50)
<b>Lease liabilities recognised as at 1 January 2020</b>	<b>12,747</b>	<b>12,696</b>
Current lease liabilities	1,114	1,100
Non-current lease liabilities	11,633	11,596



# NOTES TO THE FINANCIAL STATEMENTS

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## Practical expedients applied

In applying TFRS 16 for the first time on leases which outstanding before 1 January 2020, the Group has used the following practical expedients permitted by the standard:

- the use of a single discount rate to a portfolio of leases with reasonably similar characteristics,
- reliance on previous assessments on whether leases are onerous before adoption of TFRS 16,
- the accounting for operating leases with a remaining lease term of less than 12 months as at 1 January 2020 is considered as short-term leases,
- the exclusion of initial direct costs for the measurement of the right-of-use assets at the date of initial application,
- the use of hindsight in determining the lease term where the contract contains options to extend or terminate the lease, and
- elect not to reassess whether a contract is, or contains a lease as defined under TFRS 16 at the date of initial application but relied on its assessment made applying TAS 17 and TFRIC 4 - Determining whether an Arrangement contains a Lease.

In addition, the Group has reassessed a sublease, which the Group is the intermediate lessor and is still effective at the date of initial application of the new lease standard. The Group classified the sublease by reference the right-of-use assets arising from the head lease. Consequently, the Group has reclassified the sublease which was previously classified as operating lease under TAS 17 to finance lease under TFRS 16. The Group accounted for the sublease as a new finance lease entered into at the date of initial application and recognised the cumulative effect of applying the standard as an adjustment to retained earnings at 1 January 2020.

An associate of the Group has considered that some portion of finance lease receivable contained foreign currency. Under TFRS 16, the standard defined that the initial recognition of foreign currency transaction is contract rate and translated into the functional currency using the exchange rates prevailing at the dates of the transactions, then and subsequently measured at the closing exchange rate at the period ended date. Consequently, associate of the Group has recognised the accumulated transactions to retained earnings as at 1 January 2020



# NOTES TO THE FINANCIAL STATEMENTS

Thai Oil Public Company Limited

For the year ended 31 December 2020

## 6 Accounting policies

### 6.1 Principles of consolidation and equity accounting

#### a) Subsidiaries

Subsidiaries are all entities over which the Group has control. The Group controls an entity when the Group 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. Subsidiaries are consolidated from the date on which control is transferred to the Group until the date that control ceases.

In the separate financial statements, investments in subsidiaries are accounted for using cost method less impairment charge.

#### b) Associates

Associates are all entities over which the Group has significant influence but not control or joint control. Investments in associates are accounted for using the equity method of accounting, in consolidated financial statements.

In the separate financial statements, investments in associates are accounted for using cost method.

#### c) Joint arrangements

Investments in joint arrangements are classified as either joint operations or joint ventures depending on the contractual rights and obligations of each investor, rather than the legal structure of the joint arrangements.

##### Joint ventures

A joint venture is a joint arrangement whereby the Group has rights to the net assets of the arrangement. Interests in joint ventures are accounted for using the equity method.

In the separate financial statements, investments in joint ventures are accounted for using cost method.



# NOTES TO THE FINANCIAL STATEMENTS

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## **d) Equity method**

The investment is initially recognised at cost which is consideration paid and directly attributable costs.

The Group's subsequently recognises shares of its associates and joint ventures' profits or losses and other comprehensive income in the profit or loss and other comprehensive income. The subsequent cumulative movements are adjusted against the carrying amount of the investment.

When the Group's share of losses in associates and joint ventures equals or exceeds its interest in the associates and joint ventures, the Group does not recognise further losses, unless it has incurred obligations or made payments on behalf of the associates and joint ventures.

## **e) Changes in ownership interests**

The Group treats transactions with non-controlling interests that do not result in a loss of control as transactions with equity owners of the Group. A difference between the amount of the adjustment to noncontrolling interests to reflect their relative interest in the subsidiary and any consideration paid or received is recognised within equity.

If the ownership interest in associates and joint ventures is reduced but significant influence and joint control is retained, only a proportionate share of the amounts previously recognised in other comprehensive income is reclassified to profit or loss where appropriate. Profit or loss from reduce of the ownership interest in associates and joint ventures is recognise in profit or loss.

When the Group losses control, joint control or significant influence over investments, any retained interest in the investment is remeasured to its fair value, with the change in carrying amount recognised in profit or loss. The fair value becomes the initial carrying amount of the retained interest which is reclassified to investment in an associate, or a joint venture or a financial asset accordingly.

## **f) Intercompany transactions on consolidation**

Intra-group transactions, balances and unrealised gains on transactions are eliminated. Unrealised gains on transactions between the Group and its associates and joint ventures are eliminated to the extent of the Group's interest in the associates and joint ventures. Unrealised losses are also eliminated in the same manner unless the transaction provides evidence of an impairment of the asset transferred.



# NOTES TO THE FINANCIAL STATEMENTS

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## 6.2 Business combination

The Group applies the acquisition method to account for business combinations with an exception on business combination under common control. The consideration transferred for the acquisition of a subsidiary comprises.

- fair value of the assets transferred,
- liabilities incurred to the former owners of the acquiree
- equity interests issued by the Group

Identifiable assets and liabilities acquired and contingent liabilities assumed in a business combination are measured initially at their fair values at the acquisition date.

On an acquisition-by-acquisition basis, the Group initially recognises any non-controlling interest in the acquiree either at fair value or at the non-controlling interest's proportionate share of the acquiree's net assets.

The excess of the consideration transferred, the amount of any non-controlling interest recognised and the acquisition-date fair value of any previous equity interest in the acquiree (for business combination achieved in stages) over the fair value of the identifiable net assets acquired is recorded as goodwill. In the case of a bargain purchase, the difference is recognised directly in profit or loss.

### Acquisition-related cost

Acquisition-related cost are recognised as expenses in consolidated financial statements

### Step-up acquisition

If the business combination is achieved in stages, the acquisition date carrying value of the acquirer's previously held equity interest in the acquiree is re-measured to fair value at the acquisition date; any gains or losses arising from such re-measured are recognised in profit or loss.

### Changes in fair value of contingent consideration paid/received

Subsequent changes to the fair value of the contingent consideration that is an asset or liability is recognised in profit or loss. Contingent consideration that is classified as equity is not re-measured.



# NOTES TO THE FINANCIAL STATEMENTS

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## Business combination under common control

The Group accounts for business combination under common control by measuring acquired assets and liabilities of the acquiree at their carrying values presented in the highest level of the consolidation. The Group retrospectively adjusted the business combination under common control transactions as if the combination had occurred on the later of the beginning of the preceding comparative period and the date of the acquiree has become under common control.

Consideration of business combination under common control are the aggregated amount of fair value of assets transferred, liabilities incurred and equity instruments issued by the acquirer at the date of which the exchange in control occurs.

The difference between consideration under business combination under common control and the acquirer's interests in the carrying value of the acquiree is presented as "surplus arising from business combination under common control" in equity and is derecognised when the investment is disposed of by transferred to retained earnings.

## 6.3 Foreign currency translation

### a) Functional and presentation currency

The financial statements are presented in Thai Baht, which is the Group's and the Company's functional and presentation currency.

### b) Transactions and balances

Foreign currency transactions are translated into the functional currency using the exchange rates prevailing at the dates of the transactions.

Foreign exchange gains and losses resulting from the settlement of such transactions and from the translation at year-end exchange rates of monetary assets and liabilities denominated in foreign currencies are recognised in the profit or loss.

When the group recognises gains and losses on a non-monetary item that recognised in other comprehensive income, all of gains and losses on foreign exchange components will also be recognised in other comprehensive income. On the other hand, if gains and losses on a non-monetary item is recognised in profit and loss, all gains and losses on foreign exchange components will be recognised in profit and loss.





# NOTES TO THE FINANCIAL STATEMENTS

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For the year ended 31 December 2020

## c) Group companies

The operational results and financial position of the Group's entities (none of which has the currency of a hyper-inflationary economy) that have a different functional currency from the Group's presentation currency are translated into the presentation currency as follows.

- Assets and liabilities are translated at the closing rate at the date of respective statement of financial position;
- Income and expenses each statement of profit or loss and statement of comprehensive income are translated at average exchange rates; and
- All resulting exchange differences are recognised in other comprehensive income.

## 6.4 Cash and cash equivalents

In the statements of cash flows, cash and cash equivalents includes cash on hand, deposits held at call, short-term highly liquid investments with maturities of three months or less from acquisition date.

In the statements of financial position, bank overdrafts are shown in current liabilities.

## 6.5 Trade accounts receivable

Trade receivables are amounts due from customers for goods sold or services performed in the ordinary course of business. They are generally due for settlement within 7-120 days and therefore are all classified as current.

Trade receivables are recognised initially at the amount of consideration that is unconditional unless they contain significant financing components, they are recognised at fair value. The Group holds the trade receivables with the objective to collect the contractual cash flows and therefore measures them subsequently at amortised cost.

The impairment of trade receivables are disclosed in Note 6.7(f).

## 6.6 Inventories

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



# NOTES TO THE FINANCIAL STATEMENTS

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Cost of inventories is determined by the weighted average method. Cost of raw materials comprise all purchase cost and costs directly attributable to the acquisition of the inventory less all attributable discounts. The cost of finished goods and work in progress comprises raw materials, direct labour, other direct costs and directly attributable costs to bring the inventories to their present location and condition.

## 6.7 Financial asset

For the year ended 31 December 2020

### a) Classification

From 1 January 2020, the Group classifies its debt instrument financial assets in the following measurement categories depending on i) business model for managing the asset and ii) the cash flow characteristics of the asset whether they represent solely payments of principal and interest (SPPI).

- those to be measured subsequently at fair value (either through other comprehensive income or through profit or loss); and
- those to be measured at amortised cost.

The Group reclassifies debt investments when and only when its business model for managing those assets changes.

For investments in equity instruments, the Group has an irrevocable election at the time of the initial recognition to account for the equity investment at fair value through profit or loss (FVPL) or at fair value through other comprehensive income (FVOCI) except those that are held for trading, they are measured at FVPL.

### b) Recognition and derecognition

Regular way purchases, acquires or sales of financial assets are recognised on trade-date, the date on which the Group commits to purchase or sell the asset. Financial assets are derecognised when the rights to receive cash flows from the financial assets have expired or have been transferred and the Group has transferred substantially all the risks and rewards of ownership.



# NOTES TO THE FINANCIAL STATEMENTS

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## c) Measurement

At initial recognition, the Group measures a financial asset at its fair value plus, transaction costs that are directly attributable to the acquisition of the financial asset. Transaction costs of financial assets carried at FVPL are expensed in profit or loss.

Financial assets with embedded derivatives are considered in their entirety when determining whether the cash flows are SPPI.

## d) Debt instruments

Subsequent measurement of debt instruments depends on the Group's business model for managing the asset and the cash flow characteristics of the financial assets. There are three measurement categories into which the Group classifies its debt instruments:

- **Amortised cost:** Financial assets that are held for collection of contractual cash flows where those cash flows represent SPPI are measured at amortised cost. Interest income from these financial assets is included in other income using the effective interest rate method. Any gain or loss arising on derecognition is recognised directly in profit or loss and presented in net gain (loss) from financial instruments. Foreign exchange gains and losses are presented in net foreign exchange gain (loss). Impairment losses are presented as a separate line item in the statement of profit or loss.
- **FVOCI:** Financial assets that are held for i) collection of contractual cash flows, where the assets' cash flows represent solely payments of principal and interest are measured at FVOCI and ii) for selling the financial assets. Movements in the carrying amount are taken through other comprehensive income (OCI), except 1) for the recognition of impairment gains or losses, 2) interest income using the effective interest method, and 3) foreign exchange gains and losses which are recognised in profit or loss. When the financial assets is derecognised, the cumulative gain or loss previously recognised in OCI is reclassified from equity to profit or loss and recognised in net gain (loss) from financial instruments. Interest income is included in other income. Impairment expenses are presented separately in the statement of profit or loss.
- **FVPL:** Financial assets that do not meet the criteria for amortised cost or FVOCI are measured at FVPL. A gain or loss on a debt investment that is subsequently measured at FVPL is recognised in profit or loss and presented net within net gain (loss) from financial instruments in the period in which it arises.



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## e) Equity instruments

The Group measures all equity investments at fair value. Where the Group has elected to present fair value gains and losses on equity instruments in OCI, there is no subsequent reclassification of fair value gains and losses to profit or loss following the derecognition of the investment. Dividends from such investments continue to be recognised in profit or loss as dividend income when the right to receive payments is established.

Changes in the fair value of financial assets at FVPL are recognised in net gain (loss) from financial instruments in the statement of profit or loss.

Impairment losses (and reversal of impairment losses) on equity investments are reported together with changes in fair value.

## f) Impairment

From 1 January 2020, the Group applies TFRS 9 using simplified approach in measuring the impairment of trade receivables, contract assets and lease receivables, which applies lifetime expected credit loss, from initial recognition, for all trade receivables, contract assets and lease receivables.

To measure the expected credit losses, trade receivables and contract assets have been grouped based on shared credit risk characteristics and the days past due. The contract assets relate to unbilled work in progress and have substantially the same risk characteristics as the trade receivables for the same types of contracts. The Group has therefore concluded that the expected loss rates for trade receivables are a reasonable approximation of the loss rates for the contract assets. The expected credit loss rates are based on payment profiles, historical credit losses as well as forward-looking information and factors that may affect the ability of the customers to settle the outstanding balances.

The expected loss rates are based on the payment profiles of sales over a period of 36 months before 1 January 2020.

For other financial assets carried at amortised cost and FVOCI, the Group applies TFRS 9 using general approach in measuring the impairment of those financial assets. Under the general approach, the 12-month or the lifetime expected credit loss is applied depending on whether there has been a significant increase in credit risk and recognise loss from impairment since the initial recognition of those financial assets.



# NOTES TO THE FINANCIAL STATEMENTS

Thai Oil Public Company Limited

**For the year ended 31 December 2020**

The credit risk assessment is performed at the end of each reporting period whether there is any significant increase in credit risk profile from the initial recognition by comparing i) expected risk of default as of the reporting date and ii) estimated risk of default on the date of initial recognition.

The Group assesses expected credit loss by considering the forward-looking information and past experiences. The expected credit loss is a probability-weighted estimate of credit losses (probability-weighted present value of estimated cash shortfall). The cash shortfall is the difference between all contractual cash flows that are due to the Group and all cash flows expected to receive, discounted at the original effective interest rate.

When measuring expected credit losses, the Group reflects the following:

- probability-weighted estimated uncollectible amounts
- time value of money
- supportable and reasonable information as of the reporting date about past experience, current conditions and forecasts of future situations.

Impairment (and reversal of impairment) losses are recognised in profit or loss as a separate line item and included in administrative expenses.

Classification and measurement of financial assets for the year ended 31 December 2019 is disclosed in note 5.1(d).

## **For the year ended 31 December 2019**

### **Investments in debt and equity securities**

Investments other than investments in subsidiaries, associates and joint ventures are initially recognised at fair value of consideration paid plus direct transaction cost.

### **Trading and available-for-sale investments**

Trading investments and available-for-sale investments are subsequently measured at fair value. The unrealised gains and losses of trading investments are recognised in profit or loss. The unrealised gains and losses of available-for-sale investments are recognised in other comprehensive income and are subsequently reclassified to profit or loss when the investment is disposed.



# NOTES TO THE FINANCIAL STATEMENTS

Thai Oil Public Company Limited

For the year ended 31 December 2020

## **Held-to-maturity investments**

Held-to-maturity investments are carried at amortised cost using the effective interest method less impairment.

## **General investments**

General investments are carried at cost less impairment.

## **Disposal of investments**

On a disposal of an investment, the difference between the net disposal proceeds and the carrying amount (including cumulative changes in fair value recognised in equity) is recognised to the profit or loss. When the Group disposes an investment partially, the carrying amount of the disposed part is determined by the weighted average method.

## **Impairment**

In the year 2019, the Group recognised impairment of trade receivables based on the incurred loss model such as uncollectible or past due for a period less than 90 days, which was not taken into account future losses. Therefore, loss allowance and allowance for doubtful accounts are not comparable.

Receivables for which an impairment provision was recognised were written off as expense when there was no expectation of recovering additional cash.

## **6.8 (Group of) non-current assets held for sale and discontinued operations**

Non-current assets (or disposal groups) are classified as assets held for sale when their carrying amount will be recovered principally through a sale transaction and a sale is considered highly probable. They are measured at the lower of the carrying amount and fair value less costs to sell.

An impairment loss is recognised for write-down of the asset (or disposal group) to fair value less costs to sell. A gain is recognised for any subsequent increases in fair value less costs to sell of an asset (or disposal group), but not in excess of any cumulative impairment loss previously recognised.





# NOTES TO THE FINANCIAL STATEMENTS

Thai Oil Public Company Limited

For the year ended 31 December 2020

Non-current assets (including those that are part of a disposal group) are not depreciated or amortised.

A discontinued operations is a component of the Group that has been disposed of or is classified as held for sale and that represents a separate major line of business or geographical area of operations, is part of a single co-ordinated plan to dispose of such a line of business or area of operations, or is a subsidiary acquired exclusively with a view to resale. The results of discontinued operations are presented separately in the statement of profit or loss.

## 6.9 Investment property

Investment property, which is land, is held for long-term rental yields or for capital appreciation and is not occupied by the Group.

Investment property is measured initially at cost, including directly attributable costs and borrowing costs.

Subsequent expenditure is capitalised to the asset's carrying amount only when it is probable that future economic benefits associated with the expenditure will flow to the Group.

After initial recognition, investment property is carried at cost less any accumulated impairment losses. Land is not depreciated.

## 6.10 Property, plant and equipment

Property, plant and equipment are stated at historical cost less accumulated depreciation and impairment losses. Historical cost includes expenditure that is directly attributable to the acquisition of the items.

Subsequent costs are included in the asset's carrying amount, only when it is probable that future economic benefits associated with the item will flow to the Group. The carrying amount of the replaced part is derecognised.

All other repairs and maintenance are charged to profit or loss when incurred.



# NOTES TO THE FINANCIAL STATEMENTS

Thai Oil Public Company Limited

For the year ended 31 December 2020

Land is not depreciated. Depreciation on other assets is calculated using the straight-line method to allocate their cost to their residual values over their estimated useful lives, as follows:

	Years
Buildings	10 - 30
Leasehold improvements	5 - 20
Refinery plant and equipment	20 - 35
Lube base oil refinery plants and equipment	16 - 30
Petrochemical plants	10 - 30
Power plants	20 - 25
Transmission facilities	25
Machinery, equipment and plant equipment	3 - 20
Oil and liquid chemical tankers and crew boats	10 - 25
Furniture, fixtures, office equipment and others	5 - 10
Vehicles	5

The assets' residual values and useful lives are reviewed, and adjusted if appropriate, at the end of each reporting period.

Gains or losses on disposals are determined by comparing the proceeds with the carrying amount and are recognised in other gains or losses.

## 6.11 Goodwill

Goodwill is tested for impairment annually, or more frequently if events or changes in circumstances indicate that it might be impaired. It is carried at cost less accumulated impairment losses.

For the purpose of impairment testing, goodwill is allocated to cash-generating units or groups of cash-generating units that are expected to benefit from the business combination in which the goodwill arose. The units or groups of units are identified at the lowest level at which goodwill is monitored for internal management purposes, being the operating segments.



# NOTES TO THE FINANCIAL STATEMENTS

Thai Oil Public Company Limited

For the year ended 31 December 2020

## 6.12 Intangible assets

License fee, computer software and patent that are acquired by the Group, which have finite useful lives, are stated at cost less accumulated amortisation and accumulated impairment losses (if any). Amortisation is calculated using the straight-line method to allocate their cost to their residual values over their estimated useful lives as follows:

	Years
License fee	10 - 25
Computer software	5 - 10
Patent	10

Cost associated with maintaining computer software are recognised as expense in the period in which they are incurred.

## 6.13 Impairment of assets

Assets that have an indefinite useful life are tested annually for impairment, or more frequently if events or changes in circumstances indicate that it might be impaired. Assets that are subject to amortisation are reviewed for impairment whenever there is an indication of impairment. An impairment loss is recognised for the amount by which the carrying amount of the assets exceeds its recoverable amount. The recoverable amount is the higher of an asset's fair value less costs of disposal and value in use.

Where the reasons for previously recognised impairments no longer exist, the impairment losses on the assets concerned other than goodwill is reversed.



# NOTES TO THE FINANCIAL STATEMENTS

Thai Oil Public Company Limited

For the year ended 31 December 2020

## 6.14 Leases

### For the year ended 31 December 2020

#### Leases - where the Group is the lessee

Leases are recognised as a right-of-use asset and a corresponding liability at the date at which the leased asset is available for use by the Group. Each lease payment is allocated between the liability and finance cost. The finance cost is charged to profit or loss over the lease period so as to produce a constant periodic rate of interest on the remaining balance of the liability for each period. The right-of-use asset is depreciated over the shorter of the asset's useful life and the lease term on a straight-line basis or utilisation rate. For contracts which contain both lease and non-lease components, the Group allocates the considerations in the contract to the lease and non-lease components based on their relative stand-alone prices. However, for leases of real estate for which the group is a lessee, it has elected not to separate lease and non-lease components and instead accounts for these as a single lease component.

Assets and liabilities arising from a lease are initially measured at present value. Lease liabilities include the net present value of the following lease payments:

- fixed payments (including in-substance fixed payments), less any lease incentives receivable
- variable lease payment that are based on an index or a rate
- amounts expected to be payable by the lessee under residual value guarantees
- the exercise price of a purchase option if the lessee is reasonably certain to exercise that option, and
- payments of penalties for terminating the lease, if the lease term reflects the lessee exercising that option.

Lease payments under the extension options period are also included in the measurement of the liability, if the Company is reasonably certain in exercise its extension options.

The lease payments are discounted using the interest rate implicit in the lease. If that rate cannot be determined, the lessee's incremental borrowing rate is used, being the rate that the lessee would have to pay to borrow the funds necessary to obtain an asset of similar value in a similar economic environment with similar terms and conditions, is used.

For contracts which have variable lease payments that depend on an index or rate, those payments are not included in the lease liability until they take effect. When adjustments to lease payments based on an index or rate take effect, the lease liability is reassessed and adjusted against the right-of-use asset.



# NOTES TO THE FINANCIAL STATEMENTS

Thai Oil Public Company Limited

For the year ended 31 December 2020

Right-of-use assets are measured at cost. It comprise which is the following:

- the amount of the initial measurement of lease liability
- any lease payments made at or before the commencement date less any lease incentives received
- any initial direct costs, and
- restoration costs.

Payments associated with short-term leases and leases of low-value assets are recognised on a straight-line basis as an expense in profit or loss. Short-term leases are leases with a lease term of 12 months or less. Low-value assets comprise IT-equipment and small items of office furniture.

## **Leases - where the Group is the lessor**

When assets are leased out under a finance lease, the present value of the lease payments is recognised as a receivable. The difference between the gross receivable and the present value of the receivable is recognised as unearned finance income. Lease income is recognised over the term of the lease which reflects a constant periodic rate of return. Initial direct costs are included in initial measurement of the finance lease receivable and reduce the amount of income recognised over the lease term.

Rental income under operating leases (net of any incentives given to lessees) is recognised on a straight-line basis over the lease term. Initial direct costs incurred in obtaining an operating lease are added to the carrying amount of the underlying asset and recognised as expense over the lease term on the same basis as lease income. The respective leased assets are included in the statement of financial position based on their nature.

The investment properties of the Group are leased to tenants under operating leases with rentals payable monthly. There are no variable lease payments that depend on an index or rate.

## **For the year ended 31 December 2019**

## **Leases - where the Group is the lessee**

Payments made under operating leases (net of any incentives received from the lessor) are charged to profit or loss on a straight-line basis over the period of the lease.

At the inception of finance lease, the lower of the fair value of the leased property and the present value of the minimum lease payments is capitalised. Each lease payment is allocated between the liability and finance charges to achieve a constant rate on the liabilities balance outstanding. The corresponding rental obligations is presented net of finance charges. Finance cost is charged to profit or loss over the lease period.



# NOTES TO THE FINANCIAL STATEMENTS

Thai Oil Public Company Limited

For the year ended 31 December 2020

## Leases - where the Group is the lessor

When assets are leased out under a finance lease, the present value of the lease payments is recognised as a receivable. The difference between the gross receivable and the present value of the receivable is recognised as unearned finance income. Lease income is recognised over the term of the lease which reflects a constant periodic rate of return. Initial direct costs are included in initial measurement of the finance lease receivable and reduce the amount of income recognised over the lease term.

Rental income under operating leases (net of any incentives given to lessees) is recognised on a straight-line basis over the lease term.

## 6.15 Financial liabilities

### For the year ended 31 December 2020

#### a) Classification

Financial instruments issued by the Group are classified as either financial liabilities or equity securities by considering contractual obligations as follow:

- Where the Group has an unconditional contractual obligation to deliver cash or another financial asset to another entity, it is considered a financial liability unless there is a predetermined or a possibility that settlement for a fixed amount of cash in exchange of a fixed number of the Group's own equity instruments.
- Where the Group has no contractual obligation or has an unconditional right to avoid delivering cash or another financial asset in settlement of the obligation, it is considered an equity instrument.

Borrowings are classified as current liabilities unless the Group has an unconditional right to defer settlement of the liability for at least 12 months after the reporting date.

#### b) Measurement

Financial liabilities are initially recognised at fair value and are subsequently measured at amortised cost.





# NOTES TO THE FINANCIAL STATEMENTS

Thai Oil Public Company Limited

For the year ended 31 December 2020

## c) **Derecognition and modification**

Financial liabilities are derecognised when the obligation specified in the contract is discharged, cancelled, or expired.

Where the terms of a financial liability are renegotiated/modified, the Group assesses whether the renegotiation / modification will result in the derecognition of that financial liability. Where the modification results in an extinguishment, the new financial liability is recognised based on fair value of its obligation. The remaining carrying amount of financial liability is derecognised. The difference is recognised as other gains/(losses) in profit or loss.

Where the modification does not result in the derecognition of the financial liability, the carrying amount of the financial liability is recalculated as the present value of the renegotiated / modified contractual cash flows discounted at its original effective interest rate. The difference is recognised in other gains/(losses) in profit or loss.

### **For the year ended 31 December 2019**

#### **Borrowings**

Borrowings are recognised initially at the fair value, net of directly attributable transaction costs incurred. Borrowings are subsequently stated at amortised cost.

Fees paid on the establishment of loan facilities are recognised as transaction costs of the loan to the extent that it will be drawn down. The fee is deferred until the drawn down occurs and included in effective interest calculation. However, if it is probable that facility will not be drawn down, that portion of the fee paid is recognised as a prepayment and amortised over the period of related facility.

Borrowings are removed from the statement of financial position when the obligation specified in the contract is discharged, cancelled, or expired. The difference between the carrying amount of a financial liability that has been extinguished or transferred to another party and the consideration paid, including any non-cash assets transferred or liabilities assumed, is recognised in profit or loss as finance costs.

Borrowings are classified as current liabilities unless the Group has an unconditional right to defer settlement of the liability for at least 12 months after the reporting date.



# NOTES TO THE FINANCIAL STATEMENTS

Thai Oil Public Company Limited

For the year ended 31 December 2020

## 6.16 Borrowing costs

General and specific borrowing costs directly attributable to the acquisition, construction or production of qualifying assets (assets that require a substantial period of time to get assets to be ready for its intended use or sale) are added to the cost of those assets less investment income earned from those specific borrowings. The capitalisation of borrowing costs is ceased when substantially all the activities necessary to prepare the qualifying asset for its intended use or sale are complete.

Other borrowing costs are expensed in the period in which they are incurred.

## 6.17 Current and deferred income taxes

The tax expense for the period comprises current and deferred tax. Tax is recognised in profit or loss, except to the extent that it relates to items recognised in other comprehensive income or directly in equity.

### Current tax

The current income tax is calculated on the basis of the tax laws enacted or substantially enacted at the end of the reporting period. Management periodically evaluates positions taken in tax returns with respect to situations in which applicable tax regulation is subject to interpretation. The Company recognises provisions where appropriate on the basis of amounts expected to be paid to the tax authorities.

### Deferred income tax

Deferred income tax is recognised on temporary differences arising from differences between the tax base of assets and liabilities and their carrying amounts in the financial statements. However, deferred income tax is not recognised for temporary differences arise from:

- initial recognition of an asset or liability in a transaction other than a business combination that affects neither accounting nor taxable profit or loss is not recognised
- investments in subsidiaries, associates and joint arrangements where the timing of the reversal of the temporary difference is controlled by the Group and it is probable that the temporary difference will not reverse in the foreseeable future.

Deferred income tax is measured using tax rates of the period in which temporary difference is expected to be reversed, based on tax rates and laws that have been enacted or substantially enacted by the end of the reporting period.



# NOTES TO THE FINANCIAL STATEMENTS

Thai Oil Public Company Limited

For the year ended 31 December 2020

Deferred tax assets are recognised only to the extent that it is probable that future taxable profit will be available against which the temporary differences can be utilised.

Deferred tax assets and liabilities are offset when there is a legally enforceable right to offset current tax assets and liabilities and when the deferred tax balances relate to the same tax authority. Current tax assets and tax liabilities are offset where the entity has a legally enforceable right to offset and intends either to settle on a net basis, or to realise the asset and settle the liability simultaneously.

## 6.18 Employee benefits

### a) Short-term employee benefits

Liabilities for short-term employee benefits such as wages, salaries, paid annual leave and paid sick leave, profit-sharing and bonuses, and medical care that are expected to be settled wholly within 12 months after the end of the period are recognised in respect of employees' service up to the end of the reporting period. They are measured at the amount expected to be paid.

### b) Defined contribution plan

The Group pays fixed contributions to a separate fund. The Group has no further payment obligations once the contributions have been paid. The contributions are recognised as employee benefit expense when they are due.

### c) Defined benefit plans

Amount of retirement benefits is defined by the agreed benefits the employees will receive after the completion of employment. It usually depends on factors such as age, years of service and an employee's latest compensation at retirement.

The defined benefit obligation is calculated by an independent actuary using the projected unit credit method. The present value of the defined benefit obligation is determined by discounting the estimated future cash outflows using market yield of government bonds that matches the terms and currency of the expected cash outflows.

Remeasurement gains and losses are recognised directly to other comprehensive income in the period in which they arise. They are included in retained earnings in the statements of changes in equity.

Past-service costs are recognised immediately in profit or loss.



# NOTES TO THE FINANCIAL STATEMENTS

Thai Oil Public Company Limited

For the year ended 31 December 2020

## **d) Other long-term benefits**

The Group's net obligation in respect of long-term employee benefits is the amount of future benefit that employees have earned in return for their service in the current and prior periods.

These obligations are measured similar to defined benefit plans except remeasurement gains and losses that are charged to profit or loss.

## **e) Termination benefits**

The Group recognises termination benefits at the earlier of (a) when the Group can no longer withdraw the offer of those benefits; and (b) when the entity recognises costs for the related restructuring. Benefits due more than 12 months are discounted to their present value.

## **6.19 Provisions**

Provisions are recognised when the Group has a present legal or constructive obligation as a result of past events; it is probable that an outflow of resources will be required to settle the obligation; and the amount has been reliably estimated.

Provisions are measured at the present value of the expenditures expected to be required to settle the obligation. The increase in the provision due to passage of time is recognised as interest expense.

## **6.20 Government grants**

Grants from the government are recognised at their fair value where there is a reasonable assurance that the grant will be received and the Group will comply with attached conditions.

Government grants relating to income are deferred and recognised in profit or loss as subsidy over the period necessary to match them with the costs they are intended to compensate.

Subsidy from oil fuel fund are calculated based on the conditions and rates announced by the Energy Policy and Planning committees.

The Group separately presents government grants from revenue from sales.



# NOTES TO THE FINANCIAL STATEMENTS

Thai Oil Public Company Limited

For the year ended 31 December 2020

## 6.21 Share capital

Ordinary shares with discretionary dividends are classified as equity.

Incremental costs directly attributable to the issue of new shares are shown in equity as a deduction, net of tax, from the proceeds.

## 6.22 Revenue recognition

Revenue includes all revenues from ordinary business activities. All ancillary income in connection with the delivery of goods and rendering of services in the course of the Group's ordinary activities are also presented as revenue.

Revenue are recorded net of value added tax. They are recognised in accordance with the provision of goods or services, provided that collectibility of the consideration is probable.

Multiple element arrangements involving delivery or provision of multiple products or services are separated into individual distinct performance obligations. Total transaction price of the bundled contract is allocated to each performance obligation based on their relative standalone selling prices or estimated standalone selling prices. Each performance obligation is recognised as revenue on fulfillment of the obligation to the customer.

### a) Sales of goods

Revenue from contracts with customers that is derived in connection with oil refinery, lube base oil refinery, petrochemical, solvent and ethanol business is recognised when the Group satisfies a performance obligation by transferring the petroleum products, petrochemical products and other products to customers via vessel, truck, or pipeline. A transfer of goods generally occurs at the same time when legal ownerships are transferred to customers and customers have physical goods in their possession. In that case, the Group satisfies a performance obligation at a point in time.

Electricity and steam sales are recognised on delivery of electricity and steam and customers' acceptance, and measured based on actual electricity and steam delivered and the price as set out in the electricity and steam purchase agreements.



# NOTES TO THE FINANCIAL STATEMENTS

Thai Oil Public Company Limited

For the year ended 31 December 2020

## **b) Revenue from service**

Revenue from services is mainly derived from marine transportation services and is recognised when service is performed. The Group satisfies a performance obligation over time.

## **6.23 Dividend distribution**

Dividend distributed to the Company's shareholders is recognised as a liability when interim dividends are approved by the Board of Directors, and when the annual dividends are approved by the shareholders.

## **6.24 Derivatives and hedging activities**

### **a) Embedded derivative and derivatives that do not qualify for hedge accounting**

Embedded derivative that is separately accounted for and derivatives that do not qualify for hedge accounting is initially recognised at fair value. Changes in the fair value are included in net gain (loss) from financial instruments.

Fair value of derivatives is classified as a current or non-current following its remaining maturity.

### **b) Hedge accounting**

Derivatives are initially recognised at fair value on the date a derivative contract is entered into and are subsequently remeasured to their fair value at the end of each reporting period. The Group designates certain derivatives as either:

- hedges of the fair value of i) recognised assets or liabilities or ii) unrecognised firm commitments (fair value hedges)
- hedges of a particular risk associated with the cash flows of i) recognised assets and liabilities and ii) highly probable forecast transactions (cash flow hedges); or
- hedges of a net investment in a foreign operation (net investment hedges).

At inception of the hedge relationship, the Group documents i) the economic relationship between hedging instruments and hedged items including whether changes in the cash flows of the hedging instruments are expected to offset changes in the cash flows of hedged items and ii) its risk management objective and strategy for undertaking its hedge transactions.





# NOTES TO THE FINANCIAL STATEMENTS

Thai Oil Public Company Limited

For the year ended 31 December 2020

The full fair value of a hedging derivative is classified as a current or non-current asset or liability following the maturity of related hedged item.

The fair values of derivative financial instruments designated in hedge relationships are disclosed in note 8. Movements in the hedging reserve in shareholders' equity are shown in note 7.

## Hedge effectiveness

Hedge effectiveness is determined at the inception of the hedge relationship, and through periodic prospective effectiveness assessments, to ensure that an economic relationship exists between the hedged item and hedging instrument.

For hedges of foreign currency purchases, the Group enters into hedge relationships where the critical terms of the hedging instrument match exactly with the terms of the hedged item. The Group therefore performs a qualitative assessment of effectiveness. If changes in circumstances affect the terms of the hedged item such that the critical terms no longer match exactly with the critical terms of the hedging instrument, the Group uses the hypothetical derivative method to assess effectiveness.

In hedges of foreign currency purchases, ineffectiveness may arise if the timing of the forecast transaction changes from what was originally estimated, or if there are changes in the credit risk of the derivative counterparty.

The Group enters into interest rate swaps that have similar critical terms as the hedged item, such as reference rate, reset dates, payment dates, maturities and notional amount. The Group does not hedge 100% of its loans, therefore the hedged item is identified as a proportion of the outstanding loans up to the notional amount of the swaps. As all critical terms matched during the year, there is an economic relationship.

Hedge ineffectiveness for interest rate swaps is assessed using the same principles as for hedges of foreign currency purchases. It may occur due to:

- the credit value/debit value adjustment on the interest rate swaps which is not matched by the loan, and
- differences in critical terms between the interest rate swaps and loans.



# NOTES TO THE FINANCIAL STATEMENTS

Thai Oil Public Company Limited

For the year ended 31 December 2020

## Cash flow hedges that qualify for hedge accounting

The effective portion of changes in the fair value of derivatives that are designated and qualified as cash flow hedges is recognised in the cash flow hedge reserve within equity. The gain or loss relating to the ineffective portion is recognised immediately in profit or loss within net gain (loss) from financial instruments.

When cross currency swap contracts are used to hedge forecast transactions, the Group does not designate the cross currency basis spread as the hedging instrument. The changes in fair value of hedging instrument relating to the effective portion are recognised in the cash flow hedge reserve in other comprehensive income within equity. The Group will recognise the change in the fair value of cross currency basis spread that is not designated as hedging instrument in the cost of hedging reserve in other comprehensive income within equity.

The Group uses forward contracts to hedge future transactions by designating only the change in fair value of the forward contracts related to the spot component of forward contracts as the hedging instrument. Gains or losses relating to the effective portion of the change in the spot component of the forward contracts are recognised within other comprehensive income in the cash flow hedges reserve within equity. The change in the forward element of the contract that relates to the hedged item ('aligned forward element') is recognised within other comprehensive income in the costs of hedging reserve within equity.

Amounts accumulated in equity are reclassified in the periods when the hedged item affects profit or loss, as follows:

- Where the hedged item subsequently results in the recognition of a non-financial asset (such as inventory), both the deferred hedging gains and losses and the deferred forward points are included within the initial cost of the asset. The deferred amounts are ultimately recognised in profit or loss when the hedged item affects profit or loss (for example through cost of sales when products are sold).
- The gain or loss relating to the effective portion of the interest rate swaps hedging variable rates borrowings is recognised in profit or loss within finance costs at the same time as the interest expense on the hedged borrowings.



# NOTES TO THE FINANCIAL STATEMENTS

Thai Oil Public Company Limited

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When a hedging instrument expires, is sold or terminated, or when a hedge no longer meets the criteria for hedge accounting, any cumulative deferred gain or loss and deferred costs of hedging in equity at that time remains in equity until the forecast transaction occurs. When the forecast transaction is no longer expected to occur, the cumulative gain or loss and deferred costs of hedging that were reported in equity are immediately reclassified to profit or loss.

The Group recognises changes in the fair value of any derivative instrument that does not qualify for hedge accounting immediately in profit or loss, which includes in net gain (loss) from financial instruments.

## 6.25 Financial guarantee contracts

Financial guarantee contracts are recognised as a financial liability at the time the guarantee is issued. The liability is initially measured at fair value and subsequently at the higher of:

- the amount determined in accordance with the expected credit loss model under TFRS 9; and
- the amount initially recognised less the cumulative amount of income recognised in accordance with the principles of TFRS 15.

The fair value of financial guarantees is determined based on the present value of the difference in cash flows between a) the contractual payments required under the debt instrument; and b) the payments that would be required without the guarantee, or the estimated amount that would be payable to a third party for assuming the obligations.

Where guarantees in relation to loans or other payables of associates are provided for no compensation, the fair values are accounted for as contributions and recognised as part of the cost of the investment.



# NOTES TO THE FINANCIAL STATEMENTS

Thai Oil Public Company Limited

For the year ended 31 December 2020

## 7 Financial risk management

### 7.1 Financial risk factors

The Group is exposed to a variety of financial risks, which are market risk (including foreign exchange risk and interest rate risk and price risk), credit risk and liquidity risk. The Group's overall risk management programme focuses on the unpredictability of financial markets and seeks to minimise potential adverse effects on the Group's financial performance. The Group uses derivative financial instruments to hedge certain exposures.

Risk management is integral to the whole business of the Group. The Group has a control system in place to create an acceptable balance between the cost of risks and the cost to manage the risks. The management continually monitors the Group's risk management process to ensure that an appropriate balance between risk and control is achieved.

Where all relevant criteria are met, hedge accounting is applied to remove the accounting mismatch between the hedging instrument and the hedged item. This will effectively result in recognising interest expense at a fixed interest rate for the hedged floating rate loans and financial liabilities at the fixed foreign currency rate for the hedged liabilities.



# NOTES TO THE FINANCIAL STATEMENTS

Thai Oil Public Company Limited

For the year ended 31 December 2020

## Hedging reserve

The Group and the Company's reserves relate to the following hedging instruments:

(Million Baht)

	Consolidated financial statements				
	Cash flow hedge reserve				
	Cross currency swaps	Cost of hedging reserve	Forward foreign exchange contracts	Interest rate swaps	Total hedge reserves
Opening balance 1 January 2020					
- as restated	-	-	-	(331)	(331)
Add: Change in fair value of hedging instrument recognised in OCI	(675)	-	(21)	(204)	(900)
Add: Costs of hedging deferred and recognised in OCI	-	444	-	-	444
Less: Deferred tax	135	(89)	4	107	157
Closing balance 31 December 2020	(540)	355	(17)	(428)	(630)

(Million Baht)

	Separate financial statements				
	Cash flow hedge reserve				
	Cross currency swaps	Cost of hedging reserve	Forward foreign exchange contracts	Interest rate swaps	Total hedge reserves
Opening balance 1 January 2020					
- as restated	-	-	-	-	-
Add: Change in fair value of hedging instrument recognised in OCI	(675)	-	-	(21)	(696)
Add: Costs of hedging deferred and recognised in OCI	-	444	-	-	444
Less: Deferred tax	135	(89)	-	4	50
Closing balance 31 December 2020	(540)	355	-	(17)	(202)



# NOTES TO THE FINANCIAL STATEMENTS

Thai Oil Public Company Limited

For the year ended 31 December 2020

## 7.1.1 Market risk

### a) Foreign exchange risk

The Group is exposed to foreign exchange risk from future commercial transactions, net monetary assets and liabilities that are denominated in a currency that is not the entity's functional currency.

The Group uses forward foreign exchange contracts and cross currency swaps in a consistent manner to hedge firm and anticipated foreign exchange commitments and manage their foreign exchange risk arising from future commercial transactions. The Group are required to manage their foreign exchange risk against their functional currency. Foreign currency borrowings are swapped into the entity's functional currency using cross-currency swaps except where the foreign currency borrowings are repaid with cash flows generated in the same foreign currency. The purpose of these hedges is to mitigate the impact of movements in foreign exchange rates on assets and liabilities and the profit and loss account of the Group.

The Group uses a combination of forward foreign exchange contracts and cross currency swaps to hedge its exposure to foreign currency risk. Under the group's policy, the critical terms of the forwards and swaps must align with the hedged items.

The Group only designates the spot component of forward foreign exchange contracts in hedge relationships. The spot component is determined with reference to relevant spot market exchange rates. The differential between the contracted forward rate and the spot market exchange rate is defined as the forward points. It is discounted, where material.

The changes in the forward element of the forward foreign exchange contracts and foreign currency basis spreads that relate to hedged items are deferred in the costs of hedging reserve.



# NOTES TO THE FINANCIAL STATEMENTS

Thai Oil Public Company Limited

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As at 31 December 2020 and 2019, the Group and the Company were exposed to foreign currency risk in respect of financial assets and liabilities denominated in the following currencies:

(Million Baht)

	Consolidated financial statements		Separate financial statements	
	2020	2019	2020	2019
<b>US Dollars</b>				
Cash and cash equivalents	14,866	53,162	14,612	52,250
Short-term investments	18,110	1,757	18,110	1,757
Trade accounts receivable	1,051	1,808	169	481
Other receivables	528	19	522	16
Derivative assets	251	-	251	-
Financial assets at fair value through profit or loss	114	-	114	-
Financial assets at fair value through other comprehensive income	75	-	75	-
Trade accounts payable	(8,270)	(6,834)	(7,800)	(6,635)
Other payables	(2,424)	(4,924)	(1,679)	(4,013)
Loans and debentures	(106,477)	(142,820)	(107,239)	(77,252)
Derivative Liabilities	(130)	-	(130)	-
	(82,306)	(97,832)	(82,995)	(33,396)
<b>Other currencies</b>				
Cash and cash equivalents	1,885	86	1,820	-
Trade accounts receivable	457	384	-	-
Other receivables	24	27	-	-
Trade accounts payable	(90)	(34)	-	-
Other payables	(94)	(1,561)	(68)	(1,532)
Loans	(282)	(480)	-	-
	1,900	(1,578)	1,752	(1,532)
<b>Gross exposure in the statement of financial position</b>				
	(80,406)	(99,410)	(81,243)	(34,928)
Forward foreign exchange contracts	5,276	3,296	5,276	3,296
Cross currency swaps	17,950	-	17,950	-
<b>Net exposure</b>	<b>(57,180)</b>	<b>(96,114)</b>	<b>(58,017)</b>	<b>(31,632)</b>



# NOTES TO THE FINANCIAL STATEMENTS

Thai Oil Public Company Limited

For the year ended 31 December 2020

## *Effects of hedge accounting on the financial position and performance*

The effects of the foreign currency-related hedging instruments on the Group and the Company's financial position and performance are as follows:

	<b>Consolidated and Separate financial statements</b>
	<b>2020</b>
<b>Forward foreign exchange contracts</b>	
Carrying amount (liability) (Million Baht)	172
Notional amount (Million US Dollars)	170
Maturity date	January 2023
Hedge ratio	1 : 1
Weighted average hedged rate for outstanding hedging instruments (including forward points)	31.04
<b>Cross currency swaps contracts</b>	
Carrying amount (liability) (Million Baht)	1,125
Notional amount (Million US Dollars)	563
Maturity date	March 2030 to October 2035
Hedge ratio	1 : 1
Weighted average hedged rate for outstanding hedging instruments (including forward points)	31.9



# NOTES TO THE FINANCIAL STATEMENTS

Thai Oil Public Company Limited

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## Sensitivity

The Group is primarily exposed to changes in Baht and US Dollar exchange rates. The sensitivity of profit or loss to changes in the exchange rates arises mainly from financial assets and financial liabilities denominated in US Dollar and the impact on other components of equity arises from foreign forward exchange contracts and cross currency swap designated as cash flow hedges.

(Million Baht)

	<b>Consolidated financial statements</b>	
	<b>Impact to net profit</b>	<b>Impact to other components of equity</b>
	<b>2020</b>	<b>2020</b>
Baht to US Dollar exchange rate - increase 10%	(5,872)	2,117
Baht to US Dollar exchange rate - decrease 10%	5,872	(2,107)

\* Holding all other variables constant

(Million Baht)

	<b>Separate financial statements</b>	
	<b>Impact to net profit</b>	<b>Impact to other components of equity</b>
	<b>2020</b>	<b>2020</b>
Baht to US Dollar exchange rate - increase 10%	(5,919)	2,117
Baht to US Dollar exchange rate - decrease 10%	5,919	(2,107)

\* Holding all other variables constant



# NOTES TO THE FINANCIAL STATEMENTS

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For the year ended 31 December 2020

## b) Cash flow and 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. Hence, the Group has entered into hedging agreements with various reputable financial institutions to protect against the risk of rising interest rates.

The borrowings are carried at amortised cost. The borrowings rate is based on market interest rates which detailed in note 28. Therefore, the Group is exposed to the risk of future changes in market interest rates.

The exposure of borrowings interest rate changes at the end of the reporting period are as follows:

	Consolidated financial statements			
	2020		2019	
	Million Baht	% of total loans	Million Baht	% of total loans
Variable rate borrowings	13,071	9	15,120	13
	13,071	9	15,120	13

The percentage of total loans shows the proportion of loans that are currently at variable rates in relation to the total amount of borrowings. An analysis by maturities is provided in note 7.1.3.

The Company has low interest rate risk since the Company's borrowings are at a fixed interests rate. The sensitivity impact to the increase or decrease in interest expenses from borrowings, as a result of changes in interest rates is immaterial on separate financial statements.

### Instruments used by the Group

The Group entered into interest rate swaps covering approximately 44% (2019: 40%) of the variable loan principal outstanding. The fixed interest rates of the swaps range between 4.21% and 4.42% (2019: 4.21% and 4.42%), and the variable rates of the loans are 2.09% (2019: 3.0%) at the end of the reporting period.

The swap contracts require settlement of net interest receivable or payable every 90 days. The settlement dates coincide with the dates on which interest is payable on the underlying debt.



# NOTES TO THE FINANCIAL STATEMENTS

Thai Oil Public Company Limited

For the year ended 31 December 2020

## Effect of hedge accounting on the financial position and performance

The effects of the interest rate-related hedging instruments on the Group's financial position and performance are as follows:

(Million Baht)	
	<b>Consolidated financial statements</b>
	<b>2020</b>
<b>Interest rate swaps contracts</b>	
Carrying amount (liabilities)	535
Notional amount	5,779
Maturity date	March 2028
Hedge ratio	1 : 1
Weighted average strike rate for outstanding hedging instruments for the year	4.34%

## Sensitivity

Profit or loss is sensitive to higher or lower interest expenses from borrowings as a result of changes in interest rates. Other components of equity changes as a result of an increase or decrease in the fair value of the cash flow hedges of borrowings.

(Million Baht)		
	<b>Consolidated financial statements</b>	
	<b>Impact to net profit</b>	<b>Impact to other components of equity</b>
	<b>2020</b>	<b>2020</b>
Interest rate - increase 1%	(60)	302
Interest rate - decrease 1%	60	(302)

\* Holding all other variables constant



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Thai Oil Public Company Limited

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## c) Price risk of petroleum products

The Group's petroleum product prices are based on the Singapore market price. The Singapore market price reflects the demand and supply of products in the region, with daily prices in US dollars. These prices are referenced against world market prices, which fluctuate due to uncontrollable factors such as market demand and supply, the political and economic stability of various countries, OPEC oil production policy, oil reserves in each country and global climate change.

When compared the crude oil prices between 2019 and 2020, crude oil prices in 2020 dropped significantly due to the COVID-19 situation. In particular, the second wave of outbreaks caused by new strains of the virus forced many countries to shut down again. This affected the demand for oil consumption and the overall economy, especially the tourism and hotel sectors. However, the market expects that the situation will improve after major pharmaceutical companies reported that the clinical trial of the vaccines is 90% effective and will be ready for public by the end of 2020. In January 2021, OPEC and its allied countries, or OPEC Plus, agreed to increase crude oil production by only 0.5 million barrels per day. This production is lower than the expected increase of 1.9 million barrels per day and led to a slight oversupply of crude oil. In addition, after Asian countries, especially China and India, began to resume more economic activities, global oil demand rose by 1.7 million barrels per day from the third quarter of 2020 to 94.7 million barrels per day.

The spread between Murban and Dubai crude oil, and between Arab light crude oil and the average price of Dubai and Oman crude oil, dropped in 2020 compared to the previous year. This is because the COVID-19 pandemic which increased pressure on oil demand, particularly the second wave in Europe that forced many countries to re-impose local lockdowns. Global crude oil inventories remain high.

Crude oil prices and the spread between refined petroleum products and crude oil, which are important factors directly affecting the company's profitability, are still extremely volatile. This volatility is caused in particular by higher crude oil premiums and lower margins for simple refining. Therefore, Thai Oil has adopted a more aggressive oil price risk management strategy by hedging against price spread risks and oil price and inventory risks. This involves oil inventory management so that the inventories are maintained at an appropriate level. A price risk management committee is responsible for considering and reviewing strategic plans, as well as setting targets for price risk management transactions under the price risk management framework. This framework is regularly approved by the Risk Management Committee and the Board of Directors to minimise the impact of such risks as much as possible.





# NOTES TO THE FINANCIAL STATEMENTS

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For the year ended 31 December 2020

As at 31 December 2020, the Group entered into a derivative contract to hedge product price risk. The details of the contract are disclosed in note 40.

## 7.1.2 Credit risk

The Group's credit risk arises from cash and cash equivalents, contractual cash flows of debt investments carried at FVPL, derivative financial instruments as well as credit exposures to customers, including outstanding receivables.

### a) Risk management

The Group manages its credit risk by categorising into level of risks. For banks and financial institutions, the Group only transacts with those that are rated at least rating of investment grade accredited by a reliable independence credit rating agency.

For transaction with other customers, the Group will consider the credit rating accredited by a reliable independence creditrating agency. If the credit rating is not available, the Group assesses the creditability of the customer by considering its financial position, past experience and other factors. Individual credit limits are set based on these assessments and in accordance with credit limits set by the Board of Director. The compliance with credit limits by customers is regularly monitored by line management.

The Group has no significant credit risk with any single counterparty or group of counterparties since the Group maintains business with large customers in petroleum and power industries and requires first class collateral for the rest.

The Group's investments in debt instruments are considered to be low risk investments. The Group regularly monitors the credit ratings of the investments for credit deterioration.

### b) Security

For some trade receivables the Group may obtain security in the form of guarantees or letters of credit which can be called upon if the counterparty is in default under the terms of the agreement.



# NOTES TO THE FINANCIAL STATEMENTS

Thai Oil Public Company Limited

For the year ended 31 December 2020

## c) Impairment of financial assets

The Group considers that impairment of financial assets.

### Loans to related parties

Loans to related parties measured at amortised cost are considered to have low credit risk, and the loss allowance assessed during the year was therefore limited to 12 months expected losses. Lifetime expected credit losses is assessed for the loans that the credit risk is significant increased.

### Other financial assets measured at amortised cost

Other financial assets measured at amortised cost include short-term investment which the Group considered that short-term investment's credit risk is low.

### Debt investments

The Group considers that all debt investments measured at amortised cost and FVOCI have low credit risk, and the loss allowance assessed during the year was therefore limited to 12 months expected losses. Management consider 'low credit risk' for bonds to be an investment grade credit rating with at least one major rating agency. The credit risk of other instruments are considered to be low when the risk of default is low and the issuer has a strong capacity to meet its contractual cash flow obligations.

### Financial asset measured at fair value through profit or loss

The Group is also exposed to credit risk in relation to debt investments that are measured at fair value through profit or loss. The maximum exposure at the end of the reporting period is the carrying amount of these investments.



# NOTES TO THE FINANCIAL STATEMENTS

Thai Oil Public Company Limited

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## 7.1.3 Liquidity risk

Prudent liquidity risk management comprises of maintaining sufficient cash and the availability of funding through an adequate amount of committed credit facilities to meet obligations when due. At the end of the reporting period the Group held deposits at call of Baht 53,244 million (2019: Baht 74,854 million) that are expected to readily generate cash inflows for managing liquidity risk. Due to the dynamic nature of the underlying businesses, the Group Treasury maintains flexibility in funding by maintaining availability under committed credit lines.

Management regularly monitors i) rolling forecasts of the Group's liquidity reserve (comprising the undrawn borrowing facilities); and ii) cash and cash equivalents. In addition, the Group's liquidity management policy involves projecting cash flows in major currencies and considering the level of liquid assets and monitoring balance sheet liquidity ratios and maintaining appropriate financing plans.

### a) Financing arrangements

The Group has undrawn credit facilities as at 31 December as follows:

(Million Baht)				
	Consolidated financial statements		Separate financial statements	
	2020	2019	2020	2019
<b>Floating rate</b>				
Expiring within one year				
- Short-term committed bank credit facility	4,240	5,240	3,700	4,700
- Short-term uncommitted bank credit facility	4,208	4,713	3,708	4,213
Expiring beyond one year				
- Long term Loan Facility	15,000	4,000	15,000	4,000
	23,448	13,953	22,408	12,913



# NOTES TO THE FINANCIAL STATEMENTS

Thai Oil Public Company Limited

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## b) Maturity of financial liabilities

The tables below present the maturity of financial liabilities classified by their contractual maturities. The amounts disclosed are the contractual undiscounted cash flows. Balances due within 12 months equals their carrying balances as the impact of discounting is not significant. For interest rate swaps and cross currency swap, the cash flows have been estimated using forward interest rates applicable at the end of the reporting period.

(Million Baht)

	Consolidated financial statements				Carrying amount of (Assets)/ Liabilities
	Within 1 years	1-5 years	Over 5 years	Total	
Maturity of financial liabilities as at 31 December 2020					
Short-term loan from financial institutions	713	-	-	713	713
Trade and other payables	13,530	-	-	13,530	13,530
Accrued interest	6,786	19,101	69,620	95,507	1,221
Lease liabilities	1,315	2,913	17,158	21,386	12,111
Long-term loans from financial institutions	964	4,557	7,638	13,159	13,074
Long-term loans from related and other parties	3,999	-	279	4,278	4,278
Debentures	3,000	25,055	100,694	128,749	126,837
Other financial liabilities	285	2,320	14	2,619	2,619
Total financial liabilities					
hat is not derivatives	30,592	53,946	195,403	279,941	174,383



# NOTES TO THE FINANCIAL STATEMENTS

Thai Oil Public Company Limited

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(Million Baht)

	Consolidated financial statements				
	Within 1 years	1-5 years	Over 5 years	Total	Carrying amount of (Assets)/ Liabilities
Derivative financial instruments					
Forward foreign exchange					
contracts - trading	109	-	-	109	109
Oil price crack spread swap and					
time spread swap – trading	(251)	-	-	(251)	(251)
Forward foreign exchange contracts					
- cash flow hedge					
(Cash inflows)	-	(5,135)	-	(5,135)	-
Cash outflows	-	5,276	-	5,276	172
Interest rate swaps - cash flow hedge					
(Cash inflows)	(119)	(418)	(190)	(727)	-
Cash outflows	248	868	395	1,511	535
Cross currency swaps - cash flow hedge					
(Cash inflows)	(595)	(2,381)	(20,906)	(23,882)	-
Cash outflows	600	2,404	21,898	24,902	1,125
Total derivatives	(8)	614	1,197	1,803	1,690
Total	30,584	54,560	196,600	281,744	176,073



# NOTES TO THE FINANCIAL STATEMENTS

Thai Oil Public Company Limited

For the year ended 31 December 2020

(Million Baht)

	Separate financial statements				
	Within 1 years	1-5 years	Over 5 years	Total	Carrying amount of (Assets)/ Liabilities
Maturity of financial liabilities					
as at 31 December 2020					
Short-term loans from related parties	57	-	-	57	57
Trade and other payables	14,561	-	-	14,561	14,561
Accrued interest	7,009	19,980	76,130	103,119	1,293
Lease liabilities	1,262	2,830	17,098	21,190	11,937
Long-term loans from related party	-	8,567	86,928	95,495	95,135
Debentures	3,000	16,536	12,708	32,244	32,104
Other financial liabilities	48	2,962	27	3,037	3,037
Total financial liabilities that is not derivatives	25,937	50,875	192,891	269,703	158,124
Derivative financial instruments					
Forward foreign exchange contract					
forwards - trading	109	-	-	109	109
Oil price crack spread swap and					
time spread swap - trading (assets)	(251)	-	-	(251)	(251)
Oil price crack spread swap and					
time spread swap - trading (liabilities)	21	-	-	21	21
Forward foreign exchange contracts					
- cash flow hedge					
(Cash inflows)	-	(5,135)	-	(5,135)	-
Cash outflows	-	5,276	-	5,276	172
Cross currency swaps - cash flow hedge					
(Cash inflows)	(595)	(2,381)	(20,906)	(23,882)	-
Cash outflows	600	2,404	21,898	24,902	1,125
Total derivatives	(116)	164	992	1,040	1,176
Total	25,821	51,039	193,883	270,743	159,300





# NOTES TO THE FINANCIAL STATEMENTS

Thai Oil Public Company Limited

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## 7.2 Capital management

### 7.2.1 Risk management

The objectives when managing capital are to:

- safeguard the ability to continue as a going concern, to provide returns for shareholders and benefits for other stakeholders, and
- maintain an optimal capital structure to reduce the cost of capital

Consistent with others in the industry, the Group monitors capital based on gearing ratio which is determined by dividing net debt with equity.

During the year 2020, the Group's strategy, which remains unchanged, was to maintain a gearing ratio within 1.0 times and a Baa2 credit rating for Moody's and BBB+ credit rating for S&P's. The credit rating was unchanged and the gearing ratios at 31 December are as follows:

(Million Baht)

	<b>Consolidated financial statements</b>	
	<b>2020</b>	<b>2019</b>
Net debt (including lease liabilities)	85,332	41,262
Equity (including non-controlling interests)	120,118	123,924
<b>Net debt to equity ratio</b>	<b>0.7 times</b>	<b>0.3 times</b>

### Loan covenants

Under the terms of the major borrowing facilities, the Group and the Company are required to comply with certain criteria and condition; for example, maintaining shareholders' portion, maintaining debt to equity ratio at the level as specified in the contract and providing financial supports based on ownership percentage. As at 31 December 2020, the Group and the Company has complied with certain criteria and condition as specified in the contract.

# NOTES TO THE FINANCIAL STATEMENTS

Thai Oil Public Company Limited

For the year ended 31 December 2020

## 8 Fair Value

The following table shows fair values and carrying amounts of financial assets and liabilities by category, excluding those with the carrying amount measured at amortised cost and approximates fair value.

(Million Baht)

	Consolidated financial statements				
	Fair value through profit or loss (FVPL)	Fair value through other comprehensive income (FVOCI)	Amortised cost	Total carrying amount	Fair value
<b>As at 31 December 2020</b>					
Financial assets measured at fair value					
<b>Financial assets at FVPL</b>					
Debt investment	461	-	-	461	461
<b>Financial assets at FVOCI</b>					
Equity investment	-	77	-	77	77
<b>Derivative financial instruments</b>					
Oil price crack spread swap and time spread swap	251	-	-	251	251
	712	77	-	789	789



# NOTES TO THE FINANCIAL STATEMENTS

Thai Oil Public Company Limited

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(Million Baht)

	Consolidated financial statements				
	Fair value through profit or loss (FVPL)	Fair value through other comprehensive income (FVOCI)	Amortised cost	Total carrying amount	Fair value
<b>As at 31 December 2020</b>					
<b>Financial liabilities measured at fair value</b>					
<b>Derivative</b>					
Forward foreign exchange contracts	109	-	-	109	109
<b>Hedging derivatives</b>					
Cross currency swap	1,125	-	-	1,125	1,125
Interest rate swap	535	-	-	535	535
Forward foreign exchange contracts	172	-	-	172	172
	1,941	-	-	1,941	1,941
<b>Financial liabilities not measured at fair value</b>					
Long-term loans from related parties	-	-	3,999	3,999	4,003
Debentures, net	-	-	126,837	126,837	138,417
	-	-	130,836	130,836	142,420



# NOTES TO THE FINANCIAL STATEMENTS

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(Million Baht)

	Consolidated financial statements				
	Fair value through profit or loss (FVPL)	Fair value through other comprehensive income (FVOCI)	Amortised cost	Total carrying amount	Fair value
<b>As at 1 January 2020</b>					
Financial assets measured at fair value					
Financial assets at FVPL					
Debt investment	383	-	-	383	383
Financial assets at FVOCI					
Equity investment	-	41	-	41	41
Derivative financial instruments					
Oil price crack spread swap and time spread swap	137	-	-	137	137
	520	41	-	561	561
Financial liabilities measured at fair value					
Hedging derivatives					
Interest rate swap	413	-	-	413	413
	413	-	-	413	413
Financial liabilities not measured at fair value					
Long-term loans from related parties	-	-	3,999	3,999	4,023
Debentures, net	-	-	97,184	97,184	108,498
	-	-	101,183	101,183	112,521



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For the year ended 31 December 2020

(Million Baht)

	Separate financial statements				
	Fair value through profit or loss (FVPL)	Fair value through other comprehensive income (FVOCI)	Amortised cost	Total carrying amount	Fair value
<b>As at 31 December 2020</b>					
<b>Financial assets measured at fair value</b>					
<b>Financial assets at FVPL</b>					
Debt investment	347	-	-	347	347
<b>Financial assets at FVOCI</b>					
Equity investment	-	2	-	2	2
<b>Derivative financial instruments</b>					
Oil price crack spread swap and time spread swap	251	-	-	251	251
	598	2	-	600	600
<b>Financial liabilities measured at fair value</b>					
<b>Derivative</b>					
Oil price crack spread swap and time spread swap	21	-	-	21	21
Forward foreign exchange contracts	109	-	-	109	109
<b>Hedging derivatives</b>					
Cross currency swap contracts	1,125	-	-	1,125	1,125
Forward foreign exchange contracts	172	-	-	172	172
	1,427	-	-	1,427	1,427
<b>Financial liabilities not measured at fair value</b>					
Long-term loans from related parties	-	-	95,135	95,135	103,417
Debentures, net	-	-	32,104	32,104	35,377
	-	-	127,239	127,239	138,794

# NOTES TO THE FINANCIAL STATEMENTS

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(Million Baht)

	Separate financial statements				
	Fair value through profit or loss (FVPL)	Fair value through other comprehensive income (FVOCI)	Amortised cost	Total carrying amount	Fair value
<b>As at 1 January 2020</b>					
Financial assets measured at fair value					
Financial assets at FVPL					
Debt investment	383	-	-	383	383
Financial assets at FVOCI					
Equity investment	-	41	-	41	41
Derivative financial instruments					
Oil price crack spread swap and time spread swap	137	-	-	137	137
	520	41	-	561	561
Financial assets not measured at fair value					
Long-term loans from related parties	-	-	11,381	11,381	11,430
	-	-	11,381	11,381	11,430
Financial liabilities measured at fair value					
Derivative financial instruments					
Oil price crack spread swap and time spread swap	13	-	-	13	13
	13	-	-	13	13
Financial liabilities not measured at fair value					
Long-term loans from related parties	-	-	65,366	65,366	73,011
Debentures, net	-	-	32,129	32,129	35,748
	-	-	97,495	97,495	108,759





# NOTES TO THE FINANCIAL STATEMENTS

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The following table shows financial assets and liabilities measured at amortised cost with the carrying amount approximates fair value. The carrying amount of long-term loans from financial institutions and long-term loans from a third party approximates their fair value, since their interest rates are close to market rate.

Consolidated financial statements	Separate financial statements
<b>Financial assets</b> <ul style="list-style-type: none"> <li>- Cash and cash equivalents</li> <li>- Deposits at a financial institutions used as collaterals</li> <li>- Short-term investments</li> <li>- Trade accounts receivable, net</li> <li>- Other receivables</li> <li>- Finance lease receivables, net</li> <li>- Other non-current assets</li> </ul>	<b>Financial assets</b> <ul style="list-style-type: none"> <li>- Cash and cash equivalents</li> <li>- Short-term investments</li> <li>- Trade accounts receivable, net</li> <li>- Other receivables</li> <li>- Finance lease receivables, net</li> <li>- Other non-current assets</li> <li>- Loan to related parties</li> </ul>
<b>Financial liabilities</b> <ul style="list-style-type: none"> <li>- Short-term loans from financial institutions</li> <li>- Trade accounts payable</li> <li>- Other payables</li> <li>- Long-term loans from financial institutions, net</li> <li>- Long-term loans from a third party</li> <li>- Lease liabilities, net</li> <li>- Other non-current liabilities</li> </ul>	<b>Financial liabilities</b> <ul style="list-style-type: none"> <li>- Trade accounts payable</li> <li>- Other payables</li> <li>- Lease liabilities, net</li> <li>- Other non-current liabilities</li> </ul>



# NOTES TO THE FINANCIAL STATEMENTS

Thai Oil Public Company Limited

For the year ended 31 December 2020

The following table presents fair value of financial assets and liabilities recognised or disclosed by their fair value hierarchy excluding those with the carrying amount approximates fair values.

(Million Baht)

	Consolidated financial statements				
	Carrying amount	Fair value			Total
		Level 1	Level 2	Level 3	
As at 31 December 2020					
Assets					
Financial assets at fair value through profit or loss					
Debt investment	461	347	-	114	461
Financial assets at fair value through other comprehensive income					
Equity investment	77	-	-	77	77
Derivative					
Current					
Oil price crack spread swap and time spread swap	251	-	251	-	251
Total assets	789	347	251	191	789



# NOTES TO THE FINANCIAL STATEMENTS

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(Million Baht)

	Consolidated financial statements				
	Carrying amount	Fair value			Total
		Level 1	Level 2	Level 3	
<b>Liabilities</b>					
<b>Derivative</b>					
<b>Current</b>					
Forward foreign exchange contracts	109	-	109	-	109
<b>Non-current</b>					
Cross currency swap	1,125	-	1,125	-	1,125
Interest rate swap	535	-	535	-	535
Forward foreign exchange contracts	172	-	172	-	172
<b>Financial liabilities not measured at fair value</b>					
Long-term loans	3,999	-	4,003	-	4,003
Debentures	126,837	-	138,417	-	138,417
<b>Total liabilities</b>	<b>132,777</b>	<b>-</b>	<b>144,361</b>		<b>144,361</b>



# NOTES TO THE FINANCIAL STATEMENTS

Thai Oil Public Company Limited

For the year ended 31 December 2020

(Million Baht)

	Consolidated financial statements				
	Carrying amount	Fair value			Total
		Level 1	Level 2	Level 3	
As at 31 December 2019					
Financial assets measured at fair value					
Available-for-sale investments					
Debt investment	383	383	-	-	383
Financial assets not measured at fair value					
Oil price crack spread swap and time spread swap	-	-	137	-	137
Total assets	383	383	137	-	520
Financial liabilities not measured at fair value					
Long term loan from related parties	3,999	-	4,023	-	4,023
Debentures	97,184	-	108,498	-	108,498
Interest rate swap	-	-	413	-	413
Total liabilities	101,183	-	112,934	-	112,934



# NOTES TO THE FINANCIAL STATEMENTS

Thai Oil Public Company Limited

For the year ended 31 December 2020

(Million Baht)

	Separate financial statements				
	Carrying amount	Fair value			Total
		Level 1	Level 2	Level 3	
As at 31 December 2020					
Assets					
Financial assets at fair value through profit or loss					
Debt investment	347	347	-	-	347
Financial assets at fair value through other comprehensive income					
Equity securities	2	-	-	2	2
Derivative					
Current					
Oil price crack spread swap and time spread swap	251	-	251	-	251
Total assets	600	347	251	2	600



# NOTES TO THE FINANCIAL STATEMENTS

Thai Oil Public Company Limited

For the year ended 31 December 2020

(Million Baht)

	Separate financial statements				
	Carrying amount	Fair value			Total
		Level 1	Level 2	Level 3	
Liabilities					
Derivative					
Current					
Oil price crack spread swap and time spread swap	21	-	21	-	21
Forward foreign exchange contracts	109	-	109	-	109
Non-current					
Cross currency swap	1,125	-	1,125	-	1,125
Forward foreign exchange contracts	172	-	172	-	172
Financial liabilities not measured at fair value					
Long-term loans	95,135	-	103,417	-	103,417
Debentures	32,104	-	35,377	-	35,377
<b>Total liabilities</b>	<b>128,666</b>	<b>-</b>	<b>140,221</b>	<b>-</b>	<b>140,221</b>





# NOTES TO THE FINANCIAL STATEMENTS

Thai Oil Public Company Limited

For the year ended 31 December 2020

(Million Baht)

	Separate financial statements				
	Carrying amount	Fair value			Total
		Level 1	Level 2	Level 3	
As at 31 December 2019					
Financial assets at fair value through profit or loss					
Available-for-sale investments					
Debt investment	383	383	-	-	383
Financial assets not measured at fair value					
Oil price crack spread swap and time spread swap	-	-	137	-	137
Long term loan from related parties	11,381	-	11,430	-	11,430
Total assets	11,764	383	11,567	-	11,950
Financial liabilities not measured at fair value					
Oil price crack spread swap and time spread swap	-	-	13	-	13
Long-term loans	65,366	-	73,011	-	73,011
Debentures	32,129	-	35,748	-	35,748
Total liabilities	97,495	-	108,772	-	108,772



# NOTES TO THE FINANCIAL STATEMENTS

Thai Oil Public Company Limited

For the year ended 31 December 2020

Fair values are categorised into hierarchy based on inputs used as follows:

- Level 1: The fair value of financial instruments is based on the closing price by reference to the Stock Exchange of Thailand.
- Level 2: The fair value of financial instruments is determined using significant observable inputs and, as little as possible, entity-specific estimates.
- Level 3: The fair value of financial instruments is not based on observable market data.

Fair value measurement of financial assets and liabilities is in accordance with accounting policy disclosed in note 6.7 and note 6.15.

The Group did not have any transfers between levels during the year.

## Valuation techniques used in measuring level 2 fair values

Type	Valuation technique
Interest rate swap	Future cash flow projection discounted by the market yield which based on Bloomberg at the reporting date.
Foreign exchange contracts	Future cash flow projection discounted by the market yield which based on commercial bank report for short-term transactions and future cash flow projection discounted by the market yield which based on Bloomberg at the reporting date for long-term transactions.
Cross currency swap	Future cash flow projection discounted by the market yield which based on Bloomberg at the reporting date.
Oil price crack spread swap and time spread swap	Market comparison technique: The fair values are based on broker quotes. Similar contracts that are traded in an active market and the quotes reflect the actual transactions in similar financial instruments.
Debt investment measure at fair value through profit or loss	Thai Bond Market Association Government Bond Yield Curve as of the reporting date.
Debentures and Long-term loans	Market comparison technique: The valuation model is based on ask prices or lastest price of comparable market securities.



# NOTES TO THE FINANCIAL STATEMENTS

Thai Oil Public Company Limited

For the year ended 31 December 2020

## Valuation techniques used in measuring level 3 fair values

Changes in level 3 financial instruments for the period ended 31 December 2020 is as follows:

(Million Baht)

	Consolidated financial statements		
	Debt investment	Equity investment	Total
Ending balance as at 1 January 2020	-	41	41
Additions	54	78	132
Reclassification	39	(39)	-
Gain recognised in profit or loss	26	-	26
Exchange differences	(5)	(3)	(8)
Ending balance as at 31 December 2020	114	77	191

The Group consider the significant unobservable inputs used in level 3 fair value measurements and conclude that fair value approximates carrying amount.

## 9 Critical accounting estimates and judgements

Estimates and judgements are continually evaluated and are based on historical experience and other factors, including expectations of future events that are believed to be reasonable under the circumstances.

During the year ended 31 December 2020, the Group makes estimates and assumptions concerning the future. The result of accounting estimates will, by definition, seldom equal the related actual results. The estimates and assumptions that have a significant risk of causing a material adjustment to the carrying amounts of assets and liabilities within the next financial year are outlined below.



# NOTES TO THE FINANCIAL STATEMENTS

Thai Oil Public Company Limited

For the year ended 31 December 2020

## 9.1 Estimated impairment of goodwill

The Group performs an impairment test of goodwill annually. The recoverable amounts of cash-generating units have been determined based on value-in-use calculations. The value-in-use calculation requires the management to estimate the future cash flows expected to arise from the cash-generating unit in order to calculate present value. Significant estimates and assumptions used are growth rate and discount rate which reflect risk of the particular cash-generating unit (Note 22). Determination of the assumptions is necessary for the goodwill impairment testing.

## 9.2 Impairment of property, plant and equipment

The Group tests impairment of property, plant and equipment whenever events or changes in circumstances indicate that the carrying amount of asset is greater than its estimated recoverable amount. Recoverable amount is the higher of fair value less costs to sell and its value-in-use. The calculation of fair value less costs to sell involves significant judgements and assumptions of the management in respect to characteristics and conditions of individual asset, expected disposal period, including the list of total assets expected to be disposed. The value-in-use calculates from a cash flow projection which approved by managements. Those cash flows are determined by annual earnings before interest, taxes, depreciation, and amortisation (EBITDA) estimated by management, adjusted by corporate income tax, change in working capital and capital expenditures considered necessary. A long-term growth rate has been determined with reference to gross domestic product (GDP) growth rates for the countries in which the CGUs operates and experiences by management.

## 9.3 Impairment of investment in subsidiaries

The Group tests impairment of investments in subsidiaries whenever events or changes in circumstances indicate that the carrying amount of asset is greater than its estimated recoverable amount which calculated by using value-in-use method. Value-in-use involves the future operating results of business, projected cash flows, discount rate to be applied to the projected cash flows and projected dividend payouts of subsidiaries.

## 9.4 Fair value of derivatives and other financial instruments

The fair value of financial instruments that are not traded in an active market (for example, over-the-counter derivatives) is determined by using valuation techniques. The Group uses its judgement to select a variety of methods and make assumptions that are mainly based on market conditions exist at the end of each reporting period as disclosed in note 8.



# NOTES TO THE FINANCIAL STATEMENTS

Thai Oil Public Company Limited

For the year ended 31 December 2020

## 9.5 Retirement benefits

The present value of the retirement benefits obligations depends on a number of factors that are determined on an actuarial basis using a number of assumptions including the discount rate. Any changes in these assumptions will have an impact on the carrying amount of retirement benefits obligation.

Key assumptions used and impacts from possible changes in key assumptions are disclosed in note 31.

## 10 Segment information

Segment information is presented in respect of the Group's business segments. The primary format, business segments, is based on the Group's management and the internal reporting structure provided to the chief operating decision maker. The chief operating decision-maker, who is responsible for allocating resources and assessing performance of the operating segments, has been identified as President and Chief Executive Officer who make strategic decisions.

Segment results, assets and liabilities include items directly attributable to a segment as well as those that can be allocated on a reasonable basis.

### Reportable segments

The Group comprises the following main business segments:

Segment 1:	Oil refinery
Segment 2:	Lube base oil refinery
Segment 3:	Petrochemical
Segment 4:	Power generation
Segment 5:	Marine transportation services
Segment 6:	Solvent
Segment 7:	Ethanol
Segment 8:	Others



# NOTES TO THE FINANCIAL STATEMENTS

Thai Oil Public Company Limited

For the year ended 31 December 2020

Assets, revenue, and profit (loss) from operation of the business in consolidated financial statements for the year ended 31 December 2020 and 2019 are as follows:

(Million Baht)

## For the year ended 31 December 2020

	Marine										Total
	Oil refinery	Lube base oil refinery	Petro-chemical	Power generation	Marine transportation services	Solvent	Ethanol	Others	Elimination	Discontinued operations	
Revenue from sales and services											
- External	205,254	11,110	12,857	4,575	418	8,137	907	-	-	(418)	242,840
- Inter-segment	42,048	2,928	23,819	6,212	240	51	724	5,792	(81,814)	-	-
Subsidy from oil fuel fund	5,073	-	-	-	-	-	-	-	-	-	5,073
Cost of sales and services	(267,162)	(12,763)	(34,547)	(9,077)	(573)	(7,123)	(1,442)	(5,475)	82,303	559	(255,300)
<b>Gross profit (loss)</b>	<b>(14,787)</b>	<b>1,275</b>	<b>2,129</b>	<b>1,710</b>	<b>85</b>	<b>1,065</b>	<b>189</b>	<b>317</b>	<b>489</b>	<b>141</b>	<b>(7,387)</b>
Dividend income	4,611	-	-	-	-	-	-	-	(4,597)	-	14
Net gain (loss) from financial instruments	(398)	-	193	-	-	-	-	26	-	-	(179)
Net foreign exchange gain (loss)	1,692	10	75	2	-	14	1	(9)	-	-	1,785
Gain from disposal of investment in an associate	8,965	-	-	-	-	-	-	-	(3,164)	-	5,801
Other income	3,194	80	185	23	21	23	3	1	(2,416)	(14)	1,100
Selling expenses	(40)	(97)	(160)	-	-	(403)	(21)	-	183	-	(538)
Administrative expenses	(2,401)	(74)	(305)	(31)	(114)	(259)	(84)	(36)	1,094	98	(2,112)
Share of profit (loss) of joint ventures and associates, net	-	-	-	2,189	82	-	19	284	-	(8)	2,566
<b>Profit (loss) before finance costs and income tax expense</b>	<b>836</b>	<b>1,194</b>	<b>2,117</b>	<b>3,893</b>	<b>74</b>	<b>440</b>	<b>107</b>	<b>583</b>	<b>(8,411)</b>	<b>217</b>	<b>1,050</b>





# NOTES TO THE FINANCIAL STATEMENTS

Thai Oil Public Company Limited

For the year ended 31 December 2020

(Million Baht)

	For the year ended 31 December 2020										
	Marine										
	Oil refinery	Lube base oil refinery	Petro-chemical	Power generation	Marine transportation services	Solvent	Ethanol	Others	Elimination	Discontinued operations	Total
Finance costs	(3,788)	(58)	(207)	(757)	(91)	(75)	(21)	-	638	67	(4,292)
Profit (loss) before income tax expense	(2,952)	1,136	1,910	3,136	(17)	365	86	583	(7,773)	284	(3,242)
Income tax benefit (expense)	1,464	(228)	(400)	(92)	(3)	(52)	2	(21)	(26)	3	647
Net profit (loss) for the year	(1,488)	908	1,510	3,044	(20)	313	88	562	(7,799)	287	(2,595)
Profit (loss) attributable to:											
- Owners of the parent	(1,488)	908	1,535	2,646	(20)	310	45	562	(7,799)	287	(3,014)
- Non-controlling interests	-	-	(25)	398	-	3	43	-	-	-	419
Net profit (loss) for the year	(1,488)	908	1,510	3,044	(20)	313	88	562	(7,799)	287	(2,595)
Recognition of revenue											
- Point in time	247,302	14,038	36,676	9,391	-	8,188	1,631	5,792	(81,178)	-	241,840
- Over time	-	-	-	1,396	658	-	-	-	(636)	(418)	1,000
Total revenue	247,302	14,038	36,676	10,787	658	8,188	1,631	5,792	(81,814)	(418)	242,840



# NOTES TO THE FINANCIAL STATEMENTS

Thai Oil Public Company Limited

For the year ended 31 December 2020

(Million Baht)

## For the year ended 31 December 2019

	Oil refinery	Lube base oil refinery	Petro-chemical	Power generation	Marine transportation services	Solvent	Ethanol	Others	Elimination	Discontinued operations	Total
Revenue from sales and services											
- External	314,333	13,755	18,801	4,970	411	9,000	909	-	-	(411)	361,768
- Inter-segment	61,067	4,488	33,397	6,800	249	102	564	4,295	(110,962)	-	-
Subsidy from oil fuel fund	2,147	-	-	-	-	-	-	-	-	-	2,147
Cost of sales and services	(374,844)	(16,803)	(51,357)	(10,089)	(654)	(8,282)	(1,374)	(4,055)	111,702	643	(355,113)
<b>Gross profit</b>	<b>2,703</b>	<b>1,440</b>	<b>841</b>	<b>1,681</b>	<b>6</b>	<b>820</b>	<b>99</b>	<b>240</b>	<b>740</b>	<b>232</b>	<b>8,802</b>
Dividend income	2,494	-	-	-	-	-	-	-	(2,327)	-	167
Net gain (loss) from financial instruments	(210)	-	569	-	-	-	-	-	-	-	359
Net foreign exchange gain (loss)	1,847	1	22	4	(3)	(106)	2	8	-	3	1,778
Other income	3,467	83	316	31	26	19	3	1	(2,370)	(16)	1,560
Selling expenses	(60)	(106)	(166)	-	-	(285)	(19)	-	231	-	(405)
Administrative expenses	(2,398)	(80)	(164)	(28)	(163)	(309)	(60)	(48)	971	138	(2,141)
Share of profit (loss) of joint ventures and associates, net	-	-	-	844	29	-	(9)	436	-	(23)	1,277
<b>Profit (loss) before finance costs and income tax expense</b>	<b>7,843</b>	<b>1,338</b>	<b>1,418</b>	<b>2,532</b>	<b>(105)</b>	<b>139</b>	<b>16</b>	<b>637</b>	<b>(2,755)</b>	<b>334</b>	<b>11,397</b>





# NOTES TO THE FINANCIAL STATEMENTS

Thai Oil Public Company Limited

For the year ended 31 December 2020

(Million Baht)

## For the year ended 31 December 2020

	Oil refinery	Lube base oil refinery	Petro- chemical	Power generation	Marine transportation services	Solvent	Ethanol	Others	Adjustments*	Total
Trade accounts receivable, net	13,001	869	2,892	1,172	53	1,497	110	816	(7,708)	12,702
Inventories, net	19,140	1,137	1,068	165	10	721	257	-	(37)	22,461
Other current assets	82,653	1,945	1,106	1,918	440	877	118	12,273	(22,515)	78,815
Derivative assets	251	-	21	-	-	-	-	-	(21)	251
Investments in subsidiaries	14,045	-	-	-	-	-	-	-	(14,045)	-
Investments in joint ventures	-	-	-	-	188	-	-	-	(188)	-
Investments in associates	993	-	-	22,185	6	-	826	-	511	24,521
Long-term loans to a related party	-	-	-	-	-	-	-	94,616	(94,616)	-
Property, plant and equipment, net	111,897	1,386	16,631	10,263	2,364	2,092	1,346	-	(754)	145,225
Right-of-use assets, net	13,610	1,150	954	207	14	373	4	1	(1,584)	14,729
Other non-current assets	6,583	648	1,656	187	2	1,267	11	944	(3,814)	7,484
<b>Total assets</b>	<b>262,173</b>	<b>7,135</b>	<b>24,328</b>	<b>36,097</b>	<b>3,077</b>	<b>6,827</b>	<b>2,672</b>	<b>108,650</b>	<b>(144,771)</b>	<b>306,188</b>
Trade accounts payable	10,731	1,011	3,224	605	31	840	16	740	(7,681)	9,517
Short-term loans	57	-	30	-	165	594	368	255	(756)	713
Current portion of long-term loans from financial institutions, net	-	-	406	332	150	160	55	-	(150)	953
Current portion of debenture, net	3,000	-	-	-	-	-	-	-	-	3,000
Other current liabilities	7,853	269	534	15,500	762	197	51	11,457	(22,295)	14,328
Derivative liabilities	1,427	-	-	534	-	-	-	-	(20)	1,941
Long-term loans, net	95,135	-	4,464	7,277	1,145	610	50	-	(96,281)	12,400
Debentures, net	29,104	-	-	-	-	-	-	94,733	-	123,837
Lease liabilities, net	11,144	1,188	935	173	8	328	1	-	(2,505)	11,272
Other non-current liabilities	7,588	147	198	112	22	156	21	731	(867)	8,108
<b>Total liabilities</b>	<b>166,039</b>	<b>2,615</b>	<b>9,791</b>	<b>24,533</b>	<b>2,283</b>	<b>2,885</b>	<b>562</b>	<b>107,916</b>	<b>(130,555)</b>	<b>186,069</b>

\* Adjustments include elimination transaction and classification of assets held for sale.



# NOTES TO THE FINANCIAL STATEMENTS

Thai Oil Public Company Limited

For the year ended 31 December 2020

(Million Baht)

	For the year ended 31 December 2019									
	Oil refinery	Lube base oil refinery	Petro-chemical	Power generation	Marine transportation services	Solvent	Ethanol	Others	Elimination	Total
Trade accounts receivable, net	23,634	1,022	3,950	1,438	61	1,249	98	850	(9,836)	22,466
Inventories, net	26,657	1,314	1,298	163	27	568	291	-	(26)	30,292
Other current assets	80,257	1,935	1,928	2,039	141	911	53	1,056	(6,401)	81,919
Investments in subsidiaries	15,015	-	-	-	-	-	-	-	(15,015)	-
Investments in joint ventures	-	-	-	-	617	-	-	-	-	617
Investments in associates	7,852	-	-	21,769	3	-	810	-	2,008	32,442
Long-term loans to a related party	11,781	-	-	-	-	-	-	76,123	(87,904)	-
Property, plant and equipment, net	68,321	1,275	18,093	11,020	2,498	2,190	1,362	-	1,800	106,559
Other non-current assets	7,354	633	1,786	100	8	1,307	11	711	(2,760)	9,150
<b>Total assets</b>	<b>240,871</b>	<b>6,179</b>	<b>27,055</b>	<b>36,529</b>	<b>3,355</b>	<b>6,225</b>	<b>2,625</b>	<b>78,740</b>	<b>(118,134)</b>	<b>283,445</b>
Trade accounts payable	27,134	863	4,556	781	46	613	48	779	(9,805)	25,015
Short-term loans	2,468	-	3,157	-	534	777	331	256	(5,947)	1,576
Current portion of long-term loans from financial institutions, net	-	-	536	312	179	254	55	-	-	1,336
Other current liabilities	9,949	254	510	223	54	116	47	80	(494)	10,739
Long-term loans	65,366	-	4,522	22,989	1,680	654	39	11,128	(88,275)	18,103
Debentures, net	32,129	-	-	-	-	-	-	65,055	-	97,184
Other non-current liabilities	5,104	44	247	96	60	81	14	693	(771)	5,568
<b>Total liabilities</b>	<b>142,150</b>	<b>1,161</b>	<b>13,528</b>	<b>24,401</b>	<b>2,553</b>	<b>2,495</b>	<b>534</b>	<b>77,991</b>	<b>(105,292)</b>	<b>159,521</b>



# NOTES TO THE FINANCIAL STATEMENTS

Thai Oil Public Company Limited

For the year ended 31 December 2020

## Major customer

Revenue from two customers represents Baht 210,369 million (2019: revenue from two customers represented Baht 235,580 million) of the Group's revenue from sales and service.

## Geographical segments

In presenting geographical information by segments, segment revenue is based on the geographical location of customers and segment assets are based on the geographical location of the assets.

## Geographical information

(Million Baht)

	Revenue		Non-current assets	
	For the year ended 31 December		As at 31 December	
	2020	2019	2020	2019
Thailand	230,071	334,325	190,495	147,362
Other countries	17,842	29,590	1,464	1,406
Total	247,913	363,915	191,959	148,768

## 11 Cash and cash equivalents

(Million Baht)

As at 31 December	Consolidated financial statements		Separate financial statements	
	2020	2019	2020	2019
Cash on hand	1	2	-	-
Deposits held at bank				
- savings and current accounts	41,411	27,401	35,668	23,591
- fixed deposit accounts less than 3 months	11,832	47,451	11,832	47,451
Total	53,244	74,854	47,500	71,042



# NOTES TO THE FINANCIAL STATEMENTS

Thai Oil Public Company Limited

For the year ended 31 December 2020

As at 31 December 2020, the interest rates on deposits in saving accounts are 0.01% - 0.80% per annum (2019: 0.01% - 2.00% per annum).

As at 31 December 2020, the interest rates on deposits in fixed accounts less than 3 months are 0.60% per annum (2019: 0.75% - 2.62% per annum) and these deposits have an average maturity of 73 days (2019: 89 days).

As at 31 December 2020, the Group's deposit at financial institutions of Baht 1,664 million were used to pledge as collateral for credit facilities (2019: Baht 1,170 million). However, the Group's deposit at financial institutions which pledged as collateral for credit facilities can be withdrawn if it meets the objectives and conditions of loan agreements to support the normal working capital and business operations of the Group (Note 28).

## 12 Deposit at a financial institutions used as collateral

As at 31 December 2020, deposits at a financial institution used as short-term collateral represented deposits of a subsidiary amounting to Baht 327 million (2019: Baht 325 million), which was used as collateral for credit facilities with a financial institution as described in note 28. The amount is restricted for long-term loans and interest repayment that will be due in the next period.

## 13 Trade accounts receivable, net

As at 31 December	(Million Baht)			
	Consolidated financial statements		Separate financial statements	
	2020	2019	2020	2019
Related parties (Note 41)	6,568	9,484	10,054	14,241
Other parties	6,136	12,982	2,947	9,393
Total	12,704	22,466	13,001	23,634
Less Loss allowance				
(2019: Allowance for doubtful accounts)	(2)	-	-	-
Trade accounts receivable, net	12,702	22,466	13,001	23,634





# NOTES TO THE FINANCIAL STATEMENTS

Thai Oil Public Company Limited

For the year ended 31 December 2020

## Fair values of trade receivables

The carrying amount is considered to be the same as their fair value due to the nature of trade accounts receivable is current assets.

Aging analyses for trade accounts receivable are as follows:

(Million Baht)				
As at 31 December	Consolidated financial statements		Separate financial statements	
	2020	2019	2020	2019
<b>Related parties</b>				
Within credit terms	6,568	9,484	10,054	14,241
Less Loss allowance				
(2019: Allowance for doubtful accounts)	-	-	-	-
<b>Net</b>	<b>6,568</b>	<b>9,484</b>	<b>10,054</b>	<b>14,241</b>
<b>Other parties</b>				
Within credit terms	6,098	12,942	2,946	9,393
Overdue:				
- Less than 3 months	36	40	1	-
- Over than 3 months but less than 1 year	2	-	-	-
	6,136	12,982	2,947	9,393
Less Loss allowance				
(2019: Allowance for doubtful accounts)	(2)	-	-	-
<b>Net</b>	<b>6,134</b>	<b>12,982</b>	<b>2,947</b>	<b>9,393</b>
<b>Total</b>	<b>12,702</b>	<b>22,466</b>	<b>13,001</b>	<b>23,634</b>

The normal credit term granted by the Group ranges from 7 days to 120 days.



# NOTES TO THE FINANCIAL STATEMENTS

Thai Oil Public Company Limited

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## 14 Other receivables

(Million Baht)

	Consolidated financial statements		Separate financial statements	
	2020	2019	2020	2019
As at 31 December				
Prepaid expenses	379	647	198	467
Other accounts receivable	690	608	829	673
Current portion of long-term loans				
to savings co-operative of employees	13	33	13	33
<b>Total</b>	<b>1,082</b>	<b>1,288</b>	<b>1,040</b>	<b>1,173</b>

### Fair values of other receivables

The carrying amount is considered to be the same as their fair value due to the nature of other receivable is current assets.

## 15 Financial assets and liabilities

Classification of financial assets and liabilities are disclosed in note 8

### 15.1 Financial assets at fair value through other comprehensive income

#### a) Classification of financial assets at fair value through other comprehensive income (FVOCI) (2019: amortised cost under TAS 105)

Financial assets at FVOCI comprise equity securities which are not held for trading, and which the Group has irrevocably elected at initial recognition to recognise in this category.

# NOTES TO THE FINANCIAL STATEMENTS

Thai Oil Public Company Limited

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Financial assets at FVOCI comprise the following investments:

(Million Baht)

	Consolidated financial statements		Separate financial statements	
	2020	2019	2020	2019
As at 31 December	Fair value		Fair value	
<b>Non-current assets</b>				
Investments in equity investments				
- Unlisted securities (2019: at cost)	77	2	2	2
<b>Total</b>	<b>77</b>	<b>2</b>	<b>2</b>	<b>2</b>

Since 1 January 2020, the Group has reclassified the related FVOCI reserve to retained earning (2019: reclassified AFS reserve to profit or loss under TAS 105) when disposing of these equity investments.

## b) Amounts recognised in profit and loss and other comprehensive income

A fair value measurement on investment in unlisted equity securities

During the year 2020, a subsidiary has invested in unlisted securities of start-up businesses. From the date of investment until the reporting date, there is no significant matter occurred which impact to the measurement of the fair value of the investments. Therefore, the cost of investments appropriately represent the fair value of investments.

### *Significant acquisitions and disposals during the year*

During the year 2020, the subsidiary invested in unlisted equity securities measured at FVOCI in the amount of Baht 78 million.

## 15.2 Financial assets at fair value through profit or loss

### a) Classification of financial assets at fair value through profit or loss (2019: fair value under TAS 105)

The Group classified debt investments that were not qualified for measurement at either amortised cost and FVOCI as financial assets measured at FVPL.



# NOTES TO THE FINANCIAL STATEMENTS

Thai Oil Public Company Limited

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Financial assets measured at FVPL include the following:

(Million Baht)

	Consolidated financial statements		Separate financial statements	
	2020	2019	2020	2019
As at 31 December	Fair value		Fair value	
<b>Non-current assets</b>				
Listed debt investment (2019: at cost)	347	383	347	383
Unlisted debt investment (2019: at cost)	114	-	-	-
	461	383	347	383

## b) Amounts recognised in profit or loss

The following gains/(losses) were recognised in profit or loss during the year as follows:

(Million Baht)

	Consolidated financial statements		Separate financial statements	
	2020	2019	2020	2019
<b>Fair value gains (losses)</b>				
on debt investments at FVPL				
on derivative (2019: nil due to recognised at cost)	(10)	-	(35)	-

## Significant acquisitions and disposals during the year

During the year 2020, the Group acquired unlisted debt investment measured at fair value through profit or loss in the amount of Baht 54 million.



# NOTES TO THE FINANCIAL STATEMENTS

Thai Oil Public Company Limited

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## 15.3 Financial assets at amortised cost

### a) Classification of financial assets at amortised cost (2019: amortised cost / fair value under TAS105)

The Group classifies its financial assets as at amortised cost only if both of the following criteria are met:

- the asset is held within a business model whose objective is to collect the contractual cash flows; and
- the contractual terms give rise to cash flows that are solely payments of principal and interest

Short-term investment is classified as financial assets at amortised cost.

(Million Baht)

As at 31 December	Consolidated financial statements		Separate financial statements	
	2020	2019	2020	2019
<b>Short-term investment</b>				
Fixed deposit accounts	18,110	1,757	18,110	1,757
	18,110	1,757	18,110	1,757

As at 31 December 2020, fixed deposit accounts are denominated in US Dollar amounting to 608 million with the interest rates at 0.65% – 0.92% per annum (2019: 2.65% per annum).

### b) Fair values of other financial assets at amortised cost

The carrying amount is considered to be the same as their fair value of other financial assets at amortised cost due to the nature of short-term investment is current assets.



# NOTES TO THE FINANCIAL STATEMENTS

Thai Oil Public Company Limited

For the year ended 31 December 2020

## 16 Inventories, net

(Million Baht)

As at 31 December	Consolidated financial statements		Separate financial statements	
	2020	2019	2020	2019
Crude oil and feedstock	8,683	11,678	8,105	10,656
Materials, spare parts and supplies	1,606	1,573	1,104	1,078
Finished and semi-finished oil products	6,638	8,300	4,589	6,189
Goods in transit				
Crude oil	5,649	8,759	5,649	8,733
Materials, spare parts and supplies	4	85	4	2
Finished and semi-finished oil products	198	-	-	-
<u>Less</u> Allowance for decline in value of inventories adjusted to net realised value				
- Crude oil and feedstock	(311)	(1)	(311)	(1)
- Finished and semi-finished oil products	(6)	(102)	-	-
Inventories, net	22,461	30,292	19,140	26,657

As at 31 December 2020, the inventories as stated above included a legal reserve amounting to Baht 4,642 million (2019: Baht 11,321 million).

Inventories recognised as expenses in cost of sale of goods for the year ended 31 December 2020 and 2019 are as follows:

(Million Baht)

For the year ended 31 December	Consolidated financial statements		Separate financial statements	
	2020	2019	2020	2019
- Cost of sale of goods	166,175	229,647	185,456	266,840
- (Reversal of) write-down to net realised value	215	(1,255)	310	(1,313)
Net	166,390	228,392	185,766	265,527



# NOTES TO THE FINANCIAL STATEMENTS

Thai Oil Public Company Limited

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## 17 Investments in subsidiaries

### 17.1 Movements of investments in subsidiaries are as follows:

	(Million Baht)	
	Separate	
	financial statements	
	2020	2019
At 1 January	15,015	14,555
Additional paid-up share capital in a subsidiary	-	460
Loss from impairment (Note 32)	(162)	-
Classified as assets held for sale (Note 32)	(808)	-
At 31 December	14,045	15,015

#### Indirect subsidiaries

##### TOP Ventures Hong Kong Limited

On 2 January 2020, at the Executive Committee Meeting No.1/2020, the committee passed a resolution to approve an increase in registered capital of TOP Ventures Hong Kong Limited amounting to US Dollars 8.30 million or equivalent to Baht 251 million. The subsidiary received payment on 7 January 2020 and already registered the change of registered capital.

On 24 July 2020, at the Executive Committee Meeting No. 3/2020, the committee passed a resolution to approve an increase in registered capital of TOP Ventures Hong Kong Limited amounting to US Dollars 0.50 million or equivalent to Baht 16 million. The subsidiary received payment on 31 July 2020 and already registered the change of registered capital.

On 26 October 2020, at the Executive Committee Meeting No.4/2020, the committee passed a resolution to approve an increase in registered capital of TOP Ventures Hong Kong Limited amounting to US Dollars 2.00 million or equivalent to Baht 62.40 million. The subsidiary received payment on 30 October 2020 and already registered the change of registered capital.





# NOTES TO THE FINANCIAL STATEMENTS

Thai Oil Public Company Limited

For the year ended 31 December 2020

## **TOP Ventures America LLC**

On 2 January 2020, at the Executive Committee Meeting No.1/2020, the committee passed a resolution to approve an increase in registered capital of TOP Ventures America LLC amounting to US Dollars 8.20 million or equivalent to Baht 248 million. The subsidiary received payment on 7 January 2020 and already registered the change of registered capital.

On 24 July 2020, at the Executive Committee Meeting No. 3/2020, the committee passed a resolution to approve an increase in registered capital of TOP Ventures America LLC amounting to US Dollars 0.50 million or equivalent to Baht 16 million. The subsidiary received payment on 31 July 2020 and already registered the change of registered capital.

On 26 October 2020, at the Executive Committee Meeting No.4/2020, the committee passed a resolution to approve an increase in registered capital of TOP Ventures America LLC amounting to US Dollars 2.00 million or equivalent to Baht 62.40 million. The subsidiary received payment on 30 October 2020 and already registered the change of registered capital.



# NOTES TO THE FINANCIAL STATEMENTS

Thai Oil Public Company Limited

For the year ended 31 December 2020

## 17.2 The details of subsidiaries are as follows:

Separate financial statements										
	Country of incorporation	Nature of the business	Percentage of direct shareholding		Paid-up capital		Cost method		Dividend income for the year	
			2020	2019	2020	2019	2020	2019	2020	2019
			%	%	Million Baht	Million Baht	Million Baht	Million Baht	Million Baht	Million Baht
Thai Paraxylene Co., Ltd. and its subsidiary	Thailand	Paraxylene manufacturing and distribution	99.99	99.99	2,572	2,572	2,161	2,161	514	513
- Subsidiary LABIX Co., Ltd.	Thailand	Linear Alkyl Benzene manufacturing and distribution	75.00	75.00	4,655	4,655	-	-	-	-
Thai Lube Base Public Company Limited	Thailand	Lube base oil refining and distribution	99.99	99.99	1,758	1,758	1,979	1,979	1,406	88
Thaioil Marine Co., Ltd. and its subsidiaries	Thailand	Providing marine transportation services for petroleum and liquid chemical products	99.99	99.99	970	970	(1)	970	-	-
- Subsidiaries										
TOP Maritime Service Co., Ltd.	Thailand	Providing marine Transportation services for crew and utilities in the Gulf of Thailand	99.99	99.99	520	520	-	-	-	-
Thaioil Marine International Pte. Ltd.	Republic of Singapore	Investment in marine transportation for crude oil and petroleum product business	100.00	100.00	274	274	-	-	-	-
Thaioil Energy Services Co., Ltd.	Thailand	Providing human resource management	99.99	99.99	40	40	40	40	27	-

<sup>(1)</sup> During the year 2020, the Company classified investment in subsidiary as assets held for sale. (Note 32)



# NOTES TO THE FINANCIAL STATEMENTS

Thai Oil Public Company Limited

For the year ended 31 December 2020

Separate financial statements										
	Country of incorporation	Nature of the business	Percentage of direct shareholding		Paid-up capital		Cost method		Dividend income for the year	
			2020	2019	2020	2019	2020	2019	2020	2019
			%	%	Million Baht	Million Baht	Million Baht	Million Baht	Million Baht	Million Baht
Thaioil Solvent Co., Ltd. and its subsidiaries	Thailand	Investment in solvent and chemical business	99.99	99.99	1,250	1,250	1,250	1,250	80	-
- Subsidiaries										
TOP Solvent Co., Ltd. and its subsidiaries	Thailand	Distribution of solvent and chemical products	99.99	99.99	1,200	1,200	-	-	-	-
Sak Chaisidhi Co., Ltd.	Thailand	Solvent and chemical products manufacturing	80.52	80.52	190	190	-	-	-	-
TOP Solvent (Vietnam) LLC.	Socialist Republic Of Vietnam	Distribution of solvent and chemical products	100.00	100.00	634	634	-	-	-	-
PT.Tirta Surya Raya	Republic of Indonesia	Distribution of solvent and chemical products	67.00	67.00	50	50	-	-	-	-
Thaioil Ethanol Co., Ltd. and its subsidiaries	Thailand	Investment in ethanol businesses and alternative energy products	99.99	99.99	1,450	1,450	1,450	1,450	-	-
- Subsidiaries										
Sapthip Co., Ltd. and its subsidiaries	Thailand	Ethanol products manufacturing and distribution	50.00	50.00	800	800	-	-	-	-
Sapthip Green Energy Co., Ltd.	Thailand	Biogas power generation And distribution	99.99	99.99	25	25	-	-	-	-



# NOTES TO THE FINANCIAL STATEMENTS

Thai Oil Public Company Limited

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Separate financial statements										
	Country of incorporation	Nature of the business	Percentage of direct shareholding		Paid-up capital		Cost method		Dividend income for the year	
			2020	2019	2020	2019	2020	2019	2020	2019
			%	%	Million Baht	Million Baht	Million Baht	Million Baht	Million Baht	Million Baht
Thaioil Power Co., Ltd.	Thailand	Power and stream generation and distribution	73.99	73.99	2,810	2,810	3,195	3,195	894	676
TOP SPP Co., Ltd.	Thailand	Power and stream generation and distribution	99.99	99.99	3,500	3,500	3,500	3,500	963	858
Thaioil Treasury Center Co., Ltd. and its subsidiaries	Thailand	Treasury center for the Group's business	99.99	99.99	470	470	470	470	210	-
- Subsidiaries										
TOP Ventures Company Limited	Thailand	Investment in venture capital and/or start-up business	99.99	99.99	9	9	-	-	-	-
TOP Ventures Hong Kong Limited and its subsidiaries	Hong Kong Special Administrative Region	Investment in venture capital and/or start-up business	100.00	100.00	329	0 <sup>(1)</sup>	-	-	-	-
TOP Ventures America LLC.	United States of America	Investment in venture capital and/or start-up business	100.00	100.00	326	0 <sup>(1)</sup>	-	-	-	-
Total investment in subsidiaries							14,045	15,015	4,094	2,135

<sup>(1)</sup> The balance is below Baht 1 million.



# NOTES TO THE FINANCIAL STATEMENTS

Thai Oil Public Company Limited

For the year ended 31 December 2020

## 17.3 Summarised financial information on subsidiaries with material non-controlling interests

Set out below are the summarised financial information for each subsidiary that has non-controlling interests and are material to the Group. The amounts disclosed for each subsidiary are before inter-company eliminations.

See note 33 for transactions with non-controlling interests.

### Summarised statement of financial position

As at 31 December	Thaioil Power Co., Ltd.		LABIX Co., Ltd.		Other individually immaterial subsidiaries		Total
	2020	2019	2020	2019	2020	2019	2019
Non-controlling interest percentage	26.01	26.01	25.00	25.00			
Current assets	623	977	855	1,600			
Non-current assets	22,962	22,824	10,482	10,962			
Current liabilities	(15,674)	(446)	(1,498)	(2,774)			
Non-current liabilities	(72)	(15,458)	(5,648)	(5,500)			
Net assets	7,839	7,897	4,191	4,288			
Carrying amount of non-controlling interests	2,039	2,054	1,048	1,072	802	825	3,889
							3,951

(Million Baht)



# NOTES TO THE FINANCIAL STATEMENTS

Thai Oil Public Company Limited

For the year ended 31 December 2020

## Summarised statement of comprehensive income

(Million Baht)

	Thaioil Power Co., Ltd.		LABIX Co., Ltd.		Other individually immaterial subsidiaries			Total
	2020	2019	2020	2019	2020	2019	2020	
<b>For the year ended 31 December</b>								<b>2019</b>
Revenue from sales and services	4,132	4,391	10,584	17,473				
Profit (loss)	1,531	1,026	(99)	(131)				
Other comprehensive income (expense)	(20)	(26)	-	-				
<b>Total comprehensive income (expense)</b>	<b>1,511</b>	<b>1,000</b>	<b>(99)</b>	<b>(131)</b>				
Profit (loss) allocated to non-controlling interests	398	267	(25)	(33)	46	6	419	240
Other comprehensive income (expense) allocated to non-controlling interests	393	260	(25)	(33)	44	6	412	233
<b>Summarised statement of cash flows</b>								
Cash flows from operating activities	704	313	761	364				
Cash flows from investing activities	764	(14,973)	(253)	190				
Cash flows from financing activities	(1,749)	14,467	(594)	(795)				
<b>Net increase (decrease) in cash and cash equivalents</b>	<b>(281)</b>	<b>(193)</b>	<b>(86)</b>	<b>(241)</b>				
Cash and cash equivalents at the beginning of the year	424	617	151	392				
Exchange losses on cash and cash equivalents	-	-	-	-				
Cash and cash equivalents at the end of the year	143	424	65	151				
Dividends paid to non-controlling interests	314	237	-	-				



# NOTES TO THE FINANCIAL STATEMENTS

Thai Oil Public Company Limited

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## 18 Investments in joint ventures and associates

### 18.1 Movements of investments in joint ventures and associates are as follows:

(Million Baht)

For the year ended 31 December	Consolidated financial statements		Separate financial statements	
	2020	2019	2020	2019
At 1 January	33,059	14,941	7,852	1,261
Impact from the first time adoption of new financial reporting standards	(516)	-	-	-
Addition of investment in an associate	-	21,971	-	6,591
Disposal of investment in associates	(9,784)	-	(7,792)	-
Share of profit of joint ventures and associates, net	2,573	1,299	-	-
Dividend income	(1,505)	(596)	-	-
Exchange differences on translation	4	(69)	-	-
Share of other comprehensive expense of associates, net of tax	(49)	(3)	-	-
Loss from the change in the ownership interests in an associate	-	(3)	-	-
Deficit from the change in the net assets in an associate	-	(4,481)	-	-
Classified as assets held for sale (Note 32)	(194)	-	-	-
Investment reclassification	933	-	933	-
At 31 December	24,521	33,059	993	7,852





# NOTES TO THE FINANCIAL STATEMENTS

Thai Oil Public Company Limited

For the year ended 31 December 2020

## Direct associate

### Global Power Synergy Public Company Limited (GPSC)

On 28 October 2020, the Extraordinary General Meeting of Shareholders No. 1/2020 passed a resolution to approve the restructuring of the Company's shareholding in power generation business. The shareholders approved the share disposal of the Company's directly held ordinary shares in associate to the parent company. The share disposal has completed on 3 December 2020. The Group and the Company has recognised Baht 5,801 million and Baht 8,965 million, respectively, for the gain on share disposal.

### Thai Petroleum Pipeline Company Limited

The Company has reclassified an investment in Thai Petroleum Pipeline Company Limited (THAPP) amounting to Baht 779 million from other long-term investment to investment in an associate. This reclassification was based on the fact that the Company has executive management representing in THAPP's Board of Directors, and they participate in policy-making processes, including decisions about dividends or other distributions. In addition, the Company has recognised the Baht 154 million increase in the investment in THAPP regarding its reclassification in other income within profit or loss.

## Indirect joint ventures

### TOP-NYK MarineOne Pte. Ltd.

On 6 November 2020, the indirect subsidiary has disposed all its shareholding in TOP-NYK MarineOne Pte. Ltd (TOP-NYK), an indirect joint venture, to former shareholder. The indirect subsidiary did not recognised any gain from the disposal.



# NOTES TO THE FINANCIAL STATEMENTS

Thai Oil Public Company Limited

For the year ended 31 December 2020

## 18.2 Investments in joint ventures

The details of joint ventures are as follows:

Consolidated financial statements										
	Country of incorporation	Nature of business	Ownership interest held by the Group		Cost method		Equity method		Dividend income	
			2020	2019	2020	2019	2020	2019	2020	2019
			%	%	Million Baht	Million Baht	Million Baht	Million Baht	Million Baht	Million Baht
TOP-NTL Pte. Ltd.	Republic of Singapore	Providing service as a trustee manager	50.00	50.00	0 <sup>(1)</sup>	0 <sup>(1)</sup>	- <sup>(2)</sup>	18	-	-
TOP-NTL Shipping Trust	Republic of Singapore	Investment in marine transportation for crude oil and petroleum product business	50.00	50.00	24	24	- <sup>(2)</sup>	73	-	-
TOP Nautical Star Co., Ltd.	Thailand	Providing marine transportation services for crude oil, feedstock and petroleum product and storage	35.00	35.00	53	53	- <sup>(2)</sup>	120	26	-
TOP-NYK MarineOne Pte. Ltd.	Republic of Singapore	Providing marine transportation for crude oil and petroleum product business	-	50.00	-	274	-	406	213	-
Total investments in joint ventures					77	351	-	617	239	-

All joint ventures above are private companies and do not have a quoted market price available for their shares. There are no contingent liabilities relating to the Group's interest in these joint ventures.

<sup>(1)</sup> The balance is below Baht 1 million.

<sup>(2)</sup> During 2020, the Group classified these investments in joint ventures as assets held for sale (Note 32).



# NOTES TO THE FINANCIAL STATEMENTS

Thai Oil Public Company Limited

For the year ended 31 December 2020

## 18.3 Investments in associates

The details of associates are as follows:

Consolidated financial statements										
	Country of incorporation	Nature of business	Ownership interest held by the Group		Cost method		Equity method		Dividend income	
			2020	2019	2020	2019	2020	2019	2020	2019
			%	%	Million Baht	Million Baht	Million Baht	Million Baht	Million Baht	Million Baht
PTT Digital Solutions Co., Ltd.	Thailand	Provide information technology and computer service activities	20.00	20.00	30	30	507	428	19	18
PTT Energy Solutions Co., Ltd.	Thailand	Provide technical and operational services	20.00	20.00	30	30	45	42	-	-
Global Power Synergy Public Company Limited	Thailand	Power, steam and water generation and distribution for industries	20.78	29.69	18,034	25,826	22,185	31,159	1,088	578
Ubon Bio Ethanol Public Company Limited	Thailand	Ethanol products manufacturing and distribution	21.28	21.28	769	769	827	810	2	-
T. I. M. Ship Management Co., Ltd.	Thailand	Provide ship management services	33.33	33.33	1	1	-(1)	3	-	-
Thai Petroleum Pipeline Co., Ltd.	Thailand	Oil transportation through the pipeline	9.19	-	933	-	957	-	157	-
Total investments in associates					19,797	26,656	24,521	32,442	1,266	596

<sup>(1)</sup> During 2020, the Group classified this investment in an associate as asset held for sale (Note 32).



# NOTES TO THE FINANCIAL STATEMENTS

Thai Oil Public Company Limited

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Separate financial statements								
	Country of incorporation	Nature of business	Ownership interest held by the Company		Cost method		Dividend income	
			2020	2019	2020	2019	2020	2019
			%	%	Million Baht	Million Baht	Million Baht	Million Baht
PTT Digital Solutions Co., Ltd.	Thailand	Provide information technology and computer service activities	20.00	20.00	30	30	19	18
PTT Energy Solutions Co., Ltd.	Thailand	Provide technical and operational services	20.00	20.00	30	30	-	-
Global Power Synergy Public Company Limited	Thailand	Power, steam and water generation and distribution for industries	-	8.91 <sup>(1)</sup>	-	7,792	327	174
Thai Petroleum Pipeline Co., Ltd.	Thailand	Oil transportation through the pipeline	9.19	-	933	-	157	-
Total investments in associates					993	7,852	503	192

As at 31 December 2020, the fair value of the Group and the Company's interests in GPSC, which is listed in the Stock Exchange of Thailand, were Baht 43,223 million (2019: Baht 71,794 million and 21,538 million).

Other associates are private companies and do not have a quoted market price available for their shares. There are no contingent liabilities relating to the Group's interest in these associates.

<sup>(1)</sup> The Company has less than 20% of shareholding percentage and voting rights, however the Company has significant influence over GPSC since the Company has contractual right to appoint director in GPSC.



# NOTES TO THE FINANCIAL STATEMENTS

Thai Oil Public Company Limited

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## 18.4 Summarised financial information for associate

Set out below are the summarised financial information for the associates that are material to the Group. The information disclosed reflects the amounting presented in the financial statements of the relevant associates (not the Group's shares of those amounts). They have been amended to reflect adjustments made using the equity method, including fair value adjustments and modifications for differences in accounting policy.

### Summarised statement of financial position

(Million Baht)

As at 31 December	Global Power Synergy Public Company Limited	
	2020	2019
Current assets	40,739	38,919
Non-current assets	215,916	213,097
Current liabilities	(21,923)	(36,748)
Non-current liabilities	(122,865)	(105,092)
Net assets	111,867	110,176
Attributable to non-controlling interests	8,970	9,283
Attributable to investee's shareholders	102,897	100,893



# NOTES TO THE FINANCIAL STATEMENTS

Thai Oil Public Company Limited

For the year ended 31 December 2020

## Summarised statement of comprehensive income

(Million Baht)

For the year ended 31 December	Global Power Synergy Public Company Limited	
	2020	2019
Revenue	69,578	66,562
Net profit	8,490	6,001
Other comprehensive expense	(152)	(151)
Total comprehensive income	8,338	5,850
Attributable to non-controlling interests	927	1,914
Attributable to investee's shareholders	7,411	3,936

## Reconciliation of summarised financial information

Reconciliation of the summarised financial information presented to the carrying amount of its interest in associate.

(Million Baht)

	Global Power Synergy Public Company Limited	
	2020	2019
Group's interest in net assets of investee at 1 January	31,159	13,081
Loss from adoption TFRS 9 and TFRS 16	(516)	-
Addition of investment in an associate	-	21,971
Share disposals	(9,512)	-
Total comprehensive income attributable to the associate	2,143	1,169
Dividends received during the year	(1,088)	(578)
Loss from the change in the ownership interests in an associate	-	(3)
Deficit from the change in the net assets in an associate	-	(4,481)
Group's interest in net assets of investee at 31 December	22,186	31,159
Carrying amount of interest in associates at 31 December	22,186	31,159



# NOTES TO THE FINANCIAL STATEMENTS

Thai Oil Public Company Limited

For the year ended 31 December 2020

## 18.5 Individually immaterial joint ventures and associates

In addition to the interests in associates disclosed above, the Group also has interests in a number of individually immaterial joint ventures and associates that are accounted for using the equity method.

(Million Baht)

	<b>Individually immaterial joint ventures</b>	
	<b>2020</b>	<b>2019</b>
Aggregate carrying amount of individually immaterial joint ventures	-	617
Aggregate amounts of the Group's share of		
Profit from continuing activities	74	26
Other comprehensive income (expense)	3	(34)
Total comprehensive income (expense)	77	(8)
Profit from discontinued operations	4	20
Other comprehensive expense	(1)	(2)
Total comprehensive income (expense)	3	18
Aggregate carrying amount of individually immaterial associates	2,335	1,283
Aggregate amounts of the Group's share of		
Profit from continuing activities	303	64
Other comprehensive expense	(3)	(2)
Total comprehensive income	300	62
Profit from discontinued operations	3	3
Other comprehensive expense	-	-
Total comprehensive income	3	3





# NOTES TO THE FINANCIAL STATEMENTS

Thai Oil Public Company Limited

For the year ended 31 December 2020

## 19 Investment property, net

Investment property of the Group is land and land improvement

(Million Baht)

	Consolidated financial statements		Separate financial statements	
	2020	2019	2020	2019
<b>As at 1 January</b>				
Cost	103	103	1,141	1,111
<u>Less</u> Provision for impairment	-	-	-	(11)
Net book amount	103	103	1,141	1,100
<b>For the year ended 31 December</b>				
Opening net book amount	103	103	1,141	1,100
Transfer from property, plant and equipment, net (Note 20)	-	-	-	30
Reversal of provision for impairment	-	-	-	11
Closing net book amount	103	103	1,141	1,141
<b>As at 31 December</b>				
Cost	103	103	1,141	1,141
<u>Less</u> Provision for impairment	-	-	-	-
Net book amount	103	103	1,141	1,141
Fair value	458	458	2,682	2,682



# NOTES TO THE FINANCIAL STATEMENTS

Thai Oil Public Company Limited

For the year ended 31 December 2020

## Fair value Measurement

The fair value of investment property was determined by external, independent property valuers, having appropriate recognised professional qualifications and experiences in valuing the property. The independent valuers provide the fair value of the Group's investment property portfolio on a regular basis.

The fair value measurement for all investment property has been categorised as a level 3 fair value based on the inputs to the valuation technique used.

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	Inter-relationship between key unobservable inputs and fair value measurement
<p>- <u>Discounted cash flows</u>;</p> <p>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.</p>	<ul style="list-style-type: none"> <li>Contractually agreed lease income over the remaining period.</li> <li>The risk-adjusted discount rates (6%-7%)</li> </ul>	<p>The estimated fair value increase (decrease) if:</p> <ul style="list-style-type: none"> <li>Expected market rental growth were higher (lower);</li> <li>The risk-adjusted discount rate were lower (higher).</li> </ul>
<p>- <u>Market approach</u></p>	<p>The adjusted quoted price and the actual selling price of comparable investment properties</p>	<p>The estimated fair value increase (decrease) if land price were higher (lower).</p>



# NOTES TO THE FINANCIAL STATEMENTS

Thai Oil Public Company Limited

For the year ended 31 December 2020

Amounts recognised in profit and loss that are related to investment property are as follows:

(Million Baht)

For the year ended 31 December	Consolidated financial statements		Separate financial statements	
	2020	2019	2020	2019
Rental income	8	8	44	44



# NOTES TO THE FINANCIAL STATEMENTS

Thai Oil Public Company Limited

For the year ended 31 December 2020

## 20 Property, plant and equipment, net

(Million Baht)

### Consolidated financial statements

	Land	Buildings	Leasehold improve- ments	Refinery plant and equipment	Petro- chemical plants	Power plants	Trans- mission facilities	Machinery, equipment and plant equipment	Oil and liquid chemical tankers and crew boats	Furniture, fixtures, office equipment and others	Vehicles	Construction in progress	Total
<b>At 1 January 2019</b>													
Cost	6,539	2,690	211	104,752	34,930	17,420	193	6,621	3,355	938	18	11,195	188,862
Less Accumulated depreciation	-	(1,376)	(24)	(79,383)	(16,891)	(5,824)	(162)	(3,715)	(782)	(733)	(14)	-	(108,904)
Less Provision for impairment	(11)	-	-	-	-	-	-	-	(18)	-	-	-	(29)
Net book amount	6,528	1,314	187	25,369	18,039	11,596	31	2,906	2,555	205	4	11,195	79,929
<b>For the year ended 31 December 2019</b>													
Opening net book amount	6,528	1,314	187	25,369	18,039	11,596	31	2,906	2,555	205	4	11,195	79,929
Exchange differences	-	(6)	-	-	-	-	-	(19)	-	-	-	(4)	(29)
Additions during the year	505	26	-	916	1,060	-	-	76	19	19	-	30,574	33,195
Addition from business combination (Note 43)	-	-	1	-	-	-	-	-	-	2	-	-	3
Transfer in (out)	-	915	-	2,229	299	40	-	338	173	72	-	(4,066)	-
Transfer to intangible assets (Note 23)	-	-	-	-	-	-	-	-	-	-	-	(1)	(1)
Disposals, net	-	-	-	-	-	-	-	-	(101)	-	-	-	(101)
Write off, net	-	(7)	-	(7)	(52)	-	-	-	-	-	-	-	(66)
Depreciation charged during the year	-	(159)	(8)	(3,067)	(1,840)	(716)	(8)	(347)	(159)	(77)	(1)	-	(6,382)
Reversal of provision for impairment, net	11	-	-	-	-	-	-	-	-	-	-	-	11
Closing net book amount	7,044	2,083	180	25,440	17,506	10,920	23	2,954	2,487	221	3	37,698	106,559
<b>At 31 December 2019</b>													
Cost	7,044	3,523	212	104,280	35,958	17,460	193	6,972	3,416	1,012	14	37,698	217,782
Less Accumulated depreciation	-	(1,440)	(32)	(78,840)	(18,452)	(6,540)	(170)	(4,018)	(911)	(791)	(11)	-	(111,205)
Less Provision for impairment	-	-	-	-	-	-	-	-	(18)	-	-	-	(18)
Net book amount	7,044	2,083	180	25,440	17,506	10,920	23	2,954	2,487	221	3	37,698	106,559



# NOTES TO THE FINANCIAL STATEMENTS

Thai Oil Public Company Limited

For the year ended 31 December 2020

(Million Baht)

Consolidated financial statements													
	Land	Buildings	Leasehold improve- ments	Refinery plant and equipment	Petro- chemical plants	Power plants	Trans- mission facilities	Machinery, equipment and plant equipment	Oil and liquid chemical tankers and crew boats	Furniture, fixtures, office equipment and others	Vehicles	Construction in progress	Total
For the year ended 31 December 2020													
Opening net book amount	7,044	2,083	180	25,440	17,506	10,920	23	2,954	2,487	221	3	37,698	106,559
Exchange differences	-	-	-	-	-	-	-	(1)	-	-	-	-	(1)
Additions during the year	295	8	-	800	220	43	-	82	7	13	1	45,563	47,032
Transfer in (out)	-	1,202	-	5,492	145	1	-	220	(3)	21	-	(7,078)	-
Write off, net	-	(1)	-	(1)	(174)	-	-	(1)	-	-	-	(5)	(182)
Depreciation charged during the year	-	(185)	(8)	(2,722)	(1,572)	(778)	(7)	(342)	(143)	(60)	(1)	-	(5,818)
Assets classified as held for sale, net	-	(6)	-	-	-	-	-	-	(2,348)	(7)	-	(4)	(2,365)
Closing net book amount	7,339	3,101	172	29,009	16,125	10,186	16	2,912	-	188	3	76,174	145,225
At 31 December 2020													
Cost	7,339	4,709	212	110,570	36,052	17,504	193	7,259	-	1,010	14	76,174	261,036
Less Accumulated depreciation	-	(1,608)	(40)	(81,561)	(19,927)	(7,318)	(177)	(4,347)	-	(822)	(11)	-	(115,811)
Less Provision for impairment	-	-	-	-	-	-	-	-	-	-	-	-	-
Net book amount	7,339	3,101	172	29,009	16,125	10,186	16	2,912	-	188	3	76,174	145,225



# NOTES TO THE FINANCIAL STATEMENTS

Thai Oil Public Company Limited

For the year ended 31 December 2020

(Million Baht)

	Separate financial statements						
	Land	Buildings	Refinery plant and equipment	Machinery, equipment and plant equipment	Furniture, fixtures, office equipment and others	Vehicles	Construction in progress
							Total
<b>At 1 January 2019</b>							
Cost	4,154	1,439	96,535	1,284	572	4	114,603
Less Accumulated depreciation	-	(708)	(72,381)	(1,093)	(427)	(4)	(74,613)
Net book amount	4,154	731	24,154	191	145	-	39,990
<b>For the year ended 31 December 2019</b>							
Opening net book amount	4,154	731	24,154	191	145	-	39,990
Additions during the year	505	21	916	33	13	-	31,559
Transfer in (out)	-	834	2,228	76	32	-	-
Transfer to investment property (Note 19)	(30)	-	-	-	-	-	(30)
Write off, net	-	(7)	(8)	-	-	-	(15)
Depreciation charged during the year	-	(101)	(2,965)	(67)	(50)	-	(3,183)
Closing net book amount	4,629	1,478	24,325	233	140	-	68,321
<b>At 31 December 2019</b>							
Cost	4,629	2,197	96,063	1,357	604	-	142,366
Less Accumulated depreciation	-	(719)	(71,738)	(1,124)	(464)	-	(74,045)
Net book amount	4,629	1,478	24,325	233	140	-	68,321



# NOTES TO THE FINANCIAL STATEMENTS

Thai Oil Public Company Limited

For the year ended 31 December 2020

(Million Baht)

	Separate financial statements						Total
	Land	Buildings	Refinery plant and equipment	Machinery, equipment and plant equipment	Furniture, fixtures, office equipment and others	Vehicles	
For the year ended 31 December 2020							
Opening net book amount	4,629	1,478	24,325	233	140	-	68,321
Additions during the year	295	7	697	13	7	-	46,454
Transfer in (out)	-	1,206	5,432	78	16	-	-
Write off, net	-	(1)	(1)	-	-	-	(2)
Depreciation charged during the year	-	(129)	(2,641)	(58)	(48)	-	(2,876)
Closing net book amount	4,924	2,561	27,812	266	115	-	111,897
At 31 December 2020							
Cost	4,924	3,402	102,192	1,448	627	-	188,812
Less Accumulated depreciation	-	(841)	(74,380)	(1,182)	(512)	-	(76,915)
Net book amount	4,924	2,561	27,812	266	115	-	111,897





# NOTES TO THE FINANCIAL STATEMENTS

Thai Oil Public Company Limited

For the year ended 31 December 2020

The gross amounts of the Group's and the Company's fully depreciated plant and equipment that were still in use as at 31 December 2020, were Baht 56,582 million (2019: Baht 53,767 million) and Baht 46,767 million (2019: Baht 44,191 million), respectively.

As at 31 December 2020, certain subsidiaries mortgaged their land, building, petrochemical plant, machines and crew boats as collateral for credit facilities as described in note 28. The net book value of land, building, petrochemical plant, machines and crew boats amounted to Baht 19,242 million (2019: Baht 20,304 million).

For the year ended 31 December 2020, borrowing costs of Baht 1,965 million for the Group and Baht 2,277 million for the Company (2019: Baht 1,592 million and Baht 1,722 million, respectively) represented the borrowing to finance the Clean Fuel Project. The Group and the Company applied capitalisation rate at 3.43% to 5.47% and 3.83% to 5.99% per annum, respectively (2019: 4.625% to 5.375% and 5.22% to 5.96% per annum, respectively) for borrowing cost calculation. The borrowing costs were included in 'Additions' during the year.

## 21 Right-of-use assets

As at 31 December, right-of-use asset balance are as follows:

	(Million Baht)			
	Consolidated financial statements		Separate financial statements	
	2020	2019	2020	2019
Land	12,720	-	11,690	-
Building	88	-	25	-
Equipment	36	-	24	-
Oil tankers	1,772	-	1,772	-
Vehicles	113	-	99	-
Total	14,729	-	13,610	-



# NOTES TO THE FINANCIAL STATEMENTS

Thai Oil Public Company Limited

For the year ended 31 December 2020

For the year ended 31 December, amounts charged to profit or loss and cash flows relating to leases are as follows:

(Million Baht)

	Consolidated financial statements		Separate financial statements	
	2020	2019	2020	2019
Depreciation charge of right-of-use assets:				
Land	411	-	382	-
Building	36	-	24	-
Equipment	13	-	7	-
Oil tankers	1,244	-	1,244	-
Vehicles	45	-	36	-
Total	1,749	-	1,693	-
Addition to the right-of-use assets during the year	670	-	498	-
Total cash outflow for leases	1,721	-	1,707	-
Expense relating to short-term leases	11	-	-	-
Expense relating to leases of low-value assets	18	-	18	-
Income from subleasing right-of-use asset	2	-	54	-



# NOTES TO THE FINANCIAL STATEMENTS

Thai Oil Public Company Limited

For the year ended 31 December 2020

## 22 Goodwill

(Million Baht)

	<b>Consolidated financial statements</b>	
	<b>2020</b>	<b>2019</b>
<b>At 1 January</b>		
Cost	765	790
Net book amount	765	790
<b>For the year ended 31 December</b>		
Opening net book amount	765	790
Additions from business combination (Note 42)	-	13
Exchange differences	(1)	(38)
Closing net book amount	764	765
<b>At 31 December</b>		
Cost	764	765
Net book amount	764	765

Goodwill is allocated to the Group's cash-generating units (CGUs) identified according to business segment which is solvent segment.



# NOTES TO THE FINANCIAL STATEMENTS

Thai Oil Public Company Limited

For the year ended 31 December 2020

## Impairment testing for goodwill

The recoverable amount was based on its value-in-use, determined by discounting future cash flows to be generated in the future from the continuing use of CGU which based on the management approved financial five-year budget. Those cash flows are determined by annual earnings before interest, taxes, depreciation, and amortisation (EBITDA) estimated by management, adjusted by corporate income tax, change in working capital and relevant capital expenditures. The estimate also included a long-term growth rate with reference to gross domestic product (GDP) growth rates for the countries in which the CGUs operates and experiences by management.

The key assumptions used for value-in-use calculations are as follows:

(%)

	Goodwill - Thailand	Goodwill - Vietnam
Gross margin	6.93 - 8.68	6.05 - 7.34
Long-term growth rate	3.00	6.50
Discount rate from weighted average cost of capital (WACC)	8.89	10.91
Average working capital turnover rate	7.89	3.30

The recoverable amount was estimated to be higher than its carrying amount and no impairment was required to be recognised in the Group's financial statements. Management has considered a reasonably possible change in a key assumption could cause the carrying amount to exceed the recoverable amount. The following table shows the amount by which this key assumption would need to be changed individually for the estimated recoverable amount to be equal the carrying amount.

(%)

	Goodwill - Thailand	Goodwill - Vietnam
Average gross margin decrease	2.48	0.26
Discount rate increase	15.98	0.55
Long-term growth rate decrease	58.98	0.66
Increase in average working capital turnover rate	117.58	8.35



# NOTES TO THE FINANCIAL STATEMENTS

Thai Oil Public Company Limited

For the year ended 31 December 2020

## 23 Intangible assets, net

(Million Baht)

	Consolidated financial statements			
	License fee	Computer software	Patent	Total
<b>At 1 January 2019</b>				
Cost	3,253	928	1	4,182
<u>Less</u> Accumulated amortisation	(1,479)	(448)	-	(1,927)
Net book amount	1,774	480	1	2,255
<b>For the year ended 31 December 2019</b>				
Opening net book amount	1,774	480	1	2,255
Additions during the year	215	103	-	318
Transfer from property, plant and equipment, net (Note 20)	-	1	-	1
Amortisation charged during the year	(96)	(91)	-	(187)
Closing net book amount	1,893	493	1	2,387
<b>At 31 December 2019</b>				
Cost	3,468	1,032	1	4,501
<u>Less</u> Accumulated amortisation	(1,575)	(539)	-	(2,114)
Net book amount	1,893	493	1	2,387
<b>For the year ended 31 December 2020</b>				
Opening net book amount	1,893	493	1	2,387
Additions during the year	53	219	-	272
Amortisation charged during the year	(96)	(84)	-	(180)
Closing net book amount	1,850	628	1	2,479
<b>At 31 December 2020</b>				
Cost	3,521	1,251	1	4,773
<u>Less</u> Accumulated amortisation	(1,671)	(623)	-	(2,294)
Net book amount	1,850	628	1	2,479



# NOTES TO THE FINANCIAL STATEMENTS

Thai Oil Public Company Limited

For the year ended 31 December 2020

(Million Baht)

	Separate financial statements			
	License fee	Computer software	Patent	Total
<b>At 1 January 2019</b>				
Cost	855	774	1	1,630
<u>Less</u> Accumulated amortisation	(800)	(301)	-	(1,101)
Net book amount	55	473	1	529
<b>For the year ended 31 December 2019</b>				
Opening net book amount	55	473	1	529
Additions during the year	112	101	-	213
Amortisation charged during the year	(10)	(83)	-	(93)
Closing net book amount	157	491	1	649
<b>At 31 December 2019</b>				
Cost	967	875	1	1,843
<u>Less</u> Accumulated amortisation	(810)	(384)	-	(1,194)
Net book amount	157	491	1	649
<b>For the year ended 31 December 2020</b>				
Opening net book amount	157	491	1	649
Additions during the year	54	213	-	267
Amortisation charged during the year	(11)	(76)	-	(87)
Closing net book amount	200	628	1	829
<b>At 31 December 2020</b>				
Cost	1,021	1,088	1	2,110
<u>Less</u> Accumulated amortisation	(821)	(460)	-	(1,281)
Net book amount	200	628	1	829

# NOTES TO THE FINANCIAL STATEMENTS

Thai Oil Public Company Limited

For the year ended 31 December 2020

## 24 Deferred income taxes

The analysis of deferred tax assets and deferred tax liabilities is as follows:

(Million Baht)

	Consolidated financial statements		Separate financial statements	
	2020	2019	2020	2019
<b>At 31 December</b>				
Deferred tax assets	2,678	671	2,450	557
Deferred tax liabilities	(135)	(125)	-	-
Deferred tax assets, net	2,543	546	2,450	557

(Million Baht)

	Consolidated financial statements		Separate financial statements	
	2020	2019	2020	2019
<b>At 31 December</b>				
<b>Deferred tax assets:</b>				
Deferred tax assets to be recovered within 12 months	707	3	704	-
Deferred tax assets to be recovered more than 12 months	2,192	940	2,029	900
	2,899	943	2,733	900
<b>Deferred tax liabilities:</b>				
Deferred tax liabilities to be settled within 12 months	(182)	(51)	(109)	(55)
Deferred tax liabilities to be settled more than 12 months	(174)	(346)	(174)	(288)
	(356)	(397)	(283)	(343)
<b>Deferred tax assets, net</b>	<b>2,543</b>	<b>546</b>	<b>2,450</b>	<b>557</b>





# NOTES TO THE FINANCIAL STATEMENTS

Thai Oil Public Company Limited

For the year ended 31 December 2020

The movements in deferred tax assets and liabilities during the year is as follows:

	Consolidated financial statements							(Million Baht)
	Employee benefit obligation	Impairment losses on assets	Tax losses	Lease liabilities	Cash flow hedges	Borrowing cost	Others	
<b>Deferred tax assets</b>								
At 1 January 2019	717	2	-	-	-	-	73	792
Charged/(credited) to profit or loss	127	(2)	-	-	-	-	(47)	78
Charged to other comprehensive income	73	-	-	-	-	-	-	73
At 31 December 2019	917	-	-	-	-	-	26	943
Impact from the first time adoption of new financial reporting standards (Note 5)	-	-	-	2	57	-	-	59
At 1 January 2020	917	-	-	2	57	-	26	1,002
Charged to profit or loss	20	32	900	151	180	380	179	1,842
Charged to other comprehensive income	8	-	-	-	75	-	-	83
Classified as assets held for sale	(4)	-	-	-	-	-	2	(2)
Adjustments in respect of prior year	-	-	-	-	-	(26)	-	(26)
At 31 December 2020	941	32	900	153	312	354	207	2,899



# NOTES TO THE FINANCIAL STATEMENTS

Thai Oil Public Company Limited

For the year ended 31 December 2020

(Million Baht)

## Consolidated financial statements

	Depreciation	Deferred cost of debentures	Borrowing cost	Others	Total
<b>Deferred tax liabilities</b>					
At 1 January 2019	(153)	(28)	-	(19)	(200)
Charged to profit or loss	(27)	(11)	(143)	-	(181)
Charged to other comprehensive income	-	-	-	(16)	(16)
At 31 December 2019	(180)	(39)	(143)	(35)	(397)
Impact from the first time adoption of new financial reporting standards (Note 5)	-	-	-	-	-
At 1 January 2020	(180)	(39)	(143)	(35)	(397)
Charged/(credited) to profit or loss	(50)	(22)	143	(31)	40
Classified as liabilities related to assets held for sale	-	-	-	1	1
At 31 December 2020	(230)	(61)	-	(65)	(356)



# NOTES TO THE FINANCIAL STATEMENTS

Thai Oil Public Company Limited

For the year ended 31 December 2020

	Separate financial statements								(Million Baht)
	Employee benefit obligation	Impairment losses on assets	Tax losses	Lease liabilities	Cash flow hedges	Borrowing cost	Others	Total	
<b>Deferred tax assets</b>									
At 1 January 2019	706	2	-	-	-	-	-	708	
Charged/(credited) to profit or loss	134	(2)	-	-	-	-	-	132	
Charged to other comprehensive income	60	-	-	-	-	-	-	60	
At 31 December 2019	900	-	-	-	-	-	-	900	
Impact from the first time adoption of new financial reporting standards (Note 5)	-	-	-	2	(22)	-	-	(20)	
At 1 January 2020	900	-	-	2	(22)	-	-	880	
Charged to profit or loss	33	32	898	126	178	354	192	1,813	
Charged to other comprehensive income	(8)	-	-	(2)	50	-	-	40	
At 31 December 2020	925	32	898	126	206	354	192	2,733	



# NOTES TO THE FINANCIAL STATEMENTS

Thai Oil Public Company Limited

For the year ended 31 December 2020

(Million Baht)

## Separate financial statements

	Depreciation	Deferred cost of debentures	Borrowing cost	Others	Total
<b>Deferred tax liabilities</b>					
At 1 January 2019	(153)	(34)	-	(5)	(192)
Charged/(credited) to profit or loss	50	(15)	(169)	(1)	(135)
Charged to other comprehensive income	-	-	-	(16)	(16)
At 31 December 2019	(103)	(49)	(169)	(22)	(343)

Impact from the first time adoption of

new financial reporting standards (Note 5)	-	-	-	-	-
At 1 January 2020	(103)	(49)	(169)	(22)	(343)
Charged/(credited) to profit or loss	(57)	(23)	169	(29)	60
At 31 December 2020	(160)	(72)	-	(51)	(283)

Deferred income tax assets are recognised for tax loss carried forwards only to the extent that realisation of the related tax benefit through the future taxable profits is probable. The Group did not recognise deferred income tax assets of Baht 436 million (2019: Baht 448 million) in respect of losses amounting to Baht 2,180 million (2019: Baht 2,242 million) that can be carried forward against future taxable income. Losses amounting to Baht 2,180 million will expire during 2021 to 2025 (2019: Baht 2,242 million will expire during 2020 to 2024).



# NOTES TO THE FINANCIAL STATEMENTS

Thai Oil Public Company Limited

For the year ended 31 December 2020

## 25 Short-term loans from financial institutions

Short-term loans from financial institutions for the Group and the Company are as follows:

(Million Baht)

As at 31 December	Consolidated financial statements		Separate financial statements	
	2020	2019	2020	2019
Short-term loans from financial institutions				
- Secured	363	722	-	-
- Unsecured	350	854	-	-
Total short-term loans from financial institutions	713	1,576	-	-

Movements of short-term loans from financial institutions for the Group and the Company are as follows:

(Million Baht)

For the year ended 31 December	Consolidated financial statements		Separate financial statements	
	2020	2019	2020	2019
Opening balance	1,576	2,392	-	-
<u>Cash flows:</u>				
Proceeds from short-term loans	6,455	6,990	-	-
Repayments of short-term loans	(7,156)	(7,806)	-	-
<u>Other non-cash movements:</u>				
Classified as liabilities related to				
assets held for sale	(165)	-	-	-
Exchange differences	3	-	-	-
Closing balance	713	1,576	-	-



## NOTES TO THE FINANCIAL STATEMENTS

Thai Oil Public Company Limited

For the year ended 31 December 2020

As at 31 December 2020, short-term loans from financial institutions represented promissory notes of the subsidiaries which denominated in Thai Baht amounting to Baht 655 million, Vietnamese Dong 31,124 million (equivalent to Baht 40 million) and Indonesian Rupiah 8,447 million (equivalent to Baht 18 million), and bore interest at rates of 1.7% to 10% per annum (2019: subsidiaries' short-term loans denominated in Thai Baht amounting to Baht 1,416 million, Vietnamese Dong 115,195 million (equivalent to Baht 150 million) and Indonesian Rupiah 4,719 million (equivalent to Baht 10 million), and bore interest at rates of 2.4% to 10% per annum).

These short-term loans of subsidiaries are secured and jointed collateral with the long-term loans under the terms and condition in the Credit Facilities Agreement as detailed in note 28.

### 26 Trade accounts payable

(Million Baht)

As at 31 December	Consolidated financial statements		Separate financial statements	
	2020	2019	2020	2019
Related parties (Note 41)	5,470	13,562	7,115	16,002
Other parties	4,047	11,453	3,616	11,132
Total	9,517	25,015	10,731	27,134



# NOTES TO THE FINANCIAL STATEMENTS

Thai Oil Public Company Limited

For the year ended 31 December 2020

## 27 Other payables

(Million Baht)

As at 31 December	Consolidated financial statements		Separate financial statements	
	2020	2019	2020	2019
Accrued operating expenses	285	173	46	17
Oil Fuel Fund payable	20	45	20	45
Other payables	4,014	7,270	3,830	7,657
Others	1,430	1,618	1,439	812
Total	5,749	9,106	5,335	8,531

## 28 Long-term loans from financial institutions and a third party

Long-term loans from financial institutions and a third party are as follows:

(Million Baht)

As at 31 December	Consolidated financial statements		Separate financial statements	
	2020	2019	2020	2019
Current portion of long-term loans from financial institutions, net				
- Secured	766	909	-	-
- Unsecured	187	427	-	-
Long-term loans from financial institutions, net				
- Secured	11,481	12,679	-	-
- Unsecured	640	1,206	-	-
Long-term loans from a third party				
- Unsecured	279	219	-	-
Total long-term loans	13,353	15,440	-	-





# NOTES TO THE FINANCIAL STATEMENTS

Thai Oil Public Company Limited

For the year ended 31 December 2020

Movements of long-term loans from financial institutions and a third party are as follows:

(Million Baht)

For the year ended 31 December	Consolidated financial statements		Separate financial statements	
	2020	2019	2020	2019
Opening balance	15,440	16,603	-	-
<u>Cash flows:</u>				
Proceeds from long-term loans	126	112	-	-
Repayments of long-term loans	(927)	(1,265)	-	-
<u>Other non-cash movements:</u>				
Amortisation of deferred financing fee	10	12	-	-
Classified as liabilities related to				
assets held for sale	(1,295)	-	-	-
Exchange differences	(1)	(22)	-	-
Closing balance	13,353	15,440	-	-

The weighted average effective interest rate of the long-term loans from financial institutions and a third party of the Group were 2.92% per annum (2019: 3.51% per annum).



# NOTES TO THE FINANCIAL STATEMENTS

Thai Oil Public Company Limited

For the year ended 31 December 2020

The detail of long-term loans of the Group are as follows:

No.	Currency in agreement	Outstanding balance as at 31 December				Interest rate per annum (%)	Principal repayment term	Interest payment period
		2020		2019				
		Original Currency (Million)	Equipvalent to Million Baht	Original Currency (Million)	Equipvalent to Million Baht			
1	Baht	-	-	588	588	MLR minus a certain margin	Semi-Annual	Semi-Annual
2	Baht	-	-	75	75	MLR minus a certain margin	Semi-Annual	Semi-Annual
3	Baht	487	487	588	588	FDR (6M) plus a certain margin	Semi-Annual	Semi-Annual
4	Baht	47	47	32	32	FDR (6M) plus a certain margin	Semi-Annual	Semi-Annual
5	Baht	7,609	7,609	7,921	7,921	THBFIX (3M) plus a certain margin	Semi-Annual	Quarterly
6	Baht	-	-	797	797	FDR (6M) plus a certain margin	Quarterly	Quarterly
7	Baht	4,591	4,591	4,838	4,838	THBFIX (3M) plus a certain margin	Semi-Annual	Monthly
8	Baht	279	279	219	219	THBFIX (3M) plus a certain margin	A specified in the agreement	A specified in the agreement
9	Vietnamese Dong	216,857	282	245,737	320	Fixed rate	Semi-Annual	Semi-Annual
10	Baht	27	27	41	41	MLR minus a certain margin	Semi-Annual	Semi-Annual
11	Baht	27	27	21	21	MLR minus a certain margin	Semi-Annual	Semi-Annual
12	Baht	4	4	-	-	MLR minus a certain margin	Semi-Annual	Semi-Annual
Total			13,353		15,440			



# NOTES TO THE FINANCIAL STATEMENTS

Thai Oil Public Company Limited

For the year ended 31 December 2020

The Group's long-term loans are secured by collateral of land, building, petrochemical plants, machinery, crew boats and deposits at financial institutions (Note 11, Note 12 and Note 20) in accordance with the Credit Facilities Agreement.

On 26 June 2020, a subsidiary amended long-term loan contract with financial institution by modifying the repayment amount of the principal.

On 29 June 2020, a subsidiary amended long-term loan contract with financial institution by extending the maturity date from December 2022 to December 2024.

The impact of such contract modification resulted in the Group recognised gain from contract modification amount of Baht 1 million (net of tax Baht 0.8 million) for the year ended 31 December 2020.

The Group is required to comply with certain criteria and conditions; for example, maintaining shareholders' portion, maintaining debt to equity ratio at the level as specified in the contract and providing financial supports based on ownership percentage.

## 29 Debentures, net

(Million Baht)

As at 31 December	Consolidated financial statements		Separate financial statements	
	2020	2019	2020	2019
Debentures, net	127,648	97,727	32,244	32,292
<u>Less</u> Discount on debenture	(811)	(543)	(140)	(163)
	126,837	97,184	32,104	32,129
<u>Less</u> Current portion of debentures, net	(3,000)	-	(3,000)	-
Debentures, net	123,837	97,184	29,104	32,129



# NOTES TO THE FINANCIAL STATEMENTS

Thai Oil Public Company Limited

For the year ended 31 December 2020

Movements of debentures of the Group and the Company are as follows:

(Million Baht)

For the year ended 31 December	Consolidated financial statements		Separate financial statements	
	2020	2019	2020	2019
Opening balance	97,184	88,065	32,129	36,009
<u>Cash flows:</u>				
Additions	31,120	17,037	-	-
Repayments	-	(3,000)	-	(3,000)
Financing fee	(123)	(55)	-	-
<u>Other non-cash movements:</u>				
Interest of discount on debenture	52	14	23	8
Exchange differences	(1,396)	(4,877)	(48)	(888)
Closing balance	126,837	97,184	32,104	32,129



# NOTES TO THE FINANCIAL STATEMENTS

Thai Oil Public Company Limited

For the year ended 31 December 2020

Debentures issued by the Company and a subsidiary are unsecured and unsubordinated. The debentures issued by a subsidiary are fully guaranteed by the Company. Detail are as follows:

Consolidated financial statements							
Issuance date	Maturity date	Years	Currency	2020 (Million)	2019 (Million)	Interest rate (% p.a.)	Interest payment term
30 April 2010	30 April 2022	12	Baht	3,000	3,000	4.80	Semi-annual basis
23 March 2012	23 March 2027	15	Baht	7,500	7,500	5.05	Semi-annual basis
23 January 2013	23 January 2023	10	US Dollars	216.4	216.4	3.625	Semi-annual basis
23 January 2013	23 January 2043	30	US Dollars	172.4	172.4	4.875	Semi-annual basis
12 March 2014	12 March 2021	7	Baht	3,000	3,000	4.61	Semi-annual basis
12 March 2014	12 March 2024	10	Baht	7,000	7,000	4.84	Semi-annual basis
10 April 2018	23 January 2023	10	US Dollars	283.6	283.6	3.625	Semi-annual basis
10 April 2018	23 January 2043	30	US Dollars	327.6	327.6	4.875	Semi-annual basis
20 November 2018	20 November 2028	10	US Dollars	400	400	4.625	Semi-annual basis
20 November 2018	20 November 2048	30	US Dollars	600	600	5.375	Semi-annual basis
17 October 2019	17 October 2049	30	US Dollars	565	565	3.50	Semi-annual basis
18 June 2020	18 June 2030	10	US Dollars	400	-	2.50	Semi-annual basis
18 June 2020	18 June 2050	30	US Dollars	600	-	3.75	Semi-annual basis

Separate financial statements							
Issuance date	Maturity date	Years	Currency	2020 (Million)	2019 (Million)	Interest rate (% p.a.)	Interest payment term
30 April 2010	30 April 2022	12	Baht	3,000	3,000	4.80	Semi-annual basis
23 March 2012	23 March 2027	15	Baht	7,500	7,500	5.05	Semi-annual basis
23 January 2013	23 January 2023	10	US Dollars	216.4	216.4	3.625	Semi-annual basis
23 January 2013	23 January 2043	30	US Dollars	172.4	172.4	4.875	Semi-annual basis
12 March 2014	12 March 2021	7	Baht	3,000	3,000	4.61	Semi-annual basis
12 March 2014	12 March 2024	10	Baht	7,000	7,000	4.84	Semi-annual basis

The Company and a subsidiary are required to comply with certain criteria and conditions; for example, maintaining shareholders' portion at the level as specified in the contract.



# NOTES TO THE FINANCIAL STATEMENTS

Thai Oil Public Company Limited

For the year ended 31 December 2020

## 30 Lease liabilities, net

(Million Baht)

As at 31 December	Consolidated financial statements		Separate financial statements	
	2020	2019	2020	2019
Within 1 year	1,315	-	1,262	-
Over than 1 year but less than 5 years	2,913	-	2,830	-
Over than 5 years	17,158	-	17,098	-
<u>Less</u> Future interest paid of lease liabilities	(9,275)	-	(9,253)	-
Present value of lease liabilities, net	12,111	-	11,937	-

(Million Baht)

As at 31 December	Consolidated financial statements		Separate financial statements	
	2020	2019	2020	2019
Lease liabilities, net	12,111	-	11,937	-
<u>Less</u> Current portion of lease liabilities, net	(839)	-	(793)	-
	11,272	-	11,144	-



# NOTES TO THE FINANCIAL STATEMENTS

Thai Oil Public Company Limited

For the year ended 31 December 2020

## 31 Employee benefit obligations

The movement in the defined benefit obligation over the year is as follows:

(Million Baht)

	Consolidated financial statements		Separate financial statements	
	2020	2019	2020	2019
At 1 January	4,586	3,587	3,955	3,183
Current service cost	342	344	241	249
Past service cost	7	379	-	301
Actuarial losses	71	385	(28)	326
Benefit payment	(283)	(109)	(270)	(104)
Classified as liabilities related to assets held for sale	(22)	-	-	-
At 31 December	4,701	4,586	3,898	3,955

Actuarial (gains)/losses recognised in other comprehensive income arising from:

(Million Baht)

	Consolidated financial statements		Separate financial statements	
	2020	2019	2020	2019
Experience	(33)	-	(75)	-
Demographic assumptions	31	-	21	-
Financial assumptions	38	364	18	305
Total	36	364	(36)	305





# NOTES TO THE FINANCIAL STATEMENTS

Thai Oil Public Company Limited

For the year ended 31 December 2020

The principal actuarial assumptions used were as follows:

	Consolidated financial statements		Separate financial statements	
	2020	2019	2020	2019
Discount rate	1.5%	2.0%	1.5%	2.0%
Salary increases rate	5.0%-10.0%	5.0%-10.0%	5.0%-10.0%	5.0%-10.0%
Employee turnover	0.0%-4.0%	0.0%-4.0%	0.0%-4.0%	0.0%-4.0%

Assumptions regarding future mortality have been based on published statistics and mortality tables.

Sensitivity analysis for each significant assumption used is as follows:

	Consolidated financial statements					
	Impact on defined benefit obligation					
	Change in assumption		Increase in assumption		Decrease in assumption	
	2020	2019	2020	2019	2020	2019
	%	%	Million Baht	Million Baht	Million Baht	Million Baht
Discount rate	1	1	(420)	(414)	496	460
Salary growth rate	1	1	522	512	(454)	(448)

	Separate financial statements					
	Impact on defined benefit obligation					
	Change in assumption		Increase in assumption		Decrease in assumption	
	2020	2019	2020	2019	2020	2019
	%	%	Million Baht	Million Baht	Million Baht	Million Baht
Discount rate	1	1	(306)	(326)	353	356
Salary growth rate	1	1	424	441	(374)	(390)



## NOTES TO THE FINANCIAL STATEMENTS

Thai Oil Public Company Limited

For the year ended 31 December 2020

The above sensitivity analysis are based on a change in an assumption while all other assumptions remain constant. In practice, this is unlikely to occur, and changes in some of the assumptions may be correlated. When calculating the sensitivity of the defined benefit obligation to significant actuarial assumptions the same method which is the present value of the defined benefit obligation calculated with the projected unit credit method at the end of the reporting period has been applied when calculating the pension liability recognised within the consolidated statement of financial position. The methods and types of assumptions used in preparing the sensitivity analysis did not change when compared to the previous period.

The weighted average employee benefit obligations of the Group is 10 years (2019: 19 years).

Expected maturity analysis of undiscounted retirement benefits are as follows:

(Million Baht)

	Consolidated financial statements				
	Less than 1 year	Between 1-2 years	Between 2-5 years	Over 5 years	Total
<b>At 31 December 2020</b>					
Retirement benefits	247	222	981	1,555	3,005
<b>At 31 December 2019</b>					
Retirement benefits	143	247	812	1,946	3,148

(Million Baht)

	Separate financial statements				
	Less than 1 year	Between 1-2 years	Between 2-5 years	Over 5 years	Total
<b>At 31 December 2020</b>					
Retirement benefits	236	212	932	1,282	2,662
<b>At 31 December 2019</b>					
Retirement benefits	142	236	772	1,653	2,803



# NOTES TO THE FINANCIAL STATEMENTS

Thai Oil Public Company Limited

For the year ended 31 December 2020

## 32 Non-current assets held for sale and discontinued operations

On 25 November 2020, the Company's Board of Directors approved the restructuring of the Company's marine transport business unit. The company would dispose of all of its directly held ordinary shares in Thailoil Marine Company Limited to another company. The Share Purchase Agreement was signed on 24 December 2020. The associated assets and liabilities were consequently presented as held for sale in the 2020 financial statements. The Group expects this restructuring to be completed in June 2021.

The assets and liabilities which related to the discontinued operation and were reclassified as held for sale as at 31 December 2020

	(Million Baht)
	<b>Consolidated financial statements</b>
Cash and cash equivalents	116
Trade accounts receivable	37
Other receivables	13
Inventories	9
Prepaid corporate income tax	12
Investments in joint ventures	188
Investments in associates	6
Plant and equipment, net	2,365
Right-of-use assets, net	14
Deferred tax assets	2
Other non-current assets	1
<b>Assets held for sale</b>	<b>2,763</b>



# NOTES TO THE FINANCIAL STATEMENTS

Thai Oil Public Company Limited

For the year ended 31 December 2020

(Million Baht)

	<b>Consolidated financial statements</b>
Short-term loans from financial institutions	165
Trade accounts payable	31
Other payables	49
Current portion of long-term loans from financial institutions, net	150
Current portion of lease liabilities, net	7
Long-term loans from financial institutions, net	1,145
Lease liabilities, net	7
Employee benefit obligations	22
<b>Liabilities related to assets held for sale</b>	<b>1,576</b>
Other surplus	101
<b>Other surplus held for sale</b>	<b>101</b>
Other components of equity	(6)
<b>Other components of equity held for sale</b>	<b>(6)</b>

The assets and liabilities of marine transportation business unit was classified as held for sale during the reporting period and was measured at the lower of its carrying amount and fair value less costs to sell at the time of the reclassification. The non-recurring fair value was determined using the market approach and is a level 2 in the fair value hierarchy.

Since this business unit was reclassified as a discontinued operations, the Group presented the post-tax profit (loss) of discontinued operations separately from the continuing operations in the consolidated statement of income. The comprehensive income (expense) presented separately from the continuing operations in the consolidated statement of comprehensive income. In the consolidated statement of cash flow, the net cash flows of discontinued operations presented separately from continuing operations. The Group represented the results of discontinued operations in the prior year financial statements to be comparable with the current year financial statements.



# NOTES TO THE FINANCIAL STATEMENTS

Thai Oil Public Company Limited

For the year ended 31 December 2020

The performance and cash flows from discontinued operations are as follows:

	(Million Baht)	
	<b>Consolidated financial statements</b>	
	<b>2020</b>	<b>2019</b>
For the year ended 31 December		
Revenue from sales and services	418	411
Cost of sales of goods and services	(559)	(643)
<b>Gross loss</b>	<b>(141)</b>	<b>(232)</b>
Net gain (loss) from foreign exchange	-	(3)
Other income	14	16
Administrative expenses	(98)	(138)
Share of profit of joint ventures and associates	8	23
<b>Loss before finance costs and income tax expense from discontinued operations</b>	<b>(217)</b>	<b>(334)</b>
Finance costs	(67)	(83)
<b>Loss before income tax expense from discontinued operations</b>	<b>(284)</b>	<b>(417)</b>
Income tax (expense) benefit	(3)	1
<b>Loss from discontinued operations</b>	<b>(287)</b>	<b>(416)</b>
<b>Items that will be reclassified subsequently to profit or loss</b>		
Exchange differences on translation of financial statements	(2)	(2)
<b>Items that will not be reclassified subsequently to profit or loss</b>		
Gain (Loss) from remeasurements of post-employment benefit obligations, net of tax	10	(3)
Other comprehensive income (expense) for the year from discontinued operations, net of tax	8	(5)
<b>Comprehensive expense from discontinued operations</b>	<b>(279)</b>	<b>(421)</b>



# NOTES TO THE FINANCIAL STATEMENTS

Thai Oil Public Company Limited

For the year ended 31 December 2020

(Million Baht)

	<b>Consolidated financial statements</b>	
	<b>2020</b>	<b>2019</b>
Cash flows from operating activities	(338)	(169)
Cash flows from investing activities	208	29
Cash flows from financing activities	(442)	12
<b>Total cash flows</b>	<b>(572)</b>	<b>(128)</b>

The Company classified the investment in a subsidiary as held for sale during the reporting period. The investment was measured at the lower of its carrying amount and fair value less costs to sell at the time of the reclassification, resulting in the recognition of a write-down of Baht 162 million as administrative expense in profit or loss. The non-recurring fair value was determined using the market approach and is a level 2 in the fair value hierarchy.

## 33 Non-controlling interests

Movement of non-controlling interests are as follows:

(Million Baht)

<b>For the year ended 31 December</b>	<b>Consolidated financial statements</b>	
	<b>2020</b>	<b>2019</b>
Opening balance	3,951	4,760
Impact from the first time adoption of new financial reporting standards (Note 5)	(94)	-
Addition from business combination (Note 42)	-	13
Dividend payment from subsidiaries	(380)	(240)
Share of total comprehensive income from subsidiaries	412	233
Deficit from the changes in net assets in an associate	-	(815)
<b>Closing balance</b>	<b>3,889</b>	<b>3,951</b>



# NOTES TO THE FINANCIAL STATEMENTS

Thai Oil Public Company Limited

For the year ended 31 December 2020

## 34 Other income

(Million Baht)

For the year ended 31 December	Consolidated financial statements		Separate financial statements	
	2020	2019	2020	2019
	Re-presented			
Interest income	683	1,164	1,062	1,344
Service income and others	417	396	2,132	2,123
Total	1,100	1,560	3,194	3,467

## 35 Expenses by nature

The statement of income includes an analysis of expenses by function. Significant expenses by nature are detailed as follows:

(Million Baht)

For the year ended 31 December	Consolidated financial statements		Separate financial statements	
	2020	2019	2020	2019
	Re-presented			
Changes in finished goods and work in progress	1,701	1,789	1,600	2,489
Purchase and raw materials used	167,329	255,705	186,965	292,519
Natural gas used	8,420	10,684	1,104	2,060
Employee benefit expenses	3,530	4,078	1,916	2,509
Depreciation and amortisation	7,554	6,923	4,603	3,747
Excise tax	59,889	65,172	59,855	65,124
Oil fuel fund contribution/ Energy conservation fund contribution	4,371	4,391	4,371	4,391





# NOTES TO THE FINANCIAL STATEMENTS

Thai Oil Public Company Limited

For the year ended 31 December 2020

## 36 Income tax expense

(Million Baht)

For the year ended 31 December	Consolidated financial statements		Separate financial statements	
	2020	2019 Re-presented	2020	2019
<b>Current tax:</b>				
Current tax on profits for the year	825	1,139	-	529
Adjustments in respect of prior year	409	(3)	409	(6)
Total current tax	1,234	1,136	409	523
<b>Deferred tax:</b>				
Changes from temporary differences (Note 24)	(1,881)	104	(1,873)	3
Income tax (benefit) expense	(647)	1,240	(1,464)	526

The tax on the Group's profit before income tax expense differs from the theoretical amount that would arise using the basic tax rate of the home country of the Company are as follows:

(Million Baht)

For the year ended 31 December	Consolidated financial statements		Separate financial statements	
	2020	2019 Re-presented	2020	2019
Profit (loss) before income tax expense	(3,242)	8,173	(2,952)	5,182
Tax calculated at a tax rate of	20	20	20	20
The result of the accounting profit multiplied by the income tax rate	(648)	1,635	(590)	1,036
Tax effect of:				
Income not subject to tax	(503)	(415)	(1,335)	(520)
Expenses not deductible for tax purpose	98	31	52	16
Tax losses for which no deferred income tax asset was recognised	(3)	(8)	-	-
Adjustments in respect of prior year	409	(3)	409	(6)
Income tax (benefit) expense	(647)	1,240	(1,464)	526



# NOTES TO THE FINANCIAL STATEMENTS

Thai Oil Public Company Limited

For the year ended 31 December 2020

The weighted average applicable tax rate of the Group and Company were 19.95% and 49.59%, respectively (2019: 15.17% and 10.15%, respectively).

Revenues, profit before finance costs and income tax expense, and income tax expense from operation in foreign countries of the Group for the year ended 31 December 2020 are as follow:

(Million Baht)

	Revenues <sup>(1)</sup>	Profit before finance costs and income tax expense	Income tax expense
Thailand	253,950	883	(644)
Vietnam <sup>(2)</sup>	2,397	97	-
Indonesia	88	(8)	(3)
Singapore <sup>(3)</sup>	-	79	-
Hong Kong	-	(1)	-
Total	256,435	1,050	(647)

**Notes:**

<sup>(1)</sup> Revenues subject to tax consist of revenue from sale of services, subsidy from oil fuel fund, dividend income, net derivative gain on hedging, net foreign exchange gain, and other income.

<sup>(2)</sup> No income tax expense due to unutilised tax losses brought forward from the previous year.

<sup>(3)</sup> No income tax expense due to tax exemption for specific business by the government of the Republic of Singapore.



# NOTES TO THE FINANCIAL STATEMENTS

Thai Oil Public Company Limited

For the year ended 31 December 2020

## 37 Promotional privileges

Certain local subsidiaries have been granted privileges by the Board of Investment relating to power and steam generation, petrochemical product production, chemical product production, ethanol product production, marine transportation, offshore crude oil unloading facilities and industrial zone. The summary of privileges granted are as follows:

- (a) an exemption from payment of import duty and tax on machinery and equipment as approved by the Board of Investment.
- (b) an exemption from payment of corporate income tax for promoted operations for periods of 7 to 8 years from the dates on which the income is first derived from such operations or 8 years from the date on which the income is received subsequent to when the privileges were granted.
- (c) a 50% reduction in the normal corporate income tax rate on the net profit derived from certain promotional operations for a period of 5 years, commencing from the expiry date in (b) above.

As promoted companies, the subsidiaries must comply with certain conditions and restrictions provided for in the promotional certificates.

Revenues from promoted businesses were as follows:

For the year ended 31 December	(Million Baht)	
	<b>Consolidated financial statements</b>	
	<b>2020</b>	<b>2019</b>
Revenues from promoted businesses	19,335	27,946

For the year ended 31 December 2020, the revenues from promoted businesses amounting to Baht 388.79 million are from the discontinued operations (Note 32).



# NOTES TO THE FINANCIAL STATEMENTS

Thai Oil Public Company Limited

For the year ended 31 December 2020

## 38 Basic earnings per share

Basic earnings per share is calculated by dividing the net profit attributable to the shareholders of the Company by the weighted average number of ordinary shares issued during the year.

	Consolidated financial statements		Separate financial statements	
	2020	2019	2020	2019
Net profit (loss) from continuing operations attributable to the ordinary shareholders of the Company (Million Baht)	(3,014)	6,692	(1,488)	4,655
Weighted average number of ordinary shares outstanding (Million shares)	2,040	2,040	2,040	2,040
<b>Basic earnings (loss) per share from continuing operations (Baht per share)</b>	<b>(1.48)</b>	<b>3.28</b>	<b>(0.73)</b>	<b>2.28</b>
Net loss from discontinued operations attributable to the ordinary shareholders of the Company (Million Baht) (Note 32)	(287)	(416)	-	-
Weighted average number of ordinary shares outstanding (Million shares)	2,040	2,040	2,040	2,040
<b>Basic earnings (loss) per share from discontinued operations (Baht per share)</b>	<b>(0.14)</b>	<b>(0.20)</b>	<b>-</b>	<b>-</b>
<b>Basic earnings (loss) per share (Baht per share)</b>	<b>(1.62)</b>	<b>3.08</b>	<b>(0.73)</b>	<b>2.28</b>

The Group did not have any potential dilutive ordinary shares issued during the year ended 31 December 2020 and 2019, so there is no presentation of diluted earning per share.



# NOTES TO THE FINANCIAL STATEMENTS

Thai Oil Public Company Limited

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## 39 Dividends

At the Board of the Directors' meeting of the Company held on 30 March 2020, the Company's Board of Directors approved the appropriation of interim dividends, instead of the annual dividends, in respect of the operating results for the six-month period of the second half of 2019 at Baht 0.50 per share, totalling Baht 1,020 million. The interim dividends were paid to shareholders on 21 April 2020. Shareholders acknowledged the interim dividend payment in the Annual General Shareholders meeting for the year 2020 held on 10 June 2020.

## 40 Commitments and contingencies

(Million Baht)

As at 31 December	Consolidated financial statements		Separate financial statements	
	2020	2019	2020	2019
<b>Capital commitments</b>				
Project construction agreements	34,092	69,362	33,723	69,190
Total	34,092	69,362	33,723	69,190
<b>Non-cancellable operating lease commitments</b>				
Within one year	21	1,534	14	1,501
After one year but within five years	20	3,529	18	3,442
After five years	-	17,761	-	17,521
Total	41	22,824	32	22,464
<b>Other commitments</b>				
Letters of guarantee issued by				
financial institutions	2,196	2,065	1,515	1,457
Forward foreign exchange contracts	421	2,905	421	2,905
Crude oil purchase agreements	33,424	54,180	33,424	54,180
Total	36,041	59,150	35,360	58,542



# NOTES TO THE FINANCIAL STATEMENTS

Thai Oil Public Company Limited

For the year ended 31 December 2020

## **Investment in Clean Fuel Project**

The Company has engaged contractors for construction of Clean Fuel Project (CFP) which has been approved in the Extraordinary General Meeting of Shareholders held on 27 August 2018, with the investment project value of not exceeding US Dollar 4,825 million or equivalent to Baht 160,279 million. The project cost includes the investment of Energy Recovery Unit (ERU). The ERU is an electrical power plant, with the designed generating capacity of 250 megawatts and steam, to supply the production process of the CFP.

## **Interest Rate Swap Contracts**

A subsidiary has entered into interest rate swap contracts with various financial institutions to manage exposure and fluctuations in interest rate on long-term loans in Thai Baht. As at 31 December 2020, a subsidiary had notional amount of Baht 5,779 million (2019: Baht 6,019 million), whereby exchanging floating interest rate based on THBFIX 3M plus certain fixed margin per annum with fixed interest rate. The swap contracts are effective from April 2018 to March 2028.

## **Cross Currency Swap Contracts**

For the year ended 31 December 2020, the Company has entered into cross currency swap contracts with local financial institutions for hedging foreign exchange and interest rate exposure of long-term debts in US Dollar currency, totalling of US Dollar 563 million (31 December 2019: nil). A counterparty agrees to pay the interest and the notional amount according to the terms and conditions in the contracts. The swap contracts are effective from March 2020 to June 2035.

## **Forward Foreign Exchange Contracts**

For the year ended 31 December 2020, the Company has entered into forward foreign exchange contracts with local financial institutions for hedging foreign exchange exposure of long-term debts in US Dollar currency, totalling of US Dollar 170 million (31 December 2019: nil). A counterparty agrees to make payment according to the terms and conditions in the contracts. The swap contracts are effective from September 2020 to January 2023.



# NOTES TO THE FINANCIAL STATEMENTS

Thai Oil Public Company Limited

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## Oil Price Crack Spread Swap and Time Spread Swap Contracts

The Group and the Company have oil price crack spread swap and time spread swap contracts with foreign companies and related parties (counterparties). The Company has or the counterparties have commitments to make payments for the differences between the fixed price and floating price of each period.

As at 31 December 2020, the Group had oil volume under the contracts totalling 2 million barrels and 0.03 million metric tons and the Company had oil volume totalling 2 million barrels and 0.05 million metric tons (31 December 2019, the Group had oil volume under the contracts totalling 1.53 million barrels and 0.06 million metric tons and the Company had oil volume totalling 1.57 million barrels and 0.06 million metric tons).

## 41 Related party transaction

The Company is an entity in the PTT Public Company Limited (PTT) group of companies. PTT is incorporated in Thailand and is the major shareholder and the parent of the Company. PTT owned 45.03% of the Company's issued and paid-up share capital as at 31 December 2020 (2019: 47.53%).

Relationships with key management and other related parties were as follows:

Name of entities	Country of incorporation	Nature of relationships
PTT Public Company Limited	Thailand	Parent company
Thai Paraxylene Co., Ltd.	Thailand	Subsidiary and/or common directors
Thai Lube Base Public Company Limited	Thailand	Subsidiary and/or the Company's management as a director
Thaioil Marine Co., Ltd.	Thailand	Subsidiary and/or the Company's management as a director
Thaioil Energy Services Co., Ltd.	Thailand	Subsidiary and/or the Company's management as a director
Thaioil Solvent Co., Ltd.	Thailand	Subsidiary and/or the Company's management as a director
TOP Solvent Co., Ltd.	Thailand	Indirect subsidiary and/or the Company's management as a director





# NOTES TO THE FINANCIAL STATEMENTS

Thai Oil Public Company Limited

For the year ended 31 December 2020

Name of entities	Country of incorporation	Nature of relationships
Sak Chaisidhi Co., Ltd.	Thailand	Indirect subsidiary and/or the Company's management as a director
TOP Solvent (Vietnam) LLC.	Socialist Republic of Vietnam	Indirect subsidiary and/or the Company's management as a director
PT. Tirta Surya Raya	Republic of Indonesia	Indirect subsidiary
Thaioil Ethanol Co., Ltd.	Thailand	Subsidiary and/or the Company's management as a director
Thaioil Power Co., Ltd.	Thailand	Subsidiary and/or common directors
TOP SPP Co., Ltd.	Thailand	Subsidiary and/or the Company's management as a director
Thaioil Treasury Center Co.,Ltd.	Thailand	Subsidiary and/or the Company's management as a director
TOP Ventures Company Limited	Thailand	Indirect subsidiary and/or the Company's management as a director
TOP Ventures Hong Kong Limited	Hong Kong Special Administrative Region	Indirect subsidiary and/or the Company's management as a director
TOP Ventures America LLC.	United States Of America	Indirect subsidiary and/or the Company's management as a director
Sapthip Co., Ltd.	Thailand	Indirect subsidiary and/or the Company's management as a director
Sapthip Green Energy Co.,Ltd.	Thailand	Indirect subsidiary and/or the Company's management as a director
Thaioil Marine International Pte. Ltd.	Republic of Singapore	Indirect subsidiary and/or the Company's management as a director
TOP Maritime Service Co., Ltd.	Thailand	Indirect subsidiary and/or the Company's management as a director
LABIX Co., Ltd.	Thailand	Indirect subsidiary and/or common directors
TOP-NTL Pte. Ltd.	Republic of Singapore	Joint venture of subsidiary
TOP-NTL Shipping Trust	Republic of Singapore	Joint venture of subsidiary
TOP Nautical Star Co., Ltd.	Thailand	Joint venture of subsidiary and/or the Company's management as a director



# NOTES TO THE FINANCIAL STATEMENTS

Thai Oil Public Company Limited

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Name of entities	Country of incorporation	Nature of relationships
TOP-NYK MarineOne Pte. Ltd.	Republic of Singapore	Joint venture of indirect subsidiary and/or the Company's management as a director
PTT Digital Solutions Co., Ltd.	Thailand	Associate and/or the Company's management as a director
PTT Energy Solutions Co., Ltd.	Thailand	Associate and/or the Company's management as a director
Thai Petroleum Pipeline Co., Ltd.	Thailand	Associate and/or common directors
Global Power Synergy Public Company Limited	Thailand	Indirect associate and/or common directors
Ubon Bio Ethanol Public Company Limited	Thailand	Indirect associate and/or the Company's management as a director
T.I.M. Ship Management Co., Ltd.	Thailand	Indirect associate and/or the Company's management as a director
PTT International Trading Pte. Ltd.	Republic of Singapore	Subsidiary of the parent company
PTT Oil and Retail Business Public Company Limited	Thailand	Subsidiary of the parent company
PTT Exploration and Production Public Company Limited	Thailand	Subsidiary of the parent company
PTT Treasury Center Co., Ltd.	Thailand	Subsidiary of the parent company
Energy Recovery Unit Co., Ltd.	Thailand	Indirect subsidiary of the parent company
Energy Complex Co., Ltd.	Thailand	Subsidiary of the parent company
IRPC Public Company Limited	Thailand	Subsidiary of the parent company
PTT Tank Terminal Co., Ltd.	Thailand	Subsidiary of the parent company and/or common directors
PTT Global Chemical Public Company Limited	Thailand	Subsidiary of the parent company
PTT International Trading London Ltd.	England	Subsidiary of the parent company
PTT Phenol Co., Ltd.	Thailand	Indirect subsidiary of the parent company
PTT Exploration and Production International Company Limited	Thailand	Indirect subsidiary of the parent company
PTTEP Energy Development Company Limited	Thailand	Indirect subsidiary of the parent company



# NOTES TO THE FINANCIAL STATEMENTS

Thai Oil Public Company Limited

For the year ended 31 December 2020

Name of entities	Country of incorporation	Nature of relationships
Solution Creation Co.,Ltd.	Thailand	Indirect subsidiary of the parent company
Thai Tank Terminal Ltd.	Thailand	Indirect subsidiary of the parent company
Global Green Chemicals Public Company Limited	Thailand	Indirect subsidiary of the parent company
Vencorex (Thailand) Co., Ltd.	Thailand	Indirect subsidiary of the parent company
GC Glycol Co., Ltd.	Thailand	Indirect subsidiary of the parent company
Sarn Palung Social Enterprise Co., Ltd.	Thailand	Related company and/or common directors
PTT Oil Myanmar Co.,Ltd.	Republic of the Union of Myanmar	Indirect subsidiary of the parent company
PTT MCC Biochem Co., Ltd.	Thailand	Joint venture of subsidiary of the parent company
Brighter PTT Oil and Retail Co., Ltd.	Republic of the Union of Myanmar	Joint venture of subsidiary of the parent company
NPC Safety and Environmental Service Co., Ltd.	Thailand	Indirect subsidiary of the parent company

The pricing policies for particular types of transactions are explained further below:

Transactions	Pricing policies
Revenue from sale and services, lease income, purchase of goods and assets	Market prices or, where no market price exists, at contractually agreed prices
Interest income and expense	Agreed rates as stipulated in the agreements
Dividend income	Right to receive dividends
Other income and expenses	Contractually agreed prices
Directors' remuneration	Amounts approved by the Group's shareholders



# NOTES TO THE FINANCIAL STATEMENTS

Thai Oil Public Company Limited

For the year ended 31 December 2020

Significant transactions for the year ended 31 December 2020 and 2019 with related parties were as follows:

(Million Baht)

For the year ended 31 December	Consolidated financial statements		Separate financial statements	
	2020	2019	2020	2019
<b>Parent Company</b>				
Revenue from sales and services	6	1,938	-	1,929
Purchase of crude oil and feedstock	74,773	124,769	67,462	116,149
Other income	15	2	15	2
Gain from disposal of investment in an associate	5,801	-	8,965	-
Other expenses	84	124	83	121
Purchase of assets	6	1	6	1
<b>Subsidiaries</b>				
Revenue from sales and services	-	-	42,048	61,096
Purchase of crude oil and feedstock	-	-	28,735	42,948
Interest income	-	-	402	211
Dividend income	-	-	4,095	2,136
Land lease income	-	-	73	74
Other income	-	-	1,735	1,812
Interest expense	-	-	1,705	1,051
Capitalised interest expense	-	-	2,277	1,722
Other expenses	-	-	1,764	1,925
Purchase of assets	-	-	135	1,056
<b>Joint ventures</b>				
Revenue from sales and services	1	-	-	-
Purchase of crude oil and feedstock	906	1,253	906	1,253
Other income	2	-	1	-
Interest expense	110	-	110	-



# NOTES TO THE FINANCIAL STATEMENTS

Thai Oil Public Company Limited

For the year ended 31 December 2020

(Million Baht)

For the year ended 31 December	Consolidated financial statements		Separate financial statements	
	2020	2019	2020	2019
<b>Associates</b>				
Revenue from sales and services	1	4	-	3
Purchase of crude oil and feedstock	676	434	676	412
Interest income	2	-	2	-
Dividend income	-	-	502	192
Land lease income	-	8	-	8
Other income	20	21	18	20
Other expenses	457	363	432	342
Purchase of assets	85	69	85	69
<b>Subsidiaries of the parent company</b>				
Revenue from sale and services	115,273	173,782	109,707	164,868
Purchase of crude oil and feedstock	6,655	17,865	3,600	13,102
Purchase - sale of crude oil and feedstock for legal reserve	-	2,240	-	2,240
Other income	17	33	16	33
Interest expenses	115	27	2	-
Other expenses	244	314	189	276
<b>Other related parties</b>				
Revenue from sales and services	7	-	-	-
Purchase of crude oil and feedstock	14	14	-	-
Dividend income	-	160	-	160
Other expenses	1	54	-	54
<b>Directors' remuneration</b>	<b>60</b>	<b>63</b>	<b>48</b>	<b>54</b>



# NOTES TO THE FINANCIAL STATEMENTS

Thai Oil Public Company Limited

For the year ended 31 December 2020

Balances as at 31 December 2020 and 2019 with related parties were as follows:

## Trade accounts receivable - related parties

(Million Baht)

As at 31 December	Consolidated financial statements		Separate financial statements	
	2020	2019	2020	2019
Subsidiaries	-	-	4,089	5,282
Associates	-	4	-	4
Subsidiaries of the parent company	6,568	9,480	5,965	8,955
	6,568	9,484	10,054	14,241
Less Allowance for doubtful accounts (2019: Allowance for doubtful accounts)	-	-	-	-
Trade accounts receivable - related parties, net	6,568	9,484	10,054	14,241

## Other receivables - related parties

(Million Baht)

As at 31 December	Consolidated financial statements		Separate financial statements	
	2020	2019	2020	2019
Parent company	1	1	1	1
Subsidiaries	-	-	182	241
Associates	19	2	19	2
Total	20	3	202	244

## Finance lease receivables - related parties

(Million Baht)

As at 31 December	Consolidated financial statements		Separate financial statements	
	2020	2019	2020	2019
Subsidiaries	-	-	1,022	-
Associate	6	-	6	-
Total	6	-	1,028	-



# NOTES TO THE FINANCIAL STATEMENTS

Thai Oil Public Company Limited

For the year ended 31 December 2020

## Short-term loans to related parties

(Million Baht)

As at 31 December	Consolidated financial statements		Separate financial statements	
	2020	2019	2020	2019
Subsidiaries	-	-	276	3,221
Total	-	-	276	3,221

Interest rates during the year 2020 and 2019 were charged at highest money market rate for short-term loan based on BIBOR 3M plus certain fixed margin per annum and LIBOR 3M plus certain fixed margin per annum.

Movements of short-term loans to related parties during the year ended 31 December 2020 and 2019 were as follows:

(Million Baht)

	Consolidated financial statements		Separate financial statements	
	2020	2019	2020	2019
At 1 January	-	-	3,221	4,274
<u>Cash flows:</u>				
Payments for short-term loans	-	-	656	1,029
Proceeds from short-term loans	-	-	(3,592)	(2,078)
<u>Other non-cash movements:</u>				
Exchange losses	-	-	(9)	(4)
At 31 December	-	-	276	3,221





# NOTES TO THE FINANCIAL STATEMENTS

Thai Oil Public Company Limited

For the year ended 31 December 2020

## Long-term loans to related parties

(Million Baht)

As at 31 December	Consolidated financial statements		Separate financial statements	
	2020	2019	2020	2019
Current portion of long-term loans to related parties				
- Subsidiaries	-	-	12,081	-
Long-term loans to related parties				
- Subsidiaries	-	-	-	11,781
Total	-	-	12,081	11,781

Movements of long-term loans to related parties during the year ended 31 December 2020 and 2019 were as follows:

(Million Baht)

	Consolidated financial statements		Separate financial statements	
	2020	2019	2020	2019
At 1 January	-	-	11,781	400
<u>Cash flows:</u>				
Payments for long-term loans	-	-	700	11,381
Proceeds from long-term loan	-	-	(400)	-
At 31 December	-	-	12,081	11,781

On 14 November 2018, the Company entered into a loan agreement with a subsidiary in an amount of Baht 400 million for financial restructuring. The borrowing bears the interest rate at BIBOR 3M plus certain fixed margin per annum. The agreement is effective for a period of 3 years from the signing date. During the year ended 31 December 2020, the subsidiary already repaid the outstanding loans.



# NOTES TO THE FINANCIAL STATEMENTS

Thai Oil Public Company Limited

For the year ended 31 December 2020

On 26 September 2019, the Company entered into a loan agreement with a subsidiary for the credit facility amounting to Baht 11,385 million. The purpose is to support a subsidiary within the Group to purchase the additional share capital of an associate. The loan has no collateral and bears a fixed interest rate at 2.66% per annum. The agreement is for a period of 4.5 years from the initial drawdown date. Subsequently, on 22 October 2020, the company entered into the Entire Business Transfer Agreement with a subsidiary. After a subsidiary received a payment from business transfer, it will immediately repay the outstanding loan balance to the Company on the same day. Since the payment will occur within 12 months after the reporting date, therefore, the long-term loan to a related party was classified as current portion of long-term loan to a related party.

On 12 June 2020, the Company entered into a loan agreement with a subsidiary in an amount of Baht 700 million for financial restructuring. The borrowing bears the interest rate at BIBOR 6M plus certain fixed margin per annum. The agreement is effective for a period of 2 years from the signing date. Subsequently, on 24 December 2020, the Company entered into the Share Purchase Agreement to dispose all ordinary shares directly held in this subsidiary, including all shares of subsidiaries and associates held by this subsidiary. Therefore, the loan agreement amounting to Baht 700 million was classified as current portion of long-term loan to a related party.

## Right-of-use assets - related parties

(Million Baht)

As at 31 December	Consolidated financial statements		Separate financial statements	
	2020	2019	2020	2019
Parent company	8	-	8	-
Subsidiaries	-	-	59	-
Joint venture	1,642	-	1,642	-
A subsidiary of the parent company	20	-	20	-
Total	1,670	-	1,729	-



# NOTES TO THE FINANCIAL STATEMENTS

Thai Oil Public Company Limited

For the year ended 31 December 2020

## Other non-current assets - related parties

(Million Baht)

As at 31 December	Consolidated financial statements		Separate financial statements	
	2020	2019	2020	2019
Subsidiaries	-	-	60	40
A subsidiary of the parent company	14	14	14	14
Total	14	14	74	54

## Trade accounts payable - related parties

(Million Baht)

As at 31 December	Consolidated financial statements		Separate financial statements	
	2020	2019	2020	2019
Parent company	4,670	12,309	4,123	11,598
Subsidiaries	-	-	2,485	3,496
Associates	59	26	59	19
Subsidiaries of the parent company	741	1,227	448	889
Total	5,470	13,562	7,115	16,002

## Other accounts payable - related parties

(Million Baht)

As at 31 December	Consolidated financial statements		Separate financial statements	
	2020	2019	2020	2019
Parent company	48	-	48	-
Subsidiaries	-	-	909	886
Associates	105	50	105	50
Subsidiaries of the parent company	21	60	18	32
Other related parties	-	5	-	5
Total	174	115	1,080	973



# NOTES TO THE FINANCIAL STATEMENTS

Thai Oil Public Company Limited

For the year ended 31 December 2020

## Lease liabilities - related parties

(Million Baht)

As at 31 December	Consolidated financial statements		Separate financial statements	
	2020	2019	2020	2019
Parent company	7	-	7	-
Subsidiaries	-	-	215	-
Joint venture	1,802	-	1,802	-
A subsidiary of the parent company	21	-	21	-
Total	1,830	-	2,045	-

## Short-term loans from related parties

(Million Baht)

As at 31 December	Consolidated financial statements		Separate financial statements	
	2020	2019	2020	2019
Subsidiaries	-	-	57	2,467
Total	-	-	57	2,467

Interest rates during the year 2020 and 2019 were charged based on BIBOR 1M plus certain fixed margin per annum.

Movements of short-term loans from related parties during the year ended 31 December 2020 and 2019 were as follows:

(Million Baht)

	Consolidated financial statements		Separate financial statements	
	2020	2019	2020	2019
At 1 January	-	-	2,467	1,506
<u>Cash flows:</u>				
Proceeds from (payments for) short-term loans	-	-	(2,410)	961
At 31 December	-	-	57	2,467



# NOTES TO THE FINANCIAL STATEMENTS

Thai Oil Public Company Limited

For the year ended 31 December 2020

## Derivative liabilities - related parties

(Million Baht)

As at 31 December	Consolidated financial statements		Separate financial statements	
	2020	2019	2020	2019
Subsidiaries	-	-	21	-
Total	-	-	21	-

## Long-term loans from related parties

(Million Baht)

As at 31 December	Consolidated financial statements		Separate financial statements	
	2020	2019	2020	2019
Current portion of long-term loans from related party				
- A subsidiary of the parent company	3,999	-	-	-
Long-term loans from related parties				
- A subsidiary	-	-	95,135	65,366
- A subsidiary of the parent company	-	3,999	-	-
Total	3,999	3,999	95,135	65,366



# NOTES TO THE FINANCIAL STATEMENTS

Thai Oil Public Company Limited

For the year ended 31 December 2020

Movements of long-term loans from related parties during the year ended 31 December 2020 and 2019 were as follows:

(Million Baht)

	Consolidated financial statements		Separate financial statements	
	2020	2019	2020	2019
At 1 January	3,999	-	65,366	52,028
<u>Cash flows:</u>				
Proceeds from long-term loans	-	3,999	31,140	17,062
Payment for loans financing fee	-	-	(131)	-
<u>Other non-cash movements:</u>				
Amortisation of deferred financing fee	-	-	16	10
Exchange (gain)/losses	-	-	(1,256)	(3,734)
At 31 December	3,999	3,999	95,135	65,366

On 11 April 2018, 20 November 2018 and 17 October 2019, the Company entered into long-term loan agreements with a subsidiary totalling of US Dollar 2,163.11 million. The loans bear a fixed interest rate of 3.93% to 5.96% per annum with maturity dates in 2023 to 2049.

On 26 September 2019, a subsidiary entered into a long-term loan agreement with a related company amounting to Baht 4,000 million to purchase additional share capital of an associate. The loan has no collateral and bears a fixed interest rate of 2.82% per annum. The agreement is for a period of 4.5 years from initial drawdown date. Subsequently, on 22 October 2020, the company entered into the Entire Business Transfer Agreement with a subsidiary. After a subsidiary received a payment from business transfer, it will immediately repay the outstanding loan balance to the related party on the same day. Since the payment will occur within 12 months after the reporting date, therefore, the long-term loan from related party was classified as current portion of long-term loan from related party.

On 19 June 2020, the Company entered into long-term loan agreement with a subsidiary totalling of US Dollar 998.24 million. The loans bear fixed interest rates of 2.89% to 4.17% per annum with maturity dates between 2030 to 2050.



# NOTES TO THE FINANCIAL STATEMENTS

Thai Oil Public Company Limited

For the year ended 31 December 2020

## Other non-current liabilities from related parties

(Million Baht)

As at 31 December	Consolidated financial statements		Separate financial statements	
	2020	2019	2020	2019
Subsidiaries	-	-	838	667
Associate	10	16	10	16
A subsidiary of the parent company	2,192	440	2,192	440
Total	2,202	456	3,040	1,123

## Significant agreements with related parties

During the year ended 31 December 2020, the Group had the following significant agreements with related parties.

### Asset Sale and Purchase Agreement for the Energy Recovery Unit (ERU)

The Company has entered into the Asset Sale and Purchase Agreement for the ERU with a related company to support energy and utilities for Clean Fuel Project (CFP) whereby the purchase price is specified in the agreement. The Company will transfer ownership in the ERU to the purchaser upon satisfaction of all the conditions precedent set out in the agreement (Closing Date). Such conditions precedent include the Company's countersigning of the Provisional Acceptance Certificate (PAC) to the contractor which is expected to occur in 2023 and purchaser and seller receive all necessary certification from relevant authorities.

### Fuel and Utilities Supply Agreement

The Company has entered into the Fuel and Utilities Supply Agreement with a related company to supply pitch, other fuels and utilities used in the operation of the ERU. The term of the agreement is 25 years from the Closing Date and the parties may agree to extend the term for another 5 years.

### Power Purchase Agreement

The Company has entered into the Power Purchase Agreement with a related company to purchase electricity, steam and other by-products generated by the ERU. The term of the agreement is 25 years from the Closing Date and the parties may agree to extend the term for another 5 years.





# NOTES TO THE FINANCIAL STATEMENTS

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For the year ended 31 December 2020

## Operation and Maintenance Services Agreement

The Company has entered into the Operation and Maintenance Services Agreement with a related company to provide the services of operation and maintenance of the ERU. The term of the agreement is 25 years from the Closing Date and the parties may agree to extend the term for another 5 years.

## The Restructuring of Shareholding in Power Business and the Entire Business Transfer Agreement

The Company has entered into the Restructuring of Shareholding in Power Business by way of disposal of shares directly held by the Company in an associate to the parent company, representing approximately 8.91 percent of all paid-up shares of the associate at approximately amounting to Baht 16,882 million. The share disposal transaction was completed in December 2020. In this connection of the restructuring plan, the Company has entered into an entire business transfer agreement with a subsidiary at the total price of approximately Baht 26,773 million (which is subjected to change depending on the market value on the date of transfer as valued by independent valuer) whereby the Company agrees to accept the transfer of all assets, liabilities, rights, duties and obligations of a subsidiary existing on the day prior to the date of the entire business transfer, include contracts and licenses related to and used in the business operations of a subsidiary to enable the Company to continue the business operations. After the entire business transfer of a subsidiary to the Company, a subsidiary will pay dividend, cease its business operations, undergo dissolution and enter into the liquidation process within the same fiscal year in which the entire business transfer was occurred. After deduction of expenses, fees or any other money in connection with or arising from the completion of dissolution and liquidation, a subsidiary shall distribute its assets to the Company and parent company as a subsidiary's shareholders in proportion to their respective shareholding.

## 42 Business combination

On 12 September 2019, TS purchased the shares for investment in PT. Tirta Surya Raya (TSR), from the existing shareholders of TSR representing 67% shareholding interest. TSR is a company registered in Indonesia and engages in distributing solvent and chemical products. TS purchased 15,410 shares, totalling US Dollar 1.28 million or equivalent to Baht 40.24 million.



# NOTES TO THE FINANCIAL STATEMENTS

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For the year ended 31 December 2020

The following table summarises the consideration paid for TSR, and the estimated fair value of the assets acquired and liabilities assumed recognised on 12 September 2019, as follows.

	Million Baht
Cash	40
Total purchase consideration	40

Recognised estimated fair value of identifiable assets acquired and liabilities assumed are as follows:

	Million Baht
Cash and cash equivalents	1
Trade accounts receivable	15
Other receivables	31
Inventories	4
Plant and equipment, net	3
Other liabilities	(14)
Estimated fair value of identifiable net assets	40
<u>Less Non-controlling interest</u>	(13)
Total estimated fair value of identifiable net assets acquired	27
Goodwill	13
Purchase consideration	40

During the year ended 31 December 2020, the Group completed the fair value measurement of the net identifiable assets acquired of TSR which comply with the measurement period for a business combination referred in TFRS 3 "Business Combination". The final fair value did not change the fair value previously disclosed in the consolidated financial statements for the year ended 31 December 2019.



# NOTES TO THE FINANCIAL STATEMENTS

Thai Oil Public Company Limited

For the year ended 31 December 2020

## 43 Event after the reporting period

### **Restructuring of Shareholding in Power Business and the Entire Business Transfer**

On 28 October 2020, the Extraordinary General Meeting of Shareholders No. 1/2020 approved the entire business transfer (EBT) of Thailoil Power Company Limited (TP) to the Company as disclosed in note 41. The EBT transaction was completed on 1 February 2021.

### **Dividend declaration**

At the meeting of the Board of Directors of the Company held on 12 February 2021, 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 2020 annual dividends at Baht 0.7 per share, totalling Baht 1,428 million. The dividends are scheduled for payment on 26 April 2021. This dividend is subject to the approval of the Company's shareholders at the annual general meeting to be held on 7 April 2021.



## AUDITORS' FEES FOR 2020

PricewaterhouseCoopers ABAS Limited, by Mr. Boonruang Lertwisetwit, a certified auditor with registration No. CPA 6552, Miss Amornrat Permpoonwattanasuk (CPA 4599), and Mr. Pongtawee Ratanakoses (CPA 7795), has performed audit tasks in accordance with auditing standards for Thai Oil's consolidated and separate financial statements for the accounting period ending December 31, 2020. The auditors agreed that Thai Oil's financial position, business results, and cashflow presented in the audited financial statements are materially correct according to financial reporting standards.

The 2020 fees were paid to the auditors as detailed below.

### 1. Audit fee

Thai Oil, subsidiaries and Thai Oil Group Registered Provident Fund paid for the audit fees to the auditors' company for the latest account period amounting to Baht 6,923,700 (Six million nine hundred and twenty-three thousand seven hundred baht only), with the breakdown below:

Item	Paying company	Auditor's name	Audit fee (THB)
1.	Thai Oil Public Company Limited	Mr. Boonruang Lertwisetwit	1,753,800
2.	Thai Paraxylene Company Limited	Mr. Boonruang Lertwisetwit	410,000
3.	Thai Lube Base Public Company Limited	Mr. Boonruang Lertwisetwit	477,000
4.	Thai Oil Marine Company Limited	Mr. Boonruang Lertwisetwit	235,800
5.	Thai Oil Energy Services Company Limited	Mr. Boonruang Lertwisetwit	150,400
6.	Thai Oil Solvent Company Limited	Mr. Boonruang Lertwisetwit	149,500
7.	Thai Oil Ethanol Company Limited	Mr. Boonruang Lertwisetwit	150,400
8.	Thai Oil Power Company Limited	Mr. Boonruang Lertwisetwit	408,500
9.	TOP SPP Company Limited	Mr. Boonruang Lertwisetwit	200,800
10.	TOP Solvent Company Limited	Mr. Boonruang Lertwisetwit	255,800
11.	Sak Chaisidhi Company Limited	Mr. Boonruang Lertwisetwit	255,800
12.	Sapthip Company Limited	Mr. Boonruang Lertwisetwit	807,000
13.	TOP Maritime Service Company Limited	Mr. Boonruang Lertwisetwit	150,400
14.	LABIX Company Limited	Mr. Boonruang Lertwisetwit	220,000
15.	Thai Oil Treasury Center Company Limited	Mr. Boonruang Lertwisetwit	400,000
16.	TOP Ventures Company Limited	Mr. Boonruang Lertwisetwit	89,500
17.	Sapthip Green Energy Company Limited	Mr. Boonruang Lertwisetwit	49,500
18.	TOP Nautical Star Company Limited	Mr. Boonruang Lertwisetwit	569,500
19.	Provident fund	Mr. Boonruang Lertwisetwit	190,000
Total audit fee			6,923,700

## 2. Non-audit fee

Thaioil and Subsidiaries also paid for other services, including a consultant fee for the Updated Offering Memorandum of the Global Medium Term Notes Program and verification of compliance with the BOI Investment Promotion Certificate to the auditor's company for the latest account period amounting to Baht 10,187,000 (ten million one hundred and eighty-seven hundred baht) was paid to the audit firm, with breakdown as shown below:

Item.	Paying company	Non-audit service	Service provider	Fee (THB)
1.	Thaioil Public Company Limited	Consultant fee	PricewaterhouseCoopers ABAS Limited	567,000
2.	Thaioil Treasury Center Company Limited	Fee for arranging the Updated Offering Memorandum of the Global Medium Term Notes Program	PricewaterhouseCoopers ABAS Limited	9,300,000
3.	Thaioil Marine Company Limited	Verification of compliance with BOI Investment Promotion Certificate	PricewaterhouseCoopers ABAS Limited	95,000
4.	TOP SPP Company Limited	Verification of compliance with BOI Investment Promotion Certificate	PricewaterhouseCoopers ABAS Limited	65,000
5.	Sak Chaisidhi Company Limited	Verification of compliance with BOI Investment Promotion Certificate	PricewaterhouseCoopers ABAS Limited	65,000
6.	Sapthip Green Energy Company Limited	Verification of compliance with BOI Investment Promotion Certificate	PricewaterhouseCoopers ABAS Limited	95,000
Total non-audit fee				10,187,000





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Professionalism

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Ownership and  
Commitment

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Social  
Responsibility

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Integrity

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Teamwork and  
Collaboration

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Initiative

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Vision Focus

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Excellence  
Striving

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(Form 56-1 One Report)