



# TIME TO **TOP UP**

Annual Report 2022  
(Form 56-1 One Report)

Thai Oil Public Company Limited









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Financial Statements

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





## TIME TO TOP UP, ENHANCING CAPABILITY AND COMPETITIVENESS IN PURSUIT OF A SUSTAINABLE FUTURE

Thaioil and Subsidiaries are aiming to become a resilient, sustainable centenary organization. To achieve such goal, three key business strategies have been formulated: namely, 1) Value Maximization, 2) Value Enhancement, and 3) Value Diversification.

To ensure that the Organization Strategy would effectively succeed, Thaioil and Subsidiaries have devised key principles to drive the strategy execution called 4P: namely, 1) People, 2) Patronage, 3) Partnership, and 4) Platform in parallel with the transformation into the innovative organization. These elements enhance the efficiency of existing operation, as well as provide business opportunity in the future.

With corporate vision of **Empowering Human Life through Sustainable Energy and Chemicals**, Thaioil and Subsidiaries are now ready to step forward to sustainable future amid changing trend through Environment, Social, and Governance (ESG) framework management to fulfill stakeholders' expectations and strengthen the engagement.





# CREATING VALUE

## CREATING VALUE FOR SECURE AND SUSTAINABLE FUTURE

Thaioil and Subsidiaries strive for future success with three key business strategies or 3Vs, by having the Clean Fuel Project (CFP) as key foundation. The CFP will expand refining capacity and increase efficiency, as well as provide the investment opportunity via the possibility to extend the product value chain.



### VALUE MAXIMIZATION

Integrated Crude to Chemicals

Create highest value to every molecule of product along the whole value chain from petroleum to petrochemical products.



### VALUE ENHANCEMENT

Integrated Value Chain Management

Manage the product value chain, expand market, and distribute products to the region.



### VALUE DIVERSIFICATION

Stable Earnings and New S-Curve

Diversify growth and create new value by seeking opportunity in high value business and new business.



CFP construction progress as of January 2023



# EMPOWERING EXECUTION

## KEY ENABLERS FOR BETTER CHANCE OF STRATEGIC SUCCESS

To ensure that the Organization Strategy would effectively succeed, ThaiOil and Subsidiaries have devised key principles to drive the strategy execution called 4P, of which one of the key elements is the development of staff potential and competency to strategically drive both existing and future business.



### PEOPLE

Develop staff potential to ensure the capability to drive forward existing and future business.



### PATRONAGE

Deliver value to fulfill the requirements of customers, partners, investors, shareholders, government agencies and communities.



### PARTNERSHIP

Cooperate with business partners, both domestic and international, to jointly develop new products and business.



### PLATFORM

Maximize the benefit of various platforms either knowledge or digital platform to enhance the efficiency to support the business expansion.



# ENHANCING INNOVATION

## INNOVATION FOR OPERATIONAL EXCELLENCE AND FUTURE BUSINESS OPPORTUNITY

Thaioil and Subsidiaries are ready to adapt to global transformation. Besides supporting the development of innovation within the organization, Thaioil and Subsidiaries also strive to be a technology development and application center to enhance the efficiency of operation and to develop high value products.

## ENHANCE EXISTING BUSINESS FOR EXCELLENCE



### Crude Excellence Center

An integrated excellence center of crude oil knowledge and technology.



### Catalyst&Adsorbent Excellence Center

Catalysts and adsorbents test center.



### AI/Robotic Solution Provider

Development of AI/Robotic systems for safety and operation efficiency.

## ACCELERATE FUTURE GROWTH



### High Value Business/ High Value Product

Investment in high value business and development of high value products to address market requirements (Market Lead) and make use of applicable technology (Technology Push).



### Polymer and Olefins Derivatives

Research and development to become house of formulator and compounder of polymer and olefins derivatives, and to support the expansion to downstream business.



### Sustainability and New Business

Development of new business regarding clean energy such as green hydrogen and biojet, and investment in start-up business to achieve net zero greenhouse gas emission target.



# Financial Highlights

## Total Assets

**444,581**  
Million Baht



## Total Equity

**158,657**  
Million Baht



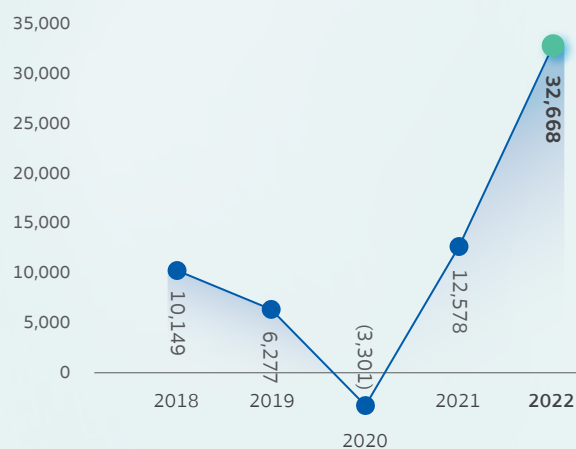
## Sales Revenue

**505,703**  
Million Baht



## Net Profit

**32,668**  
Million Baht





		2022	2021	2020 <sup>(1)</sup>	2019 <sup>(1)</sup>	2018
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### Operating Results

Sales Revenue	Million Baht	505,703	335,827	242,840	361,768	389,042
EBITDA	"	37,187	28,142	(2,056)	14,149	20,239
Net Profit/(Loss)	"	32,668	12,578	(3,301)	6,277	10,149
Basic Earnings/(Loss)	Baht/Share	15.63	6.17	(1.62)	3.08	4.97

### Financial Position

Total Assets	Million Baht	444,581	362,144	306,188	283,445	268,613
Total Liabilities	"	285,923	239,050	186,069	159,521	142,141
Total Equity	"	158,657	123,094	120,118	123,924	126,472

### Financial Ratios

Interest Coverage Ratio	Times	9.6	7.8	(0.5)	4.3	5.1
Current Ratio	"	1.5	2.6	4.0	3.5	4.3
Net Debt to Equity Ratio	"	1.0	1.4	0.7	0.3	-
Return on Equity <sup>(5)</sup>	Percent	23.5	10.7	(2.4)	5.0	8.0
Return on Assets	"	8.2	3.9	(1.0)	2.4	4.2

### Important Information in Capital Market

Annual Average	Baht/Share	53.93	54.38	43.95	68.26	86.88
Daily Closing Stock Price						
Market Capitalization <sup>(3)</sup>	Million Baht	114,752	110,937	89,659	139,252	177,238
Dividend Payment	Baht/Share	3.70 <sup>(2)</sup>	2.60	0.70	1.50	2.65
Dividend Yield <sup>(4)</sup>	Percent	6.9	4.8	1.6	2.2	3.1
Book Value	Baht/Share	69.85	59.25	56.97	58.81	59.66

#### Remarks:

<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> Included the interim dividend for 2022 half-year results at the rate of 2.00 baht per share paid on November 25, 2022, and the remaining dividend of 1.70 baht per share is to be proposed to the 2023 Annual General Meeting of Shareholders for approval.

<sup>(3)</sup> Calculated from the closing price at the end of the year.

<sup>(4)</sup> Calculated from average closing price for the year 2022.

<sup>(5)</sup> Represented from the revised method of calculation based on The Securities and Exchange Commission, Thailand.



# Message from the Board of Directors



Professor Dr. Supot Teachavorasinskun  
Chairman of the Board

Mr. Bandhit Thamprajamchit  
Chief Executive Officer and President



Dear Shareholders,

**Besieged in 2022 by year-round business volatility and challenging circumstances, Thailoil and Subsidiaries demonstrated its business management competency and caliber in pursuit of short-term and long-term corporate goals. This required knowledge, capability and experience of the personnel as well as proactive work plans that can efficiently handle unfavorable situations and business opportunities, in parallel with our commitment to the pursuit of sustainable growth in the future.**

This year, Thailoil and Subsidiaries faced geopolitical conflicts between Russia and Ukraine amid the subsiding COVID-19, which contributed to big jumps in the prices of energy and commodities early in the year. The central banks of many countries therefore had to hike their interest rates to stem inflation, in turn leading to concerns about economic regression. Moreover, the intensive Zero COVID policy of China sapped the world oil price in the second half of the year, which was concluded at the level only slightly higher than that of the previous year.



#### **Integrating Cooperation for the Best Interests**

To sustain extremely volatile situations, Thailoil and Subsidiaries integrated the cooperation of all functions through the long-standing Operational Excellence, ranging from the process of suitable raw material/feedstock procurement, production planning in tune with market demand, to proactive machinery maintenance, which enabled us to keep refining operation uninterrupted and elevated utilization rates at high level. Our product distribution focused on expanding the market to economically vibrant regions as well as penetrating the end user groups with high-value products, curbing operating expenditure. All these actions culminated in Thailoil and Subsidiaries' outstanding performance this year amid such volatile and challenging business environment.



#### **Scaling up to Secure Future Growth**

Apart from business management for optimum goals, Thailoil and Subsidiaries are determined to relentlessly scale up and move forward growth projects under our strategic plans. One of the growth projects include Clean Fuel Project (CFP), currently under construction. This pivotal project will not only scale up our capacity and efficiency, but also serve as a foundation for investment to extend our product value chain. As of year-end 2022, the project had registered more than 89 percent progress. Euro 5 fuel project is also a growth project, which will be ready to operate for commercial and accommodate law enforcement in 2024 and the TOP SPP Expansion project, which should launch in early 2023. Projects under study include the Biojet project and the pursuit of new business opportunities through venture capital and startup investment. Finally, our innovation endeavor through research and development is going strong.





### Enhancing Caliber for Corporate Goals

To support the realization of strategic plans and the achievement of corporate goals, **Thaioil and Subsidiaries ensure readiness in several aspects.** The first aspect is personnel preparation, embracing recruitment, development of caliber and competency, and organizational restructure for present and future businesses. Secondly, the application of IT and digital technology to improve operating efficiency and enhance the competitiveness across the product value chain. Thirdly, financial restructure, includes the sale of a portion of Global Power Synergy Plc shares held by Thaioil, and the issuance and offer for sale of newly issued ordinary shares, which highly attracted numerous shareholders and investors.



### Commitment to Responsibility for Stable and Sustainable Growth

**Thaioil and Subsidiaries strive to duly address the expectations of all stakeholders with our scope of operation that embrace Environment, Social, and Governance (ESG).** For Environment, we have set the goal to achieve Carbon Neutrality by 2050 and Net Zero Greenhouse Gas (GHG) Emission by 2060. This year Thaioil and Subsidiaries undertook assorted projects and activities for GHG reduction: energy efficiency improvement, use of clean energy and efficient machinery, circular economy activities, mangrove reforestation to capture GHG, and so on. For Social, we constantly managed CSR projects, including a project to install a solar power system for Laem Chabang Hospital and the 60<sup>th</sup> Years Thaioil-Nakon Laem Chabang Park. Finally, for Governance, Thaioil and Subsidiaries elevated corporate governance efficiency, transparency, and accountability through Integrated Governance, Risk & Control, and Compliance (GRC).



### Higher Standards for Excellence

Due to the aforementioned activities, **Thaioil and Subsidiaries have constantly garnered recognition from various domestic and international entities in assorted aspects.** For example, Thaioil is selected as the membership of Dow Jones Sustainability Indices (DJSI) for the 10<sup>th</sup> consecutive year, and assessed with top score worldwide for sustainable development in the Oil&Gas Refining and Marketing industry group for the 7<sup>th</sup> consecutive year. Moreover, Thaioil has won SET Awards 2022 in the category of Sustainability Excellence, Sustainability Awards of Honor for the 5<sup>th</sup> consecutive year; Top 20 Publicly Listed Company ranking in ASEAN and Top 3 ranking among domestic listed companies out of the ASEAN CG Scorecard 2021 assessment for the 2<sup>nd</sup> consecutive year; the Thailand Top Company Award 2022 in the category of TOP Management Award; and the Model Organizations for Human Rights Award 2022 entity in the category of outstanding major business entity.

The Board of Directors, management, and all employees are grateful to all shareholders for their excellent support to our businesses. With strong foundation with a firm commitment to integrating knowledge, experience, and proficiency of all our elements in pursuit of our strategic plans, we are convinced that Thaioil and Subsidiaries are poised to handle new challenges to attain our goals and vision of Empowering Human Life through Sustainable Energy and Chemicals in the best and sustainable interests of shareholders and all stakeholders.







# Audit Committee Report



**Police General Aek Angsanant**

Chairman of the Audit Committee

## Dear Shareholders,

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

The AC independently executed Board-assigned and charter duties, which conform to the requirements and best practices for audit committees of the SEC and SET. In 2022, the AC held ten meetings with perfect attendance by all directors, including consultation with management, the head of Corporate Internal Audit, the internal auditor, and the external auditor. In addition, the AC held one non-executive meeting with the external auditor for open consultation on the external auditor's work, its opinions, issues arising from the financial report review and audit, as well as its collaboration with the AC and Corporate Internal Audit Department. Each quarter, the AC filed a performance report to the Board.

The performance highlights of this year are as follows:

### 1. Financial Statements:

The AC reviewed financial reports, including quarterly and annual separate and consolidated financial data. It also examined key audit matters, appropriateness of the account recording system, and disclosure of other key information. To this end, the committee reviewed the credibility of estimated figures, assumptions requiring managements' discretion, disclosure of key transactions potentially affecting financial reports, while obtaining clarification from the external auditor and management to ensure that financial report preparation was accurately, credibly undertaken and useful for the users. The auditor has reviewed and audited the financial report, and provided unqualified opinions.

### 2. Connected Transactions:

Having reviewed connected transactions or those posing potential conflicts of interest with those of Thailoil and Subsidiaries under the SET's regulations and other related laws and regulations, the AC concluded that Thailoil and Subsidiaries had observed regular business practices, fairness, and sensibility taking into account the best benefits of Thailoil and its shareholders. Such transactions were also promptly disclosed to SET.



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

The AC reviewed the efficiency and effectiveness of corporate governance while giving support for business in pursuit of sustainability. The committee also reviewed the appropriateness of actions taken following self-assessment in preparation for the renewal of membership of the Thai Private Sector Collective Action Against Corruption (CAC) to ensure compliance with the corporate governance code. This reflected Thail's strong will to fight against corruption. In addition to reviewing compliance with current laws and regulations, the committee encouraged the preparation for and closely monitored the upcoming laws that may impact Thail's businesses. The AC also reviewed risk management and mitigation plans to ensure their efficiency and effectiveness, with close monitoring of key risk management outcomes. The committee made observations and emphasized the readiness of the workforce in support of business growth and rapid change. Having examined the internal audit report, it endorsed the sufficiency of the internal control system as required by the SEC to ensure that Thail commands appropriate and sufficient internal control.

### 4. Internal Audit:

The AC approved strategic plans, annual and long-term audit plans, execution of plans, and audit outcomes while suggesting and monitoring improvements of significant matters together as well as reviewing internal audit independence. The committee constantly valued Corporate Internal Audit Department's manpower preparation and personnel recruitment and development to ensure personnel's competency, capability, and constantly efficient and effective performance. The committee advocated auditors' achievement of certificates for greater professionalism while encouraging the development and enhancement of professional internal audit operations that could sustainably create value to the organization. The committee stressed continuous application of

information technology (IT) to the internal audit process and upheld internal audit assessment in accordance with international professional standards. Finally, the committee assessed annual performance of the Vice President-Corporate Internal Audit.

### 5. Proposal of 2023 External Auditor and Audit Fee:

In selecting the external auditor, the AC considered by taking into account performance records, experience, independence, audit fee, and compliance with the SEC's announcements, and nominated EY Office Limited and their proposed audit fee for the Board's endorsement and submission to the 2023 AGM for shareholders' approval.

In conclusion, this year the AC executed its charter duties and responsibilities with diverse expertise, prudence, and independence while providing creative views and advice for equal benefit of all stakeholders. The AC concluded that Thail and Subsidiaries had valued efficient and effective business conduct, prepared credible and material financial reports in line with financial reporting standards, and sufficiently provide disclosure of connected transactions with potential conflicts of interest. Thail and Subsidiaries also commanded sound corporate governance, as well as suitable and adequate risk management and internal control process, in full compliance with applicable laws and regulations.

February 8, 2023

On behalf of the Audit Committee



(Police General Aek Angsanant)  
Chairman of the Audit Committee  
Thai Oil Public Company Limited



# Risk Management Committee Report



**Dr. Pailin Chuchottaworn**

Chairman of  
the Risk Management Committee

## Dear Shareholders,

The Board of Directors (the Board) appointed the Risk Management Committee (RMC), which is made up of four members who are knowledgeable, competent, and experienced directors with expertise related to Thaioil and Subsidiaries' businesses. The RMC is chaired by Dr. Pailin Chuchottaworn, with three members, namely Dr. Buranin Rattanasombat, Ms. Pannalin Mahawongtikul, and Mr. Noppadol Pinsupa. Effective on January 1, 2023, the Board appointed Mr. Bandhit Thamprajamchit as a member, replacing Mr. Noppadol, who resigned. The committee is responsible for supporting directors in supervising corporate risk management to ensure the achievement of business goals and enhance confidence and credibility of Thaioil and Subsidiaries among investors and stakeholders.

The RMC defines and reviews the framework of corporate risk management, policies and processes under the Risk Management Committee Charter, and suggests guidelines for appropriate risk management for efficient business operations consistent with strategic directions and business plans. The committee constantly and efficiently supports and improves the risk management at all levels throughout the organization by observing international standards, driving risk management to become a corporate culture.

The committee constantly monitored the outcomes of corporate risk management and project risks. In 2022, the RMC held a total of five meetings, where all directors attended all meetings. At the first meeting, Dr. Buranin served as Chairman, while the rest of the meetings, the committee appointed Dr. Pailin as Chairman of the RMC. In conclusion, the committee has fulfilled its duties summarized as follows:

1. Reviewed the Risk Appetite Statement and guidelines for risk management in various aspects, including strategic and business, commercial, financial, operational, and project management risks to be in line with shifting situations and business factors.
2. Supervised, followed up, and reviewed plans and recommended guidelines for corporate risk management, mitigation plans, 2022 key risk indicators, and key projects on a quarterly basis, to ensure that effective and appropriate risk management is implemented within risk appetite statement, and consistent with the risk management policy. The committee also reported the findings of corporate risk management and the RMC performance to the Board on a regular basis.



3. Reviewed and recommended corporate risks, mitigation plans, and 2023 key risk indicators so that Thailoil and Subsidiaries could operate its business efficiently and in line with strategic directions, business plans, and shifting business environments.
4. Supervised, monitored, and advised on hedging on a quarterly basis to ensure efficient operation and appropriate risk mitigation.
5. Supported risk management at all levels throughout the organization, as well as provided advice on factors or incidents deemed significant and possibly affecting Thailoil and Subsidiaries; for example, the geopolitical crisis between Russia and Ukraine, cyber-attacks by phishing e-Mails, strategic plans for long-term water supply for production processes, risk management in case of a flood in Thailoil's operating areas, and construction technologies of CFP.

In 2022, the RMC concluded that Thailoil and Subsidiaries had developed an extensive corporate risk management system embracing all aspects of risks, and had commanded constant risk management practices to cope with prevailing circumstances. The RMC's meetings were regularly organized to promptly review key and urgent risks, resulting in Thailoil and Subsidiaries' effective risk management. Thailoil and Subsidiaries could effectively and suitably manage key corporate risks within the risk appetite statement.

December 20, 2022

On behalf of the Risk Management Committee



(Dr. Pailin Chuchottaworn)

Chairman of the Risk Management 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, consisting of 3 directors, is chaired by Air Chief Marshal Suttipong Inseeyong (independent director), with Associate Professor Dr. Pasu Decharin (independent director) and Mr. Terdkiat Prommool serving as members.

The NRC recruits qualified people under Thail's process and criteria for nomination as directors and the Chief Executive Officer and President. The committee also selects directors for Board Committees and reviews directors' remuneration models and criteria, before proposing for the Board's consideration and the Annual General Meeting of Shareholders (AGM) for approval respectively and as required by law.

In 2022, the NRC executed all its charter duties, with its four meetings fully attended by all incumbent members (meeting attendance records shown on page 97).

Below are the highlights of the NRC's execution in 2022:

## Nomination

The NRC proceeded strictly with the prescribed process and criteria indicated in the Corporate Governance and Code of Conduct Manual, to nominate qualified persons for the Board of Directors' or shareholders' meeting to appoint as required by law. To this end, the NRC considered the composition and qualifications of the Board, both overall and individually, to match the size, type, complexity, and diversity of Thail's businesses. The NRC also examined personal qualifications which include education, expertise, skills, experience, and specialization related to Thail's businesses as well as personal independence as required by applicable laws and Thail's criteria. The committee's activities are described below:

1. Selected and nominated qualified persons as directors in replacement of directors with term completion in 2022 and proposed the list to the Board and the AGM. The five directors nominated for another term were Dr. Buranin Rattanasombat, General Kukiat Srinaka, Mr. Suchat Ramarch, Mr. Plakorn Wanglee, and Mr. Terdkiat Prommool.



2. Recruited and nominated directors to replace Mr. Wirat Uanarumit, who resigned due to reaching the retirement. The NRC agreed to propose for the Board's approval to appoint Mr. Noppadol Pinsupa as director and acting Chief Executive Officer and President during the recruitment and nomination of the next Chief Executive Officer and President. Subsequently, the NRC nominated Mr. Bandhit Thamprajamchit to the position, replacing Mr. Noppadol, effective January 1, 2023 onwards. Mr. Bandhit commands suitable qualifications without prohibited qualifications by law, and possesses skills, experience, and expertise in several aspects related to and beneficial for driving Thail's business operations towards its vision.
3. Selected and nominated directors for Board committee; namely, Dr. Sompop Pattanariyankool to the Corporate Governance and Sustainability Committee, replacing Dr. Prasert Sinsukprasert, who resigned from the Board.
4. Organized orientation and provided useful documents to the newly appointed director: Mr. Noppadol Pinsupa.
5. Encouraged and supported Thail to create opportunity for shareholders to nominate candidates for directors before proposing to the 2023 AGM during September 29 to December 31, 2022.

### Remuneration

The NRC defined directors' remuneration under Thail's criteria, based on 1) company performance and business complexity; 2) Board performance; 3) director responsibilities; and 4) comparison with peer companies in the same industry. The NRC's performance is elaborated as follows:

1. Identified remuneration payment rate and criteria before proposing for the approval of the 2022 AGM. The survey of comparison with leading companies of similar industries revealed that Thail's remuneration payment rate and structure remained appropriate. Therefore, the same remuneration rate as that of 2021 had been proposed and was approved by the 2022 AGM.
2. Approved the 2021 performance assessment of Mr. Wirat Uanarumit, Chief Executive Officer and President, as well as annual salary adjustment (merit) and bonus, and tabled it for the Board's consideration.
3. Endorsed the 2022 criteria for performance assessment and the criteria for annual salary adjustment (merit) for Thail's Chief Executive Officer and President for the Board's consideration.

January 23, 2023

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



# Corporate Governance and Sustainability Committee Report



**Police General Aek Angsanant**

Chairman of the Corporate Governance and Sustainability Committee

## Dear Shareholders,

Thai Oil Plc is committed to operating a business with adherence to the Corporate Governance (CG) code and Code of Conduct by prioritizing to sustainable development and embracing Environmental, Social, and Governance (ESG). The Board of Directors (the Board) has therefore appointed the Corporate Governance and Sustainability Committee (CGC) to support the Board in formulating policies and guidelines in line with the CG and sustainability code of the international standard by which listed companies must abide. The committee is chaired by Police General Aek Angsanant (independent director), with General Kukiat Srinaka (independent director) and Dr. Sompop Pattanariyankool as members.

In 2022 the CGC held four meetings with full attendance by all members. The committee performed all its duties under the charter and those assigned by the Board, with regular reports of outcomes submitted to the Board as summarized below.

### 1. Development of CG Policy and Guidelines

The CG Policy, Anti-Fraud Policy, CG and Code of Conduct Manual, and Charter of the CGC were reviewed to ensure that Thailoil's policies and guidelines are up to date and comply with criteria, announcements,

and corporate governance practices indicated by the Securities and Exchange Commission, Thailand (SEC) and the Stock Exchange of Thailand (SET) as well as CG and sustainability assessment criteria of recognized institutes.

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

- >> Preparing information and references to support Thailoil's self-assessment in the third-round recertification of Thai Private Sector Collective Action Against Corruption (CAC Recertification).
- >> Revising criteria and channels for shareholders to propose the agenda of Annual General Meeting of Shareholders (AGM) and nominate qualified candidates as Thailoil's directors. Reviewing the arrangement plan of the 2022 AGM and devising measures to prevent the spread of COVID-19 in line with public hygiene laws and CG guidelines as well as the AGM Checklists of the Thai Investors Association. The effort earned Thailoil full 100 scores for seven consecutive years.
- >> Revising the 2022 performance assessment form of the Board and its 2021 performance assessment results.



- >> Devising a work plan on the Integrated Governance, Risk & Control, and Compliance (GRC).
- >> Organizing activities and arranging communication to stress CG as part of the corporate culture, for example, PTT Group CG Day 2022, GRC Quiz Challenge, and participation in the 2022 National Anti-Corruption Day.
- >> Implementing CG when dealing with various stakeholder groups, for example, providing material information to shareholders and investors on a regular basis, problem-solving, knowledge-sharing, arranging service level agreements (SLAs) with customers, using digital tools in bidding process for suppliers' convenience, designing a suitable organizational structure and workforce, and raising employees' caliber and their work-life balance, among others.

### 3. Sustainable Development (SD)

- >> Devising a strategic plan for moving towards Carbon Neutrality by 2050 and Net Zero Greenhouse Gas Emissions by 2060 while designing a work plan and guidelines for Greenhouse Gas reduction with appropriate technology, such as Carbon Capture and Storage (CCS), change in fuel types, adjustment of production process, and carbon offsetting by various methods, including mangrove planting.
- >> Improving operations by observing sustainable development guidelines and principles, such as the ESG risk assessment of strategic partners, analysis into possible long-term impacts caused by measures to prevent climate change, and potential development for employees who can produce visible quantitative benefit to Thailoil.
- >> Providing information about sustainable development actions to nurture the corporate culture, assessing awareness and understanding of sustainability, making sustainability work known to outsiders through the

Integrated Report, and sharing knowledge at various seminars.

### 4. Corporate Social Responsibility (CSR)

- >> Initiating projects and undertaking activities to enhance the quality of life of people residing in the refinery neighborhood, which cover education, public health, religion, culture, tradition, community economy support, and environmental conservation. These activities include the development of the **"60<sup>th</sup> Years Thailoil-Nakon Laem Chabang Park"** to commemorate Thailoil's 60<sup>th</sup> anniversary, career promotion in the **"Products from Communities Neighboring Thailoil and Subsidiaries"** project, development of youths' sports skills by professional coaches under the **"Thailoil Sculpturing Youths' Dreams to Professional Athletes"** project, providing knowledge about the **Circular Economy** to children living in the community around refinery through a systematic waste management system held at local schools in a project called the **"Thailoil CE School Model"**. Continuous efforts in these CSR activities earned Thailoil as high as 95.85 percent in a survey on community engagement carried out by an independent consultant.
- >> Carrying out social development activities at the national level by applying Thailoil's knowledge, experience, and expertise with a focus on optimal consumption of natural resources for sustainable development. These projects include the **"Rooftop Solar Power System Installation"** project held at a local hospital, the **"Mangrove Reforestation"** project to benefit from carbon credit, the **"Smart Farming"** project, in which innovation and technology were applied to develop a smart farming model with a novel way of producing farm products, and promotion of a volunteer culture through the **"You Initiate... We Fulfill Volunteer Year 2"** project, in which employee activities were turned into cash contribution for various foundations.



With a strong determination to operate the business with CG, sustainable development, and social responsibility throughout 2022, Thailoil was widely recognized at national and international levels. This is evident in our being selected as a Dow Jones Sustainability Indices (DJSI) member for the 10<sup>th</sup> consecutive year, earning the world's highest score in the Oil&Gas Refining and Marketing Industry group for the 7<sup>th</sup> year as assessed by S&P Global; being recognized as one of top 20 Publicly Listed Companies in ASEAN and one of the top three Listed Companies in Thailand as assessed by the ASEAN CG Scorecard 2021 for the 2<sup>nd</sup> consecutive year; being classified as "Excellent" (90-100 scores) following Corporate Governance Report of Thai Listed Companies (CGR) for 2022, the highest level for 14 years in a row; and winning the Sustainability Awards of Honor in the Sustainability Excellence category at the SET Awards 2022 for the 5<sup>th</sup> consecutive year.

These achievements are a testament to Thailoil's attempts to promote, develop, and keep its operations in compliance with the CG code in parallel with sustainable development and social responsibility, recognized as part of its business missions to support continuous growth in a sustainable manner, thus earning trust from stakeholders and well accepted in the international arena.

February 1, 2023

On behalf of the Corporate Governance  
and Sustainability Committee

A handwritten signature in blue ink, reading "Aek Angsanant".

(Police General Aek Angsanant)  
Chairman of the Corporate Governance  
and Sustainability Committee  
Thai Oil Public Company Limited



# Thaioil and Subsidiaries' Vision, Mission, and Strategies



## Vision

Empowering Human Life through Sustainable Energy and Chemicals

## 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

For over 61 years, Thaioil and Subsidiaries have relentlessly refined knowledge and long-accumulated experience to uphold an organization full of potential for production, marketing, and management in the energy and chemical industries in parallel with the provision of a sustainable quality of life for Thais as well as the determination to inherit business resolutions, in pursuit of a sustainable centenary entity.

In 2022, Thaioil and Subsidiaries continued to focus on such pursuit to achieve the vision and mission.





Thaioil and Subsidiaries have set strategic goals to become a robust energy and chemical company while providing sustainable returns and an improved quality of life to all stakeholders through three key business strategies and approaches (3Vs) described below:

01



## Value Maximization:

### Integrated Crude to Chemicals

**Value Maximization: Integrated Crude to Chemicals**-by integrating the value chains of current businesses while pursuing investment opportunity in petrochemical and high value product businesses to supplement value as well as operation flexibility to ultimately raise competitiveness. To this end, Thaioil will optimize existing production platforms to satisfy customers' requirements. This is divided into four business units as follows:

**Refinery:** The core business and production platform of petrochemical feedstock with investment in the Clean Fuel Project (CFP) to expand capacity and diversity of crude intake while adding value to products. This enhances higher operation flexibility and long-term competitiveness, which contribute to national energy security during the looming energy transition.

**Aromatics:** An extension of the refining business to satisfy regional aromatics demand.

**Olefin:** An extension of the refining business through investment in PT Chandra Asri Petrochemical Tbk (CAP) in Indonesia, a joint venture with a business partner, to penetrate the regional market for robust growth.

**High Value Product (HVP):** Product development through value chain extension and joint investment with business partners to create HVPs to meet customers' demand.

02



## Value Enhancement:

### Integrated Value Chain Management

**Value Enhancement: Integrated Value Chain Management**-by integrating operations and value chain management within Thaioil and Subsidiaries to enhance competitiveness and achieve a sustainable business through developing and distributing products to the regional market. In the meantime, Thaioil will pursue sustainable investment opportunities, as steered by the following four strategies:

**Securing Heavy Crude Supply** for greater production flexibility and competitiveness

**Geographic Expansion** with a focus on countries with economic vibrancy, namely 1) Thailand and countries in the Indochina region, including Laos, Cambodia, Myanmar, and Vietnam, 2) Indonesia, and 3) India

**Product Portfolio Expansion** by raising sale of HVPs and penetrating the bio-product, chemical products, and green energy markets.

**Customer Portfolio Expansion** by expanding product sale direct to end users.



03



## Value Diversifications:

Stable Earning and  
New S-Curve

**Value Diversification**-by diversifying the investment portfolio for sustainable returns while seeking New S-Curve business opportunities compatible with future business trends:

**High Value Business (HVB)** by seeking collaboration with business partners, focusing on high-growth businesses in line with Thailoil and Subsidiaries' strategies and competitiveness, such as production of disinfectants and surfactants.

**Other New S-Curve businesses** by adding Thailoil and Subsidiaries' investment portfolio resilience matching industrial trends and energy transition through 1) joint ventures, mergers and acquisitions in the bio business and new energy and mobility business, and 2) investment through corporate venture capital (CVC) in sustainability technology, hydrocarbon disruption technology, and manufacturing technology.

**Power business** with a focus on power generation from renewables to raise power supply security and secure stable income for Thailoil and Subsidiaries.

To efficiently realize these strategies, Thailoil and Subsidiaries have devised guidelines of **4Ps for Effective Execution**, namely 1) **People**-by grooming the staff's potential to drive current and future businesses, 2) **Patronage**-by delivering value and addressing the requirements of customers, partners, investors, shareholders, the government, and communities, 3) **Partnership**-by forging collaboration with allies, both domestic and international, for joint product and business development, and 4) **Platform**-by optimizing current platforms which include the current business platform, knowledge platform, and digital platform to enhance the efficiency in support of business growth and expansion.

Thailoil and Subsidiaries, in the meantime, stay determined to grow sustainable businesses and maintain the position as an international leader in sustainability, valuing stewardship of the environment, social, and governance (ESG) in parallel with comprehensive consideration for stakeholders to attain the goal of becoming a truly sustainable organization.



# 32 Awards and Certificates of 2022 Achievement



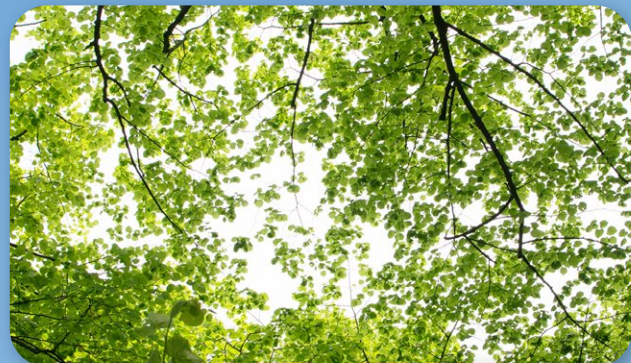
## 4 Operation Awards

1. PTT Group Operation Excellence 2022 Award for Best Practices, Gold Level and Silver Level
2. Honorary award for excellent environmental and safety governance for Sak Chaisidhi Co., Ltd. from the Industrial Estate Authority of Thailand
3. Safety Management System for Chemical Laboratories Certification (TIS 2677-1) from the Management System Certification Institute (Thailand) without any significant deficiency
4. Accreditation for the renewal and expansion of the management system scope for testing and calibration laboratories (ISO/IEC 17025) from the Management System Certification Institute (Thailand) without any significant deficiency



## 3 Finance and Investment Awards

1. 4<sup>th</sup> consecutive year of the Most Consistent Dividend Policy Award and the Most Organized Investor Relations Award from the Alpha Southeast Asia magazine
2. International Business Magazine Awards 2022 for Best Investor Relations Company Thailand 2022 (Energy Sector) from the International Business magazine



## 9 Sustainability Awards

1. 10<sup>th</sup> consecutive year of membership of Dow Jones Sustainability Indices (DJSI) in the Oil&Gas Refining and Marketing Industry Group from an assessment of Sustainability Indices by S&P Global in 2022
2. 7<sup>th</sup> year of Sustainability Assessment, ranked the world's no.1 in the Oil&Gas Refining and Marketing Industry Group by the 2022 DJSI
3. Silver Class Sustainability Assessment in the Oil&Gas Refining and Marketing Industry Group from the S&P Global Sustainability Award 2022
4. 10<sup>th</sup> consecutive year of the Strongest Commitment to Sustainable Energy in Southeast Asia Award, presented by the Alpha Southeast Asia magazine
5. 8<sup>th</sup> consecutive year of Listed Company's Sustainable Stock from Thailand Sustainability Investment Awards 2022
6. 5<sup>th</sup> consecutive year of SET Award 2022 in the Sustainability Excellence Group under the Sustainability Award of Honor category, presented by the Stock Exchange of Thailand and the Money and Banking magazine
7. 4<sup>th</sup> consecutive year of a Sustainability Disclosure Award 2022, an honorary award for disclosing sustainability information, presented by Thaipat Institute
8. 2<sup>nd</sup> consecutive year of Excellence Award from Low-Carbon and Sustainable Business Ranking 2022, attested by Thailand Greenhouse Gas Management Organization (Public Organization)
9. 2<sup>nd</sup> consecutive year of an Honorary Award for Low Emission Support Scheme (LESS) certificate as a role model organization for greenhouse gas reduction, presented by the Ministry of Natural Resources and Environment



## 7 Management Awards

1. Best CFO in Resources category, presented at the Investment Analyst Association (IAA) Awards for Listed Companies 2021
2. ATD Excellence in Practice Award for Integrated Talent Management, presented by the Association for Talent Development, USA
3. Thai Award for Excellent Organization-Sustainable Energy and Chemicals 2022, presented by the Thai Society Foundation
4. 3<sup>rd</sup> consecutive year of Human Rights Award 2022 for Model Organization in large business, presented by the Rights and Liberties Protection Department
5. 2<sup>nd</sup> consecutive year of the Thailand Top Company Awards 2022, Top Management Award category
6. Role Model Award in Business Sector 2022, Energy and Utilities category, presented by the Foundation of Science and Technology Council of Thailand (FSTT)
7. 7<sup>th</sup> consecutive year of a top score of 100 on the Annual General Meeting (AGM) Checklist 2022 by Thai Investors Association



## 6 Corporate Governance Awards

1. 2<sup>nd</sup> consecutive year of ASEAN Top 20 Publicly Listed Companies (PLCs) and Country Top 3 PLCs (Thailand), including ASEAN Asset Class Publicly Listed Companies Award under the ASEAN Corporate Governance Scorecard Project
2. 3<sup>rd</sup> consecutive year of the Strongest Adherence to Corporate Governance, presented by Alpha Southeast Asia magazine
3. Renewal of Thai Private Sector Collective Action against Corruption (CAC) Membership
4. 14<sup>th</sup> consecutive year of excellent rating of Corporate Governance Report of Thai Listed Companies for 2022 (CGR), with the highest score for the 4<sup>th</sup> consecutive year



## 3 Social Responsibility Awards

1. 14<sup>th</sup> consecutive year of CSR-DIW Continuous Award, from the Department of Industrial Works, Ministry of Industry
2. Platinum Award for Responsible Care for Sak Chaisidhi Co., Ltd. from Responsible Care Management Committee of Thailand, Chemical Industry Group of Federation of Thai Industries
3. Eco Factory Certificate for Sak Chaisidhi Co., Ltd., presented by Federation of Thai Industries and Industrial Estate Authority of Thailand







## Summary of Business Achievements in 2022

Challenges and business uncertainties were overwhelming throughout the year 2022: geopolitical tensions between Russia and Ukraine, the U.S. and China conflict over Taiwan significantly affecting technology commodities supply chain, and China's Zero-COVID policy. These uncertainties created significant impacts and caused the fluctuation of crude and commodity price and petroleum product demand, driving up inflationary pressure worldwide. This prompted central banks of many countries to raise their interest rates, which led to global recession.



Thanks to a strong organizational culture, a unified committed workforce pursuing operation excellence, prioritization of work plans and proactive execution, continuous development and improvement, risk management and resilience for operation to handle fluctuation and seize the business opportunity during favorable situations, while taking into account environment, society, and stakeholders. Thailoil and Subsidiaries posted the net profit of THB 32,668 million which included the profit from the partial disposal of investment in Global Power Synergy Plc, totaling THB 12,880 million. The key matters and achievements were summarized as follows:



### 1. Profit Maximization:

Thailoil and Subsidiaries has intergratedly managed in pursuit of Operation Excellence, Commercial Excellence, and Cost Management with emphases on work safety, productivity improvement, and profit maximization in parallel with operating cost reduction. As a result, the business performance of Thailoil and Subsidiaries in 2022 incresed Significantly with the following highlights:

**1.1 Outstanding Safety Records:** With a Total Recordable Case Frequency (TRCF) of 0.32 case per million man-hours, the best safety record in PTT Group, and was ranked by Oil and Gas UK Benchmarking in the top 10 of the top quartile of the oil and gas industry worldwide. This record was considered outstanding despite large projects on process of construction during 2022, including Clean Fuel Project (CFP) and TOP SPP Co., Ltd. (TOP SPP) Expansion Project, as well as multiple major turnarounds of several units.

### 1.2 Integrated Operation and Commercial Excellence:

The operation efficiency was higher due to integrated operation and management across the business value chain to capture market opportunities during the recovery of the market and domestic demand. The higher efficiency was illustrated in the 100 percent average operation availability and 107 percent utilization rate, sustaining Thailoil and Subsidiaries as the national leading fuel producer, with a domestic market share at 30 percent of domestic demand for petroleum products, and the proportion of domestic sales is 85 percent of the production capacities. In addition, Thailoil and Subsidiaries prioritized the strategic management focusing on market penetration to Southeast Asia, expansion of customer base for new customers, and strengthening relationship with existing customers, resulting in customer engagement up to 95 percent.

**1.3 Productivity Improvement:** With extraordinary efforts from our workforce with creativity for maximizing profits through margin improvement and cost management, the short-term performance resulted in maximum profit and productivity improvement:

>> **Margin Improvement:** Thailoil's margin improvement was achieved through systematic, effective management and teamwork. These include 1) feedstock optimization by increasing the portion of high-sulfur content crude and product volume to meet market demand, 2) on-time and on-budget major turnaround management, 3) proactive product distribution in line with prevailing market demand for optimum profits, such as distribution of diesel to power plants to substitute high-cost natural gas, thus capturing more customers in the region with high growth economies, promoting sales directly to end users and High Value Products (HVP) for higher



profitability, and 4) energy optimization: increasing energy efficiency. All these practices significantly helped Thailoil and Subsidiaries generate additional gross integrated margin THB 6,346 million from the corporate plan, equivalent to an additional 1.65 USD per barrel.

- >> **Cost Management:** Despite the inflation rise causing production costs, operating expenses, and commodity prices to soar, Thailoil and Subsidiaries were able to constantly reduce the operating cost in 2022 by THB 1,069 million or 0.28 USD per barrel, which exceeded the planned target. This was achieved by various initiatives, including maintenance planning and control excellence, procurement management review, catalyst life optimization, reduction of insurance premiums under PTT Group's insurance package with more bargaining power, offensive risk management on exchange rates (FX management) with cross currency swaps, reduction of financial costs with various financial instruments, and effective tax planning.



## 2. Long-term Strategic Execution:

Thailoil and Subsidiaries have relentlessly operated against strategies throughout 2022 to strive for the targeted vision, short-medium-long term strategic objectives, and consistent as well as sustainable growth. To achieve such targets, strategies executed in 2022 were capital investing at the most appropriate time to increase competitive advantage, leveraging strengths from our refining capability to new businesses in the value chain to cope with market and business volatility as well as new challenges, and continual pursuit of more business opportunities that could become our

future core business. The strategy execution was pursued under 3Vs: Value Maximization: Integrated Crude to Chemicals, Value Enhancement: Integrated Value Chain Management, and Value Diversifications. Thailoil and Subsidiaries' completed-as-planned projects in 2022 are as follows:

- >> **Euro V Standard Production Project** was aimed to address the government policy to change fuel standard to Euro V. The enforcement of which is on January 1, 2024 onwards. The project was completed at the end of 2022.
- >> **Product sales in Indonesia** in which was one of the targeted country with high-growth economies. The product supply was from PT Chandra Asri Petrochemical Tbk (CAP) and Sak Chaisidhi Co., Ltd.
- >> **High value product** was developed and sold to address the customers' needs. Generating revenue of approximately THB 332 million, the seven high value products included the F44 aviation fuel, high-purity toluene, cyclohexane (99.9%), thinner blending, 150 light fuel oil (LFO), and hydrocarbon solvents, such as Hexane TPC and TOPSol LSP.
- >> **Rebranding** from TOP Solvent Co., Ltd to TOPNEXT International Co., Ltd, aimed for distribution of product varieties especially products from Thailoil and Subsidiaries and from potential business allies to be sold in high-growth regional economies, including Vietnam, Indonesia, and India.
- >> **Biojet** was studied, developed, and invested for production under the collaboration agreement with PTT Group in November 2022.
- >> **The feasibility study on Carbon Capture and Storage** was executed under the collaboration agreement with PTT Group in June 2022.



- >> **Investment through Corporate Venture Capital** was one of the interesting mechanisms to seek a new business that could strengthen competitiveness under the strategic plan. In 2022, Thaioil and Subsidiaries invested in two start-up companies: namely, 1) Versogen: the company developing electrolyzer technology to produce green hydrogen from hydropower and renewable energy sources, and 2) Increbio; the company developing technology to produce the world's first sugarless fruit juice.
- >> **R&D Innovation** was created for commercialization benefit. Four research and development projects were scheduled for commercialization: 1) emulsified asphalt, 2) ceramic coating to increase efficiency of heat exchanger in furnaces, 3) low PAHs light residual aromatic extract (LRAE), and 4) TOPSOL 200 hydrocarbon solvent.



### 3. Key Enablers & Sustainability

**3.1 Financial Management:** Thaioil and Subsidiaries successfully restructured the following recapitalization plan and be financially prepared to support future growth. This included partially disposal of investment in GPSC and raising capitals by equity offering which greatly attracted investment from shareholders and investors at a 130 percent subscription rate, largely by institutional investors at 14 times over the allotment. Thaioil also succeeded in issuing debenture and Baht-denominated loans with reasonable coupon rates, acquiring sustainability-linked loans, and taking parts in environmental conservation savings program. All of which directly reflected Thaioil's commitment to sustainability. Moreover, proactive corporate communication with credit rating agencies and strict financial

discipline were proactively pursued to maintain the corporate financial credibility in the international market. These led to MOODY's perception and rating improvement from 'Negative' to 'Stable', with Baa3 credibility explicit in the Investment Grade.

### 3.2 Human Resource and Organizational Management:

Valuing human resource and organizational proactive management to drive existing business and support future business, Thaioil and Subsidiaries executed the following three major activities: 1) recruiting qualified and suitable personnel, strategic workforce planning to meet specific business needs, and maintain corporate competitiveness on manpower at P91 percentile compared with industry peers, 2) systematically developing workforce competency under the Learning Organization master plan, and 3) enhancing good work experience by integrating technology into work process to better quality of life and nurture employees' satisfaction and engagement.

**3.3 Digital Management:** Thaioil and Subsidiaries have laid digital technologies as the foundation of business operation to support future business growth. Such technologies were expected to enhance production efficiency and competitiveness across the value chain, ranging from procurement of crude oil, production processes, to sales and distribution of products under the Value Chain Digital Platform (VCDP). The success of this approach has substantially promoted the enterprise as a data-driven organization and generated many more digital-driven management programs, such as the SAP BW/4 HANA data collection system, efficient Cloud-based databases, and the Cyber Resilience program under the Zero Trust concept to protect critical data from cyber-attacks.



**3.4 Sustainable Management:** Thailoil and Subsidiaries' sustainability strategy covering Environment, Social, and Governance (ESG), and stakeholder management to handle the changes of variable factors affecting industry and to ensure sustainable operations. These efforts have constantly been accepted and reflected on membership of Dow Jones Sustainability Indices (DJSI) for 10 years consecutively in 2022, with special recognition as the No. 1 ranking in the global Oil & Gas Refining and Marketing Industry Group for the 7<sup>th</sup> year. The operation was detailed as follows:

**1) Enhance Environment:** Thailoil and Subsidiaries have designed the pathway to the goal of carbon neutrality by 2050 and the net zero greenhouse gas (GHG) emission goal by 2060. During 2022, Thailoil successfully improved energy efficiency through 17 initiatives, leading to energy saving of up to 138,472.93 gigajoules, equivalent to 16,758.90 tons carbon dioxide (tCO<sub>2</sub>e) of GHG reduction. Thailoil also participated in several GHG emission reduction programs launched by public sectors to confirm the standpoint of support for Thailoil and Subsidiaries' as well as Thailand's target of GHG emission reduction.

The initiatives are; for example, a 239-MW cogeneration power plant operated by TOP SPP, which was assessed and certified by the Thailand Voluntary Emission Reduction Program (T-VER) at 356,863 tCO<sub>2</sub>e, under the category of international-standard use of clean fuels and highly-efficient technology for efficient power generation. The total carbon credit for the total project life-cycle between April 1, 2018 and March 31, 2022 exceeded 1,310,492 tCO<sub>2</sub>e.

Low Emission Supporting Scheme (LESS) is a program initiated to select energy efficiency

projects for energy conservation. Five projects were selected: namely, Sour Water Stripper Unit-2/5 (to increase energy efficiency to eliminate hydrogen sulfide and ammonia with hot stream), Thai Lube Base Plc's energy efficiency improvement of Propane Deasphalting Unit or and Solvent Dewaxing Unit by fuel oil (Hot LR), and the energy efficiency improvement of the C-58504 distillation tower of the Detal-Plus Unit, operated by LABIX Co., Ltd. The total GHG reduction capacity under LESS exceeded 2,457.63 tCO<sub>2</sub>e.

In addition, several activities under the TOP CE WE GO initiative were designed to promote the Circular Economy (CE) concept. The scope and objective of the concept are extensive but focus on renewable resources, proper treatment of waste from production and production support processes, and joint operation with external entities, including PTT Group and state authorities for a reforestation program. During 2022, Thailoil and Subsidiaries were allocated 56.22 rai by the Department of Marine and Coastal Resources for mangrove reforestation.

**2) Engage Society:** With an obligation to conduct all activities for the benefit and cordial relationship with all communities surrounding operating areas and society, several programs have been continuously supported, leading us to constantly maintain our community engagement evaluation at remarkable levels. The projects initiated and executed by Thailoil and Subsidiaries are the construction and installation of an 80.24-kw solar power generation system for Laem Chabang Hospital, donation of the 60<sup>th</sup> Years Thailoil-Nakon Laem Chabang Park, delivery of life-support and survival kits under the Thailoil project for flood-



affected communities, Thailoil CE School Model educating children and youths on knowledge and awareness of waste treatment under the CE concept, participation with Ramathibodi Hospital under the Rama Health Shop project to provide accessibility for society to high-standard and high-quality medical products, and supporting staff on their own CSR initiatives under the 'You Initiate..., We Fulfill' Volunteer Year 2, joint voluntary program for two consecutive years.

- 3) Ensure Good Governance:** Under Integrated Governance, Risk&Control, and Compliance (GRC), Thailoil and Subsidiaries fully comply with good governance practices, work efficiency, transparency, auditability, high agility on work integrated with good governance, risk management, internal control, and regulatory compliance. Key policies on Corporate Governance and Anti-Fraud, Corporate Governance and Code of

Conduct Manual, and the charter of the Corporate Governance and Sustainability Committee are regularly reviewed and updated. These efforts have enabled Thailoil and Subsidiaries to achieve the business target of zero case of non-major compliance and no fraud incidents.

All these activities and achievements under the Key Enablers and Sustainability programs illustrate Thailoil and Subsidiaries' obligations and commitment to leveraging knowledge and expertise as an energy industry leader in parallel with operational excellence, good governance, responsibility to the environment, community and society, and stakeholders to strive for business growth in tandem with sustainable development and sustainable growth of Thai society and the Kingdom. These achievements led to multiple awards from various authorities and institutions in 2022 (details as described under Awards and Certificates of 2022 Achievement).



Milestones of 2022

January



01  
Thaioil organized 2022 National Children's Day online activities for youths in the communities surrounding the refinery in Chonburi, and co-arranged Children's Day activities with PTT Group at PTT Plc's Head Office in Bangkok.

February



02  
Thaioil received an honorary plaque and a certificate from the project entitled "Workation Thailand", as an organization that helps drive Thai economy towards sustainable growth.



03  
The Board of Directors approved a recapitalization plan through a capital raising and partial disposal of investment in Global Power Synergy Plc to enhance its financial strength and gear up for future business expansion.

March



04  
Thaioil organized a ceremony to celebrate and express appreciation to leading financial institutions for affirming letters of credit with a total value of more than THB 51,000 million to strengthen Thaioil and Subsidiaries' financial liquidity.

April



05  
Thaioil held the 2022 Annual General Meeting of Shareholders, which drew shareholders' interest and attendance in person and online through live broadcast.

May



06  
Thaioil organized a ceremony to present congratulatory plaques and certificates to contractors of the Clean Fuel Project on their achievement of 30 million man-hours safety without any accident, echoing Thaioil's commitment to safety operation management.

May



07  
Thaioil presented a completed project where it had installed a solar power generation system and an power storage system to HRH Princess Maha Chakri Sirindhorn at the Border Patrol Police's learning center at Ban Huai Tong.

July



08  
Thaioil held a ceremony to hand over the "60<sup>th</sup> years Thaioil-Nakon Laem Chabang Park" to Laem Chabang Municipality on the occasion of Thaioil's 60<sup>th</sup> anniversary for people in the communities to use for exercising, leisure, and other social activities.



09  
Thaioil delivered an 80.24-kW solar power generation system to Laem Chabang Hospital to lower the hospital's expenses. The system promotes alternative energy and helps reduce greenhouse gas emissions.

July



10  
Thaioil together with the public sector and other private companies established the "Thailand CCUS Consortium" group to study practices for further development and application of technologies to capture, utilize, and store carbon dioxide generated by industries, aiming for the net zero greenhouse gas emission target.

August



11  
Thaioil and Subsidiaries awarded 247 scholarships and 11 educational funds for youths and schools in Sriracha District and Laem Chabang Municipality.

September



12  
Thaioil and Subsidiaries sponsored the construction of Ramathibodi Hospital's RAMA HEALTH SHOP as a facility for the public's access to standard and quality medical products.



September



13  
Thaioil participated in the declaration of an anti-corruption resolution at the 2022 Anti-Corruption Day event.



14  
Thaioil and Subsidiaries participated in the preparation of flood relief survival kits and delivered them to people affected by floods across the country.

October



15  
"Top Solvent Company Limited" was renamed "TOPNEXT International Company Limited" with its new role as the marketing arm of Thaioil and Subsidiaries, steering distribution, export, and distribution of products to other countries.

November



19  
Thaioil organized the 2022 Thaioil and Subsidiaries' Supplier Seminar to convey important policies to suppliers, including Sustainability Management for Human Rights, Corporate Governance, and the net zero greenhouse gas emission target.

December



20  
Thaioil and Subsidiaries presented a vase of flower and signed well-wishing messages for HRH Princess Bajrakitiyabha, wishing her speedy recovery.



21  
Thaioil completed the 2022 firefighting and evacuation exercise under a simulated scenario of a fire incident at the lorry loading.

October



16  
Thaioil and Subsidiaries together with communities surrounding the refinery organized the 2022 Kathin Ceremony at Wat Mai Noen Phayom.

November



17  
Thaioil together with PTT Group signed a collaboration agreement to study, develop, and invest in the production of sustainable biojet, and drive Thailand to become the production hub in Southeast Asia, in pursuit of the net zero greenhouse gas emission target.



18  
Thaioil and Subsidiaries demonstrated their commitment to corporate governance in the organization at the PTT Group CG Day 2022 event, held under the theme of "TOGETHERVERSE-CG Power for Sustainability&Beyond".

December



22  
Thaioil organized the TOP Group QSHE Day 2022 event to enhance and foster awareness of quality, security, safety, occupational health, and environment as well as energy conservation among employees and contractors.



23  
Thaioil, as a member of the Energy Beyond Standards Network, announced its resolution on organizational energy conservation, demonstrating its commitment to energy conservation, and encouraged all sectors to maximize energy efficiency.



24  
Thaioil and Subsidiaries conducted the 2022 firefighting and fire evacuation drill.

Remark: Investors can find Milestone of 2020-2021 on the Company's website ([www.thaioilgroup.com](http://www.thaioilgroup.com)) through 'Investor Relations/Publications/Form 56-1 One Report'.



# Market Review and Outlook

In 2022, Dubai crude price increased when compared with the price average of previous year due to the amplified Russia-Ukraine conflict. Moreover, the petroleum demand was constantly recovered following economic activities, after the COVID-19 pandemic subsided and the demand for fuel oil in replacement of natural gas increased due to the rise of natural gas price.





## Global Market and Economic Review

Pressured by the ongoing Russia-Ukraine conflict in 2022, the global economy witnessed sharp rises in the prices of energy and commodities, and the global inflation skyrocketing to the record high along with the rising cost of living. Many countries' central banks therefore needed to employ rigorous fiscal policies to slow down impacts of inflation by revoking measures to buy bonds and steadily raise policy interest rates. The US Federal Reserve System (FED) raised the interest rates significantly from 0-0.25 percent in early 2022 to 4.25-4.50 percent, whereas the European Central Bank (ECB) raised the interest rate to 2.0 percent, resulting in a global economic slowdown with the risk of economic recession in 2023. In addition, China's lockdown under the COVID-19 policy significantly posed impacts on economic activities.

Amid uncertainty and assorted risks, The International Monetary Fund (IMF) projected that global economic growth of 2022 and 2023 would decrease from last year's 6.0 percent to 3.2 and 2.7 percent, which was below previous projections and below the growth rate before the COVID-19 pandemic period, averaged at 3.0 percent. The factors to be closely observed in 2023 are the direction of global central banks' policies, which tend to raise interest rates further until inflation returns to normal; and the relaxation of China's policies to control the COVID-19 pandemic as well as the consideration of border opening. The latest update indicates that China has announced the opening of several big cities in early December 2022, and it is expected to help recover China's economic activities and support global economic growth.

## Crude Oil Market and Refining Industry

Dubai crude price in 2022 surged to 96.3 USD per barrel against the previous year's average of 69.5 USD

per barrel because of the Russia-Ukraine conflict which was amplified after Russia attacked Ukraine in late February 2022. The US and allies thus declared various measures boycotting Russia, including financial, trade, and VIP boycotts as well as Russian oil import embargoes. This is evident in EU ceasing to import Russian crude oil since December 5, 2022. The petroleum demand steadily rebounded along with economic activities after the subsiding the COVID-19 pandemic. The demand for oil to replace natural gas increased due to rising natural gas prices, resulting in lower global oil stocks to the levels lower than the five-year average. This caused concerns about supply shortages and resulted in daily crude oil prices increasing to the record 14-year high in March 2022. To prevent skyrocketing crude oil prices, the US announced a release of its strategic reserves of approximately 180 million barrels, one of its largest drawdowns in the US history. In the meantime, the members of International Energy Agency (IEA) released an additional 60 million barrels, totaling 240 million barrels within around six months after the US release. Then oil prices were plunge down in the latter half of 2022 due to the following events: the spread of the COVID-19 in China, concerns about the global economic recession (notably in the US and the EU) due to rising inflation and interest rates announced by global central banks; impacts of price caps measure on oil purchase from Russia, announced by G7 nations and the EU, allowing third countries to employ tankers, insurance, and other services from G7 only for oil purchased at up to 60 USD per barrel. Crude prices therefore were decreased to those before the Russia-Ukraine conflict. Nevertheless, OPEC and allies (OPEC+) agreed to cut down its capacity by 2.0 million barrels per day, effective since November 2022; the decision that was upheld at the December 2022 meeting to maintain global oil market balance.



The refining industry in 2022 commanded significant recovery from last year. After the escalating Russia-Ukraine conflict, the US and allies declared Russia boycott measures through import embargoes of crude oil and refined products. The EU would stop importing petroleum products from Russia, effective February 5, 2023, creating concerns that supply would not meet demand, as Russia is the EU's largest seller of diesel. Moreover, China's policy on energy consumption control and pollutants sapped the petroleum product exports to low level amid soaring fuel demand after several countries had re-opened their borders following the relaxation of the COVID-19 measures and the increase of gas price, thus promoting consumption of oil for power generation rather than natural gas in several countries. This widened the price spread between products, particularly the gasoline and diesel to crude oil spread in June 2022, which increased the record high in a short period of time.

For 2023, it was projected that Dubai crude price would likely to decline from 2022 since oil supply tends to rise due to the capacity increase of non-OPEC producers (excluding Russia) by about 1.8 million barrels per day. Crude supply from Russia is expected to be lower than market projections after Russia managed to export to other countries, including China, India, and Turkey. At the same time, global oil demand tends to decelerate in line with the global economy recession. US Energy Information Administration (EIA) projected that global oil demand rate would grow at 1-1.5 million barrels per day, lower than that of last year's 2.3 million barrels per day. Nevertheless, China's relaxation of the COVID-19 control policy and the border opening measures are likely to support the oil demand of China and the rest of the world.

In 2023, it is expected that see the refining industry would become weaken compared with the situation in

2022, as petroleum product demand tends to slow down following the stagnant state of the global economy. Supply appears to be rising due to several new major refineries in the Middle East and China starting up. China's petroleum product export is also expected to rise after the government announced an increase in export quotas to drum up the economy. However, there are factors that support the refining industry and lead to a healthier state than the year before the COVID-19 pandemic period: namely, the uncertainty of impacts on the boycott of Russia's product export; the global petroleum product inventory, which stood lower than the five-year average; and China's border reopening, which supports the recovery of the tourism industry.

### **Domestic Market of Petroleum Products**

The office of National Economic and Social Development Council (NESDC) projected that in 2022, Thailand's economy would register 3.2 percent growth, recovering from the year 2021's 1.5 percent growth. This was due mainly to the recovery of private consumption and the tourist sector; the steady growth in exports after COVID-19 pandemic subsided; and the relaxation of international travel measures by canceling the Thailand Pass registration for international tourists, effective July 1, 2022. These hiked the income of labor and the business sector related to the tourism sector. The subsided COVID-19 pandemic situation and related travel measures benefited the consumption of gasoline, diesel, jet fuel, and fuel oil as well. In addition, the government employed several measures to maintain domestic consumption, including the Half-Half Co-payment scheme, the purchase empowering for State Welfare Card Holder scheme, and a measure to fix the price of diesel at 30-35 baht per liter. Such measures helped increase domestic demand and ease the public's burden posed by the increase of oil prices and

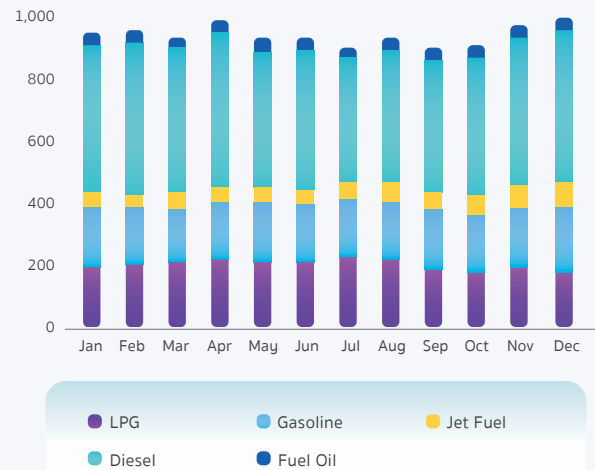


the cost of living; they also provided additional income to retail business operators and producers across the supply chain. Nevertheless, in Q3/2022 the La Niña phenomenon brought turbulent weather conditions and the Noru depression caused heavy rain in many areas of Thailand, with the accumulated rainfall from August 2022, multiple areas across Thailand confronting with huge flood, damaging crops and decreasing diesel demand due to sluggish transportation.

Domestic demand for petroleum products this year increased about 13.6 percent against that of last year due to the recovery of gasoline and diesel demand picking up with more travel after the relaxation of the COVID-19 measures, which restored normal lifestyles. The overall gasoline demand increased 3.4 percent whereas the overall diesel demand jumped 16.2 percent. Moreover, diesel was also used for power generation at an average of 154.0 million liters per month, or 379.6 percent compared with that of last year. The jet fuel demand likewise soared to 87.7 percent in line with the big jump in domestic flights due to the policy on full reopening of the country. Canceling the registration of Thailand Pass for foreigner tourists opened the gates to such groups of tourists. This was evident during January to October, when approximately 7.2 million tourists have visited Thailand. In addition, the full oil demand increased by 15.7 percent due to a steady rise in exported goods in line with the global economic and trade conditions, while the use of fuel oil for power generation averaged at 25.7 million liters per month, equaling an increase of 155.2 percent jump. Finally, the LPG demand increased about 5.7 percent against that of last year due to the price fixing of retail LPG to aid people during the government energy crisis.

### Domestic Demand for Petroleum Products, 2022

Thousand barrels per day



Source: Department of Energy Business, Ministry of Energy

Domestic demand for petroleum products this year increased about

# 13.6

percent against that of last year





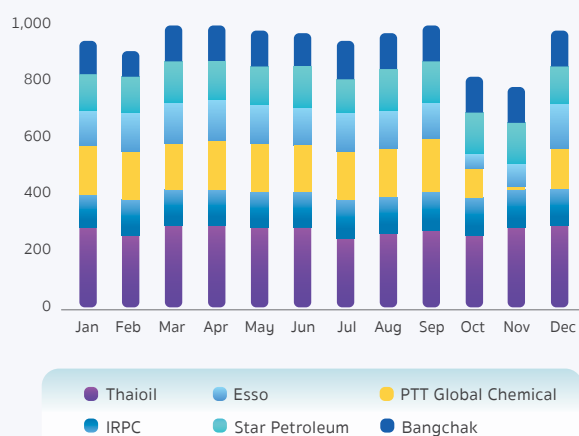
In 2022, the averaged petroleum products including gasoline, diesel, jet fuel, and fuel oil was 936,515 barrels per day, increasing from last year's 876,130 barrels per day or equaling 6.9 percent, in line with the surging domestic demand. Thaioil's production volume was still the country's highest at 29.2 percent of the total volume.

For 2023, NESDC projected that Thailand's economy would grow 3.0-4.0 percent (as of November 2022). There are several factors supporting this growth. First, with the tourism sector tends to recover to normal operation following the constant permission of international travel since mid-2022, and an increase of international arrival flights. Still, it is essential to monitor the number of tourists from China, which still has large numbers of COVID-19 patients. It is expected that China will probably gradually relax the COVID-19 measures and reopen its borders in early 2023. Second, the investment both the public and private sectors tends to continuously grow around 2.5 percent. This also includes the tendency of major industrial operators from other countries to move production base to Thailand; such industries include the Electric Vehicles (EVs) and electronics parts. Third, the domestic consumption tends to expand at 3.0 percent in line with the economic activities and spending behavior, which tend to recover to normal situation. Fourth and finally, the agricultural productivity tends to grow due to enough water supplies to sustain planting. However, risk factors that could affect Thailand's economy, include the implementation of strict fiscal policies of key trading partners like the US and the EU, which would likely raise their interest rates after facing spiraling inflation, which could lead to global economic recession. Also, risks of geopolitical conflicts in various regions could weaken energy and food security.

The 2023 domestic consumption of petroleum products is estimated to grow about 4.8 percent. Considering by fuel type, gasoline consumption would grow 6.1 percent;

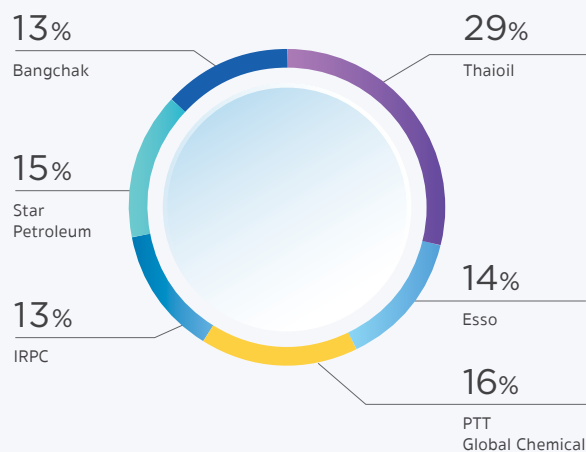
### Domestic Refinery Production, 2022

Thousand barrels per day



Source: Department of Energy Business, Ministry of Energy

### Share of Refining Output, 2022



Source: Department of Energy Business, Ministry of Energy



diesel consumption, 1.5 percent; and jet fuel consumption, 51.9 percent. Fuel oil and LPG consumption would on the other hand, decrease at 3.4 and 0.5 percent respectively.

### **Aromatics Market**

In 2022, the paraxylene market was pressured by increasing regional supply at 3.4 million tons, mostly from the operation of new plants. Such capacity rise outpaced the demand growth of 2.2 million tons gained after the relaxation of lockdown measures, which accelerated the recovery of economic activities and international travel, in turn supporting the growth of apparel and water bottles/containers consumption in the region.

The benzene market in 2022 was also pressured by regional supply, which increased about 2.3 million tons from inaugurated new plants, while the demand picked up only 0.8 million tons or lower than last year growth of 3 million tons. This is because demand for downstream products, including electrical appliances, electronics devices and the automotive industry, was sluggish on account of concerns on economic recession after several countries' central banks announced the increase in interest rates. Nevertheless, a factor supporting the benzene market was the increase of economic activities after the opening of many cities in the region.

In 2023, the paraxylene market would continue to be pressured by massive supply from China, with approximately 5.3 million tons in capacity, which would in turn reduce the paraxylene utilization rate from 76.7 percent in 2022 to 71.0 percent in 2023. Yet, the new PTA plant projected to start operating in 2023 would feed 10.7 million tons to the market, which supports steady growth in paraxylene demand. The benzene market would continue to be pressured by an emerging supply of about 3 million tons, which would trim the regional benzene utilization rate to 74.5 percent in 2023 from 75.6

percent in 2022. However, the benzene demand tends to grow since the COVID-19 situation has subsided in several countries, and automotive and electrical appliance industries, the main consumers of benzene, tends to grow.

### **Olefins Market**

The High-Density Polyethylene (HDPE) and Polypropylene (PP) markets were stagnant in 2022 compared with 2021, as their supply hiked to 3.6 and 5.3 million tons, respectively. Moreover, economic activities were relatively slow while China's intensive COVID-19 control measures caused the decrease of olefins imports. The Russia-Ukraine conflict as well as the risk of global economy recession on account of rising inflation, caused 2022, HDPE and PP demand in Asia to grow only 1.6 and 3.3 million tons, respectively.

In 2023, it is expected that HDPE and PP markets tend to get slightly better compared with that of the year 2022; this was due mainly to HDPE and PP demand expected to grow up to 1.2 and 2.5 million tons, respectively. After the COVID-19 situation in several countries subsided, and the measures controlling COVID-19 situation were relaxed, the consumption and import of polymer tends to increase while the currencies in the region tend to appreciate and support the recovery of demand. Nevertheless, the HDPE and PP markets would still be pressured by Asia's supply, which should increase 2.4 and 3.8 million tons, respectively.

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

In 2022, the lube base oil market slightly slowed down from last year, as supply surged due to the capacity growth of regional refineries after the relaxation of the COVID-19 measures. Still, the market for lube base oil Group 1 was regarded as good; this was due mainly to the shutdown of a plant in Japan (capacity of 210,000 tons per year), resulting in a manageable oversupply. At the same time many countries, notably those in Asia,



gradually opened their borders and relaxed lockdown measures, thus raising demand for lube base oil. In addition, the price of lube base oil Group 1 increased along with that of Group 2, following that of diesel. The price of fuel oil-the major lube base oil Group 1 production cost-plunged late in the year, thus supporting the spread between lube base oil Group 1 and fuel oil.

The bitumen prices in 2022 increased compared to that of last year, due to tight supply after key regional refineries reduced their bitumen capacities and produce high-value products during the Russia-Ukraine conflict. However, the market continued to be pressured by the lower regional demand due to delays in the repairs and road structure improvement because of the much higher prices, which pressured regional bitumen purchases. Also, China's economic growth was proved less than anticipated because of the return of the COVID-19 pandemic in Q2/2022.

It was projected that in 2023 the lube base oil market would be in better condition than that of the year before the COVID-19 period, but less healthy than 2022 due to the market entry of supply from new lube base oil Group 2 and Group 3 plants at capacity of 800,000 tons per year of Hainan Handi Sunshine plant in China in conjunction with the steadily decreasing demand for lube base oil Group 1 in the region.

The bitumen market, meanwhile, is projected to be pressured by the increasing supply from the resume of operation and the enhancement of regional refineries' capacity after the subsiding COVID-19. This results in a rising trend of regional bitumen supply.

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

LAB prices in 2022 increased compared with that of 2021, as the surfactant prices climbed following the

crude price in the world's market after the Russia-Ukraine conflict since early 2022. Meanwhile, the average spread between LAB and surfactant decreased because the global economy decelerated amid rising inflation. LAB supply increased around 0.14 million tons per year, due to the full-steam production of plants in Saudi Arabia and capacity expansion of plants in China in 2021. Still, the Asian demand for LAB continued to grow by 0.03 million tons per year, following the steady demand growth of detergents and surfactants.

In 2023, it is projected that the LAB market would be pressured over last year, as supply in Asia Pacific and the Middle East would increase following, given the capacity expansion of an LAB plant in Indonesia (40,000 tons per year) and in India (25,000 tons per year). The LAB market continued, however, to be supported by steadily growing demand for detergents and surfactants, in line with the population size, economic conditions, improvement in the quality of life, and more health consciousness.

### **Solvent Market**

Demand of the overall solvent and chemical market in 2022 was sluggish, echoing the global economy amid the Russia-Ukraine conflict, which drove crude prices up. Naturally, the prices of solvents and chemicals, including their feedstock, hiked up approximately 20-30 percent year-on-year. Besides, increased freight rates rose, as did the protracted shortage of product tankers and drum-and-isotank containers since 2021, which caused them to miss delivery deadlines. The increased inflation and interest rates caused demand for solvents and chemicals in the world market.

As for Thailand, demand for solvents and chemicals climbed during the first half of the year due to the slowly recovering economy, but the demand largely slow down





during the latter half of the year due to rising costs of the products reflecting those in the world market, thus decreasing the overall demand. Meanwhile, as supply exceeded demand, market competition grew fiercer, notably in the chemical solvent product group, most products of which were imported for sale. In addition, the significantly rises in the prices of solvents and chemicals depressed demand in assorted industries.

Although the demand dropped due to each country's economy conditions, the overall demand still exceeded that of Thailand, echoing economic growth rates, particularly in India, Indonesia, and Vietnam. Still, the same intense competition prevailed as in Thailand, cause the price competition to be as fierce.

In 2023, the supply for solvents and chemicals, particularly in Asia, is expected to be comparable to that of 2022 because China's producers will likely still maintain the

utilization rates. With the border opening of China from January 8, 2023, it was projected that demand in China will be on the rise, plunging down exports of the chemical solvent group from China, which were positive factors the overall market for solvents and chemicals. Yet, the global economy of 2023 seems to be sluggish due to the rising inflation and cost of living, shortage of cargo ships, and high freight rates. These would pose big obstacles to product transportation around the world, notably that to India and Australia. This problem tends to occur all year long.

Thailand's 2023 demand is expected to slightly increase in accordance with economic growth after the 2020 recession and the 2021 small expansion, compared with other countries. However, it was projected that supply would still outpace demand, as did in 2022, particularly the chemical solvent group due to continuing imports



from China. Moreover the hydrocarbon solvent products, namely toluene and xylene, are expected to enter the market, as a new player (Long Son Petrochemical Complex, LSP) is to commercially operate in 2023, causing even more intense competition. As for the other chemical products, including the chemicals for product manufacturing, including paint additives, resin, fertilizers, and cleaning chemicals, it is expected that the demand and supply would be in balance, grow along with the national economy, as the chemical is essential for living and plant cleaning under international standards.

### Ethanol Market

In 2022, the ethanol demand for blending gasohol for domestic use hiked to 3.8 million liters per day from 3.7 million liters per day in 2021, a 3.6 percent increase. Due to relaxed COVID-19 measures and the country's border opening to welcome tourists, traveling by car naturally surged, especially the travel season in Q4/2022. Also, when compared with the year 2021, the number of service stations distributing gasohol E20 increased 10.8 percent, although the number of stations distributing E85 dropped 2.6 percent in line with the public policy supporting E20 as the basic gasoline grade for Thailand.

The 2022 domestic ethanol supply increased from the year 2021 due to the increase in the volume of molasses-based ethanol. The 2021/2022 crop involved 92 million tons of sugarcane in the process against 2020/2021, when only 67 million tons were harvested. The major cause was the addition of planting acreage after the government's announcement of the sugarcane price assurance policy, coupled with the rising prices of sugar in the world market. At the same time, the amount of rainfall proved just right due to the La Niña phenomenon, leaving more water stored for agriculture. The cassava crop of 2021/2022 also increase over last season, thus

raising the proportion of cassava-based ethanol. Note that more cassava was exported other countries especially China to meet the demand increase to replace cereals in the world market, which were in short supply due to the Russia-Ukraine conflict.

In 2022, ethanol prices surged 7.7 percent or average 27.40 baht per liter, against 25.40 baht per liter in 2021. This was due to increasing costs of raw materials, after the cassava demand constantly increase and the Russia-Ukraine conflict continue.

Demand for ethanol in 2023 is expected to increase along with the steady rise in gasoline demand after the relaxation of the COVID-19 control measures and the full opening of the country to welcome both domestic and international tourists, particularly Chinese. Still, the ethanol business is expected to be processed by the slowdown in global economy and the prolonging Russia-Ukraine conflict. Also, the supply tends to rise with the increasing crop of sugarcane, the main raw material. It was projected that the sugarcane crop for 2022/2023 would reach 106 million tons in process, increase from 92 million tons of previous season. The cassava crop for the 2022/2023 season (October 2022-September 2023) tends to increase from 34.0 million tons in the previous season to 35.8 million ton, 1.7 percent increase. As for the cassava-harvesting acreage, it is expected to increase from 9.9 million rai to 10.1 million rai, or 2 percent rise. Resulting from the more efficient prevention and management of the cassava mosaic disease. It was projected that the 2023 total capacity would increase to 7.6 million liters per day, 8.6 percent surge, under the 2023 capacity examine plan. As a result, the 2023 total capacity next year would still outpace domestic demand.



## Power Industry

As of November 30, 2022, the Electricity Generating Authority of Thailand (EGAT) commanded power generating capacity, including contractual capacities, of 49,196.50 megawatts, 5.39 percent increase from 2021. On April 27, 2022, the peak electricity demand was recorded at 32,255 megawatts, 7.03 percent increase from 2021, due to high temperatures during summer season.

The power traded on EGAT's system totaled 201,492 billion units, increasing 3.40 percent compared with that of 2021. It can be divided into 51.60 percent natural gas, 22.50 percent coal, 18.90 percent renewable energy, and 7.00 percent others, including diesel and fuel oil. Considering by user sector, 45.00 percent was consumed by the industrial sector, 28.00 percent by the household sector, 23.00 percent by the business sector, and 4.00 percent by others.

As for the power demand under EGAT's system in 2023, EGAT projected that the demand would increase from last year's by 2.70 percent in line with Thailand's GDP, whose growth is likely to be 3.70 percent. However, factors affecting the estimate of power demand include the global economic slowdown, world market demand, economies of partner countries, foreign exchange rates,

outlook for the Russia-Ukraine conflict, climate change and natural catastrophes, evolution of the COVID-19, and risk of a new wave of infection. The 2023 power demand proportion on EGAT's system was projected to decrease from the previous year (from 80.10 to 80.00 percent), whereas the power production for own use would rise from 5.60 to 6.30 percent, resulting from more efficient technological evolution and the tendency for more power generation from renewable energy.

In 2023, the proportion of power generation in EGAT's system considering by power producer type would undergo a certain change. EGAT projected that it would generate about 30.90 percent, a slight drop from 2022. Similarly, Small Power Producers (SPPs) would command smaller proportions in line with the end of SPP agreements. Independent Power Producer (IPPs) would gain bigger proportion in line with the commercial operation date of new power plants. Considering by fuel type, power generation would rely mostly on natural gas (47.30 percent), with a slight drop from 2022 due to the trend of gas consumption reduction and an 11.20 percent increase in the consumption of petroleum product to manage fuel to reduce cost. Finally, renewable energy would account for about 18.50 percent.





## Feedstock Procurement, Product Distribution, and Industrial Competition

### **Feedstock procurement**

Thaioil procures crude oil-main feedstock for refining-from domestic and overseas sources, taking into consideration estimated yields from each type of crude against market demand at a given time for maximum returns. Thaioil's policy is to diversify crude procurement from different sources to reduce dependence on any particular supplier to mitigate risk in case of crude cannot be delivered. Two types of crude supply agreement, namely term contract and spot contract, are made to ensure balance between feedstock security and the opportunity to profit from market fluctuation.



In 2022, Thailoil's crude imports accounted for 82.80 percent of the total volume of crude and other raw materials. A majority of the crude, or 88 percent, was procured from Middle Eastern countries such as the UAE, Saudi Arabia, and Qatar. Crude imports from Far Eastern countries such as from Brunei, Indonesia, and the Philippines, accounted for 2.5 percent; North America, 0.5 percent; Africa, 1 percent; and the remaining

8 percent from domestic sources. Domestic crude is transported by rail and tanker, while imported crude is shipped directly to the refinery. Through a single buoy mooring (SBM), Thailoil receives crude and other raw materials delivered by large vessels or tankers, enhancing crude oil movement efficiency while reducing the unit cost of crude shipping.

The table below shows the costs of crude and other feedstock procured from various sources, (Excluding by-products provided by Thai Lube Base Plc (TLB) and Thai Paraxylene Co., Ltd (TPX)).

Sources of crude and other raw materials	2022		2021		2020	
	(THB million)	percent of the total volume	(THB million)	percent of the total volume	(THB million)	percent of the total volume
Middle East	342,647	88.0	149,212	66.0	67,307	57.0
Far East	8,770	2.5	30,708	14.0	13,005	10.0
Thailand	30,653	8.0	22,963	9.0	11,395	9.0
Africa	4,146	1.0	23,559	10.0	21,931	14.0
Europe	11	0.0	871	0.5	2,688	1.0
North America	1,693	0.5	945	0.5	14,103	9.0
<b>Total</b>	<b>387,920</b>	<b>100.0</b>	<b>228,258</b>	<b>100.0</b>	<b>130,429</b>	<b>100.0</b>

This year, Thailoil and PTT Group cooperated in securing crude oil, international trading of petroleum and petrochemical products, derivative trading, and procuring tankers through PTT Plc (PTT) under Project ONE. This resulted, Thailoil purchased crude oil 100 percent from PTT.

For other raw materials, Thailoil imports additives and product color substances in line with market demand,

the applicable laws, and public-sector requirements. TLB procures long residue-a raw material for lube base oil production-from Thailoil as well as other domestic and overseas markets. LABIX Co., Ltd. (LABIX) imports normal paraffin to accommodate full-scale production of linear alkyl benzene (LAB)-a feedstock for detergents and cleaning agents-for economic value.



## Product Sales

In 2022, Thailoil sold a total of 20,116 million liters of products as detailed below:

Product (Million liters/year)	2022		2021		2020	
	Sales volume	Percent of total sales	Sales volume	Percent of total sales	Sales volume	Percent of total sales
LPG	850	4	693	4	685	4
Unleaded gasoline <sup>(1)</sup>	3,436	17	3,292	18	3,564	19
Light Naphtha	276	1	138	1	79	0
Isomerase/Reformate	2,235	11	2,197	12	2,232	12
Jet/Kerosene	3,447	17	2,076	11	2,616	14
Low-speed Diesel/ High-speed Diesel	7,408	37	7,339	40	7,005	38
Fuel Oil <sup>(2)</sup>	1,533	8	1,580	9	1,409	8
Long Residue	891	5	1,012	5	1,000	5
Sulphur	40	0	30	0	27	0
<b>Total</b>	<b>20,116</b>	<b>100</b>	<b>18,357</b>	<b>100</b>	<b>18,617</b>	<b>100</b>
<b>Remarks:</b> <sup>(1)</sup> Including Gasohol sales <sup>(2)</sup> Including Refinery Slop Oil						

Thailoil sells its petroleum products to PTT Oil and Retail Business Plc (OR) under the Product Offtake and Crude Oil Supply Agreement (POCSA) at market prices. Under the procedures for setting product volumes, OR shall first propose the types and volumes of desired products, which must account for at least 49.99 percent of Thailoil's capacity, mainly for domestic sale. Thailoil will then notify OR of the types and volumes to be delivered by an agreed timeframe. In addition, if Thailoil has surplus products, OR is entitled to purchase such products prior to other buyers at prevailing market prices under POCSA terms. Other remaining surplus products are to be exported, based on suitability and favorable conditions of the market, both domestic and

regional, through its trading partners. Nevertheless, the product exports by large vessels will be executed through PTT under Project ONE.

Domestic product pricing is referenced to Singapore market prices at a given period for respective products, which are benchmarked to ex-refinery prices. Such prices set daily in US dollars reflect regional supply and demand. Thailoil's domestic product pricing is based on an import parity basis, while export pricing is based on an export parity basis. Thailoil sells petroleum products to customers at ex-refinery prices and calculates prices based on FOB (free on board), depending on prevailing market conditions.



In 2022, about 85 percent of Thailoil's total petroleum products were sold domestically, comprising 33 percent to OR, 20 percent to its subsidiaries (namely TLB, TPX, and LABIX), 17 percent to PTG Energy Plc (PTG), 3 percent to Shell Company of Thailand Ltd. (SHELL), 2 percent to Chevron Thailand Exploration and Production Ltd. (CHEVRON), 1 percent to Susco Plc

(SUSCO), 1 percent to Bangchak Corporation Plc (BCP), and 8 percent to other buyers. The remaining 15 percent was for export. Details of types and volumes of Thailoil's petroleum products sold during 2020-2022 together with percentage comparison of total sales are appear below:

Petroleum products sold and percentage comparison of total sales by Thailoil (Million liters/year)	2022		2021		2020	
	Sales volume	Percent of total sales	Sales volume	Percent of total sales	Sales volume	Percent of total sales
<b>Domestic</b>						
OR	6,700	33	5,274	29	6,614	36
Thailoil's subsidiaries	4,109	20	4,119	22	4,036	22
PTG	3,324	17	3,205	18	3,210	17
SHELL	687	3	620	3	835	4
CHEVRON	343	2	235	1	327	2
SUSCO	201	1	164	1	272	1
BCP	113	1	188	1	128	1
Others <sup>(1)</sup>	1,693	8	951	5	837	4
<b>Total</b>	<b>17,170</b>	<b>85</b>	<b>14,756</b>	<b>80</b>	<b>16,259</b>	<b>87</b>
<b>Export</b>						
OR	1,791	9	1,125	6	1,020	6
Others <sup>(2)</sup>	1,202	6	2,544	14	1,377	7
<b>Total</b>	<b>2,993</b>	<b>15</b>	<b>3,669</b>	<b>20</b>	<b>2,397</b>	<b>13</b>
<b>Total sales</b>	<b>20,163</b>	<b>100</b>	<b>18,425</b>	<b>100</b>	<b>18,656</b>	<b>100</b>

**Remarks:**

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

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



## Industrial Competition in 2022 and Outlook

### Competition

Currently, there are six major refineries in Thailand: namely, Thailoil, BCP, Esso (Thailand) Plc (ESSO), PTT Global Chemical Plc (GC), Star Petroleum Refining Plc (SPRC), and IRPC Plc (IRPC), operating a combined refining capacity of 1,242,000 barrels per day. BCP and ESSO are the two refineries operating integrated businesses with their own service stations, whereas the rest of the refineries operate only the refining business under offtake agreements or free-market delivery, or both, for the sale of various products. Thailoil's major and secondary competitors are domestic and regional refineries, respectively. Major competitors are mostly national and international integrated oil companies with several petroleum businesses, notably those with exploration and production of crude oil, oil refining, and marketing. Due to integrated businesses, massive investment and resources as well as consistent crude oil procurement, these companies thrive in volatile markets and efficiently succeed in price competition.

The oil refining business is highly competitive in terms of prices and product yields. Thailoil's advantage lies in its complex refinery with sophisticated refining systems and in being the country's largest capacity, which enables Thailoil to produce high value petroleum products in one of the highest proportions in Asia. Thailoil can also leverage the process flexibility since its distillation units are connected to petrochemical and

lube base oil units, thus benefiting maneuverability of production amid volatile market prices. For example, Thailoil can hike its outputs of various grades of gasoline to meet domestic demand, including gasohol 91, gasohol 95, or E20. Thailoil is the sole domestic refiner of ULG 95 and gains most of Indochina market shares. It 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 improving COVID-19 situation, the petroleum product demand constantly increases. Thailoil recognizes the value of product distribution to meet domestic demand and extends cooperation under the public policy of selling diesel to power plants to lower their LNG usage during LNG price upswings. The costs of product distribution to major market regions with high demand are considered low due to the relatively short distances to such locations. Thailoil commands several channels of product distribution and transportation: 1) a pipeline directly connected to the refineries, capable of distributing various products to depots in the North and the Northeast to sustain each region's demand; 2) lorry product loading operating 24 hours a day to meet the demand of domestic and Indochina customers; and 3) jetty and conventional buoy mooring (CBM) supporting the distribution of petroleum product by tankers of different sizes. The proportions of distribution and transportation were 46, 35, and 19 percent of total sales, respectively.



# Production Processes and Process Development

In 2022, Thailoil's throughput of crude oil and other feedstock accounted for 294,000 barrels per day, or 107 percent of its nameplate capacity, while Thai Lube Base Plc (TLB) and Thai Paraxylene Co., Ltd. (TPX) commanded 205,000 tons per year and 596,000 tons per year, or 77 percent and 71 percent of the nameplate capacities of lube base oil and aromatics respectively. LABIX Co., Ltd. produced 142,000 tons per year of LAB, representing 118 percent of nameplate capacity.





The global economy this year was still recovering from COVID-19 pandemic. As the vaccination rates steadily rose, many countries around the world eased their international travel measures; as a result, demand for fuels and consumer goods soared, especially jet fuel. However, the Russia-Ukraine conflict continued, resulting in higher energy costs and constant increase of inflation rates.

Amid such circumstances, Thailoil and Subsidiaries exercised business and process operations in line with prevailing economic situations and domestic fuel demand, which was gradually picking up, as seen in Thailoil's utilization rate increasing from previous year. Also, Thailoil and Subsidiaries were relentlessly focusing on developing high value products to meet market demand. This is considered a part of the margin improvement measures ranging from hydrocarbon management review activities and supply chain management, implemented together with cost-saving by reducing financial costs amid high inflation rates under the ongoing Productivity Improvement Project. In 2022, Thailoil and Subsidiaries generated 1.93 USD per barrel or THB 7,415 million in total benefit. Our key activities are summarized below:

#### **Thai Oil Plc (Thailoil)**

- >> Procured the highest economic crude oil by comparing high-sulfur and low-sulfur groups. Also, managed logistics to achieve fully loaded tankers to save transportation costs per unit
- >> Efficiently managed the major turnaround (MTA), successfully shaving maintenance time and opportunity loss, enabling production units to return to full operation with efficiency of both productivity and energy consumption. During the MTA, Thailoil revamped Hydrodesulfurization Units-2/3 to prepare

for Euro 5 diesel production, whose enforcement begins on January 1, 2024

- >> Lessened the time needed to dehydrate clay used for extracting olefins in the Mixed Xylenes Unit by raising the upper limit of steam in the mixed xylenes fed into the Parex Unit and duly calibrating water addition to desorbents to cut losses of mixed xylenes during dehydration
- >> Installed a micro-coalescer to improve the hydrogen adsorption efficiency of the Pressure Swing Adsorption Unit-2 and duly reduce the hydrogen purity giveaway. To achieve this, Thailoil bypassed some parts of the pipeline of low-purity hydrogen derived from the Continuous Catalyst Regeneration Platformer Unit, from the Pressure Swing Adsorption Unit
- >> Improved the energy efficiency of various production processes, thus cutting energy consumption by about 100,927 gigajoules (GJ), including lowering the furnace temperature of the Sulfur Recovery Unit-3 to suit feedstock; controlling the volume of surplus air at the Hydrocracking Unit-2 and Hydrotreater Unit-2 furnaces; and lowering the lower limit of the temperature of the air pre-heater of the Crude Distillation Unit-3 for maximum re-use of the gas combustion heat
- >> Developed high value products by adjusting production process to add value to products, which marked a marketing expansion to new customer groups with niche demand, namely separation of the heavy jet fuel derived from the Hydrocracking Unit-2 so that its property was comparable with military jets without additional investment.

#### **Thai Lube Base Plc (TLB)**

- >> Developed feedstock databases with the Feedstock Selection Project and improved product analytical



processes for greater accuracy and precision, thus enabling selection of long residue from new sources that were economic and enhancing the capacity of imported long residue to cut the overall operating costs

- >> Steadily increased the lube base oil capacity by using tanks to store intermediate products derived from the MP Refining Unit and the Hydrofinishing Unit. This allows, the Solvent Dewaxing Unit to be isolated, and thus giving each unit the ability to achieve full capacity
- >> Produced the 150 Label Free Oil (150LFO), a new high value product from TDAE Unit in June 2022 to meet customers' needs
- >> Constantly produced the 40/50 special grade of bitumen, whose quality is superior to the 60/70 standard grade, to meet customers' greater needs
- >> Used the low-value short residue from Thairoil as a feedstock for bitumen production to add value and production volume to bitumen.

#### **Thai Paraxylene Co., Ltd (TPX)**

- >> Managed production efficiently, resulting in 99.9 percent of operational availability
- >> Developed high value products by modifying production process to add value to products, marking a marketing expansion for new customers with niche demand, namely the high-purity toluene as a substrate for the pharmaceutical industry, without additional investment
- >> Modified various production processes to suit market circumstances for maximum product economics, including adjustment of aromatics in solvents to cut aromatic losses in the gasoline component

>> Temporarily shutdown the PxMax Unit, as toluene sale was more profitable than its application as feedstock for paraxylene and benzene of the PxMax Unit during unfavorable aromatics market periods

- >> Modified various processes for improved energy efficiency:
  - Raised the upper limit of the benzene volume in feedstock to the Parex Unit to reduce the overall energy consumption of the Paraxylene Complex Unit
  - Properly adjusted the temperature of the stripper of the Isomar Unit to increase high value products
  - Shut down the cooling equipment of the products at stripper of the Isomar Unit, which is feedstock of the ED Sulfolane Unit, to reduce energy consumption for reheating at the Xylene Rerun Unit
  - Paused the heat ventilation fan at the Parex Unit during capacity reduction periods
  - Properly adjusted the temperature of the feedstock to the Clay Treater at the Benzene Toluene Fractionation 1 Unit to extend the life of the Clay Treater and control aromatics losses as well as maintain low energy consumption.

These process modifications successfully reduced energy consumption by approximately 3,199 GJ.

#### **LABIX Co., Ltd (LABIX)**

- >> Reallocated Thairoil and Subsidiaries' proportion of crude oil types by economic value, which made paraffin feedstock from Thairoil more concentrated, thus lowering the paraffin import volumes from expensive sources while enhancing the overall energy efficiency of the Pre-Fractionation unit



- >> Duly improved the efficiency of feedstock conversion, which lowered the feedstock volume of the Pacol Unit, resulting in a sharp reduction in the overall energy consumption of the LAB in Back-End Unit
- >> Modified various production processes for greater energy efficiency, including pressure reduction at the PEP Unit to proper level to enable fuel saving at the reboiler. Also, improved energy efficiency of the Prefractionation Unit through pressure reduction, which resulted from the LABIX Debottleneck Project, completed in 2021
- >> Used surplus hydrogen from process as fuel together with natural gas at the Hot Oil Unit instead of burnt at flares and released to the atmosphere, thus enabling LABIX to decrease its process natural gas while improving energy efficiency.

#### TOP SPP Co., Ltd. (TOP SPP)

- >> Efficiently operated with control, audit, and plant optimization
- >> Efficiently proceeded with the Reliability Improvement Program, thus raising operational availability to 100 percent
- >> Piloted the predictive maintenance system with gas turbines for greater process reliability
- >> Arranged a third-party measurement of the Primary Energy Saving (PES) (index of the ability to consume primary energy in the production process of power and thermal energy) of both power generation units under the terms of the power sale and purchase agreements. It was found that both projects commanded higher PES than required, thus they received maximum rates of fuel saving (FS)

- >> Continually operated the Reverse Osmosis Unit, thus reusing water to lower process water expenses
- >> Controlled processes to achieve goals on energy conservation and expense reduction:
  - Used a heat recovery steam generator to produce ultra-high pressure steam instead of the ultra-high pressure generator with a fired boiler
  - Increased cycles of the Demineralization Unit of the boiler feed water to lower chemical consumption for restoring the unit's efficiency
  - Conducted major turnarounds of two gas turbines, thus increasing machinery efficiency while consuming less fuels in power and steam generation.

#### Refining Performance Assessment

Thaioil and Subsidiaries maintained excellent overall performance, due to efficient business as well as processing operations in parallel with prompt responses to market demand through integrating the coordinated work of various parties. Thaioil also maintained plant utilization at high level, with excellent performance outcomes through the Productivity Improvement Project as well as sound and ongoing development of energy efficiency according to the biennial Solomon Benchmarking. The latest edition (2021) found that Thaioil and TLB maintained energy efficiency at the 2<sup>nd</sup> quartile and 1<sup>st</sup> quartile, respectively. In addition, Philip Townsend, a petrochemical expert company, found that TPX commanded better energy efficiency and had now moved up to the 2<sup>nd</sup> quartile due to its close control of processes, constant improvement of processes, and pursuit of challenging energy efficiency goals through various activities over the years. Nevertheless, amid an



unfavorable market situation for the lube base oil and petrochemical businesses, Thailoil and Subsidiaries needed to trim their utilization rates, thus inevitably decreasing their energy efficiency. In addition, partial shutdowns of production units posed constraints on utilization, and the additional consumption of utilities and energy shaved Thailoil's, TLB's, and TPX's energy efficiency, causing them lower than the target. On the

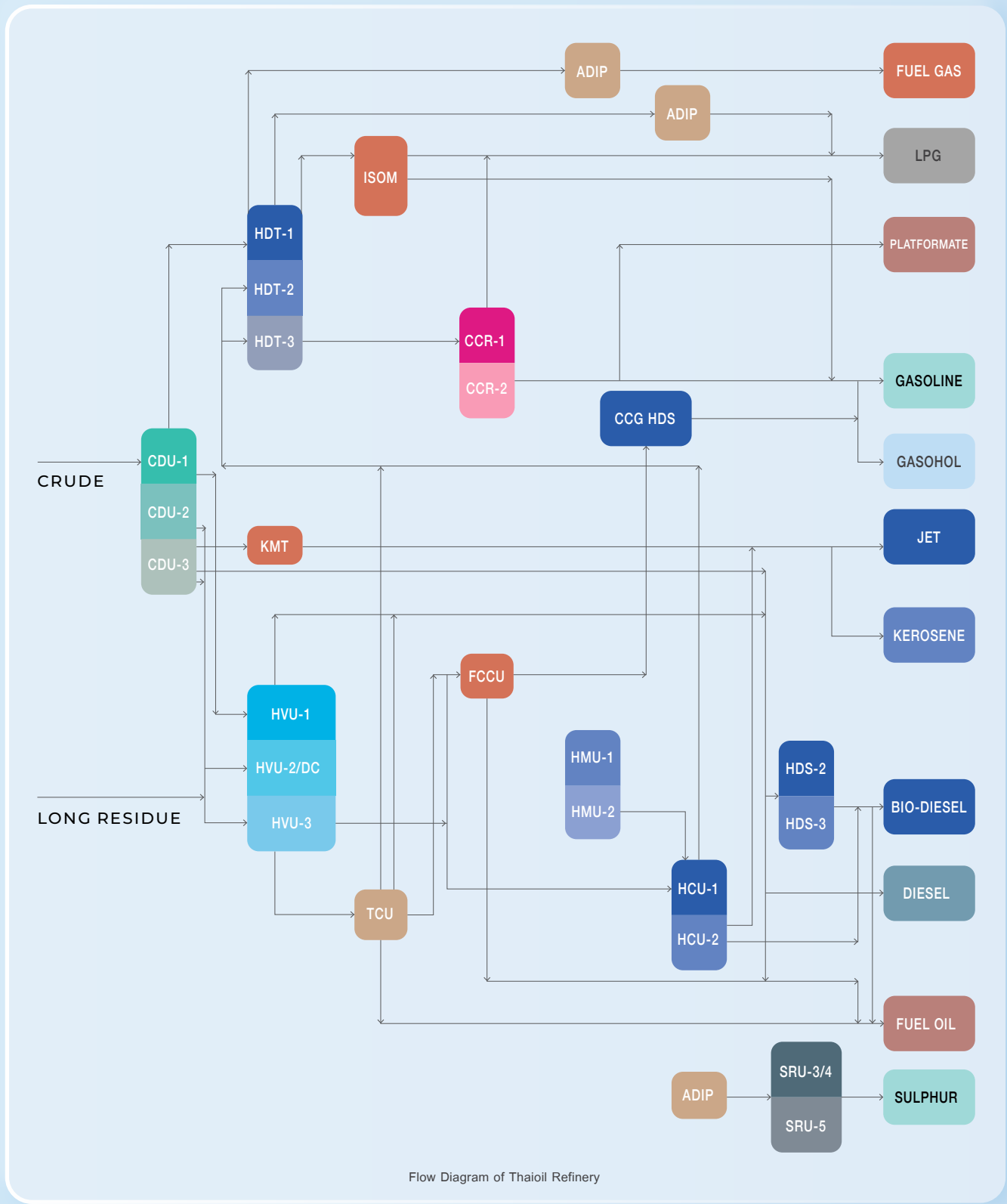
contrary, LABIX maintained high utilization rates and successfully executed its energy efficiency improvement as planned, resulting in the outstanding energy efficiency, exceeding goals. Thailoil and Subsidiaries are committed to improving petroleum refining and petrochemical production capability through assorted operations to maintain the status of a leading refinery in Asia-Pacific.



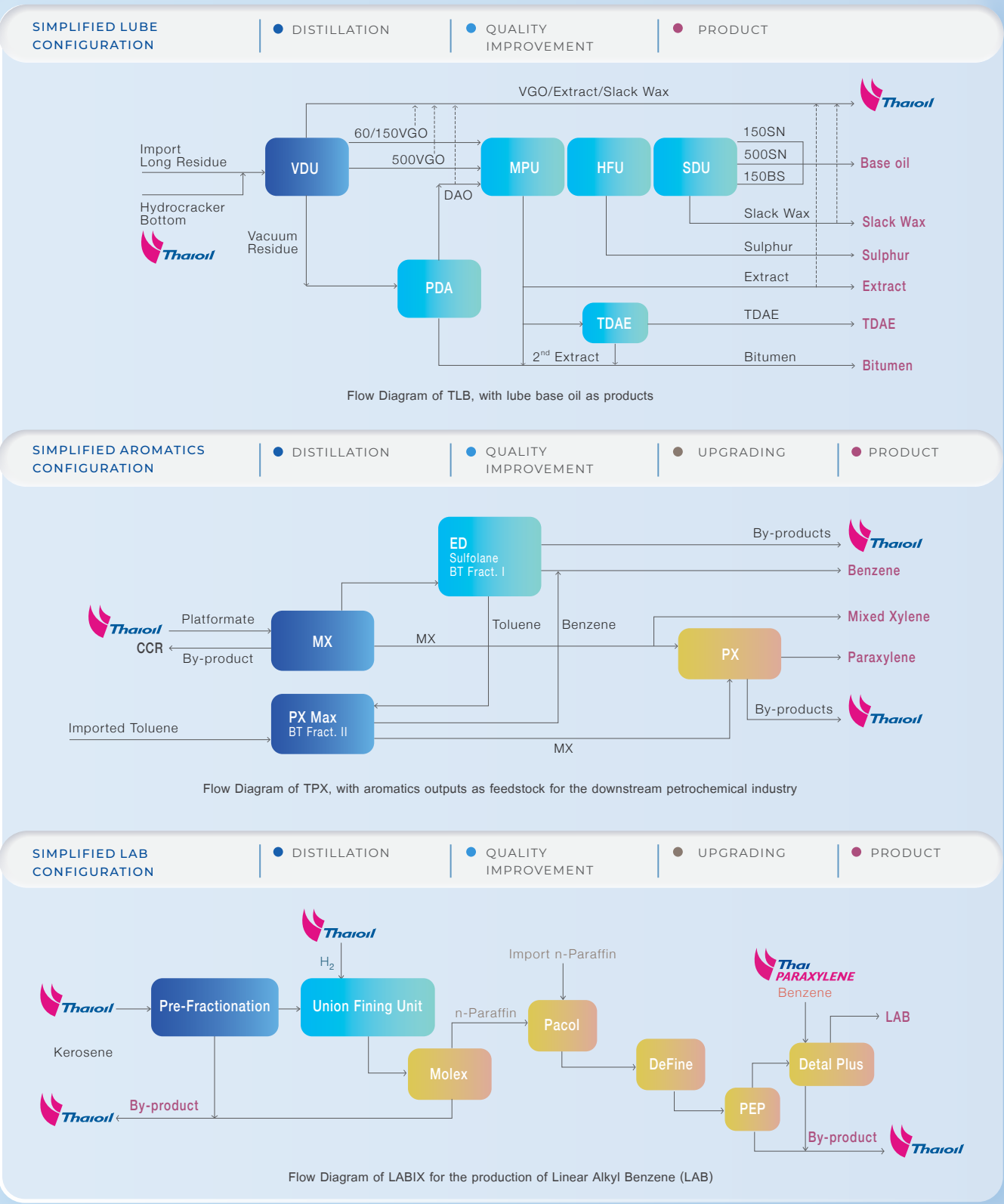




CRUDE AND FEEDSTOCK REFINING PROCESSES



LUBE BASE OIL AND PETROCHEMICALS  
PRODUCTION PROCESSES OF THAI OIL AND SUBSIDIARIES



Details related to the production processes of petroleum products from crude oil and other feedstock, including the production processes of lubricants and petrochemicals of Thaioil and Subsidiaries, are disclosed on the Company's website ([www.thaioilgroup.com](http://www.thaioilgroup.com)) on the topic "Thaioil and Subsidiaries' Business and Products" under "Oil refinery business, lube base oil business, petrochemical business, and other business".



# Future Projects

Thaioil and Subsidiaries are committed to driving for sustainable growth by executing strategic plans through project investment to strengthen long-term competitiveness, leverage and increase values of production platforms.





To achieve the vision of **Empowering Human Life through Sustainable Energy and Chemicals**, Thaioil and Subsidiaries are committed to driving for sustainable growth by executing strategic plans through project investment to strengthen long-term competitiveness, leverage and increase values of production platforms, including creating a diversified and flexible investment portfolio to reduce dependence on refinery business. Thaioil values continuous alignment of investment plans with prevailing market situations to maximize appropriate benefit to both the organization and stakeholders.

### Ongoing Projects

#### Clean Fuel Project (CFP)

Thaioil and Subsidiaries have invested resources in the Clean Fuel Project (CFP) to expand the capacity from 275,000 to 400,000 barrels per day, achieving economies of scale and addressing the market demands, both Thailand and Southeast Asia. CFP can also lower production costs from diverse types of crude as well as improve product values, and produce more environmentally friendly products. As a result, investment in CFP bolsters flexibility, enhances long-term competitiveness, and lays a foundation for feedstock production for future petrochemical products. CFP also benefits national energy security and the country's economy. At present, the project is under construction.

#### Residue Hydrocracking Unit (RHCU) Pilot Plant

This project simulates the process of the Residue Hydrocracking Unit (RHCU), a new unit in CFP, to assess the quality of cheaper heavy crude oil yet suitable for production planning of RHCU units to maximize returns. This pilot plant also tests the performance of catalysts, which will provide technical information necessary for selecting proper catalysts for cost competitiveness. The project construction is expected to be completed and ready for operation in 2024.

#### Power and Steam Production of TOP SPP Co., Ltd.

Thaioil and Subsidiaries expand the power and steam production capacity of TOP SPP Co., Ltd., to replace Thaioil's power plant, after the Power Purchase Agreement for Small Power Producers (SPP-PPA) with the Electricity Generating Authority of Thailand is to expire in 2023. This will improve the efficiency and stability of the power system and will support Thaioil and Subsidiaries' electricity and steam demand. The construction is expected to complete and begin commercial operation in the beginning of Q2/2023.

### Projects under Feasibility Study

#### Petrochemical Business Expansion

Thaioil and Subsidiaries are studying new opportunities with business partners for further extension of the value chain to the petrochemical business; for example, Thaioil and Subsidiaries in collaboration with PT Chandra Asri Petrochemical Tbk (CAP), Indonesia's leading petrochemical producer in which Thaioil and Subsidiaries hold 15 percent share, are studying the extension of intermediate petrochemicals to downstream petrochemicals along with high value products, which are in high demand in Indonesia. CAP is also on process of basic engineering design for the capacity expansion phase 2 (CAP 2), which will double its existing capacity.

#### Extension of High Value Product (HVP)

Thaioil and Subsidiaries command a strategic plan to increase the proportion of high value product (HVP) by adding value to commodities, thus meeting specific requirements of customers and reducing the volatility of long-term profits. Thaioil and Subsidiaries are studying and developing HVP by leveraging market lead and technology push as guidelines. In addition, the group has integrated cooperation with both PTT Group and external business partners to achieve this objective.



### Investment in High Value Business (HVB)

Thaioil and Subsidiaries are studying opportunities for high value business (HVB) through joint ventures or mergers and acquisitions. Implementation of this strategic plan will create a pivotal business platform for future sustainable growth for Thaioil and Subsidiaries to cushion against volatility in the refining and petrochemical businesses. There are investment frameworks of interest, for example, the disinfectant and surfactant production businesses which command high growth rates and are in line with the competitiveness of Thaioil and Subsidiaries.

### Extension of International Logistics, Infrastructure, and Distributors

Thaioil and Subsidiaries are studying investment opportunities to improve and set up a new logistics management system, utilities, and existing business infrastructure in Vietnam, Indonesia, and India. In addition, the possibility of joint ventures or mergers and acquisitions with chemical distributor partners is also being studied to support the sale and distribution of the group's products to markets in target countries and other countries in Asia, considered as an important base to support business expansion and ensure Thaioil and Subsidiaries' future growth.

### Investment in Step Out Business

Thaioil and Subsidiaries command a strategy to invest in new businesses to increase the flexibility of investment portfolios in line with industrial trends and changes in energy consumption patterns. Thaioil and Subsidiaries focuses on investing in two business groups: namely, 1) Bio Business: Thaioil and Subsidiaries together with PTT Group have studied the production of biojet fuels in Thailand; and 2) Novel Energy Technology Business for travel and transportation (New Energy and Mobility): Thaioil and Subsidiaries together with PTT Group have studied the possibility of investing in Carbon Capturing and Storage (CCS), blue hydrogen production from CCS or Carbon Capturing and Utilization (CCU) technology, as well as a feasibility study on green hydrogen production from renewable energy.

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

Thaioil and Subsidiaries invest through corporate venture capital (CVC) to seek for new business opportunities that strengthen strategic business competitiveness. The investment framework spans three business groups: namely, Sustainability Technology, Hydrocarbon Disruption Technology, and Manufacturing Technology.



# Risk Factors and Enterprise Risk Management

In 2022, the global COVID-19 situation pandemic subsided after most population got vaccinated, enabling the government to efficiently contain the COVID-19 pandemic. Meanwhile, this year several countries opened up their borders and allowed the public to resume normal lifestyles, thus stimulating the economy and significantly raising demand for petroleum products. At the same time, the world suddenly faced a new risk factor of geopolitical risk namely Russia-Ukraine conflicts, which slow down the global economy as well as on the recovering demand of petroleum products. Moreover, lifestyles have turned into the New Normal, with increasing application of emerging online technologies to facilitate and enhance work efficiency. This results in more and more cyber attacks. All these factors directly affect businesses, causing Thailoil and Subsidiaries to elevate them to key corporate risks.

To ensure efficient risk management and handling of potential impacts while maintaining business competitiveness amid high uncertainty and volatility, Thailoil and Subsidiaries applied the risk management approach under the model of The Committee of Sponsoring Organizations of the Treadway Commission Enterprise Risk Management 2017 (COSO ERM) and ISO 31000:2018 (Risk Management Principles and Guidelines), regarded as universal practices. The risk management emphasizes on integrated execution embracing Thailoil and Subsidiaries' risk management and risk appetite, consisting of six elements: strategic, commercial/marketing, financial, operation, corporate governance, and Clean Fuel Project (CFP) construction. The risk appetite framework was then connected to the process of mapping out the strategic plan, investment plan, and business plan to align with corporate

objectives and goals. This was complemented by the identification of key risk factors, both internal and external, derived from stakeholders' expectations, and brought to define measures and plans for each factor. Finally, key risks were identified along with key risk indicators (KRIs) to closely monitor key risks and risk management outcomes. Reports were then regularly made to the Risk Management Steering Committee (RMSC), Risk Management Committee (RMC), and Board of Directors (the Board) for efficient and effective steering of enterprise risk management. Finally, Thailoil and Subsidiaries defined risk management among the key performance indicators (KPIs) of Thailoil and Subsidiaries' executives.

Currently, the severity of threats tends to increase, as well as calamities and situations that could disrupt businesses are approaching; Thailoil, thus, has prepared to be ready by defining its business continuity plan (BCP) to comprehensively cover critical processes and key support processes under the ISO 22301:2019 Business Continuity Management. The simulation of disasters were designed as part of BCP drills in conjunction with continual emergency drills of the refinery. Also, the integrated governance, risk&control, and compliance (GRC) approach was developed to enable Thailoil to grow sustainably and command business ethics complying with corporate governance, conduct risk management systematically and compliance with laws, regulations, and the company's articles of association.

## Corporate Risk Management and Mitigation Plans

Thailoil has systematically monitored and reviewed corporate risks as well as the effectiveness of mitigation plans by quarterly tabling Thailoil and Subsidiaries'



risks, mitigation plans, and outcomes of KRI management monitoring for 2022 for RMC's endorsement before pursuing the Board's approval. Thailoil and Subsidiaries grouped risks into three aspects with 11 key risks, and defined corresponding preventive measures or mitigation plans to achieve goals, as described below:

## Business as Usual

### 1. Market/Commercial Risks

In 2022, the crude price and its spread of crude oil and petroleum products (both of which directly affect Thailoil and Subsidiaries' profitability) highly fluctuated amid the Russia-Ukraine conflict. Thailoil therefore proactively adjusted its margin hedging. To this end, the Hedging Steering Committee regularly screened and reviewed the strategic plan and set hedging goals under the framework endorsed by RMC and the Board. Thailoil also engaged in productivity improvement and cost management to minimize such risks.

As for commercial risks, Thailoil prioritized risk management of the reliance on major customers by selling petroleum products to PTT Oil and Retail Business Plc (OR) under the Product Offtake and Crude Oil Supply Agreement (POCSA) enabling Thailoil to know in advance the volumes of petroleum products required by our customers so that Thailoil could plan the production volumes to accurately match customers' demand. Thailoil also sold petroleum products to other traders both domestic and international, and sold them as feedstock to Thai Paraxylene Co., Ltd., and Thai Lube Base Plc, as well as expanding our business into petrochemical business and to Indonesia, which is considered a major step to diversify our investment to mitigate commercial risks to meet risk appetite.

### 2. Black Swan Events

Geopolitical conflicts and the COVID-19 pandemic are considered Black Swan Events-unexpected and

posting impacts on our business. Thailoil has therefore closely followed up the Russia-Ukraine conflict as well as the COVID-19 pandemic through the I-COVID Center to exercise proactive measures to prevent transmission among employees and contractors. Essential medical supplies were provided to employees and contractors in support of working on site. Thailoil also drew up a BCP and constantly rehearsed plans to be better prepared for emergencies.

### 3. Risk from major incidents affecting or disrupting business (due to external factors include natural disaster, terrorism, protest and internal factors such as unplanned shutdowns from equipment breakdowns, unsafe acts)

Major incidents could post impacts on business operations; the cause of which is possibly from both external and internal factors. Apart from affecting business operations, these risks affect our reputation, communities, society, and the environment. Thailoil, thus, came up with preventive measures and mitigation plans by adding measures for security, safety, occupational health, and the environment in the operation by employees and those related. Thailoil stressed process safety management and risk assessment for site activities; advocated safety activities of operators and contractors by ensuring the incorporation into every work process and intensive adherence; advocated inspection, maintenance, and assurance that all equipment works efficiently and reliably; coordinated with nearby communities, local government agencies, and industry groups to form collaboration on equipment and resources for safe and ongoing operations. In addition, BCP was regularly revised, improved, and rehearsed. Thailoil and Subsidiaries have engaged in applicable insurance: namely, physical loss or damage and business interruption insurance, third party liability insurance, miscellaneous insurance, and environmental liability insurance to safeguard Thailoil's assets or properties under Thailoil's responsibility, including the



refinery, depots, supplies and equipment, and others; and insure against losses of life and properties of third parties, including public liability, pollution liability, and product liability in addition to protection against potential loss to the environment and rehabilitation expenses.

In 2022, since water supplies for future projects was considered a key risk to the business operation, Thailoil mapped out a strategic plan on water management while ceaselessly monitoring the situation of all related sectors' water management, with proper planning and properly allocation of water consumption. Additional sources were acquired along with sustainable water consumption plans.

#### 4. Cyber Threats and IT Security Risk

Work modification and more reliance on technology, including work from home practice and digital workplaces where employee connect, communicate, and collaborate through multiple channels, and application of digital technology to increase efficiency in every step of business, caused major cyber risks of data leaks and infrastructure attacks, among others. Thailoil therefore elevated the security measures for IT system to protect itself from external threats. This included compliance with ISO 27001:2013 Information Security Management System; relentless system monitoring and inspection; communication on measures and guidelines to related parties; and regular testing of protection systems by third-party experts to identify defects and seek additional protection guidelines, as well as increase Zero Trust Architecture measures. Thailoil also conducted security maturity level assessment against international standards and commissioned a third-party expert for conduct vulnerability assessment in addition to engagement in a BCP drill on the IT disaster recovery plan to ensure that the business could proceed seamlessly and continually meet customers' and stakeholders' needs.

### Strategic Initiatives

#### 5. CPF Execution and Readiness for Startup&Operation Risk

CPF is a major project that impacts Thailoil's growth and sustainability. Together with our contractors and related stakeholders in all sectors, Thailoil and Subsidiaries therefore value and manage this project risks, which are divided into six aspects: namely, occupational health and safety, management of communities around the refinery, project period, capital management, quality, and preparedness of current and future process units. This is to ensure that CPF can commercially operate as planned. Despite being affected by the COVID-19 pandemic, CPF project management team had devised mitigation plans, including the prioritization of engineering and procurement work under the prevailing situation and compliance with the COVID-19 pandemic control measures.

#### 6. CAP Project Execution Risk

Since investment in PT Chandra Asri Petrochemical Tbk (CAP) marks the milestone business step to the olefins petrochemical industry, Thailoil emphasizes and takes seriously risk management of CAP performance and overall operations before deciding to expand CAP's capacity. This is to ensure the achievement of Thailoil's plans while lowering potential risks despite new external risk factors affecting the plans.

#### 7. New Project, New Investment, Product Development and Market Expansion Risk

Thailoil has mapped out investment strategies to expand its business and pursue opportunities in refining and non-refining undertakings to foster overall growth and sustainability. To this end, Thailoil assessed key risks and followed up on strategic projects, including olefins investment, TOP SPP Co., Ltd. Expansion Project, and the study on high value products (HVP), to ensure that projects are executed as planned.



## 8. Long-Term Business Disruption Risk

At present, the environment is changing while consumers are giving more attention to the environment. This is evident in the increasing use of electric vehicles (EVs) instead of conventional combustion engines and the Net Zero Greenhouse Gas (GHG) Emission policy, which could hasten a plunge in fossil fuel demand, and thereby affect Thailoil's long-term business or disrupt it altogether. Thailoil has therefore decided to extend to the olefins business by investing in CAP in Indonesia to sustain the growing demand for olefins products, which would support the growth of business structure covering petroleum and petrochemical businesses. Thailoil and Subsidiaries also engaged in long-term planning and implementation of assorted strategic plans to prepare for a low-carbon society, as pledged by Thailand to the 26<sup>th</sup> Meeting of the United Nations Framework Convention on Climate Change Conference of the Parties (COP26), by increasing process efficiency to curb and lower GHG emissions and by studying the investment in green business.

## Strategic Enablers & Sustainability

### 9. Financial Risk due to Funding of Major Projects

Thailand's economic recession has slowed down the recovery of petroleum product demand. Thailoil has therefore developed new financial tools to increase options and flexibility for securing loans through the capital markets. Thailoil has restructured investment capital which will be able to secure growth in the future by closely monitoring movements of these markets.

### 10. Staff Readiness Risk

To ensure the seamless execution of CFP Project and New S-Curve Business, Thailoil has restructured the workforce and modified strategies for staff recruitment and development to match business needs and align with the New Normal. The actions include proactive recruitment focusing on accessing integrated HR

resources through a wider variety of channels, personnel development planning that satisfies our future needs by designing essential expertise and enhancing knowhow among related personnel as well as applying technology to support personnel development. In addition, Thailoil has created learning media, increased communication channels and build relationships within the organization to address all age groups' needs, modified the work model for more flexibility in accordance with work nature, apart from enhancing welfare schemes' diversity to meet employees' needs. Finally, Thailoil takes steps to modify the personnel management for greater flexibility to address the needs of the company while supporting compliance with the human rights in the workplace.

### 11. Community Complaints Including Social Concerns

Thailoil and Subsidiaries value their business operation in parallel with community development for a better quality of life through corporate social responsibility (CSR) projects around the refinery as well as remote areas, in the aspects of education, environmental conservation, energy, and natural resources, to achieve the goal of an admired, accepted, and trusted entity among communities and society. To this end, Thailoil grants opportunities for stakeholders to engage in the operation management through three coordinates involving Thailoil and Subsidiaries, communities, and local entities, and five participates in together thinking, acting, resolving, learning, and developing. This is to ensure that all sectors participate in activities for public services with the same goal. Thailoil also complies with the environmental impact complaint process if the operations affect the way of living in the community. Thailoil also engages in community administration through CFP Support Center to coordinate and receive complaints from community members especially affected by CFP to ensure that Thailoil and Subsidiaries' operation could minimize environmental impacts on communities. Finally, Thailoil and Subsidiaries are committed to operating the businesses with equitable treatment for all stakeholders for sustainable benefit.



## Emerging Risks

Amid changing political, economic, social, environmental, legal, and technological circumstances, Thaioil and Subsidiaries' overall business is inevitably facing emerging risks:

### 1. Risk from Laws and Regulations Change due to Climate Change

Global climate change has assumed widespread significance as a foremost issue, evident in the COP26 Meeting during 6<sup>th</sup>-18<sup>th</sup> November 2022 to stress attempts at all levels to achieve the goal to maintain the increase of global temperatures up to 2 degrees Celsius against the pre-Industrial Age according to the Paris Agreement as well as to participate in the reduction of GHG emissions. Thailand had signed an agreement to lower the GHG emissions by 40 percent (previously 20-25 percent) by 2030 compared with the 2015 base year to achieve Net Zero GHG emission by 2050. In addition, the public sector is committed to monitoring, revising, and promoting participation in easing global warming every five years. To this end, it requires applicable public agencies to evolve laws concerning climate change and enforce them within three years. And in five years, proper tools must be defined to provide economic incentives for the private sector to lower GHG emissions; and promotional measures for the public to modify their daily behaviors to jointly resolve such problems; for example, development and promotion of mass transit schemes and reduction of plastic bag use. Despite unclear public policies, laws, rules and regulations both mechanism and enforcement procedures, Thaioil has projected that the EV push policy, reforestation, production efficiency improvement, and permission for private investment in Carbon Capture, Utilization, and Storage (CCUS), are business transition risks in coming years.

**Mitigation plan:** Thaioil has mapped out plans embracing existing business and future investment to sustain such changes through market re-segmentation, by lowering GHG emissions directly and indirectly from production process (Scope 1 and Scope 2) by enhancing process energy efficiency and investing in CFP with advanced technology and high efficiency in parallel with the shutdown of distillation units over 50 years old, which helps reducing GHG emissions. Thaioil and Subsidiaries have also defined various goals, including planning and setting long-term GHG emissions against business-as-usual plans to define the annual and long-term goals for energy consumption reduction as indicated by the Solomon Index (Energy Intensity Index: EII). Also, with PTT Group, Thaioil has engaged in the monitoring of and participation in Thailand's GHG emission reduction planning, including participation in giving recommendations on the draft climate change act, preparing a life cycle inventory with the Petroleum Institute of Thailand to obtain a database for production included in the Carbon Footprint Project, and investigating of approaches and methods of the Thailand Voluntary Emission Reduction Program (T-VER) Project to prepare for changes in applicable climate change laws, by assessing and pursuing suitable guidelines and reviewing carbon pricing and carbon credit certification to approach a low-carbon society in the future. The required data are then used for revising plans for GHG emission reduction goals. Finally, Thaioil commands a project for long-term GHG emission reduction, including TOP SPP Co., Ltd. expansion project to increase its power generation and steam production capacities and studies on its investment in renewable energy business and reforestation.

Apart from the aforementioned activities, Thaioil commands measures to accommodate the global



population's energy consumption behavior arising from concerns on climate change and the environment by investing in CFP to enable Thailoil to adjust production proportion of high-value petroleum products in accordance with future market demand. This is evident in the reduction of gasoline production to sustain the trend to use EVs instead of combustion-engine vehicles, while increasing diesel and jet fuels. Also Thailoil and Subsidiaries have restructured portfolio for more investment in non-refining businesses.

## 2. Technology Disruption in Transport Energy Risk

Technological transformation, substituting petroleum product with alternative energy, tends to occur quickly affecting the energy industry. Today, the technological development and improvement for alternative-energy production, including EVs and hydrogen fuels are vibrant. In 2018 certain car manufacturers set a goal to reduce or cease manufacturing of combustion-engine cars. At the same time, Thailand's public sector has issued regulations to promote alternative energy, with tangible EV promotion plan notably seen in the Thailand Integrated Energy Blueprint (TIEB 2015) under the Energy Efficiency Plan (EEP 2015), involving support for EV charging stations and formulation of a plan to

develop EV infrastructure. If consumers extensively and swiftly change their behavior to EVs, the refinery industry could possibly be unable to adjust in time and thereby affected on revenue as well as long-term growth.

**Mitigation plan:** Thailoil has launched CFP to enhance process efficiency with emphasis on diesel and jet fuel, and restructured their investment portfolio to expand non-refining businesses over the long run by setting a 50 percent revenue proportion goal as well as pursuing new investment opportunities, including HVP production. Thailoil has also addressed the trend of future technological development with the Earnings Diversification strategy, which includes investment in the startup business through venture capital (VC). The investment scope of which consists of three businesses: 1) technology for greater performance in production and scaling up to goods and services for other future industries; 2) technology for better human quality of life with due regards for the environment; and 3) technology on travel, mobility, and novel forms of energy. This year Thailoil invested in two start-up companies, and is pursuing additional investment opportunities to maintain Thailoil and Subsidiaries growth rate in line with the defined goal.



# Internal Controls

Thaioil recognizes the value of the internal control system under the international framework of The Committee of Sponsoring Organizations of Treadway Commission 2013 (COSO 2013) to attain all three aspects of internal control goals, namely efficient and effective operations, credibility of financial statements and other reports, and full compliance with laws and regulations. The Board of Directors (the Board), assigned the Audit Committee to review results of internal control assessment. Meanwhile, the Operational Risk Management Section takes charge of monitoring and reviewing the adequacy of the internal control system annually.

In 2022, the Board examined the results of assessment form of the Securities and Exchange Commission, Thailand (SEC), prepared by Thaioil's executives and subsequently reviewed by the Audit Committee, and concluded that Thaioil's internal control system proved adequate and suitable for its business operations to accomplish the targets, with the five elements of operations and system development to support internal control under COSO as follows:

## 1. Control Environment

The Board and executives of Thaioil support the corporate culture that stresses integrity and business ethics, consistent with the organization's vision and mission, by managing a sound and suitable control environment as detailed below:

- >> Formulation and review of policies on corporate governance and code of conduct which include anti-fraud and anti-corruption, as operating guidelines for directors, executives, and employees. A conflicts of interest are to be reported via an electronic system every year. Emphasis is made on giving or acceptance of gifts, assets, or other benefits. Executives and employees are required to comply with such policies and guidelines as well as the Personal Data Protection Act B.E. 2562. This earned Thaioil multiple corporate governance achievement awards both at national and international levels in 2022.
- >> Independency of the Board from executives: Roles and responsibilities of the Board are clearly defined. The Board takes charge of reviewing and endorsing key strategies and policies as well as objectives, financial goals, risks, work plans, and budgets. They are to also uphold compliance with laws while ensuring that executives pursue business policies and strategies efficiently and effectively.
- >> Organization structure: The organization is structured with emphasis on efficient internal control, equipped with checks and balances through different divisions of work, whose authorities, duties, and responsibilities are independent of each other. Each line of work has its own top executive. The organization structure is regularly reviewed to keep pace with business strategies and plans. In 2022, the petrochemical business function was added to the organization structure.
- >> Human resource development plan: Thaioil devised HR development plan that enhances employees' competency and capability in a systematic and sustainable way, duly embracing personnel attraction, development, and retention and engagement, with a succession plan of key positions prepared. Thaioil also values the process of fair performance management that reflects the ability to perform against Key Performance Indicators (KPIs). A long-term personnel recruitment strategy was identified, addressing the changing environment and prevailing business needs.
- >> Integrated Governance, Risk&Control, and Compliance (GRC): Thaioil is equipped with ethics and good governance as well as systematic risk management in key processes, with a TOP Group GRC Integration Working Team established to drive GRC and ensure continuous operation development in an efficient and systemic manner while enhancing the awareness and understanding of GRC to employees at all levels.



## 2. Risk Assessment

Thaioil values risk management and incorporates it into the entire organization to drive the business towards both short-term and long-term goals with confidence. The Risk Management Committee (RMC) and the Risk Management Steering Committee (RMSC) are to ensure efficient risk management and its suitability with the operation and business growth direction.

To this end, Thaioil devised a risk management plan embracing risk assessment, analysis, and review in line with its strategies and business plans following Thaioil's objectives and targets. The plan takes into account internal and external factors relating to both current and future business, as well as corruption probability. Thaioil identifies Risk Appetites and Key Risk Indicators (KRIs) to facilitate performance monitoring and reporting, details of which can be found in the 'Risk Factors and Corporate Risk Management' section. Thaioil has also mapped out measures and guidelines for cybersecurity management, compliance with the Personal Data Protection Act B.E. 2562, and recruitment in replacement of retiring, transferring, and position-changing staff.

Each year those responsible for business processes shall assess changes in circumstances potentially affecting risk management and internal control to define plans and ensure that their improvement and validity are in line with prevailing situations.

## 3. Control Activities

Efficient and effective control activities help Thaioil mitigate risks within the risk appetites. Key control measures are as follows:

- >> Internal control policies based on good control principles-including segregation of duties, Corporate Authorization Procedures (CAP), review, and document filing. The Governance, Risk&Control, and Compliance Self-Assessment (GRCSA) form for applicable units to assess efficiency and effectiveness of key

processes' internal control. The Operational Risk Management Section shall review the assessment and monitor additional control improvement plan within a timeframe to ensure that Thaioil is well equipped with adequate and suitable internal control.

- >> Preventive and monitoring control activities-both manual and automated systems inherent in work processes. All executives are to supervise and inspect their respective units' work processes to ensure 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 monitor control compliance.
- >> Control process of the information technology (IT) system security-was identified following the standard defined by the National Institute of Standards of Technology (NIST). IT service management was reviewed and improved to be updated to keep pace with the changing situation, particularly the work-from-home practice. In 2022, the Two-Factor Authentication (2FA) system was upgraded for higher security using the One Time Password (OTP) code together with a log-in system designed to register personal electronic devices to allow access to the work systems.

## 4. Information and Communication

Thaioil values IT and communication systems that systematically support business execution, operation, management, and financial reports to accommodate the Board's and executives' decision making and to ensure the efficiency and effectiveness of internal control. Policies and protocols for IT and communication are appropriately devised.

To maintain proper communication within the organization, Thaioil has developed an internal communication manual as well as efficient guidelines for managing contents and practical communication



channels. Employees shall therefore receive prompt, complete, and accurate information. To this end, responsible parties have been clearly appointed for each internal communication channel, including the intranet, e-Mail, e-Newspaper, internal bulletin (Akanee), and CEO Connect activity initiated for communication between high-level executives and employees. The communication between executives and employees is constantly arranged to ensure goal attainment. To accommodate the Board's decision making, critical information such as meeting papers is properly communicated and sent to the Board at least five business days ahead of the meeting date according to best practice.

As for external communication, Thaioil provides accurate and sufficient business information updates through public relations and advertising channels, including printed media, radio, commercial films, website, and social media such as Facebook. Moreover, operating results and other related information that useful for investor's decision making are provided at analyst meetings. Furthermore, during crisis, the communication is done through the crisis communication center specially established to provide accurate, appropriate, and timely information.

In addition, Thaioil has laid down measures for filing complaints and whistle-blowing in writing. The process starts from receiving complaints, fact finding, to concluding cases. Channels for lodging complaints are clearly specified with protection provided for whistle-blowers and other concerned persons to encourage employees and third parties to report or provide information related to non-compliance, fraud, or any action which is seeking unlawful benefits.

## 5. Monitoring Activities

Thaioil requires all executives to supervise and audit their respective work systems to ensure efficiency and compliance to policies, requirements, and work

regulations under a concise internal control system. Thaioil equally values the management of Security, Safety, Occupational Health and Environment (SSHE), in which energy management and social responsibility are included, and requires employees to undergo annual self-assessment and to revise their operation as required by regulations. This will prevent and minimize losses concerning safety and occupational health of employees and contractors as well as safety of production processes. More details appear in 'Risk Factors and Corporate Risk Management' section.

Thaioil annually monitors results of internal control, both at corporate level with executives conducting the assessment using the SEC's internal control adequacy assessment forms; and at process level with process owners using the GRCSA form. Should any change in tasks or work processes take place during the year, the Operational Risk Management Section is to duly update and improve work procedures and control measures. Monitoring is also carried out through the CCMS system that can detect any real-time non-compliance, with a report regularly submitted to process owners and management meetings. The approach helps ensure that all parties recognize the importance of compliance with business processes and internal control mechanisms. At the same time, the Corporate Internal Audit Department formulates annual audit plans based on key risks, changes or increase in work processes and systems, and request by executives and the Audit Committee (if any), to verify the adequacy and suitability of each internal control activity.



# Sustainability



Thaioil and Subsidiaries' sustainable development management and performance report, covering environmental, social, and governance aspects, has been incorporated in the 2022 Integrated Report.

For more information



## Sustainability Management Policy and Goals




Thaioil and Subsidiaries are determined to operate and grow a sustainable business with attention to Environmental, Social, and Governance (ESG) aspects as well as impacts on stakeholders along the value chain. The Sustainability Management Policy was identified and launched to drive operations on sustainable development in the same direction as such sustainable business.

In support of the corporate vision and business strategies as well as United Nations Sustainable Development Goals (UN SDGs) while responding to the global trend involving ESG issues, which have become more and more vital to stakeholders and business operations, Thaioil reviewed its sustainability management strategy implemented in Thaioil and Subsidiaries and identified a strategic plan and goals regarding ESG operations, as detailed below:



Additional information about Thaioil and Subsidiaries' Sustainability Management Policy is available on Thaioil's website, on the topic 'Sustainability/ Sustainability Management/ Policy'.

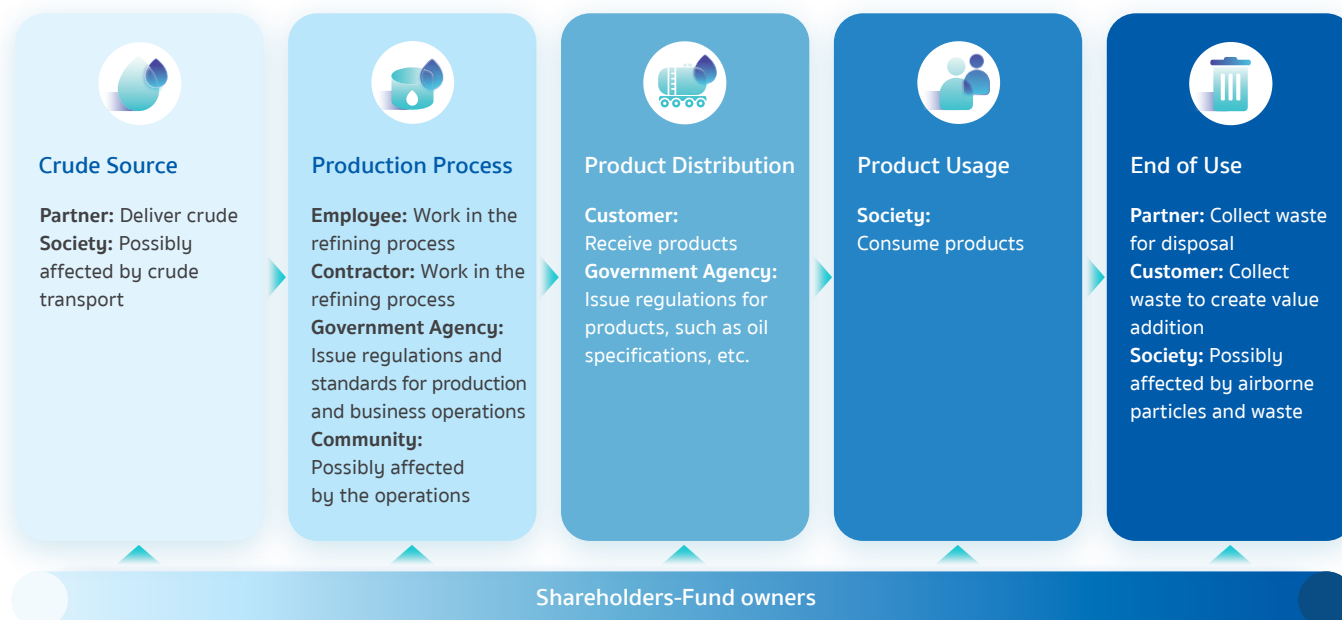


Sustainability dimension	 <b>E: Environment</b>	 <b>S: Social</b>	 <b>G: Governance</b>
<b>Strategy</b>	<b>Enhance Clean Environment</b> Enhancing environmental management in line with the global direction	<b>Engage with Society</b> Bonding in parallel with creating value for communities and society to achieve long-term mutual growth	<b>Ensure Good Governance</b> Fostering confidence in corporate governance and organizational transparency
<b>Success indicators</b>	<b>Top Quartile Performance:</b> Achieving Carbon Neutrality goal by 2050 and net zero greenhouse gas (GHG) emissions target by 2060 by adhering to the Net Zero GHG Emissions Strategy	<b>Creating Social Value:</b> Upgrading people's quality of life in line with Thailoil and Subsidiaries' strategy that aims for engaging in a petrochemical business and innovation, and supporting net zero GHG emissions	<b>Zero Case of Non-Compliance and Fraud Incidents:</b> Achieving zero violation of laws and corporate rules and regulations
		<b>Strengthen Community Engagement:</b> Maintaining community engagement of over 90 percent	<b>Good Governance Recognition:</b> Being recognized as a business entity with good governance
		<b>Nature-based Solution:</b> Supporting net zero GHG emissions target through projects relating to forest conservation, restoration, and forest area expansion	

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

Thailoil and Subsidiaries identified stakeholders by analyzing their involvement along the supply chain, ranging from crude procurement, production, to waste disposal after product consumption. Impacts between one another were analyzed as shown in the diagram below:

### Stakeholders along the Value Chain





As a result of such analysis of the value chain, stakeholders are divided into six main groups. An internal unit was established to take charge of continual communication and exchange information with each group of stakeholders to understand their expectations and points of view about the business. (More information is available in the 2022 Integrated Report on the topic 'Stakeholders and Materiality Matters')

### Sustainability Management in Environmental Aspect

Thaioil and Subsidiaries developed an environmental management system by devising a policy on quality, security, safety, occupational health, environment, energy management, and corporate social responsibility (Thaioil Group QSHE Energy-CSR Policy), which serves as an operation framework. In addition, Thaioil and Subsidiaries have adopted the ISO 14001:2015 environmental management system and established a systematic environmental database to control and minimize impacts while conserving a good environment in parallel with driving sustainable business growth. The database covers the following environmental management matters.



Additional information about the policy on quality, security, safety, occupational health, environment, energy management, and corporate social responsibility is available on Thaioil's website on the topic 'Sustainability/WORLD: Environment Well-being/Environmental Quality Management'.



#### Environmental Management

Thaioil and Subsidiaries have systematically applied ISO 14001:2015 to business operations with regular reviews for continuous improvement. The Compliance Unit was established as the core unit responsible for driving the assessment of compliance with laws and regulations. Meanwhile, management tools and systems have been developed to support higher operating efficiency. In 2022, after an examination by the Management System Certification Institute (Thailand), Thaioil and Subsidiaries were found to engage in no major non-compliance with laws and regulations concerning the environment. (More information is available in the 2022 Integrated Report on the topic 'Environment Impact Management')



#### Water Management

Thaioil and Subsidiaries have an efficient and systematic water management under the project 'TOP Circular Economy-WE GO Theme' (TOP CE WE GO), initiated to mitigate risks from shortage of water for processes while preventing conflicts with neighboring communities. Volumes of water consumed are accurately and clearly disclosed to the public. A business continuity plan has also been developed and reviewed, taking into consideration shortage of water for processes to reduce water consumption and raise water management efficiency in the long run. In 2022, Thaioil and Subsidiaries could reduce 41 percent of raw water with sea water. (More information is available in the 2022 Integrated Report on the topic 'Circular Economy')





### Waste and Hazardous Substances Management

Thaioil and Subsidiaries command systematic industrial waste management by listing a waste inventory, minimizing industrial waste from the beginning of operations using the circular economy principle and the 3Rs strategy (Reduce, Reuse, and Recycle), and applying them for waste management, collection, transport, and safe disposal as suggested by laws and technical principles. In 2022, Thaioil and Subsidiaries achieved the goal of zero landfill. (More information is available in the 2022 Integrated Report on the topic 'Circular Economy')



### Energy Management

Thaioil and Subsidiaries keep on executing the energy conservation project to achieve energy efficiency at various levels of production. In 2022, there were a total of 17 projects involving energy conservation, capable of reducing 138,472.93 gigajoules of energy or 16,758.90 tons of carbon dioxide equivalent per year. The attempt resulted in cost saving of around THB 74.08 million. (More information is available in the 2022 Integrated Report on the topic 'Circular Economy')



### Biodiversity Management

In addition to conducting business with strict and continuous adherence to measures entailed in the Environmental Impact Assessment (EIA), Thaioil and Subsidiaries have joined PTT Group Biodiversity and Ecosystem Service in reviewing the manual on biodiversity management and control and ecosystem service, to provide guidelines for managing responsibilities for habitats and natural resources surrounding the refinery. This is to ensure that the operations of Thaioil and Subsidiaries will not produce any adverse impact on the ecosystem. (More information is available in the 2022 Integrated Report on the topic 'Environment Impact Management')



### Climate Change Actions

To achieve the net zero GHG emissions target by 2060, Thaioil and Subsidiaries have continuously executed the project to reduce GHG emissions in production processes. Risks were assessed and opportunities were analyzed to support production control planning while systematically monitoring climate change actions taken to support Thaioil and Subsidiaries' attempt to reduce GHG emission as well as the country's goal. In 2022, direct emission of GHG from the operations of Thaioil and Subsidiaries amounted to 3.25 million tons of carbon dioxide equivalent, surpassing the target of no more than 3.53 million tons of carbon dioxide equivalent. (More information is available in the 2022 Integrated Report on the topic 'Climate Change Management')



### Air Quality Management

Air quality management at Thaioil and Subsidiaries is reflected in production process design, maintenance planning, control of the sulfur content in fuels, greater use of fuels with low emission than those with high emissions, application of clean production equipment and processes, application of technology with efficient combustion that releases low nitrogen oxides, and implementation of projects to minimize impacts on the environment and communities, as well as control of ventilation ratios and regular air quality tests based on the 2007 Shell International Practice Standard. All these attempts are to reduce environmental impacts at sources. (More information is available in the 2022 Integrated Report on the topic 'Environment Impact Management')



## Sustainability Management in Social Aspect

To be a sustainable organization, Thailoil and Subsidiaries have been committed to operating businesses with social responsibility as well as safety and occupational health. Potential impacts on all groups of stakeholders have also been taken into consideration. Stakeholders are treated equally and fairly with respect to their rights in a systematic manner using the Plan-Do-Check-Act approach. This could be witnessed in, for example, policy announcement, risk assessment, formulation of measures to control and minimize impacts together with result monitoring and reporting for further improvement. In addition, Thailoil implements various projects to promote corporate culture and awareness of integrity, perseverance, patience, and social responsibility to create a balanced society with upgraded living.



### Safety and Occupational Health Management

Thailoil and Subsidiaries have followed a five-year plan on safety, occupational health, and emergency and crisis management, with determination to achieve the corporate safety goal of 'No Harm, No Leak, Goal Zero' stated in the strategic plan that aims towards attaining 'Operational Excellence to Business Excellence' (O2Bx), and prepares to become a world-leading refinery. To this end, safety is a major factor to be improved and upgraded. The strategic operating plan was therefore adjusted from Safe White Green to All Safe White Green to develop and reinforce awareness and leadership in work safety among all staff and contractors. The plan has been implemented through the Management Walk and Talk activity, held by high-level executives and the QSHE Roll-Out activity alternately held at various construction sites and operating sites of various projects, particularly during the shutdown period. This is to promote and enhance safety awareness by encouraging the participation of operators on actual work area and environment. In 2022, Thailoil and Subsidiaries registered a total recordable incident rate (TRIR) of 0.29 case per million manhours, better than the target of 0.30 case per million manhours. (More information is available in the 2022 Integrated Report on the topic 'Human Health and Safety')



### Human Rights Management

Thailoil and Subsidiaries are strongly determined to drive the business with recognition for human rights throughout the value chain. The organization stands firm on principles of international organizations advocating human rights, including the United Nations Global Compact (UNGC), Universal Declaration of Human Rights (UDHR), United Nations Guiding Principles on Business and Human Rights (UNGPs), the International Covenant on Civil and Political Rights (ICCPR), International Covenant on Economic, Social and Cultural Rights (ICESCR), and the International Labour Organization's (ILO) Declaration on Fundamental Principles and Rights at Work. Two policies about human rights were launched in 2021 with amendments made in 2022 as follow:

- >> Thailoil Group Human Rights Policy in the Workplace to protect employees' human rights
- >> Thailoil Group Business and Human Rights Policy together with guidelines on human rights for partners to support human rights and prevent risks for Thailoil and suppliers from activities which may violate human rights

These two policies address sexual harassment and other harassment as well as illegal labor, both child labor and forced labor in domestic business operations, and compliance with international regulations for overseas businesses.



In 2022, 100 percent of Thaioil and Subsidiaries' business activities, covering activities in Thaioil's core business plus those in partnership with others, were assessed against Human Rights Due Diligence (HRDD). No complaints were lodged by staff and partners about human rights violation by any internal or external stakeholders under corporate risk management principles that are systematically aligned with those of the United Nations. (More information is available in the 2022 Integrated Report on the topic 'Human Rights')



Additional information relating to policies and principles on human rights of Thaioil and Subsidiaries is available on the Thaioil's website on the topic 'Sustainability/I: Our Well-being/Human Rights'.



### Social Responsibility Management

Thaioil and Subsidiaries are confident that organizational sustainability thrives from the balanced coexistence between business operations and communities and society. Thaioil's Board of Directors launched the **Thaioil Group Corporate Social Responsibility Policy** together with guidelines for social responsibility policy implementation and continuous monitoring. The executives and the unit responsible for social and community development were assigned to formulate a strategic plan and a long-term development plan, and to visit neighboring and remote communities then regularly report to the Corporate Governance and Sustainability Committee, to ensure goal attainment regarding the development of community and social potential to forge long-term growth and relationship.



Additional information relating to policies on corporate social responsibility of Thaioil and Subsidiaries is available on Thaioil's website on the topic 'Sustainability/WE: People Well-Being/Social and Community Responsibility'.

The 2022 Community Engagement Index, prepared by an independent consultant to measure relationships between communities and Thaioil and Subsidiaries, was 95.85 percent, better than the target of 85 percent. (More information is available in the 2022 Integrated Report on the topic 'Corporate Social Responsibility')

### Sustainability Management in Corporate Governance Aspect

Thaioil and Subsidiaries are determined to conduct a fair, honest, transparent, and auditable business, complying with corporate governance principles and code of conducts, which form a strong foundation for fostering confidence among investors and all stakeholders, raising business competitiveness, and supporting sustainable growth. policies, manuals, and guidelines concerning corporate governance of Thaioil and Subsidiaries were drawn up in line with the 2017 Corporate Governance Code (CG Code 2017) for listed companies as well as measures for corporate governance and anti-corruption assessment, laid down by renowned and recognized organizations, such as Corporate Governance Report of Thai Listed Companies (CGR), Thai Private Sector Collective Action Against Corruption (CAC) organized by the Thai Institute of Directors (IOD), NACC Integrity Awards organized by Thailand's National Anti-Corruption Commission, and Dow Jones Sustainability Indices (DJSI) organized by S&P Global, internationally-renowned indices for sustainability assessment.





### Corporate Governance and Code of Conduct

Directors, executives, and employees are required to strictly observe code of conduct as guidelines for business operation, which concern procurement, intellectual property, money laundering prevention, application of information technology and communication, among others. Thailoil and Subsidiaries stand firm against all forms of fraud, corruption included. The Anti-Fraud Policy was identified and launched for organization-wide implementation. Directors and executives must act as leaders and role models in performing their duties with honesty, integrity, fairness, transparency, and auditability to make corporate governance a sustainable corporate culture. In 2022, no violation of the corporate governance code or code of conduct was detected among employees. (More information is available in the 2022 Integrated Report on the topic 'Corporate Governance and Sustainability')



Additional information relating to Thailoil and Subsidiaries' corporate governance principles and policies is available on the Thailoil's website on the topic 'Corporate Governance'





# Research and Development of Thailo and Subsidiaries

The year 2022 remained a challenging year for us due to economic volatility and oil prices affecting the world. In addition, the creation of novel products to meet the needs of existing and new customers is always a challenge. Therefore, “innovation” has become increasingly important as crucial equipment supporting the business of Thailo and Subsidiaries to grow steadily and sustainably.

In 2022, the Board of Directors approved a long-term strategic plan for 2022-2030 to advocate, develop, and enhance the value of corporate innovation by striving to continuously develop Thailo and Subsidiaries into an outstanding organization for innovation by 2030.

In 2023, Thailo and Subsidiaries will upgrade the corporate values (POSITIVE) by modifying “Initiative” into “Innovation”. Thailo is focus on and value innovation for sustainable growth, starting from an assessment of Corporate Innovation Maturity by a reputable and professional consulting company. Furthermore, Thailo has appointed teams to develop value-added products and low-carbon businesses such as hydrogen and bio-business by integrating efforts from various departments; for example, Research and Development, Engineering, Manufacturing, People and Organization Management, Commercial, and Business Development. Thailo also regularly monitors the progress to efficiently achieve goals and address customers’ needs by positioning customers as the center of product development. The Company also encourages studies on technologies for capturing, storing, and utilizing carbon dioxide in accordance with Thailo and Subsidiaries’ plan to reduce greenhouse gas emissions to net zero by 2060.

## Assessing Corporate Innovation Maturity of Thailo and Subsidiaries

In 2022, the executives of Thailo and Subsidiaries recognizes the value of assessing corporate innovation maturity, and have commissioned Rise Accel (Thailand) Co., Ltd., in collaboration with Sasin Graduate Institute of Business Administration of Chulalongkorn University, to assess the innovation level of Thailo and Subsidiaries and benchmark with other leading organizations. The assessment indicated that Thailo’s innovation was at Level 3 (Challenging level) from five levels, meaning Thailo commanded capability of creating innovation within the organization at a medium level. Thailo and Subsidiaries are therefore committed to applying the findings as guidelines for the development of future innovation and become the organization with innovation Level 5; an organization with the potential to constantly produce advanced innovations and apply them to create benefits and business advantages for Thailo and Subsidiaries to become a sustainable organization.

## Research and Development Strategic Plan

Thailo has developed a Research and Development (R&D) plan, which is divided by six pillars:

- >> Crude Excellence Center;
- >> Catalyst and Adsorbent Excellence Center;
- >> Center of Excellence in Artificial Intelligence and Robotics (AI/Robotics Solution Provider);
- >> Research Center for High Value Products and High Value Business (HVP/HVB);
- >> Research Center for Polymer and Olefin Derivatives; and
- >> Sustainability and New Business Research Center.

Thailo has plans to advance all six research centers to become innovation centers, thus developing new products for the organization in the long term.



## Research and Development (R&D)

During the past three years (2020-2022), Thailo and Subsidiaries' annual expenditure for R&D was THB 82 million, THB 28 million, and THB 13 million, respectively. In 2020, there were additional expenses for the design of a crude oil pilot plant for Clean Fuel Project (CFP), resulting in increased expenditure.

For 2022, Thailo and Subsidiaries' R&D highlights are as follows:

### 1. Emulsified Asphalt (EA)

Emulsified Asphalt (EA) is a product made from asphalt cement mixed with emulsifiers, additives, and water. It can be used at low temperatures at around 20-70 degrees Celsius; therefore, it is suitable for pavement preparation and repair work. EA acts as an adhesive between layers of the road and resists permeating water (Prime Coat) that causes deterioration of the road layer. After being applied to the surface, the water in emulsified asphalt will evaporate, leaving only asphalt that forms a film covering the pavement, thus enabling the road to be used quickly. This product is endorsed by the Department of Highways for meeting Thailand Industrial Standard specifications. With outstanding properties in resistance to water permeability, roads have a longer service life with more resistance to slurry seal. The product is on process of testing on actual roads and the parking lot of Laem Chabang Hospital, Chonburi.

### 2. Aromatic rubber oil, Low PAHs type (Light Residual Aromatic Extract: LRAE)

This product is an essential component in the production of auto tires. It is classified as rubber processing oil of the aromatic type which helps blend various ingredients together in tire production and create a good dispersion of ingredients. Thailo's departments namely Manufacturing, Commercial,

Laboratory, and R&D have jointly developed LRAE, containing Polycyclic Aromatic Hydrocarbons (PAHs) of less than 7 parts per million (ppm) to meet the requirements of customers and the EN16143 standard. The team conducts intensive technical studies to identify the relationship of production variables so that the process can be adjusted to obtain products fitting customers' requirements with PAHs of less than 4 ppm.

### 3. Paraffinic Oil: TOPSol P200

This is an essential component in the production of sealing materials, classified as rubber processing oil of the paraffinic or softener grade. Its main function is to mix rubber and various ingredients together and create a good dispersion of the mixture, resulting in a material with the desired mechanical properties and resistance to changing environments. Thailo's departments namely Manufacturing, Commercial, Laboratory, and R&D have studied in-depth technical data from patents and relevant academic documents so that TOPSol P200 could be developed and become equivalent to lube base oil Group 2, which is normally imported at high costs. TOPSol P200 has been successfully produced and tested in our customers' laboratories, and the material is on process of testing and approaching the actual production scale.

### 4. Ceramic Coating

This is a product used to coat the surface of process furnaces, boilers, or heat exchangers to increase heat exchange efficiency by 3-5 percent and prevent corrosion from high-temperature environments. It can also be used to coat refractory to prevent heat loss on the equipment wall and corrosion, including to increase heat exchange efficiency by heat dissipation properties (re-emission). This year, Thailo used ceramic coating on high-pressure boilers in its refinery to prevent corrosion from highly acidic environments.



## Culture of Innovation

Relentlessly, Thailoil encourages employees to create innovation, evident in the surge of innovation and knowledge promotion activities. In 2022, Thailoil shared knowledge and inspired innovation through weekly and monthly articles sent to employees via e-Mail and innovation contests:

>> Innovation and Knowledge Promotion Activities. These encourage employees to become quality innovators by raising their awareness and providing knowledge and inspiration about innovation through various activities.

- 1) TOP Innovation Newsletter is a weekly article to promote creativity, out-of-the-box thinking, growth mindset, and cultivation of innovators' qualities;

- 2) TOP BCG Updates is monthly article to enhance knowledge of BCG, which is a novel economic model suggested by the government, consisting of Bio Economy, Circular Economy, and Green Economy;

- 3) Innovation Talk is a program featuring guest speakers with expertise on innovation, regularly sharing knowledge with employees.

>> 2022 Thailoil Wisdom and Innovation Awards

By arranging contest for 2022 Thailoil Wisdom and Innovation Awards, Thailoil and Subsidiaries solicit and gather initiatives as well as innovation work of employees. The contest is a major venue that allows employees to present their innovative ideas. In 2022, 318 projects were submitted by employees, an increase of 3.3 times from the previous contest.





# Human Resource and Organization Development

Thaioil and Subsidiaries have implemented strategic plans to achieve the vision of expanding its petroleum business to petrochemical business and new businesses, both in Thailand and overseas. As a result, preparations for several business transformations are required, including human resources and organization.





The goal is to increase the potential of the organizational structure and manpower, to enhance employee competency, and to deliver great experiences to the employees. Our personnel are believed to be the key to drive Thailo and Subsidiaries towards a steady and sustainable centennial organization. The activities done to achieve such goal are detailed as follows:

1. **Strategic Workforce Planning** supports business growth while maintaining workforce productivity competitiveness with peer industries. This includes an appropriate design of the organizational structure and efficiency in staff recruitment and selection.

1.1 **Organization and Manpower Design** is aimed to be appropriately created to ensure the efficient drive of the following three key strategies:





**1.2 Proactive Recruitment Strategy** involves enhancing staff recruitment efficiency through Thailoil Energy Services Co., Ltd., by analyzing the manpower needs, finding effective channels to recruit more employees, and developing tools to evaluate the values of the applicants to recruit new employees with values consistent with the organization. This strategy includes the use of digital technology to enhance the recruitment and selection process.

**2. People Capability Development** stresses the importance of human resource development to ensure knowledge and skills to systematically drive current and future businesses. This includes equipping employees with leadership skills to grow in a secure career path.

**2.1 70-20-10 Development** encourages employees to take action to acquire actual experiences and promote training, coaching, and self-learning through digital platforms to increase one's potential to readily support business expansion.

**2.2 Leader Wellness** is created to ensure the leader can lead the team and the organization effectively amid uncertain situations by strengthening leaders' well-being through the creation of an Alpha Leader Club that allows the exchange of knowledge, experience, and instill GREAT Behavior. To this end, the assessment of leadership behavior is conducted according to the GREAT Model, and elevate behaviors through the exchange of experiences with external specialists.

**2.3 Learning Organization** is the target aimed to achieve to help increase competitiveness and expand business with a long-term master plan and regular communication with employees to raise awareness of a learning organization. Being a Learning Organization encourages each department to identify and systematically store key knowledge so that employees can access and leverage such knowledge to tangibly create business value.

## Learning Organization

Thailoil carries out five major matters to achieve the goal of becoming a learning organization.



### Goal & Strategy

To set clear goals and strategies for being a learning organization, which are consistent with the business strategies



### Organization Transformation

To determine policies, organizational structure, roles, and processes that facilitate learning atmosphere



### Strategic Knowledge Management

To organize knowledge management system to be effective for transferring, storing, and applying knowledge



### People Dynamic Learning

To foster a learning culture, concepts, behaviors, and competencies consistent with that of a learning organization



### Learning Ecosystem

To possess technology and learning platforms that cover all aspects, as well as facilitate and induce a learning society



**3. People Experience** is created to ensure fair treatment to employees, providing them with fair and competitive benefits and remuneration as well as work safety while promoting good corporate culture to ensure staff contentment.

### 3.1 Good Labor Practice: Labor Right and Equality

Commitment to respecting human rights in the workplace and at all Thailoil and Subsidiaries' operating sites is clearly reflected through Thailoil and Subsidiaries' Human Rights Policy and Human Rights Impact Assessment, posted on Thailoil's website ([www.thailoilgroup.com](http://www.thailoilgroup.com)) under the topic of 'Sustainability/I: Our well-being/Human Rights'. Thailoil and Subsidiaries realize their duties and responsibilities for implementing and upholding human rights while playing an important role in driving the Thailoil Value Chain to respect and comply with human rights. To this end, the Human Rights Due Diligence has been developed as a tool and monitor for all business activities undertaken by Thailoil and Subsidiaries and its suppliers in the supply chain on a yearly basis, along with a risk assessment carried out every three years. The tool was developed in line with Human Rights Due Diligence Handbook of the International Finance Corporation (IFC), United Nations Guiding Principles, NAP Implementation, and Thailoil's risk management. This is identified as 'Thailoil Group Human Rights Impact Assessment and Management Procedure'.

In 2022, Thailoil and Subsidiaries focused on organizing activities to promote human rights so as to ensure that executives, employees, and stakeholders clearly understand the policies and regulations. This is to prevent human rights violations in the workplace and engagement in violation of partners in the value chain. The '3 Parts for Fulfilling Human Right' guidelines carried out for the third consecutive year, consists of 1) communication with all sectors to ensure

awareness of human rights, 2) improvement of employee physical and mental health, and 3) uplift of 'people' as the first priority both in terms of human rights and employee well-being amid the COVID-19 outbreak.

To achieve sustainable business operations and retain capable personnel within the organization, Thailoil and Subsidiaries annually reviews to ensure attractive remuneration and welfare for employees, yet competitive with peer industries and leading companies in Thailand. This includes refraining from discrimination and allowing freedom of association to negotiate as a group. Thailoil recorded no significant labor dispute during the past three years, and as of December 31, 2022, Thailoil registered 444 members to the Union of Thai Oil Refinery Company, representing 75 percent of its total employees. There has been no protest or strikes and 100 percent of business transactions have been audited accordingly.

Therefore, in 2022, the aforementioned activities earned Thailoil a Human Right Award on Model Organization for the third consecutive year; and Thailoil is certified as a member of DJSI for the tenth consecutive year, with a score of 100 for human rights.

### 3.2 Employees' Remuneration (Excluding Executives)

Employees of Thailoil and Subsidiaries receive benefits such as salary, allowance, overtime payment, welfare, annual allowance, and other financial assistance as well as contribution to a provident fund. Housing allowance, medical expenses, children's education support, and other benefits such as annual leave, military service leave, maternity leave, and funeral aid are also provided. Thailoil is well aware that each employee needs financial security upon retirement, and therefore a gratuity fund was organized where a lump sum of money will be awarded to employees, depending on their respective service



periods. Employees are allowed to withdraw part of the sum every 10 years, and each month Thailoil makes a contributions to this project.

Remuneration for employees in the fiscal year ending December 31, 2022, is as follows:

Total remuneration for Thailoil employees

Type of Remuneration	Remuneration (THB Million)	
	2022	2021
Salary and Allowance	858.76	881.91
Bonus Payment	255.35	241.50
Contribution to Provident Fund	81.15	85.46
Retirement (Gratuity) Fund	108.58	111.07
Overtime	77.95	65.01
Miscellaneous	348.67	387.17
<b>Total</b>	<b>1,730.46</b>	<b>1,772.12</b>

Total remuneration for employees of Thailoil Energy Services Co., Ltd. (TES)

Type of Remuneration	Remuneration (THB Million)	
	2022	2021
Salary and Allowance	1,110.67	986.96
Bonus Payment	296.26	240.44
Contribution to Provident Fund	60.81	54.42
Overtime	90.11	62.16
Miscellaneous	189.36	192.09
<b>Total</b>	<b>1,747.21</b>	<b>1,536.07</b>

In addition to the remuneration described above, Thailoil set up a Provident Fund in 1990 under the Provident Fund Act B.E. 2530 (1987) and has contributed 15 percent of employees' salary to the fund with options for each employee to contribute 5-15 percent of the salary. Currently, 511 employees are participating in the fund, representing 92.74 percent of the total Thailoil employees and 1,191 employees are participating

in the fund, representing 92.83 percent of the total TES employees.

The management and investment of the Member Companies of Thai Oil Group-Registered Provident Fund is key to stable and sustainable growth. As a result, selecting a fund management company is a crucial duty that the Provident Fund Committee must carefully and prudently consider. A fund management company with past records of administrative system that is appropriate, secure, and beneficial for members will be selected. The consideration is based on 1) the administrative system of the fund management company should consist of an investment decision-making process, data used for investment decision, and various services systems, and 2) the stability of the fund management company from past performance, experience, expertise, policies, operations, and insurance against possible damages. The committee will give equal weight to both criteria, but appropriate and necessary adjustments can be made. If a new fund management company has been selected, the committee will follow Thailoil and Subsidiaries' procurement policy.

### 3.3 Employee Satisfaction and Engagement Enhancement

Thailoil and Subsidiaries conduct an employee engagement survey on an annual basis, and utilize the results from the survey to analyze and to formulate strategies and activities that constantly enhance engagement. All line managers are encouraged to organize activities suitable for employees in their respective functions by using the PEOPLE Model, designed to develop good relations within the organization, increase effective communication channels, and develop a work environment that enhances mutual trust. Moreover, employee performance is valued, and employees are given the opportunity to acquire new experience, fostering and developing a good understanding between employees and the organization.





In 2022, Thailoil and Subsidiaries has prepared a Care Package: Insightful Leader Playbook for the second consecutive year, as a guidebook for line managers to communicate and create an accurate understanding about performance evaluation, provide recommendations and advice as well as promote career path. Thailoil also arranged the activity “We Connected” through online channels to provide information on the organization and the responsibilities of each department. It also promotes employee relationship despite rare meets between employees due to the spread of COVID-19.

### 3.4 5 Happiness Project

Thailoil and Subsidiaries are committed to stewardship of the quality of life of employees from the first until the last day of their employment by delivering good work experiences through the 5 Happiness consisting of physical, mental, financial, social, and appreciative happiness. In addition, in 2022 Thailoil and Subsidiaries enhanced the happiness of employees through the Employee Well-Being integrated program called “Joyful The Series”. External experts share their knowledge about enhancing one’s own well-being, so that employees can apply such knowledge to achieve well-being in both work

life and personal life with balance. Moreover, the development of the “SparkJoy” application to support a new way of working with flexibility and to increase work efficiency can pass on positive feelings and care to colleagues at times when they have to work at a distance. This is another way to help maintain strong positive relations between employees.

### 3.5 Pandemic Management and Prevention

Thailoil and Subsidiaries have managed and prevented the spread of COVID-19 through the I-COVID Center by setting policies, measures, and guidelines that cover several aspects such as promoting employees to strictly follow the THAM-D+ measure, encouraging employees to work from home, encouraging booster vaccinations, setting up screening measures at entrances and exits of all operating area, employee clustering for mission-critical activities, and manpower sparing. These measures foster confidence among employees and prevent business operations from being interrupted by the spread of COVID-19.



## Employee Data

Number of employees (excluding executives) of Thailoil and TES.

Key Function	Number of Employees			
	As of December 31, 2022		As of December 31, 2021	
	Thailoil	TES	Thailoil	TES
Corporate Strategic Risk Department	2	8	3	7
Movement Marine and Logistic Department	48	80	51	80
Technology Department	10	40	11	40
Refinery Department	137	204	159	216
Treasury Department	4	22	3	22
Commercial Department	6	39	13	30
Corporate Affairs Department	10	25	11	26
Procurement and Contract Department	8	22	9	22
Quality Management Department	10	23	13	22
Supply Chain Optimization Department	3	20	3	19
Accounting Department	10	34	14	37
Petrochemical and Lube Base Department	8	141	11	146
Business Development Department	2	13	2	13
Asset Development Department	12	27	14	26
Financial Planning Department	3	16	6	10
Commercial Planning Department	4	12	3	13
Engineering Department	83	206	90	194
Efficient Operations Support Department	27	88	29	83
New S-Curve Business Development Department	2	4	5	12
Corporate Resources and Transformation Management Department	2	6	2	5
Digitalization Department	9	20	11	15
Clean Fuel Project	71	82	55	63
Corporate Governance, Compliance and Legal Department	2	8	3	7
Group Company Secretary and Sustainability Department	8	19	8	13
Corporate Internal Audit Department	2	7	2	9
People and Organization Management Department	19	32	20	30



Key Function	Number of Employees			
	As of December 31, 2022		As of December 31, 2021	
	Thaioil	TES	Thaioil	TES
People and Organization Excellence Department	2	9	2	10
Strategic Planning Department	-	16	-	16
Finance and Accounting Function	6	7	6	4
Manufacturing Function	30	6	28	6
Hydrocarbon Function	1	-	-	-
Operation Excellence Function	1	-	-	-
TOPNEXT International Co., Ltd.	6	35	-	-
Research & Development/High Value Product	3	12	-	-
<b>Total</b>	<b>551</b>	<b>1,283</b>	<b>587</b>	<b>1,196</b>

**Remarks:**

Under the aforementioned structure, employees can be divided into two groups:

1. Non-Executives-consists of juniors, supervisors, seniors, and managers
2. Executives-consists of Vice Presidents, Executive Vice Presidents, Senior Executive Vice Presidents, and Chief Executive Officer and President

**Significant changes in the number of employees in the past 3 years (excluding executives)****Thaioil**

- >> As of December 31, 2022, a total of 551 employees
- >> As of December 31, 2021, a total of 587 employees
- >> As of December 31, 2020, a total of 606 employees

**TES**

- >> As of December 31, 2022, a total of 1,283 employees
- >> As of December 31, 2021, a total of 1,196 employees
- >> As of December 31, 2020, a total of 1,118 employees.







# Corporate Governance Policy

Committed to conducting an honest, transparent, and accountable business, Thailoil sets its business on corporate governance principles and a code of conduct, recognized as basic requirements for efficient business operations and key foundation for building confidence from all stakeholders, to raise competitiveness, and to promote sustainable growth for Thailoil and Subsidiaries. The Board of Directors (The Board) developed the 'Corporate Governance Policy' and assigned the Corporate Governance and Sustainability Committee (The CG Committee) to monitor and promote business operations in compliance with the policy and guidelines involving corporate governance and a code of conduct. Policies, principles, and guidelines for corporate governance are to be regularly reviewed by the committee. In 2022, the Board granted an approval for a review of the Corporate Governance Policy, Anti-Fraud Policy, Corporate Governance and Code of Conduct Manual (CG Manual), and Charter of the Corporate Governance and Sustainability Committee to ensure alignment with amended criteria and recommendations made by related regulators. Thailoil's corporate governance policy and compliance with corporate governance principles are detailed below:

## Policy and Guidelines Relevant to the Board

### Nomination and Appointment of the Board

#### Nomination Criteria

Criteria for Thailoil's Board members nomination were developed in compliance with relevant laws and regulations, as described in CG Manual. Thailoil's nomination criteria stipulate that directors must hold qualifications that comply with laws and regulations, considering experience, knowledge, and skills that benefit the business. The criteria, in addition, opened to the diversity of gender, race, ethnicity, nationality, or country of origin. Thailoil also values directors' diversity of expertise and has developed a Board Skill Matrix aligned with business strategies to assist in the selection process. Names of qualified persons are also searched from the State Enterprise Policy Office's (SEPO) Director's Pool and the Thai Institute of Directors' list of professional directors (IOD Chartered Directors). As of December 31, 2022, eight members of the Board were from the 14 names in SEPO's Director's Pool.

#### Independent Directors' Qualifications

Independent Directors shall be independent from major shareholders or groups of major shareholders, or Thailoil



executives. Qualifications of independent directors are stated in the CG Manual. An independent director shall serve not exceed nine consecutive years from the date of the first appointment. To date, none of the independent directors have been on the position for longer than nine years.

#### Directors' Remuneration

The Nomination and Remuneration Committee (NRC) considers director's annual remuneration by considering such factors as directors' responsibilities, business performance, and overall economic circumstances while making comparisons with other companies in the same industry to come up with a comparable and motivating remuneration package. The NRC will then make a proposal to the Board for endorsement before submitting to the

Annual General Meeting of Shareholders (AGM) for consideration and approval.

Following the comparison with companies of a similar size in the same industry and taking the business circumstances into consideration, it was found that the criterion structure and remuneration for the Board were still suitable. So, the remuneration of the same rate as that of 2021 was proposed, with a bonus of THB 38 million offered for their 2021 performance, which accounts for 0.30 percent of the net profit and does not exceed the annual maximum limit of THB 50 million. The package already received approval from the 2022 AGM and was disclosed on the topic 'Directors' Remuneration in 2022' on page 95.

#### Remuneration Structure

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

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

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

Per-Attendance Fee (for directors who attend the meeting)	45,000 Baht/Meeting
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Special Bonus for the Board	THB 38 million <sup>(2)</sup>
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Other Remunerations	-None-
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#### Remarks:

<sup>(1)</sup> The Chairman of the Board and the Chairman of Board-committees shall receive remuneration of 25 percent higher than the directors.

<sup>(2)</sup> Special bonus for the 2021 Company performance were paid to the directors holding the office in 2021, which include the directors who completed their terms or resigned in 2021, prorated due to the duration of office holding. The Chairman of the Board shall receive remuneration of 25 percent higher than the directors.



## Directors' Remuneration in 2022 (As of December 31, 2022)

(THB)

No.	Name-Surname	Board of Directors			Board-Committees (Per-Attendance Fee)				Annual Bonus for 2021 Performance <sup>(1)</sup> (Paid in April 2022)
		Retainer Fee	Per-Attendance Fee	Audit Committee	Nomination and Remuneration Committee	Corporate Governance and Sustainability Committee	Risk Management Committee	Total Remunerations	
1	Prof. Dr. Supot Teachavorasinskun	750,000.00	900,000.00	-	-	-	-	1,650,000.00	3,165,365.83
2	Pol. Gen. Aek Angsanant	600,000.00	720,000.00	562,500.00	-	225,000.00	-	2,107,500.00	2,532,292.67
3	Dr. Pailin Chuchottaworn	600,000.00	680,000.00	-	-	-	225,000.00	1,505,000.00	1,699,758.08
4	ACM Sutibong Inseeyong	600,000.00	720,000.00	-	225,000.00	-	-	1,545,000.00	2,532,292.67
5	Mr. Praphaisith Tankeyura	600,000.00	720,000.00	450,000.00	-	-	-	1,770,000.00	2,532,292.67
6	Gen. Kukiat Siriraka	600,000.00	720,000.00	-	-	180,000.00	-	1,500,000.00	2,532,292.67
7	Ms. Pannalin Mahawongtikul	600,000.00	720,000.00	-	-	-	225,000.00	1,545,000.00	2,532,292.67
8	Dr. Buranin Rattanasombat	600,000.00	720,000.00	-	-	-	236,250.00	1,556,250.00	2,532,292.67
9	Assoc. Prof. Dr. Pasu Decharin	600,000.00	720,000.00	450,000.00	180,000.00	-	-	1,950,000.00	2,532,292.67
10	Mr. Plakorn Wanglee	600,000.00	720,000.00	450,000.00	-	-	-	1,770,000.00	2,532,292.67
11	Mr. Terdkiat Prommool	600,000.00	680,000.00	-	180,000.00	-	-	1,460,000.00	2,532,292.67
12	Dr. Sompop Pattanaryankool	600,000.00	680,000.00	-	-	-	-	1,280,000.00	1,859,327.21
13	Mr. Suchat Ramarch	600,000.00	720,000.00	-	-	-	-	1,320,000.00	638,276.50
14	Mr. Noppadol Pinsupa	151,666.67	120,000.00	-	-	-	90,000.00	361,666.67	-
<b>Directors who resigned during the Year 2022</b>									
1	Mr. Wirat Uanarumit	300,000.00	600,000.00	-	-	-	135,000.00	1,035,000.00	2,532,292.67
2	Dr. Prasert Sinsuprasert	300,000.00	640,000.00	-	-	180,000.00	-	1,120,000.00	1,859,327.21
<b>Directors who completed the Term in 2021 AGM/resigned during the Year 2021</b>									
1	Mr. Yongyut Jantaratorai	-	-	-	-	-	-	-	215,071.42
2	Ms. Chularat Suleethorn	-	-	-	-	-	-	-	672,965.45
3	Mr. Praphon Wongtharua	-	-	-	-	-	-	-	672,965.45
4	Ms. Duangporn Thiergwatanatham	-	-	-	-	-	-	-	1,894,016.15
<b>Total</b>		<b>8,701,666.67</b>	<b>10,780,000.00</b>	<b>1,912,500.00</b>	<b>585,000.00</b>	<b>585,000.00</b>	<b>911,250.00</b>	<b>23,475,416.67</b>	<b>38,000,000.00</b>

## Remark:

<sup>(1)</sup> Special Bonus for 2021 Company Performance as resolved by the 2022 Annual General Meeting of Shareholders (AGM) on April 7, 2022, paid on April 23, 2022, to the directors holding the office in 2021, which include the directors who completed their terms or resigned in 2021, prorated due to the duration of office holding. The Chairman of the Board shall receive the remuneration of 25 percent higher than the directors.



### Board Meeting

Each year, the Board meetings are scheduled in advance so that the Board can make themselves available to efficiently attend the meeting. The 2023 Board meeting schedule was sent to the Board in November 2022. According to best practices, **a meeting invitation together with documents required for the meeting will be delivered to all directors** at least five business days before the scheduled meeting date, except for urgent matters. The Board sets a policy that requires no less than two-thirds of the current Board in attendance and vote counts to make a quorum, unless where there is an urgent need to conduct a meeting to avoid damage to Thailoil, or in an event of an urgent call for a meeting, or any other reasons where the Board deems appropriate.

In 2022, a total of 18 Board meetings were held, one Strategic Thinking Session (STS) included. One non-executive directors meeting without executives and one independent directors meeting were also held to allow non-executive directors/independent directors to exchange views freely. Directors were encouraged to discuss and make recommendations in support of business administration. The outcomes of the meeting were passed on to the executives by the Company Secretary for further action. Information on meeting attendance of individual directors is disclosed on the topic 'Meeting Attendance of Board of Directors, Board-Committees, and Shareholders' Meeting in 2022' on page 97.









### Board's Performance Assessment

Thaioil arranges for performance assessment of the Board on an annual basis. The assessment is divided into two types:

- 1) Board and Board-Committee Assessment
- 2) Individual Self-Assessment and Peer Assessment.

### Board's Performance Assessment Criteria and Process

The CG Committee agreed on the 2022 Board's performance assessment form, which was reviewed and improved to have diverse issues covered under the Thai Institute of Directors' (IOD) 'Guideline on Board Evaluation and Development'. The assessment forms were sent to each individual director for assessment and returned to Thaioil for analysis. Thaioil, then, raised the assessment results together with comments to the CG Committee and the Board respectively for acknowledgment. Suggestions and recommendations from the assessment shall be used to identify guidelines to develop and enhance the Board's performance efficiency; for example, an increase in frequency of report of Board-Committee's performance to the Board.

Performance assessment of the Board and Board-committees consists of such key matters as the Board composition, information management, business performance management, directors' development, etc. Individual assessment (self-assessment and peer assessment) includes participation, knowledge and skills, teamwork, and director's ethics. The assessment criteria are divided into five levels:

- Level 1 - Need significant improvement
- Level 2 - Partially meet expectations
- Level 3 - Meet expectations
- Level 4 - Exceed expectations
- Level 5 - Exemplary (best practices).

The 2022 Board's Performance Assessment can be summarized as follow:

Assessment Results		2022
Part 1:	Board of Directors and Board-Committees Assessment	4.8
	- Audit Committee	4.9
	- Corporate Governance and Sustainability Committee	4.8
	- Nomination and Remuneration Committee	4.9
	- Risk Management Committee	4.9
Part 2:	Individual Director Assessment (Self-Assessment)	4.8
Part 3:	Individual Director Assessment (Peer Assessment)	4.7
Average score (Parts 1-3)		4.8

### Directors' Development

The Board encourages all directors to keep on learning as support for their improved performance. The list of director's training courses in the year 2022 is shown on page 99. An annual visit to the refinery was also arranged to keep directors updated with the progress of key projects and the operations.

For new directors, Thaioil arranges an orientation session facilitated by high-level executives with knowledge about the business and business direction as well as related laws and regulations and other information required for performing the director's duties. A Welcome Package for TOP's New Director, containing information required, is prepared for new directors before assuming office.



### Director's Training Courses in the year 2022 (As of December 31, 2022)

No.	Name-Surname	Training Courses in the year 2022
1	Prof. Dr. Supot Teachavorasinskun	<ul style="list-style-type: none"> <li>&gt;&gt; Capital Market Academy Leader Program, Class 32, Capital Market Academy</li> <li>&gt;&gt; IOD National Director Conference 2022: "Wisdom for Future: Harmonizing the diverse boards"</li> <li>&gt;&gt; IOD Chairman Forum No. 1/2022: "Chairing the Unknown Future"</li> </ul>
2	Pol. Gen. Aek Angsananont	<ul style="list-style-type: none"> <li>&gt;&gt; PTT Group AC Forum 2022: "Rising to the Challenge"</li> </ul>
3	Dr. Pailin Chuchottaworn	<ul style="list-style-type: none"> <li>&gt;&gt; STS Expert Session 2022:               <ul style="list-style-type: none"> <li>&gt;&gt; "Oil and Petrochemical Industry Outlook", Boston Consulting Group (BCG)</li> <li>&gt;&gt; "Net Zero GHG Emission Pathway", Shell Plc</li> </ul> </li> <li>&gt;&gt; IOD National Director Conference 2022: "Wisdom for Future: Harmonizing the diverse boards"</li> </ul>
4	ACM Suttipong Inseepong	<ul style="list-style-type: none"> <li>&gt;&gt; Director Leadership Certification Program (DLCP 4/2022)</li> <li>&gt;&gt; IOD National Director Conference 2022: "Wisdom for Future: Harmonizing the diverse boards"</li> </ul>
5	Mr. Praphaisith Tankeyura	<ul style="list-style-type: none"> <li>&gt;&gt; STS Expert Session 2022:               <ul style="list-style-type: none"> <li>&gt;&gt; "Oil and Petrochemical Industry Outlook", Boston Consulting Group (BCG)</li> </ul> </li> <li>&gt;&gt; IOD National Director Conference 2022: "Wisdom for Future: Harmonizing the diverse boards"</li> <li>&gt;&gt; PTT Group AC Forum 2022: "Rising to the Challenge"</li> <li>&gt;&gt; Discussion: "Easy Listening: Tips Audit Committee should not miss Episode 2", The Securities and Exchange Commission, Thailand</li> </ul>
6	Ms. Pannalin Mahawongtikul	<ul style="list-style-type: none"> <li>&gt;&gt; Risk Management Program for Corporate Leaders (RCL 28/2022)</li> <li>&gt;&gt; STS Expert Session 2022:               <ul style="list-style-type: none"> <li>&gt;&gt; "Successful Thai Union's Business Transformation Pathway", Thai Union Group Plc</li> <li>&gt;&gt; "Energy Outlook and Major Oil Players Movement in Energy Transition and Net Zero Era", McKinsey&amp;Company</li> <li>&gt;&gt; "Global&amp;Thailand Economic Outlook", Kiattakin Phatra Financial Group</li> </ul> </li> <li>&gt;&gt; IOD National Director Conference 2022: "Wisdom for Future: Harmonizing the diverse boards"</li> <li>&gt;&gt; IOD Seminar: "What Director Should Know about Quantum?"</li> </ul>



No.	Name-Surname	Training Courses in the year 2022
7	Dr. Buranin Rattanasombat	<ul style="list-style-type: none"> <li>&gt;&gt; Director Leadership Certification Program (DLCP 4/2022)</li> <li>&gt;&gt; National Defence Course, Class 64, National Defence College</li> <li>&gt;&gt; IOD National Director Conference 2022: "Wisdom for Future: Harmonizing the diverse boards"</li> </ul>
8	Assoc. Prof. Dr. Pasu Decharin	<ul style="list-style-type: none"> <li>&gt;&gt; Advanced Audit Committee Program (AACP 44/2022)</li> <li>&gt;&gt; IOD National Director Conference 2022: "Wisdom for Future: Harmonizing the diverse boards"</li> <li>&gt;&gt; PTT Group AC Forum 2022: "Rising to the Challenge"</li> <li>&gt;&gt; Seminar: "Strategy Adjustment to Ensure Update, Crisis Survival, and Sustainable Thrive amidst Economic Crises from Pandemic, Energy War, and Inflation", EY Office Limited</li> </ul>
9	Mr. Plakorn Wanglee	<ul style="list-style-type: none"> <li>&gt;&gt; Advanced Audit Committee Program (AACP 44/2022)</li> <li>&gt;&gt; STS Expert Session 2022:               <ul style="list-style-type: none"> <li>&gt;&gt; "Oil and Petrochemical Industry Outlook", Boston Consulting Group (BCG)</li> <li>&gt;&gt; "Energy Industry Trend", Facts Global Energy (FGE)</li> </ul> </li> <li>&gt;&gt; IOD National Director Conference 2022: "Wisdom for Future: Harmonizing the diverse boards"</li> <li>&gt;&gt; PTT Group AC Forum 2022: "Rising to the Challenge"</li> </ul>
10	Dr. Sompop Pattanariyankool	<ul style="list-style-type: none"> <li>&gt;&gt; Financial Statements for Directors (FSD 45/2022)</li> <li>&gt;&gt; The Executive Program in Energy Literacy for a Sustainable Future, Class 16, Thailand Energy Academy</li> <li>&gt;&gt; STS Expert Session 2022:               <ul style="list-style-type: none"> <li>&gt;&gt; "Oil and Petrochemical Industry Outlook", Boston Consulting Group (BCG)</li> <li>&gt;&gt; "Successful Thai Union's Business Transformation Pathway", Thai Union Group Plc</li> </ul> </li> </ul>
11	Mr. Suchat Ramarch	<ul style="list-style-type: none"> <li>&gt;&gt; National Defence Course, Class 64, National Defence College</li> <li>&gt;&gt; STS Expert Session 2022:               <ul style="list-style-type: none"> <li>&gt;&gt; "Successful Thai Union's Business Transformation Pathway", Thai Union Group Plc</li> <li>&gt;&gt; "Global&amp;Thailand Economic Outlook", Kiattakin Phatra Financial Group</li> </ul> </li> </ul>



### Directors who resigned during the year 2022

No.	Name-Surname	Training Courses in the year 2022
1	Mr. Wirat Unanarumit	>> STS Expert Session 2022: >> “Oil and Petrochemical Industry Outlook”, Boston Consulting Group (BCG) >> “Energy Industry Trend”, Facts Global Energy (FGE) >> “Global&Thailand Economic Outlook”, Kiatnakin Phatra Financial Group >> “Energy Outlook and Major Oil Players Movement in Energy Transition and Net Zero Era”, McKinsey&Company >> “Successful Thai Union’s Business Transformation Pathway”, Thai Union Group Plc >> “Net Zero GHG Emission Pathway”, Shell Plc >> IOD National Director Conference 2022: “Wisdom for Future: Harmonizing the diverse boards” >> IOD National Director Conference 2022: “Wisdom for Future: Harmonizing the diverse boards”
2	Dr. Prasert Sinsukprasert	

#### Remarks:

- Mr. Wirat Unanarumit resigned from directorship on September 30, 2022.
- Dr. Prasert Sinsukprasert resigned from directorship on December 1, 2022.



## Policies and Guidelines Relating to Stakeholders

Thaioil operates a fair business with awareness of impacts on stakeholders while treating all groups of stakeholders equally. Guidelines for treating each group of stakeholders are made and available in the CG Manual, which is accessible on Thaioil's website for study and downloading. Policies and guidelines are summarized below:

### Shareholders, Investors, and Analysts

The Board protects shareholders and encourages them to exercise their rights while treating them equally, be they may major or minor shareholders or institutional investors.

#### The 2022 Annual General Meeting of Shareholders (AGM)

Thaioil held the 2022 AGM on April 7, 2022, at 09:00 hrs., at Bangkok Convention Center, 5<sup>th</sup> floor, Central Plaza Ladprao, where shareholders can conveniently reach by car, sky train, and other means of public transport. Additional measures were implemented to reduce the risk of the COVID-19 pandemic, for example, seating arrangement with sufficient distancing and live broadcast of the meeting.

To hold an AGM, Thaioil follows the AGM Checklists of Thai Investors Association, Thai Investors Association, Thai Listed Companies Association, and SEC. For the 2022 AGM, Thaioil earned full 100 scores for meeting arrangement for seven straight years, reflecting its determination to hold an AGM of the required standard and with corporate governance principles applied. This includes:

>> **Allowing shareholders to propose agenda items and qualified persons for nomination to the Board** during September 27-December 31, 2021, for which the criteria and process were announced on the websites of SET and Thaioil, while **welcoming questions from shareholders before the meeting date** stated in the meeting invitation. For the 2022 AGM, none of the

shareholders has proposed an agenda nor nominated any candidate for director position, which Thaioil disclosed in the AGM invitation notice.

As for the 2023 AGM, scheduled for April 2023, Thaioil allowed shareholders to propose agenda items and qualified persons for nomination to the Board during September 29-December 31, 2022,

- >> Technology was applied to the AGM, such as **the use of barcodes** for registration and vote counting to ensure accuracy, convenience, and speed.
- >> **Allowing shareholders to be volunteer witnesses in the vote counting and arranging for an independent legal expert to inspect vote counting to ensure voting and vote counting transparency.**

Apart of arranging an AGM, Thaioil held a number of online activities as a channel to meet with shareholders, investors, and analysts, as detailed on the topic 'Investor Relations' on page 104.

### Customers

Thaioil pays special attention to delivering quality products to meet customers' standards, details of which are available on page 55 on the topic of 'Production Process and Development'. This includes innovation for product development to better respond to customers' demand. Details of such innovation are revealed in the 2022 Integrated Report on the topic 'Innovation and Customer Stewardship'. In addition to making quality products, Thaioil values communication with customers while maintaining good and sustainable relationship with them. The Voice of Customer system has been initiated to receive customers' opinions on various channels, including the website, phone, and e-Mail. Thaioil is well aware of privacy and strives to protect customers' personal data and comply with the Personal Data Protection Act B.E. 2562 by announcing privacy notice for customers and all stakeholders on Thaioil's website. Moreover, a customer satisfaction survey is held monthly and yearly to measure customers'



satisfaction. For the 2022 customer engagement survey, Thaioil received an average score of as high as 95 percent. Details of customer treatment is available in the 2022 Integrated Report on the topic 'Innovation and Customer Stewardship'.

### Business Partners

Recognizing business partners as key business associates, Thaioil established procurement procedures and complies strictly with them. This exhibits Thaioil's intention to treat all partners fairly, equally, and transparently. Thaioil has a selection process that requires business partners to meet certain qualifications. Criteria for assessing business partners' capability have also been clearly defined. Thaioil also gives support for business partners to raise their potential through various activities, details of which are available in the 2022 Integrated Report on the topic 'Sustainable Supply Chain Management'. Thaioil also promotes 'Green Procurement', of which details are stated in the 2022 Integrated Report on the topic 'Circular Economy'.

### Employees

Thaioil pays attention to employee's well-being by promoting a corporate culture and providing fair compensation while observing human rights principles based on fairness and equality, which have been turned into the following actions:

- >> Basing treatment for employees and stakeholders on human rights principles, at both national and international levels, while strictly observing labor laws and other related regulations. Each one of Thaioil employees is hired under conditions of related laws and local practice, with a remuneration package offered without any discrimination. All employees are given training that suit their respective nature of work. Thaioil has launched the '**Human Rights Policy in Workplace**' that addresses key issues, including fair treatment for employees, equal pay policy, safety and occupational health at work policy, union freedom

support and negotiation results approval, among others. Information on compliance with human rights principles is disclosed in the 2022 Integrated Report on the topic 'Human Rights'. No complaint about human rights was lodged in 2022.

- >> Introducing a **policy on fair compensation and welfare** which is connected to the performance of each individual executive and employee. The remuneration structure is reviewed every year to ensure that Thaioil's remuneration package is part of the top quartile companies in the industry and **to align the remuneration scheme with both short-term and long-term corporate performance**. Thaioil considered salary adjustment for executives and employees once a year using the 'Balanced Scorecard', which features three aspects, namely 1) business as usual; 2) strategic initiatives; and 3) strategic enablers and sustainability. The scorecard is used for defining corporate KPIs, which is cascaded down to individual KPIs for measuring an individual's current performance (short term) and ability to respond to long-term strategy. More details about human resource management can be found in 'Human Resource and Organization Development' on page 84 and in the 2022 Integrated Report on the topic 'Human and Organization Development'.

### Creditors

Thaioil treats creditors responsibly and operates its businesses in accordance with conditions and guarantee terms strictly while making full and timely repayment of loans and interests as well as honestly submitting accurate financial status report to creditors on time. Should there be any failure to comply with payment terms and conditions, Thaioil will inform creditors in advance and discuss to solve problems to prevent any possible damages.

### Competitors

Thaioil treats all business competitors equally under laws concerning trade competition and within the extent



of liberalized international competition. Thailoil adheres to fair competition and does not commit the following practices: seeking competitors' confidential information, defaming competitors using slander, entering into any agreement with competitors or any party that may lead to reduction or limitation of competition. No legal case between Thailoil and competitors was filed in 2022.

#### **Communities, society, and environment**

Thailoil has in place policies on quality, security, safety, occupational health, environment, energy management, and social responsibility. Thailoil fosters good relationships and raises the quality of life for people in neighboring and distant communities under its Corporate Social Responsibility (CSR) framework, which covers education, energy and natural resources, environmental conservation, and quality of life. Details about operations and social responsibility can be found in the 2022 Integrated Report on the topics 'Human Health and Safety' and 'Corporate Social Responsibility'.

#### **Disclosure and Transparency**

##### **Information Disclosure**

In compliance with various regulations, Thailoil discloses financial and general information to stakeholders in both Thai and English. The information is regularly posted on the electronic system of the SET, Thailoil's website, and social media channels, such as Facebook and LINE. Besides, operation updates are communicated through public media in electronic and printed forms.

#### **Investor Relations**

To ensure that shareholders, investors, and interested parties receive adequate, accurate, complete, transparent, and equal information, Thailoil established Investor Relations section to facilitate communication with shareholders, investors, analysts, and regulators. Investor Relations can be reached by e-Mail: at [ir@thailoilgroup.com](mailto:ir@thailoilgroup.com) or by phone number 0-2797-2961 (direct).

Thailoil's financial status and other key information are communicated through various channels, including virtual and conference calls with local and foreign investors, quarterly analysts' meeting, and activities regularly organized with the SET, such as the SET Opportunity Day and SET Digital Roadshow (three times a year).

#### **Review of Policies, Principles, and Guidelines for Corporate Governance**

Thailoil regularly reviews its policies, principles, and guidelines for corporate governance annually, in compliance with regulations, announcements, and guidelines for corporate governance of the SET and SEC, as well as principles and assessment criteria for corporate governance of various institutes. In some cases, however, Thailoil deems it necessary to have guidelines that better match the business environment, such as the **Cumulative Voting**, which by Thailoil's Article of Association, director nomination relies on the majority votes by shareholders whose votes equal the number of shares they are holding. But as Thailoil values minor shareholders, they are allowed to propose candidate for director nomination in advance.



# Corporate Governance Report

## Code of Conduct

To manage an ethical business, **Thaioil established a Code of Conduct** as guidelines for directors, executives, and employees to follow, involving for example, a code of conduct for procurement and a code of conduct for anti-money laundering, which have been incorporated into the **Corporate Governance and Code of Conduct Manual (CG Manual)**, in which the Corporate Governance Policy, Corporate Governance code, Code of Conduct and the Anti-Fraud Policy are featured. In 2022, Thaioil amended the CG Manual to be up-to-date and in line with the best practices of various regulating agencies. Directors, executives, and employees are required to study the CG Manual and acknowledge it on the electronics CG Reporting system as a pledge to adhere to the principles and tangibly implement. The CG Manual has also been posted on Thaioil's website for easy access by all stakeholders and the public.

## Communication and Advocacy of Compliance

To ensure that all directors are well aware of Thaioil's corporate governance code, the CG Manual was sent to all newly appointed directors. Meanwhile, compliance with code of conduct, such as the use of inside information, vested interests, and conflicts of interest, are continually communicated and emphasized in the Board meetings.

As for executives and employees, Thaioil nurtures concepts of corporate governance, code of conduct, use of inside information, conflicts of interest, and anti-fraud since their first day of employment. The concepts have been incorporated to each orientation session organized for new employees, while the CG Manual is distributed through the CG Reporting system, resulting in all new employees being informed and trained. Furthermore, activities were organized such as GRC Quiz Challenge, National Anti-Corruption Day 2022's

activity that employees are engaged to exchange their views about the prevention of corruption risk, PTT Group CG Day 2022 held under the concept 'Togetherverserse- CG Power for Sustainability&Beyond', and the No Gift Policy. Messages regarding corporate governance, code of conduct, use of inside information, conflicts of interest, and anti-fraud were communicated 14 times this year via Akaanee (Thaioil's internal magazine), and e-Newsletters were sent directly by e-Mail to all executives and employees. More details are found in the 2022 Integrated Report on the topic 'Corporate Governance and Sustainability'.

## Corporate Governance and Code of Conduct Guideline and Enforcement

Thaioil requires directors, executives, and all employees to acknowledge and perform in accordance with policies and regulations stated in the CG Manual. Monitoring of compliance with the Code of Conduct and that of dubious acts was carried out through whistle-blowing measures as well as the internal control process. If directors, executives, or employees violate the corporate governance principles, code of conduct, or unlawful acts implying corrupt practices, they will face strict disciplinary punishment. If it is suspected that they have violated any law, regulation, rule, and requirement laid down by the public sector, they will also be handed to public officials for prosecution. In 2022, there was no case of code of conduct violation nor corruption by directors, executives, and employees.

## Supervision of Subsidiaries' Operations

Thaioil formulated 'TOP Way of Conduct Policy' to govern operations of Thaioil's subsidiaries and as a guideline for assigning a qualified personnel to manage an affiliate to ensure business direction alignment.



The TOP Way of Conduct contains 23 policies, such as accounting, corporate governance, anti-fraud, and internal control policies. To govern subsidiaries\*, Thailoil assumes its role as the shared service center whereby Accounting Department oversees subsidiaries' financial reports and their connected transactions, and Investor Relations Sections ensures that subsidiaries disclose all essential information (financial status, operating results, transactions between each subsidiary with related parties, acquisition and disposition of assets) accurately and timely as required by the Stock Exchange of Thailand (SET). To make sure that subsidiaries command appropriate and efficient internal control, Thailoil developed a self-assessment form for relevant work units to assess the levels of risks of key processes before the implementation of control measures, followed by an assessment of the control measures' efficiency and actions taken under their improvement plans. Meanwhile, Thailoil has adopted the Securities and Exchange Commission, Thailand's (SEC) Internal Control Adequacy Evaluation Form for use on trial at two subsidiaries, namely TOPNEXT International Co., Ltd. and Sak Chaisidhi Co., Ltd. Results of the assessment along with recommendations were raised to the managing directors of the subsidiaries and Executive Committee (EXCOM) of each business unit.

Remark: \*A subsidiary means a company in which Thailoil directly or indirectly holds more than 50 percent of the paid-up registered capital.

#### Connected Transactions or Acquisition or Disposal of Assets

Thailoil has established its Connected Transaction Policy on a fair and at arm's length basis. This is also complies with the rules and regulations of the regulators as well as with accounting and tax standards. **The Audit Committee will provide opinions on the suitability of connected transactions.** For any matters or connected transactions

requiring specific expertise, Thailoil will secure opinions from a qualified person. **These opinions will be proposed to the Board of Directors (the Board) or the Annual General Meeting of Shareholders (AGM) for case-by-case approval.**

#### Use of Inside Information

The Board is fully aware that the use of inside information must comply with laws and the corporate governance code to avoid abuse of inside information. Actions taken include:

- >> Issuing a policy to prevent the abuse of inside information for buying and selling securities. Directors, executives, and their closely related parties are prohibited from buying, selling, or transferring Thailoil's shares or engaging in futures contracts concerning Thailoil's shares ahead of Thailoil's performance report filing to SET or until the inside information potentially affecting Thailoil's share price has been publicized for at least 30-45 days (for the quarterly financial statements and other significant documents) and 45-60 days (for annual financial statements) and at least one day after such publicity date.
- >> Establishing a 'Code of Conduct on Maintaining Confidentiality and the Use of Inside Information', and incorporating it with the CG Manual.
- >> Sending an e-Mail to directors, executives, and employees, asking for cooperation in refraining and prohibiting themselves and their close contacts from buying, selling, or transferring Thailoil's shares at least one month prior to the submission of the quarterly performance report to SET.
- >> Requiring directors and executives, as defined by SEC, to notify their intention to sell Thailoil's shares, either the shares of their own, spouse, unmarried partner, or minor, to the Company Secretary at least one business day in advance. They are also required to report Thailoil's shareholding status to SEC when



first assuming the position and within three business days whenever there's a change (purchase, sale, or transfer of share) of their shareholding. Shareholding of directors and executives are to be disclosed in the Annual Report (Form 56-1 One Report).

- >> Reminding directors, executives, and employees of regulations and policies involving the use of inside information regularly through various channels, such as on the agenda of matters to be informed by the Chairman at each Board meeting, in Akahee Magazine (Thaioil's internal magazine), and via e-Mail (e-Newsletter) to all executives and employees, which was carried out year-round, as well as on Thaioil's intranet, among other channels. The attempt has resulted in all directors, executives, and employees of Thaioil educated about the careful use of inside information.

During 2022, Thaioil found no abuse of inside information that has not been disclosed to the public.

### Prevention of Conflicts of Interest

To prevent conflicts between personal interests and those of Thaioil, Thaioil introduced a 'Code of Conduct for Conflicts of Interest' and included it in the CG Manual as guidelines for its personnel. Actions taken include:

- >> Introducing policies and guidelines for directors at the Board meeting. Directors involved in matters with possible conflicts of interest shall leave the meeting unless the Chairman grants a permission to stay to provide answers to questions from other directors. However, the person must abstain from voting on that particular agenda.
- >> Arranging vested interest report form for directors and executives under designated rules. A director or an executive is required to submit a report from the first time they took position, to review them quarterly, and update them annually. The requirement was fulfilled by all directors and executives this year.

- >> Providing executives and employees with information concerning conflicts of interest through articles in Akahee Magazine (Thaioil's internal magazine) and by e-Mail in the form of e-Newsletters throughout the year as well as on Thaioil's Intranet. Therefore, all Thaioil's executives and employees have learned about conflicts of interest. Moreover, an electronic conflict of interest report was introduced, and all executives and employees of Thaioil are required to declare their conflicts of interest via the report form when they are accepted for employment in Thaioil, then at the beginning of every year, and whenever a conflict of interest occurs.

During 2022, Thaioil found no abuse of conflict of interest.

### Anti-Fraud

Thaioil takes all forms of fraud seriously, corruption included. **The Anti-Fraud Policy** was announced for company-wide implementation, and directors, executives, and employees must acknowledge and perform accordingly. The Policy is reviewed every year to keep pace with the changing business circumstances and environment. In 2022, the 'Anti-Corruption Policy' was upgraded into the 'Anti-Fraud Policy'. Following policy formulation, Thaioil focuses on the actual implementation of the policy, guidelines, and measures with regular monitoring and reviews for improvement. To this end, the organization is properly structured with a division of duties. Corruption risk assessment is made into high-risk work processes with appropriate internal control measures laid down to prevent and minimize corruption risk. Communication to employees is carried out to provide information on anti-fraud. All executives and employees receive updates on the Anti-Fraud Policy by e-Mail. More information is available in the 2022 Integrated Report on the topic 'Corporate Governance and Sustainability'.



To demonstrate Thailoil's commitment to countering corruption, as a listed company, it is the company's responsibility to foster confidence among shareholders and stakeholders. In addition to internal activities, Thailoil was certified as a member of Thai Private Sector Collective Action Against Corruption (CAC-certified company) on April 4, 2014. As the certification is valid for three years, Thailoil has so far been successful in every re-certification from the CAC. Moreover, Thailoil encourages its business partners to join CAC.

### Whistle-Blowing Measures

Thailoil has in place **whistle-blowing measures**, which are part of the CG Manual and posted on Thailoil's website to allow stakeholders to monitor the performance of directors, executives, and employees of Thailoil and Subsidiaries to ensure their compliance with laws, regulations, corporate governance code, and code of conduct, while refraining from engaging in any action that

may lead to fraud and corruption. Those who experience violation of their rights and are affected by Thailoil and Subsidiaries' activities, stakeholders, employees, relevant authorities, and external parties coming across or are aware of such activities may file a complaint or report them through the following channels:



**Chairman of the Board/  
Chairman of Corporate Governance  
and Sustainability Committee/  
Chairman of Audit Committee/  
Chief Executive Officer and President/  
Company Secretary**

Thailoil Public Company Limited  
555/1 Energy Complex Building A, 11<sup>th</sup> Floor  
Vibhavadi Rangsit Road, Chatuchak, Chatuchak,  
Bangkok 10900 Thailand

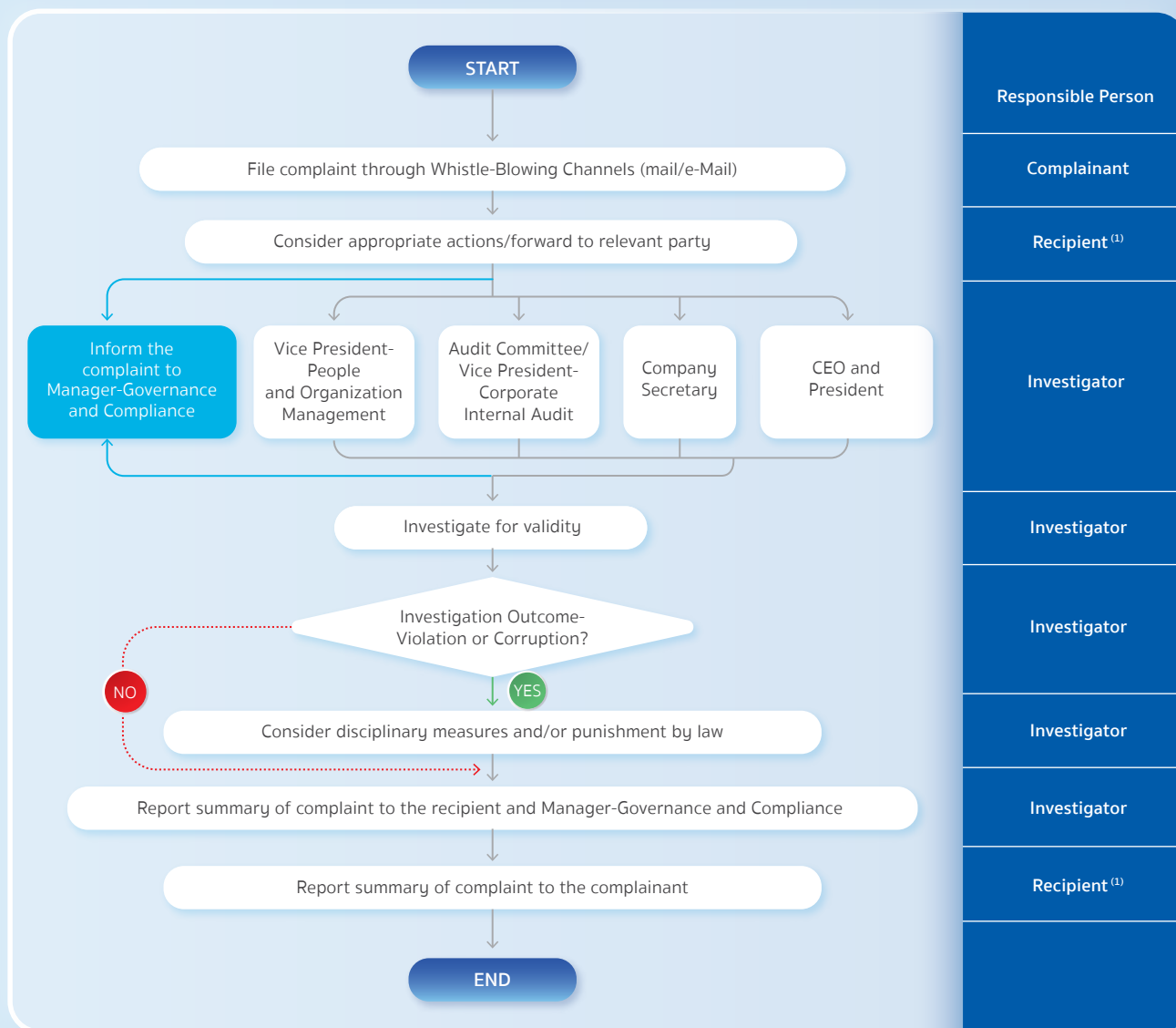


[cgcoordinate@thailoilgroup.com](mailto:cgcoordinate@thailoilgroup.com)





## Whistle-Blowing Process



Remark: <sup>(1)</sup> Chairman of the Board/Chairman of the Audit Committee/Chairman of Corporate Governance and Sustainability Committee/CEO and President/Company Secretary

### Protection for Complainants, Whistle-blowers, and Related Parties

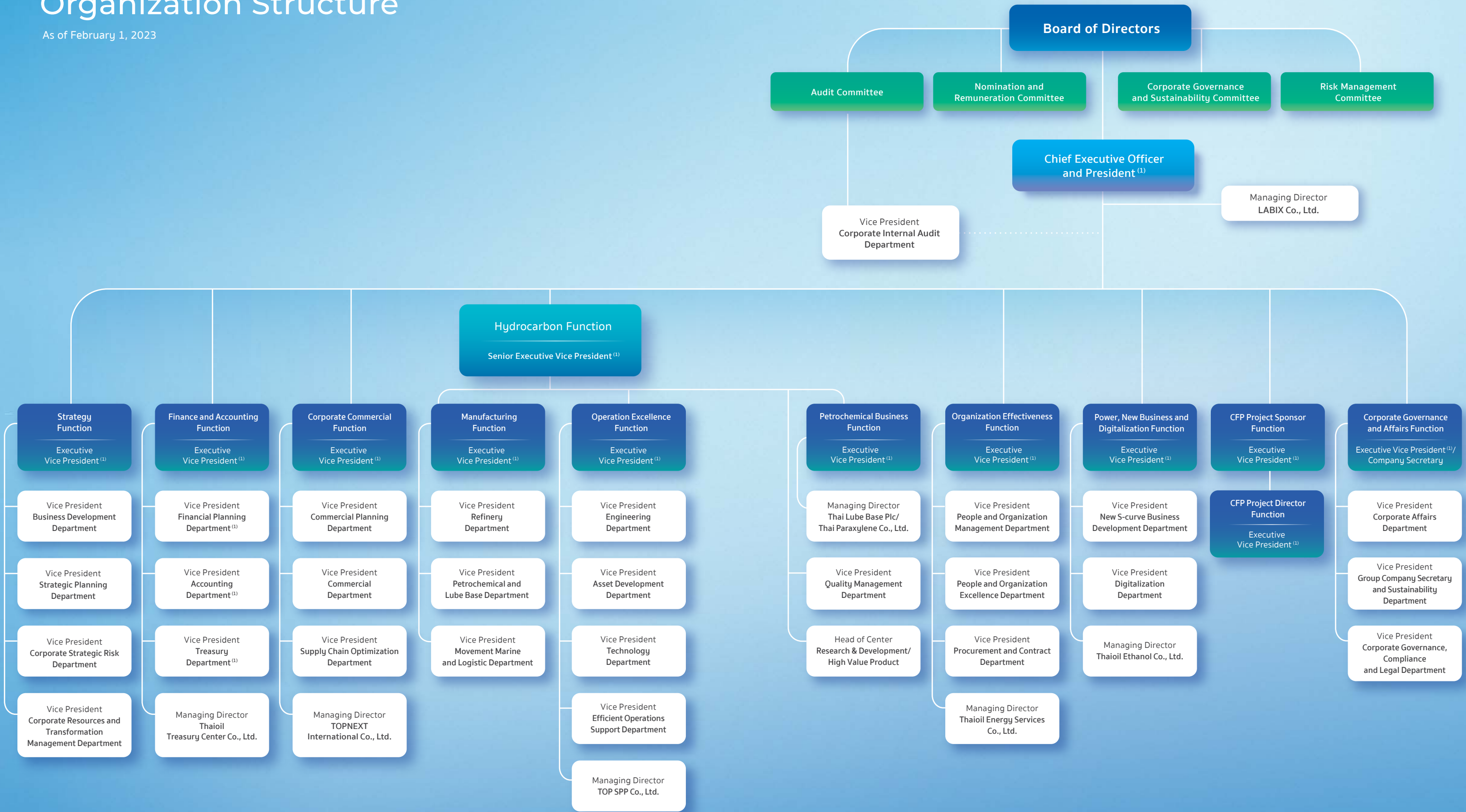
Complainants or whistle-blowers of a legal violation or non-compliance are to be duly and fairly protected by Thaioil, which implies no change in job titles, threats, job interference, dismissal, or any unfair acts. Thaioil will keep information about their complaints confidential and will not disclose it to unrelated parties, except when required by law.

In 2022, Thaioil received three complaints from the whistle-blowing channel and launched investigations according to the complete whistle-blowing process, which found no fraud or violation of Thaioil's regulations. The complainants were duly notified of the investigation outcomes. Measures were also laid down to prevent possible recurrence of such cases.



# Organization Structure

As of February 1, 2023



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



		Subsidiaries							Indirect Subsidiaries								Associates				Related Companies					
	Name	Thai Lube Base Pte	Thai Paraxylene Co., Ltd.	Thailand Solvent SPP Co., Ltd.	PT TOP Investment Indonesia	TOP SPP Co., Ltd.	Thailand Energy Services Co., Ltd.	Thailand Ethanol Co., Ltd.	Thailand Treasury Center Co., Ltd.	LABX Co., Ltd.	TOP Next International Co., Ltd.	Sak Chaisadit Co., Ltd.	TOP Solvent (Metham) LLC	PT Tirta Surya Raya	USKem Pte Ltd.	Septhim Co., Ltd.	Septhim Green Energy Co., Ltd.	TOP Ventures Co., Ltd.	TOP Ventures Hong Kong Ltd.	TOP Ventures America LLC	Global Power Synergy Pte	Ubott Bio Ethanol Plc	PIT Digital Solutions Co., Ltd.	PIT Energy Solutions Co., Ltd.	Thai Petroleum Pipeline Co., Ltd.	Sam Pung Social Enterprise Co., Ltd.
	1 Prof. Dr. Supot Teachavorasinskun	★																								
	2 Pol. Gen. Aek Angsananonit	★																								
	3 Dr. Palin Chuchohtaworn	★																								
	4 ACM Suttipong Inseepong	★																								
	5 Mr. Praphaisith Tankeyura	★																								
	6 Gen. Kukiat Srinaka	★																								
	7 Ms. Pamalin Mahawongtikul	★																								
	8 Dr. Buranin Rattanasombat	★																								
	9 Assoc. Prof. Dr. Pasu Decharin	★																								
	10 Mr. Plakorn Wanglee	★																								
	11 Mr. Terdkiat Prommool	★																								
	12 Dr. Sompop Pattaniyankool	★																								
	13 Mr. Suchart Ramarch	★																								
	14 Dr. Veerapat Kiatluengfoe	★																								
	15 Mr. Bandhit Thamprajanchit	★	★				★	★		★	★	★									★	★				
	16 Mr. Jeerawat Pattanasomist	★				★											★				★	★				
	17 Mr. Chalapong Wungtanagorn	★		★																					★	
	18 Mr. Charlee Balmongkol	★				★																				
	19 Mr. Rathakorn Kampanathsanyakorn	★						★																		
	20 Ms. Rungrapa Janchookiat	★	★									★														
	21 Ms. Wanida Boonpiraks	★	★				★	★	★		★						★									
	22 Mr. Viroj Meenaphant	★					★	★	★																	★
	23 Mr. Viroj Wongathirayakhun	★					★	★	★																	
	24 Mr. Santi Wasanasiri	★	★	★	★		★					★														
	25 Mr. Surachai Saengsamran	★										★														
	26 Ms. Korapat Limpaphayom	★																								
	27 Mr. Khwanchai Chaivarek	★										★	★													
	28 Ms. Jariya Oonmeechai	★																								
	29 Ms. Jidapa Soontaratpong	★																								
	30 Mr. Jumpon Thapanapong																									



## Information of Directors, Executive Officers and Control Executives as of February 1, 2023

Name	Subsidiaries										Indirect Subsidiaries										Associates				Related Companies	
	Thai Lube Base Pte	Thai Paraxylene Co., Ltd.	Thailand Solvent Co., Ltd.	PT TOP Investment Indonesia <sup>(1)</sup>	TOP SPP Co., Ltd.	Thailand Energy Services Co., Ltd.	Thailand Ethanol Co., Ltd.	Thailand Treasury Center Co., Ltd.	LABIX Co., Ltd. <sup>(2)</sup>	TOP Next International Co., Ltd. <sup>(3)</sup>	Sak Chaisidhi Co., Ltd. <sup>(4)</sup>	TOP Solvent (Vietnam) LLC <sup>(5)</sup>	PT Tirta Surya Pagar <sup>(6)</sup>	JSKern Pte. Ltd. <sup>(7)</sup>	Saphip Co., Ltd. <sup>(8)</sup>	Saphip Green Energy Co., Ltd. <sup>(9)</sup>	TOP Ventures Co., Ltd. <sup>(10)</sup>	TOP Ventures Hong Kong Ltd. <sup>(11)</sup>	TOP Ventures America LLC <sup>(12)</sup>	Global Power Synergy Pte <sup>(13)</sup>	Ubon Bio Ethanol Pte <sup>(14)</sup>	PTT Digital Solutions Co., Ltd. <sup>(15)</sup>	PTT Energy Solutions Co., Ltd. <sup>(16)</sup>	Thai Petroleum Pipeline Co., Ltd. <sup>(17)</sup>	Sam Pung Social Enterprise Co., Ltd. <sup>(18)</sup>	
36 Mr. Nuttapon Meerit	✳																									
37 Ms. Danusa Sanguannoi	✳																									
38 Ms. Duangporn Teerapabpaist	✳																									
39 Mr. Thirayoot Limanond	✳																									
40 Ms. Torsang Chalpravat	✳				✳							✳														
41 Ms. Tarika Devahasin	✳		✳					✳			✳															
42 Ms. Prapin Thongnium	✳																									
43 Ms. Prapatsri Hanchanlert				✳								✳	✳													
44 Mr. Preedayos Chutikomol																✳										
45 Ms. Pimchanok Sakolwaree	✳																									
46 Mr. Phunchit Taisanaprasert	✳																									
47 Mr. Mongkol Janchookiat	✳																									
48 Ms. Runglip Maneesarachun	✳																									
49 Mr. Luck Saraya																			✳	✳						
50 Mr. Worachart Ruangtragool	✳															✳		✳	✳	✳						
51 Ms. Wanwisa Yanchinda	✳														✳		✳	✳	✳							
52 Mr. Vivat Wongnirund	✳																	✳	✳							
53 Mr. Visit Thangpakorn													✳													
54 Mr. Sarunyu Limwongse	✳																									
55 Mr. Seksan Rojsirkulchai														✳												
56 Mr. Somborn Chauyokbiap	✳																									
57 Ms. Somporn Buntuesruang	✳																									
58 Ms. Silanan Jantarasiri				✳																						
59 Ms. Suchada Deechaiya	✳																									
60 Mr. Anawat Chansaksoong	✳	✳	✳							✳	✳			✳												
61 Ms. Acharee Tiayabhorn	✳	✳									✳								✳							
62 Mr. Udom Wongsirinnopphakhun	✳																									

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

- (1) PT TOP Investment Indonesia is a subsidiary of Thai Oil Pte (TOP), in which TOP holds 100% of shares.  
 (2) LABIX Co., Ltd. is a subsidiary of Thai Paraxylene Co., Ltd. (TPX), in which TPX holds 75% of shares.  
 (3) TOPNEXT International Co., Ltd. (TX) Formerly TOP Solvent Co., Ltd. and change the name on October 3, 2022)  
 (4) is a subsidiary of Thail Solvent Co., Ltd. (TOS), in which TOS holds 100% of shares.  
 (5) Sak Chaisidhi Co., Ltd. is a subsidiary of TOPNEXT International Co., Ltd. (TX), in which TX holds 80.52% of shares.  
 (6) TOP Solvent Vietnam LLC. is a subsidiary of TOPNEXT International Co., Ltd. (TX), in which TX holds 100% of shares.  
 (7) PT Tirta Surya Raya is a subsidiary of TOPNEXT International Co., Ltd. (TX), in which TX holds 77.7% of shares.  
 (8) JSKern Private Limited is a subsidiary of TOPNEXT International Co., Ltd. (TX), in which TX holds 60% of shares.  
 (9) Saphip Co., Ltd. is a subsidiary of Thail Ethanol Co., Ltd. (TET), in which TET holds 50% of shares.  
 (10) Saphip Green Energy Co., Ltd. is a subsidiary of Saphip Co., Ltd. (SAP), in which SAP holds 100% of shares.  
 (11) TOP Ventures Co., Ltd. is a subsidiary of Thail Oil Treasury Center Co., Ltd. (TTC), in which TTC holds 100% of shares.  
 (12) TOP Ventures Hong Kong Ltd. is a subsidiary of Thail Oil Treasury Center Co., Ltd. (TTC), in which TTC holds 100% of shares.  
 (13) Global Power Synergy Pte has become public company limited since November 27, 2014.  
 (14) Ubon Bio Ethanol Pte is an associate company of Thail Oil Ethanol Co., Ltd. (TET) and has become public company limited on April 23, 2018, in which TET holds 12.4% of shares.  
 (15) PTT Digital Solutions Co., Ltd. is an associate company of Thail Oil Pte (TOP), in which TOP holds 20% of shares.  
 (16) PTT Energy Solutions Co., Ltd. is an associate company of Thail Oil Pte (TOP), in which TOP holds 20% of shares. The company, however, is on process of closing down business.  
 (17) Thail Petroleum Pipeline Co., Ltd. is a related company of Thail Oil Pte (TOP), in which TOP holds 9.19% of shares.  
 (18) Sam Pong Social Enterprise Co., Ltd. is a related company of Thail Oil Pte (TOP), in which TOP holds 15% of shares.  
 \* Thail Oil Marine International Pte. Ltd. is a subsidiary of Thail Oil Pte (TOP), in which TOP holds 100% of shares. The company, however, was closed down business since December 28, 2022



# Board of Directors

As of February 1, 2023



## Professor Dr. Supot Teachavorasinskun

Independent Director (Non-Executive)  
and Chairman of the Board  
Age 57 Yrs.

### Director Term

- >> Independent Director (Non-Executive) (Appointed on November 25, 2020 and effective from December 1, 2020: 4 months)
- >> Independent Director (Non-Executive) (Re-elected on April 7, 2021: 1 year 10 months)
- >> Independent Director (Non-Executive) and Chairman of the Board (Elected on December 22, 2020: 2 years 1 month)

### Board-Committee Term

-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)
- >> Director Leadership Certification Program (DLCP 2/2021)

### 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"
- >> IOD National Director Conference 2021: "Leadership Behind Closed Door"
- >> STS Expert Session 2021:
  - >> "Business Transformation and Innovation" by The Siam Cement Plc (SCG)
  - >> "How H&R as a specialty marketer and refiner with primarily Group I refinery technology is planning to adapt to the changing refinery landscape" by Hansen and Rosenthal Group (H&R Group)
  - >> "Strategy and Business Direction Towards Quality and Sustainable Growth" by PTG Energy Plc
- >> Trade and Development Regional Forum 2021: "Recharging Asia: Inclusive Growth and Sustainable Development amidst Post Pandemic World" by International Institute for Trade and Development (Public Organization)
- >> Conference Call on Q4/2021 Outlook: "Navigating a Vulnerable Recovery" by Standard Chartered Bank (Thai) Plc
- >> Director's Briefing No.14/2021: "The Choices of Dispute Resolution in the time of COVID-19" by IOD and Thailand Arbitration Center

- >> 2021 PTIT Special Lecture by Khunying Thongtip Ratanarat: "Thailand's Destiny in the Next 30 Years; Must Have A "New Think Through" to Propel the Country's Economy Forward"
- >> Capital Market Academy Leader Program, Class 32, Capital Market Academy
- >> IOD National Director Conference 2022: "Wisdom for Future: Harmonizing the diverse boards"
- >> IOD Chairman Forum No. 1/2022: "Charing the Unknown Future"

### Working Experience in the 5 Preceding Years

Jul 2016-Present Dean, Faculty of Engineering, Chulalongkorn University

### Board Industry Experience&Expertise

Possesses educational qualification, knowledge, and expertise on engineering (civil engineering field), which would be useful for advising and commenting on the company's construction projects. The director also possesses the experience on research development and innovation, which are one of the company's key strategies.

### 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 Thailoil -None-
- Conflict of Interest -None-
- Family Relation with Other Directors -None-
- Dispute in the 10 Preceding Years -None-





### Police General Aek Angsanonont

Independent Director (Non-Executive),  
Chairman of the Audit Committee  
and Chairman of the Corporate Governance  
and Sustainability Committee  
Age 66 Yrs.

#### Director Term

- >> Independent Director (Non-Executive) (Elected on April 7, 2017: 3 years 2 months)
- >> Independent Director (Non-Executive) (Re-elected on June 10, 2020: 2 years 8 months)

#### Board-Committee Term

- >> Member of the Corporate Governance Committee (Appointed on May 26, 2017 and completed the term in the 2020 Annual General Meeting of Shareholders)
- >> Chairman of the Corporate Governance Committee (Elected on June 21, 2017 and completed the term in the 2020 Annual General Meeting of Shareholders)
- >> Member of the Corporate Governance Committee\* (Appointed on June 23, 2020)
- >> Member of the Audit Committee (Appointed on June 23, 2020)
- >> Chairman of the Corporate Governance Committee\* (Elected on September 10, 2020)
- >> Chairman of the Audit Committee (Elected on September 18, 2020)

#### Remark\*:

The Board of Directors, in the meeting No. 8/2022 has approved the amendment of Corporate Governance Committee Charter which changed the Committee's name from "Corporate Governance Committee" to "Corporate Governance and Sustainability Committee"

#### Education

- >> Bachelor of Law (1<sup>st</sup> Class Honours), 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 Certificate Course in Politics and Governance in Democratic Systems for Executives, Class 7, 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
- >> The Rule of Law for Democracy, Class 1, College of the Constitutional Court
- >> PTT Group AC Forum 2022: "Rising to the Challenge"

#### Working Experience in the 5 Preceding Years

2015-2016 Permanent Secretary, Office of the Permanent Secretary, The Prime Minister's Office

#### Board Industry Experience&Expertise

Possesses educational qualification as well as knowledge and experience in legal field, which are required by the company.

#### Current Positions

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

- >> Independent Director, Chairman of the Audit Committee and Chairman of the Corporate Governance and Sustainability 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 (1)

- >> Director and Member of the Audit Committee, BJC Logistics and Warehouse, Co., Ltd.

##### 4. Other Organizations/Institutions (2)

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

##### 5. State Enterprise

% of Shareholding in Thailoil	-None-
Conflict of Interest	-None-
Family Relation with Other Directors	-None-
Dispute in the 10 Preceding Years	-None-





### Dr. Pailin Chuchottaworn

Independent Director (Non-Executive)  
and Chairman of the Risk Management Committee  
Age 66 Yrs.

#### Director Term

- >> Independent Director (Non-Executive) (Appointed on April 23, 2021 and effective from May 1, 2021: 1 year 9 months)

#### Board-Committee Term

- >> Member of the Risk Management Committee (Appointed on April 29, 2022)
- >> Chairman of the Risk Management Committee (Elected on June 27, 2022)

#### Education

- >> Bachelor of Engineering (Chemical Engineering) (1<sup>st</sup> Class Honours), Chulalongkorn University
- >> Master of Engineering (Chemical Engineering), Tokyo Institute of Technology, Japan (Japanese Government Scholarship)
- >> Doctor of Engineering (Chemical Engineering), Tokyo Institute of Technology, Japan (Japanese Government Scholarship)

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

- >> Director Certification Program (DCP 51/2004)
- >> Director Accreditation Program (DAP 24/2004)
- >> Finance for Non-Finance Director (FND 14/2004)
- >> Diploma Examination (Exam 15/2005)
- >> Anti-corruption for Executive Program (ACEP 4/2012)
- >> Role of the Chairman Program (RCP 37/2015)
- >> Boards that Make a Difference (BMD 2/2016)

#### Other Trainings

- >> The Executive Program in Energy Literacy for a Sustainable Future, Class 1, Thailand Energy Academy
- >> Corporate Governance for Directors and Senior Executives of State Enterprises and Public Organization, Class 7, King Prajadhipok's Institute
- >> The Joint State-Private Sector Course, Class 22, National Defence College
- >> Top Executive Program, Class 8, Capital Market Academy
- >> Top Executive Program in Commerce and Trade (TEPCoT), Class 1, Commerce Academy, University of the Thai Chamber of Commerce
- >> Industrial Liaison Program (ILP) 2005, Massachusetts Institute of Technology, USA
- >> NIDA-Wharton Executive Leadership Program 2007, Wharton, University of Pennsylvania, USA
- >> PTT-GE Executive Leadership Program 2008, GE Crotonville, USA
- >> IOD National Director Conference 2021: "Leadership Behind Closed Door"
- >> STS Expert Session 2021:
  - >> "How H&R as a specialty marketer and refiner with primarily Group I refinery technology is planning to adapt to the changing refinery landscape", Hansen and Rosenthal Group (H&R Group)
- >> STS Expert Session 2022:
  - >> "Oil and Petrochemical Industry Outlook", Boston Consulting Group (BCG)
  - >> "Net Zero GHG Emission Pathway", Shell Plc
- >> IOD National Director Conference 2022:
  - >> "Wisdom for Future: Harmonizing the diverse boards"

#### Working Experience in the 5 Preceding Years

- 2017-Jul 15, 2019 Deputy Minister of Transport
- Mar 11-Jul 15, 2019 Advisor to the Prime Minister

#### Board Industry Experience&Expertise

Possesses knowledge and expertise on energy business, petroleum and petrochemical, which highly benefit the company. The director also has experience and expertise in many fields; for example, science, technology, digital, and innovation, which fully support the company's strategies and benefit the business operation facing the challenge of emerging of electric vehicles possibly replacing the use of fossil fuel.

#### Current Positions

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

- >> Independent Director and Chairman of the Risk Management Committee, Thai Oil Plc
- >> Independent Director and Chairman of the Board, Global Power Synergy Plc
- >> Independent Director, Chairman of the Technology Committee and Member of the Executive Committee, SCBX Plc

##### 2. Public Company

-None-

##### 3. Limited Company (5)

- >> Director, SCB 10X Co., Ltd.
- >> Director and Chairman of the Board, SCB TECH X Co., Ltd.
- >> Director and Chairman of the Board, SCB DataX Co., Ltd.
- >> Director and Chairman of the Board, VISUP Co., Ltd.
- >> Director and Chairman of the Board, VISAI AI Co., Ltd.

##### 4. Other Organizations/Institutions (10)

- >> Chairman of the Council, Vidyasirimedhi Institute of Science and Technology (VISTEC)
- >> Chairman of the Governing Board, Kamnoetvidya Science Academy
- >> Chairman, Committee on Economic Steering
- >> Member of the Executive Board, Office of National Higher Education Science Research and Innovation Policy Council
- >> Member, the Board of Investment of Thailand
- >> Advisor to the Prime Minister
- >> Director, The National Electric Vehicle Policy Committee, Ministry of Energy
- >> Advisory Board, Devawongse Varopakam Institute of Foreign Affairs, Ministry of Foreign Affairs
- >> Senior Expert, National for the Development of Special Economic Zones, The Office of the National Economic and Social Development Council
- >> Member of Public Sector Audit Evaluation Committee and Chairman of the Public Sector Audit Evaluation Subcommittee, the Office of the Public Sector Development Commission

##### 5. State Enterprise

-None-

% of Shareholding in Thaioil

43,399 shares  
equivalent to 0.00194%

Conflict of Interest

-None-

Family Relation with Other Directors

-None-

Dispute in the 10 Preceding Years

-None-





### Air Chief Marshal Suttipong Inseepong

Independent Director (Non-Executive)  
and Chairman of the Nomination  
and Remuneration Committee  
Age 65 Yrs.

#### Director Term

- >> 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: 2 years 8 months)

#### Board-Committee Term

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

#### 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)
- >> Director Leadership Certification Program (DLCP 4/2022)

#### 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"
- >> IOD National Director Conference 2021: "Leadership Behind Closed Door"
- >> IOD National Director Conference 2022: "Wisdom for Future: Harmonizing the diverse boards"

#### Working Experience in the 5 Preceding Years

Oct 2017-Sep 2018 Deputy Chief of Defence Forces,  
The Royal Thai Armed Forces

#### Board Industry Experience&Expertise

Possesses experience, knowledge and understanding on public policies and security strategic plans, which benefit the company's business operation since the refinery is considered the critical stronghold which requires robust security administration.

#### 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

-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. Praphaisith Tankeyura

Independent Director (Non-Executive)  
and Member of the Audit Committee

Age 68 Yrs.

#### Director Term

- >> 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: 2 years 8 months)

#### Board-Committee Term

- >> 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)
- >> Member of the Audit Committee (Appointed on June 23, 2020)

#### 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)
- >> Director Leadership Certification Program (DLCP 1/2021)
- >> Ethical Leadership Program (ELP 23/2021)

#### 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"
- >> IOD National Director Conference 2021: "Leadership Behind Closed Door"
- >> STS Expert Session 2021:
  - >> "Business Transformation and Innovation", The Siam Cement Plc (SCG)
- >> STS Expert Session 2022:
  - >> "Oil and Petrochemical Industry Outlook", Boston Consulting Group (BCG)
- >> IOD National Director Conference 2022:
  - "Wisdom for Future: Harmonizing the diverse boards"
- >> PTT Group AC Forum 2022: "Rising to the Challenge"
- >> Discussion: "Easy Listening: Tips Audit Committee should not miss Episode 2", The Securities and Exchange Commission, Thailand

#### Working Experience in the 5 Preceding Years

- 2005-Present Managing Director, Boathouse Hua Hin Co., Ltd.
- 2012-2018 Director and Chief Executive Officer, Maboonyong Real Estate Co., Ltd.
- 2014-2022 Chairman of Advisory Board, JWS Construction Co., Ltd.

#### Board Industry Experience&Expertise

Possesses experience, knowledge and understanding on finance and accounting which are required by the company.

#### Current Positions

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

- >> 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

##### 2. Public Company

-None-

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

- >> Managing Director, Boathouse Hua Hin Co., Ltd.

##### 4. Other Organizations/Institutions

-None-

##### 5. State Enterprise

-None-

% of Shareholding in Thairoil

-None-

Conflict of Interest

-None-

Family Relation with Other Directors

-None-

Dispute in the 10 Preceding Years

-None-





### General Kukiatt Srinaka

Independent Director (Non-Executive)  
and Member of the Corporate Governance  
and Sustainability Committee  
Age 62 Yrs.

#### Director Term

- >> Independent Director (Non-Executive) (Appointed on November 23, 2018 and effective from January 1, 2019: 3 months)
- >> Independent Director (Non-Executive) (Re-elected on April 10, 2019: 3 years)
- >> Independent Director (Non-Executive) (Re-elected on April 7, 2022: 10 months)

#### Board-Committee Term

- >> Member of the Audit Committee (Appointed on July 19, 2019 and vacated on September 20, 2019)
- >> Member of the Corporate Governance Committee (Appointed on August 30, 2019, effective from September 20, 2019 and completed the term in the 2022 Annual General Meeting of Shareholders)
- >> Member of the Corporate Governance Committee\* (Appointed on April 29, 2022)

#### Remark\*:

The Board of Directors, in the meeting No. 8/2022 has approved the amendment of Corporate Governance Committee Charter which changed the Committee's name from "Corporate Governance Committee" to "Corporate Governance and Sustainability Committee"

#### 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)
- >> Director Accreditation Program (DAP 185/2021)
- >> Boardroom Success through Financing and Investment (BFI 10/2021)

#### Other Trainings

- >> Thailand National Defence College, Class 57
- >> Joint Staff College, Class 48
- >> The Executive Program in Energy Literacy for a Sustainable Future, Class 15, Thailand Energy Academy

#### Working Experience in the 5 Preceding Years

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

#### Board Industry Experience&Expertise

Possesses experience, knowledge and understanding on security strategic plans, which benefit the company's business operation since the refinery is considered the critical stronghold which requires robust security administration.

#### Current Positions

1. Listed Company (2)
    - >> Independent Director and Member of the Corporate Governance and Sustainability Committee, Thai Oil Plc
    - >> Independent Director and Vice Chairman of the Board, Nirvana Daii Plc
  2. Public Company -None-
  3. Limited Company -None-
  4. Other Organizations/Institutions -None-
  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-





### Ms. Pannalin Mahawongtikul

Director (Non-Executive)  
and Member of the Risk Management Committee  
Age 58 Yrs.

#### Director Term

- >> Director (Non-Executive) (Appointed on September 28, 2018 and effective from October 1, 2018: 2 years 8 months)
- >> Director (Non-Executive) (Re-elected on June 10, 2020: 2 years 8 months)

#### Board-Committee Term

- >> Member of the Risk Management Committee (Appointed on September 28, 2018, effective from October 1, 2018 and completed the term in the 2020 Annual General Meeting of Shareholders)
- >> Member of the Risk Management Committee (Appointed on June 23, 2020)

#### 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)
- >> Risk Management Program for Corporate Leaders (RCL 28/2022)

#### Other Trainings

- >> Executive Development Program (EDP), Class 2, Thai Listed Companies Association
- >> PTT-HBS Leadership Development Program II, Harvard Business School, USA
- >> NIDA-Wharton Executive Leadership Program (ELP), The Wharton School, University of Pennsylvania, USA
- >> Leadership Development Program (LDP) III, PTT Leadership and Learning Institute (PLLI)
- >> CMA-Greater Mekong Subregion (CMA-GMS), Class 1, Capital Market Academy
- >> Leadership Succession Program (LSP), Class 6, Institute of Research and Development for Public Enterprises
- >> Executive Program for Senior Management (EX-PSM), Class 3, Fiscal Policy Research Institute Foundation
- >> Capital Market Academy Leader Program, Class 24, Capital Market Academy
- >> The TIJ Executive Program on the Rule of Law and Development (RoLD) 2020: The Resilient Leader, Thailand Institute of Justice (Public Organization)
- >> The Executive Program in Energy Literacy for a Sustainable Future, Class 15, Thailand Energy Academy

#### 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- Present | Chief Financial Officer, PTT Plc  |

#### Board Industry Experience&Expertise

Possesses experience, knowledge and expertise on energy, and accounting and finance in the energy industry. The director has work experience working for PTT Plc, resulting in the ability to provide useful advice and comments on the company's strategic planning and business directions through PTT Group overview.

#### Current Positions

1. Listed Company (3)
    - >> Director and Member of the Risk Management Committee, Thai Oil Plc
    - >> Director, Global Power Synergy Plc
    - >> Chief Financial Officer, PTT Plc
  2. Public Company -None-
  3. Limited Company -None-
  4. Other Organizations/Institutions (7)
    - >> Executive Director, Thailand Energy Academy
    - >> Club President, Thai Investor Relations Club
    - >> Member of Council, Vidyasirimedhi Institute of Science and Technology (VISTEC)
    - >> Member of Executive Committee, VISTEC
    - >> Chairman of Finance and Budget Sub-Committee, VISTEC
    - >> Director and Member of the Audit Committee, Thai Listed Companies Association (TLCA)
    - >> Director, Lotus Pharmaceutical Co., Ltd. (Listed Company in Taiwan)
  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- |





### Dr. Buranin Rattanasombat

Director (Non-Executive)  
and Member of the Risk Management Committee  
Age 55 Yrs.

#### Director Term

- >> Director (Non-Executive) (Appointed on September 18, 2020: 1 year 6 months)
- >> Director (Non-Executive) (Re-elected on April 7, 2022: 10 months)

#### Board-Committee Term

- >> Member of the Nomination and Remuneration Committee (Appointed on September 18, 2020 and vacated from April 23, 2021)
- >> Member of the Risk Management Committee (Appointed on April 23, 2021 and completed the term in the 2022 Annual General Meeting of Shareholders)
- >> Chairman of the Risk Management Committee (Elected on May 19, 2021 and completed the term in the 2022 Annual General Meeting of Shareholders)
- >> Member of the Risk Management Committee (Appointed on April 29, 2022)

#### 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)
- >> Director Leadership Certification Program (DLCP 4/2022)

#### Other Trainings

- >> Capital Market Academy Leader Program, Class 30, Capital Market Academy
- >> Advanced Security Management Program, Class 10, The Association of National Defence College of Thailand Under The Royal Patronage of His Majesty The King
- >> Senior Executive Education Program, School of Management, MIT
- >> CMA-GMS International Program 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
- >> IOD National Director Conference 2022: "Wisdom for Future: Harmonizing the diverse boards"
- >> National Defence Course, Class 64, National Defence College

#### 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 Plc
2019-May, 2020	Senior Executive Vice President, Corporate Strategy, Innovation and Sustainability, & Chief Transformation Officer (CTO), PTT Oil and Retail Business Plc
Jun 2020-Sep 2021	Senior Executive Vice President, Downstream Business Group Alignment, PTT Plc
Oct 2021-Sep 2022	Senior Executive Vice President, Innovation and New Ventures, PTT Plc
Oct 2022-Present	Chief New Business and Infrastructure Officer, PTT Plc

#### Board Industry Experience&Expertise

Possesses experience, knowledge and expertise on energy, strategies and innovation in the energy industry. The director has work experience working for PTT Plc, resulting in the ability to provide useful advice and comments on the company's strategic planning and business directions through PTT Group overview. The director is interested and usually follows the new business and change of world trend, which highly benefit the company's strategic planning and business directions.

#### Current Positions

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

- >> Director and Member of the Risk Management Committee, Thai Oil Plc
- >> Director and Member of the Risk Management Committee, PTT Oil and Retail Business Plc
- >> Chief New Business and Infrastructure Officer, PTT Plc

##### 2. Public Company

-None-

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

- >> Director and Chairman of the Board, Innobic (Asia) Co., Ltd.
- >> Director and Chairman of the Board, Nuovo Plus Co., Ltd.
- >> Director and Chairman of the Board, Horizon Plus Co., Ltd.

##### 4. Other Organizations/Institutions (2)

- >> President, Marketing Association of Thailand (MAT)
- >> Board of Directors, The Federation of Thai Industries

##### 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-





### Associate Professor Dr. Pasu Decharin

Independent Director (Non-Executive),  
Member of the Audit Committee  
and Member of the Nomination  
and Remuneration Committee  
Age 54 Yrs.

#### Director Term

- >> Independent Director (Non-Executive) (Elected on April 11, 2018: 3 years)
- >> Independent Director (Non-Executive) (Re-elected on April 7, 2021: 1 year 10 months)

#### Board-Committee Term

- >> Member of the Audit Committee (Appointed on April 27, 2018 and completed the term in the 2021 Annual General Meeting of Shareholders)
- >> Member of the Nomination and Remuneration Committee (Appointed on August 30, 2019, effective from September 20, 2019 and completed the term in the 2021 Annual General Meeting of Shareholders)
- >> Member of the Audit Committee (Appointed on April 7, 2021)
- >> Member of the Nomination and Remuneration Committee (Appointed on April 7, 2021)

#### 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)
- >> Ethical Leadership Program (ELP 23/2021)
- >> Advanced Audit Committee Program (AACP 44/2022)

#### Other Trainings

- >> Executive Development Program (EDP), Class 3, Thai Listed Companies Association (TLCA)
- >> Leadership Development Program (LDP), Class 6, Thai Listed Companies Association (TLCA)
- >> IOD National Director Conference 2022: "Wisdom for Future: Harmonizing the diverse boards"
- >> PTT Group AC Forum 2022: "Rising to the Challenge"
- >> Seminar: "Strategy Adjustment to Ensure Update, Crisis Survival, and Sustainable Thrive amidst Economic Crises from Pandemic, Energy War, and Inflation", EY Office Limited

#### 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

#### Board Industry Experience&Expertise

Possesses the leading knowledge, expertise and experience on management and administration in national level as well as holds the position of the managing director of the leading management curricular. The director also composes writings in the leading newspapers and magazines, as well as gives lecture for Thai Institute of Directors Association (IOD). Moreover, the director is interested and usually follows the new business and change of world trend, which highly benefit the company's strategic planning and business directions.

#### 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, Chairman of the Audit Committee and Member of the Governance and Nomination Committee, The Siam Cement Plc
- >> Independent Director and Chairman of the Board, Warrix Sports Plc

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

- >> Independent Director, Aksorn Education Plc
- >> Independent Director, Member of the Audit Committee and Member of the Risk Oversight Committee, Siam Commercial Bank Plc

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

- >> Director, InnovestX Securities Co., Ltd.

##### 4. Other Organizations/Institutions (2)

- >> Lecturer, Faculty of Commerce and Accountancy, Chulalongkorn University
- >> Director and Member of the Corporate Governance Committee, Thai Institute of Directors Association (IOD)

##### 5. State Enterprise (1)

- >> Board of Director and Chairman of the Audit Committee, National Science Museum Thailand

% 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 55 Yrs.

#### Director Term

- >> Independent Director (Non-Executive) (Appointed on October 22, 2020 and effective from November 1, 2020: 1 year 5 months)
- >> Independent Director (Non-Executive) (Re-elected on April 7, 2022: 10 months)

#### Board-Committee Term

- >> Member of the Audit Committee (Appointed on October 22, 2020, effective from November 1, 2020 and completed the term in the 2022 Annual General Meeting of Shareholders)
- >> Member of the Audit Committee (Appointed on April 29, 2022)

#### 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)
- >> Advanced Audit Committee Program (AAP 44/2022)

#### 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
- >> The Programme for Senior Executives on Justice Administration, Batch 25, Judicial Training Institute, National Justice Academy
- >> STS Expert Session 2022:
  - >> "Oil and Petrochemical Industry Outlook", Boston Consulting Group (BCG)
  - >> "Energy Industry Trend", Facts Global Energy (FGE)
- >> IOD National Director Conference 2022:
  - "Wisdom for Future: Harmonizing the diverse boards"
- >> PTT Group AC Forum 2022: "Rising to the Challenge"

#### Working Experience in the 5 Preceding Years

- |              |   |
|--------------|---|
| 2016-Present | President and Chief Executive Officer,<br>Standard Chartered Bank (Thai) Plc<br>Thailand and Representative Offices |
|--------------|---|

#### Board Industry Experience&Expertise

Possesses experience, knowledge and expertise on accounting and finance, as well as holds the executive positions in leading companies.

#### 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, Rabbit Holdings 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 Thai oil

-None-

Conflict of Interest

-None-

Family Relation with Other Directors

-None-

Dispute in the 10 Preceding Years

-None-





### Mr. Terdkiat Prommool

Director (Non-Executive)  
and Member of the Nomination  
and Remuneration Committee  
Age 57 Yrs.

#### Director Term

- >> Director (Non-Executive) (Appointed on September 18, 2020 and effective from October 1, 2020: 1 year 6 months)
- >> Director (Non-Executive) (Re-elected April 7, 2022: 10 months)

#### Board-Committee Term

- >> Member of the Nomination and Remuneration Committee (Appointed on April 23, 2021 and completed the term in the 2022 Annual General Meeting of Shareholders)
- >> Member of the Nomination and Remuneration Committee (Appointed on April 29, 2022)

#### 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, Institute of Research and Development for Public Enterprises
- >> IOD National Director Conference 2021: "Leadership Behind Closed Door"

#### Working Experience in the 5 Preceding Years

2015-2018	Executive Vice President, Planning and Risk Control, PTT Plc
Oct 2018-Sep 2020	Managing Director, PTT Digital Solutions Co., Ltd.
Oct 2020-Sep 2021	Senior Executive Vice President, Organization Management and Sustainability, PTT Plc
Oct 2021-Present	Senior Executive Vice President, Corporate Strategy and Sustainability, PTT Plc

#### Board Industry Experience&Expertise

Possesses experience, knowledge and expertise on digital, personnel management and mega project management in the energy industry. The director has long work experience working for PTT Plc, resulting in the ability to provide useful advice and comments which benefit the company's strategic planning and business directions through PTT Group overview.

#### Current Positions

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

- >> Director and Member of the Nomination and Remuneration, Thai Oil Plc
- >> Director, PTT Oil and Retail Business Plc
- >> Senior Executive Vice President, Corporate Strategy and Sustainability, PTT Plc

##### 2. Public Company

-None-

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

- >> Chairman, PTT Digital Solutions 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-





### Dr. Sompop Pattanariyankool

Director (Non-Executive)  
and Member of the Corporate Governance  
and Sustainability Committee  
Age 44 Yrs.

#### Director Term

>> Director (Non-Executive) (Elected on April 7, 2021: 1 year 10 months)

#### Board-Committee Term

>> Member of the Corporate Governance and Sustainability Committee  
(Appointed on December 20, 2022)

#### Education

>> Bachelor of Economics (1<sup>st</sup> Class Honours), Chulalongkorn University  
>> Master of Science in Economic and Policy, Department of Economics,  
University of Surrey, United Kingdom  
>> Ph.D. in Economics, Tepper School of Business,  
Carnegie Mellon University, USA

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

>> Director Certification Program (DCP 309/2021)  
>> Financial Statements for Directors (FSD 45/2022)

#### Other Trainings

>> Civil Service Executive Program: Visionary and Moral Leadership,  
Office of the Civil Service Commission  
>> Advance Certificate Course in Public Administration and Law for Executives,  
King Prajadhipok's Institute  
>> Course for Ministry Spokesman, The Government Public Relation Department  
>> The Executive Program in Energy Literacy for a Sustainable Future, Class 16,  
Thailand Energy Academy  
>> Leadership Development Program (LDP) II,  
PTT Leadership and Learning Institute (PLLI)  
>> Advanced Training Course on Energy for Executives, Ministry of Energy  
>> The New Wave Leader Development Program in Thai Civil Service,  
Office of the Civil Service Commission  
>> IOD National Director Conference 2021: "Leadership Behind Closed Door"  
>> STS Expert Session 2022:  
>> "Oil and Petrochemical Industry Outlook", Boston Consulting Group (BCG)  
>> "Successful Thai Union's Business Transformation Pathway",  
Thai Union Group Plc

#### Working Experience in the 5 Preceding Years

2018-2020 Director, Strategy and Planning Division, Ministry of Energy  
2020-Present Assistant Permanent Secretary, Ministry of Energy

#### Board Industry Experience&Expertise

Possesses knowledge, expertise and experience on energy as well as strategic  
and energy business planning. The director also possesses knowledge and  
understanding on public policy which benefits the company's business  
operation.

#### Current Positions

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

>> Director and Member of the Corporate Governance and Sustainability,  
Thai Oil Plc

##### 2. Public Company

-None-

##### 3. Limited Company

-None-

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

>> Assistant Permanent Secretary, Ministry of Energy

##### 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. Suchat Ramarch

Director (Non-Executive)

Age 54 Yrs.

#### Director Term

- >> Director (Non-Executive) (Appointed on September 29, 2021 and effective from October 1, 2021: 6 months)
- >> Director (Non-Executive) (Re-elected on April 7, 2022: 10 months)

#### Board-Committee Term

-None-

#### Education

- >> Bachelor of Engineering (Mechanical Engineering), Rajamangala University of Technology Krungthep
- >> Master of Arts (Social Development Administration), National Institute of Development Administration

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

- >> Director Certification Program (DCP 176/2017)

#### Other Trainings

- >> National Defence Course, Class 64, National Defence College
- >> Corporate Governance for Directors and Senior Executives of Regulator, State Enterprises and Public Organizations, Class 22, King Prajadhipok's Institute
- >> Capital Market Academy Leader Program, Class 28, Capital Market Academy
- >> Leadership Development Program (LDP) III, 2019 PTT Leadership and Learning Institute (PLLI)
- >> Advanced Certificate Course in Public Administration and Law for Executives, Class 13, King Prajadhipok's Institute
- >> Advance Management Program II, 2013 PTT Leadership and Learning Institute (PLLI)
- >> Management Development Program (MDP) III, 2013 PTT Leadership and Learning Institute (PLLI)
- >> Executive Development Program (EDP), 2011 Thai Listed Companies Association
- >> STS Expert Session 2022:
  - >> "Successful Thai Union's Business Transformation Pathway", Thai Union Group Plc
  - >> "Global&Thailand Economic Outlook", Kiattakin Phatra Financial Group

#### Working Experience in the 5 Preceding Years

2016-2018	Executive Vice President, Retail Marketing, PTT Plc
2018-2019	Senior Executive Vice President, Retail Marketing, PTT Oil and Retail Business Plc
2019-Sep 2021	Senior Executive Vice President, Non-oil Retail Business PTT Oil and Retail Business Plc
Oct 2021-Sep 2022	Senior Executive Vice President, Organization Effectiveness and Corporate Governance, PTT Plc
Oct 2022-Present	Senior Executive Vice President of Chief Operating Officer, Downstream Petroleum Business Group, PTT Plc, secondment as President, PTT Oil and Retail Business Plc

#### Board Industry Experience&Expertise

Possesses experience, knowledge and expertise on energy and marketing in the energy industry. The director has long work experience at PTT Plc and companies in PTT Group, resulting in the ability to provide useful advice and comments which benefit the company's marketing planning and business directions through PTT Group overview.

#### Current Positions

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

- >> Director, Thai Oil Plc
- >> Senior Executive Vice President of Chief Operating Officer, Downstream Petroleum Business Group, PTT Plc
- >> President, PTT Oil and Retail Business Plc

##### 2. Public Company

-None-

##### 3. Limited Company (2)

- >> Director and Chairman of the Board, PTT Retail Management Co., Ltd.
- >> Director and Chairman of the Board, Business Services Alliance Co., Ltd.

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

- >> Ethics Committee of The Secretariat of the Prime Minister

##### 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-




**Dr. Veerapat Kiatfuengfoo**

Director (Non-Executive)

Age 50 Yrs.

**Director Term**

&gt;&gt; Director (Non-Executive) (Elected on January 27, 2023 and effective from February 1, 2023)

**Board-Committee Term**

-None-

**Education**

 >> Bachelor of Business Administration (Finance), Kasetsart University  
 >> Master of Arts (Economic Development), Vanderbilt University, USA  
 >> Doctor of Philosophy (Development Studies), University of Melbourne, Australia

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

-None-

**Other Trainings**

 >> The Civil Service Executive Program (Additional Program), Class 13, Office of the Civil Service Commission  
 >> Executive Development Program, Class 10, The Ministry of Education  
 >> Executive Development Program, Class 13, The Ministry of Finance  
 >> Executive Development Program, Class 10, The Ministry of Energy  
 >> Financing South East Asia Energy Transition, UK Foreign and Commonwealth Office, European Climate Foundation and Growald Family Fund, Wilton Park, Sussex, United Kingdom  
 >> Public Sector Strategic Management Course, Class 1/2017, Chulalongkorn University  
 >> Meeting Southeast Asia's Energy Needs: Fueling the Future under the Singapore-Norway Third Country Training Program, The Governments of Republic of Singapore and Norway  
 >> Leadership Development Program, Office of the Civil Service Commission  
 >> International Oil and Gas Law: Negotiation and Contracting Course, Chulalongkorn University  
 >> International Oil and Gas Law: History, Technology, Policy and Economics, Chulalongkorn University  
 >> Highly Performance and Potential System, Class 2, Office of the Civil Service Commission

**Working Experience in the 5 Preceding Years**

 2018-2021 Executive Director, Power Policy Division, Energy Policy and Planning Office, Ministry of Energy  
 2021-Present Deputy Director General, Energy Policy and Planning Office, Ministry of Energy

**Board Industry Experience&Expertise**

Possesses long working experience in energy sector, which benefit for providing comments and suggestions on the company's business.

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

&gt;&gt; Director, Thai Oil Plc

**2. Public Company**

-None-

**3. Limited Company**

-None-

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

&gt;&gt; Deputy Director General, Energy Policy and Planning Office, Ministry of Energy

**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. Bandhit Thamprajamchit

Director (Executive),  
Member of the Risk Management Committee,  
Chief Executive Officer and President  
and the Secretary to the Board of Directors  
Age 52 Yrs.

#### Director Term

>> Director (Executive) (Appointed on December 20, 2022  
and effective from January 1, 2023: 1 month)

#### Board-Committee Term

>> Member of the Risk Management Committee  
(Appointed on December 20, 2022 and effective from January 1, 2023)

#### Education

>> Bachelor of Engineering (Chemical Engineering)  
(1<sup>st</sup> Class Honours, Gold Medal), Chulalongkorn University  
>> M.Sc. in Advanced Chemical Engineering (Distinction), Imperial College,  
University of London, United Kingdom  
>> Master of Business Administration (Executive), Sasin Graduate Institute of  
Business Administration of Chulalongkorn University

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

>> Director Certification Program (DCP 187/2014)  
>> Ethical Leadership Program (ELP 27/2022)  
>> Role of the Chairman Program (RCP 52/2022)

#### Other Trainings

>> National Defence Course, Class 63, National Defence College  
>> The Executive Program in Energy Literacy for a Sustainable Future, Class 14,  
Thailand Energy Academy  
>> Capital Market Academy Leader Program, Class 27, Capital Market Academy  
>> Leadership Development Program (LDP) III, Class 4,  
PTT Leadership and Learning Institute (PLLI)  
>> The Young Executive Program in Energy Literacy for a Sustainable Future,  
Class 2, Thailand Energy Academy  
>> Executive Development Program (EDP), Thai Listed Companies Association  
>> Executive Development Program, Fiscal Policy Research Institute Foundation,  
Thailand

#### Working Experience in the 5 Preceding Years

Jul 2017 - Sep 2018	Senior Executive Vice President-Petroleum & Petrochemical and Acting Executive Vice President-Manufacturing, Thai Oil Plc
Oct 2018 - Jan 2020	Senior Executive Vice President-Petroleum & Petrochemical and Acting Executive Vice President-Operation Excellence, Thai Oil Plc
Feb - Dec 2020	Senior Executive Vice President-Petroleum & Petrochemical, Thai Oil Plc
Jan 2021 - Dec 2022	Senior Executive Vice President-Hydrocarbon and Acting Executive Vice President-Manufacturing, Thai Oil Plc

Jan 2023 - Present	>> Senior Executive Vice President, PTT Plc Secondment to Thai Oil Plc as Chief Executive Officer and President >> Acting Senior Executive Vice President-Hydrocarbon and Acting Executive Vice President-Manufacturing, Thai Oil Plc >> Acting Managing Director, LABIX Co., Ltd.
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#### Board Industry Experience&Expertise

Possesses knowledge and expertise in energy business, petroleum and petrochemical industries for more than 31 years, as well as various skills and experiences in policy determination, strategic planning and business practices at corporate level, security strategic plan, environment governance, innovation management, key business decisions eg. project approval, final investment decision, risk management, and management of mega project in energy industry. Also holds the position of Chairman of Petroleum Refining Industry Club, The Federation of Thai Industries. This benefits the management of the Company and enables the achievement of the Company's vision and mission.

#### Current Positions

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

>> Director, Member of the Risk Management Committee,  
Chief Executive Officer and the President,  
Acting Senior Executive Vice President-Hydrocarbon,  
Acting Executive Vice President-Manufacturing and  
the Secretary to the Board of Directors, Thai Oil Plc  
>> Director, Global Power Synergy Plc  
>> Senior Executive Vice President, PTT Plc

##### 2. Public Company

-None-

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

>> Director and Chairman of the Board, Thail Energy Services Co., Ltd.  
>> Director, Thai Paraxylene Co., Ltd.  
>> Director and Acting Managing Director, LABIX Co., Ltd.

##### 4. Other Organizations/Institutions (6)

>> Board of Directors, The Federation of Thai Industries  
>> Subcommittee on Fuel and Greenhouse Gases Impact Assessment from  
EV Measures, The National EV Policy Committee  
>> Chairman, Petroleum Refining Industry Club,  
The Federation of Thai Industries  
>> Vice Chairman, Petrochemical Cluster, The Federation of Thai Industries  
>> Committee, Industrial Promotion and Support Department,  
The Federation of Thai Industries  
>> Committee, The Institute of Industrial Energy,  
The Federation of Thai Industries

##### 5. State Enterprise

-None-

% of Shareholding in Thail	2,400 shares equivalent to 0.00011%
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  
(Resigned from Directorship: September 30, 2022)  
Age 60 Yrs.

#### Director Term

- >> Director (Executive) (Appointed on June 21, 2019 and effective from September 1, 2019: 1 year 7 months)
- >> Director (Executive) (Re-elected on April 7, 2021: 1 year 6 months)

#### Board-Committee Term

- >> Member of the Risk Management Committee  
(Appointed on June 21, 2019 and effective from September 1, 2019: 3 years)

#### 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
- >> 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

#### Working Experience in the 5 Preceding Years

- Oct 2016-Aug 2019 Chief Operating Officer, Upstream Petroleum and Gas Business Group, PTT Plc
- Sep 2019-Sep 2022 Chief Executive Officer and President, Thai Oil Plc

#### Board Industry Experience&Expertise

Possesses experience, knowledge and expertise on energy, accounting and finance in the energy industry. The director is also a leader with advance vision, being able to manage and drive the organization forward under crises and fluctuating situations, and focusing on operational excellence with extraordinary efforts. This includes personnel management, plan revision to gain short-term profit, and the execution of strategic plan to achieve long-term target.

#### Current Positions

1. Listed Company -None-
  2. Public Company -None-
  3. Limited Company -None-
  4. Other Organizations/Institutions (8)
    - >> Board of Directors, The Federation of Thai Industries
    - >> Director and Member of the Audit Committee, Thailand Management Association (TMA)
    - >> Director, Thai Listed Companies Association (TLCA)
    - >> Advisor to the President, Association of Capital Market Academy (ACMA)
    - >> Member of Nomination Committee, Chulalongkorn University Alumni Association under the King's Patronage
    - >> Advisor, Chulalongkorn University Engineering Alumni
    - >> Advisor, Thailand-Malaysia Business Council, The Federation of Thai Industries
    - >> Advisory, the Petroleum and Petrochemical College, Chulalongkorn University
  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-





### Dr. Prasert Sinsukprasert

Director (Non-Executive)  
and Member of the Corporate Governance  
and Sustainability Committee  
(Resigned from Directorship: December 1, 2022)  
Age 56 Yrs.

#### Director Term

>> Director (Non-Executive) (Elected on April 7, 2021: 1 year 8 months)

#### Board-Committee Term

>> Member of the Corporate Governance Committee\* (Appointed on April 23, 2021)

#### Remark\*:

The Board of Directors, in the meeting No. 8/2022 has approved the amendment of Corporate Governance Committee Charter which changed the Committee's name from "Corporate Governance Committee" to "Corporate Governance and Sustainability Committee"

#### Education

- >> Bachelor of Engineering (Electrical Engineering), Chulalongkorn University
- >> Master of Science in Energy Conversion, Power and Transmission, George Washington University, USA
- >> Ph.D. in Energy Management and Policy, University of Pennsylvania, USA

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

>> Director Certification Program (DCP 229/2016)

#### Other Trainings

- >> Capital Market Academy Leader Program, Class 29, Capital Market Academy
- >> Senior Executive Fellows, Harvard University, Boston, Massachusetts, USA
- >> National Defence Course, Class 58, National Defence College
- >> Top Executive Program in Commerce and Trade (TEPCoT), Commerce Academy, University of the Thai Chamber of Commerce
- >> IOD National Director Conference 2021: "Leadership Behind Closed Door"
- >> STS Expert Session 2021:
  - >> "How H&R as a specialty marketer and refiner with primarily Group I refinery technology is planning to adapt to the changing refinery landscape", Hansen and Rosenthal Group (H&R Group)
  - >> "Strategy and Business Direction towards Quality and Sustainable Growth", PTG Energy Plc
- >> 2021 PTIT Special Lecture by Khunying Thongtip Ratanarat: "Thailand's Destiny in the Next 30 Years; Must Have A "New Think Through" to Propel the Country's Economy Forward"
- >> IOD National Director Conference 2022: "Wisdom for Future: Harmonizing the diverse boards"

#### Working Experience in the 5 Preceding Years

2017-2020	Inspector General, Ministry of Energy
Jun-Sep 2020	Deputy Permanent Secretary, Ministry of Energy
Oct 2020-Present	Director General, Department of Alternative Energy Development and Efficiency, Ministry of Energy

#### Board Industry Experience&Expertise

Possesses knowledge and expertise on energy, renewable energy and energy conservation. The director also possesses experience on governing energy business, understanding on public policies, and work experience in important departments of Ministry of Energy. This benefits the company's business operation.

#### Current Positions

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

>> Director, PTT Plc

##### 2. Public Company

-None-

##### 3. Limited Company

-None-

##### 4. Other Organizations/Institutions (2)

- >> Director General, Department of Alternative Energy Development and Efficiency, Ministry of Energy
- >> Director, Thailand Greenhouse Gas Management Organization (Public Organization)

##### 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. Noppadol Pinsuda

Director (Executive),  
Member of the Risk Management Committee,  
Acting Chief Executive Officer and President  
and the Secretary to the Board of Directors  
(Resigned from Directorship: January 1, 2023)  
Age 58 Yrs.

#### Director Term

>> Director (Non-Executive) (Appointed on September 23, 2022  
and effective from September 30, 2022: 3 months)

#### Board-Committee Term

>> Member of the Risk Management Committee  
(Appointed on September 23, 2022 and effective from September 30, 2022)

#### Education

>> Bachelor of Engineering (Electrical Engineering), Chulalongkorn University  
>> Master of Engineering (Electrical Engineering), Chulalongkorn University

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

>> Director Certification Program (DCP 146/2011)  
>> Financial Statements for Directors (FSD 12/2011)

#### Other Trainings

>> The Executive Program in Energy Literacy for a Sustainable Future, Class 14, Thailand Energy Academy  
>> National Defence Course, Class 60, National Defence College  
>> The TIJ Executive Program on Rule of Law and Development (RoLD), Class 2017, Thailand Institute of Justice (Public Organization)  
>> Capital Market Academy Leader Program, Class 22, Capital Market Academy  
>> G-20 Y Summit 2015, France  
>> Mitsui-HBS Global Management Academy 2015, Japan and USA  
>> The Programme for Senior Executives on Justice Administration, Batch 19, Judicial Training Institute, National Justice Academy  
>> Leadership Development Program (LDP) III, PTT Leadership and Learning Institute (PLLI)  
>> Breakthrough Program for Senior Executives (BPSE), International Leading Business School (IMD), Lausanne, Switzerland  
>> Assessor Training Program, Office of Thailand Quality Award

#### Working Experience in the 5 Preceding Years

Oct 2015-Jan 2019	Senior Executive Vice President, Gas Business Unit, PTT Plc
Feb 2019-Nov 2020	Senior Executive Vice President, PTT Plc, working on secondment as Chief Executive Officer and President, IRPC Plc
Dec 2020-Sep 2021	Senior Executive Vice President, Innovation and Digital, PTT Plc
Oct 2021-Sep 2022	Chief New Business and Infrastructure Officer, PTT Plc
Sep 30, 2022-Jan 1, 2023	Acting Chief Executive Officer and President, Thai Oil Plc
Oct 2022-Present	Chief Operating Officer, Downstream Petroleum Business Group, PTT Plc

#### Board Industry Experience&Expertise

Possesses knowledge and expertise on energy business, petroleum and petrochemical. The director also possesses several skills, experiences and expertise on innovation and new business, which fully support the company's strategies. The director has work experience at PTT Plc, resulting in the ability to provide useful advice and comments which benefit the company's strategic planning and business directions through PTT Group overview.

#### Current Positions

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

>> Chief Operating Officer, Downstream Petroleum Business Group, PTT Plc  
>> Director, Chairman of the Risk Management Committee, and Member of the Nomination and Remuneration Committee, Global Power Synergy 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-



## Management Structure

Thai Oil Plc's management structure comprises of:

- The Board of Directors (the Board)
- Four Board-committees appointed by the Board of Directors to oversee significant matters, namely the Audit Committee, the Nomination and Remuneration Committee, the Corporate Governance and Sustainability Committee, and the Risk Management Committee
- Executives, with the Chief Executive Officer and President (CEO) as the highest level executive

### The Board of Directors (as of February 1, 2023)

The Board of Directors comprised 15 members:

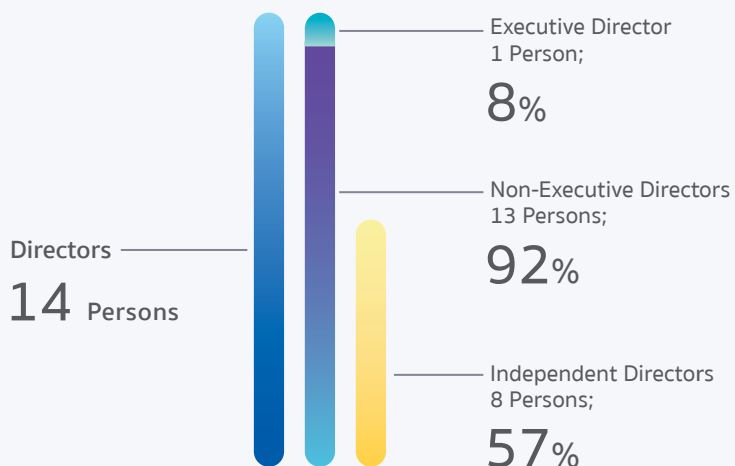
- 14 non-executive directors, eight of whom are independent directors
- One executive director, namely the CEO and President

## Board Composition

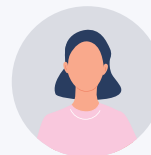
By the Company's Articles of Association (AOA), the number of Board members shall consist of at least five (5) but not more than fifteen (15) members, all of whom must be proficient and widely accepted, and elected by shareholders at the Annual General Meeting of Shareholders (AGM). Each year, a certain number of Board members completed the term as required by the AOA; however, they may be re-nominated and re-elected on an individual basis upon receiving majority votes of the shareholders who attend the meeting and casting their votes. A **policy on Board Diversity** is in place. Consideration for appointment is made on experience, knowledge, and skills that benefit the business. The criteria, in addition, opened to the gender, race, ethnicity, and nationality or country of origin. A Board Skill Matrix was developed for mapping out skills, knowledge, and expertise required for the business and responsive to strategies, such as energy, petroleum and petrochemicals, accounting and finance, information technology and digital, and innovation and environment. At least three of the entire Board members shall possess knowledge about Thailoil's business, at least one about laws, and at least one about finance and accounting. Moreover, the Board must consist of independent directors at least one-third of all Board members and number must be at least three. The current Board composition is shown in the diagram on page 133.

Recognizing the value of director's efficient and effective performance, Thailoil has specified a limit of three listed companies on SET where directors can each serve, and that also includes his/her service as a director of Thailoil.





### Genders



Female

1 Person



Male

13 Persons



### Ratio

Independent Directors:  
All Directors 8 : 14Non-Executive Directors:  
All Directors 13 : 14

### The Tenure of Directors

Average 3.27 years

### Board Expertise

Energy/Petroleum/  
Petrochemicals

7 Persons

Engineering

6 Persons

Accounting/Finance

4 Persons

Laws

4 Persons

Economics

2 Persons

Political Science/  
Social Science

4 Persons

Security

3 Persons

Information  
Technology/Digital

3 Persons

Business Management/  
Organizational  
Management/  
Corporate Governance

14 Persons

Science/Innovation/  
Environment

4 Persons



## Shareholding Report of the Board of Directors in 2022

(Inclusive of Spouse, Unmarried Partner, and Minor)

Information as of February 1, 2023

No.	Name-Surname	No. of Share (Shares)			Remark
		as of February 1, 2023	as of December 31, 2021	Addition/(Reduction) During the Year (Shares)	
1	Prof. Dr. Supot Teachavorasinskun	-None-	-None-	-No Change-	-
2	Pol. Gen. Aek Angsanant	-None-	-None-	-No Change-	-
3	Dr. Pailin Chuchottaworn	43,399	40,000	3,399	Changed due to the subscription of the newly-issued ordinary shares
4	ACM Suttipong Inseepong	-None-	-None-	-No Change-	-
5	Mr. Praphaisith Tankeyura	-None-	-None-	-No Change-	-
6	Gen. Kukiat Srinaka	-None-	-None-	-No Change-	-
7	Ms. Pannalin Mahawongtikul	-None-	-None-	-No Change-	-
8	Dr. Buranin Rattanasombat	-None-	-None-	-No Change-	-
9	Assoc. Prof. Dr. Pasu Decharin	-None-	-None-	-No Change-	-
10	Mr. Plakorn Wanglee	-None-	-None-	-No Change-	-
11	Mr. Terdkiat Prommool	-None-	-None-	-No Change-	-
12	Dr. Sompop Pattanariyankool	-None-	-None-	-No Change-	-
13	Mr. Suchat Ramarch	-None-	-None-	-No Change-	-
14	Dr. Veerapat Kiatfuengfoo	-None-	-None- <sup>(1)</sup>	-No Change-	Effective on February 1, 2023
15	Mr. Bandhit Thamprajamchit	2,400	2,200	200	Effective on January 1, 2023/ Changed due to the subscription of the newly-issued ordinary shares
Remark: <sup>(1)</sup> As of the effective date					



## Directors who Resigned during the Year 2022

No.	Name-Surname	No. of Share (Shares)			Remark
		as of Date of Resignation	as of December 31, 2021	Addition/(Reduction) During the Year (Shares)	
1	Mr. Wirat Uanarumit	-None-	-None-	-No Change-	Resigned on September 30, 2022 (Not holding any share of the Company during his directorship in year 2022)
2	Dr. Prasert Sinsukprasert	-None-	-None-	-No Change-	Resigned on December 1, 2022 (Not holding any share of the Company during his directorship in year 2022)
3	Mr. Noppadol Pinsupa	-None-	-None- <sup>(1)</sup>	-No Change-	Effective on September 30, 2022/ Resigned on December 31, 2022 (Not holding any share of the Company during his directorship in year 2022)
<b>Remark:</b> <sup>(1)</sup> As of the effective date					

## Authorized Directors

According to the Company's Articles of Association, (1) the Chief Executive Officer or (2) Two (2) authorized directors shall sign with affixation of the Company's seal to represent the Company. The Board of Directors has the right to prescribe and rectify the list of the Company's authorized directors.

In the Board of Directors Meeting No. 12/2022 on Tuesday, December 20, 2022, the Board of Directors resolved to approve directors and the number of directors, authorized to sign on behalf of the Company: namely, Mr. Bandhit Thamprajamchit, CEO, signing with affixation of the Company's seal; or, Mr. Terdkiat Prommool, Ms. Pannalin Mahawongtikul, and Mr. 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 January 1, 2023.



### Roles, Duties, and Responsibilities of the Board, Chairman of the Board, and CEO and President

Thaioil defined the roles, duties, and responsibilities of the Board, Chairman of the Board, and CEO and president to segregate between the responsibilities the of the Board and Company's executives. Information is included in the CG Manual and posted on Thaioil's website. In summary, the Board of Directors' key roles and responsibilities are to define a business vision, review and endorse key strategies and policies, oversee executives' performance, and provide suggestions and recommendations to ensure that operations comply with the laws and regulations and are transparent, fair, and in the maximum benefit of the Company. Key roles, duties, and responsibilities of Chairman of the Board are to support directors in executing their duties within the scope of authority and responsibility while ensuring efficient meetings and strengthen cordial relations among directors and between directors and executives. The CEO and President, meanwhile, is assigned by the Board to manage normal business operations. The CEO and President's key roles, duties, and responsibilities are to prepare and present business plans and strategies to the Board while realizing those plans and strategies into action within the budget approved by the Board, among others.

### Board's Approval Authority

The Board is authorized to grant approvals for various operations within the extent of laws, the Company's AOA and resolutions of shareholders' meeting. The approval authority of the Board and that of the executives are clearly defined. The Board's main authorization includes:

- Authorization concerning the business: for example, granting approval for the vision, mission, values, strategies, financial goals, as well as budget and plans, etc. The vision, mission, and strategies are to

be reviewed in the annual Strategic Thinking Session (STS) meeting. To allow the Board to closely follow up progress of implemented strategies; executives make progress reports of various project every quarter.

- Authorization concerning shareholders: for example, making consideration and agreement on dividend payment, and shareholders' meeting invitation.
- Authorization concerning the Board and high-level executives: for example, making consideration and agreement on replacement of directors for cases other than term completion and with over two months remaining before the term completes, appointment of Board-Committee members, consideration and appointment of the CEO and high-level executives (executive vice president and above), and assessment of the CEO's performance.

### Board-Committees

The Board appoints Board-Committees to scrutinize specific issues as assigned. The Charters of each Committee have been developed to define each Committee's qualifications, tenure, and roles and responsibilities. The Charters are available on Thaioil's website for study and download.

1) **The Audit Committee** consists of fully qualified members, with minimum of three independent directors and at least one of whom must possessing sufficient knowledge and experience for reviewing the credibility of financial statements. The Audit Committee are tasked with reviewing financial statements, the Corporate Internal Audit Department, and connected transactions; considering, selecting, nominating, re-nominating, and terminating external auditors; considering the independence of internal auditors; and endorsing appointment, relocation, and evaluation of the Vice President-Corporate Internal Audit's annual performance.



The Audit Committee, as of February 1, 2023, comprised four independent directors:

Name	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), <i>an Accounting Graduate</i>

**Remarks:**

<sup>(1)</sup> Directors with sufficient knowledge and experience in accounting for reviewing the credibility of financial statements

Ms. Rungtip Maneesarachun, Vice President-Corporate Internal Audit, serves as Secretary to the Audit Committee.

In 2022, the Audit Committee performed its duties as detailed in the Audit Committee Report on page 16.

**2) The Nomination and Remuneration Committee** consists of at least three non-executive directors, the majority of whom must be independent directors and possessing qualifications stated in the Charter of the Committee. The Nomination and Remuneration Committee considers the composition and qualifications of the Board, both overall and individual, to ensure suitability for holding directorship and CEO and President. It also nominates qualified persons for Board-Committees and reviews the succession plan for CEO and President. The Committee reviews and proposes remuneration packages and criteria to suit Board's roles and

responsibilities and seeks approval from shareholders at the AGM. Also, it makes annual assessment of CEO and President's performance and considers adjustment of remuneration before proposing to the Board for approval.

The Nomination and Remuneration Committee, as of February 1, 2023, comprised three directors:

Name	Position
1. ACM Suttipong Inseeyong	Chairman of the Nomination and Remuneration Committee (Independent)
2. Assoc. Prof. Dr. Pasu Decharin	Member of the Nomination and Remuneration Committee (Independent)
3. Mr. Terdkiat Prommool	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.

In 2022, the Nomination and Remuneration Committee performed its duties as detailed in the Nomination and Remuneration Committee Report on page 20.

**3. The Corporate Governance and Sustainability Committee (CG Committee)** consists of at least three non-executive members, the majority of whom are independent directors possessing qualifications stated in the Charter of the Committee. Its key roles include formulating and reviewing policies and guidelines on corporate governance, the code of conducts, and anti-fraud policy as well as defining sustainability strategies, plans, and



goals. The Committee also oversees, monitors, and assesses corporate governance and sustainability actions in line with prevailing business contexts, while aligning with international laws and best practices, and recommendations of various institutes.

The CG Committee, as of February 1, 2023, comprised three directors:

Name	Position
1. Pol. Gen. Aek Angsanantont	Chairman of the Corporate Governance and Sustainability Committee (Independent)
2. Gen. Kukiatt Srinaka	Member of the Corporate Governance and Sustainability Committee (Independent)
3. Dr. Sompop Pattanariyankool	Member of the Corporate Governance and Sustainability Committee

Mr. Viroj Meenaphant, Executive Vice President-Corporate Governance and Affairs, and Company Secretary, serves as Secretary to the CG Committee.

In 2022, the CG Committee performed its duties as described in the Corporate Governance and Sustainability Committee Report on page 22.

**4) The Risk Management Committee** consists of at least three members possessing qualifications stated in the Charter of the Risk Management Committee, one of whom must be the CEO and President. The Committee defines and reviews the risk management framework, risk management policies and processes, and proposes guidelines for managing risks concerning business operations. The Committee also supports and develops

risk management while promoting the corporate culture on risk management. It also oversees, monitors, and reviews key risk management plans and reports.

The Risk Management Committee, as of February 1, 2023, comprised four directors:

Name	Position
1. Dr. Pailin Chuchottaworn	Chairman of the Risk Management Committee (Independent)
2. Dr. Buranin Rattanasombat	Member of the Risk Management Committee
3. Ms. Pannalin Mahawongtikul	Member of the Risk Management Committee
4. Mr. Bandhit Thamprajamchit	Member of the Risk Management Committee/ Chief Executive Officer and President

Mr. Rathakorn Kampanathsanyakorn, Executive Vice President-Strategy, serves as Secretary to the Risk Management Committee.

In 2022, the Risk Management Committee performed its duties as described in the Risk Management Committee Report on page 18.







# Executives

As of February 1, 2023



**Mr. Bandhit Thamprajamchit**

Chief Executive Officer and President,  
Acting Senior Executive  
Vice President-Hydrocarbon,  
Acting Executive  
Vice President-Manufacturing  
and Vice President-assigned as  
Acting Managing Director,  
LABIX Co., Ltd.



**Mr. Jeerawat Pattanasomsit**

Executive Vice President-  
Power, New Business  
and Digitalization



**Mr. Chatapong Wungtanagorn**

Executive Vice President-  
Corporate Commercial



**Mr. Charlee Balmongkol**

Executive Vice President-  
CFP Project Director



**Mr. Rathakorn Kampanathsanyakorn**

Executive Vice President-  
Strategy



**Ms. Rungnapa Janchookiat**

Executive Vice President-  
Operation Excellence



**Ms. Wanida Boonpiraks**

Executive Vice President-  
Finance and Accounting



**Mr. Viroj Meenaphant**

Executive Vice President-  
Corporate Governance and Affairs,  
Acting Vice President-  
Corporate Governance,  
Compliance and Legal,  
and Company Secretary



**Mr. Viroj Wongsathirayakhun**

Executive Vice President-  
Organization Effectiveness,  
Acting Vice President-People  
and Organization Management  
and Vice President-  
assigned as Managing Director,  
Thaioil Energy Services Co., Ltd.



**Mr. Santi Wasanasiri**

Executive Vice President-  
Petrochemical Business,  
and Vice President-  
assigned as Managing Director,  
Thai Lube Base Plc  
and Thai Paraxylene Co., Ltd.



**Mr. Surachai Saengsamran**

Executive Vice President-  
CFP Project Sponsor





**Ms. Korapat Limpaphayom**  
Acting Vice President-  
Group Company Secretary  
and Sustainability



**Ms. Jariya Oonmeechai**  
Vice President-  
Special Assignment



**Ms. Jidapa Soontraratpong**  
Vice President-  
Technology



**Mr. Jumpon Thapanapong**  
Vice President-  
Corporate Strategic Risk



**Mr. Chatchai Siriwit**  
Vice President-  
Strategic Planning



**Mr. Chet Prongchit**  
Vice President-  
Movement Marine and Logistic



**Mr. Narongsak Chaviengpob**  
Vice President-  
Engineering



**Mr. Nattapong Tumsaroj**  
Vice President-  
assigned as Director-  
Strategy & Business Development,  
PT Chandra Asri Petrochemical Tbk



**Mr. Nuttapol Nopparatwong**  
Vice President-  
Commercial Planning



**Mr. Nuttapon Meerit**  
Vice President-  
Refinery



**Ms. Danusa Sanguanno**  
Acting Vice President-  
New S-Curve Business Development



**Ms. Duangporn Teerapabpaisit**  
Head of Research & Development/  
High Value Product Center





**Mr. Thirayoot Limanond**  
Vice President-  
Corporate Affairs



**Ms. Torsang Chaipravat**  
Vice President-  
Financial Planning



**Ms. Tarika Devahastin**  
Vice President-Treasury  
and Vice President-  
assigned as Managing Director,  
Thaioil Treasury Center Co., Ltd.



**Ms. Prapin Thongnium**  
Vice President-  
Procurement and Contract



**Ms. Pimchanok Sakolwaree**  
Vice President-  
Commercial



**Mr. Phumchit Tatsanaprasert**  
Vice President-  
Quality Management



**Mr. Mongkol Janchookiat**  
Vice President-Corporate Resources  
and Transformation Management



**Ms. Rungtip Maneesarachun**  
Vice President-  
Corporate Internal Audit



**Mr. Worrachart Ruangtragool**  
Vice President-  
assigned as Managing Director,  
Thaioil Ethanol Co., Ltd.



**Ms. Wanwisa Yanchinda**  
Vice President-  
Accounting



**Mr. Vivat Wongnirund**  
Vice President-  
Supply Chain Optimization



**Mr. Sarungu Limwongse**  
Vice President-  
Petrochemical and Lube Base





**Mr. Somboon Chuaykoblap**  
Vice President-  
Digitalization



**Ms. Somporn Bunluesriruang**  
Vice President-  
Efficient Operations Support



**Ms. Suchada Deechaiya**  
Vice President-  
People and Organization Excellence



**Mr. Anawat Chansaksoong**  
Vice President-  
assigned as Managing Director,  
Thaioil Solvent Co., Ltd.  
and TOPNEXT International Co., Ltd.



**Ms. Acharee Tiyaabhorn**  
Vice President-  
Business Development



**Mr. Udom Wongsirinopphakhun**  
Vice President-Asset Development  
and Vice President-  
assigned as Managing Director,  
TOP SPP Co., Ltd.



**Mr. Noppadol Pinsupa**  
Acting Chief Executive Officer  
and President  
(End of secondment  
as of December 31, 2022)



**Mr. Pongpun Amornvivat**  
Executive Vice President  
secondment to PTT Plc  
(Resigned on December 31, 2022)



**Mr. Nikom Kongnok**  
Vice President-  
Group Company Secretary  
and Sustainability  
(Retired on December 31, 2022)



**Mr. Nitas Krongvanitchayakul**  
Senior Vice President-  
assigned as Managing Director,  
LABIX Co., Ltd.  
(Retired on December 31, 2022)



**Mr. Sarayut Jitprasertngam**  
Vice President-  
Corporate Governance,  
Compliance and Legal  
(End of secondment  
as of January 31, 2023)



## Shareholding Report of Company's High-Level Executives (as defined by SEC) in 2022

(Inclusive of Spouse, Unmarried Partner, and Minor)

Information as of February 1, 2023

No.	Name-Surname Of High-Level Executives, and Finance & Accounting Executive	No. of Share (Shares)			Remark
		as of February 1, 2023	as of January 1, 2022	Addition/(Reduction) During the Year (Shares)	
1	Mr. Bandhit Thamprajamchit	2,400	2,200	200	Changed due to the subscription of the newly-issued ordinary shares
2	Mr. Jeerawat Pattanasomsit	-None-	-None-	-No Change-	-
3	Mr. Chatapong Wungtanagorn	105,676	97,400	8,276	Changed due to the subscription of the newly-issued ordinary shares
4	Mr. Charlee Balmongkol	-None-	-None-	-No Change-	-
5	Mr. Rathakorn Kampanathsanyakorn	-None-	-None-	-No Change-	-
6	Ms. Runghapa Janchookiat	-None-	-None-	-No Change-	-
	By Spouse, Unmarried Partner, and Minor	100	100	-No Change-	-
7	Ms. Wanida Boonpiraks	6,585	6,000	585	Changed due to the subscription of the newly-issued ordinary shares
8	Mr. Viroj Meenaphant	-None-	-None-	-No Change-	-
9	Mr. Viroj Wongsathirayakhun	21,600	21,600	-No Change-	-
10	Mr. Santi Wasanasiri	10,976	10,000 <sup>(1)</sup>	976	Effective on July 1, 2022
	By Spouse, Unmarried Partner, and Minor	55,600	51,200 <sup>(1)</sup>	4,400	-
11	Mr. Surachai Saengsamran	107,000	98,500	8,500	Changed due to the subscription of the newly-issued ordinary shares
12	Ms. Torsang Chaipravat	-None-	-None-	-No Change-	-
13	Ms. Tarika Devahastin	-None-	-None-	-No Change-	-
14	Ms. Wanwisa Yanchinda	5,424	5,000	424	Changed due to the subscription of the newly-issued ordinary shares
Remark: <sup>(1)</sup> As of the effective date					



## High-Level Executives who Resigned during the Year 2022

No.	Name-Surname Of High-Level Executives, and Finance & Accounting Executive	No. of Share (Shares)			Remark
		as of Date of Resignation	as of January 1, 2022	Addition/(Reduction) During the Year (Shares)	
1	Mr. Pongpun Amornvivat	46,653	46,653	-No Change-	Resigned on December 31, 2022

## Recruitment and Appointment of the CEO and Succession Plan

To recruit and nominate the Chief Executive Officer and President (CEO) to fill in the vacant position, the Nomination and Remuneration Committee, selecting from the name list of high-level executives and qualified persons, bases its consideration on professional experience and specific qualifications necessary and beneficial for Thailoil's operations as planned and align with promotion, expansion, and growth strategies while attempting to pursue new business opportunities. Candidates shall possess knowledge, business administration, and related experience such as energy, petroleum, and petrochemicals on top of their leadership and experience in organization management. They must also be well recognized by organizations involved, taking into account possible conflicts of interest with Thailoil. The committee will finally raise its nomination to the Board for consideration and approval.

Thailoil has also prioritized the development of executives to ensure they are equipped and ready for rotation among high-level positions and for succession to high-level executive positions. Their performance will be assessed so that the succession plan can be properly designed to ensure that candidates are developed and groomed for future succession, and only the right persons will be considered. The succession plan is reviewed every year to assure shareholders and investors of business continuity.

Regarding the CEO's position holding outside Thailoil and Subsidiaries, the Board developed the '**Guidelines for its Executives and Personnel that are Invited to serve in Other Companies, Agencies, or Organizations**', which is included in the Corporate Governance and Code of Conduct Manual (CG Manual). The CEO must inform the Board of such position holding for acknowledgment or endorsement as applicable before taking such position. However, the CEO is allowed to hold directorship in Thailoil's subsidiaries to ensure that Thailoil's business and those of subsidiaries are aligned and mutually support one another.

## Assessment of CEO's Performance

Thailoil arranges for the assessment of CEO's performance on an annual basis. The Nomination and Remuneration Committee takes charge of the assessment, which is made up of two main parts (with different assessment weight given).

Part 1-Assessment of Corporate KPIs

Part 2-Assessment of Leadership Competency

The results of the performance assessment would be used to identify CEO remuneration, which will be presented to the Board for consideration and approval. However, towards the end of 2022, when Mr. Wirat Uanarumit retired with effect from September 30, 2022 and the Board appointed Mr. Noppadol Pinsupa as the acting CEO, no performance assessment was made for the acting



CEO since he took office for only three months. The Board later selected Mr. Bandhit Thamprajamchit to the position of CEO from January 1, 2023.

#### CEO's Remuneration

Thaioil has a policy on the CEO's remuneration for his current (short-term) performance and performance in response to the long-term strategy. This is to ensure that the remuneration package for the CEO is a foundation for growth and proves attractive as well as comparable to industry peers under clear and transparent criteria. A Balanced Scorecard, featuring three assessment aspects, namely Business as Usual, Strategic Initiatives, and Strategic Enablers and Sustainability, is used for defining Corporate KPIs and is considered part of the performance assessment criteria. The increase of CEO remuneration is based on annual performance, with criteria clearly identified in advance. The Nomination and Remuneration Committee will make an annual assessment of CEO's performance for the Board to consider. Then, the Chairman of the Board will inform the CEO of the outcome of Board consideration.

#### Executives' Remuneration

At the end of the fiscal year (December 31, 2022), the total remuneration for 40 executives amounted to THB 339.97 million, comprising salary and allowance of THB 217.77 million, bonus of THB 68.11 million, contribution to the provident fund of THB 22.74 million, retirement benefit of THB 18.71 million, and THB 12.64 million for other items.

**Remarks:** Remuneration for 40 executives as of December 31, 2022 excluded these secondees:

Mr. Nitas Krongvanitchayakul

Mr. Worrachart Ruangtragool

Mr. Anawat Chansaksoong

Mr. Viroj Wongsathirayakhun  
(proportional to the secondment period at a Thaioil subsidiary)

Mr. Santi Wasanasiri  
(proportional to the secondment period at a Thaioil subsidiary)

Ms. Tarika Devahastin  
(proportional to the secondment period at a Thaioil subsidiary)

Mr. Udom Wongsirinopphakhun  
(proportional to the secondment period at a Thaioil subsidiary).



# Executive Biography (Disclosure Required by Law)

As of February 1, 2023

**Mr. Jeerawat Pattanasomsit**  
**Executive Vice President-Power,**  
**New Business and Digitalization**

## Education

- >> Bachelor of Engineering, Kasetsart University
- >> Master of Science, The Petroleum and Petrochemical College, Chulalongkorn University

## Training

### Thai Institute of Directors Association (IOD)

- >> Director Certification Program (DCP 186/2014)
- >> Diploma Examination (Exam)
- >> IT Governance and Cyber Resilience Program (ITG 16/2021)
- >> Director Refreshment Training Program (DRP 3/2021)

### Other Institutes

- >> Executive Development Program (EDP), Thai Listed Companies Association
- >> PTT-Harvard Business School Leadership Development Program
- >> Entrepreneurship Program
- >> Leadership Development Program (LDP)
- >> Geo-Informatics Technology for Executives Program 9/2022, Geo-Informatics and Space Technology Development Agency (Public Organization) (GISTDA)

### Working Experience in the 5 Preceding Years

Oct 2018-Apr 2019	Executive Vice President-Manufacturing (Act.) and Vice President-Refinery
Apr 2019-Dec 2020	Executive Vice President-Manufacturing and Vice President-Refinery (Act.)
Jan 2021-Sep 2022	Executive Vice President-Power, New Business and Digitalization and Vice President-New S-curve Business Development (Act.)
Oct 2022-Present	Executive Vice President-Power, New Business and Digitalization

**Mr. Chatapong Wungtanagorn**  
**Executive Vice President-Corporate Commercial**

## Education

- >> Bachelor of Engineering, King Mongkut's University of Technology Thonburi
- >> Master of Advanced Chemical Engineering, The Imperial College of Science, Technology and Medicine, London, United Kingdom
- >> Master of Management, College of Management, Mahidol University

## Training

### Thai Institute of Directors Association (IOD)

- >> Director Certification Program (DCP 162/2012)
- >> Role of the Chairman Program (RCP 39/2016)

### Other Institutes

- >> Leadership Development Program (LDP) III
- >> Advanced Certificate Course in Politics and Governance in Democratic Systems for Executives, King Prajadhipok's Institute
- >> The Executive Program in Energy Literacy for a Sustainable Future, Thailand Energy Academy
- >> Leadership Development Program (LDP) II
- >> Executive Development Program (EDP), Thai Listed Companies Association

### Working Experience in the 5 Preceding Years

Jan-Dec 2018	Executive Vice President-Corporate Commercial
Jan 2019-Dec 2021	Executive Vice President-Corporate Commercial and Vice President-Commercial Planning (Act.)
Jan 2022-Present	Executive Vice President-Corporate Commercial



**Mr. Rathakorn Kampanathsanyakorn**  
**Executive Vice President-Strategy**

**Education**

- >> Bachelor of Engineering, Chulalongkorn University
- >> Master of Science, Chemical Engineering, Imperial College London, United Kingdom
- >> Master of Science, International Management, King's College London, United Kingdom

**Training**

**Thai Institute of Directors Association (IOD)**

- >> Director Certification Program (DCP 324/2022)

**Other Institutes**

- >> Leadership Development Program (LDP) I, 2013, PTT Leadership and Learning Institute
- >> Advanced Management Program 2015, PTT Leadership and Learning Institute
- >> Management Development Program (MDP) III, 2015, PTT Leadership and Learning Institute
- >> Leadership Development Program (LDP) II, 2018, PTT Leadership and Learning Institute
- >> Leadership Development Program (LDP) III, 2019, PTT Leadership and Learning Institute
- >> Director Development Program (DDP PTT 1/2019), (PTT In-house Course)

**Working Experience in the 5 Preceding Years**

Sep 16-Nov 15, 2018	Executive Vice President-Downstream Business Group Planning (Act.), PTT Plc
Nov 16, 2018-Sep 2021	Executive Vice President-Downstream Business Group Planning, PTT Plc
Oct 2021-Present	Executive Vice President-Strategy, Thai Oil Plc

**Ms. Rungrapa Janchookiat**  
**Executive Vice President-Operation Excellence**

**Education**

- >> Bachelor of Engineering, Chulalongkorn University
- >> Master of Engineering, Strathclyde University, United Kingdom

**Training**

**Thai Institute of Directors Association (IOD)**

- >> Director Certification Program (DCP 307/2021)

**Other Institutes**

- >> Leadership Development Program (LDP) I, 2013, PTT Leadership and Learning Institute
- >> The Young Executive Program in Energy Literacy for a Sustainable Future, Class 6, Thailand Energy Academy
- >> Executive Development Program (EDP) 2020, Thai Listed Companies Association

**Working Experience in the 5 Preceding Years**

Jan 2014-Jan 2020	Vice President-Technology
Feb-Jun 2020	Executive Vice President-Operation Excellence (Act.)
Jul 2020-Dec 2021	Executive Vice President-Operation Excellence and Vice President-Technology (Act.)
Jan 2022-Present	Executive Vice President-Operation Excellence



**Mr. Viroj Wongsathirayakhun****Executive Vice President-Organization Effectiveness****Education**

- >> Bachelor of Science, Silpakorn University
- >> Master of Public Administration,  
National Institute of Development Administration (NIDA)

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

- >> Director Certification Program (DCP 209/2015)

**Other Institutes**

- >> Digital Economy for Management Program (DE4M)
- >> Leadership Succession Program (LSP) 7
- >> Leadership Development Program (LDP):  
Leading Bold Change
- >> Management Development Program (MDP)
- >> Advanced Certificate Course in Politics and  
Governance in Democratic Systems for Executives,  
Class 24, King Prajadhipok's Institute

**Working Experience in the 5 Preceding Years**

- |                   |   |
|-------------------|---|
| Feb 2015-Sep 2018 | Senior Vice President-People and<br>Organization Management, Thai Oil Plc.<br>and Managing Director,<br>Thaioil Energy Services Co., Ltd.   |
| Oct 2018-Mar 2019 | Executive Vice President-<br>Organization Effectiveness (Act.),<br>Vice President-People and<br>Organization Management, Thai Oil Plc.<br>and Managing Director,<br>Thaioil Energy Services Co., Ltd. |
| Apr 2019-Present  | Executive Vice President-<br>Organization Effectiveness,<br>Vice President-People and<br>Organization Management (Act.),<br>Thai Oil Plc. and Managing Director,<br>Thaioil Energy Services Co., Ltd. |

**Mr. Santi Wasanasiri****Executive Vice President-Petrochemical Business****Education**

- >> Bachelor of Engineering, Chulalongkorn University

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

- >> Director Certification Program (DCP 152/2011)
- >> Boardroom Success through Financing and Investment  
Program (BFI 9/2020)

**Other Institutes**

- >> EX-PSM5 Executive P20 G203 For Senior Management
- >> Executive Development Program (EDP), Class 17,  
Thai Listed Companies Association
- >> Leadership Development Program (LDP) II

**Working Experience in the 5 Preceding Years**

- |                   |   |
|-------------------|---|
| Jan 2013-Sep 2018 | Manager-Innovation and Sustainability   |
| Oct 2018-Jun 2020 | Vice President-New S-Curve<br>Business Development, and<br>Manager-Corporate Venture Capital<br>(Act.)                                      |
| Jul 2020-Jun 2022 | Managing Director,<br>Thai Lube Base Plc and<br>Thai Paraxylene Co., Ltd.   |
| Jul-Dec 2022      | Executive Vice President-<br>Petrochemical Business (Act.) and<br>Managing Director,<br>Thai Lube Base Plc and<br>Thai Paraxylene Co., Ltd. |
| Jan 2023-Present  | Executive Vice President-<br>Petrochemical Business and<br>Managing Director,<br>Thai Lube Base Plc and<br>Thai Paraxylene Co., Ltd.        |



**Mr. Surachai Saengsamran****Executive Vice President-CFP Project Sponsor****Education**

>> Bachelor of Engineering, Chulalongkorn University

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

>> Director Certification Program (DCP 238/2017)

>> Boardroom Success through Financing and Investment Program (BFI 9/2020)

**Other Institutes**

>> Executive Socialization Program-Full program

>> You are Top Group 'Great Leader'

>> Work Process Design&Improvement

>> DP: Leadership Greatness/Financial Secret/  
The Speed of Trust/Bold Change

**Working Experience in the 5 Preceding Years**

Apr 2016-Sep 27, 2018	Executive Vice President- Operation Excellence and Senior Vice President- Engineering (Act.)
Sep 28-Oct 21, 2018	Executive Vice President- Operation Excellence
Oct 22, 2018-Present	Executive Vice President- CFP Project Sponsor

**Mr. Charlee Balmongkol****Executive Vice President-CFP Project Director****Education**

>> Bachelor of Engineering, Chulalongkorn University

>> Master of Advanced Mechanical Engineering,  
Imperial College, University of London, United Kingdom

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

>> Director Certification Program (DCP 209/2015)

**Other Institutes**

>> PTT-Havard Business School Leadership Program

>> Leadership Development Program (LDP)

>> Leadership For Customer Program (LFC), GE Crotonville

**Working Experience in the 5 Preceding Years**

Jan-May 2016	Vice President-Engineering
May 2016-Oct 2018	Manager-CFP Project
Oct-Dec 2018	Executive Vice President- CFP Project Director (Act.) and Manager-CFP Project
Dec 2018-Apr 21, 2019	Executive Vice President- CFP Project Director (Act.)
Apr 22, 2019-Present	Executive Vice President- CFP Project Director



**Mr. Viroj Meenaphant**

**Executive Vice President-Corporate Governance and Affairs;  
Acting Vice President-Corporate Governance,  
Compliance and Legal (Chief of the Compliance);  
and 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 thoroughly executed. 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 resolved to appoint Mr. Viroj Meenaphant as the Company Secretary, effective from October 1, 2018.

**Education**

>> Bachelor of Engineering, Chulalongkorn University

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

>> Company Secretary Program (CSP 31/2009)  
>> Director Certification Program (DCP 185/2014)  
>> Thailand's 10<sup>th</sup> National Conference on Collective Action against Corruption  
>> Company Secretary Forum 2019: Role of the Company Secretary in Shaping Corporate Culture

**Other Institutes**

>> Leadership Development Program (LDP) II, 2018  
>> Executive Development Program (EDP), Thai Listed Companies Association  
>> 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"

## &gt;&gt; STS Expert Session 2022:

>> "Oil and Petrochemical Industry Outlook"  
Boston Consulting Group (BCG)  
>> "Energy Industry Trend", Facts Global Energy (FGE)  
>> "Global&Thailand Economic Outlook",  
Kiatnakin Phatra Financial Group  
>> The Program for Senior Executives on Justice Administration, Batch 26, Judicial Training Institute, National Justice Academy  
>> Knowledge Sharing "Geopolitics and Climate Change& Its Implication" By Dr. Pailin Chuchottaworn, Chairman of the Board, Global Power Synergy Plc  
>> Seminar: Regulatory Framework and Incentives for Low Carbon Future Society, Petroleum Institute of Thailand  
>> NBI Think Tank Lecture: "Geopolitics: New World Order and Investment Strategies of Thailand and PTT Group", New Business and Infrastructure, PTT Plc

**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-Dec 2021	Executive Vice President-Corporate Governance and Affairs, Vice President-Corporate Affairs (Act.), and Company Secretary
Jan 2022-Jan 2023	Executive Vice President-Corporate Governance and Affairs, and Company Secretary
Feb 2023-Present	Executive Vice President-Corporate Governance and Affairs, and Vice President-Corporate Governance, Compliance and Legal (Act.), and Company Secretary



**Ms. Wanida Boonpiraks**

**Executive Vice President-Finance and Accounting**  
**(Person Taking the Highest Responsibility in Finance and Accounting)**

**Education**

- >> Bachelor of Accountancy, Chulalongkorn University
- >> Master of Business Administration (Finance),  
University of St. Thomas, USA

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

- >> Director Certification Program (DCP 195/2014)

**Other Institutes**

- >> Executive Development Program (EDP), Class 9,  
Thai Listed Companies Association
- >> Chief Financial Officer Certification Program, Class 19,  
the Federation of Accounting Professions under  
the Royal Patronage of His Majesty the King
- >> Leadership Development Program (LDP) II,  
PTT Leadership and Learning Institute
- >> Orchestrating Winning Program (OWP) 2018,  
IMD Business School, Switzerland
- >> Leadership Development Program (LDP) III,  
IMD Business School, Singapore

**Working Experience in the 5 Preceding Years**

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
Apr-Dec 2020	Chief Financial Officer, Global Power Synergy Plc
Jan 2021-Present	Executive Vice President- Finance and Accounting, Thai Oil Plc

**Ms. Wanwisa Yanchinda**

**Vice President-Accounting**  
**(Person Supervising Accounting)**

**Education**

- >> Bachelor of Accountancy, Bangkok University
- >> Master of Business Administration,  
Ramkhamhaeng University

**Others:**

- >> Certificated Public Accountant

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

- >> Director Certification Program (DCP 299/2020)

**Other Institutes**

- >> Modern Banking Executive Development Program  
(MOBEX)
- >> Chief Financial Officer Certification Program, Class 4,  
the Federation of Accounting Professions under  
the Royal Patronage of His Majesty the King
- >> Strategic CFO in Capital Markets Program,
- >> Finance Transformation Program
- >> Leadership Development Program (LDP) I&II,  
Thai Oil Plc
- >> Certificate of Tax Law, Class 1
- >> IT Governance&IT Risk Management 4.0, Class 1/64,  
the Federation of Accounting Professions under  
the Royal Patronage of His Majesty the King

**Working Experience in the 5 Preceding Years**

Jan 2016-Mar 2020	Manager-Financial Accounting: Consolidation
Apr-Sep 2020	Vice President-Account (Act.)
Oct 2020-Present	Vice President-Account

Person taking the highest responsibility in finance and accounting and person supervising accounting are qualified as required by The Securities and Exchange Commission, 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.



**Ms. Rungtip Maneesarachun****Vice President-Corporate Internal Audit****(Chief of the 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. 7/2020 on December 15, 2020, the Committee appointed Ms. Rungtip Maneesarachun 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.

**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

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

- >> Director Certification Program (DCP 245/2017)
- >> Ethical Leadership Program (ELP 9/2017)
- >> Anti-Corruption Program: The Practical Guide (ACPG 42/2017)

**Other Institutes**

- >> Management Development Program (MDP), Class 22, Thailand Management Association
- >> Leadership Development Program (LDP) I, Class 2, PTT Plc
- >> Financial Executive Development Program (FINEX), Class 27, Thai Banking Academy
- >> COSO Internal Control-Integrated Framework Program (2013), the Federation of Accounting Professions under the Royal Patronage of His Majesty the King
- >> Certified Professional Internal Audit of Thailand (CPIAT) Program, Class 65, The Institute of Internal Auditors of Thailand
- >> The Young Executive Program in Energy Literacy for Sustainable Future, Class 8, Thailand Energy Academy

**Working Experience in the 5 Preceding Years**

- |              |   |
|--------------|---|
| 2017-2020    | Vice President-Treasury                 |
| 2021-Present | Vice President-Corporate Internal Audit |



## Other important information

### Investor Relations Manager

- >> Ms. Torsang Chaipravat  
Manager-Investor Relations (Act.)  
(Vacating the office as from June 30, 2022)
- >> Ms. Chuleeyon Leangreunrom  
Manager-Investor Relations  
(Effective July 1, 2022)

Communication Channel for Investors Relations Section



**Thai Oil Plc**

**Investor Relations**

555/1 Energy Complex Building A, 11<sup>th</sup> floor,  
Vibhavadi Rangsit Road, Chatuchak,  
Chatuchak, Bangkok 10900, Thailand



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+66(0) -2797-2999, +66(0) -2299-0000  
ext. 42060-42063

## Executives who resigned and end of secondment

During January 1, 2022-February 1, 2023

**Mr. Pongpun Amornvivat**

**Executive Vice President secondment to PTT Plc**

**(Resigned on December 31, 2022)**

### Education

- >> Bachelor of Engineering, Carnegie Mellon University, USA
- >> Master of Engineering, Massachusetts Institute of Technology (MIT), USA
- >> Master of Business Administration, Massachusetts Institute of Technology (MIT), USA
- >> Master of Arts, Chulalongkorn University

### Training

**Thai Institute of Directors Association (IOD)**

- >> Director Certification Program (DCP 225/2016)

### Other Institutes

- >> Perspective Exchange with OCC
- >> Capital Market Academy Leader Program, Class 29, Capital Market Academy
- >> Senior Executive Program on good governance promotion for Sustainable Development, Class 1, the Office of the Public Sector Development Commission
- >> The Young Executive Program in Energy Literacy for a Sustainable Future, Thailand Energy Academy
- >> PTT-Harvard Business School Leadership Development Program II
- >> Leadership Development Program: Leading Bold Change
- >> Business Excellence for Sustainability Workshop
- >> Executive Development Program (EDP), Thai Listed Companies Association
- >> Leadership Development Program: TQA
- >> The Executive Program in Energy Literacy for a Sustainable Future, Class 16, Thailand Energy Academy

**Remark: Biography of Mr. Bandhit Thamprajamchit**

**Acting Senior Executive Vice President-  
Hydrocarbon and Acting Executive Vice President-  
Manufacturing, disclosed in the topic  
“Board of Directors”**



**Working Experience in the 5 Preceding Years**

Jan 2018-Sep 2021	Executive Vice President-Strategy, Thai Oil Plc
Oct 2018-Oct 2020	Executive Vice President- Innovation and Digitalization (Act.), Thai Oil Plc
Oct 2021-Dec 2022	Executive Vice President secondment to PTT Plc as Executive Vice President, International Trading, PTT Plc
Jan 2023-Present	Senior Executive Vice President, International Trading Business Unit, PTT Plc

**Mr. Sarayut Jitprasertngam**

**Vice President-Corporate Governance, Compliance and Legal  
(Chief of Legal and Compliance)  
(End of secondment on January 31, 2023)**

**Education**

- >> Bachelor of Laws, Thammasat University
- >> Master of Laws, The University of Nottingham

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

- >> Subsidiary Governance Program (SGP 1/2022)

**Other Institutes**

- >> Corporate Legal Counsel Forum 2018
- >> Asia Pacific Disputes Summit Singapore 2019
- >> Director Development Program
- >> Secondment Development Program 1/2022
- >> Personal Data Protection Act B.E. 2562 (2019) Program:  
Procedures and Practices (PDPA 22/2022)
- >> Digital Business Compliance Program 2/2022

**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-Mar 2021	Vice President-Regulatory Compliance, Thai Oil Plc
Apr 2021-Jan 2023	Vice President-Corporate Governance, Compliance and Legal, Thai Oil Plc



# Assets and Shareholders Information

## Registered and Paid-up Capitals

### Ordinary Shares

On the share registration book closing date as of November 11, 2022, Thailoil's registered capital was THB 23,151,478,730 and the paid up capital was THB 22,338,355,660, comprised of 2,233,835,566 shares at the par value of 10 Baht per share.

### Shareholders

As of November 11, 2022, 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>	1,005,920,239	45.031 %
2. THAI NVDR COMPANY LIMITED <sup>(2)</sup>	300,869,605	13.469 %
3. SIAM MANAGEMENT HOLDING COMPANY LIMITED	66,400,499	2.972 %
4. CITIBANK NOMINEES SINGAPORE PTE LTD-A/C GIC C	63,477,476	2.842 %
5. SOUTH EAST ASIA UK (TYPE C) NOMINEES LIMITED	63,049,410	2.822 %
6. STATE STREET EUROPE LIMITED	53,169,915	2.380 %
7. THE BANK OF NEW YORK MELLON	25,677,833	1.149 %
8. SOCIAL SECURITY OFFICE	23,015,836	1.030 %
9. TISCO MASTER POOLED REGISTERED PROVIDENT FUND	12,904,900	0.578 %
10. K20 SELECT LONG TERM EQUITY FUND	11,340,223	0.508 %
<b>Total</b>	<b>1,625,825,936</b>	<b>72.781 %</b>

#### Remarks:

<sup>(1)</sup> As a major shareholder of Thailoil, PTT Plc (PTT), 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 February 1, 2022, there are five Directors from a total of 15 who are also holding position as PTT's 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

As of December 31, 2022, Thaioil and Subsidiaries had issued nine sets of debentures with denomination in US dollars totalling USD 3,565 million. All of them are senior unsecured bond, as detailed below:

Table 1: Debentures with denomination in US dollars issued by Thai Oil Plc

Debenture Set No.	Type of Instrument	Issuance Date	Maturity	Coupon Rate (Percent per annum)	Value (USD Million)	Credit Rating (S&P's/Moody's)
1.	Rule 144A/	January 23, 2013	2023	3.625	216	BBB+/Baa1
2.	Regulation S		2043	4.875	172	
Total value					388	

Table 2: Debentures with denomination in US dollars issued by Thaioil Treasury Center Co., Ltd.  
(Guaranteed by Thai Oil Plc)

Debenture Set No.	Type of Instrument	Issuance Date	Maturity	Coupon Rate (Percent per annum)	Value (USD Million)	Credit Rating (S&P's/Moody's)
1.	Rule 144A/ Regulation S	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					3,177	



Thaioil also issued eight other sets of debentures, also senior unsecured bonds, with denomination in Thai baht worth altogether THB 26,500 million. The debentures were given credit rating of AA- and A+ level by Fitch Ratings (Thailand) as detailed below:

Debenture Set No.	Type of Instrument	Issuance Date	Maturity	Coupon Rate (Percent per annum)	Value (USD Million)	Credit Rating (Fitch)
1.	II/HNW	March 12, 2014	2024	4.840	7,000	AA- (Stable Outlook)
2.		March 23, 2012	2027	5.050	7,500	
3.		November 11, 2022	2025	2.990	1,400	A+ (Negative Outlook)
4.			2027	3.640	600	
5.			2029	4.130	2,000	
6.			2032	4.490	1,700	
7.			2034	4.790	3,100	
8.			2037	5.090	3,200	
Total value					26,500	

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 laws and the Company's Article 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	2021	2020	2019	2018	2017	2016
Earnings (Baht per share)	6.17	(1.62)	3.08	4.97	12.18	10.40
Dividend (Baht per share)	2.60	0.70	1.50	2.65	5.25	4.50
Dividend Payout (Percent)	42.0	N/A	49.0	53.0	43.0	43.0

### Legal disputes

As of December 31, 2022, Thaioil and Subsidiaries were not engaged in any pending legal dispute that may affect Thaioil's or Subsidiaries' assets of over 5 percent of shareholders' equity, nor any dispute that may cause significant impacts on the business.



## Relationship with Major Shareholders' Business Groups

PTT Plc (PTT), Thailoil's major shareholder, is a national energy company engaging in upstream to downstream petroleum and petrochemical businesses. PTT currently holds major shares in three companies running domestic oil refineries, namely 48.00 percent in Thailoil (inclusive of 2.97 percent held by Siam Management Holding Co., Ltd., PTT's wholly-owned subsidiary), 45.18 percent in PTT Global Chemical Plc, and 45.05 percent in IRPC Plc.

The transactions and business cooperation Thailoil has carried out with PTT and its affiliates include trading of raw materials, feedstock, and products; the price of which follows market price and the volume identification follows terms and conditions indicated in the agreed contract.









# General Information

## Thai Oil Public Company Limited

Monogram	TOP
Registration Number	0107547000711
Business	<p>Thaioil is Thailand's largest operator and supplier of petroleum products. Founded in 1961, it operates one of the leading complex refineries in Asia Pacific with the current capacity of 275,000 barrels per day.</p> <p>Thaioil operates under the Operational Excellence system as an integrated group of companies running oil refinery, petrochemicals-aromatics and lube base oil with supporting businesses, including power generation, solvents and chemicals, pipeline transportation, renewable-energy generation, petrochemicals-olefins business, LAB (an intermediate in the production of cleaning agents), recruitment services for Thaioil and Subsidiaries, as well as Treasury Center to enhance Thaioil and Subsidiaries' capability of financial management. Thaioil leads the domestic refining industry through a well-planned and integrated production process, yielding optimal efficiency and low-cost products, while maintaining the high quality of product at the top quartile of refineries in Asia Pacific, giving it production cost advantages while enhancing its competitiveness.</p>
Registered Capital	<p>THB 23,151,478,730</p> <p>Comprising 2,233,835,566 paid-up common shares of 10 Baht per share</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><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, +66(0) -3849-8900</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 (Percent)
<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 (Percent)
<b>TOPNEXT International 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.)
* TOP Solvent Company Limited has changed name to TOPNEXT International Company Limited since October 3, 2022.							
<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	01055527011880	Hydrocarbon solvent manufacturer and distributor	180,000,000	Common	1,800,000	100	80.52 (Shareholding through TOPNEXT International 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 product distributor in Vietnam	373,520,000,000 VND	Common	-	-	100 (Shareholding through TOPNEXT International Co., Ltd.)
<b>PT. Tirta Surya Raya</b> Synergy Building Lt. 12 Unit 09 Jl. Jalur Sutera Barat No.17, Kel. Panunggan Timur, Kec. Pinang, Kota Tangerang, Banten Province, Indonesia 15325 Tel : +62-21808-21308 Fax : +62-21808-21307	9120102163812 (Registered in Indonesia)	Solvent and petrochemical product distributor in Indonesia	23,000,000,000 IDR	Common	23,000	1,000,000 IDR per share	77.71 (Shareholding through TOPNEXT International 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 (Percent)
<b>JSKem Private Limited</b> 24, Sin Ming Lane, #06-97 Midview City, Singapore 573970 Tel : +65-6659-1073 Fax : +65-6659-1075	201311162C (Registered in Singapore)	Solvent and petrochemical product distributor in Singapore	100,000 SGD	Common	100,000	1 SGD per share	60 (Shareholding through TOPNEXT International Co., Ltd.)
<b>TSCChem India Private Limited</b> Ram Nivas, Room No. 4, Tilak Nagar, Aarey Road, Goregaon East, Mumbai, Bandra Suburban, Maharashtra, India 400063	U11100MH2021 FTC354985 (Registered in India)	Solvent and petrochemical product distributor in India	100,000 INR	Common	10,000	10 INR per share	99.99 (Shareholding through JSKem Pte. Ltd.)
<b>Olefin</b> <b>PT TOP Investment Indonesia</b> Gedung Synergy Lt. 12 Unit 08 Jl. Jalur Sutera Barat No. 17, Kel. Panungangan Timur, Kec. Pinang, Kota Tangerang, Banten Province, Indonesia 15325 Tel : 081-9511-1144	429914021416000 (Registered in Indonesia)	Investment in petrochemical business	10,000,000,000 IDR (equivalent to 700,000 USD)  12,332,250,000,000 IDR (equivalent to 913,500,000 USD)	Common	1,000  9,135,000	10,000,000 IDR per share (equivalent to 700 USD per share) 1,350,000 IDR per share (equivalent to 100 USD per share)	100
<b>PT Chandra Asri Petrochemical Tbk</b> Wisma Barito Pacific Tower A, 7 <sup>th</sup> floor, Jl. Let. Jend. S. Parman Kav. 62-63 Jakarta, Indonesia 11410 Tel : +62-21530-7950 Fax : +62-21530-8930	8120011061265 (Registered in Indonesia)	Petrochemical manufacturer and distributor	12,264,785,664,000 IDR	Common	86,511,545,092	50 IDR per share	15 (Shareholding through PT TOP Investment Indonesia)



Company Name and Address	Registration Number	Business	Registered Capital (THB)	Type of Shares	Number of Shares (Issued)	Value of Share (THB per share)	Shareholding (Percent)
<b>Power Generation Business</b> <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	10
<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>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>Thaioil 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 (Percent)
<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, Nikomlamnlai, Chaibadan, Lopburi 15130, Thailand Tel : +66(0) -3646-2438 Fax : +66(0) -3646-2475	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, Nayear, Ubonratchatani 34160, Thailand Tel : +66(0) -4525-2777 Fax : +66(0) -4525-2776	0345550000315	Cassava-based molasses-based ethanol manufacturer and distributor	2,740,000,000	Common	2,740,000	1,000	12.39 (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 (Percent)
<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	Financial service provider for Thaioil and Subsidiaries	956,200,000	Common	95,620,000	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	1,925,000	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 (Percent)
TOP Ventures Hong Kong Limited 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  15,300,001 USD	Common	1	1 HKD per share 15,300,001 USD per share	100 (Shareholding through Thaioil Treasury Center Co., Ltd.)
TOP Ventures America Limited Liability Company 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)
Sarn Palung Social Enterprise Company Limited 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

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### Debenture Registrar and Principal Paying Agent

#### Bangkok Bank Public Company Limited

The Registrar and Debenture Holders' Representative

333 Head Office, 1<sup>st</sup> Floor, Trinity Building,

Silom Road, Silom, Bangrak, Bangkok 10500, Thailand

Tel : +66(0) -2230-1478, +66(0) -2230-2895

Fax : +66(0) -2230-1893

#### Bank Of Ayudhya Public Company Limited

AA Floor, 1222 Rama III Road, Bang Phongphang,

Yan Nawa, Bangkok 10120, Thailand

Tel : +66(0) -2296-3582

Fax : +66(0) -2683-1298

Contact: Ms. Srisunan Dutiyabodhi

### Auditor

#### EY Office Limited

33<sup>rd</sup> Floor, Lake Rajada Office Complex,

193/136-137 Ratchadaphisek Road, Klongtoey,

Bangkok 10110, Thailand

Tel : +66(0) -2264-9090

Fax : +66(0) -2264-0789

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### Other Services (Loss of Share Certificate, Change of Particulars in Securities Register and Other Services)

#### Counter Service

The Stock Exchange of Thailand Building, 1<sup>st</sup> Floor,

93 Ratchadaphisek Road, Dindaeng,

Bangkok 10400, Thailand

Tel : +66(0) -2009-9999 (Call center)

or

#### Office of Registration Services

Thailand Securities Depository Company Limited (TSD)

The Stock Exchange of Thailand Building,

93 Ratchadaphisek Road, Dindaeng,

Bangkok 10400, Thailand

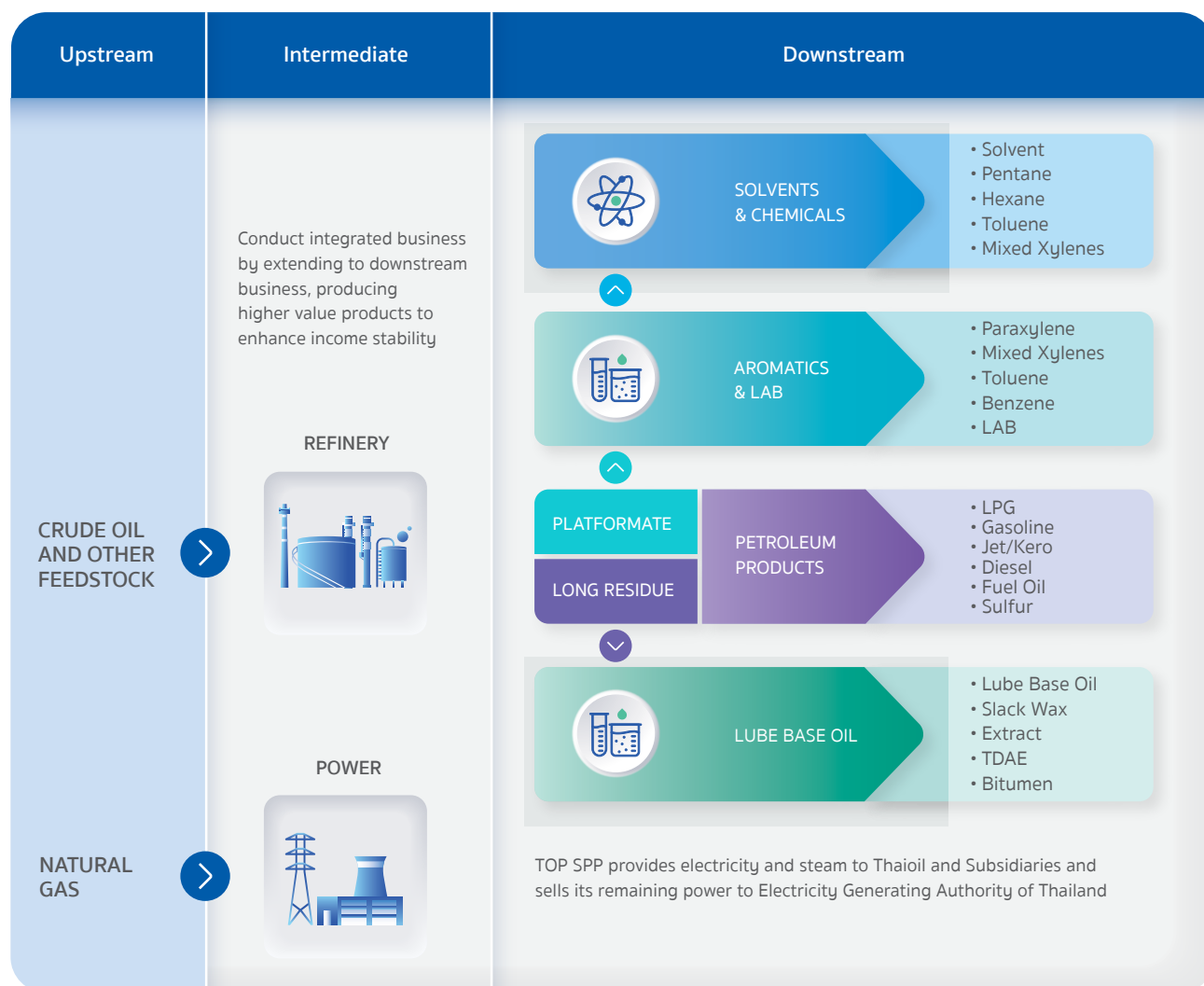
Tel : +66(0) -2009-9000,

+66(0) -2009-9999 (Call center)

Fax : +66(0) -2009-9991



# Products and Services



Thailo and Subsidiaries' Major Income-generating Products with Domestic Production Base

**Thailo Refinery** is the country's largest single-site refinery with maximum complexity to generate value-added products. It is a leading complex refinery with a capacity to produce and distribute wholesale petroleum products (with crude and other raw materials run capacity of approximately 22 percent of the entire domestic refining capacity), focusing on distributing to domestic and regional markets. Unlike other refineries in Thailand, Thailo's refining complexity and technologies allow flexibility for maintenance shutdowns of each

production unit without shutting down the entire system, thus enabling Thailo to constantly meet customers' needs.

## Lubricant Business

**Thai Lube Base Plc (TLB)** mainly produces and distributes lube base oil Group 1; when blended with additives, it can be turned into lube oil (lubricating oil or engine oil) for machinery moving parts such as pistons and shafts, providing lubrication as well as cooling. TLB also produces bitumen for road pavement



as well as treated distillate aromatics extract (TDAE), which lowers carcinogens and air pollutants. Other TLB products include slack wax, a raw material for multiple consumer products such as candles, shoe wax, gloss coating, cosmetics, and adhesives for plywood.

#### Petrochemical Business

**Thai Paraxylene Co., Ltd. (TPX)** is a producer of paraxylene, feedstock for purified terephthalic acid (PTA) production in the intermediate petrochemical industry. PTA is the monomer in the downstream petrochemical industry for polyester fiber or synthetic fiber used for manufacturing apparel and 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, and plastic bags for heat preservation. TPX also produces benzene (key feedstock for styrene monomer: SM), phenol, and cyclohexene (monomers for plastic packaging, electrical appliances, automobiles, etc.).

**LABIX Co., Ltd.** is Thailand's first producer of linear alkyl benzene (LAB) and the first fully integrated producer in Southeast Asia. LAB is key feedstock for detergents and cleaning agents.

**PT Chandra Asri Petrochemical Tbk (CAP)** is Thailoil's investment through PT TOP Investment Indonesia. CAP is Indonesia's only large olefins producer, running the naphtha cracker with a wide range of petrochemical products from upstream to downstream including polyethylene (PE), polypropylene (PP), SM, butadiene, and several other olefins products. CAP is investigating capacity expansion and construction of the second petrochemical plant to double the existing capacity.

#### Solvent and Chemical Business

Thailoil invested in the solvent business to enhance the product value chain through Thailoil Solvent Co., Ltd. (TOS), of which TOPNEXT International Co., Ltd. (TX) (formerly known as TOP Solvent Co., Ltd.), is a subsidiary distributing solvents and chemicals in domestic and overseas markets. TX owns Sak Chaisidhi Co., Ltd., a plant manufacturing high-quality hydrocarbon solvents for industrial use. TX also manages an overseas business through TOP Solvent (Vietnam) LLC., a distributor of solvents and chemicals in Vietnam with warehouses in both southern and northern Vietnam. In Myanmar, TX appointed TOP Solvent Co., Ltd. (Myanmar Representative Office), a representative office in Yangon, Myanmar. Moreover, through a partnership, TX established PT. Tirta Surya Raya to distribute solvents and chemicals in Thailand, Indonesia, Singapore, and Malaysia. It also entered joint ventures with JSKem Pte. Ltd. (JSKEM) and TSChem India Pte. Ltd., a JSKEM's subsidiary, for procurement and distribution of chemicals and solvents in Singapore and India.

Solvents and chemicals sold by TOS and subsidiaries consist of:

- >> Hydrocarbon solvents consist of hydrogen and carbon, namely paraffins and aromatics for using in such industries as paints, polymer, auto-tire, etc.
- >> Chemical solvents consist of alcohol, ketone, ester, and glycol ether for using in the paints, coating work, etc.
- >> Other chemicals include non-solvent chemicals, such as the glycol group and monomer group as well as additives used in paints, binders, resin, etc.
- >> Specialty products are chemicals used in food and beverage industries, such as acid regulators, sugar substitutes, and functional ingredients for nutritional objectives, etc.



### Power and Steam Businesses

Thaioil invests in the cogeneration power business, supplying power and steam for Thaioil and Subsidiaries' core businesses and leading to higher efficiency and securing revenue streams. These businesses are invested through subsidiaries and joint ventures as follows.

1. TOP SPP Co., Ltd. is running two natural gas-fired cogeneration power and steam plants. Electricity produced by TOP SPP is sold to the Electricity Generating of Thailand (EGAT) under two 25-year power purchase agreements at a combined volume of 180 megawatts (MW), or 90 MW each. Electricity sale to EGAT generates 54 percent of TOP SPP's total revenue; the other 46 percent is contributed by the remaining electricity and steam distributed to Thaioil and subsidiaries.
2. Global Power Synergy Plc also produces and distributes utilities through its own operations and joint ventures.

### Ethanol Business

To strengthen its business capability, Thaioil invests through Thaioil Ethanol Co., Ltd. (TET) in the production and distribution of ethanol used to produce a variety of gasohol fuels including gasohol E10, E20, and E85, with 10, 20, and 85 percent of ethanol content, respectively. TET invests through its subsidiary and joint venture:

- 1) Sapthip Co., Ltd. (SAPTHIP), a TET's subsidiary, produces and distributes cassava-based ethanol for fuel production. SAPTHIP owns another subsidiary, Sapthip Green Energy Co., Ltd., a power producer from biogas.
- 2) Ubon Bio Ethanol Plc (UBE), a TET's joint venture produces and distributes ethanol from cassava and molasses for fuel production and industrial use. UBE currently has two subsidiaries. One is Ubon Sunflower Co., Ltd., a producer of food-grade and industrial-grade tapioca starch. The processed water and tapioca residue can be turned into biogas, used as renewable fuel and for power generation distributed within Ubon Group and to the Provincial Electricity Authority. The other is Ubon Bio Agricultural Co., Ltd., a distributor of agricultural products and organic products such as coffee beans, rice, tapioca starch, cassava chips, a soil enhancer from cassava residue, and Napier grass. It also operates livestock business and engages in agricultural land leasing.



# Business Assets

## Primary Fixed Assets under the Ownership of Thailoil and Subsidiaries

As of December 31, 2022, the primary business assets under the ownership of Thailoil and Subsidiaries after cumulative depreciation and allowance for impairment losses as shown in the financial statements amounted to THB 206,476 million:

Description	Net book value after cumulative depreciation and allowance for impairment losses (THB Million)
Land	7,358
Buildings	5,109
Leasehold improvement	212
Refinery plants and equipment	118,034
Power plants	17,752
Petrochemical plants	36,135
Machinery, equipment and plant equipment	7,801
Furniture, fixtures, office equipment, and others	1,102
Vehicles	16
Construction in progress	140,789
<b>Total Cost</b>	<b>334,308</b>
Less-Cumulative depreciation and allowance for impairment losses	(127,832)
<b>Total-Net value after cumulative depreciation and allowance for impairment losses</b>	<b>206,476</b>



### Thai Oil Plc

As of December 31, 2022, Thailoil's fixed assets were mainly land, buildings, refinery plants, power plants, machinery, and equipment, of which the Company took ownership listed as follows:

Description	Net book value (THB Million)	Obligation (THB)
Land	4,941	-
Buildings	3,747	-
Refinery plants and equipment	109,246	-
Power plants	5,784	-
Machinery, equipment and plant equipment	1,588	-
Furniture, fixtures, office equipment, and others	711	-
Vehicles	1	-
Construction in progress	138,364	-
<b>Total Cost</b>	<b>264,382</b>	-
Less-Cumulative depreciation and allowance for impairment losses	(88,712)	-
<b>Total-Net value after cumulative depreciation and allowance for impairment losses</b>	<b>175,670</b>	-

### Subsidiaries

As of December 31, 2022, Thailoil's 20 subsidiaries, including Thai Paraxylene Co., Ltd., LABIX Co., Ltd., Thai Lube Base Plc, TOP SPP Co., Ltd., Thailoil Solvent Co., Ltd., TOPNEXT International Co., Ltd., Sak Chaisidhi Co., Ltd., TOP Solvent (Vietnam) LLC, PT. Tirta Surya Raya, JSKem Pte., Ltd., TSCChem India Pte., Ltd., Thailoil Ethanol Co., Ltd., Sapthip Co., Ltd., Sapthip Green Energy Co., Ltd., Thailoil Energy Services Co., Ltd., Thailoil Treasury Center Co., Ltd., TOP Ventures Co., Ltd., TOP Ventures Hong Kong Limited, TOP Ventures America LLC., and PT TOP Investment Indonesia, held several primary fixed assets such as land, office buildings, power plants, plants, and machinery as detailed below:



Description	Net book value (THB Million)	Obligation (THB)
Land	2,417	-
Buildings	1,362	-
Leasehold improvement	212	-
Power plants, plants, machinery, equipment and plant equipment	63,104	<ul style="list-style-type: none"> <li>- Land, machinery, buildings, and the 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 plants of LABIX Co., Ltd. have been used as collateral to secure a loan of THB 5,400 million from multiple financial institutions.</li> <li>- Power plants, machinery, and equipment of TOP SPP Co., Ltd. have been used as collateral to secure a loan of THB 8,500 million from multiple financial institutions.</li> </ul>
Furniture, fixtures, office equipment, and others	391	-
Vehicles	15	-
Construction in progress	2,425	-
<b>Total Cost</b>	<b>69,926</b>	<b>-</b>
Less-Cumulative depreciation and allowance for impairment losses	(39,120)	-
<b>Total-Net value after cumulative depreciation and allowance for impairment losses</b>	<b>30,806</b>	<b>-</b>



## Investment Properties

As of December 31, 2022, investment properties which can generate profit from rental or from value appreciation or both under the ownership of Thailoil 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 of Water Pipelines and Natural Gas Pipelines

Under the water consumption contract that Thailoil made with Eastern Water Resources Development and Management Plc, Thailoil 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 applicable agencies to lay connecting pipes through their land to Thailoil's water-receiving point.

Thailoil is also entitled to share the use of the gas pipelines belonging to PTT Plc for gas delivery to Thailoil's refinery process for 15 years. The pipeline fee is included in the monthly gas consumption charge, based on a calculation formula specified under the agreement. The agreement can be renewed by Thailoil through a written notification to PTT Plc no less than six months in advance.

### Right under Land and Building Rental Contracts

On August 21, 2018, Thailoil entered into a land lease agreement with the Treasury Department, Ministry of Finance, for the right to use land of the Treasury Department for an oil refinery and staff housing. Located in Chonburi Province, the land occupies 1,499 rai, 3 ngan, and 26 square wah (accounting for 65 percent of the total area of Thailoil refinery in Sriracha). Thailoil must pay the annual rental fee for 30 years from 2022 to 2052; the agreement ends on September 10, 2052. The annual rental fee for September 2022 to September 2025 is around THB 384 million. The total rent through the contract period, with an increase of 10 percent every three years, will be about THB 21,321 million. On the contract signing day, Thailoil had already paid THB

2,962 million in advance.

The Treasury Department has allowed Thailoil to allocate part of the rented land, accounting for 8 percent of the total refinery area, to subsidiaries and other companies related to Thailoil. Regarding this matter, Thailoil must pay additional annual rental fee to the Treasury Department. Thailoil has also allowed subsidiaries and 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 it holds with the Treasury Department.

### Investment in Equity Shares of Subsidiaries and Affiliates

As of December 31, 2022 and December 31, 2021, financial investment in equity shares of Thailoil's subsidiaries and affiliates, using the cost method under separate financial statements, amounts to THB 42,262 million and THB 64,285 million, respectively.

### Policy on Investment in Subsidiaries

Thailoil holds a policy on investment in subsidiaries and on future investment in businesses that support Thailoil or strengthen Thailoil and Subsidiaries.

To supervise subsidiaries, Thailoil as a shareholder appoints a representative to participate in the subsidiaries' shareholders' meeting as proxy or representative, and exercise the voting right at the shareholders' meeting under the Board of Directors' principles or guidelines.

Moreover, Thailoil appoints representatives to serve as directors or executives of subsidiaries, or both. The positions of representatives include the Chairman of the Board, director, managing director, high-level 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 Thailoil and each given subsidiary, and applicable laws.



# Investment Promotion Privileges

Thai Oil Plc has gained a number of investment promotion privileges from Thailand Board of Investment (BOI) under the criteria and procedures stated in the Investment Promotion Act, B.E. 2520 (1977), for the rights and incentives given to the oil refining business. This includes the exemption of import duties on machinery and equipment, a permit to import skilled workers and experts to work in the number and for the period agreed by BOI, and a permit for overseas remittance in foreign currencies. In 2018, Thailoil's Clean Fuel Project (CFP) gained BOI investment promotion privileges for exemption of import duties on machinery and equipment under the same criteria mentioned above. In 2020, additional BOI privileges were granted to support investment in power generation from pitch from the Residue Hydrocracking Unit (RHCU), and sulfuric acid. This investment is exempt from corporate income tax on the combined net profit of up to 100 percent of the investment cost over eight years. The project, after corporate income tax exemption has ended, will receive an additional 50 percent reduction in corporate income tax from the usual rate on the net profit for five years for power and for three years for sulfuric acid-in addition to import tax exemption.

BOI promotion privileges have also been granted to Thailoil's subsidiaries as detailed below:

>> TOP SPP Co., Ltd. (TOP SPP) gained BOI privileges in 2014 for investment in power generation and steam production of 239.65 megawatts of electricity and 445.9 tons per hour of steam. The privileges include corporate income tax exemption on the combined net profit of up to 100 percent of the investment cost

for eight years from November 25, 2015 to November 24, 2023. Moreover in 2021, TOP SPP gained BOI privileges for investment in power generation and steam production (120 megawatts of electricity and 294.20 tons per hour of steam), which include corporate income tax exemption on the combined net profit of up to 100 percent of the investment cost for three years. The project is still under construction and corporate income tax exemption has not yet been exercised.

>> LABIX Co., Ltd. (LABIX) gained BOI privileges in 2012 for investment in the production of Linear Alkyl Benzene (LAB) and its by-products. LABIX earned corporate income tax exemption on the combined net profit of up to 100 percent of the investment cost for seven years from January 8, 2016 to January 7, 2023.

>> Sak Chaisidhi Co., Ltd. (SAKC) gained BOI privileges for investment in the production of Aliphatic Hydrocarbons and Aromatic Hydrocarbons, exempting the corporate income tax on the combined net profit of up to 100 percent of the investment cost for eight years from May 12, 2014 to May 11, 2022, followed by corporate income tax reduction at 50 percent of the usual rate on the net profit for five years from the end of corporate income tax exemption. The business was also granted a permit for utility cost deduction of twice the actual expense for ten years.

>> Sapthip Green Energy Co., Ltd. (SGE) gained BOI privileges in 2018 for power generation from biogas. The business earned corporate income tax exemption on the combined net profit of up to 100 percent of



the investment cost for eight years from January 1, 2020 to December 31, 2027. In 2019, SGE earned BOI privileges for its investment in steam production, with corporate income tax exemption on the combined net profit of up to 100 percent of the investment cost for five years from January 1, 2020 to December 31, 2024. The company in 2020 gained BOI privileges

for power generation from agricultural produce under measures to improve production efficiency using renewable energy, and for machinery modification to enhance production efficiency, reducing the corporate income tax by 50 percent of the usual rate on the combined net profit for three years from May 27, 2022 to May 26, 2025.





# Revenue Structure

Thaioil's core earnings were derived from our oil refinery business. Other revenue contributors were the lube base oil refinery, aromatics and LAB, power generation, marine transportation services (discontinued operations), solvent, ethanol, olefins, and other businesses.

(THB Million)

			For the year ended December 31					
			2022		2021		2020	
							(Re-presented)	
Operator <sup>(1)</sup>	Ownership Interest (%)		Amount	%	Amount	%	Amount	%
A. Net Sales								
1. Oil refinery	TOP	-	568,678	103	358,390	102	254,316	98
2. Lube base oil refinery	TLB	100	27,773	5	23,832	7	14,038	5
3. Aromatics and LAB	TPX	100	88,938	16	60,547	17	36,676	14
4. Power generation	TP/TOP SPP	74/100	11,716	3	7,573	3	6,655	3
5. Marine transportation services (Discontinued operations)	TM	100	-	-	210	-	658	-
6. Solvent	TOS	100	22,585	5	13,313	4	8,188	4
7. Ethanol	TET	100	1,796	-	1,589	-	1,631	1
8. Olefins	TII	100	2	-	-	-	-	-
9. Others	TES/TTC	100	6,647	1	6,330	2	5,792	2
Less: Eliminations			(198,546)	(36)	(126,288)	(36)	(80,041)	(31)
Total			529,589	97	345,496	99	247,913	96
B. Net Derivative Gain on Hedging								
1. Aromatics and LAB	TPX	100	100	-	303	-	193	-
2. Solvent	TOS	100	13	-	-	-	-	-
3. Others	TTC	100	10	-	23	-	26	-
Total			123	-	326	-	219	-
C. Net Foreign Exchange Gain <sup>(2)</sup>								
1. Oil refinery	TOP	-	-	-	-	-	1,692	-
2. Lube base oil refinery	TLB	100	30	-	47	-	10	-
3. Aromatics and LAB	TPX	100	-	-	117	-	75	-
4. Power generation	TP/TOP SPP	74/100	6	-	8	-	2	-
5. Marine transportation services (Discontinued operations)	TM	100	-	-	10	-	-	-
6. Solvent	TOS	100	-	-	112	-	14	-
7. Ethanol	TET	100	-	-	-	-	1	-
Less: Eliminations			-	-	(10)	-	-	-
Total			36	-	284	-	1,794	-



(THB Million)

			For the year ended December 31					
Operator <sup>(1)</sup>	Ownership Interest (%)		2022		2021		2020 (Re-presented)	
			Amount	%	Amount	%	Amount	%
D. Other Revenues <sup>(3)</sup>								
1. Oil refinery	TOP	-	20,623	3	2,198	1	12,164	5
2. Lube base oil refinery	TLB	100	114	-	65	-	80	-
3. Aromatics and LAB	TPX	100	314	-	264	-	185	-
4. Power generation	TP/TOP SPP	74/100	18	-	14,771	4	2,207	1
5. Marine transportation services	TM	100	-	-	12	-	103	-
(Discontinued operations)								
6. Solvent	TOS	100	40	-	28	-	23	-
7. Ethanol	TET	100	5	-	657	-	22	-
8. Others	TES/TTC	100	297	-	3	-	285	-
Less: Eliminations			(3,001)	-	(15,106)	(4)	(5,602)	(2)
Total			18,410	3	2,892	1	9,467	4
Total revenues (A-D)			548,158	100	348,998	100	259,393	100
Revenue for the period from continuing operations			548,158	100	348,998	100	259,393	100
Revenue for the period from discontinued operations			-	-	-	-	515	-
Total revenues			548,158	100	348,998	100	259,908	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 Thailoil Power Co., Ltd. which Thai Oil Plc carried out an entire business transfer from TP on February 1, 2021.

It has completely liquidation on September 17, 2022.

TOP SPP is TOP SPP Co., Ltd.

TM is Thailoil Marine Co., Ltd. having respective interests in Thailoil Marine International Pte. Ltd. (TOMI) and TOP Maritime Service Co., Ltd. in 2020. However, Thai Oil Plc having respective interests in TOMI in 2021 and 2022 which TOMI has completely liquidation on December 28, 2022.

TOS is Thailoil Solvent Co., Ltd. having respective interests in TOPNEXT International Co., Ltd. (Formerly TOP Solvent Co., Ltd.) Sak Chaisidhi Co., Ltd., TOP Solvent (Vietnam) LLC., PT. Tirta Surya Raya and JSKem Pte. Ltd.

TET is Thailoil Ethanol Co., Ltd. having respective interests in Sapthip Co., Ltd.

TES is Thailoil Energy Services Co., Ltd.

TTC is Thailoil Treasury Center Co., Ltd. having respective interests in TOP Ventures Co., Ltd., TOP Ventures Hong Kong Limited and TOP Ventures America LLC.

TII is PT TOP Investment Indonesia

<sup>(2)</sup> Oil refinery business has net foreign exchange gain in 2020 but there are net foreign exchange loss in 2021 and 2022.<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 2021 to 2022 Thairoil and/or Subsidiaries engaged in key business transactions with subsidiaries and associates along with related parties with common major shareholders and/or directors, as shown in the notes to the financial statements. All such transactions are based on market prices wherever available or mutually agreed prices wherever market prices are unavailable. The relationships among parties are listed as follows:

Company	Relationship with Thairoil as at December 31, 2022	Related Party Transactions	Value (THB Million)		Conditions
			2022	2021	
PTT Plc (PTT)	Major shareholder, holding 45.03% of Thairoil's total shares	>> Revenue	-	5	Occasional sale of solvent products. Considered normal business practice.
		>> TOPNEXT International Co., Ltd. <sup>(1)</sup> sold solvent products	-	-	The three-year P1 Collaboration Agreement expires in December 2024.
		>> Thairoil generated revenue from P1 Collaboration Agreement	1,001	-	The three-year P1 Collaboration Agreement expires in December 2024.
		>> Thai Paraxylene Co., Ltd. generated revenue from P1 Collaboration Agreement	6	-	The three-year P1 Collaboration Agreement expires in December 2024.
		>> Other income	50	8	
		>> Expenses			
		>> Thairoil purchased petroleum products	359,318	105,324	The Product Offtake and Crude Oil Supply Agreement (POCSA) and Feedstock Supply Agreement.
		>> Thairoil purchased natural gas	7,288	3,699	The 10-year and 15-year natural gas supply agreements expire in 2022 and 2023 respectively.
		>> Thairoil Power Co., Ltd. <sup>(2)</sup> purchased natural gas	-	189	The 25-year natural gas supply agreements expire in 2023.
		>> Thai Lube Base Plc purchased natural gas	377	301	The 10-year natural gas supply agreements expire in 2026.



Company	Relationship with Thaioil as at December 31, 2022	Related Party Transactions	Value (THB Million)		Conditions
			2022	2021	
Thaioil Power Co., Ltd. <sup>(2)</sup>	as at December 31, 2021 >> Dissolved and completed liquidation on September 17, 2021.	>> TOP SPP Co., Ltd. purchased natural gas	8,482	4,615	The 25-year natural gas supply agreements expire in 2041.
		>> Sak Chaisidhi Co., Ltd. purchased natural gas	96	71	The 10-year natural gas supply agreements expire in 2028.
		>> LABIX Co., Ltd. purchased natural gas	873	656	The 10-year natural gas supply agreements expire in 2025.
		>> Other expenses	98	83	
		>> Acquisition of assets	1	5	
		>> Disposal of investment in associated company	10,701	-	
		>> Other receivables	1,605	5	
		>> Trade accounts payable	71,121	13,525	
		>> Other payables	61	-	
		>> Lease liabilities	4	6	
		>> Revenue	-	39	The 25-year sale and purchase of power and steam agreement (1998-2022).
		>> Thaioil generated revenue from sale of steam	-	2	The 25-year sale and purchase of steam agreement (1998-2022).
		>> Thai Paraxylene Co., Ltd. generated revenue from sale of steam	-	16,881	
		>> Thaioil received dividend	-	-	



Company	Relationship with Thaioil as at December 31, 2022	Related Party Transactions	Value (THB Million)		Conditions
			2022	2021	
		>> Thairoil Treasury Center Co., Ltd. received loan interest income	-	29	The 4.5-year long-term loan agreement, commencing on the first draw at the amount not exceeding to THB 11,385 million, at 2.66% fixed interest rate.
		>> Other income	-	28	
		>> Expenses			
		>> Thairoil paid the costs of electricity and steam	-	132	The 25-year sale and purchase of power and steam agreement (1998-2022).
		>> Thai Paraxylene Co., Ltd. purchased electricity and steam, including steam backup services	-	83	The 25-year sale and purchase of power and steam agreement (1998-2022).
		>> Thai Lube Base Plc purchased electricity and steam	-	49	The 25-year sale and purchase of power and steam agreement (1998-2022).
		>> Loss on impairment of investments	-	901	Impairment loss is a related transaction to the entire business transfer under common control.
Global Power Synergy Plc <sup>(3)</sup> (GPSC)	>> 47.27% owned by PTT >> 10% owned by Thairoil >> Common Directors: Dr. Palin Chuchottaworn; Ms. Pannalin Mahawongtikut; and Mr. Noppadol Pinsupa	>> Revenue >> Thairoil generated revenue from services	16,206	2,600	The 25-year agreement to obtain compensation of the construction, cost of pipeline to supply water, including petroleum product and fuel oil reserve sales and purchase agreement (2023-2025).



Company	Relationship with Thaioil as at December 31, 2022	Related Party Transactions	Value (THB Million)		Conditions
			2022	2021	
Energy Recovery Unit Co., Ltd.		>> Thaioil received interest income from finance lease	-	1	The 25-year and 9-month sublease agreement (December 1996-September 2022) (The agreement is under a renewal process).
		>> Thaioil received dividend	642	879	
		>> TOP SPP Co., Ltd. generated revenue from backup power	1	2	The 7-year and 3-month sale and purchase agreement of backup power expires in August 2025.
		>> Trade accounts receivable	3,070	593	
		>> Other receivables	3	1	
		>> Other non-current liabilities	5	7	
		>> Other non-current liabilities	3,092	2,192	The sale and purchase agreement of the Energy Recovery Unit (ERU) to support power and steam to the Clean Fuel Project (CFP). Thaioil transferred the rights of use of ERU assets to Energy Recovery Unit Co., Ltd.
PTT Energy Solutions Co., Ltd. <sup>(4)</sup> (PTTES)	>> 40% owned by PTT >> 20% owned by Thaioil >> Thaioil's executive on PTES Board: Ms. Rungnapa Janchookiat	>> Revenue	4	-	
		>> Thaioil received dividend			
		>> Expenses	88	97	The 3-year service agreement to provide technical solutions and advice expired in December 2022.
		>> Thaioil paid service expenses			Impairment loss is a related transaction to the closure of PTES.
		>> Loss on impairment of investments	11	-	



Company	Relationship with Thaiol as at December 31, 2022	Related Party Transactions	Value (THB Million)		Conditions
			2022	2021	
Thai Petroleum Pipeline Co., Ltd. (THAPP)	>> 40.40% owned by PTT Oil and Retail Business Plc >> 9.19% owned by Thaiol >> Thaiol's executive on THAPP Board: Mr. Chatapong Wungtanagorn	>> Revenue			
		>> Thaiol received dividend	95	119	
		>> Expenses			
PTT Digital Solutions Co., Ltd. (PTTDG)	>> 20% owned by PTT >> 20% owned by Thaiol >> Common Director: Mr. Terdkiat Prommool >> Thaiol's executive on PTTDG Board: Mr. Jeerawat Pattanasomsit	>> Thaiol paid transportation service expenses and other expenses	61	50	The 20-year service agreement for transportation of petroleum products starts from May 17, 1994 or goals achieved (which have not been met).
		>> Other payables	5	3	
		>> Revenue			
	>> 20% owned by PTT >> 20% owned by Thaiol >> Common Director: Mr. Terdkiat Prommool >> Thaiol's executive on PTTDG Board: Mr. Jeerawat Pattanasomsit	>> Thaiol received dividend	25	26	
		>> Expenses			
		>> Thaiol paid service expenses	227	257	The 1-year technology and telecommunication services and solutions agreement expired in December 2022. (The agreement is under a renewal process).
	>> Acquisition of assets >> Other receivables >> Other payables >> Lease liabilities	>> Acquisition of assets	32	46	
		>> Other receivables	35	29	
		>> Other payables	91	93	
	>> Acquisition of assets >> Other receivables >> Other payables >> Lease liabilities	>> Lease liabilities	8	3	



Company	Relationship with Thaioil as at December 31, 2022	Related Party Transactions	Value (THB Million)		Conditions
			2022	2021	
PTT Global Chemical Plc (GC)	>> 45.18% owned by PTT	>> Revenue			Occasional sale and purchase of solvent products, including purchase of feedstock. Considered normal business practice.
		>> TOPNEXT International Co., Ltd. <sup>(1)</sup> sold solvent products	292	168	
		>> Expenses			
		>> Thairoil paid expenses on petroleum products	1,237	-	
		>> TOPNEXT International Co., Ltd. <sup>(1)</sup> purchased solvent products	49	33	
		>> Sak Chaisidhi Co., Ltd. purchased raw materials	226	786	
		>> TOP Solvent (Vietnam) LLC. purchased solvent products	14	-	
		>> Other expenses	1	1	
		>> Trade accounts receivable	39	15	
		>> Trade accounts payable	292	6	
IRPC Plc (IRPC)	>> 45.05% owned by PTT	>> Revenue			Occasional sale and purchase of petroleum, petrochemical, and solvent products. Considered normal business practice.
		>> Thairoil sold petroleum products	-	34	
		>> Thai Paraxylene Co., Ltd. sold petrochemical products	1,418	1,401	
		>> TOPNEXT International Co., Ltd. <sup>(1)</sup> sold solvent products	147	114	
		>> Other income	-	1	
		>> Expenses			
		>> Thairoil purchased petroleum products	550	45	
		>> Thairoil Marine Co., Ltd. <sup>(4)</sup> purchased petroleum products	-	11	



Company	Relationship with Thai Oil as at December 31, 2022	Related Party Transactions	Value (THB Million)		Conditions
			2022	2021	
PTT Oil and Retail Business Plc (OR)	>> 75% owned by PTT >> Common Directors: Dr. Buranin Rattanasombat and Mr. Terdkiat Prommool	>> Thai Paraxylene Co., Ltd. purchased petrochemical products	-	445	
		>> TOPNEXT International Co., Ltd. <sup>(1)</sup> purchased solvent products	1,730	1,247	
		>> Sak Chaisidhi Co., Ltd. purchased raw materials	408	222	
		>> TOP Solvent (Vietnam) LLC. purchased solvent products	227	567	
		>> Trade accounts receivable	11	14	
		>> Trade accounts payable	127	136	
		>> Revenue			
		>> Thaioil sold petroleum products	221,783	127,581	The Product Offtake and Crude Oil Supply Agreement (POCSA).
		>> Thai Lube Base Plc sold lube base oil products	4,379	3,918	Occasional sale of lube base oil. Considered normal business practice.
		>> Saphip Co., Ltd. sold ethanol products	764	618	Occasional sale of ethanol. Considered normal business practice.
		>> Other income	12	10	
		>> Expenses			
		>> Thaioil purchased petroleum products	32	141	Occasional purchase of petroleum products, lube base oil, fuels for production, and solvent products.
		>> Thai Lube Base Plc purchased lube base oil products	33	12	Considered normal business practice.
		>> Thai Paraxylene Co., Ltd. purchased fuel for production processes	2	2	
		>> TOPNEXT International Co., Ltd. <sup>(1)</sup> purchased solvent products	20	25	



Company	Relationship with ThaiOil as at December 31, 2022	Related Party Transactions	Value (THB Million)		Conditions
			2022	2021	
		>> Sapthip Co., Ltd. purchased petroleum products >> Other expenses >> Trade accounts receivable >> Trade accounts payable >> Other payables	10  2 12,655 10 3	4  4 8,309 8 1	
GC Maintenance and Engineering Co., Ltd.	>> Wholly owned by GC	>> Acquisition of assets >> Other expenses >> Other payables	22 4 1	12 2 -	
IRPC Polyol Co., Ltd.	>> 50% owned by IRPC	>> Revenue >> TOPNEXT International Co., Ltd. <sup>(1)</sup> sold solvent products	3	3	Occasional sale of solvent products. Considered normal business practice.
NPC Safety and Environmental Service Co., Ltd.	>> Wholly owned by GC	>> Expenses >> Other expenses	1	1	
Energy Complex Co., Ltd.	>> 50% owned by PTT	>> Expenses >> Other expenses >> Interest expense-finance lease  >> Other non-current assets >> Other payables >> Lease liabilities	44 1  15 3 42	57 -  14 1 1	The 3-year property lease agreement expires in November 2024 and can be renewed on a 3-year basis.



Company	Relationship with Thai Oil as at December 31, 2022	Related Party Transactions	Value (THB Million)		Conditions
			2022	2021	
Global Green Chemicals Plc	>> 72.29% owned by GC	>> Expenses			
		>> Thai Oil purchased petroleum products	2,533	2,644	Occasional purchase of petroleum products.
		>> Trade accounts payable	98	200	Considered normal business practice.
PTT International Trading Pte. Ltd.	>> Wholly owned by PTT	>> Revenue			
		>> Thai Oil sold petroleum products	16,454	4,980	Occasional sale and purchase of petroleum products, lube base oil and petrochemical products. Considered normal business practice.
		>> Thai Paraxylene Co., Ltd. sold petrochemical products	6,533	5,365	
		>> Thai Lube Base Plc sold lube base oil products	-	199	
		>> Thai Oil Marine Co., Ltd. <sup>(4)</sup> provided marine transportation services	-	2	
		>> Thai Oil generated revenue from P1 Collaboration Agreement	649	-	The 3-year P1 Collaboration Agreement expires in December 2024.
		>> Thai Paraxylene Co., Ltd. generated revenue from P1 Collaboration Agreement	7	-	The 3-year P1 Collaboration Agreement expires in December 2024.
		>> Revenue from oil price crack spread swap contract	2	-	



Company	Relationship with Thailoil as at December 31, 2022	Related Party Transactions	Value (THB Million)		Conditions
			2022	2021	
PTT Exploration and Production Plc (PTTEP)	>> 63.79% owned by PTT	>> Expenses			
		>> Expenses on petroleum products	9,339	3,112	
		>> Thai Paraxylene Co., Ltd. purchased petrochemical products	-	1,158	
		>> TOP Solvent (Vietnam) LLC. purchased solvent products	678	-	
		>> Expenses on oil price crack spread swap contract	-	35	
Orange Energy Co., Ltd.	>> 53.95% owned by PTTEP	>> Trade accounts receivable	943	944	
		>> Other receivables	643	-	
		>> Trade accounts payable	1,219	264	
		>> Other payables	-	16	
		>> Revenue			
PTT Exploration and Production Plc (PTTEP)	>> 63.79% owned by PTT	>> TOP Maritime Service Co., Ltd. <sup>(4)</sup> provided transport services of crews and personal belongings in the Gulf of Thailand	-	34	Occasional provision of transport services of crews and personal belongings in the Gulf of Thailand. Considered normal business practice.
		>> Expenses			
		>> Thailoil purchased petroleum products	-	13	Occasional purchase of petroleum products. Considered normal business practice.
Orange Energy Co., Ltd.	>> 53.95% owned by PTTEP	>> Expenses			
		>> Thailoil purchased petroleum products	-	13	Occasional purchase of petroleum products. Considered normal business practice.



Company	Relationship with Thaiol as at December 31, 2022	Related Party Transactions	Value (THB Million)		Conditions
			2022	2021	
PTT Phenol Co., Ltd.	>> Wholly owned by GC	>> Expenses >> TOPNEXT International Co., Ltd. <sup>(1)</sup> purchased solvent products >> TOP Solvent (Vietnam) LLC. purchased solvent products >> JSKem Pte. Ltd. purchased solvent products >> Trade accounts payable	205 133 25 26	226 156 - 23	Occasional purchase of solvent products. Considered normal business practice .
PTT MCC Biochem Co., Ltd.	>> 50% owned by GC	>> Expenses >> TOPNEXT International Co., Ltd. <sup>(1)</sup> purchased solvent products	3	14	Occasional purchase of solvent products. Considered normal business practice.
Vencorex (Thailand) Co., Ltd.	>> Wholly owned by GC	>> Revenue >> TOPNEXT International Co., Ltd. <sup>(1)</sup> sold solvent products	8	6	Occasional sale of solvent products. Considered normal business practice.
GC Polyols Co., Ltd.	>> 82.10% owned by GC	>> Expenses >> TOP Solvent (Vietnam) LLC. purchased solvent products	-	2	Occasional purchase of solvent products. Considered normal business practice.
PTT Tank Terminal Co., Ltd.	>> Wholly owned by PTT	>> Expenses >> Sak Chaisidhi Co., Ltd. paid storage tank service expenses	24	23	The 24-year storage tank service agreement expires on September 30, 2038.



Company	Relationship with Thaioil as at December 31, 2022	Related Party Transactions	Value (THB Million)		Conditions
			2022	2021	
Thai Tank Terminal Co., Ltd.	>> 36.43% owned by GC	>> Expenses >> Sak Chaisidhi Co., Ltd. paid storage tank service expenses  >> LABIX Co., Ltd. paid storage tank service and other service expenses  >> Other payables	16	17	The 2-year storage tank service agreement expired on December 31, 2022. The 3-month storage tank service agreement expired in May 2022.
GC Glycol Co., Ltd. <sup>(6)</sup>	>> Wholly owned by GC	>> Expenses >> TOP Solvent (Vietnam) LLC. purchased solvent products >> PT. Tirta Surya Raya purchased solvent products >> Trade accounts payable	27 - -	22 22 2	Occasional purchase of solvent products. Considered normal business practice.
Sam Palung Social Enterprise Co., Ltd. (SPSE)	>> 20% owned by PTT >> 15% owned by Thaioil >> Thaioil's executive on SPSE Board: Mr. Viroj Meenaphant	>> Expenses >> Other expenses	-	1	
PTT Treasury Center Co., Ltd.	>> Wholly owned by PTT	>> Thaioil paid interest expenses on borrowings	157	91	The bridging loan for a period of not more than 18 months with a market rate of not more than 2.5% per annum, for an amount not exceeding USD 670 million, or approximately THB 22,154 million.



Company	Relationship with Thaioil as at December 31, 2022	Related Party Transactions	Value (THB Million)		Conditions
			2022	2021	
		>> Thaioil Power Co., Ltd. <sup>(2)</sup> paid interest expenses on borrowings  >> Accrued interest >> Current portion of long-term borrowings >> Long-term borrowings	-	10   2 1  14,000	The 4.5-year long-term loan agreement, commencing on the first draw at the amount of THB 4,000 million at a 2.82% fixed interest rate.
Combined Heat and Power Producing Co., Ltd.	>> Wholly owned by GPSC <sup>(3)</sup>	>> Expenses >> Thaioil purchases fuels for production process	3	-	Occasional purchase of fuels for production process. Considered normal business practice.
GC-M PTA Co., Ltd.	>> 74% owned by GC	>> Revenue >> Thai Paraxylene Co., Ltd. sold petrochemical products	3,529	-	Occasional sale and purchase of petrochemical products. Considered normal business practice.
Siam Management Holding Co., Ltd.	>> Wholly owned by PTT Global Management Co., Ltd.	>> Disposal of investment in an associate	11,346	-	
Business Services Alliance Co., Ltd.	>> 25% owned by PTT >> Common Director: Mr. Suchat Ramarch	>> Expenses >> Other expenses	1	-	
Nuplex Resins (Vietnam) Pty Ltd.	>> Wholly owned by GC	>> Revenue >> TOP Solvent (Vietnam) LLC. sold solvent products >> Trade accounts receivable	26  3	-	Occasional sale of solvent products. Considered normal business practice.



Company	Relationship with Thaiol as at December 31, 2022	Related Party Transactions	Value (THB Million)		Conditions
			2022	2021	
PTT International Trading London Ltd.	>> Wholly owned by PTT	>> Revenue	46	-	The 3-year P1 Collaboration Agreement expires in December 2024.
		>> Thaiol generated revenue from P1 Collaboration Agreement			
		>> Thai Paraxylene Co., Ltd. P1 generated revenue from Collaboration Agreement	1	-	The 3-year P1 Collaboration Agreement expires in December 2024.
PTT MEA Ltd.	>> Wholly owned by PTT	>> Other receivables	48	-	
		>> Revenue			
		>> Thaiol generated revenue from P1 Collaboration Agreement	11	-	The 3-year P1 Collaboration Agreement expires in December 2024.
		>> Other receivables	12	-	

**Remarks:**

- (1) On October 3, 2022, TOP Solvent Co., Ltd. renamed as TOPNEXT International Co., Ltd.
- (2) On February 1, 2021, Thaiol accepted the transfer of the entire business of Thaiol Power Co., Ltd., (TP), the subsidiary in which it held 73.99 percent of all shares of TP. After that, TP registered its company dissolution with the Department of Business Development, Ministry of Commerce on February 25, 2021 and completed the liquidation on September 17, 2021.
- (3) All issued and subscribed shares of Global Power Synergy Plc (GPSC) and Thaiol have seen investment type change in GPSC from an investment fund in an associated company to financial assets, whose fair values are determined through other net profits/losses.
- (4) On April 30, 2021, Thaiol disposed of and transferred all ordinary shares in Thaiol Marine Co., Ltd. (TM) to Phurich Marine Co., Ltd., leading to TM's termination as a subsidiary of the Company. TM also holds equity interests 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.
- (5) On August 29, 2022, the Extraordinary General Meeting of PTT Energy Solutions Co., Ltd. approved registration of its dissolution. The liquidation process is expected to be wrapped up in 2023.
- (6) On August 31, 2022, GC Glycol Co., Ltd. registered its company dissolution with the Department of Business Development, Ministry of Commerce, with effect from December 31, 2022 and is under the liquidation process.



### **Opinion of 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 definitely committed to full compliance with laws, rules and regulations set forth by the Securities and Exchange Commission, Thailand (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 under the Royal Patronage of His Majesty the King.

In case of any accounting disagreement and discrepancy on related party 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 from a third party with applicable proficiency, such as the external auditor or independent asset assessor and individuals with conflicts of interests. The opinions of the Audit Committee or the proficient third party will serve as insights and information for the approval of the Board or the Shareholders, as applicable. This is to ensure that such transactions are not considered an illegal transfer of benefit among and between Thaioil, subsidiaries, joint ventures and associates, or related parties and shareholders, but transactions taken for the maximum benefit of the shareholders, especially minor shareholders.



# Management Discussion and Analysis of Financial Position and Operating Results Fiscal Year 2022

## Operating Results-Consolidated Financial Results

		2022	2021	+/(−)
Gross Integrated Margin (GIM) <u>excluding</u> Stock Gain/(Loss) <sup>(1)</sup>	USD/barrel	13.4	5.5	7.9
Gross Integrated Margin (GIM) <u>including</u> Stock Gain/(Loss) <sup>(1)</sup>	"	14.3	10.1	4.2
Sales Revenue	Million Baht	505,703	335,827	169,876
Net Realized Gain/(Loss) on Financial Instruments	"	(15,841)	(2,461)	(13,380)
<b>EBITDA</b>	"	<b>37,187</b>	<b>28,142</b>	<b>9,045</b>
Net Gain/(Loss) on Fair Value Measurement of Financial Instruments	"	(164)	55	(219)
Net Foreign Exchange Gain/(Loss) <sup>(2)</sup>	"	(64)	(4,595)	4,531
Gain from Selling Investment in an Associate	"	10,038	-	10,038
Gain/(Loss) from Reclassification of Investment	"	7,297	-	7,297
Financial Costs	"	(3,860)	(3,595)	(265)
Reversing of Income Tax (Expenses)	"	(8,918)	(2,034)	(6,884)
<b>Net Profit/(Loss)</b>	"	<b>32,668</b>	<b>12,578</b>	<b>20,090</b>
Basic Earnings/(Loss) per Share	Baht	15.63	6.17	9.46
Stock Gain/(Loss)	Million Baht	3,613	15,063	(11,450)
Reversal/(Write-Down) on Crude and Petroleum Product Inventory <sup>(3)</sup>	"	(10)	332	(342)

### Remarks:

- <sup>(1)</sup> Gross Integrated Margin (GIM) is the integrated margin among Thaioil Refinery, Thai Lube Base Plc, Thai Paraxylene Co., Ltd., and LABIX Co., Ltd.
- <sup>(2)</sup> Including net foreign exchange gain/(loss) on foreign currency assets and liabilities in 2022 and 2021 of THB (983) million and THB (4,584) million.
- <sup>(3)</sup> Including reversal/(write-down) of allowance for the decline in values of crude and petroleum product inventories, adjusted to realizable value and reversal/(write-down) of petroleum product at cost.



In 2022, Thailoil and Subsidiaries posted sales revenue of THB 505,703 million, rising THB 169,876 million from last year due to higher product selling prices tracking with crude oil prices together with the increasing gasoline, jet fuel/kerosene, and diesel spread over Dubai crude after many countries relaxed their lockdown measures and international travel, and the healthy gross margins of the LAB business group. Note that the spread between aromatics over ULG 95 and that lube base oil over fuel oil were on the decline, which resulted in the GIM excluding stock gain/(loss), gained USD 7.9 per barrel to USD 13.4 per barrel. Furthermore, Thailoil booked stock gain of THB 3,613 million, down THB 11,450 million from last year. However, Thailoil and Subsidiaries posted a write-down on crude and petroleum product inventory of THB 10 million, compared with a reversal on crude and petroleum product inventory of THB 332 million last year. With the incorporation of the net realized loss from financial instruments of THB 15,841 million, Thailoil and Subsidiaries posted THB 37,187 million in EBITDA, rising THB 9,045 million over last year. However, Thailoil and Subsidiaries also posted loss from fair value measurement of financial instruments of THB 164 million and net foreign exchange loss of THB 64 million due to Thai Baht depreciation despite booking a profit from reclassified investment and the partial disposal of investment in Global Power Synergy Plc (GPSC) of THB 17,334 million (before tax) or THB 12,880 million (net of tax). Offsetting with depreciation, financial costs, and income tax expenses, in 2022 Thailoil and Subsidiaries netted a profit of THB 32,668 million, a rise of THB 20,090 million over last year.

Additionally, in Q3/2022, Thailoil completed capital raising and ended up issuing 192,307,693 ordinary shares at 53.50 baht per share for a total of THB 10,288 million. The direct costs attributable to this transaction, net of tax, was THB 183 million. and in Q4/2022, Thailoil issued additional shares of 1,500,000 shares at 53.50 baht per share, totaling to THB 80 million as a part of the over-allotment option.

## Results by Company for the Year 2022 compared to Year 2021

**Thailoil Refinery (Thailoil)** posted a 7-percent surge in capacity utilization this year on account of production plan adjustment to capture resumption that corresponded to improved market conditions accompanying the recovering economy and the subsiding COVID-19 pandemic. Its sales volume rose 11-percent along with the average product selling prices, thus resulting in sales revenue of THB 544,792 million, a rise of THB 196,071 million. Thailoil's gross refining margin excluding stock gain/(loss) amounted to 12.0 USD per barrel, a rise of 9.8 USD per barrel; the stock gains equaled THB 3,613 million, a drop of THB 11,450 million from last year. Inclusive of the net realized loss from financial instruments of THB 15,997 million, which was a higher loss of THB 13,280 million from last year, Thailoil posted THB 30,139 million in EBITDA, eclipsing last year's number by THB 14,639 million. Furthermore, Thailoil posted a loss on the fair value measurement of financial instruments of THB 131 million (a slightly heavier loss than last year) along with a net foreign exchange loss of THB 24 million, an improvement of THB 4,849 million from last year. Nevertheless, this year Thailoil booked gain before tax on reclassified investment and partial disposal of investment in GPSC totaling THB 18,026 million, or equivalent to THB 13,572 million, net of tax. Offsetting with depreciation, financial costs, and income tax expenses, Thailoil posted net profit of THB 30,887 million, up THB 28,245 million over last year. (And if this year's dividend income were included, Thailoil's net profit would stand at THB 33,665 million.)

**Thai Lube Base Plc (TLB)** reported sales revenue of THB 27,773 million, a rise of THB 3,941 million from last year, due mainly to higher bitumen price. However, lube base oil spread over fuel oil price dropped, causing TLB to post a lower product-to-feed margin by 22 USD per ton resulting in EBITDA THB 3,481 million, dropped by THB 1,264 million. TLB's net profit this year stood at THB 2,651 million, down THB 1,027 million from last year.



**Thai Paraxylene Co., Ltd. (TPX)** reported sales revenue of THB 59,742 million, a surge of THB 14,653 million, due mainly to the hike in average selling prices. This was despite the fall in the product-to-feed margin of 68 USD per ton in line with the sharply lower in aromatics spreads over and ULG95 as a result of the Russia-Ukraine conflict, coupled with the reduced demand due to economic slowdowns. Combining with net realized gain on financial instruments of THB 158 million, TPX posted a loss in EBITDA of THB 1,359 million against THB 2,975 million last year. Including the loss on the fair value measurement of financial instruments of THB 56 million, compared with net gain of THB 48 million in previous year, and had the net foreign exchange gain of THB 17 million (down from THB 178 million last year), TPX posted a net loss of THB 2,411 million, compared with a net profit of THB 1,665 million in the same period last year.

**LABIX Co., Ltd. (LABIX)** recorded sales revenue of THB 30,912 million, rising THB 14,168 million due to rising LAB prices tracking feedstock prices and greater sales volume. The gross margin this year was comparable to last year's, which caused the EBITDA to climb THB 263 million to THB 2,277 million. However, LABIX had a net foreign exchange loss of THB 27 million, some THB 51 million lower than last year. Offsetting with depreciation and financial costs, LABIX reported net profit of THB 1,638 million, a rise of THB 410 million from last year.

For 2022, the aromatics business group had consolidated sales revenue of THB 88,938 million, consolidated EBITDA of THB 197 million, and consolidated net loss of THB 1,183 million.

**TOP SPP Co., Ltd. (TOP SPP)** recorded sales revenue of THB 11,716 million, increased by THB 4,467, due mainly to increasing average selling prices following higher natural gas prices, despite lower product sales on account of gas turbine major turnarounds. As a result, the company commanded THB 2,140 million in EBITDA, a rise of THB 341 million. Offsetting with

depreciation, financial costs, and income tax expenses, TOP SPP reported net profit of THB 1,342 million, a surge of THB 356 million from last year.

Besides, Thailoil disposed of GPSC shares approximately 10.78 percent of total issued and paid-up shares, completed on June 7, 2022, thus diluting Thailoil's shareholding in GPSC from 20.78 percent to 10.0 percent. Therefore, Thailoil and Subsidiaries' share of profit from GPSC investment amounted to THB 58 million, a drop of THB 1,436 million. An interim dividend income of THB 56 million was paid on September 21, 2022. Thailoil and Subsidiaries' power business netted a profit of THB 1,456 million, a drop of THB 1,032 million from the same period last year.

**Thailoil Solvent Co., Ltd. (TOS)** boasted 117 percent in solvent utilization rate, with an increase in sale volume of approximately 122,000 tons and increase in average prices per unit tracking crude oil prices from last year. As a result, the group recorded THB 22,585 million in sales revenue, a jump of THB 9,271 million. Its EBITDA amounted to THB 1,043 million, comparable to last year. The group booked a net foreign exchange loss of THB 58 million against a net foreign exchange gain of THB 112 million in 2021. Offsetting depreciation, financial costs, and income tax expenses are deducted, TOS posted THB 525 million in net profit, down THB 138 million from last year.

On October 3, 2022, TOP Solvent Co., Ltd. underwent a name change to TOPNEXT International Co., Ltd., to serve as Thailoil and Subsidiaries' marketing arm, engaging in distribution, export, and international distribution of products.

**PT TOP Investment Indonesia (TII)** posted a net loss of THB 813 million against a net loss of THB 90 million last year as TII realized the share of loss in PT Chandra Asri Petrochemical Tbk (CAP) after rises in naphtha prices tracking crude oil prices from the Russia-Ukraine conflict and the pressure on the olefins market produced



by China's lockdowns, aggravated by new additional capacity in the second half of the year. As a result, most olefins plants trimmed their capacities for economic reasons.

**Thaioil Ethanol Co., Ltd. (TET)** generated THB 1,796 million in consolidated sale revenue, rising THB 207 million from last year, due mainly to surges in ethanol sales volume and selling prices. As a result, TET had

a higher gross profit and reported EBITDA of THB 206 million, a rise of THB 17 million. Note that TET reclassified Ubon Bio Ethanol Co., Ltd. (UBE), from the equity method to the financial assets measured at fair values through other comprehensive income. As a result, TET does not record its profit sharing from investment in UBE this year. This led TET to book a net profit of THB 18 million compared with net profit of THB 579 million last year, which contained this extraordinary items.

## Analysis of Consolidated Financial Position

Unit: THB Million

Financial position	As at December 31, 2022	As at December 31, 2021	+/(−)
Total Assets	444,581	362,144	82,437
Total Liabilities	285,923	239,050	46,873
Total Equity-net	158,657	123,094	35,563

### Total Assets

As of December 31, 2022, Thaioil and Subsidiaries reported total asset of THB 444,581 million, rising from December 31, 2021 by THB 82,437 million or 23 percent, with the following main reasons:

- >> Cash, cash equivalents, and short-term investment jumped THB 13,895 million mainly due to capital raising altogether with additional debenture issuance to accommodate maturing debentures, offsetting with capital expenditure incurred during the year.
- >> Current assets rose THB 38,694 million from rising account receivables and inventories following higher average crude oil prices compared with that in December 2021. Additionally, oil fuel fund receivables increased in 2022 because of the Government's intervention on fuel prices.
- >> Non-current assets grew THB 29,848 million on account of a net rise in property, plant, and equipment

from projects investment such as the Clean Fuel Project (CFP).

### Total Liabilities

As of December 31, 2022, Thaioil and Subsidiaries reported total liabilities of THB 285,923 million, which went up by THB 46,873 million or 20 percent from December 31, 2021, mainly due to:

- >> Current liabilities rose by THB 49,208 million primarily due to higher trade payables from higher average crude prices and the extended trade credit with PTT Plc.
- >> Long-term borrowings and debentures (including current portions) declined by THB 9,976 million because of repayment of bridging loan borrowed from PTT Plc, and other financial institutions for investment in CAP. Nevertheless, Thaioil issued baht debentures in late 2022 to refinance a debenture maturing in early 2023.



>> Other non-current liabilities rose THB 7,642 million mainly because of an increase in lease liabilities of THB 8,590 million.

#### Total Equity-Net

As of December 31, 2022, Thailoil and Subsidiaries reported consolidated equity of THB 158,657 million,

a rise of THB 35,563 million or 29 percent from December 31, 2021 mainly due to net profit rise on account of the operating profit and the extraordinary gain from partial disposal in GPSC, including capital raising both issued and paid-up capital and additional paid in capital.

## Analysis of Cash Flow and Financial Ratios

### Briefly Cash Flow Statement

Unit: THB Million

	Consolidated Financial Statements	Separate Financial Statements
Net cash flow from (used in) operating activities	43,251	39,246
Net cash flow from (used in) investing activities	(9,049)	(7,293)
Net cash flow from (used in) financing activities	(20,253)	(21,792)
<b>Net decrease in cash and cash equivalents</b>	<b>13,949</b>	<b>10,161</b>
Cash and cash equivalents at the beginning of period	29,696	24,600
Effect of exchange rates changes on cash and cash equivalents	(69)	27
<b>Cash and cash equivalents at the end of period <sup>(1)</sup></b>	<b>43,576</b>	<b>34,787</b>

#### Remark:

<sup>(1)</sup> Excluding deposits at financial institutions used as collateral.

In 2022, Thailoil and Subsidiaries had cash flows generated from operating activities of THB 43,251 million, which was mainly a result of net operating profit, before tax, of THB 42,024 million, and increases in working capital of THB 13,382 million, lower non-cash adjustment, before tax, of THB 2,687 million. During the period, there was a tax payment of THB 9,468 million. Nevertheless, Thailoil and Subsidiaries posted THB 9,049 million in cash flows used in investing activities mainly because of cash needed for property, plant, and equipment of THB 31,929 million, the bulk of which went into Thailoil Refinery, which had major projects like the CFP and TOP SPP expansion project, offset by cash inflow from the disposal of partial shares in GPSC during the year of THB 22,047 million.

Thailoil and Subsidiaries' cash flow used in financing activities came to THB 20,253 million mainly because of the net cash received from short-term borrowings from financial institutions of THB 967 million, proceeds received from capital raising of THB 10,369 million, repayment of long-term borrowings to financial institutions totaled a net THB 9,084 million, new issuance of debentures, net of repayment of maturing debentures of THB 9,000 million, financial cost of THB 7,397 million, repayment of long-term borrowings from a related party of THB 14,000 million, and dividend payment of THB 8,547 million.

According to the mentioned cash flows activities, Thailoil and Subsidiaries reported a rise of THB 13,949 million in cash and cash equivalents from December 31, 2021.



Thaioil and Subsidiaries were affected by foreign exchange rates, which trimmed on cash and cash equivalents by THB 69 million. With the cash and cash

equivalents at the beginning of the year (THB 29,696 million) were included, Thaioil and Subsidiaries commanded THB 43,576 million at December 31, 2022.

## Financial Ratios

Financial Ratios		2022	2021
Current Ratio	Times	1.5	2.6
Interest Coverage Ratio <sup>(1)</sup>	"	9.6	7.8
Long-term Loans/Total Capitalization	Percent	55	62
Long-term Loans/Total Equity	Times	1.2	1.6
Total Liabilities/Total Equity	"	1.8	1.9
Net Debt/Equity	"	1.0	1.4

### Remark:

<sup>(1)</sup> Excluding depreciation and amortization.

In 2022, Thaioil and Subsidiaries' current ratio was 1.5 times, down from last year by 1.1 times. Our interest coverage ratio equaled 9.6 times, an improvement from last year by 1.8 times, mainly due to our improved performance over the year. However, our cash flows and current ratio, as well as other ratios demonstrated in the table above, ensure that Thaioil and Subsidiaries command enough liquidity for our operations, investment,

ability to manage loan repayments, and compliance with all key debt covenants.

In addition, this year Thaioil and Subsidiaries reported lower long-term loans to total capitalization, long-term loans to total equity, and total liabilities to total equity than last year.



## Outstanding Consolidated Liabilities (Short-Term and Long-Term)

As of December 31, 2022 and 2021

Unit: THB Million

	For the year ended December 31	
	2022	2021
Short-term loans from financial institutions	1,892	929
Current portion of long-term loans from financial institutions, net	2,884	1,213
Long-term loans from financial institutions, net	19,807	30,476
Long-term loans from a third party	216	279
Current portion of long-term loans from related parties, net	0	-
Long-term loans from related parties, net	0	14,000
Current portion of debentures, net	17,317	3,000
Debentures, net	131,635	132,868
<b>Total</b>	<b>173,751</b>	<b>182,765</b>

## Details of Long-Term Borrowings and Outstanding Debentures as of December 31, 2022

By Company and Denomination

Unit: THB Million

	Thai Oil Plc	LABIX Co., Ltd.	TOP SPP Co., Ltd.	Thaioil Solvent Co., Ltd.	Thaioil Ethanol Co., Ltd.	Thaioil Treasury Center Co., Ltd.	Total
USD-denominated Debentures <sup>(1)</sup>	13,383	-	-	-	-	109,081	122,464
THB-denominated Debentures	26,488	-	-	-	-	-	26,488
THB-denominated Borrowings	11,906	3,416	6,884	160	89	-	22,455
Other currencies denominated Borrowings <sup>(1)</sup>	-	-	-	453	-	-	453
<b>Total</b>	<b>51,777</b>	<b>3,416</b>	<b>6,884</b>	<b>613</b>	<b>89</b>	<b>109,081</b>	<b>171,860</b>

Remark:

<sup>(1)</sup> Including foreign exchange gain/(loss) from foreign currency-denominated liabilities revaluation.



## Capital Expenditure by Company for the Year 2022 and 2021

Unit: THB Million

	For the year ended December 31	
	2022	2021
Thai Oil Plc	28,732	33,673
Thai Paraxylene Co., Ltd.	13	9
LABIX Co., Ltd.	45	21
Thai Lube Base Plc	534	453
Thaioil Power Co., Ltd.	-	2
Thaioil Marine Co., Ltd.	-	18
Thaioil Solvent Co., Ltd.	269	32
Thaioil Ethanol Co., Ltd.	133	98
Thaioil Energy Services Co., Ltd.	-	-
PT TOP Investment Indonesia	0	-
TOP SPP Co., Ltd.	1,907	943
<b>Total <sup>(1)</sup></b>	<b>31,929</b>	<b>35,128</b>
Capital expenditure from continuing operations	31,929	35,110
Capital expenditure from discontinued operations	-	18
<b>Total <sup>(1)</sup></b>	<b>31,929</b>	<b>35,128</b>

## Remark:

<sup>(1)</sup> Excluding Related Parties Transaction in Thaioil and Subsidiaries.

In 2022, Thaioil and Subsidiaries reported a total capital expenditure of THB 31,929 million: THB 28,732 million was under Thaioil and the remaining THB 3,197 million under the subsidiaries. This capital expenditure was allocated to the following key projects:

- >> THB 26,390 million for CFP.
- >> THB 2 million for Thaioil Sriracha Building Project.
- >> THB 26 million for Jetty Expansion Project.
- >> THB 157 million Digital Transformation Project.
- >> THB 114 million for New Bang Phra Reservoir Raw Water Line Project.
- >> THB 28 million for Fire-Extinguishing Water Improvement Project.
- >> THB 2 million for Crude Oil Tank Construction Project.

In 2021, Thaioil and Subsidiaries sanctioned THB 35,128 million as capital expenditure: THB 33,673 million managed under Thaioil and the remaining THB 1,455 million under the subsidiaries for the following key projects:

- >> THB 32,139 million for CFP.
- >> THB 56 million for Thaioil Sriracha Building Project.
- >> THB 409 million for Jetty Expansion Project.
- >> THB 638 million for Digital Transformation Project.
- >> THB 672 million for New Bang Phra Reservoir Raw Water Line Project.
- >> THB 235 million for Fire-Extinguishing Water Improvement Project.
- >> THB 333 million for Crude Oil Tank Construction Project.



Investors can access historical details under the “Management Discussion and Analysis of Financial Position and Operating Performance” at the corporate website “[www.thaioilgroup.com](http://www.thaioilgroup.com)” under topic “Investor Relations/Financial Information”.

### **Factors and Impacts of Sustainability**

Thaioil strives to building on our strong foundation to empowering human life through sustainable energy and chemical. Our goal is to become a highly competitive energy and chemical company that pays due attention to Environment, Social, and Governance (ESG) in line with our business context and future directions of the energy industry while meeting expectations and maintaining Thaioil’s engagement with all stakeholders.

This year posed serious challenges to Thaioil, evident in economic volatility and geopolitical conflicts with rippling effects on our various businesses despite the subsiding COVID-19. Challenges also come from

the global energy transition to clean energy and a low-carbon society, the growth outlook of the EV business, increasingly strict global environmental policies, and Thailand’s Net Zero GHG emission by 2065 goal. Our assessment of materiality issues of 2022 indicated that climate change will continue to exert both positive and negative effects on stakeholders and businesses over the long-term value. Thaioil and Subsidiaries have therefore managed our businesses for flexibility and preparedness for short-term and long-term business opportunities to align with our vision of Empowering Human Life through Sustainable Energy and Chemicals.

For additional details, please go to “Sustainability” on page 74 under “Policy and Goals for Sustainability Management” and “Sustainability Management in Environmental Aspect”.



# Summary of Financial Data

Summary of consolidated financial statements of Thailoil and Subsidiaries for the period 2020-2022

## Statement of Financial Position

Unit: THB Million

Statement of Financial Position	As at 31 December		
	2022	2021	2020
<b>Assets</b>			
<b>Current assets</b>			
Cash and cash equivalents	43,576	29,696	53,244
Deposits at financial institutions as collaterals	343	328	327
Short-term investments	-	-	18,110
Trade accounts receivable, net	28,759	23,415	12,702
Current portion of finance lease receivables, net	-	-	8
Other receivables	4,361	1,009	1,082
Inventories, net	55,343	39,576	22,461
Derivative assets	1,408	414	251
Prepaid corporate income tax	2,197	428	248
Value added tax receivables	1,957	2,500	1,043
Assets related to discontinued operations	-	305	-
Assets held-for-sale	-	-	2,763
Other current assets	15,884	3,568	1,990
<b>Total current assets</b>	<b>153,828</b>	<b>101,239</b>	<b>114,229</b>
<b>Non-current assets</b>			
Financial assets measured at fair value through profit or loss	798	619	461
Financial assets measured at fair value through other comprehensive income	21,394	1,256	77
Investments in joint ventures	32,603	55,412	24,521
Investments properties, net	103	103	103
Property, plant and equipment, net	206,476	178,399	145,225
Rights-of-use assets, net	24,038	17,131	14,729
Derivative assets	-	1,255	-
Intangible assets, net	3,348	3,307	3,243



Unit: THB Million

Statement of Financial Position	As at 31 December		
	2022	2021	2020
Deferred tax assets	1,125	2,585	2,678
Other non-current assets	868	838	922
<b>Total non-current assets</b>	<b>290,753</b>	<b>260,905</b>	<b>191,959</b>
<b>Total assets</b>	<b>444,581</b>	<b>362,144</b>	<b>306,188</b>
<b>Liability and equity</b>			
<b>Current liabilities</b>			
Short-term loans from financial institutions	1,892	929	713
Trade accounts payable	74,154	23,001	9,517
Other payables	4,948	6,561	5,749
Current portion of long-term loans from financial institutions, net	2,884	1,213	953
Current portion of long-term loans from related parties, net	-	-	3,999
Derivatives liabilities	193	2	109
Current portion of debentures, net	17,317	3,000	3,000
Current portion of lease liabilities, net	1,401	1,247	839
Excise duty payables	452	1,798	1,727
Income tax payables	432	725	439
Liabilities related to assets held-for-sale	-	-	1,575
<b>Total current liabilities</b>	<b>103,673</b>	<b>38,476</b>	<b>28,620</b>
<b>Non-current liabilities</b>			
Long-term loans from financial institutions, net	19,807	30,476	12,121
Long-term loans from a third party	216	279	279
Long-term loans from related parties, net	-	14,000	-
Debentures, net	131,635	132,868	123,837
Derivatives liabilities	1,980	373	1,832
Lease liabilities, net	21,107	14,135	11,272
Deferred tax liabilities	3	170	135
Other non-current liabilities	7,503	8,273	7,973
<b>Total non-current liabilities</b>	<b>182,251</b>	<b>200,574</b>	<b>157,449</b>
<b>Total liabilities</b>	<b>285,924</b>	<b>239,050</b>	<b>186,069</b>



Unit: THB Million

Statement of Financial Position	As at 31 December		
	2022	2021	2020
<b>Equity</b>			
Share capital			
Registered	23,151 <sup>(2)</sup>	20,400 <sup>(1)</sup>	20,400 <sup>(1)</sup>
Issued and fully paid-up	22,338	20,400	20,400
Share premium on ordinary shares	10,699	2,456	2,456
Appropriated retained earnings			
Statutory reserve	2,315	2,040	2,040
Other reserves	245	245	245
Unappropriated retained earnings	127,095	103,544	93,645
Other deficits	(4,343)	(6,665)	(2,117)
Other surplus held-for-sale	-	-	100
Other components of equity	(2,315)	(1,152)	(534)
Other components of equity related to discontinued operations	-	13	-
Other components of equity held-for-sale	-	-	(6)
<b>Equity attributable to the owners of the parent</b>	<b>156,034</b>	<b>120,881</b>	<b>116,229</b>
Non-controlling interests of the subsidiaries	2,623	2,213	3,889
<b>Total equity</b>	<b>158,657</b>	<b>123,094</b>	<b>120,118</b>
<b>Total liabilities and equity</b>	<b>444,581</b>	<b>362,144</b>	<b>306,188</b>

**Remarks:**

<sup>(1)</sup> Registered share capital, issued and fully paid-up share capital 2,040,027,873 ordinary shares, at a par value of THB 10 each, for a total of THB 20,400 million as at the year-end of 2020-2021.

<sup>(2)</sup> Registered share capital, issued, and offered 2,315,147,873 ordinary shares, at a par value of THB 10 each, for a total of THB 23,151 million; fully paid-up share capital of 2,233,835,566 ordinary shares, at a par value of THB 10 each, for a total of THB 22,338 million as at the end of 2022.



## Statement of Income

Unit: THB Million

Statement of Income	For the year ended December 31		
	2022	2021	2020 <sup>(1)</sup>
<b>Revenues</b>			
Revenue from sales and services	505,703	335,827	242,840
Subsidy from oil fuel fund	23,886	9,669	5,073
Net foreign exchange gain	-	-	1,784
Gain on disposal of investment in associate	10,038	-	5,801
Gain from investment reclassification	7,297	-	-
Dividend income	81	7	14
Other income	781	1,129	1,100
<b>Total revenue</b>	<b>547,786</b>	<b>346,632</b>	<b>256,612</b>
<b>Expenses</b>			
Cost of sales of goods and services	(481,137)	(319,555)	(255,300)
Selling and distribution expenses	(1,052)	(770)	(538)
Administrative expenses	(3,130)	(2,286)	(2,111)
Net financial instruments loss	(16,006)	(2,406)	(179)
Net foreign exchange loss	(64)	(4,595)	-
<b>Total expenses</b>	<b>(501,389)</b>	<b>(329,612)</b>	<b>(258,128)</b>
Share of profits of joint ventures and associates	(513)	1,675	2,492
<b>Profit before finance costs and income tax expense</b>	<b>45,884</b>	<b>18,695</b>	<b>976</b>
Finance costs	(3,860)	(3,595)	(4,292)
<b>Profit (loss) before income tax expense</b>	<b>42,024</b>	<b>15,100</b>	<b>(3,316)</b>
Income tax benefits (expenses)	(8,918)	(2,034)	647
<b>Profit (loss) for the year from continuing operations, net of tax</b>	<b>33,106</b>	<b>13,066</b>	<b>(2,669)</b>
Loss for the year from discontinued operations, net of tax	-	(63)	(213)
<b>Net profit (loss) for the year</b>	<b>33,106</b>	<b>13,003</b>	<b>(2,882)</b>



Unit: THB Million

Statement of Income	For the year ended December 31		
	2022	2021	2020 <sup>(1)</sup>
<b>Other comprehensive income</b>			
Changes in fair value of financial assets at fair value through other comprehensive income, net of tax	1,486	(61)	-
Loss from remeasurement of post-employment benefit obligation, net of tax	1,569	-	(40)
Cash flow hedges, net of tax	(3,035)	(1,267)	(654)
Cost of hedging, net of tax	(532)	(494)	355
Exchange differences on translating of financial statements	992	717	150
Share of other comprehensive income (expense) of an associate accounted for using the equity method, net of tax	210	474	(49)
Other comprehensive income (expense) for the year from discontinued operations, net of tax	-	24	12
<b>Other comprehensive income (expense) for the year, net after tax</b>	<b>690</b>	<b>(607)</b>	<b>(226)</b>
<b>Total comprehensive income (expense) for the year</b>	<b>33,796</b>	<b>12,396</b>	<b>(3,108)</b>
<b>Profit (loss) attributable to:</b>			
Owners of the parent company	32,668	12,578	(3,301)
- continuing operations	32,668	12,641	(3,088)
- discontinued operations	-	(63)	(213)
Non-controlling interests	438	425	419
<b>Net profit (loss) for the year</b>	<b>33,106</b>	<b>13,003</b>	<b>(2,882)</b>
<b>Total comprehensive income (expense) attribute to:</b>			
Owners of the parent company	33,354	11,973	(3,519)
- continuing operations	33,354	12,013	(3,318)
- discontinued operations	-	(40)	(202)
Non-controlling interests	442	423	412
<b>Total comprehensive income (expense) for the year</b>	<b>33,796</b>	<b>12,396</b>	<b>(3,108)</b>
<b>Basic earnings (loss) per share (Baht)</b>	<b>15.63</b>	<b>6.17</b>	<b>(1.62)</b>

Remark:

<sup>(1)</sup> Figures adjusted under new accounting classification.



## Statement of Cash Flows

Unit: THB Million

Statement of Cash Flows	For the year ended December 31		
	2022	2021	2020 <sup>(1)</sup>
<b>Cash flow from operating activities</b>			
Net profit (loss) for the year from continuing operations	33,106	13,066	(2,669)
Adjustments to reconcile profit (loss) to cash:			
Allowance for (reversal of) decline in value of inventories adjusted to net realizable value	558	237	215
Depreciation and amortization	7,744	7,424	7,554
Allowance for (reversal of) expected credit loss	3	(2)	2
Finance costs	3,860	3,595	4,292
Net unrealized (gain) loss on foreign exchange	1,034	5,056	(2,234)
Share of profit of joint ventures and associates, net	514	(1,675)	(2,492)
(Gain) loss from investment reclassification	(7,297)	(504)	(154)
Dividends income	(81)	(7)	(14)
Difference on lease modification	(78)	6	(1)
(Gain) loss on debt modification	-	-	(2)
(Gain) loss on disposal of investment in associate	(10,038)	(102)	(5,801)
(Gain) loss on hedging of forecasted revenue transaction	271	44	-
(Gain) loss from changes in fair value of financial assets	(18)	(49)	9
(Gain) loss from changes in fair value of derivatives	183	(6)	(4)
(Gain) loss on write-off of property, plant and equipment	-	6	183
Reversal of impairment loss on property, plant and equipment, and investment property	687	-	-
(Gain) loss on disposal of assets and liabilities held-for-sale	(12)	(41)	-
Amortization of advance receipts for land lease and others	(17)	(13)	(12)
Income tax expense (benefit)	8,918	2,034	(647)
	<b>39,337</b>	<b>29,069</b>	<b>(1,775)</b>



Unit: THB Million

Statement of Cash Flows	For the year ended December 31		
	2022	2021	2020 <sup>(1)</sup>
<b>Changes in operating assets and liabilities</b>			
Trade accounts receivable	(5,430)	(10,694)	9,705
Other receivables	(3,316)	84	437
Receivables from oil fuel fund	(12,316)	(1,578)	(317)
Value added tax receivables	543	(1,457)	(291)
Inventories	(16,325)	(17,340)	7,589
Other non-current assets	(6)	37	(45)
Trade accounts payable	51,162	13,456	(15,445)
Other payables	(330)	440	897
Excise duty payables	(1,346)	71	309
Other non-current liabilities	746	108	1,684
Income tax received (paid)	(9,468)	(1,331)	26
Cash used in operating activities of discontinued operations	-	(361)	(339)
<b>Net cash generated from operating activities</b>	<b>43,251</b>	<b>10,504</b>	<b>2,435</b>
<b>Cash flow from investing activities</b>			
Dividend received	841	1,110	1,281
Payments for deposits at a financial institution used as collateral	(15)	(1)	(2)
Proceeds from (repayment of) short-term investments, net	-	19,162	(17,221)
Payments for financial assets measured at fair value through other comprehensive income	(70)	(80)	(78)
Payments for financial assets measured at fair value through profit and loss	(85)	(91)	(53)
Proceeds from long-term loans to savings co-operative of employees	44	46	43
Payment for long-term loans to savings co-operative of employees	(13)	(9)	(7)
Payments for acquisition property, plant and equipment	(31,929)	(35,146)	(48,377)
Payments for rights-of-use assets	(19)	(42)	(40)
Payments for intangible assets	(160)	(248)	(273)
Proceeds from liquidation of a subsidiary	308	-	-
Payments for acquisition of investment in subsidiaries	-	(6)	-
Proceeds from disposal of investment in an associate	22,047	235	16,757
Payments for acquisition of investment in an associate	-	(29,807)	-
Payments for acquisition of investment in joint venture	-	(2)	-
Proceeds for disposal of investment in joint venture	1	-	272



Unit: THB Million

Statement of Cash Flows	For the year ended December 31		
	2022	2021	2020 <sup>(1)</sup>
Proceeds from business restructuring	-	1,560	-
Cash generated from (used in) investing activities of discontinued operations	-	(18)	208
<b>Net cash generated from (used in) investing activities</b>	<b>(9,049)</b>	<b>(43,337)</b>	<b>(47,490)</b>
<b>Cash flows from financing activities</b>			
Finance costs paid	(7,397)	(6,929)	(6,262)
Dividends paid to the shareholders	(8,579)	(8,624)	(1,399)
Redemption of capital paid to non-controlling interests	-	(806)	-
Proceeds from short-term loans from financial institutions	17,325	6,034	6,209
Repayment of short-term loans from financial institutions	(16,358)	(5,821)	(6,731)
Proceeds from long-term loans from related parties	-	14,000	-
Repayment of long-term loans from related parties	(14,000)	(3,999)	-
Proceeds from long-term loans from financial institutions	8,779	19,754	66
Repayment of long-term loans from financial institutions	(17,863)	(1,014)	(763)
Proceeds from long-term loans from third parties	-	-	60
Repayment of long-term loans from a third party	(63)	-	-
Proceeds from debentures	11,765	-	31,119
Payment for debentures and loans financing fee	(20)	(204)	(123)
Proceeds from capital increase	10,369	-	-
Redemption of debentures	(3,000)	(3,000)	-
Payment of principal portion of lease liabilities	(1,211)	(1,050)	(1,159)
Cash generate from (used in) financing activities of discontinued operations	-	(95)	(442)
<b>Net cash generated from financing activities</b>	<b>(20,253)</b>	<b>8,246</b>	<b>20,575</b>
<b>Net increase (decrease) in cash and cash equivalents</b>	<b>13,949</b>	<b>(24,587)</b>	<b>(24,480)</b>
Effect of exchange rate changes	(69)	1,039	2,870
Cash and cash equivalents at the beginning of the year	29,696	53,244	74,854
<b>Cash and cash equivalents at the end of the year</b>	<b>43,576</b>	<b>29,696</b>	<b>53,244</b>
<b>Supplementary information related to cash flow</b>			
Payables on acquisition of property, plant and equipment	741	2,211	2,024
Payables on acquisition of intangible assets	214	167	324
Non-cash changes in the right-of-use assets	9,458	4,001	629
Contingent consideration from acquisition of investment in an associate	-	130	-

Remark:

<sup>(1)</sup> Figures adjusted under new accounting classification.



## Key Financial Ratios

Financial Ratios	Unit	2022	2021	2020 <sup>(1)</sup>
<b>Liquidity ratios</b>				
Liquidity ratio	times	1.5	2.6	4.0
Quick ratio	"	0.7	1.4	2.9
Cash flow current ratio	"	0.6	0.3	0.1
Receivable current ratio	"	19.4	18.6	13.8
Average debt collection period <sup>(3)</sup>	days	18.8	19.6	26.4
Inventory turnover period	times	10.1	10.3	9.7
Average selling period <sup>(3)</sup>	days	36.0	35.4	37.7
Payable current ratio	times	9.9	19.7	14.8
Loan repayment period <sup>(3)</sup>	days	36.9	18.6	24.7
Cash Cycle <sup>(3)</sup>	"	18.0	36.5	39.5
<b>Profitability ratios</b>				
Gross profit margin <sup>(3)</sup>	percent	9.1	7.5	(3.0)
Operating profit margin <sup>(3)</sup>	"	7.0	8.1	(0.8)
Other profit margin	"	7.7	3.1	5.4
Cash to profit margin	"	116.3	37.3	(118.4)
Net profit margin	"	6.0	3.8	(1.1)
Return on equity <sup>(3)</sup>	"	23.5	10.7	(2.4)
Interest Bearing Debt to EBITDA Ratio	times	5.3	7.0	(76.4)
Debt coverage ratio	"	1.6	4.4	(0.2)
<b>Operating Efficiency ratios</b>				
Return on assets	percent	8.2	3.9	(1.0)
Return on fixed assets <sup>(3)</sup>	"	21.2	12.5	3.6
Asset turnover <sup>(3)</sup>	times	1.4	1.0	0.8
<b>Financial policy ratios</b>				
Total debt to equity ratio	times	1.8	1.9	1.5
Net debt to equity ratio	"	1.0	1.4	0.7
Share price to book value	"	0.8	0.9	0.8
Interest coverage ratio	"	9.6	7.8	(0.5)
Dividend payout ratio <sup>(2)</sup>	percent	26	42	N/A

### Remarks:

<sup>(1)</sup> Figures adjusted under new accounting classification.

<sup>(2)</sup> Dividend payment for 2020, 2021, and 2022 was 0.70, 2.60, and 3.70 baht per share, respectively. Thaioil will present and seek approval for the 2022 dividend payment in the 2023 Annual General Meeting of Shareholders.

<sup>(3)</sup> Adjusted calculation method under the guidelines of the Office of the Securities and Exchange Commission, Thailand.



## 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 punctually pay the agreed amounts 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

	For the year ended December 31		
	2022	2021	2020
1. Refining Capacity (thousand barrels per day)	275	275	275
2. Intake Feedstock (thousand barrels per day) <sup>(1)</sup>	294	275	277
3. Refining Utilization (percent) <sup>(2) (3)</sup>	107	100	101
4. Gross Refining Margin-Refinery (USD per barrel) <sup>(4)</sup>	12.0	2.2	0.4
5. Integrated Intake Feedstock (thousand barrels per day) <sup>(5)</sup>	297	278	281
6. Gross Integrated Margin (USD per barrel) <sup>(6)</sup>	13.4	5.5	2.4
6.1 Gross Refining Margin-Refinery (USD per barrel)	11.9	2.2	0.4
6.2 Gross Margin-Aromatics and Intermediate in the production of surfactants (USD per barrel)	0.4	1.7	1.5
6.3 Gross Margin-Lube base oil (USD per barrel)	1.1	1.6	0.5
7. Operating Cost-Refinery (USD per barrel) <sup>(7)</sup>	1.5	1.7	1.5



**Remarks:**

- <sup>(1)</sup> Calculated from the intake of refinery feedstock (raw materials) 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 Thaioil Refinery's feedstock for refining and blending for refined products.
- <sup>(2)</sup> Calculated from the 275,000 barrel per day refining capacity for the selected period.
- <sup>(3)</sup> Calculated from the intake feedstock divided by refining capacity.
- <sup>(4)</sup> Gross Refining Margin excluding the impact of the 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 based on the intake feedstock.
- <sup>(5)</sup> Calculated by the 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 the gross margin of Thaioil Refinery, Thai Lube Base Plc, Thai Paraxylene Co., Ltd., and LABIX Co., Ltd., excluding the impact of the oil stock, divided by the average exchange rate of each period, and further divided by the intake feedstock.
- <sup>(7)</sup> Including expenses on employees, maintenance, catalysts, insurance, land leases, and others.











# Board of Directors' Responsibility for 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 to the requirements of the Public Limited Companies Act B.E. 2535 (1992) and its amendment, the Securities and Exchange Act B.E. 2535 (1992) and its amendment, the Announcement of the Department of Business Development (No. 3) dated December 26, 2019 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 ensure that

the financial position, results of operations and cash flows are presented accurately; an effective internal control system has been established; and accounting records have been precisely, thoroughly and adequately maintained to safeguard assets and prevent fraud and other irregularities with material implications. Suitable accounting policies have been selected in 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. Bandhit Thamprajamchit)  
Chief Executive Officer and President







# Independent Auditor's Report

## To the Shareholders of Thai Oil Public Company Limited

### Opinion

I have audited the accompanying consolidated financial statements of Thai Oil Public Company Limited and its subsidiaries (the Group), which comprise the consolidated statement of financial position as at 31 December 2022, and the related consolidated statements of income, comprehensive income, changes in shareholders' equity and cash flows for the year then ended, and notes to the consolidated financial statements, including a summary of significant accounting policies, and have also audited the separate financial statements of Thai Oil Public Company Limited for the same period.

In my opinion, the financial statements referred to above present fairly, in all material respects, the financial position of Thai Oil Public Company Limited and its subsidiaries and of Thai Oil Public Company Limited as at 31 December 2022, their financial performance and cash flows for the year then ended in accordance with Thai Financial Reporting Standards.

### Basis for Opinion

I conducted my audit in accordance with Thai Standards on Auditing. My responsibilities under those standards are further described in the *Auditor's Responsibilities for the Audit of the Financial Statements* section of my report. I am independent of the Group in accordance with the *Code of Ethics for Professional Accountants including Independence Standards* issued by the Federation of Accounting Professions (Code of Ethics for Professional Accountants) that are relevant to my audit of the financial statements, and I have fulfilled my other ethical responsibilities in accordance with the Code of Ethics for Professional Accountants. 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 financial statements of the current period. These matters were addressed in the context of my audit of the financial statements as a whole, and in forming my opinion thereon, and I do not provide a separate opinion on these matters.

I have fulfilled the responsibilities described in the *Auditor's Responsibilities for the Audit of the Financial Statements* section of my report, including in relation to these matters. Accordingly, my audit included the performance of procedures designed to respond to my assessment of the risks of material misstatement of the financial statements. The results of my audit procedures, including the procedures performed to address the matters below, provide the basis for my audit opinion on the accompanying financial statements as a whole.

Key audit matters and how audit procedures respond to each matter are described below.

### The measurement of inventories valuation

The balance of the Group's inventories is significant to the financial statements while the Group's raw materials and finished goods are commodities, which are exposed to price volatility. The inventories are measured at the lower of cost or net realisable value. I focused on the estimation of the net realisable value of inventory, as disclosed in Note 11 to the financial statements, since it is an area requiring significant management judgment and may affect the valuation of inventories at the end of the reporting period.



I have examined the valuation of inventories of the Group as follows.

- Gained an understanding of and assessed the design and implementation of internal controls and tested the effectiveness of the controls related to the inventory valuation.
- Evaluated the appropriateness of the methodology used to calculate the net realisable value of inventories at the end of reporting period, considering the reasonableness of the market price used through comparison with the expected selling price of commodity, and tested the accuracy of the calculation.
- Assessed the adequacy of the disclosures made in the notes to the financial statements in relation to the allowance for diminution in value of inventories.

### Other Matter

The consolidated financial statements of Thai Oil Public Company Limited and its subsidiaries (the Group) and the separate financial statements of Thai Oil Public Company Limited for the year ended 31 December 2021, presented herein as comparative information, were audited by another auditor who, under his report dated 15 February 2022, expressed an unmodified opinion on those financial statements.

### Other Information

Management is responsible for the other information. The other information comprise the information included in annual report of the Group, but does not include the financial statements and my auditor's report thereon.

My opinion on the 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 financial statements, my responsibility is to read the other information and, in doing so, consider whether the other information is materially inconsistent with the 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 Management and Those Charged with Governance for the Financial Statements

Management is responsible for the preparation and fair presentation of the financial statements in accordance with Thai Financial Reporting Standards, and for such internal control as management determines is necessary to enable the preparation of financial statements that are free from material misstatement, whether due to fraud or error.

In preparing the financial statements, management is responsible for assessing the Group's ability to continue as a going concern, disclosing, as applicable, matters related to going concern and using the going concern basis of accounting unless management either intends to liquidate the Group or to cease operations, or has no realistic alternative but to do so.

Those charged with governance are responsible for overseeing the Group's financial reporting process.

### Auditor's Responsibilities for the Audit of the Financial Statements

My objectives are to obtain reasonable assurance about whether the 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 Thai Standards on Auditing 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 financial statements.

As part of an audit in accordance with Thai Standards on Auditing, I exercise professional judgement and maintain professional skepticism throughout the audit. I also:

- Identify and assess the risks of material misstatement of the 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 internal control.
- Evaluate the appropriateness of accounting policies used and the reasonableness of accounting estimates and related disclosures made by management.
- Conclude on the appropriateness of management's use of the going concern basis of accounting and, based on the audit evidence obtained, whether a material uncertainty exists related to events or conditions that may cast significant doubt on the Group's 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 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 to cease to continue as a going concern.
- Evaluate the overall presentation, structure and content of the financial statements, including the disclosures, and whether the financial statements represent the underlying transactions and events in a manner that achieves fair presentation.
- Obtain sufficient appropriate audit evidence regarding the financial information of the entities or business activities within the Group to express an opinion on the consolidated financial statements. I am responsible for the direction, supervision and performance of the group audit. I remain solely responsible for my audit opinion.

I communicate with those charged with governance regarding, among other matters, the planned scope and timing of the audit and significant audit findings, including any significant deficiencies in internal control that I identify during my audit.

I also provide those charged with governance with a statement that I have complied with relevant ethical requirements regarding independence, and to communicate with them all relationships and other matters that may reasonably be thought to bear on my independence, and where applicable, related safeguards.

From the matters communicated with those charged with governance, I determine those matters that were of most significance in the audit of the 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.

I am responsible for the audit resulting in this independent auditor's report.



**Waraporn Prapasirikul**

Certified Public Accountant (Thailand) No. 4579

EY Office Limited

Bangkok: 10 February 2023



# Statement of financial position

Thai Oil Public Company Limited

As at 31 December 2022

(Unit: Baht)

		Consolidated financial statements		Separate financial statements	
	Note	2022	2021	2022	2021
<b>Assets</b>					
<b>Current assets</b>					
Cash and cash equivalents	7	43,576,141,447	29,695,935,321	34,787,150,811	24,599,931,465
Deposits at financial institutions used as collateral	8	342,942,122	327,968,281	-	-
Short-term investments in financial assets		51,708	51,556	-	-
Trade receivables	9	28,758,763,491	23,414,850,685	29,780,895,851	25,047,923,258
Other receivables	10	4,360,674,670	1,009,491,750	4,335,163,616	928,013,922
Current portion of finance lease receivables		-	-	269,294,153	222,637,177
Receivables from oil fuel fund		15,883,619,978	3,567,664,636	15,883,619,978	3,567,664,636
Short-term loans to related parties	6	-	-	2,079,284,357	781,803,050
Inventories	11	55,343,143,495	39,576,036,655	49,854,208,859	33,622,752,432
Derivative assets	38	1,408,421,983	413,598,280	1,396,838,782	413,399,940
Prepaid corporate income tax		2,197,303,296	428,666,380	1,857,158,368	233,406,328
Value added tax receivables		1,957,127,320	2,500,040,431	1,132,472,675	1,833,775,015
Assets held-for-sale and discontinued operations	12	-	304,589,030	-	277,182,000
<b>Total current assets</b>		<b>153,828,189,510</b>	<b>101,238,893,005</b>	<b>141,376,087,450</b>	<b>91,528,489,223</b>

The accompanying notes to financial statements are an integral part of the financial statements.



# Statement of financial position

Thai Oil Public Company Limited

As at 31 December 2022

(Unit: Baht)

		Consolidated financial statements		Separate financial statements	
	Note	2022	2021	2022	2021
Assets (Continued)					
Non-current assets					
Financial assets measured at fair value through profit or loss	38	798,372,415	619,200,840	381,180,557	372,501,493
Financial assets measured at fair value through other comprehensive income	38	21,394,024,959	1,255,971,793	20,585,524,401	1,500,000
Investments in subsidiaries	13	-	-	41,280,364,907	41,013,554,907
Investments in joint ventures and associates	14	32,603,023,727	55,411,915,142	981,869,921	23,271,764,392
Long-term loans to related party	6	-	-	2,000,000,000	-
Finance lease receivables, net of current portion		-	-	832,504,343	828,238,887
Investment properties	15	102,520,270	102,520,270	1,123,781,182	1,123,781,182
Property, plant and equipment	16	206,475,779,500	178,399,498,296	175,669,529,025	146,632,727,741
Right-of-use assets	17	24,037,927,615	17,131,350,066	23,266,294,300	16,065,742,985
Goodwill	18	849,398,538	849,795,946	-	-
Derivative assets	38	-	1,254,892,201	-	1,254,892,201
Intangible assets	19	2,498,591,531	2,456,877,420	894,478,714	892,874,401
Deferred tax assets	20	1,125,358,279	2,584,675,894	375,009,310	2,409,557,219
Other non-current assets		867,671,726	838,528,579	781,310,712	761,910,329
Total non-current assets		290,752,668,560	260,905,226,447	268,171,847,372	234,629,045,737
Total assets		444,580,858,070	362,144,119,452	409,547,934,822	326,157,534,960

The accompanying notes to financial statements are an integral part of the financial statements.



# Statement of financial position

Thai Oil Public Company Limited

As at 31 December 2022

(Unit: Baht)

		Consolidated financial statements		Separate financial statements	
	Note	2022	2021	2022	2021
<b>Liabilities and shareholders' equity</b>					
<b>Current liabilities</b>					
Short-term loans from					
financial institutions	21	1,891,679,473	928,947,304	-	-
Short-term loans from related parties	6	-	-	320,937,658	2,135,480,112
Trade payables	22	74,154,200,327	23,000,501,061	78,629,741,664	25,344,499,645
Other payables	23	4,948,018,121	6,560,729,686	4,222,520,887	5,785,111,154
Current portion of long-term loans					
from financial institutions	24	2,884,118,047	1,212,855,150	1,670,083,448	-
Current portion of long-term loans					
from related parties	6	-	-	9,850,761,178	-
Current portion of debentures	25	17,317,475,318	3,000,000,000	7,515,272,144	3,000,000,000
Derivative liabilities	38	193,137,032	2,064,077	204,262,618	67,571,714
Current portion of lease liabilities	17	1,401,225,596	1,247,313,785	1,341,462,478	1,187,076,878
Income tax payables		431,326,511	725,784,520	-	-
Excise duty payables		451,837,587	1,797,643,153	451,755,137	1,796,626,561
Liabilities related to assets held-for-sale					
and discontinued operations		-	289,424	-	-
Total current liabilities		103,673,018,012	38,476,128,160	104,206,797,212	39,316,366,064

The accompanying notes to financial statements are an integral part of the financial statements.



# Statement of financial position

Thai Oil Public Company Limited

As at 31 December 2022

(Unit: Baht)

		Consolidated financial statements		Separate financial statements	
	Note	2022	2021	2022	2021

**Liabilities and shareholders' equity** (Continued)

**Non-current liabilities**

Long-term loans from financial institutions, net of current portion	24	19,806,567,400	30,475,749,816	10,236,056,978	19,536,214,656
Long-term loans from a third party	24	216,437,500	279,437,500	-	-
Long-term loans from related parties, net of current portion	6	-	14,000,000,000	99,632,079,681	119,857,716,617
Debentures, net of current portion	25	131,634,961,395	132,867,676,896	32,355,912,277	27,429,992,835
Derivative liabilities	38	1,979,726,503	373,219,542	1,920,640,434	56,622,726
Lease liabilities, net of current portion	17	21,106,960,627	14,135,399,334	21,264,240,778	14,036,471,958
Deferred tax liabilities	20	2,811,025	170,100,535	-	-
Provision for long-term employee benefits	26	2,752,608,756	4,798,968,156	2,173,378,579	3,873,671,834
Other non-current liabilities		4,750,395,386	3,473,359,364	4,855,245,693	3,823,185,053
<b>Total non-current liabilities</b>		<b>182,250,468,592</b>	<b>200,573,911,143</b>	<b>172,437,554,420</b>	<b>188,613,875,679</b>
<b>Total liabilities</b>		<b>285,923,486,604</b>	<b>239,050,039,303</b>	<b>276,644,351,632</b>	<b>227,930,241,743</b>

The accompanying notes to financial statements are an integral part of the financial statements.



# Statement of financial position

Thai Oil Public Company Limited

For the year ended 31 December 2022

(Unit: Baht)

		Consolidated financial statements		Separate financial statements	
	Note	2022	2021	2022	2021
Shareholders' equity					
Share capital	27				
Registered					
2,315,147,873 ordinary shares					
of Baht 10 each					
(2021: 2,040,027,873 ordinary					
shares of Baht 10 each)		23,151,478,730	20,400,278,730	23,151,478,730	20,400,278,730
Issued and fully paid up					
2,233,835,566 ordinary shares					
of Baht 10 each					
(2021: 2,040,027,873 ordinary					
shares of Baht 10 each)		22,338,355,660	20,400,278,730	22,338,355,660	20,400,278,730
Share premium on ordinary shares		10,698,724,259	2,456,261,491	10,698,724,259	2,456,261,491
Other deficits		(4,342,658,559)	(6,665,433,461)	(9,243,166,763)	(17,970,817,850)
Retained earnings					
Appropriated - statutory reserve	28	2,315,147,873	2,040,027,873	2,315,147,873	2,040,027,873
Appropriated - other reserves		244,500,000	244,500,000	244,500,000	244,500,000
Unappropriated		127,095,140,237	103,544,202,130	110,599,064,061	93,194,531,581
Other components of					
shareholders' equity		(2,314,908,203)	(1,151,622,764)	(4,049,041,900)	(2,137,488,608)
Other components of equity held-for-sale					
and discontinued operations		-	12,530,179	-	-
Equity attributable to owners of					
the Company		156,034,301,267	120,880,744,178	132,903,583,190	98,227,293,217
Non-controlling interests					
of the subsidiaries	29	2,623,070,199	2,213,335,971	-	-
Total shareholders' equity		158,657,371,466	123,094,080,149	132,903,583,190	98,227,293,217
Total liabilities and shareholders' equity		444,580,858,070	362,144,119,452	409,547,934,822	326,157,534,960

The accompanying notes to financial statements are an integral part of the financial statements.



# Statement of income

Thai Oil Public Company Limited

As at 31 December 2022

(Unit: Baht)

		Consolidated financial statements		Separate financial statements	
	Note	2022	2021	2022	2021
Revenue					
Revenue from sales and services		505,703,223,990	335,827,481,182	544,791,694,672	348,720,943,680
Subsidy from oil fuel fund		23,885,643,273	9,668,979,625	23,885,643,273	9,668,979,625
Total revenue		529,588,867,263	345,496,460,807	568,677,337,945	358,389,923,305
Cost of sales of goods and services		(481,137,018,938)	(319,555,257,876)	(526,994,340,498)	(344,128,578,079)
Gross profit		48,451,848,325	25,941,202,931	41,682,997,447	14,261,345,226
Dividend income		80,531,829	7,213,318	2,778,257,746	22,190,408,620
Loss from financial instruments		(16,005,831,795)	(2,405,585,837)	(16,128,333,432)	(2,730,635,807)
Loss on exchange		(64,454,875)	(4,595,089,896)	(24,241,664)	(4,872,883,594)
Gain on disposal of investments					
in associates	14	10,037,820,547	101,618,571	10,487,368,511	-
Gain on reclassification of investments	14	7,296,617,443	503,791,641	7,539,035,364	-
Other income	30	781,970,931	523,112,956	2,596,232,584	2,197,621,047
Selling and distribution expenses		(1,052,076,412)	(769,732,834)	(68,246,848)	(52,930,608)
Administrative expenses		(3,129,684,881)	(2,286,579,017)	(2,819,648,121)	(2,655,039,510)
Share of profit (loss) from investments					
in joint ventures and associates	14	(512,610,221)	1,674,639,524	-	-
Operating profit		45,884,130,891	18,694,591,357	46,043,421,587	28,337,885,374
Finance cost		(3,860,037,320)	(3,594,681,061)	(3,490,691,352)	(3,213,152,344)
Profit before income tax expenses		42,024,093,571	15,099,910,296	42,552,730,235	25,124,733,030
Income tax expenses	20	(8,917,861,561)	(2,033,501,898)	(8,887,386,197)	(472,298,698)
Profit for the year from					
continuing operations		33,106,232,010	13,066,408,398	33,665,344,038	24,652,434,332
Discontinued operations					
Loss after tax for the year from					
discontinued operations		-	(63,326,717)	-	-
Profit for the year		33,106,232,010	13,003,081,681	33,665,344,038	24,652,434,332

The accompanying notes to financial statements are an integral part of the financial statements.



# Statement of income

Thai Oil Public Company Limited

For the year ended 31 December 2022

(Unit: Baht)

	Consolidated financial statements		Separate financial statements		
	Note	2022	2021	2022	2021
Profit attributable to:					
Equity holders of the Company		32,668,134,594	12,578,025,758	33,665,344,038	24,652,434,332
Non-controlling interests of the subsidiaries		438,097,416	425,055,923		
		33,106,232,010	13,003,081,681		
Earnings per share 33					
Basic earnings per share					
Profit attributable to equity holders of the Company		15.63	6.17	16.11	12.08
Earnings per share from continuing operations					
Basic earnings per share from continuing operations					
Profit from continuing operations attributable to equity holders of the Company		15.63	6.20	16.11	12.08

The accompanying notes to financial statements are an integral part of the financial statements.



# Statement of comprehensive income

Thai Oil Public Company Limited

For the year ended 31 December 2022

(Unit: Baht)

	Note	Consolidated financial statements		Separate financial statements	
		2022	2021	2022	2021
Profit for the year		33,106,232,010	13,003,081,681	33,665,344,038	24,652,434,332
Other comprehensive income:					
<i>Other comprehensive income to be reclassified to profit or loss in subsequent periods:</i>					
Cash flow hedges, net of					
income tax	37	(3,034,720,209)	(1,266,739,476)	(3,240,728,805)	(1,440,907,790)
Cost of hedging, net of income tax	37	(531,845,871)	(494,497,396)	(531,845,871)	(494,497,396)
Exchange differences on					
translation of financial statements					
in foreign currency		992,203,914	717,216,507	-	-
Share of other comprehensive					
income from investments in					
associates under equity					
method, net of income tax	14	147,817,577	40,258,528	-	-
Other comprehensive income					
to be reclassified to profit or					
loss in subsequent periods,					
net of income tax		(2,426,544,589)	(1,003,761,837)	(3,772,574,676)	(1,935,405,186)

The accompanying notes to financial statements are an integral part of the financial statements.



# Statement of comprehensive income

Thai Oil Public Company Limited

For the year ended 31 December 2022

(Unit: Baht)

		Consolidated financial statements		Separate financial statements	
	Note	2022	2021	2022	2021
<i>Other comprehensive income not to be reclassified to profit or loss in subsequent periods</i>					
Actuarial gain - net of income tax	26	1,568,947,765	-	1,288,808,947	-
Changes in fair value of financial assets at fair value through other comprehensive income, net of income tax		1,485,531,242	(60,986,103)	1,861,021,384	-
Share of other comprehensive income from investments in joint ventures and associates, net of income tax	14	61,657,501	434,238,683	-	-
Other comprehensive income not to be reclassified to profit or loss in subsequent periods, net of income tax		3,116,136,508	373,252,580	3,149,830,331	-
Other comprehensive income for the year		689,591,919	(630,509,257)	(622,744,345)	(1,935,405,186)
Other comprehensive income for the year from discontinued operations, net of income tax		-	23,746,716	-	-
Total comprehensive income for the year		33,795,823,929	12,396,319,140	33,042,599,693	22,717,029,146
Total comprehensive income attributable to:					
Equity holders of the Company		33,354,307,224	11,973,528,793	33,042,599,693	22,717,029,146
Non-controlling interests of the subsidiaries		441,516,705	422,790,347		
		33,795,823,929	12,396,319,140		

The accompanying notes to financial statements are an integral part of the financial statements.



# Statement of changes in shareholders' equity

Thai Oil Public Company Limited

For the year ended 31 December 2022

(Unit: Baht)

## Consolidated financial statements

	Equity attributable to owners of the Company																
	Other components of shareholders' equity																
	Other comprehensive income																
	Share of other comprehensive income (loss) from an associate held-for-sale	Share of other comprehensive income (loss) from an associate held-for-sale	Share of other comprehensive income (loss) from an associate held-for-sale	Share of other comprehensive income (loss) from an associate held-for-sale	Share of other comprehensive income (loss) from an associate held-for-sale	Share of other comprehensive income (loss) from an associate held-for-sale	Share of other comprehensive income (loss) from an associate held-for-sale	Share of other comprehensive income (loss) from an associate held-for-sale	Share of other comprehensive income (loss) from an associate held-for-sale	Share of other comprehensive income (loss) from an associate held-for-sale	Share of other comprehensive income (loss) from an associate held-for-sale	Share of other comprehensive income (loss) from an associate held-for-sale	Share of other comprehensive income (loss) from an associate held-for-sale				
Balance as at 1 January 2021	20,400,278,730	2,456,261,491	330,835,954	(127,795,383)	(2,320,883,519)	100,556,041	2,040,027,873	244,500,000	93,645,317,073	318,190,935	(894,775,936)	355,246,746	(223,266,365)	(5,638,725)	116,228,963,915	3,889,467,780	120,118,431,695
Profit for the year	-	-	-	-	-	12,578,025,758	-	-	-	-	-	-	-	-	12,578,025,758	425,055,923	13,003,081,681
Other comprehensive income for the year	-	-	-	-	-	-	-	-	-	739,397,296	(1,266,739,476)	(494,497,396)	478,328,714	-	(604,436,965)	(2,265,576)	(606,762,541)
Total comprehensive income for the year	-	-	-	-	-	12,578,025,758	-	-	-	739,397,296	(1,266,739,476)	(494,497,396)	478,328,714	-	11,973,528,793	422,790,347	12,396,319,140
Dividend paid (Note 35)	-	-	-	-	-	(2,651,901,359)	-	-	-	-	-	-	-	-	(2,651,901,359)	(5,971,992,376)	(8,623,893,735)
Business restructuring under common control	-	-	-	-	-	(4,671,283,952)	-	-	-	-	-	-	-	-	(4,671,283,952)	4,671,283,952	-
Liquidation of a subsidiary	-	-	-	-	-	127,795,383	-	-	-	-	-	-	-	-	-	(806,203,711)	(806,203,711)
Disposal of investment in a subsidiary	-	-	-	-	-	(100,556,041)	-	-	-	-	-	-	-	-	5,638,725	-	5,638,725
Non-controlling interest arising from business combination	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Changes of interest in an investment in a subsidiary	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12,697,600	12,697,600
Discontinued operations	-	-	-	-	-	(2,210,561)	-	-	-	-	-	-	-	-	(2,210,561)	(4,707,021)	(6,918,182)
Deficits from the change in the net assets in an associate	-	-	-	-	-	-	-	-	-	(12,530,179)	-	-	-	-	-	-	-
Balance as at 31 December 2021	20,400,278,730	2,456,261,491	330,835,954	(4,673,494,513)	(2,322,774,902)	(2,191,383)	2,040,027,873	244,500,000	103,544,202,130	1,045,067,052	(2,251,515,412)	(139,250,650)	255,062,349	12,530,179	120,880,744,178	2,213,335,971	123,094,080,149
Balance as at 1 January 2022	20,400,278,730	2,456,261,491	330,835,954	(4,673,494,513)	(2,322,774,902)	-	2,040,027,873	244,500,000	103,544,202,130	(60,886,103)	1,045,067,052	(2,251,515,412)	255,062,349	12,530,179	120,880,744,178	2,213,335,971	123,094,080,149
Profit for the year	-	-	-	-	-	32,668,134,594	-	-	-	-	-	-	-	-	32,668,134,594	438,097,416	33,106,232,010
Other comprehensive income for the year	-	-	-	-	-	1,574,798,788	-	-	-	991,533,813	(3,034,720,207)	(531,845,871)	202,069,936	(1,194,157)	688,173,544	3,419,289	689,592,833
Total comprehensive income for the year	-	-	-	-	-	34,242,933,382	-	-	-	991,533,813	(3,034,720,207)	(531,845,871)	202,069,936	(1,194,157)	33,794,308,138	441,516,705	33,795,824,843
Increase share capital (Note 27)	1,938,076,930	8,430,634,645	-	-	-	-	-	-	-	-	-	-	-	-	10,368,711,575	-	10,368,711,575
Transaction costs - net of income tax (Note 27)	-	(188,171,877)	-	-	-	-	-	-	-	-	-	-	-	-	(188,171,877)	-	(188,171,877)
Transfer to statutory reserve	-	-	-	-	-	(275,120,000)	-	-	-	-	-	-	-	-	-	-	-
Dividend paid (Note 35)	-	-	-	-	-	(8,546,849,418)	-	-	-	-	-	-	-	-	(8,546,849,418)	(31,782,477)	(8,578,631,895)
Liquidation of a subsidiary	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(11,336,022)	-	(11,336,022)
Disposal of investment in an associate	-	-	-	-	-	2,320,883,519	-	-	-	-	-	-	-	-	174,703,310	-	174,703,310
Share gain from the change in the net assets in an associate	-	-	-	-	-	2,191,383	-	-	-	-	-	-	-	-	2,191,383	-	2,191,383
Balance as at 31 December 2022	22,338,355,660	10,698,724,259	330,835,954	(4,673,494,513)	-	-	2,315,147,873	244,500,000	127,095,140,237	1,424,541,39	(5,286,235,619)	(671,086,321)	181,277,933	-	156,034,301,267	2,623,070,199	158,657,371,466

The accompanying notes to financial statements are an integral part of the financial statements.







# Statement of cash flows

Thai Oil Public Company Limited

For the year ended 31 December 2022

(Unit: Baht)

	Consolidated financial statements		Separate financial statements	
	2022	2021	2022	2021
<b>Cash flows from operating activities</b>				
Profit before income tax expenses	42,024,093,571	15,099,910,296	42,552,730,235	25,124,733,030
Adjustments to reconcile profit before tax to net cash provided by (paid from) operating activities:				
Depreciation and amortisation	7,744,330,761	7,424,341,843	5,281,655,023	4,773,394,182
Expected credit loss (reversal)	3,155,351	(2,277,291)	-	-
Reduction of inventory to net realisable value	557,542,659	237,277,804	332,074,942	90,276,186
Finance cost	3,860,037,320	3,594,681,061	3,490,691,352	3,213,152,344
Unrealised loss on exchange	1,033,832,176	5,055,569,464	906,789,204	5,230,027,375
Share of loss (profit) from investments in joint ventures and associates	512,610,221	(1,674,639,524)	-	-
Dividends income	(80,531,829)	(7,213,318)	(2,778,257,746)	(23,091,657,555)
Difference on lease modification	(78,110,615)	5,675,511	(76,091,730)	6,002,702
Impairment loss on investment in a subsidiary	-	-	-	901,248,935
Impairment loss on investment in an associate	-	-	11,400,000	-
Impairment loss on property, plant and equipment	686,953,439	-	-	-
Loss (gain) on disposal of property, plant and equipment	(41,989)	(28,593)	2,866	(9,345)
Loss on write-off of property, plant and equipment	7,477	6,431,045	-	-
Loss on hedging of forecasted revenue transaction	271,145,454	43,890,341	271,145,454	43,890,341
Gain from changes in fair value of financial assets	(18,302,106)	(48,618,078)	(8,679,064)	(25,171,593)
Unrealised loss (gain) from changes in fair value of derivatives	182,777,373	(6,455,955)	139,780,182	38,624,343
Gain on disposal of assets and liabilities held-for-sale	(11,881,212)	(40,877,815)	(31,235,890)	(52,685,540)
Gain on disposal of investments in associates	(10,037,820,166)	(101,618,571)	(10,487,368,511)	-
Gain on reclassification of investments	(7,296,617,443)	(503,791,641)	(7,539,035,364)	-
Amortisation of advance receipts for land lease and others	(16,527,146)	(13,215,882)	(517,112,158)	(65,455,108)

The accompanying notes to financial statements are an integral part of the financial statements.



# Statement of cash flows

Thai Oil Public Company Limited

For the year ended 31 December 2022

(Unit: Baht)

	Consolidated financial statements		Separate financial statements	
	2022	2021	2022	2021
<b>Cash flows from operating activities (Continued)</b>				
Profit from operating activities before				
changes in operating assets and liabilities	39,336,653,296	29,069,040,697	31,548,488,795	16,186,370,297
Operating assets (increase) decrease				
Trade receivables	(5,430,112,419)	(10,694,311,822)	(4,741,327,573)	(11,324,353,977)
Other receivables	(3,316,102,587)	84,568,509	(3,470,349,380)	65,344,961
Receivables from oil fuel fund	(12,315,955,343)	(1,577,726,018)	(12,315,955,343)	(1,577,726,018)
Inventories	(16,324,649,499)	(17,339,761,082)	(16,563,531,369)	(14,511,975,802)
Value added tax receivables	542,913,112	(1,457,344,255)	701,302,340	(1,114,883,547)
Other non-current assets	(5,919,922)	37,015,136	32,364	(17,476,966)
Operating liabilities increase (decrease)				
Trade payables	51,162,328,929	13,455,848,210	53,295,754,544	14,356,303,397
Other payables	(330,059,477)	439,819,783	(176,678,137)	312,463,481
Excise duty payables	(1,345,805,566)	71,060,219	(1,344,871,424)	70,870,964
Other non-current liabilities	745,829,229	108,146,002	518,845,590	68,575,604
Cash from operating activities	52,719,119,753	12,196,355,379	47,451,710,407	2,513,512,394
Cash used in operating activities of				
discontinued operations	-	(361,406,316)	-	-
Corporate income tax paid	(9,468,363,069)	(1,331,181,574)	(8,206,074,908)	(151,716,735)
<b>Net cash flows from operating activities</b>	<b>43,250,756,684</b>	<b>10,503,767,489</b>	<b>39,245,635,499</b>	<b>2,361,795,659</b>

The accompanying notes to financial statements are an integral part of the financial statements.



# Statement of cash flows

Thai Oil Public Company Limited

For the year ended 31 December 2022

(Unit: Baht)

	Consolidated financial statements		Separate financial statements	
	2022	2021	2022	2021
<b>Cash flows from investing activities</b>				
Dividends received	841,280,179	1,109,675,114	2,778,257,746	23,091,657,555
Increase in deposits at a financial institution used as collateral	(14,973,841)	(1,029,455)	-	-
Proceeds from (repayment of) short-term investments in financial assets	(152)	19,161,775,517	-	19,161,775,670
Cash payment for purchase of financial assets measured at fair value through other comprehensive income	(70,133,368)	(80,199,544)	-	-
Cash payment for purchase of financial assets measured at fair value through profit or loss	(84,666,924)	(91,328,879)	-	-
Cash payment for short-term loans to related parties	-	-	(2,079,284,357)	(31,469,078,950)
Cash receipt from short-term loans to related parties	-	-	781,882,950	30,975,502,900
Cash payment for long-term loans to related parties	-	-	(2,000,000,000)	-
Cash receipt from long-term loans to related parties	-	-	-	11,381,334,798
Proceeds from long-term loans to savings co-operative of employees	43,657,453	46,375,224	43,393,365	46,212,885
Cash payment for long-term loans to savings co-operative of employees	(13,046,642)	(8,760,642)	(6,586,000)	(8,760,642)
Proceeds from disposal of property, plant and equipment	136,128	28,596	91,268	9,346
Cash payment for acquisition of property, plant and equipment	(31,929,205,073)	(35,146,067,716)	(28,731,959,237)	(33,672,966,839)
Cash payment for acquisition of intangible assets	(159,603,521)	(247,885,058)	(148,176,801)	(158,151,548)
Cash payment for right-of-use assets	(19,344,619)	(41,578,889)	(19,344,619)	(41,578,889)
Cash payment for investments in subsidiaries	-	(6,001,777)	-	(30,221,427,888)
Cash payment for capital increase in a subsidiary	-	-	(266,810,000)	(220,000,000)
Cash payment for acquisition of investment in an associate	-	(29,807,361,200)	-	-
Proceeds from disposal of investment in a subsidiary	-	-	-	2,294,251,065
Proceeds from disposal of investments in associates	22,047,150,675	234,856,800	22,047,150,675	-
Cash payment for acquisition of investment in joint ventures	-	(1,632,000)	-	-
Proceeds from liquidation of a subsidiary	308,417,890	-	308,417,890	-
Proceeds from decrease in capital of joint ventures	1,186,096	-	-	-
Proceeds from business restructuring	-	1,560,487,060	-	1,560,487,060
Cash payment for entire business transfer under common control	-	-	-	(25,904,440,827)
Cash used in investing activities of discontinued operations	-	(17,964,599)	-	-
<b>Net cash flows used in investing activities</b>	<b>(9,049,145,719)</b>	<b>(43,336,611,448)</b>	<b>(7,292,967,120)</b>	<b>(33,185,174,304)</b>

The accompanying notes to financial statements are an integral part of the financial statements.



# Statement of cash flows

Thai Oil Public Company Limited

For the year ended 31 December 2022

(Unit: Baht)

	Consolidated financial statements		Separate financial statements	
	2022	2021	2022	2021
<b>Cash flows from financing activities</b>				
Finance costs paid	(7,397,031,980)	(6,929,326,395)	(7,694,992,039)	(6,868,172,511)
Dividends paid to the shareholders of the Company	(8,546,849,418)	(2,651,901,359)	(8,546,849,418)	(2,651,901,359)
Dividends paid to non-controlling interests	(31,782,477)	(5,971,992,374)	-	-
Redemption of capital paid to non-controlling interest	-	(806,203,712)	-	-
Proceeds from short-term loans from financial institutions	17,325,104,966	6,034,470,777	-	-
Repayment of short-term loans from financial institutions	(16,358,412,216)	(5,821,204,586)	-	-
Proceeds from (repayment of) short-term loans from related parties	-	-	(1,814,542,454)	2,078,156,721
Proceeds from long-term loans from financial institutions	8,779,136,908	19,754,222,664	8,500,000,000	19,709,000,000
Repayment of long-term loans from financial institutions	(17,862,863,012)	(1,013,784,179)	(16,209,000,000)	-
Repayment of long-term loans from a third party	(63,000,000)	-	-	-
Proceeds from long-term loans from related parties	-	14,000,000,000	-	14,000,000,000
Repayment of long-term loans from related parties	(14,000,000,000)	(3,998,847,362)	(14,000,000,000)	(15,380,182,160)
Cash payment for loans financing fee	(7,530,274)	(203,799,680)	(7,510,274)	(191,676,849)
Proceeds from debentures	12,000,000,000	-	12,000,000,000	-
Redemption of debentures	(3,000,000,000)	(3,000,000,000)	(3,000,000,000)	(3,000,000,000)
Cash payment for debenture financing fee	(12,136,946)	-	(12,136,946)	-
Payment of principal portion of lease liabilities	(1,211,000,040)	(1,050,670,607)	(1,140,588,486)	(999,966,175)
Proceeds from increase in share capital	10,368,711,576	-	10,368,711,576	-
Transaction costs on issue of shares	(235,214,847)	-	(235,214,847)	-
Cash used in financing activities of discontinued operations	-	(95,515,640)	-	-
<b>Net cash flows from (used in) financing activities</b>	<b>(20,252,867,760)</b>	<b>8,245,447,547</b>	<b>(21,792,122,888)</b>	<b>6,695,257,667</b>

The accompanying notes to financial statements are an integral part of the financial statements.



# Statement of cash flows

Thai Oil Public Company Limited

For the year ended 31 December 2022

(Unit: Baht)

	Consolidated financial statements		Separate financial statements	
	2022	2021	2022	2021
Net increase (decrease) in cash and cash equivalents	13,948,743,205	(24,587,396,412)	10,160,545,491	(24,128,120,978)
Cash and cash equivalents at beginning of year	29,695,935,321	53,243,895,741	24,599,931,465	47,642,862,760
Effect of exchange rate changes	(68,537,079)	1,039,435,992	26,673,855	1,085,189,683
<b>Cash and cash equivalents at end of year</b>	<b>43,576,141,447</b>	<b>29,695,935,321</b>	<b>34,787,150,811</b>	<b>24,599,931,465</b>

## Supplemental disclosure of cash flows information

Payables on acquisition of property, plant and equipment	741,475,168	2,210,974,176	692,115,512	1,706,996,709
Payables on acquisition of intangible assets	214,209,574	167,265,347	-	-
Increase in right-of-use assets and lease liabilities	9,458,104,838	4,000,653,888	9,540,274,158	3,958,651,510
Contingent consideration from acquisition of investment in an associate	-	129,726,137	-	-

The accompanying notes to financial statements are an integral part of the financial statements.



# Notes to consolidated financial statements

Thai Oil Public Company Limited

For the year ended 31 December 2022

## 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 parent company is PTT Public Company Limited (45.03% of shareholding as at 31 December 2022).

The principal business operations of the Group is oil refinery and distributions, petrochemicals, lube base oil and other businesses in domestic and overseas. 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
Sriracha office and refinery plant:	42/1 Moo 1, Sukhumvit Road Km. 124, Tambol Tungsukla, Amphur Sriracha, Chonburi 20230

## 2. Basis of preparation

- 2.1 The financial statements have been prepared in accordance with Thai Financial Reporting Standards enunciated under the Accounting Professions Act B.E. 2547 and their presentation has been made in compliance with the stipulations of the Notification of the Department of Business Development, issued under the Accounting Act B.E. 2543, including guidelines promulgated by the Federation of Accounting Professions (TFAC), and the financial reporting requirements of the Securities and Exchange Commission under the Securities and Exchange Act, B.E. 2535.

The financial statements have been prepared on a historical cost basis except where otherwise disclosed in the accounting policies. The financial statements in Thai language are the official statutory financial statements of the Company. The financial statements in English language have been translated from the Thai language financial statements.



# Notes to consolidated financial statements

Thai Oil Public Company Limited

For the year ended 31 December 2022

## 2.2 Basis of consolidation

- a) The consolidated financial statements include the financial statements of Thai Oil Public Company Limited (“the Company”) and the following subsidiary companies (“the subsidiaries”) (collectively as “the Group”):

Company's name	Nature of business	Country of incorporation	Percentage of shareholding	
			2022	2021
Direct subsidiaries				
Thai Paraxylene Co., Ltd.	Paraxylene manufacturing and distribution	Thailand	99.99	99.99
Thai Lube Base Public Company Limited	Lube base oil refining and distribution	Thailand	99.99	99.99
Thaioil Energy Services Co., Ltd.	Providing human Resource management	Thailand	99.99	99.99
Thaioil Solvent Co., Ltd.	Investment in solvent and chemical business	Thailand	99.99	99.99
Thaioil Ethanol Co., Ltd.	Investment in ethanol businesses and alternative energy products	Thailand	99.99	99.99
TOP SPP Co., Ltd.	Power and stream generation and distribution	Thailand	99.99	99.99
Thaioil Treasury Center Co., Ltd.	Treasury center for the Group's business	Thailand	99.99	99.99
PT TOP Investment Indonesia	Investment in Olefins petrochemical business	Republic of Indonesia	100.00	100.00



# Notes to consolidated financial statements

Thai Oil Public Company Limited

For the year ended 31 December 2022

Company's name	Nature of business	Country of incorporation	Percentage of shareholding	
			2022	2021
Indirect subsidiaries				
TOP Next International Co., Ltd. (Formerly known as "TOP Solvent Co., Ltd.")	Distribution of solvent and chemical products	Thailand	99.99	99.99
Sak Chaisidhi Co., Ltd.	Solvent and chemical products manufacturing	Thailand	80.52	80.52
TOP Solvent (Vietnam) LLC.	Distribution of solvent and chemical products	Socialist Republic of Vietnam	100.00	100.00
PT Tirta Surya Raya	Distribution of solvent and chemical products	Republic of Indonesia	77.71	77.71
JSKEM Private Limited	Distribution of solvent and chemical products	Republic of Singapore	60.00	60.00
TSCHEM India Private Limited	Distribution of solvent and chemical products	Republic of India	60.00	60.00
Sapthip Co., Ltd.	Ethanol products manufacturing and distribution	Thailand	50.00	50.00
Sapthip Green Energy Co., Ltd.	Biogas power generation and distribution	Thailand	50.00	50.00
LABIX Co., Ltd.	Linear Alkyl Benzene manufacturing and distribution	Thailand	75.00	75.00
TOP Ventures Company Limited	Investment in venture capital and/or start-up business	Thailand	99.99	99.99
TOP Ventures Hong Kong Limited	Investment in venture capital and/or start-up business	Hong Kong Special Administrative Region	100.00	100.00
TOP Ventures America LLC.	Investment in venture capital and/or start-up business	United States of America	100.00	100.00

- b) The financial statements of the subsidiaries are prepared using the same significant accounting policies as the Company.



# Notes to consolidated financial statements

Thai Oil Public Company Limited

For the year ended 31 December 2022

## 3. New financial reporting standards

### 3.1 Financial reporting standards that became effective in the current year

During the year, the Group has adopted the revised financial reporting standards and interpretations which are effective for fiscal years beginning on or after 1 January 2022. These financial reporting standards were aimed at alignment with the corresponding International Financial Reporting Standards with most of the changes directed towards clarifying accounting treatment and providing accounting guidance for users of the standards.

The adoption of these financial reporting standards does not have any significant impact on the Group's financial statements.

However, the Group has adopted the temporary reliefs in accordance with TFRS 9 Financial Instruments, TFRS 7 Disclosure of Financial Instruments and TFRS 16 Leases, which apply to transactions directly affected by interest rate benchmark reform, including changes to contractual cash flows or hedging relationships arising from the replacement of the referenced interest rate benchmark with an alternative benchmark rate.

The adoption of these temporary reliefs does not have any significant impact on the Group's financial statements.

### 3.2 Financial reporting standards that will become effective for fiscal years beginning on or after 1 January 2023

The Federation of Accounting Professions issued a number of revised financial reporting standards, which are effective for fiscal years beginning on or after 1 January 2023. These financial reporting standards were aimed at alignment with the corresponding International Financial Reporting Standards with most of the changes directed towards clarifying accounting treatment and providing accounting guidance for users of the standards.

The management of the Group believes that adoption of these amendments will not have any significant impact on the Group's financial statements.



# Notes to consolidated financial statements

Thai Oil Public Company Limited

For the year ended 31 December 2022

## 4. Significant accounting policies

### 4.1 Principles of consolidation

#### 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.

#### b) Associates

Associates are all entities over which the Group has significant influence but does not have 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.

#### d) Equity method

The investment is initially recognised at cost which is consideration paid and directly attributable costs.



# Notes to consolidated financial statements

Thai Oil Public Company Limited

For the year ended 31 December 2022

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 non-controlling 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.

Upon the disposal of investments, the difference between the net disposal proceeds and the carrying amount of the investments is recorded in profit or loss.

## 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 consolidated financial statements

Thai Oil Public Company Limited

For the year ended 31 December 2022

## 4.2 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 profit and loss 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 and/or liability is recognised in profit or loss. Contingent consideration that is classified as equity is not re-measured.



# Notes to consolidated financial statements

Thai Oil Public Company Limited

For the year ended 31 December 2022

## 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 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 of 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.

The group recognised expenses related to business combination under common control as expenses during the period of which the business combination occurs.

## 4.3 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 consolidated financial statements

Thai Oil Public Company Limited

For the year ended 31 December 2022

## 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 in 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.

## 4.4 Cash and cash equivalents

Cash and cash equivalents consist of cash in hand and at banks, and all highly liquid investments with an original maturity of three months or less and not subject to withdrawal restrictions.

Bank overdrafts are included in current liabilities in the statements of financial position.

## 4.5 Trade receivables

Trade receivables are amounts due from customers for goods sold and/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 4.7 (f).

## 4.6 Inventories

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

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, overhead costs and directly attributable costs to bring the inventories to their present location and condition.



# Notes to consolidated financial statements

Thai Oil Public Company Limited

For the year ended 31 December 2022

## 4.7 Financial instruments

### Financial asset

#### a) Classification

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 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.

#### 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 principal and interest (SPPI).



# Notes to consolidated financial statements

Thai Oil Public Company Limited

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## 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 income.
- **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.

## e) Equity instruments

The Group measures all equity investments at fair value. Where the Group has elected to present fair value gains or losses on equity instruments in OCI, there is no subsequent reclassification of fair value gains or 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.



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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 or reversal of impairment losses on equity investments are reported together with changes in fair value.

## f) Impairment

The Group applies the 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.

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.

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.



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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.

## 4.8 Non-current assets held-for-sale and discontinued operations

The Group classifies non-current assets and disposal groups as held for sale if their carrying amounts will be recovered principally through a sale transaction rather than through continuing use. Non-current assets and disposal groups classified as held for sale are measured at the lower of their carrying amount and fair value less costs to sell. Costs to sell are the incremental costs directly attributable to the disposal of an asset (disposal group), excluding finance costs and income tax expense.

The criteria for held for sale classification is regarded as met only when the sale is highly probable, and the asset or disposal group is available for immediate sale in its present condition. Actions required to complete the sale should indicate that it is unlikely that significant changes to the sale will be made or that the decision to sell will be withdrawn. Management must be committed to the plan to sell the asset and the sale expected to be completed within one year from the date of the classification.

Property, plant and equipment and intangible assets are not depreciated or amortised once classified as held for sale.

Assets and liabilities classified as held for sale are presented separately as current items in the statement of financial position.

Discontinued operations are excluded from the results of continuing operations and are presented as a single amount as profit or loss after tax from discontinued operations in the statement of comprehensive income.

## 4.9 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.



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Investment properties are measured initially at cost, including transaction costs. Subsequent to initial recognition, investment properties are stated at cost less allowance for loss on impairment (if any). Land is not depreciated.

On disposal of investment properties, the difference between the net disposal proceeds and the carrying amount of the asset is recognised in profit or loss in the period when the asset is derecognised.

## 4.10 Property, plant and equipment

Land is stated at cost. Buildings and equipment are stated at cost less accumulated depreciation and allowance for loss on impairment of assets (if any). The costs comprise any costs directly attributable to bringing the asset to the location and condition necessary for it to be capable of operating. These include decommissioning costs, delivery and restoration costs, and any obligation associated with either its acquisition or a consequence of having used the items.

Subsequent costs are included carrying value of replace items, only when it is probable that future economic benefit associated with the items will flow to the group. In case of replacement, the Group writes off carrying value of replaced items. Repair and maintenance costs are recognized in profit or loss during the financial period in which they are incurred.

Depreciation of plant and equipment is calculated by reference to their costs on the straight-line basis over the following estimated useful lives:

	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
Machinery, equipment and plant equipment	3 - 20
Oil and liquid chemical tankers and crew boats	10 - 25
Furniture, fixtures, office equipment and others	3 - 10
Vehicles	5



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Depreciation is included in determining income.

No depreciation is provided on land and assets under construction.

The assets' residual values and useful lives are reviewed, and adjusted if appropriate, at the end of each reporting period.

An item of property, plant and equipment is derecognised upon disposal or when no future economic benefits are expected from its use or disposal. Any gain or loss arising on disposal of an asset is included in profit or loss when the asset is derecognised.

## 4.11 Goodwill

Goodwill is initially recorded at cost, which equals to the excess of cost of business combination over the fair value of the net assets acquired. If the fair value of the net assets acquired exceeds the cost of business combination, the excess is immediately recognised as gain in profit or loss.

Goodwill is carried at cost less any accumulated impairment losses. Goodwill is tested for impairment annually and when circumstances indicate that the carrying value may be impaired.

For the purpose of impairment testing, goodwill acquired in a business combination is allocated to each of the Company's cash-generating units (or group of cash-generating units) that are expected to benefit from the synergies of the combination. The Company estimates the recoverable amount of each cash-generating unit (or group of cash-generating units) to which the goodwill relates. Where the recoverable amount of the cash-generating unit is less than the carrying amount, an impairment loss is recognised in profit or loss. Impairment losses relating to goodwill cannot be reversed in future periods.

## 4.12 Intangible assets

Intangible assets acquired through business combination are initially recognised at their fair value on the date of business acquisition while intangible assets acquired in other cases are recognised at cost. Following the initial recognition, the intangible assets are carried at cost less any accumulated amortisation and any accumulated impairment losses (if any).



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Intangible assets with finite lives are amortised on the straight-line basis over the economic useful life and tested for impairment whenever there is an indication that the intangible asset may be impaired. The amortisation period and the amortisation method of such intangible assets are reviewed at least at each financial year end. The amortisation expense is charged to profit or loss.

A summary of the intangible assets with finite useful lives is as follows:

	Years
License fee	10 - 25
Computer software	5 - 10
Patent	10

## 4.13 Impairment of non-financial assets

At the end of each reporting period, the Group performs impairment reviews in respect of the property, plant and equipment, right-of-use assets, investment properties and other intangible assets whenever events or changes in circumstances indicate that an asset may be impaired. The Group also carries out annual impairment reviews in respect of goodwill. An impairment loss is recognised when the recoverable amount of an asset, which is the higher of the asset's fair value less costs to sell and its value in use, is less than the carrying amount.

An impairment loss is recognised in profit or loss.

In the assessment of asset impairment (except for goodwill), if there is any indication that previously recognised impairment losses may no longer exist or may have decreased, the Group estimates the asset's recoverable amount. A previously recognised impairment loss is reversed only if there has been a change in the assumptions used to determine the asset's recoverable amount since the last impairment loss was recognised. The increased carrying amount of the asset attributable to a reversal of an impairment loss shall not exceed the carrying amount that would have been determined had no impairment loss been recognised for the asset in prior years. Such reversal is recognised in profit or loss.



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## 4.14 Leases

### 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.

Depreciation of right-of-use assets are calculated by reference to their costs, on the straight-line basis over the shorter of their estimated useful lives and the lease term.

Land	33 years
Buildings	3 years
Equipment	5 years
Oil tanker	10 years
Motor vehicles	5 years

If ownership of the leased asset is transferred to the Group at the end of the lease term or the cost reflects the exercise of a purchase option, depreciation is calculated using the estimated useful life of the asset.

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.



# Notes to consolidated financial statements

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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.

Right-of-use assets are measured at cost. It comprises 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.

## Short-term leases and leases of low-value assets

A lease that has a lease term less than or equal to 12 months from commencement date or a lease of low-value assets is recognised as expenses on a straight-line basis over the lease term. Low-value assets comprise of IT-equipment and small items of office furniture.

## Leases - where the Group is the lessor

### *Finance lease*

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.



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## *Operating lease*

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.

## 4.15 Financial liabilities

### 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.

### c) Derecognition and modification

Financial liabilities are derecognised when the obligation specified in the contract is discharged, cancelled, or expired.



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Where the terms of a financial liability are renegotiated or modified, the Group assesses whether the renegotiation or 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 or modified contractual cash flows discounted at its original effective interest rate. The difference is recognised in other gains (losses) in profit or loss.

## 4.16 Borrowing costs

Borrowing costs directly attributable to the acquisition, construction or production of an asset that necessarily takes a substantial period of time to get ready for its intended use or sale are capitalised as part of the cost of the respective assets. All other borrowing costs are expensed in the period they are incurred. Borrowing costs consist of interest and other costs that an entity incurs in connection with the borrowing of funds.

## 4.17 Income tax

Income tax expense represents the sum of corporate income tax currently payable and deferred tax.

### Current tax

Current income tax is provided in the accounts at the amount expected to be paid to the taxation authorities, based on taxable profits determined in accordance with tax legislation.

### Deferred tax

Deferred income tax is provided on temporary differences between the tax bases of assets and liabilities and their carrying amounts at the end of each reporting period, using the tax rates enacted at the end of the reporting period.

The Group recognises deferred tax liabilities for all taxable temporary differences while it recognises deferred tax assets for all deductible temporary differences and tax losses carried forward to the extent that it is probable that future taxable profit will be available against which such deductible temporary differences and tax losses carried forward can be utilised.



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At each reporting date, the Group reviews and reduces the carrying amount of deferred tax assets to the extent that it is no longer probable that sufficient taxable profit will be available to allow all or part of the deferred tax asset to be utilised.

The Group records deferred tax directly to shareholders' equity if the tax relates to items that are recorded directly to shareholders' equity.

## 4.18 Employee benefits

### a) Short-term employee benefits

Liabilities for short-term employee benefits 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.

Salaries, wages, bonuses and contributions to the social security fund are recognised as expenses when incurred.

### b) Post-employment benefits and other long-term employee benefits

#### Defined contribution plans

The Company and its employees have jointly established a provident fund. The fund is monthly contributed by employees and by the Company. The fund's assets are held in a separate trust fund and the Company's contributions are recognised as expenses when incurred.

#### Defined benefit plans and other long-term employee benefits

The Group has obligations in respect of the severance payments it must make to employees upon retirement under labor law and other employee benefit plans. The Group treats these severance payment obligations as a defined benefit plan. In addition, the Group provides other long-term employee benefit plan, namely long service awards.

The obligation under the defined benefit plan and other long-term employee benefit plans is determined by a professionally qualified independent actuary based on actuarial techniques, using the projected unit credit method.



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Actuarial gains and losses arising from defined benefit plans are recognised immediately in other comprehensive income.

Actuarial gains and losses arising from other long-term benefits are recognised immediately in profit and loss.

Past service costs are recognised in profit or loss on the earlier of the date of the plan amendment or curtailment and the date that the Group recognises restructuring-related costs.

## 4.19 Provisions

Provisions are recognised when the Group has a present obligation as a result of a past event, it is probable that an outflow of resources embodying economic benefits will be required to settle the obligation, and a reliable estimate can be made of the amount of the obligation.

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 finance costs.

## 4.20 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 is 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 in profit or loss.

## 4.21 Share capital

Ordinary shares with discretionary dividends are classified as shareholders' equity.

Incremental costs directly attributable to the issue of new shares are shown in shareholders' equity as a deduction, net of tax, from the proceeds.



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## 4.22 Revenue recognition

Revenue includes all revenues from ordinary business activities. All ancillary income in connection with 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 collectability 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 fulfilment of the obligation to the customer.

### Sales of goods

Revenue from contracts with customers that is derived in connection with oil refinery, lube base oil refinery, aromatics and LAB, 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.

## 4.23 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.



# Notes to consolidated financial statements

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## 4.24 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.

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 38. Movements in the hedging reserve in shareholders' equity are shown in Note 37.



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## 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 significant similar critical terms as the hedged item, such as reference rate, reset dates, payment dates, maturities and notional amount. The Group does not hedge all of its loans, therefore the hedged item is identified as a proportion of the outstanding loans up to the notional amount of the swaps. Due to the critical terms match of the hedge items and the hedged instrument throughout the year, such hedged transactions are concluded to have 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.

## 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.



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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 related to the 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.

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.



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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.

The Group designates only the spot element of forward contracts and the financial instrument excluding the foreign currency basis spread as a hedging instrument. The change in fair value of the forward element of forward contracts and the foreign currency basis spread of financial instrument that relates to the hedged item is separately accounted for as a cost of hedging which is recognised in other comprehensive income and accumulated in a separate component of equity under cost of hedging reserve.

If the hedged item is transaction-related, the cost of hedging reserve accumulated in other comprehensive income is reclassified to profit or loss when the hedged item affects profit or loss. If the hedged item is time-period related, then the reserve accumulated in other comprehensive income is reclassified to profit or loss on systematic and rational basis. The reclassified amounts are recognised in profit or loss in the same line as the hedged item. If the hedged item is a non-financial item, then the reserve is removed directly from equity and included in the initial carrying amount of the recognised non-financial item. Furthermore, if the Group expects that some or all of the loss accumulated in cost of hedging reserve will not be recovered in the future, that amount is immediately reclassified to profit or loss.

## 4.25 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.



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## 4.26 Fair value measurement

Fair value is the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between buyer and seller (market participants) at the measurement date. The Group applies a quoted market price in an active market to measure their assets and liabilities that are required to be measured at fair value by relevant financial reporting standards. Except in case of no active market of an identical asset or liability or when a quoted market price is not available, the Group measures fair value using valuation technique that are appropriate in the circumstances and maximises the use of relevant observable inputs related to assets and liabilities that are required to be measured at fair value.

All assets and liabilities for which fair value is measured or disclosed in the financial statements are categorised within the fair value hierarchy into three levels based on categorise of input to be used in fair value measurement as follows:

Level 1 - Use of quoted market prices in an active market for such assets or liabilities

Level 2 - Use of other observable inputs for such assets or liabilities, whether directly or indirectly

Level 3 - Use of unobservable inputs such as estimates of future cash flows

At the end of each reporting period, the Group determines whether transfers have occurred between levels within the fair value hierarchy for assets and liabilities held at the end of the reporting period that are measured at fair value on a recurring basis.

## 5. Significant accounting judgements and estimates

The preparation of financial statements in conformity with financial reporting standards at times requires management to make subjective judgements and estimates regarding matters that are inherently uncertain. These judgements and estimates affect reported amounts and disclosures; and actual results could differ from these estimates. Significant judgements and estimates are as follows:

### Allowance for diminution in value of inventories

Net realisable value is the estimate of the selling price in the ordinary course of business, less applicable variable selling expenses. Allowance is made, where necessary, for obsolete, slow-moving and defective inventories.



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## Goodwill

The initial recognition and measurement of goodwill, and subsequent impairment testing, require management to make estimates of cash flows to be generated by the asset or the cash-generating units and to choose a suitable discount rate in order to calculate the present value of those cash flows.

## Investment in associate

The management of the Company determined that the Group has significant influence on PT Chandra Asri Petrochemical Tbk (CAP) and classified investment as an investment in associate, even though the Group only holds less than 20% of shares and voting rights. This is because the Company holds 15% of the shares in CAP through its subsidiary, PT TOP Investment Indonesia. The Company has delegated representatives to serve as the directors of CAP's Board of Commissioners and executives to serve as the members of CAP's Board of Directors. In addition, the Company also entered into the Feedstock Sale and Purchase Agreement with CAP.

## Lease

### *Determining the lease term with extension and termination options - The Group as a lessee*

In determining the lease term, the management is required to exercise judgement in assessing whether the Group is reasonably certain to exercise the option to extend or terminate the lease considering all relevant facts and circumstances that create an economic incentive for the Group to exercise either the extension or termination option.

### *Estimating the incremental borrowing rate - The Group as a lessee*

The Group cannot readily determine the interest rate implicit in the lease, therefore, the management is required to exercise judgement in estimating its incremental borrowing rate to discount lease liabilities. The incremental borrowing rate is the rate of interest that the Group would have to pay to borrow over a similar term, and with a similar security, the funds necessary to obtain an asset of a similar value to the right-of-use asset in a similar economic environment.

### *Post-employment benefits under defined benefit plans and other long-term employee benefits*

The obligation under the defined benefit plan and other long-term employee benefit plans is determined based on actuarial techniques. Such determination is made based on various assumptions, including discount rate, future salary increase rate, mortality rate and staff turnover rate.



# Notes to consolidated financial statements

Thai Oil Public Company Limited

For the year ended 31 December 2022

## 6. Related party transactions

During the years, the Group had significant business transactions with related parties. Such transactions, which are summarised below, arose in the ordinary course of business.

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 and/or the Company's management as a director
LABIX Co., Ltd.	Thailand	Indirect subsidiary and/or common directors and/or the Company's management as a director
Thai Lube Base Public Company Limited	Thailand	Subsidiary and/or common directors and/or the Company's management as a director
Thaioil Marine International Pte. Ltd. <sup>(1)</sup>	Republic of Singapore	Subsidiary and/or the Company's management as a director
PT TOP Investment Indonesia	Republic of Indonesia	Subsidiary and/or the Company's management as a director
PT Chandra Asri Petrochemical Tbk	Republic of Indonesia	Indirect associate and/or common directors
Thaioil Energy Services Co., Ltd.	Thailand	Subsidiary and/or common directors and/or the Company's management as a director
Thaioil Solvent Co., Ltd.	Thailand	Subsidiary and/or the Company's management as a director
TOPNEXT International Co., Ltd. <sup>(2)</sup>	Thailand	Indirect subsidiary and/or common directors
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



# Notes to consolidated financial statements

Thai Oil Public Company Limited

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Name of entities	Country of incorporation	Nature of relationships
JSKEM Private Limited	Republic of Singapore	Indirect subsidiary and/or the Company's management as a director
TSCHEM India Private Limited	Republic of India	Subsidiary of indirect subsidiary
TOP SPP Co., Ltd.	Thailand	Subsidiary and/or the Company's management as a director
Thaioil Ethanol Co., Ltd.	Thailand	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	Subsidiary of indirect subsidiary and/or the Company's management as a director
Ubon Bio Ethanol Public Co., Ltd.	Thailand	Other related and/or the Company's management as a director
Chaibadan Community Power Plant 1 Co., Ltd. <sup>(3)</sup>	Thailand	Joint venture of indirect subsidiary
Chaibadan Community Power Plant 2 Co., Ltd. <sup>(3)</sup>	Thailand	Joint venture of indirect subsidiary
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
PTT Digital Solutions Co., Ltd.	Thailand	Associate and/or common directors and/or the Company's management as a director
PTT Energy Solutions Co., Ltd. <sup>(4)</sup>	Thailand	Associate and/or the Company's management as a director



# Notes to consolidated financial statements

Thai Oil Public Company Limited

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Name of entities	Country of incorporation	Nature of relationships
Thai Petroleum Pipeline Co., Ltd.	Thailand	Associate and/or the Company's management as a director
Global Power Synergy Public Co., Ltd. <sup>(5)</sup>	Thailand	Other related and/or common directors
Sarn Palung Social Enterprise Company Limited	Thailand	Other related and/or the Company's management as director
PTT Oil and Retail Business Public Company Limited	Thailand	Subsidiary of the parent company and/or common directors
Business Services Alliance Co., Ltd.	Thailand	Subsidiary of the parent company and/or common directors
PTT Exploration and Production Public Company Limited	Thailand	Subsidiary of the parent company
PTT International Trading Pte. Ltd.	Republic of Singapore	Subsidiary of the parent company
PTT Treasury Center Co., Ltd.	Thailand	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
PTT Global Chemical Public Company Limited	Thailand	Subsidiary of the parent company
PTT International Trading London Ltd.	England	Subsidiary of the parent company
PTT International Trading USA Inc.	United States of America	Subsidiary of the parent company
PTT MEA Ltd.	United Arab Emirates	Indirect subsidiary of the parent company
Siam Management Holding Co., Ltd.	Thailand	Indirect subsidiary of the parent company
PTTEP International Limited	Thailand	Indirect subsidiary of the parent company
Orange Energy Limited	Thailand	Indirect subsidiary of the parent company
Energy Recovery Unit Co., Ltd.	Thailand	Indirect subsidiary of the parent company
Combined Heat and Power Producing Co., Ltd.	Thailand	Indirect subsidiary of the parent company



# Notes to consolidated financial statements

Thai Oil Public Company Limited

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Name of entities	Country of incorporation	Nature of relationships
Nuplex Resins (Vietnam) Pty Ltd.	Socialist Republic of Vietnam	Indirect subsidiary of the parent company
GC Maintenance & Engineering Co., Ltd.	Thailand	Indirect subsidiary of the parent company
NPC Safety and Environmental	Thailand	Indirect subsidiary of the parent company
Global Green Chemicals Public Company Limited	Thailand	Indirect subsidiary of the parent company
PTT Phenol Co., Ltd.	Thailand	Indirect subsidiary of the parent company
Vencorex (Thailand) Co., Ltd.	Thailand	Indirect subsidiary of the parent company
GC Polyols Co., Ltd.	Thailand	Indirect subsidiary of the parent company
GC Glycol Co., Ltd.	Thailand	Indirect subsidiary of the parent company
GC-M PTA Company Limited	Thailand	Indirect subsidiary of the parent company
PTT MCC Biochem Co., Ltd.	Thailand	Joint venture of subsidiary of the parent company
Thai Tank Terminal Ltd.	Thailand	Joint venture of subsidiary of the parent company
IRPC Polyol Co., Ltd.	Thailand	Joint venture of subsidiary of the parent company

<sup>(1)</sup> On 19 November 2021, the Company resolved to approve the closure of Thail Marine International Pte. Ltd., which the Subsidiary has already been liquidated and closed on 28 December 2022.

<sup>(2)</sup> On 3 October 2022, TOP Solvent Company Limited changed its name to "TOPNEXT International Company Limited".

<sup>(3)</sup> On 25 November 2022, the Company resolved to approve the closure of Chaibadan 1 Community Power Plant Company Limited and Chaibadan 2 Community Power Plant Company Limited, which are expected to be completed the liquidation within 2023.

<sup>(4)</sup> On 29 August 2022, the Company resolved to approve the closure of PTT Energy Solution Co., Ltd. The liquidation is expected to be completed within 2023.

<sup>(5)</sup> During the year 2022, the Company classified investments in associates to financial asset measured at fair value through other comprehensive income (Note 14).



# Notes to consolidated financial statements

Thai Oil Public Company Limited

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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

Summarised significant business transactions with related parties are as follows:

(Unit: Million Baht)

	Consolidated financial statements		Separate financial statements	
	2022	2021	2022	2021
<b>Parent company</b>				
Revenue from sale and services	-	5	-	-
Purchase of crude oil and feedstock	375,428	114,854	365,605	109,023
Disposal of investment in associated company	10,701	-	10,701	-
Other income	50	8	50	8
Other expenses	98	83	98	82
Purchase of assets	1	5	1	5



# Notes to consolidated financial statements

Thai Oil Public Company Limited

For the year ended 31 December 2022

(Unit: Million Baht)

	Consolidated financial statements		Separate financial statements	
	2022	2021	2022	2021
<b>Subsidiaries</b>				
<i>(eliminated from the consolidated financial statements)</i>				
Revenue from sale and services	-	-	116,581	74,371
Purchase of crude oil and feedstock	-	-	72,481	43,627
Interest income	-	-	99	95
Dividend income	-	-	2,004	22,061
Land lease income	-	-	67	45
Other income	-	-	1,679	1,581
Interest expense	-	-	1,159	1,051
Interest expense capitalised as cost of assets	-	-	3,989	3,688
Other expenses	-	-	1,488	2,690
Purchase of assets	-	-	187	187
<b>Associates</b>				
Revenue from sale and services	7,564	2,589	7,552	2,587
Purchase of crude oil and feedstock	922	535	-	507
Dividend income	-	-	710	1,024
Other income	6	14	6	14
Other expenses	378	410	378	398
Purchase of assets	32	46	30	44
<b>Joint ventures</b>				
Purchase of crude oil and feedstock	-	238	-	238
Interest expense	-	27	-	27



# Notes to consolidated financial statements

Thai Oil Public Company Limited

For the year ended 31 December 2022

(Unit: Million Baht)

	Consolidated financial statements		Separate financial statements	
	2022	2021	2022	2021
<b>Subsidiaries of the parent company</b>				
Revenue from sale and services	255,334	144,421	238,237	132,596
Purchase of crude oil and feedstock	16,736	10,883	12,988	5,956
Disposal of investment in associated company	11,346	-	11,346	-
Other income	14	11	14	11
Interest expense	111	101	111	79
Interest expense capitalised as cost of assets	47	12	47	12
Other expenses	109	152	52	101
Purchase of assets	22	12	22	12
<b>Other related parties</b>				
Revenue from sale and services	8,641	3	8,638	-
Purchase of crude oil and feedstock	3	28	-	13
Dividend income	68	-	56	-
Other income	10	-	10	-
Other expenses	22	1	-	-



# Notes to consolidated financial statements

Thai Oil Public Company Limited

For the year ended 31 December 2022

As at 31 December 2022 and 2021, the balances of the accounts between the Group and those related companies are as follows:

(Unit: Million Baht)

	Consolidated financial statements		Separate financial statements	
	2022	2021	2022	2021
<b>Trade receivables - related parties (Note 9)</b>				
Subsidiaries	-	-	8,188	8,252
Associates	-	593	-	593
Subsidiaries of the parent company	13,651	9,282	12,578	8,600
Other related parties	3,070	-	3,070	-
<b>Total</b>	<b>16,721</b>	<b>9,875</b>	<b>23,836</b>	<b>17,445</b>
<b>Other receivables - related parties</b>				
Parent company	1,605	5	1,599	5
Subsidiaries	-	-	204	232
Associates	35	30	35	30
Subsidiaries of the parent company	704	-	696	-
Other related party	3	-	3	-
<b>Total</b>	<b>2,347</b>	<b>35</b>	<b>2,537</b>	<b>267</b>
<b>Finance lease receivables - related parties</b>				
Subsidiaries	-	-	1,102	1,051
<b>Total</b>	<b>-</b>	<b>-</b>	<b>1,102</b>	<b>1,051</b>
<b>Other non-current assets - related parties</b>				
Subsidiaries	-	-	60	63
A subsidiary of the parent company	15	14	15	14
<b>Total</b>	<b>15</b>	<b>14</b>	<b>75</b>	<b>77</b>



# Notes to consolidated financial statements

Thai Oil Public Company Limited

For the year ended 31 December 2022

(Unit: Million Baht)

	Consolidated financial statements		Separate financial statements	
	2022	2021	2022	2021
<b>Trade payables - related parties</b>				
Parent company	71,121	13,525	70,332	12,941
Subsidiaries	-	-	5,845	4,013
An associate	83	-	-	-
Subsidiaries of the parent company	1,772	639	1,550	205
<b>Total</b>	<b>72,976</b>	<b>14,164</b>	<b>77,727</b>	<b>17,159</b>
<b>Other payables - related parties</b>				
Parent company	61	-	-	-
Subsidiaries	-	-	1,035	1,089
Associates	95	96	95	95
Subsidiaries of the parent company	8	20	5	19
Other related parties	2	-	-	-
<b>Total</b>	<b>166</b>	<b>116</b>	<b>1,135</b>	<b>1,203</b>
<b>Finance lease payables - related parties</b>				
Parent company	4	6	4	6
Subsidiaries	-	-	538	207
An associate	8	3	8	3
A subsidiary of the parent company	42	-	42	-
<b>Total</b>	<b>54</b>	<b>9</b>	<b>592</b>	<b>216</b>
<b>Derivative liability - related party</b>				
A subsidiary	-	-	11	67
<b>Total</b>	<b>-</b>	<b>-</b>	<b>11</b>	<b>67</b>



# Notes to consolidated financial statements

Thai Oil Public Company Limited

For the year ended 31 December 2022

(Unit: Million Baht)

	Consolidated financial statements		Separate financial statements	
	2022	2021	2022	2021
<b>Other non-current liabilities - related parties</b>				
Subsidiaries	-	-	611	924
An associate	-	7	-	7
A subsidiary of the parent company	3,091	2,192	3,091	2,192
Other related party	5	-	5	-
<b>Total</b>	<b>3,096</b>	<b>2,199</b>	<b>3,707</b>	<b>3,123</b>

## Short-term loans to related parties

Movements of short-term loans to related parties during year ended 31 December 2022 are as follows:

(Unit: Million Baht)

	Separate financial statements			
	Balance as at 1 January 2022	Increase	Decrease	Balance as at 31 December 2022
Subsidiaries	782	2,079	(782)	2,079
<b>Total</b>	<b>782</b>	<b>2,079</b>	<b>(782)</b>	<b>2,079</b>

Interest rates for the year ended 31 December 2022 and 2021 are charged based on BIBOR 3M plus certain fixed margin per annum and LIBOR 3M plus certain fixed margin per annum.



# Notes to consolidated financial statements

Thai Oil Public Company Limited

For the year ended 31 December 2022

## Long-term loans to related party

Movements of long-term loans to related party during the year ended 31 December 2022 are as follows:

(Unit: Million Baht)

	Separate financial statements			Balance as at 31 December 2022
	Balance as at 1 January 2022	Increase	Decrease	
A subsidiary	-	2,000	-	2,000
<b>Total</b>	<b>-</b>	<b>2,000</b>	<b>-</b>	<b>2,000</b>

On 30 September 2021, the Company entered into a loan agreement with a subsidiary in an amount not exceeding of Baht 2,500 million for the construction of the Expansion Project, with the first exercise of rights on 17 January 2022 with a fixed interest rate of not exceeding 2.5 percent per annum throughout the contract period. The agreement is effective for a period of 3.5 years from the first utilisation date.

## Short-term loans from related parties

Movements of short-term loans from related parties during the year ended 31 December 2022 are as follows:

(Unit: Million Baht)

	Separate financial statements			Balance as at 31 December 2022
	Balance as at 1 January 2022	Increase	Decrease	
Subsidiaries	2,135	-	(1,814)	321
<b>Total</b>	<b>2,135</b>	<b>-</b>	<b>(1,814)</b>	<b>321</b>

Interest rates for year ended 31 December 2022 and 2021 are charged based on BIBOR 1M plus certain fixed margin per annum.



# Notes to consolidated financial statements

Thai Oil Public Company Limited

For the year ended 31 December 2022

(Unit: Million Baht)

	Consolidated financial statements		Separate financial statements	
	2022	2021	2022	2021
<b>Long-term loans from related parties</b>				
Current portion of long-term loans from related parties				
A subsidiary	-	-	9,851	-
	-	-	9,851	-
<b>Long-term loans from related parties, net of current portion</b>				
A subsidiary	-	-	99,632	105,858
A subsidiary of the parent company	-	14,000	-	14,000
	-	14,000	99,632	119,858
<b>Total</b>	<b>-</b>	<b>14,000</b>	<b>109,483</b>	<b>119,858</b>

Movements of long-term loans from related parties during the year ended 31 December 2022 are as follows:

(Unit: Million Baht)

	Consolidated financial statements			
	Balance as at 1 January 2022	Increase	Decrease	Balance as at 31 December 2022
A subsidiary of the parent company	14,000	-	(14,000)	-
<b>Total</b>	<b>14,000</b>	<b>-</b>	<b>(14,000)</b>	<b>-</b>



# Notes to consolidated financial statements

Thai Oil Public Company Limited

For the year ended 31 December 2022

(Unit: Million Baht)

	Separate financial statements					Balance as at 31 December 2022
	Balance as at 1 January 2022	Increase	Decrease	Amortise of deferred financing fee	Effect of exchange rate	
A subsidiary	105,858	-	-	19	3,606	109,483
A subsidiary of the parent company	14,000	-	(14,000)	-	-	-
<b>Total</b>	<b>119,858</b>	<b>-</b>	<b>(14,000)</b>	<b>19</b>	<b>3,606</b>	<b>109,483</b>

On 21 May 2021, the Company passed a resolution to enter into a credit agreement with a subsidiary of the parent company for a period of not more than 18 months, with a market rate of not more than 2.5 percent per annum, in an amount not exceeding US Dollar 670 million, or approximately Baht 22,154 million, to support the Company's investment through a subsidiary in the Republic of Indonesia.

## Directors and management's benefits

During the years ended 31 December 2022 and 2021, the Group had employee benefit expenses payable to their directors and management as below.

(Unit: Million Baht)

	Consolidated financial statements		Separate financial statements	
	2022	2021	2022	2021
Short-term employee benefits	69	33	62	24
<b>Total</b>	<b>69</b>	<b>33</b>	<b>62</b>	<b>24</b>



# Notes to consolidated financial statements

Thai Oil Public Company Limited

For the year ended 31 December 2022

## Significant agreements with related parties

During the year ended 31 December 2022, 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 2025 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.

### 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.

### Master Agreement for Business Collaboration

The Company has entered into Master Agreement for Business Collaboration with a parent company in order to assign rules, conditions and guidelines for credit term extension of crude and condensate from 30 days to not exceeding 90 days. Term of the contract is 1 years which will be expired in 31 December 2022. The Company renewed the Service agreement with a subsidiary for another one year which will be expired on 31 December 2023.



# Notes to consolidated financial statements

Thai Oil Public Company Limited

For the year ended 31 December 2022

## Feedstock Supply Agreement

The Company has entered into Feedstock Supply Agreement with a parent company. A parent company will supply crude and condensate for the Company's refinery production including hire a vessels to deliver crude. Term of the contracts is 3 years which will be expired on 31 December 2024.

## P1 Collaboration Agreement

The Company and subsidiaries have entered into P1 Collaboration Agreement to assign a collaboration guideline between PTT group, the Company and one of the Company's subsidiaries for supplying crude and condensate, petroleum product and petrochemical product, hire vessel, and derivatives related to an export and import of crude and condensate petroleum products and petrochemical products, including managing time charter vessel of the Company. These services will be managed by a related party in order to get a maximum benefit among PTT Group. The term of the contracts is 3 years which will be expired on 31 December 2024.

## 7. Cash and cash equivalents

(Unit: Million Baht)

	Consolidated financial statements		Separate financial statements	
	2022	2021	2022	2021
Cash on hand	-	1	-	-
Deposits held at bank				
- savings and current accounts	33,589	24,390	24,800	19,295
- fixed deposit accounts less than 3 months	9,987	5,305	9,987	5,305
<b>Total</b>	<b>43,576</b>	<b>29,696</b>	<b>34,787</b>	<b>24,600</b>

As at 31 December 2022, the interest rates on deposits in saving accounts are 0.01% - 2.23% per annum (2021: 0.01% - 0.75% per annum).

As at 31 December 2022, the interest rates on deposits in fixed accounts less than 3 months are 0.13% - 4.44% per annum (2021: 0.13% to 0.60% per annum).



# Notes to consolidated financial statements

Thai Oil Public Company Limited

For the year ended 31 December 2022

As at 31 December 2022, the Group's deposit at financial institutions of Baht 2,761 million were used to pledge as collateral for credit facilities (2021: Baht 1,394 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.

## 8. Deposits at a financial institution used as collateral

As at 31 December 2022, deposits at a financial institution used as short-term collateral represented deposits of a subsidiary amounting to Baht 343 million (2021: Baht 328 million), which was used as collateral for credit facilities with a financial institution. The amount is restricted for long-term loans and interest repayment that will be due in the next period.

## 9. Trade receivables

(Unit: Million Baht)

	Consolidated financial statements		Separate financial statements	
	2022	2021	2022	2021
<b>Trade receivables - related parties</b>				
Age of outstanding debts by due date				
Not yet due	16,721	9,875	23,836	17,445
Less: Allowance for expected credit losses	-	-	-	-
<b>Total trade receivables - related parties, net</b>	<b>16,721</b>	<b>9,875</b>	<b>23,836</b>	<b>17,445</b>
<b>Trade receivables - non related parties</b>				
Age of outstanding debts by due date				
Not yet due	11,918	13,409	5,945	7,603
Past due				
Up to 3 months	122	131	-	-
3 - 6 months	1	-	-	-
<b>Total</b>	<b>12,041</b>	<b>13,540</b>	<b>5,945</b>	<b>7,603</b>
Less: Allowance for expected credit losses	(3)	-	-	-
<b>Total trade receivables - non related parties, net</b>	<b>12,038</b>	<b>13,540</b>	<b>5,945</b>	<b>7,603</b>
<b>Total</b>	<b>28,759</b>	<b>23,415</b>	<b>29,781</b>	<b>25,048</b>

The normal credit term granted by the Group ranges from 7 days to 120 days.



# Notes to consolidated financial statements

Thai Oil Public Company Limited

For the year ended 31 December 2022

## 10. Other receivables

(Unit: Million Baht)

	Consolidated financial statements		Separate financial statements	
	2022	2021	2022	2021
Other accounts receivable	3,928	399	4,095	612
Prepaid expenses	420	597	227	303
Current portion of long-term loans				
to savings co-operative of employees	13	13	13	13
<b>Total</b>	<b>4,361</b>	<b>1,009</b>	<b>4,335</b>	<b>928</b>

## 11. Inventories

(Unit: Million Baht)

	Consolidated financial statements					
	Cost		Reduce cost to net realisable value		Inventories - net	
	2022	2021	2022	2021	2022	2021
Crude oil and feedstock	16,713	14,983	-	-	16,713	14,983
Materials, spare parts and supplies	1,741	1,709	(13)	-	1,728	1,709
Finished and semi-finished oil products	13,557	9,963	(801)	(244)	12,756	9,719
Goods in transit						
Crude oil	23,988	12,700	-	-	23,988	12,700
Materials, spare parts and supplies	23	213	-	-	23	213
Finished and semi-finished oil products	135	252	-	-	135	252
<b>Total</b>	<b>56,157</b>	<b>39,820</b>	<b>(814)</b>	<b>(244)</b>	<b>55,343</b>	<b>39,576</b>



# Notes to consolidated financial statements

Thai Oil Public Company Limited

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(Unit: Million Baht)

	Separated financial statements					
	Cost		Reduce cost to net realisable value		Inventories - net	
	2022	2021	2022	2021	2022	2021
Crude oil and feedstock	15,583	13,295	-	-	15,583	13,295
Materials, spare parts and supplies	1,236	1,204	-	-	1,236	1,204
Finished and semi-finished oil products	9,468	6,308	(422)	(90)	9,046	6,218
Goods in transit						
Crude oil	23,988	12,700	-	-	23,988	12,700
Materials, spare parts and supplies	1	206	-	-	1	206
<b>Total</b>	<b>50,276</b>	<b>33,713</b>	<b>(422)</b>	<b>(90)</b>	<b>49,854</b>	<b>33,623</b>

As at 31 December 2022, the inventories as stated above included a legal reserve amounting to Baht 12,661 million (2021: Baht 7,850 million).

As at 31 December 2022, a subsidiary has pledged inventories of approximately Baht 287 million (2021: Baht 166 million) to secure short-term loans from financial institutions.

Inventories recognised as expenses in cost of sale of goods for the year ended 31 December 2022 and 2021 are as follows:

(Unit: Million Baht)

	Consolidated financial statements		Separate financial statements	
	2022	2021	2022	2021
Cost of sale of goods	407,781	229,532	455,340	270,129
Reduction of inventory to net realisable value	570	238	332	90
<b>Net</b>	<b>408,351</b>	<b>229,770</b>	<b>455,672</b>	<b>270,219</b>



# Notes to consolidated financial statements

Thai Oil Public Company Limited

For the year ended 31 December 2022

## 12. Assets held-for-sale and discontinued operations

In year 2020, the Company's Board of Directors approved the restructuring of the Company's marine transport business unit. On 19 November 2021, the Company passed a resolution to dissolve Thail Marine International Pte. Ltd. ("TOMI"), a subsidiary company. The Group reclassified the related assets and liabilities to assets discontinued operations.

Subsequently, on 25 April 2022 and 2 September 2022, the Company received a return of capital of totalling, US Dollar 9.1 million, or equivalent to Baht 308 million, from TOMI.

On 23 September 2022, the shareholders' meeting of TOMI had a resolution to report the liquidation which TOMI had already filed the registration of the liquidation report in September 2022. TOMI has already liquidated completion since 28 December 2022.

## 13. Investments in subsidiaries

### 13.1 Movements of investments in subsidiaries are as follows:

(Unit: Million Baht)

	Separate financial statements	
	2022	2021
At 1 January	41,014	14,045
Increase in investment	266	30,441
Disposal of investment	-	(3,195)
Classified as assets held-for-sales and discontinuing operations	-	(277)
At 31 December	41,280	41,014



# Notes to consolidated financial statements

Thai Oil Public Company Limited

For the year ended 31 December 2022

## Significant transactions during the year ended 31 December 2022

### Direct subsidiaries

Thaioil Treasury Center Co., Ltd.

On 27 April 2022, Thaioil Treasury Center Co., Ltd ("TTC"), a subsidiary company, has called up for additional shares totalling Baht 266 million. The Company has fully paid for the shares in April 2022.

### Indirect subsidiaries

TOP Ventures Hong Kong Limited (TVHK)

In September 2022, Thaioil Treasury Center Co., Ltd ("TTC"), a direct shareholder holding 99.99 percent of the total registered capital of TVHK, has called up for additional shares in the amount of US Dollar 0.25 million. TTC has fully paid for the shares in September 2022.

## Significant transactions during the year ended 31 December 2021

### Business combination

On 1 July 2021, TOP Solvent Company Limited (TS) acquired shares of JSKEM Private Limited (JSKEM), which operates the business of distributing solvents and chemicals in Singapore and India from existing shareholders of JSKEM representing 60% of shareholding interest. The Group fully paid for the shares and estimate additional cost of investment totalling US Dollar 1.2 million or equivalent to Baht 38.9 million. From business combination, the Group recognised the goodwill of Baht 19.9 million.

According to the Share Purchase Agreement, there may be an additional contingent consideration in an amount not exceeding US Dollar 0.52 million or equivalent to Baht 17 million, if total sales of JSKEM significantly meets the condition in an agreement.

The Group completed the fair value assessment of the net identifiable assets at the acquisition date and no adjustment to financial statements for the year ended 31 December 2021.











# Notes to consolidated financial statements

Thai Oil Public Company Limited  
For the year ended 31 December 2022

(Unit: Million Baht)

		Separate financial statements							
Country of incorporation	Nature of the business	Percentage of direct shareholding		Paid-up capital		Cost method		Dividend received during the year	
		2022 (percent)	2021 (percent)	2022	2021	2022	2021	2022	2021
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	26	290
- 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	-	-	-	-
Thaioil Power Co., Ltd.	Thailand Power and stream generation and distribution	-	-	-	-	-	-(2)	-	16,881
TOP SPP Co., Ltd.	Thailand Power and stream generation and distribution	99.99	99.99	3,500	3,500	3,500	3,500	-	-



# Notes to consolidated financial statements

Thai Oil Public Company Limited

For the year ended 31 December 2022

(Unit: Million Baht)

Separate financial statements									
Country of incorporation	Nature of the business	Percentage of direct shareholding		Paid-up capital		Cost method		Dividend received during the year	
		2022 (percent)	2021 (percent)	2022	2021	2022	2021	2022	2021
Thaioil Treasury Center Co., Ltd. and its subsidiaries	Treasury center for the Group's business	99.99	99.99	956	690	956	690	164	150
- Subsidiaries									
TOP Ventures Company Limited	Investment in venture capital and/or start-up business	99.99	99.99	19	19	-	-	-	-
TOP Ventures	Investment in venture capital and/or start-up business	100.00	100.00	557	480	-	-	-	-
Hong Kong Limited and its subsidiaries									
TOP Ventures	Investment in venture capital and/or start-up business	100.00	100.00	326	326	-	-	-	-
Hong Kong Limited and its subsidiaries									
TOP Ventures	Investment in venture capital and/or start-up business	100.00	100.00	29,944	29,944	29,944	29,944	-	-
Hong Kong Limited and its subsidiaries									
TOP Ventures	Investment in venture capital and/or start-up business	100.00	100.00	29,944	29,944	29,944	29,944	-	-
Hong Kong Limited and its subsidiaries									
TOP Ventures	Investment in venture capital and/or start-up business	100.00	100.00	29,944	29,944	29,944	29,944	-	-
Hong Kong Limited and its subsidiaries									
TOP Ventures	Investment in venture capital and/or start-up business	100.00	100.00	29,944	29,944	29,944	29,944	-	-
Hong Kong Limited and its subsidiaries									
TOP Ventures	Investment in venture capital and/or start-up business	100.00	100.00	29,944	29,944	29,944	29,944	-	-
Hong Kong Limited and its subsidiaries									
TOP Ventures	Investment in venture capital and/or start-up business	100.00	100.00	29,944	29,944	29,944	29,944	-	-
Hong Kong Limited and its subsidiaries									
TOP Ventures	Investment in venture capital and/or start-up business	100.00	100.00	29,944	29,944	29,944	29,944	-	-
Hong Kong Limited and its subsidiaries									
TOP Ventures	Investment in venture capital and/or start-up business	100.00	100.00	29,944	29,944	29,944	29,944	-	-
Hong Kong Limited and its subsidiaries									
TOP Ventures	Investment in venture capital and/or start-up business	100.00	100.00	29,944	29,944	29,944	29,944	-	-
Hong Kong Limited and its subsidiaries									
TOP Ventures	Investment in venture capital and/or start-up business	100.00	100.00	29,944	29,944	29,944	29,944	-	-
Hong Kong Limited and its subsidiaries									
TOP Ventures	Investment in venture capital and/or start-up business	100.00	100.00	29,944	29,944	29,944	29,944	-	-
Hong Kong Limited and its subsidiaries									
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Hong Kong Limited and its subsidiaries									
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Hong Kong Limited and its subsidiaries									
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Hong Kong Limited and its subsidiaries									
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Hong Kong Limited and its subsidiaries									
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Hong Kong Limited and its subsidiaries									
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Hong Kong Limited and its subsidiaries									
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TOP Ventures	Investment in venture capital and/or start-up business	100.00	100.00	29,944	29,944	29,944	29,944	-	-
Hong Kong Limited and its subsidiaries									
TOP Ventures	Investment in venture capital and/or start-up business	100.00	100.00	29,944	29,944	29,944	29,944	-	-
Hong Kong Limited and its subsidiaries									
TOP Ventures	Investment in venture capital and/or start-up business	100.00	100.00	29,944	29,944	29,944	29,944	-	-
Hong Kong Limited and its subsidiaries									
TOP Ventures	Investment in venture capital and/or start-up business	100.00	100.00	29,944	29,944	29,944	29,944	-	-
Hong Kong Limited and its subsidiaries									
TOP Ventures	Investment in venture capital and/or start-up business	100.00	100.00	29,944	29,944	29,944	29,944	-	-
Hong Kong Limited and its subsidiaries									
TOP Ventures	Investment in venture capital and/or start-up business	100.00	100.00	29,944	29,944	29,944	29,944	-	-
Hong Kong Limited and its subsidiaries									
TOP Ventures	Investment in venture capital and/or start-up business	100.00	100.00	29,944	29,944	29,944	29,944	-	-
Hong Kong Limited and its subsidiaries									
TOP Ventures	Investment in venture capital and/or start-up business	100.00	100.00	29,944	29,944	29,944	29,944	-	-
Hong Kong Limited and its subsidiaries									
TOP Ventures	Investment in venture capital and/or start-up business	100.00	100.00	29,944	29,944	29,944	29,944	-	-
Hong Kong Limited and its subsidiaries									
TOP Ventures	Investment in venture capital and/or start-up business	100.00	100.00	29,944	29,944	29,94			

(1) The Company has completed the liquidation process on 28 December 2022.

(2) During the year 2021, the Company carried out an entire business transfer from Thaioil Power Co., Ltd. ("TP"). TP paid dividends and completed the liquidation process.

(3) The balance is below Baht 1 million.



# Notes to consolidated financial statements

Thai Oil Public Company Limited

For the year ended 31 December 2022

## 13.3 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 29 for transactions with non-controlling interests.

Summarised statement of financial position

(Unit: Million Baht)

	LABIX Co., Ltd.		Other individually immaterial subsidiaries		Total	
	2022	2021	2022	2021	2022	2021
<b>As at 31 December</b>						
Non-controlling interest percentage	25	25				
Current assets	4,489	3,248				
Non-current assets	9,888	9,938				
Current liabilities	(3,415)	(2,681)				
Non-current liabilities	(3,905)	(5,086)				
<b>Net assets</b>	<b>7,057</b>	<b>5,419</b>				
Carrying amount of non-controlling interests	1,764	1,355	859	858	2,623	2,213



# Notes to consolidated financial statements

Thai Oil Public Company Limited

For the year ended 31 December 2022

## Summarised statement of comprehensive income

(Unit: Million Baht)

	LABIX Co., Ltd.		Other individually immaterial subsidiaries		Total	
	2022	2021	2022	2021	2022	2021
<b>For the year ended 31 December</b>						
Revenue from sales and services	30,912	16,744				
Profit	1,638	1,228				
Other comprehensive income	-	-				
<b>Total comprehensive income</b>	<b>1,638</b>	<b>1,228</b>				
Profit allocated to non-controlling interests	409	307	29	118	438	425
Total comprehensive income allocated to non-controlling interests	409	307	32	116	441	423

(Unit: Million Baht)

	LABIX Co., Ltd.	
	2022	2021

## For the year ended 31 December

### Summarised statement of cash flows

Cash flows from operating activities	1,227	1,148
Cash flows used in investing activities	(45)	(15)
Cash flows used in financing activities	(1,479)	(549)
<b>Net increase (decrease) in cash and cash equivalents</b>	<b>(297)</b>	<b>584</b>
Cash and cash equivalents at the beginning of the year	652	65
Exchange gains on cash and cash equivalents	14	3
<b>Cash and cash equivalents at the end of the year</b>	<b>369</b>	<b>652</b>



# Notes to consolidated financial statements

Thai Oil Public Company Limited

For the year ended 31 December 2022

## 14. Investments in joint ventures and associates

14.1 Movements of investments in joint ventures and associates are as follows:

(Unit: Million Baht)

	Consolidated financial statements		Separate financial statements	
	2022	2021	2022	2021
Net book value at beginning of year	55,412	24,521	23,272	23,179
Increase in investment	3	29,920	-	-
Decrease in investment	(1)	-	-	-
Disposal of investment in associates	(11,835)	(133)	(11,560)	-
Share of profit (loss) of joint ventures and associates	(512)	1,675	-	-
Dividend income	(765)	(1,103)	-	-
Exchange differences on translation	1,051	719	-	-
Share of other comprehensive expense of associates, net of tax	209	476	-	-
Share gain (loss) from the change in the net assets in an associate	2	(2)	-	-
Investment increase from entire business transfer	-	-	-	93
Loss on impairment	-	-	(11)	-
Investment reclassification	(10,961)	(661)	(10,719)	-
<b>Net book value at ending of year</b>	<b>32,603</b>	<b>55,412</b>	<b>982</b>	<b>23,272</b>



# Notes to consolidated financial statements

Thai Oil Public Company Limited

For the year ended 31 December 2022

## Significant transactions during the year ended 31 December 2022

### Disposal of investment and decrease in shareholding of Global Power Synergy Public Company Limited ("GPSC")

On 7 April 2022, the Company's Annual General Meeting of Shareholders passed a resolution to approve the sale of ordinary shares of Global Power Synergy Public Company Limited ("GPSC") with a par value of Baht 10 per share to PTT Public Company Limited ("PTT"), the Company's major shareholder and/or Siam Management Holding Co., Ltd. ("SMH"), PTT's related party, in the aggregate amount of 304 million shares, representing 10.78 percent of the total issued and paid-up shares of GPSC, subject to the terms and conditions of the Share Sale Transaction as specified in the share purchase agreement.

On 6 June 2022 and 7 June 2022, the Company disposed of parts of its investment in GPSC, with 5.55 percent of all issued and paid-up shares of GPSC sold to SMH and 5.23 percent to PTT, or a total of 10.78 percent of the total issued and paid-up shares of GPSC, totalling Baht 22,047 million. The Group and the Company recognised gain from disposal of investment in an associate in the consolidated and separate statements of income of Baht 10,038 million and Baht 10,487 million, respectively.

After the disposal of this investment in GPSC, the Company's remaining shareholding was 10 percent of the total issued and paid-up shares of GPSC and the Company reclassified this investment from investments in associates to financial assets measured at fair value through other comprehensive income. The Group and Company recognised gain from reclassification of investment in the consolidated and separate statements of income amounting to Baht 7,297 million and Baht 7,539 million, respectively.

The objective of the disposal of investment was to use the proceeds generated primarily to make repayment of loans from PTT under the credit facility agreement with PTT and the loans from commercial banks provided as financial assistance in the form of bridging loans and to finance the Company's investment in PT Chandra Asri Petrochemical Tbk.

### Dissolution of PTT Energy Solutions Company Limited ("PTTES")

On 29 August 2022, Extraordinary General Meeting of Shareholders of PTT Energy Solutions Company Limited ("PTTES") passed a resolution to approve the dissolution of PTTES, which is an associate company with 20 percent owned by the Company.



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On 29 December 2022, PTES completed the registration of dissolution with the Ministry of Commerce and is in the process of liquidation. The dissolution of PTES is aligned with PTT Group's business restructuring policy and does not have any material effect to the operation of the Company.

## Indirect associates

### PT Chandra Asri Petrochemical Tbk

In September 2021, PT TOP Investment Indonesia ("TII"), a subsidiary of the Group, entered into the share acquisition of PT Chandra Asri Petrochemical Tbk ("CAP"), a registered company in the Republic of Indonesia. The Group has 15% of shareholding interest in CAP.

Furthermore, the Group will acquire an additional 0.38% of shareholding interest in CAP with the contingent considerations not exceeding of US Dollar 3.9 million or not exceeding US Dollar 270 million which will depend on the condition of the approval for the final investment decision on the petrochemical plant construction project by PT Chandra Asri Perkasa (CAP2), a subsidiary of CAP within 5 years from the date of investment acquisition.

On 5 August 2022, the Extraordinary General Meeting of Shareholders of CAP passed a resolution to approve the stock split at a ratio of 1:4, resulting in an increase in the Company's shares from 3,244 million shares to 12,976 million shares.

## Indirect joint ventures

### Chaibadan Community Power Plant 1 Co., Ltd. and Chaibadan Community Power Plant 2 Co., Ltd.

On 25 November 2022, the extraordinary meeting of Chaibadan Community Power Plant 1 Co., Ltd. ("CCPP1") and Chaibadan Community Power Plant 2 Co., Ltd. ("CCPP2") have approved the dissolution of the companies and the companies have registered the dissolution with Ministry of Commerce on 25 November 2022. At present, CCPP1 and CCPP2 entered into the liquidation process and have not completed the liquidation process. These dissolutions has no significant effect to the Group's operation.



# Notes to consolidated financial statements

Thai Oil Public Company Limited

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## Significant transaction during the year ended 31 December 2021

### Acquisition of investment in an associate - PT Chandra Asri Petrochemical Tbk ("CAP")

In September 2021, PT TOP Investment Indonesia (TII), a subsidiary of the Group, entered into the share acquisition of PT Chandra Asri Petrochemical Tbk (CAP), a registered company in the Republic of Indonesia with the total consideration of US Dollar 913.3 million or equivalent to Baht 29,798.4 million. The Group has 15% of shareholding interest in CAP. The Group paid share capital and estimated the contingent consideration for future investments of US Dollar 916.6 million or equivalent to Baht 29,910.6 million.

The Group completed the fair value assessment of the net identifiable assets at the acquisition date and no adjustment to financial statements for the year ended 31 December 2021.

### Disposal of investment and decrease in shareholding of Ubon Bio Ethanol Public Company Limited ("UBE")

On 27 September 2021, Ubon Bio Ethanol Public company Limited (UBE), entered into the Initial Public Offering (IPO) of its ordinary shares. Thairoil Ethanol Company Limited (TET), a subsidiary of the Group partially disposed shares of UBE totalling Baht 234.8 million, and consequently decreased its percentage of shareholding of TET from 21.28% to 12.39%. The Group reclassified its investments in UBE from investment in an associate to financial assets measured at fair value through other comprehensive income. The Group recognised gain from disposed totalling Baht 101.6 million and gain from changes reclassification of an investment totalling Baht 503.8 million in the statement of income.



# Notes to consolidated financial statements

Thai Oil Public Company Limited  
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## 14.2 Investments in joint ventures

The details of joint ventures are as follows:

(Unit: Million Baht)

Consolidated financial statements									
Country of incorporation	Nature of the business	Ownership interest held by the Group		Cost method		Equity method		Dividend received during the year	
		2022	2021	2022	2021	2022	2021	2022	2021
		(percent)	(percent)						
Chaibadan Community Power Plant 1 Co., Ltd.	Power generation and distribution	50.99	50.99	-( <sup>(1)</sup> )	1	-( <sup>(1)</sup> )	1	-	-
Chaibadan Community Power Plant 2 Co., Ltd.	Power generation and distribution	50.99	50.99	-( <sup>(1)</sup> )	1	-( <sup>(1)</sup> )	1	-	-
Total investments in joint ventures				-( <sup>(1)</sup> )	2	-( <sup>(1)</sup> )	2	-	-

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.



# Notes to consolidated financial statements

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## 14.3 Investments in associates

The details of associates are as follows:

(Unit: Million Baht)

Consolidated financial statements										
	Country of incorporation	Nature of the business	Ownership interest held by the Group		Cost method		Equity method		Dividend received during the year	
			2022	2021	2022	2021	2022	2021	2022	2021
			(percent)	(percent)						
PTT Digital Solutions Co., Ltd.	Thailand	Provide information technology and computer service activities	20.00	20.00	30	30	675	585	25	26
PTT Energy Solutions Co., Ltd.	Thailand	Provide technical and operational services	20.00	20.00	19	30	21	37	4	-
Global Power Synergy Public Company Limited	Thailand	Power, steam and water generation and distribution for industries	-(2)	20.78	-(2)	22,279	-(2)	23,314	586	879
Ubon Bio Ethanol Public Company Limited	Thailand	Ethanol products manufacturing and distribution	-	-(1)	-	-(1)	-	-(1)	-	79
Thai Petroleum Pipeline Co., Ltd.	Thailand	Oil transportation through the pipeline	9.19	9.19	933	933	983	940	95	119
PT Chandra Asri Petrochemical Tbk	Republic of Indonesia	Chemical products manufacturing and distribution	15.00	15.00	29,920	29,920	30,924	30,536	58	-
Total investments in associates					30,902	53,192	32,603	55,412	768	1,103

(1) During 2021, the Group classified this investment in an associate as financial asset measured at fair value through other comprehensive income.

(2) During 2022, the Group classified this investment in an associate as financial asset measured at fair value through other comprehensive income.



# Notes to consolidated financial statements

Thai Oil Public Company Limited  
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(Unit: Million Baht)

		Country of incorporation	Nature of the business	Separate financial statements				
				Ownership interest held by the Group		Cost method		Dividend received during the year
				2022 (percent)	2021 (percent)	2022	2021	
PTT Digital Solutions Co., Ltd.	Thailand	Thailand	Provide information technology and computer service activities	20.00	20.00	30	30	25
PTT Energy Solutions Co., Ltd.	Thailand	Thailand	Provide technical and operational services	20.00	20.00	19	30	4
Global Power Synergy Public Company Limited	Thailand	Thailand	Power, steam and water generation and distribution for industries	-( <sup>(1)</sup> )	20.78	-( <sup>(1)</sup> )	22,279	586
Thai Petroleum Pipeline Co., Ltd.	Thailand	Thailand	Oil transportation through the pipeline	9.19	9.19	933	933	95
Total investments in associates						982	23,272	710
								1,024

As at 31 December 2022, the fair value of the Group and the Company's interest in PT Chandra Asri Petrochemical Tbk listed in the Stock Exchange of the Republic of Indonesia was Indonesian Rupiah 33,350 billion or equivalent to Baht 73,847 million (2021: Indonesian Rupiah 23,764 billion or equivalent to Baht 55,771 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> During the year 2022, the Group classified investment in associate as financial assets measured at fair value through other comprehensive income.



# Notes to consolidated financial statements

Thai Oil Public Company Limited

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## 14.4 Summarised financial information for associates

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 only 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

(Unit: Million Baht)

	PT Chandra Arsi Petrochemical Tbk	
	2022	2021
Current assets	98,677	98,789
Non-current assets	70,584	67,979
Current liabilities	(20,937)	(31,017)
Non-current liabilities	(51,102)	(38,132)
<b>Net assets</b>	<b>97,222</b>	<b>97,619</b>
Shareholding percentage (%)	15.00	15.00
Share of net assets	14,583	14,643
Adjustment and elimination entries	16,341	15,893
<b>Carrying amounts of associates based on equity method</b>	<b>30,924</b>	<b>30,536</b>

### Summarised statement of comprehensive income

(Unit: Million Baht)

	PT Chandra Arsi Petrochemical Tbk	
	2022	2021*
Revenue	83,678	29,232
Loss	(5,116)	(524)
Other comprehensive income	1,298	(89)
<b>Total comprehensive income</b>	<b>(3,818)</b>	<b>(613)</b>

\* Information for the period from September to December 2021 in which the Group started investing in associate and recognising share of profit and loss under the equity method.



# Notes to consolidated financial statements

Thai Oil Public Company Limited

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## Reconciliation of summarised financial information

Reconciliation of the summarised financial information presented to the carrying amount of its interest in associates.

(Unit: Million Baht)

	Global Power Synergy Public Company Limited		PT Chandra Arsi Petrochemical Tbk	
	2022	2021	2022	2021
Group's interest in net assets of associates				
at 1 January	23,314	22,186	30,536	-
Addition of investment	-	-	3	29,920
Share of gain (loss) from investments				
in associates	58	1,521	(805)	(90)
Share of other comprehensive income				
from associates, net of income tax	8	488	195	(13)
Currency translation differences	-	-	1,051	719
Dividends received	(586)	(879)	(56)	-
Deficit from the change in the net				
assets of an associate	2	(2)	-	-
Disposal of investment in an associate	(11,835)	-	-	-
Reclassification of investment	(10,961)	-	-	-
Carrying amount of interest in				
associates at 31 December	-	23,314	30,924	30,536



# Notes to consolidated financial statements

Thai Oil Public Company Limited

For the year ended 31 December 2022

## 14.5 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.

(Unit: Million Baht)

	Individually immaterial joint ventures	
	2022	2021
Aggregate carrying amount of individually immaterial joint ventures	-	2
Aggregate carrying amount of individually immaterial associates	1,679	1,562
The total amount of the group's share in associates		
Profit	235	197
Other comprehensive income	7	-
Total comprehensive income	242	197



# Notes to consolidated financial statements

Thai Oil Public Company Limited

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## 15. Investment properties

Investment properties of the Group is land and land improvement.

(Unit: Million Baht)

	Consolidated financial statements		Separate financial statements	
	2022	2021	2022	2021
<b>As at 1 January</b>				
Cost	103	103	1,124	1,141
<u>Less</u> Provision for impairment	-	-	-	-
Book value	103	103	1,124	1,141
<b>For the year ended 31 December</b>				
Beginning book value	103	103	1,124	1,141
Transfer to property, plant and equipment (Note 16)	-	-	-	(17)
Ending book value	103	103	1,124	1,124
<b>As at 31 December</b>				
Cost	103	103	1,124	1,124
<u>Less</u> Provision for impairment	-	-	-	-
Book value	103	103	1,124	1,124
Fair value	458	458	2,626	2,626



# Notes to consolidated financial statements

Thai Oil Public Company Limited

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## 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 was higher (lower).</p>



# Notes to consolidated financial statements

Thai Oil Public Company Limited

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Amounts recognised in profit and loss that related to investment property are as follows:

(Unit: Million Baht)

	Consolidated financial statements		Separate financial statements	
	2022	2021	2022	2021
For the year ended 31 December				
Rental income	8	8	44	43



# Notes to consolidated financial statements

Thai Oil Public Company Limited  
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## 16. Property, plant and equipment

Movements of property, plant and equipment for the years ended 31 December 2022 and 2021 are summarised below.

(Unit: Million Baht)

Consolidated financial statements											
	Land	Buildings	Leasehold improvements	Refinery plant and equipment	Petro-chemical plants	Power plants	Machinery, equipment and plant	Furniture, fixtures, office equipment and others	Vehicles	Construction in progress	Total
Cost											
At 1 January 2021	7,339	4,709	212	110,570	36,052	17,697	7,259	1,010	14	76,174	261,036
Additions	8	-	-	62	6	-	29	9	-	38,747	38,861
Disposals and write-off	-	-	-	-	(18)	-	(8)	(2)	-	-	(28)
Transfers in (out)	-	359	-	5,797	82	5	46	51	-	(6,353)	(13)
Decommissioning	-	-	-	-	-	-	(2)	-	-	-	(2)
Exchange differences	-	11	-	-	-	-	62	-	-	-	73
At 31 December 2021	7,347	5,079	212	116,429	36,122	17,702	7,386	1,068	14	108,568	299,927
Additions	11	6	-	260	3	-	297	15	2	33,839	34,433
Disposals and write-off	-	-	-	(1)	-	-	(7)	(5)	-	-	(13)
Transfers in (out)	-	24	-	1,346	10	50	131	24	-	(1,618)	(33)
Exchange differences	-	-	-	-	-	-	(6)	-	-	-	(6)
At 31 December 2022	7,358	5,109	212	118,034	36,135	17,752	7,801	1,102	16	140,789	334,308



# Notes to consolidated financial statements

Thai Oil Public Company Limited  
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(Unit: Million Baht)

## Consolidated financial statements

### Accumulated depreciation

	Land	Buildings	Leasehold improvements	Refinery plant and equipment	Petro-chemical plants	Power plants	Machinery, equipment and plant	Furniture, fixtures, office equipment and others	Vehicles	Construction in progress	Total
At 1 January 2021	-	1,608	40	81,561	19,927	7,495	4,347	822	11	-	115,811
Depreciation charged during the year	-	253	7	3,033	1,507	530	326	58	2	-	5,716
Depreciation on disposals and write-off	-	-	-	-	(14)	-	(6)	(2)	-	-	(22)
Exchange differences	-	2	-	-	-	-	21	-	-	-	23
At 31 December 2021	-	1,863	47	84,594	21,420	8,025	4,688	878	13	-	121,528
Depreciation charged during the year	-	233	8	2,944	1,309	767	330	51	1	-	5,643
Depreciation on disposals and write-off	-	-	-	(1)	-	-	(8)	(4)	(1)	-	(14)
Transfers in	-	2	-	-	-	-	-	-	-	-	2
Exchange differences	-	-	-	-	-	-	(1)	-	-	-	(1)
At 31 December 2022	-	2,098	55	87,537	22,729	8,792	5,009	925	13	-	127,158



# Notes to consolidated financial statements

Thai Oil Public Company Limited  
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(Unit: Million Baht)

## Consolidated financial statements

	Land	Buildings	Leasehold improvements	Refinery plant and equipment	Petro-chemical plants	Power plants	Machinery, equipment and plant	Furniture, fixtures, office equipment and others	Vehicles	Construction in progress	Total
<b>Impairment allowance</b>											
At 31 December 2021	-	-	-	-	-	-	-	-	-	-	-
Addition	-	-	-	-	674	-	-	-	-	-	674
At 31 December 2022	-	-	-	-	674	-	-	-	-	-	674

## Net book value

At 31 December 2021	7,347	3,216	165	31,835	14,702	9,677	2,698	190	1	108,568	178,399
At 31 December 2022	7,358	3,011	157	30,497	12,732	8,960	2,792	177	3	140,789	206,476

## Depreciation for the year

2021 (Baht 5,563 million included in manufacturing cost, and the balance in selling and administrative expenses)

5,716

2022 (Baht 5,508 million included in manufacturing cost, and the balance in selling and administrative expenses)

5,643



# Notes to consolidated financial statements

Thai Oil Public Company Limited

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(Unit: Million Baht)

## Separate financial statements

### Cost

	Land	Buildings	Refinery plant and equipment	Power plants	Machinery, equipment and plant equipment	Furniture, fixtures, office equipment and others	Vehicles	Construction in progress	Total
At 1 January 2021	4,924	3,402	102,192	5,784	1,565	628	1	76,219	194,715
Additions	-	-	62	-	6	5	-	37,157	37,230
Transfers in (out)	-	338	5,780	-	4	48	-	(6,170)	-
Transfer from investment property	17	-	-	-	-	-	-	-	17
At 31 December 2021	4,941	3,740	108,034	5,784	1,575	681	1	107,206	231,962
Additions	-	-	236	-	13	7	-	32,196	32,452
Disposals and write-off	-	-	(1)	-	-	-	-	-	(1)
Transfers in (out)	-	7	977	-	-	23	-	(1,038)	(31)
At 31 December 2022	4,941	3,747	109,246	5,784	1,588	711	1	138,364	264,382

### Accumulated depreciation

At 1 January 2021	-	841	74,380	5,051	1,264	513	1	-	82,050
Depreciation charged during the year	-	197	2,708	243	58	49	-	-	3,255
Adjustment from entire business transfer	-	-	-	22	2	-	-	-	24
At 31 December 2021	-	1,038	77,088	5,316	1,324	562	1	-	85,329
Depreciation charged during the year	-	176	2,843	264	60	41	-	-	3,384
Depreciation on disposals and write-off	-	-	(1)	-	-	-	-	-	(1)
At 31 December 2022	-	1,214	79,930	5,580	1,384	603	1	-	88,712



# Notes to consolidated financial statements

Thai Oil Public Company Limited  
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(Unit: Million Baht)

## Separate financial statements

### Impairment allowance

At 31 December 2021	-	-	-	-	-	-	-	-	-
At 31 December 2022	-	-	-	-	-	-	-	-	-

### Net book value

At 31 December 2021	4,941	2,702	30,946	468	251	119	-	107,206	146,633
At 31 December 2022	4,941	2,533	29,316	204	204	108	-	138,364	175,670

### Depreciation for the year

2021 (Baht 3,135 million included in manufacturing cost, and the balance in selling and administrative expenses)

3,255

2022 (Baht 3,278 million included in manufacturing cost, and the balance in selling and administrative expenses)

3,384

As at 31 December 2022, the Group had assets under construction for The Clean Fuel Project. The construction has been financed with loans. Borrowing costs amounting to Baht 4,047 million were capitalised during the year ended 31 December 2022 (the Company only: Baht 4,463 million). The weighted average rate of 2.70% to 5.47% per annum (The Company only: 3.34% to 5.99% per annum) has been used to determine the amount of borrowing costs eligible for capitalisation. The borrowing costs were included in 'Additions' during the year.

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 2022, were Baht 82,688 million (2021: Baht 56,901 million) and Baht 54,106 million (2021: Baht 47,651 million), respectively.

As at 31 December 2022, certain subsidiaries mortgaged their land, building, petrochemical plant and machines as collateral for credit facilities. The book value of land, building, petrochemical plant, and machines amounted to Baht 15,935 million (2021: Baht 16,769 million).



# Notes to consolidated financial statements

Thai Oil Public Company Limited

For the year ended 31 December 2022

## 17. Leases

### The Group as a lessee

The Group has lease contracts for assets used in its operations.

#### a) Right-of-use assets

Movements of right-of-use assets for the years ended 31 December 2022 and 2021 are summarised below:

(Unit: Million Baht)

	Consolidated financial statements					
	Land	Buildings	Equipment	Oil tankers	Motor vehicles	Total
1 January 2021	12,720	97	36	1,772	118	14,743
Additions	-	1	85	3,930	2	4,018
Disposals and write-off	-	-	(8)	-	-	(8)
Lease modification	(2)	-	-	(69)	(1)	(72)
Exchange differences	2	1	2	-	-	5
Depreciation for the year	(413)	(55)	(37)	(1,006)	(44)	(1,555)
31 December 2021	12,307	44	78	4,627	75	17,131
Additions	68	171	68	9,107	43	9,457
Lease modification	-	-	-	(841)	(1)	(842)
Exchange differences	-	-	(1)	-	-	(1)
Depreciation for the year	(429)	(66)	(48)	(1,120)	(44)	(1,707)
31 December 2022	11,946	149	97	11,773	73	24,038



# Notes to consolidated financial statements

Thai Oil Public Company Limited

For the year ended 31 December 2022

(Unit: Million Baht)

	Separate financial statements					
	Land	Buildings	Equipment	Oil tankers	Motor vehicles	Total
1 January 2021	11,690	25	24	1,772	99	13,610
Additions	11	4	52	3,930	5	4,002
Lease modification	-	-	-	(69)	-	(69)
Depreciation for the year	(386)	(23)	(24)	(1,006)	(38)	(1,477)
31 December 2021	11,315	6	52	4,627	66	16,066
Additions	289	73	50	9,107	40	9,559
Lease modification	103	-	-	(841)	(1)	(739)
Depreciation for the year	(404)	(29)	(28)	(1,120)	(39)	(1,620)
31 December 2022	11,303	50	74	11,773	66	23,266

The movements of right-of-use assets exclude the right-of-use assets which are classified as investment property which is presented in Note 15.

## b) Lease liabilities

(Unit: Million Baht)

	Consolidated financial statements		Separate financial statements	
	2022	2021	2022	2021
Lease payments	32,619	24,688	32,924	24,518
Less: Deferred interest expenses	(10,111)	(9,306)	(10,318)	(9,295)
Total	22,508	15,382	22,606	15,223
Less: Portion due within one year	(1,401)	(1,247)	(1,342)	(1,187)
Lease liabilities - net of current portion	21,107	14,135	21,264	14,036



# Notes to consolidated financial statements

Thai Oil Public Company Limited

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Movements of the lease liability account during the years ended 31 December 2022 and 2021 are summarised below:

(Unit: Million Baht)

	Consolidated financial statements		Separate financial statements	
	2022	2021	2022	2021
Balance at beginning of year	15,382	12,126	15,223	11,936
Additions	9,458	4,001	9,540	3,959
Interest expenses	658	546	653	537
Repayments	(1,869)	(1,596)	(1,793)	(1,537)
Lease modification	(917)	(73)	(815)	(62)
Unrealised loss (gain) on exchange	(204)	393	(202)	390
Sales of a subsidiary	-	(15)	-	-
Balance at end of year	22,508	15,382	22,606	15,223

A maturity analysis of lease payments is disclosed in Note 37.1.3 under the liquidity risk.

## c) Expenses relating to leases that are recognised in profit or loss

(Unit: Million Baht)

	Consolidated financial statements		Separate financial statements	
	2022	2021	2022	2021
Depreciation expenses of right-of-use assets	1,707	1,555	1,620	1,477
Interest expenses on lease liabilities	658	546	653	537
Expenses relating to short-term leases	11	49	-	48
Expenses relating to leases of low-value assets	5	13	5	12

## d) Group as a lessor

The Group has entered into operating leases for its investment property portfolio consisting of (see Note 15). During the year 2022, the Group has sublease income amounting to Baht 8 million (2021: Baht 8 million) (The Company only: Baht 44 million, 2021: Baht 43 million).



# Notes to consolidated financial statements

Thai Oil Public Company Limited

For the year ended 31 December 2022

## 18. Goodwill

(Unit: Million Baht)

	Consolidated financial statements	
	2022	2021
<b>At 1 January</b>		
Cost	850	764
Book value	850	764
<b>For the year ended 31 December</b>		
Book value at the beginning of year	850	764
Additions from business combination	-	20
Exchange differences	(1)	66
Book value at end of year	849	850
<b>At 31 December</b>		
Cost	849	850
Book value	849	850

Goodwill is allocated to the Group's cash-generating units (CGUs) identified according to business segment which is solvent segment.

### Impairment testing for goodwill

The Group tests goodwill impairment on an annual basis. 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 five-year financial 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.



# Notes to consolidated financial statements

Thai Oil Public Company Limited

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The key assumptions used for value-in-use calculations are as follows:

	Goodwill - Thailand	Goodwill - Vietnam
	%	%
Gross margin	7.97 - 9.05	5.62 - 6.06
Long-term growth rate	3.00	6.27
Discount rate from weighted average cost of capital (WACC)	7.80	10.79

The recoverable amount of CGU in which goodwill is allocated is estimated to exceed the carrying amount of the CGU. Management has considered the above and believes that there is no occurrence of impairment of goodwill.

## 19. Intangible assets

The net book value of intangible assets as at 31 December 2022 and 2021 are presented below.

(Unit: Million Baht)

	Consolidated financial statements				
	License fee	Computer software	Patent	Intangible assets under processing	Total
As at 31 December 2022					
Cost	3,528	1,271	2	406	5,207
<u>Less:</u> Accumulated amortisation	(1,859)	(848)	(1)	-	(2,708)
Net book value	1,669	423	1	406	2,499
As at 31 December 2021					
Cost	3,419	1,078	1	439	4,937
<u>Less:</u> Accumulated amortisation	(1,770)	(710)	-	-	(2,480)
Net book value	1,649	368	1	439	2,457



# Notes to consolidated financial statements

Thai Oil Public Company Limited

For the year ended 31 December 2022

(Unit: Million Baht)

	Separate financial statements				
	License fee	Computer software	Patent	Intangible assets under processing	Total
As at 31 December 2022					
Cost	953	1,035	2	397	2,387
Less: Accumulated amortisation	(853)	(639)	(1)	-	(1,493)
Net book value	100	396	1	397	894
As at 31 December 2021					
Cost	919	914	1	434	2,268
Less: Accumulated amortisation	(835)	(540)	-	-	(1,375)
Net book value	84	374	1	434	893

## 20. Income tax

Income tax expenses for the years ended 31 December 2022 and 2021 are summarised as follows:

(Unit: Million Baht)

	Consolidated financial statements		Separate financial statements	
	2022	2021	2022	2021
<b>Current income tax:</b>				
Income tax for the year	7,844	1,919	7,020	481
<b>Deferred tax:</b>				
Relating to origination and reversal of temporary differences	1,074	114	1,867	(9)
Income tax expense reported in profit or loss	8,918	2,033	8,887	472

The amounts of income tax relating to each component of other comprehensive income for the years ended 31 December 2022 and 2021 are presented in the movement in deferred tax assets and liabilities.



# Notes to consolidated financial statements

Thai Oil Public Company Limited

For the year ended 31 December 2022

The amounts of current tax and deferred tax that recognised directly in equity for the years ended 31 December 2022 and 2021 are as follows:

(Unit: Million Baht)

	Consolidated financial statements		Separate financial statements	
	2022	2021	2022	2021

## Current income tax:

Current income tax on transaction costs for

issued share capital	48	-	48	-
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The reconciliation between accounting profit and income tax expense are shown below.

(Unit: Million Baht)

	Consolidated financial statements		Separate financial statements	
	2022	2021	2022	2021
Accounting profit before tax	42,024	15,100	42,553	25,125
Applicable tax rate	20%	20%	20%	20%
Accounting profit before tax multiplied by				
income tax rate	8,405	3,020	8,511	5,025
Decrease (increase) in deferred tax in current year	49	(56)	-	-
Adjustment from prior period	9	(32)	-	-(1)
Effects of:				
Promotional privileges and dividends	(330)	(490)	(556)	(4,618)
Non-deductible expenses	895	132	1,007	68
Additional expense deductions allowed	(110)	(541)	(75)	(3)
Total	455	(899)	376	(4,553)
Income tax expense reported in profit or loss	8,918	2,033	8,887	472

<sup>(1)</sup> The balance is below Baht 1 million.



# Notes to consolidated financial statements

Thai Oil Public Company Limited

For the year ended 31 December 2022

Revenue, profit before finance costs and income tax expenses and income tax expenses from overseas operations of the Group for the year ended 31 December 2022 are as follows:

(Unit: Million Baht)

	Revenue <sup>(1)</sup>	Profit (loss) before finance costs and income tax expenses	Income tax expense (income)
Thailand	522,859	45,955	8,939
Vietnam	4,826	73	8
Indonesia	2,677	(163)	(31)
Singapore	1,338	5	2
Hong Kong <sup>(2)</sup>	23	22	-
United States of America <sup>(2)</sup>	(8)	(8)	-
<b>Total</b>	<b>531,715</b>	<b>45,884</b>	<b>8,918</b>

Note:

<sup>(1)</sup> Taxable income consists of: Sales and services income, Subsidy from oil fuel fund, Dividend Income, Gain from hedging derivatives net, Net foreign exchange gain and Other income etc.

<sup>(2)</sup> No income tax expenses due to income tax loss.

The analysis of deferred tax assets and deferred tax liabilities is as follows:

(Unit: Million Baht)

	Consolidated financial statements		Separate financial statements	
	2022	2021	2022	2021
Deferred tax assets, net	1,125	2,585	375	2,410
Deferred tax liabilities, net	(3)	(170)	-	-
Deferred tax, net	1,122	2,415	375	2,410



# Notes to consolidated financial statements

Thai Oil Public Company Limited  
For the year ended 31 December 2022

The movements in deferred tax assets and liabilities during the year are as follows:

(Unit: Million Baht)

Consolidated financial statements									
	Employee benefit obligation	Impairment losses on assets	Unused tax losses	Lease liabilities	Cash flow hedges	Borrowing cost	Loss from exchange rate in construction in progress	Others	Total
<b>Deferred tax assets</b>									
At 1 January 2021	941	32	900	153	312	354	188	19	2,899
Charged (credited) to profit or loss	19	(32)	(824)	97	(312)	(148)	1,728	9	537
Charged to other comprehensive income	-	-	-	-	-	-	-	15	15
Reclassification	-	-	-	(2)	-	-	-	(7)	(9)
At 31 December 2021	960	-	76	248	-	206	1,916	36	3,442
At 1 January 2022	960	-	76	248	-	206	1,916	36	3,442
Charged (credited) to profit or loss	(8)	140	550	55	-	21	582	55	1,395
Charged (credited) to other comprehensive income	(392)	-	-	-	-	-	-	78	(314)
Reclassification	-	-	-	-	157	-	-	(92)	65
Exchange differences	-	-	(2)	-	-	-	-	-	(2)
At 31 December 2022	560	140	624	303	157	227	2,498	77	4,586



# Notes to consolidated financial statements

Thai Oil Public Company Limited  
For the year ended 31 December 2022

(Unit: Million Baht)

	Consolidated financial statements					
	Accumulated depreciation	Deferred cost of debentures	Gain on reclassification of investments	Cash flow hedges	Unrealised gain on changes in fair value of investment FVOCI	Total
<b>Deferred tax liabilities</b>						
At 1 January 2021	(230)	(61)	-	-	-	(356)
(Charged) credited to profit or loss	(111)	(9)	-	(217)	-	(651)
Charged to other comprehensive income	-	-	-	(29)	-	(29)
Reclassification	(3)	-	-	-	-	9
At 31 December 2021	(344)	(70)	-	(246)	-	(1,027)
At 1 January 2022	(344)	(70)	-	(246)	-	(1,027)
(Charged) credited to profit or loss	(52)	22	(1,916)	(165)	-	(2,472)
(Charged) credited to other comprehensive income	-	-	-	568	(465)	103
Reclassification	-	(4)	(136)	-	92	88
Exchange differences	-	1	-	(157)	-	(156)
At 31 December 2022	(396)	(51)	(2,052)	-	(373)	(3,464)



# Notes to consolidated financial statements

Thai Oil Public Company Limited  
For the year ended 31 December 2022

(Unit: Million Baht)

## Separate financial statements

	Employee benefit obligation	Impairment losses on assets	Unused tax losses	Lease liabilities	Cash flow hedges	Borrowing cost	Loss from exchange rate in construction in progress	Others	Total
<b>Deferred tax assets</b>									
At 1 January 2021	925	32	898	126	206	354	188	4	2,733
Charged (credited) to profit or loss	15	(32)	(850)	75	(206)	(148)	1,728	7	589
Reclassification	-	-	-	(2)	-	-	-	-	(2)
At 31 December 2021	940	-	48	199	-	206	1,916	11	3,320
At 1 January 2022	940	-	48	199	-	206	1,916	11	3,320
Charged (credited) to profit or loss	(76)	2	(48)	48	-	21	582	52	581
Credited in other comprehensive income	(322)	-	-	-	-	-	-	-	(322)
Reclassification	-	-	-	-	146	-	-	-	146
At 31 December 2022	542	2	-	247	146	227	2,498	63	3,725



# Notes to consolidated financial statements

Thai Oil Public Company Limited  
For the year ended 31 December 2022

(Unit: Million Baht)

	Separate financial statements					
	Accumulated depreciation	Deferred cost of debentures	Gain on reclassification of investments	Cash flow hedges	Unrealised gain on changes in fair value of investment FVOCI	Total
<b>Deferred tax liabilities</b>						
At 1 January 2021	(232)	(72)	-	-	-	(355)
(Charged) credited to profit or loss	(36)	(8)	-	(323)	-	(580)
Credited to other comprehensive income	-	-	-	14	-	14
Reclassification	-	-	-	-	-	2
Transfer from entire business transfer	9	-	-	-	-	9
At 31 December 2021	(259)	(80)	-	(309)	-	(910)
At 1 January 2022	(259)	(80)	-	(309)	-	(910)
(Charged) credited to profit or loss	(29)	23	(1,916)	(165)	-	(2,449)
(Charged) credited to other comprehensive income	-	-	-	620	(465)	155
Reclassification	-	-	(31)	(146)	-	(146)
At 31 December 2022	(288)	(57)	(1,947)	-	(465)	(3,350)



# Notes to consolidated financial statements

Thai Oil Public Company Limited

For the year ended 31 December 2022

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 209 million (2021: Baht 266 million) in respect of losses amounting to Baht 1,043 million (2021: Baht 1,331 million) that can be carried forward against future taxable income. Losses amounting to Baht 209 million will expire during 2023 to 2027 (2021: Baht 266 million will expire during 2022 to 2026).

## 21. Short-term loans from financial institutions

Short-term loans from financial institutions for the Group are as follows:

(Unit: Million Baht)

	Consolidated financial statements	
	2022	2021
Short-term loans from financial institutions		
- Secured	508	270
- Unsecured	1,384	659
Total short-term loans from financial institutions	1,892	929

Movements of short-term loans from financial institutions for the Group are as follows:

(Unit: Million Baht)

	Consolidated financial statements	
	2022	2021
Opening balance	929	713
<u>Cash flows:</u>		
Proceeds from short-term loans	17,325	6,035
Repayments of short-term loans	(16,358)	(5,821)
<u>Other non-cash movements:</u>		
Exchange differences	(4)	2
Closing balance	1,892	929



# Notes to consolidated financial statements

Thai Oil Public Company Limited

For the year ended 31 December 2022

As at 31 December 2022, short-term loans from financial institutions represented promissory notes of the subsidiaries which denominated in Thai Baht amounting to Baht 1,308 million, Vietnamese Dong 259,500 million (equivalent to Baht 378 million) and Indonesian Rupiah currency amounting to 92,083 million Indonesian Rupiahs (equivalent to Baht 204 million), and bore interest at rates of 2.66% to 10.00% per annum (2021: subsidiaries' short-term loans denominated in Thai Baht amounting to Baht 670 million, Vietnamese Dong 177,037 million (equivalent to Baht 259 million) with interest rates of 2.05% to 3.05% per annum.

These short-term loans of a subsidiary are secured by the pledge of inventories and jointed collateral with the short-term loans under the terms and condition in the Credit Facilities Agreement.

## 22. Trade payables

(Unit: Million Baht)

	Consolidated financial statements		Separate financial statements	
	2022	2021	2022	2021
Related parties (Note 6)	72,976	14,164	77,727	17,159
Other parties	1,178	8,837	903	8,185
Total	74,154	23,001	78,630	25,344

## 23. Other payables

(Unit: Million Baht)

	Consolidated financial statements		Separate financial statements	
	2022	2021	2022	2021
Other payables	2,550	4,555	2,020	3,981
Accrued interest	1,365	1,255	1,445	1,338
Accrued operating expenses	235	290	85	115
Oil Fuel Fund payable	340	52	340	52
Others	458	409	333	299
Total	4,948	6,561	4,223	5,785



# Notes to consolidated financial statements

Thai Oil Public Company Limited

For the year ended 31 December 2022

## 24. Long-term loans from financial institutions and a third party

Long-term loans from financial institutions and a third party are as follows:

(Unit: Million Baht)

	Consolidated financial statements		Separate financial statements	
	2022	2021	2022	2021
Current portion of long-term loans from financial institutions, net				
- Secured	1,007	1,139	-	-
- Unsecured	1,877	74	1,670	-
Long-term loans from financial institutions, net of current portion				
- Secured	9,133	10,474	-	-
- Unsecured	10,674	20,002	10,236	19,536
Long-term loans from a third party				
- Unsecured	216	279	-	-
Total long-term loans	22,907	31,968	11,906	19,536



# Notes to consolidated financial statements

Thai Oil Public Company Limited

For the year ended 31 December 2022

Movements of long-term loans from financial institutions and a third party are as follows:

(Unit: Million Baht)

	Consolidated financial statements		Separate financial statements	
	2022	2021	2022	2021
Opening balance	31,968	13,353	19,536	-
<u>Cash flows:</u>				
Proceeds from long-term loans	8,779	19,550	8,500	19,517
Repayments of long-term loans	(17,926)	(1,014)	(16,209)	-
<u>Other non-cash movements:</u>				
Amortisation of deferred financing fee	90	43	79	19
Exchange differences	(4)	36	-	-
Closing balance	22,907	31,968	11,906	19,536

The weighted average effective interest rate of the long-term loans of the Group were 3.48% per annum (2021: 1.90% per annum), the Company was 3.54% per annum (2021: 1.76% per annum).



# Notes to consolidated financial statements

Thai Oil Public Company Limited

For the year ended 31 December 2022

The detail of long-term loans of the Group are as follows:

As at 31 December									
2022					2021				
No.	Loans by	Currency in agreement	Original currency (Million)	Equivalent to Million Baht	Original currency (Million)	Equivalent to Million Baht	Interest rate per annum (%)	Principal repayment term	Interest payment period
1	Subsidiaries	Baht	160	160	321	321	FDR (6M) plus a certain margin	Semi-Annual	Semi-Annual
2	Subsidiaries	Baht	15	15	30	30	MLR minus a certain margin	Semi-Annual	Semi-Annual
3	Subsidiaries	Baht	6,883	6,883	7,277	7,277	THBFIX (3M) plus a certain margin	Semi-Annual	Quarterly
4	Subsidiaries	Baht	3,200	3,200	4,185	4,185	THOR plus a certain margin	Semi-Annual	Monthly
5	Subsidiaries	Baht	216	216	279	279	THOR plus a certain margin	A specified in the agreement	A specified in the agreement
6	Subsidiaries	Vietnamese Dong	309,098	452	187,978	276	Fixed rate	Semi-Annual	Semi-Annual
7	Subsidiaries	Baht	10	10	19	19	MLR minus a certain margin	Semi-Annual	Semi-Annual
8	Subsidiaries	Baht	-	-	12	12	MLR minus a certain margin	Semi-Annual	Semi-Annual
9	Subsidiaries	Baht	23	23	33	33	MLR minus a certain margin	Semi-Annual	Semi-Annual
10	The Company	Baht	-	-	1,494	1,494	BIBOR plus a certain margin	Terminate agreement	Quarterly
11	The Company	Baht	-	-	5,089	5,089	3MBIBOR plus a certain margin	Terminate agreement	Quarterly
12	The Company	Baht	-	-	9,563	9,563	MLR minus a certain margin	Terminate agreement	Quarterly
13	The Company	Baht	6,922	6,922	1,908	1,908	MLR minus a certain margin	Quarterly	Quarterly
14	The Company	Baht	4,984	4,984	1,482	1,482	6MBIBOR plus a certain margin	Semi-Annual	Quarterly
15	Subsidiaries	Baht	42	42	-	-	THOR plus a certain margin	Semi-Annual	Semi-Annual
Total				22,907		31,968			



# Notes to consolidated financial statements

Thai Oil Public Company Limited

For the year ended 31 December 2022

The Group's long-term loans are secured by collateral of land, building, petrochemical plants, machinery and deposits at financial institutions (Note 7, 8 and 16) in accordance with the Credit Facilities Agreement.

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.

## 25. Debentures

(Unit: Million Baht)

	Consolidated financial statements		Separate financial statements	
	2022	2021	2022	2021
Debentures	149,781	136,710	40,004	30,561
Less: Discount on debentures	(829)	(842)	(133)	(131)
	148,952	135,868	39,871	30,430
Less: Current portion of debentures, net	(17,317)	(3,000)	(7,515)	(3,000)
Debentures, net	131,635	132,868	32,356	27,430

Movements of debentures of the Group and the Company are as follows:

(Unit: Million Baht)

	Consolidated financial statements		Separate financial statements	
	2022	2021	2022	2021
Beginning balance	135,868	126,837	30,430	32,104
<u>Cash flows:</u>				
Additions	12,000	-	12,000	-
Repayments	(3,000)	(3,000)	(3,000)	(3,000)
Financing fee	(12)	-	(12)	-
<u>Other non-cash movements:</u>				
Interest of discount on debenture	49	44	10	9
Exchange differences	4,047	11,987	443	1,317
Ending balance	148,952	135,868	39,871	30,430



# Notes to consolidated financial statements

Thai Oil Public Company Limited

For the year ended 31 December 2022

Debentures issued by the Group are owned by the Company and a subsidiary, which 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	2022 (Million)	2021 (Million)	Interest rate (% p.a.)	Interest payment term
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 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	400	2.50	Semi-annual basis
18 June 2020	18 June 2050	30	US Dollars	600	600	3.75	Semi-annual basis
11 November 2022	11 November 2025	3	Baht	1,400	-	2.99	Semi-annual basis
11 November 2022	11 November 2027	5	Baht	600	-	3.64	Semi-annual basis
11 November 2022	11 November 2029	7	Baht	2,000	-	4.13	Semi-annual basis
11 November 2022	11 November 2032	10	Baht	1,700	-	4.49	Semi-annual basis
11 November 2022	11 November 2034	12	Baht	3,100	-	4.79	Semi-annual basis
11 November 2022	11 November 2037	15	Baht	3,200	-	5.09	Semi-annual basis



# Notes to consolidated financial statements

Thai Oil Public Company Limited

For the year ended 31 December 2022

Separate financial statements							
Issuance date	Maturity date	Years	Currency	2022 (Million)	2021 (Million)	Interest rate (% p.a.)	Interest payment term
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 2024	10	Baht	7,000	7,000	4.84	Semi-annual basis
11 November 2022	11 November 2025	3	Baht	1,400	-	2.99	Semi-annual basis
11 November 2022	11 November 2027	5	Baht	600	-	3.64	Semi-annual basis
11 November 2022	11 November 2029	7	Baht	2,000	-	4.13	Semi-annual basis
11 November 2022	11 November 2032	10	Baht	1,700	-	4.49	Semi-annual basis
11 November 2022	11 November 2034	12	Baht	3,100	-	4.79	Semi-annual basis
11 November 2022	11 November 2037	15	Baht	3,200	-	5.09	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.

## 26. Provision for long-term employee benefits

The movement in the provision for long-term employee benefits during the year is as follows:

(Unit: Million Baht)

	Consolidated financial statements		Separate financial statements	
	2022	2021	2022	2021
At 1 January	4,799	4,701	3,874	3,898
Current service cost	314	277	166	153
Interest cost	67	67	54	55
Actuarial gain	(2,086)	-	(1,638)	-
Benefits paid during the year	(340)	(242)	(283)	(232)
Exchange differences	(1)	(4)	-	-
At 31 December	2,753	4,799	2,173	3,874



# Notes to consolidated financial statements

Thai Oil Public Company Limited

For the year ended 31 December 2022

Actuarial (gains)/losses recognised in other comprehensive income arising from:

(Unit: Million Baht)

	Consolidated financial statements		Separate financial statements	
	2022	2021	2022	2021
Experience	(458)	-	(563)	-
Demographic assumptions	18	-	7	-
Financial assumptions	(1,521)	-	(1,055)	-
Total	(1,961)	-	(1,611)	-

Actuarial losses (gains) recognised in profit and loss arising from:

(Unit: Million Baht)

	Consolidated financial statements		Separate financial statements	
	2022	2021	2022	2021
Experience	(2)	-	9	-
Demographic assumptions	12	-	3	-
Financial assumptions	(135)	-	(39)	-
Total	(125)	-	(27)	-



# Notes to consolidated financial statements

Thai Oil Public Company Limited

For the year ended 31 December 2022

The principal actuarial assumptions used were as follows:

	Consolidated financial statements		Separate financial statements	
	2022	2021	2022	2021
Discount rate	2.5% - 3.9%	1.5%	2.5% - 2.8%	1.5%
Salary increases rate	5.0% - 6.0%	5.0% - 10.0%	5.0%	5.0% - 10.0%
Employee turnover	0.2% - 5.7%	0.0% - 4.0%	0.2% - 2.3%	0.0% - 4.0%

Assumptions regarding future mortality have been based on published statistics and mortality tables.

The result of sensitivity analysis for significant assumptions that affect the present value of the provision for long-term employee benefit as at 31 December 2022 and 2021 are summarised below:

(Unit: Million Baht)

	Consolidated financial statements					
	Change in assumption		Increase in assumption		Decrease in assumption	
	2022	2021	2022	2021	2022	2021
Discount rate	1%	1%	(361)	(429)	397	508
Salary growth rate	1%	1%	309	526	(273)	(458)

(Unit: Million Baht)

	Separate financial statements					
	Change in assumption		Increase in assumption		Decrease in assumption	
	2022	2021	2022	2021	2022	2021
Discount rate	1%	1%	(272)	(302)	312	349
Salary growth rate	1%	1%	254	419	(227)	(370)



# Notes to consolidated financial statements

Thai Oil Public Company Limited

For the year ended 31 December 2022

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 reserve long-term employee benefit of the Group is 10 years (2021: 10 years).

Expected maturity analysis of undiscounted retirement benefits are as follows:

(Unit: Million Baht)

	Consolidated financial statements				
	Less than 1 year	Between 1 - 2 years	Between 2 - 5 years	Over 5 years	Total

## At 31 December 2022

Retirement benefits	174	427	290	2,252	3,143
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## At 31 December 2021

Retirement benefits	220	257	1,159	1,108	2,744
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(Unit: Million Baht)

	Separate financial statements				
	Less than 1 year	Between 1 - 2 years	Between 2 - 5 years	Over 5 years	Total

## At 31 December 2022

Retirement benefits	147	413	276	1,663	2,499
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## At 31 December 2021

Retirement benefits	212	238	1,129	846	2,425
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# Notes to consolidated financial statements

Thai Oil Public Company Limited

For the year ended 31 December 2022

## 27. Share Capital

Movements of the share capital for the year ended 31 December 2022 are summaries below:

	Consolidated/ Separate financial statements				
	Par value per share (Baht)	Number of share		Share capital	
		Registered share capital (Million share)	Paid-up share capital	Registered share capital (Million Baht)	Paid-up share capital
As at 1 January 2022	10	2,040	2,040	20,400	20,400
Increase share capital	10	275	194	2,751	1,938
As at 31 December 2022	10	2,315	2,234	23,151	22,338

### The increase of registered capital and allocation of newly issued ordinary shares of the Company

On 7 April 2022, the Company's Annual General Meeting of Shareholders passed resolutions to approve the increase in the registered capital of the Company amounting to Baht 2,751 million through the issuance of 275 million new ordinary shares with a par value of Baht 10 each, from the existing capital of Baht 20,400 million to the new registered capital of Baht 23,151 million, comprising 2,315 million ordinary shares with a par value of Baht 10 each, and to approve the allocation of not exceeding 275 million newly issued ordinary shares, consisting of (1) 239 million newly issued ordinary shares for public offering and (2) 36 million newly issued ordinary shares to support the exercise of subscription right of the over - allotment agent (if any).

On 8 April 2022, the Company registered the capital increase of Baht 23,151 million with the Ministry of Commerce. The Company submitted the application seeking approval for the offering of newly issued ordinary shares and the registration statement together with the draft prospectus to the Office of the Securities and Exchange Commission ("SEC") on 29 April 2022.



# Notes to consolidated financial statements

**Thai Oil Public Company Limited**

**For the year ended 31 December 2022**

## Public offering

The Company issued and offered a total of 214,953,271 newly issued ordinary shares of the Company, comprising (1) 192,307,693 newly issued ordinary shares for the public offering, and (2) the over-allotment of 22,645,578 ordinary shares, which the over-allotment agent had borrowed 22,645,578 shares from PTT Public Company Limited ("PTT"), the parent company, in order to deliver them to the subscribers.

From 9 to 16 September 2022, the Company proceeded to allocate the newly issued ordinary shares of the Company for the public offering and to the existing shareholders of the Company in proportion to their shareholding totalling 192,307,693 shares at a par value of Baht 10 per share, at the offering price of Baht 53.50 per share, totalling Baht 10,288 million before deducting the directly related expenses. The Company registered the change in the issued and paid-up capital with the Ministry of Commerce on 28 September 2022. As a result, the Company has a total of Baht 22,323 million paid-up capital, with a total issued ordinary shares of 2,232 million shares at a par value of Baht 10 per share.

## The exercise of over-allotment option by the over-allotment agent

During the 30 day period subsequent to the offering of all ordinary shares, the over-allotment agent purchased the Company's 21,145,578 ordinary shares traded on the SET in order to return shares to PTT. Subsequently, on 21 October 2022, the over-allotment agent exercised its right to purchase 1.5 million newly issued ordinary shares at the subscription price of Baht 53.50 per share, which is the same price as the offering price of the newly issued ordinary shares, totalling Baht 80.3 million, in order to return shares to PTT. The Company registered the change in the registered and paid-up capital with the Ministry of Commerce on 28 October 2022. As a result, the Company's paid-up share capital is Baht 22,338 million, with issued share capital 2,233,835,566 shares.

For the offering of such newly issued ordinary shares, the Company had directly related expenses of Baht 188 million (net of income tax) which had been recorded to net with its share premium. As a result, the Company had a share premium of Baht 10,699 million as at 31 December 2022.



# Notes to consolidated financial statements

Thai Oil Public Company Limited

For the year ended 31 December 2022

## 28. Statutory reserve

Pursuant to Section 116 of the Public Limited Companies Act B.E. 2535, the Company is required to set aside a statutory reserve at least 5 percent of its net profit after deducting accumulated deficit brought forward (if any), until the reserve reaches 10 percent of the registered capital. The statutory reserve is not available for dividend distribution. At present, the statutory reserve has fully been set aside.

## 29. Non-controlling interests

Movement of non-controlling interests are as follows:

(Unit: Million Baht)

	Consolidated financial statement	
	2022	2021
Beginning balance	2,213	3,889
Addition from business combination	-	13
Dividend payment from subsidiaries	(32)	(5,972)
Business restructuring under common control	-	4,671
Liquidation of a subsidiary	-	(806)
Change in the ownership interests in subsidiaries	-	(5)
Share of total comprehensive income from subsidiaries	442	423
Ending balance	2,623	2,213

## 30. Other income

(Unit: Million Baht)

	Consolidated financial statements		Separate financial statements	
	2022	2021	2022	2021
Interest income	368	199	440	261
Service income and others	414	324	2,156	1,937
Total	782	523	2,596	2,198



# Notes to consolidated financial statements

Thai Oil Public Company Limited

For the year ended 31 December 2022

## 31. Expenses by nature

(Unit: Million Baht)

	Consolidated financial statements		Separate financial statements	
	2022	2021	2022	2021
Changes in finished goods and work in progress	(2,860)	(2,794)	(2,827)	(1,625)
Purchase and raw materials used	416,777	241,426	471,703	271,901
Natural gas used	17,152	9,536	7,288	3,699
Employee benefit expenses	4,185	3,911	2,132	2,076
Depreciation and amortisation	7,744	7,424	5,282	4,773
Excise tax	33,362	54,170	33,332	54,124
Oil fuel fund contribution/ Energy conservation fund contribution	4,031	3,417	4,031	3,417

## 32. Promotional privileges

Certain local subsidiaries have been granted privileges by the Board of Investment relating to power and steam generation, petrochemical product production and chemical product production. The summary of privileges granted are as follows:

- an exemption from payment of import duty and tax on machinery and equipment as approved by the Board of Investment.
- 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.
- 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.



# Notes to consolidated financial statements

Thai Oil Public Company Limited

For the year ended 31 December 2022

Revenues from promoted businesses were as follows:

(Unit: Million Baht)

	<b>Consolidated financial statement</b>	
	<b>2022</b>	<b>2021</b>
Revenues from promoted businesses	45,842	24,204

## 33. Earnings per share

Basic earnings per share is calculated by dividing profit for the year attributable to equity holders of the Company (excluding other comprehensive income) by the weighted average number of ordinary shares in issue during the year.

(Unit: Million Baht)

	<b>Consolidated financial statements</b>		<b>Separate financial statements</b>	
	<b>2022</b>	<b>2021</b>	<b>2022</b>	<b>2021</b>
Profit for the year attributable to equity holders of the Company (Million Baht)	32,668	12,641	33,665	24,652
Weighted average number of ordinary shares (Million shares)	2,090	2,040	2,090	2,040
<b>Basic earnings per share from continuing operations (Baht/share)</b>	<b>15.63</b>	<b>6.20</b>	<b>16.11</b>	<b>12.08</b>
Loss from discontinued operations attributable to equity holders of the Company (Million Baht)	-	(63)	-	-
Weighted average number of ordinary shares (Million shares)	2,090	2,040	2,090	2,040
<b>Basic loss per share from discontinued operations (Baht/share)</b>	<b>-</b>	<b>(0.03)</b>	<b>-</b>	<b>-</b>
<b>Basic earnings per share (Baht/share)</b>	<b>15.63</b>	<b>6.17</b>	<b>16.11</b>	<b>12.08</b>



# Notes to consolidated financial statements

Thai Oil Public Company Limited

For the year ended 31 December 2022

## 34. 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 is organised into business units based on their products and services. During the current period, the Group has not changed the organisation of their reportable segments from the last annual financial statements.

Segment 1:	Oil refinery
Segment 2:	Lube base oil refinery
Segment 3:	Aromatics and LAB
Segment 4:	Power generation
Segment 5:	Solvent
Segment 6:	Ethanol
Segment 7:	Olefins
Segment 8:	Others

Marine transportation services was discontinued operations during the year 2021.



# Notes to consolidated financial statements

Thai Oil Public Company Limited

For the year ended 31 December 2022

The following tables present assets, revenue, and operating results information regarding the Group's operating segments for the years ended 31 December 2022 and 2021:

(Unit: Million Baht)

## Consolidated financial statements for the year ended 31 December 2022

	Oil refinery	Lube base oil refinery	Aromatics and LAB	Power generation	Solvent	Ethanol	Olefins	Others	Adjustments	Total
<b>Revenue from sales and services</b>										
- External customers	428,210	20,078	27,752	6,211	22,397	1,055	-	-	-	505,703
- Inter - segment	116,582	7,695	61,185	5,504	190	741	2	6,647	(198,546)	-
Subsidy from oil fuel fund	23,886	-	-	-	-	-	-	-	-	23,886
Cost of sales of goods and services	(526,995)	(24,376)	(89,489)	(10,065)	(20,802)	(1,624)	-	(6,702)	198,916	(481,137)
<b>Gross Profit (loss)</b>	<b>41,683</b>	<b>3,397</b>	<b>(552)</b>	<b>1,650</b>	<b>1,785</b>	<b>172</b>	<b>2</b>	<b>(55)</b>	<b>370</b>	<b>48,452</b>
Dividend income	2,778	-	-	-	-	12	-	5	(2,715)	80
Gain (loss) from financial instruments	(16,128)	-	100	-	13	-	-	10	-	(16,005)
Gain (loss) on exchange	(24)	30	(10)	6	(58)	-	(1)	(7)	-	(64)
Gain on disposal of investment in associate	10,487	-	-	-	-	-	-	-	(449)	10,038
Gain on reclassification of investment	7,539	-	-	-	-	-	-	-	(242)	7,297
Other income	2,596	114	314	18	40	5	-	3	(2,308)	782
Selling and distribution expenses	(68)	(98)	(346)	-	(703)	(21)	-	-	184	(1,052)
Administrative expenses	(2,820)	(69)	(806)	(39)	(322)	(98)	(9)	(67)	1,099	(3,131)
Share of profit (loss) from investments in joint ventures and associates	-	-	-	-	-	-	(806)	293	-	(513)
<b>Profit (loss) before finance costs and income tax expense</b>	<b>46,043</b>	<b>3,374</b>	<b>(1,300)</b>	<b>1,635</b>	<b>755</b>	<b>70</b>	<b>(814)</b>	<b>182</b>	<b>(4,061)</b>	<b>45,884</b>
Finance cost	(3,491)	(58)	(162)	(293)	(121)	(19)	-	-	284	(3,860)
<b>Profit (loss) before income tax expense</b>	<b>42,552</b>	<b>3,316</b>	<b>(1,462)</b>	<b>1,342</b>	<b>634</b>	<b>51</b>	<b>(814)</b>	<b>182</b>	<b>(3,777)</b>	<b>42,024</b>



# Notes to consolidated financial statements

Thai Oil Public Company Limited  
For the year ended 31 December 2022

(Unit: Million Baht)

## Consolidated financial statements for the year ended 31 December 2022

	Oil refinery	Lube base oil refinery	Aromatics and LAB	Power generation	Solvent	Ethanol	Olefins	Others	Adjustments	Total
Income tax income (expenses)	(8,887)	(665)	688	(1)	(107)	(4)	-	58	-	(8,918)
<b>Profit (loss) for the year from continuing operations</b>	<b>33,665</b>	<b>2,651</b>	<b>(774)</b>	<b>1,341</b>	<b>527</b>	<b>47</b>	<b>(814)</b>	<b>240</b>	<b>(3,777)</b>	<b>33,106</b>

## Profit (loss) for the year attributable to:

- Equity holder of the Company										
- Continuing operations	33,665	2,651	(1,183)	1,341	527	18	(814)	240	(3,777)	32,668
- Non-controlling interests of the subsidiaries	-	-	409	-	-	29	-	-	-	438
<b>Profit (loss) for the year from continuing operations</b>	<b>33,665</b>	<b>2,651</b>	<b>(774)</b>	<b>1,341</b>	<b>527</b>	<b>47</b>	<b>(814)</b>	<b>240</b>	<b>(3,777)</b>	<b>33,106</b>

## Timing of revenue recognition

- At a point of time	544,792	27,773	88,937	10,656	22,587	1,796	2	6,647	(198,350)	504,840
- Over time	-	-	-	1,059	-	-	-	-	(196)	863
<b>Total Revenue</b>	<b>544,792</b>	<b>27,773</b>	<b>88,937</b>	<b>11,715</b>	<b>22,587</b>	<b>1,796</b>	<b>2</b>	<b>6,647</b>	<b>(198,546)</b>	<b>505,703</b>



# Notes to consolidated financial statements

Thai Oil Public Company Limited

For the year ended 31 December 2022

(Unit: Million Baht)

## Consolidated financial statements for the year ended 31 December 2021

	Oil refinery	Lube base oil refinery	Aromatics and LAB	Power generation	Marine Transportation Service	Solvent	Ethanol	Olefins	Others	Adjustments*	Total
<b>Revenue from sales and services</b>											
- External customer	274,350	18,826	24,461	4,059	126	13,236	895	-	-	(126)	335,827
- Inter - segment	74,371	5,006	36,086	3,514	84	78	693	-	6,330	(126,162)	-
Subsidy from oil fuel fund	9,669	-	-	-	-	-	-	-	-	-	9,669
Cost of sales of goods and services	(344,129)	(19,106)	(57,459)	(6,240)	(146)	(11,697)	(1,413)	-	(6,075)	126,710	(319,555)
<b>Gross Profit</b>	<b>14,261</b>	<b>4,726</b>	<b>3,088</b>	<b>1,333</b>	<b>64</b>	<b>1,617</b>	<b>175</b>	<b>-</b>	<b>255</b>	<b>422</b>	<b>25,941</b>
Dividend income	22,190	-	-	-	-	-	-	-	-	(22,183)	7
Gain (loss) from financial instruments	(2,731)	-	303	-	-	(1)	-	-	23	-	(2,406)
Gain (loss) on exchange	(4,873)	47	117	8	10	112	-	-	(6)	(10)	(4,595)
Gain on disposal of investment in associate	-	-	-	-	-	-	102	-	-	-	102
Gain on reclassification of investment	-	-	-	-	-	-	504	-	-	-	504
Other income	2,198	66	264	14,663	12	28	5	1	2	(16,716)	523
Selling and distribution expenses	(53)	(96)	(187)	-	-	(545)	(18)	-	-	129	(770)
Administrative expenses	(2,654)	(72)	(114)	(27)	(40)	(294)	(114)	(1)	(52)	1,082	(2,286)
Share of profit (loss) from investments in joint ventures and associates	-	-	-	1,522	-	-	46	(90)	197	-	1,675
<b>Profit (loss) before finance costs and income tax expense</b>	<b>28,338</b>	<b>4,671</b>	<b>3,471</b>	<b>17,499</b>	<b>46</b>	<b>917</b>	<b>700</b>	<b>(90)</b>	<b>419</b>	<b>(37,276)</b>	<b>18,695</b>
Financial cost	(3,214)	(59)	(159)	(338)	(27)	(74)	(17)	-	-	293	(3,595)
<b>Profit (loss) before income tax expense</b>	<b>25,124</b>	<b>4,612</b>	<b>3,312</b>	<b>17,161</b>	<b>19</b>	<b>843</b>	<b>683</b>	<b>(90)</b>	<b>419</b>	<b>(36,983)</b>	<b>15,100</b>
Income tax income (expenses)	(472)	(933)	(419)	(5)	(1)	(121)	(76)	-	(8)	1	(2,034)
<b>Profit (loss) for the year from continuing operations</b>	<b>24,652</b>	<b>3,679</b>	<b>2,893</b>	<b>17,156</b>	<b>18</b>	<b>722</b>	<b>607</b>	<b>(90)</b>	<b>411</b>	<b>(36,982)</b>	<b>13,066</b>



# Notes to consolidated financial statements

Thai Oil Public Company Limited  
For the year ended 31 December 2022

(Unit: Million Baht)

## Consolidated financial statements for the year ended 31 December 2021

	Oil refinery	Lube base oil refinery	Aromatics and LAB	Power generation	Marine Transportation Service	Solvent	Ethanol	Olefins	Others	Adjustments*	Total
<b>Profit (loss) for the year attributable to:</b>											
- Equity holder of the Company											
- Continuing operations	24,652	3,679	2,586	17,125	18	663	579	(90)	411	(36,982)	12,641
- Non-controlling interests of the subsidiaries	-	-	307	31	-	59	28	-	-	-	425
<b>Profit (loss) for the year from continuing operations</b>	<b>24,652</b>	<b>3,679</b>	<b>2,893</b>	<b>17,156</b>	<b>18</b>	<b>722</b>	<b>607</b>	<b>(90)</b>	<b>411</b>	<b>(36,982)</b>	<b>13,066</b>
<b>Timing of revenue recognition</b>											
- At a point of time	348,542	23,832	60,547	6,509	-	13,314	1,588	-	6,330	(125,858)	334,804
- Over time	179	-	-	1,064	210	-	-	-	-	(430)	1,023
<b>Total Revenue</b>	<b>348,721</b>	<b>23,832</b>	<b>60,547</b>	<b>7,573</b>	<b>210</b>	<b>13,314</b>	<b>1,588</b>	<b>-</b>	<b>6,330</b>	<b>(126,288)</b>	<b>335,827</b>

\* Adjustments include elimination transaction and classification of assets held-for-sale.



## Notes to consolidated financial statements

Thai Oil Public Company Limited  
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(Unit: Million Baht)

Consolidated financial statements for the year ended 31 December 2022											
	Oil refinery	Lube base oil refinery	Aromatics and LAB	Power generation	Marine Transportation Service	Solvent	Ethanol	Olefins	Others	Adjustments* Total	
Trade receivables	29,781	1,505	7,578	1,562	-	2,640	127	2	962	(15,399)	28,758
Inventories	49,854	1,787	1,868	129	-	1,296	435	-	-	(26)	55,343
Other current assets	60,344	2,954	1,000	3,183	4	2,562	120	69	11,099	(13,017)	68,318
Financial derivative assets	1,397	-	11	-	-	12	-	-	-	(11)	1,409
Investments in subsidiaries	41,280	-	-	-	-	-	-	-	-	(41,280)	-
Investments in associated companies	-	-	-	-	-	-	-	30,924	982	697	32,603
Long-term loans to related parties	2,000	-	-	-	-	-	-	-	101,109	(103,109)	-
Property, plant and equipment	175,670	2,170	13,139	11,429	-	2,091	1,300	-	-	676	206,475
Right-of-use assets	23,266	1,071	926	247	-	412	3	-	-	(1,888)	24,037
Other non-current assets	24,974	655	2,224	40	-	1,394	735	-	1,077	(3,461)	27,638
Total Assets	408,566	10,142	26,746	16,590	4	10,407	2,720	30,995	115,229	(176,818)	444,581



# Notes to consolidated financial statements

Thai Oil Public Company Limited

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(Unit: Million Baht)

## Consolidated financial statements for the year ended 31 December 2022

	Oil refinery	Lube base oil refinery	Aromatics and LAB	Power generation	Marine Transportation Service	Solvent	Ethanol	Olefins	Others	Adjustments*	Total
Trade payables	78,629	1,352	6,474	886	-	1,304	14	-	853	(15,358)	74,154
Short-term loan from financial institutions	321	-	776	-	-	2,679	508	-	294	(2,686)	1,892
Current portion of long-term loans from financial institutions	1,670	-	596	386	-	187	45	-	-	-	2,884
Current portion of debentures	7,515	-	-	-	-	-	-	-	9,802	-	17,317
Other current liabilities	15,866	577	506	69	-	303	65	1	151	(10,305)	7,233
Financial derivative liabilities	2,125	-	-	59	-	-	-	-	-	(11)	2,173
Long-term loans from financial institutions and from a third party, net of current portion	109,868	-	2,820	8,498	-	425	45	-	2,000	(103,632)	20,024
Debentures, net of current portion	32,356	-	-	-	-	-	-	-	99,279	-	131,635
Lease liabilities, net of current portion	21,264	1,262	989	220	-	366	1	-	-	(2,995)	21,107
Other non-current liabilities	7,029	145	114	41	-	147	29	118	536	(655)	7,504
<b>Total Liabilities</b>	<b>276,643</b>	<b>3,336</b>	<b>12,275</b>	<b>10,159</b>	<b>-</b>	<b>5,411</b>	<b>707</b>	<b>119</b>	<b>112,915</b>	<b>(135,642)</b>	<b>285,923</b>



# Notes to consolidated financial statements

Thai Oil Public Company Limited  
For the year ended 31 December 2022

(Unit: Million Baht)

Consolidated financial statements for the year ended 31 December 2021										
	Oil refinery	Lube base oil refinery	Aromatics and LAB	Power generation	Marine Transportation Service	Solvent	Ethanol	Olefins	Others	Adjustments* Total
Trade receivables	25,048	1,410	5,990	1,137	48	2,135	109	-	948	(13,410) 23,415
Inventories	33,623	2,658	1,727	110	11	1,240	244	-	-	(37) 39,576
Other current assets	32,444	1,850	2,835	1,816	641	1,500	85	20	1,054	(4,188) 38,057
Financial derivative assets	1,668	-	67	-	-	-	-	-	-	(67) 1,668
Investments in subsidiaries	41,014	-	-	-	-	-	-	-	-	(41,014) -
Investments in joint ventures	-	-	-	-	188	-	1	-	-	(188) 1
Investments in associated companies	-	-	-	22,279	6	-	-	30,536	993	1,597 55,411
Long-term loans to related parties	-	-	-	-	-	-	-	-	105,291	(105,291) -
Property, plant and equipment	146,633	1,745	15,100	10,437	2,382	1,983	1,315	-	-	(1,196) 178,399
Right-of-use assets	16,066	1,112	921	217	14	342	5	-	-	(1,546) 17,131
Other non-current assets	6,390	655	1,552	93	4	1,357	1,100	-	1,264	(3,929) 8,486
<b>Total Assets</b>	<b>302,886</b>	<b>9,430</b>	<b>28,192</b>	<b>36,089</b>	<b>3,294</b>	<b>8,557</b>	<b>2,859</b>	<b>30,556</b>	<b>109,550</b>	<b>(169,269) 362,144</b>



# Notes to consolidated financial statements

Thai Oil Public Company Limited

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(Unit: Million Baht)

## Consolidated financial statements for the year ended 31 December 2021

	Oil refinery	Lube base oil refinery	Aromatics and LAB	Power generation	Marine Transportation Service	Solvent	Ethanol	Olefins	Others	Adjustments*	Total
Trade payables	25,344	2,056	6,387	581	38	1,110	17	-	823	(13,355)	23,001
Short-term loan from financial institutions	2,135	-	-	-	95	1,444	270	-	284	(3,299)	929
Current portion of long-term loans from financial institutions	-	-	596	394	165	164	59	-	-	(165)	1,213
Current portion of debentures	3,000	-	-	-	-	-	-	-	-	-	3,000
Other current liabilities	8,769	620	491	526	34	257	66	1	106	(537)	10,333
Financial derivative liabilities	124	-	-	317	-	1	-	-	-	(67)	375
Long-term loans from financial institution, net of current portion	139,394	-	3,868	6,883	1,823	433	35	-	-	(107,681)	44,755
Debentures, net of current portion	27,430	-	-	-	-	-	-	-	105,438	-	132,868
Lease liabilities, net of current portion	14,036	1,219	963	185	8	298	2	-	-	(2,576)	14,135
Other non-current liabilities	7,698	148	257	40	14	189	86	111	844	(946)	8,441
<b>Total Liabilities</b>	<b>227,930</b>	<b>4,043</b>	<b>12,562</b>	<b>8,926</b>	<b>2,177</b>	<b>3,896</b>	<b>535</b>	<b>112</b>	<b>107,495</b>	<b>(128,626)</b>	<b>239,050</b>



# Notes to consolidated financial statements

Thai Oil Public Company Limited

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## Major customer

Revenue from 2 customers represents Baht 289,804 million (2021: revenue from two customers represented Baht 179,642 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

(Unit: Million Baht)

	For the year ended		As at	
	31 December		31 December	
	Revenue		Non-current assets	
	2022	2021	2022	2021
Thailand	479,996	283,654	257,851	228,756
Indonesia	2,743	2,081	30,996	30,536
Other countries	46,850	59,761	1,906	1,613
<b>Total</b>	<b>529,589</b>	<b>345,496</b>	<b>290,753</b>	<b>260,905</b>



# Notes to consolidated financial statements

Thai Oil Public Company Limited

For the year ended 31 December 2022

## 35. Dividends

Dividends	Approved by	Total dividends (Million Baht)	Dividend per share (Baht)
Final dividends for 2020	Annual General Meeting of the shareholders on 7 April 2021	1,428	0.70
The interim dividends for 2021	Director meeting on 27 August 2021	1,224	0.60
Total for 2021		2,652	1.30
Final dividends for 2021	Annual General Meeting of the shareholders on 7 April 2022	4,080	2.00
The Interim dividends for 2022	Director meeting on 28 October 2022	4,468	2.00
Total for 2022		8,548	4.00

## 36. Commitments and contingent liabilities

(Unit: Million Baht)

	Consolidated financial statements		Separate financial statements	
	2022	2021	2022	2021
<b>Capital commitments</b>				
Project construction agreements	16,088	16,928	15,411	14,662
Total	16,088	16,928	15,411	14,662
<b>Other commitments</b>				
Letters of guarantee issued by financial institutions	2,142	2,181	1,519	1,516
Crude oil and raw material purchase agreements	78,188	67,007	78,188	67,007
Total	80,330	69,188	79,707	68,523



# Notes to consolidated financial statements

Thai Oil Public Company Limited

For the year ended 31 December 2022

## 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

The Company 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 2022, the Company had contracts with a notional amount of Baht 14,500 million to exchange the fixed interest rate to floating interest rate based on THOR plus certain fixed margin per annum. (2021: Baht 14,500 million, exchange the fixed interest rate to floating interest rate based on THBFIX 6M plus certain fixed margin per annum) The swap contracts are effective from July 2021 to March 2027.

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 2022, a subsidiary had notional amount of Baht 5,373 million (2021: Baht 5,524 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

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. As at 31 December 2022, the Company had notional amount totalling US Dollar 623 million (2021: US Dollar 623 million). 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 October 2035.

## Forward Foreign Exchange Contracts

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. As at 31 December 2022, the Company had notional amount totalling of US Dollar 196 million (2021: US Dollar 170 million). 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 consolidated financial statements

Thai Oil Public Company Limited

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## Oil Price Crack 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 2022, the Group had oil volume under the contracts totalling 21.78 million barrels and 0.001 million metric tons and the Company had oil volume totalling 21.78 million barrels and 0.01 million metric tons (2021: The Group had oil volume under the contracts totalling 6 million barrels and 0.024 million metric tons and the Company had oil volume totalling 6 million barrels and 0.048 million metric tons).

## 37. Financial risk management

### 37.1 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 consolidated financial statements

Thai Oil Public Company Limited

For the year ended 31 December 2022

## Hedging reserve

The Group and the Company's hedging reserves comprise of the followings:

(Unit: Million Baht)

	Consolidated financial statements					
	Cash flow hedge reserve					
	Cross currency swaps	Cost of hedging reserve	Forward foreign exchange contracts	Interest rate swaps	Hedge on foreign currency proceeds	Total hedge reserves
Opening balance 1 January 2022	(101)	(139)	(20)	(253)	(1,878)	(2,391)
Add: Change in fair value of hedging instrument recognised in OCI	(2,437)	-	5	258	(1,686)	(3,860)
Costs of hedging deferred and recognised in OCI	-	(665)	-	-	-	(665)
Less: Deferred tax	487	133	(1)	(52)	392	959
<b>Closing balance 31 December 2022</b>	<b>(2,051)</b>	<b>(671)</b>	<b>(16)</b>	<b>(47)</b>	<b>(3,172)</b>	<b>(5,957)</b>
Opening balance 1 January 2021	(540)	355	(17)	(428)	-	(630)
Add: Change in fair value of hedging instrument recognised in OCI	549	-	(4)	219	(2,358)	(1,594)
Costs of hedging deferred and recognised in OCI	-	(618)	-	-	-	(618)
Less: Deferred tax	(110)	124	1	(44)	480	451
<b>Closing balance 31 December 2021</b>	<b>(101)</b>	<b>(139)</b>	<b>(20)</b>	<b>(253)</b>	<b>(1,878)</b>	<b>(2,391)</b>



# Notes to consolidated financial statements

Thai Oil Public Company Limited

For the year ended 31 December 2022

(Unit: Million Baht)

	Separate financial statements				
	Cash flow hedge reserve				
	Cross currency swaps	Cost of hedging reserve	Forward foreign exchange contracts	Hedge on foreign currency proceeds	Total hedge reserves
Opening balance 1 January 2022	(101)	(139)	(20)	(1,878)	(2,138)
Add: Change in fair value of hedging instrument recognised in OCI	(2,437)	-	5	(1,686)	(4,118)
Costs of hedging deferred and recognised in OCI	-	(665)	-	-	(665)
Less: Deferred tax	487	133	(1)	392	1,011
<b>Closing balance 31 December 2022</b>	<b>(2,051)</b>	<b>(671)</b>	<b>(16)</b>	<b>(3,172)</b>	<b>(5,910)</b>
Opening balance 1 January 2021	(540)	355	(17)	-	(202)
Add: Change in fair value of hedging instrument recognised in OCI	549	-	(4)	(2,358)	(1,813)
Costs of hedging deferred and recognised in OCI	-	(618)	-	-	(618)
Less: Deferred tax	(110)	124	1	480	495
<b>Closing balance 31 December 2021</b>	<b>(101)</b>	<b>(139)</b>	<b>(20)</b>	<b>(1,878)</b>	<b>(2,138)</b>



# Notes to consolidated financial statements

Thai Oil Public Company Limited

For the year ended 31 December 2022

## 37.1.1 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, cross currency swaps in a consistent manner and hedge on foreign currency proceeds to hedge 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 hedges the foreign currency proceeds by hedging the fluctuations arisen from the foreign exchange rate occurring from the certain revenue in US Dollar with the long-term loans which has the same currency as revenue occurred. Under the Group's policy, the critical terms of the forwards and options must align with the hedged items.

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 options 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 and include currency basis spread fees. It is discounted based on time period of the contract 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 consolidated financial statements

Thai Oil Public Company Limited

For the year ended 31 December 2022

As at 31 December 2022 and 2021, the Group and the Company were exposed to foreign currency risk in respect of financial assets and liabilities denominated in the following currencies:

(Unit: Million Baht)

	Consolidated financial statements		Separate financial statements	
	2022	2021	2022	2021
<b>US Dollars</b>				
Cash and cash equivalents	16,900	17,198	15,360	15,819
Trade receivables	2,190	3,427	430	2,074
Other receivables	2,074	250	2,099	184
Derivative assets	739	413	739	413
Financial assets at fair value through profit or loss	417	247	-	-
Financial assets at fair value through other comprehensive income	105	168	-	-
Trade payables	(27,761)	(21,761)	(26,767)	(20,246)
Other payables	(1,000)	(454)	(1,590)	(1,148)
Loans and debentures	(122,464)	(118,368)	(122,866)	(118,788)
Derivative liabilities	(193)	(68)	(204)	(68)
	(128,993)	(118,948)	(132,799)	(121,760)
<b>Other currencies</b>				
Cash and cash equivalents	435	1,196	319	1,058
Trade receivables	1,064	684	-	-
Other receivables	17	13	-	-
Trade payables	(110)	(260)	-	-
Other payables	(69)	(445)	(44)	(413)
Loans	(452)	(275)	-	-
	885	913	275	645



# Notes to consolidated financial statements

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(Unit: Million Baht)

	Consolidated financial statements		Separate financial statements	
	2022	2021	2022	2021
Gross exposure in the statement of financial position	(128,108)	(118,035)	(132,524)	(121,115)
Forward foreign exchange contracts	6,111	5,276	6,111	5,276
Cross currency swaps	19,797	19,797	19,797	19,797
<b>Net exposure</b>	<b>(102,200)</b>	<b>(92,962)</b>	<b>(106,616)</b>	<b>(96,042)</b>

## 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:

(Unit: Million Baht)

	Consolidated and Separate financial statements	
	2022	2021
<b>Forward foreign exchange contracts</b>		
Carrying amount (liability) (Million Baht)	658	394
Notional amount (Million US Dollars)	196	170
Maturity date	January 2023	January 2023
Hedge ratio	1 : 1	1 : 1
Weighted average hedged rate for outstanding hedging instruments (including forward points)	31.18	31.04
<b>Cross currency swaps contracts</b>		
Carrying amount (liability) (Million Baht)	(1,536)	860
Notional amount (Million US Dollars)	623	623
Maturity date	March 2030 to October 2035	March 2030 to October 2035
Hedge ratio	1 : 1	1 : 1
Weighted average hedged rate for outstanding hedging instruments (including forward points)	31.79	31.79



# Notes to consolidated financial statements

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In term of the hedge on foreign currency proceed with the loans denominated in foreign currency, as at 31 December 2022, the Company's fully drawdown loans amounted to Baht 52,429 million were used in the hedging activities. The loans notional amount was US Dollar 1,716 million with maturity from November 2028 to November 2048. The Company's exchange rate for hedge instrument was Baht 32.193 per one US Dollar.

## Sensitivity

As shown in the table above, 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.

(Unit: Million Baht)

	Consolidated financial statements			
	Impact to net profit		Impact to other components of equity	
	2022	2021	2022	2021
Baht to US Dollar exchange rate				
- increase 10% *	(1,160)	(1,323)	(4,321)	(4,208)
Baht to US Dollar exchange rate				
- decrease 10% *	1,160	1,323	4,313	4,208

\* Holding all other variables constant



# Notes to consolidated financial statements

Thai Oil Public Company Limited

For the year ended 31 December 2022

(Unit: Million Baht)

	Separate financial statements			
	Impact to net profit		Impact to other components of equity	
	2022	2021	2022	2021
Baht to US Dollar exchange rate				
- increase 10% *	(1,212)	(1,156)	(7,025)	(6,715)
Baht to US Dollar exchange rate				
- decrease 10% *	1,212	1,156	7,017	6,715

\* Holding all other variables constant

## b) Cash flow and fair value interest rate risk

The Group's main interest rate risk arises from long-term borrowings with variable rates, which expose the Group to cash flow interest rate risk. Generally, the Group enters into long-term borrowings at floating rates and swaps them into fixed rates that are lower than those available if the Group borrowed at fixed rates directly. During 2021 and 2022, the Group's borrowings at variable rate were mainly denominated in Baht and US dollars.

The borrowings are carried at amortised cost. The borrowings rate is based on market interest rates which detailed in Note 24 Therefore, the Group is exposed to the risk of future changes in market interest rates.



# Notes to consolidated financial statements

Thai Oil Public Company Limited

For the year ended 31 December 2022

The exposure of long-term loans interest rate changes at the end of the reporting period are as follows:

(Unit: Million Baht)

	Consolidated financial statements			
	2022		2021	
	Million Baht	% of total loans	Million Baht	% of total loans
Variable rate borrowings	22,907	13	45,693	25

As at 31 December 2022, the percentage of total loans shows the proportion of long-term loans that are currently at variable rates in relation to the total amount of long-term loans 182,765 million (2021: Baht 173,751 million). An analysis by maturities is provided in note 37.1.3.

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 23% (2021: 12%) of the variable loan principal outstanding. The fixed interest rates of the swaps range between 4.21% and 4.42% (2021: 4.21% and 4.42%), and the variable rates of the loans are 2.81% (2021: 2.15%) 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.

The Group applies hedge accounting for certain interest rate swaps.



# Notes to consolidated financial statements

Thai Oil Public Company Limited

For the year ended 31 December 2022

## *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:

(Unit: Million Baht)

	Consolidated financial statements	
	2022	2021
<i>Interest rate swaps contracts</i>		
Carrying amount (liabilities)	(59)	(315)
Notional amount	5,373	5,658
Maturity date	March 2028	March 2028
Hedge ratio	1 : 1	1 : 1
Weighted average strike rate for outstanding hedging instruments for the year	4.34%	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.

(Unit: Million Baht)

	Consolidated financial statements			
	Impact to net profit		Impact to other components of equity	
	2022	2021	2022	2021
Interest rate - increase 1% *	(143)	(324)	(143)	221
Interest rate - decrease 1% *	143	324	143	(221)

\* Holding all other variables constant



# Notes to consolidated financial statements

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## c) Price risk of petroleum products

The Group's and the Company's exposure to price risk arises from time to time by volatility and cyclical movement in the market prices for crude oil, petroleum, and petrochemical products. The Group manages this risk by using derivative financial instruments, for example, oil price crack spread swap and time spread swap as appropriated.

### Sensitivity

The table below summarises the impact of increases or decreases of the index on net profit for the year.

(Unit: Million Baht)

	Consolidated and Separate financial statement
	Impact to net profit
	2022
Price increases by 1 % *	(49)
Price decreases by 1 % *	49

\* Holding all other variables constant

## 37.1.2 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 within 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 credit rating 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.



# Notes to consolidated financial statements

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For the year ended 31 December 2022

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.

## c) Impairment of financial assets

The Group considers that impairment of financial assets does not have significant financial impact.

### *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*

Debt investments are measured at amortised cost include other receivables and loans to related parties.

All of the debt investments at amortised cost and FVOCI are considered to have low credit risk, and the loss allowance recognised during the year was therefore limited to 12 months expected losses. Management consider 'low credit risk' for listed bonds to be an investment grade credit rating with at least one major rating agency. Other instruments are considered to have low credit risk when they have a low risk of default and the issuer has a strong capacity to meet its contractual cash flow obligations in the near term.

### *Financial asset measured at fair value through profit or loss (FVPL)*

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 of Baht 798 million (2021: Baht 619 million).



# Notes to consolidated financial statements

Thai Oil Public Company Limited

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## 37.1.3 Liquidity risk

Prudent liquidity risk management is to maintaining sufficient cash and the availability of funding through an adequate amount of committed credit facilities to meet obligations when due and to close out market positions. At the end of the reporting period the Group held deposits at call of Baht 43,576 million (2021: Baht 29,696 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:

(Unit: Million Baht)

	Consolidated financial statements		Separate financial statements	
	2022	2021	2022	2021
<b>Floating rate</b>				
Expiring within one year				
- Short-term committed bank credit facility	7,955	5,841	6,700	3,700
- Short-term uncommitted bank credit facility	6,475	5,144	2,630	3,844
Expiring beyond one year				
- Long term Loan Facility	6,074	11,500	6,000	11,500
	20,504	22,485	15,330	19,044



# Notes to consolidated financial statements

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## b) Maturity of financial liabilities

The tables below analyse the Group's financial liabilities into relevant maturity based on their contractual maturities for:

- (a) all non-derivative financial liabilities; and
- (b) net and gross settled derivative financial instruments for which the contractual maturities are essential for an understanding of the timing of the cash flows.

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.

(Unit: Million Baht)

	Consolidated financial statements				
Maturity of financial liabilities as at 31 December 2022	Within 1 year	1 - 5 years	Over 5 years	Total	Carrying amount of (Assets/ Liabilities)
Non-derivatives					
Short-term loan from financial institutions	1,892	-	-	1,892	1,892
Trade and other payables	76,704	-	-	76,704	76,704
Accrued interest	7,837	23,718	73,850	105,405	1,365
Lease liabilities	1,401	20,745	362	22,508	22,508
Long-term loans from financial institutions	2,924	14,696	5,228	22,848	22,691
Long-term loans from related and other parties	-	-	216	216	216
Debentures	17,318	16,500	115,963	149,781	148,952
Other financial liabilities	235	3,243	63	3,541	3,541
Total non-derivatives	108,311	78,902	195,682	382,895	277,869



# Notes to consolidated financial statements

Thai Oil Public Company Limited

For the year ended 31 December 2022

(Unit: Million Baht)

Maturity of financial liabilities as at 31 December 2022	Consolidated financial statements				Carrying amount of (Assets/ Liabilities)
	Within 1 year	1 - 5 years	Over 5 years	Total	
Derivatives					
Forward foreign exchange contracts - trading	(12)	-	-	(12)	(12)
Oil price crack spread swap and time spread swap - trading (assets)	(739)	-	-	(739)	(739)
Oil price crack spread swap and time spread swap - trading (liabilities)	193	-	-	193	193
Forward foreign exchange contracts					
- cash flow hedge					
(Cash inflows)	(6,808)	-	-	(6,808)	(658)
Cash outflows	6,111	-	-	6,111	-
Interest rate swaps					
(Cash inflows)	(732)	(1,319)	-	(2,051)	385
Cash outflows	648	1,167	-	1,815	-
- Cash flow hedge					
(Cash inflows)	(164)	(562)	(29)	(755)	59
Cash outflows	224	764	40	1,028	-
Cross currency swaps - cash flow hedge					
(Cash inflows)	(859)	(3,437)	(27,770)	(32,066)	1,536
Cash outflows	753	3,010	25,853	29,616	-
Hedging foreign currency income					
- cash flow hedge					
(Cash inflows)	(2,925)	(17,452)	(89,811)	(110,188)	-
Cash outflows	2,738	10,952	89,455	103,145	-
Total derivatives	(1,572)	(6,877)	(2,262)	(10,711)	764
Total	106,739	72,025	193,420	372,184	278,633



# Notes to consolidated financial statements

Thai Oil Public Company Limited

For the year ended 31 December 2022

(Unit: Million Baht)

	Consolidated financial statements				
Maturity of financial liabilities as at 31 December 2021	Within 1 year	1 - 5 years	Over 5 years	Total	Carrying amount of (Assets/ Liabilities)
Non-derivatives					
Short-term loan from financial institutions	929	-	-	929	929
Trade and other payables	27,556	-	-	27,556	27,556
Accrued interest	7,805	20,293	72,675	100,773	1,255
Lease liabilities	1,405	4,156	19,127	24,688	15,383
Long-term loans from financial institutions	1,223	23,516	7,197	31,936	31,689
Long-term loans from related and other parties	-	14,000	279	14,279	14,279
Debentures	3,000	23,747	109,962	136,709	135,868
Other financial liabilities	290	142	138	570	570
<b>Total non-derivatives</b>	<b>42,208</b>	<b>85,854</b>	<b>209,378</b>	<b>337,440</b>	<b>227,529</b>



# Notes to consolidated financial statements

Thai Oil Public Company Limited

For the year ended 31 December 2022

(Unit: Million Baht)

	Consolidated financial statements				
Maturity of financial liabilities as at 31 December 2021	Within 1 year	1 - 5 years	Over 5 years	Total	Carrying amount of (Assets/ Liabilities)
Derivatives					
Forward foreign exchange contracts - trading	2	-	-	2	2
Oil price crack spread swap and time spread swap					
- trading (assets)	(413)	-	-	(413)	(413)
Oil price crack spread swap and time spread swap					
- trading (liabilities)	1	-	-	1	1
Forward foreign exchange contracts					
- cash flow hedge					
(Cash inflows)	-	(5,711)	-	(5,711)	(394)
Cash outflows	-	5,276	-	5,276	-
Interest rate swaps					
(Cash inflows)	(732)	(1,958)	(93)	(2,783)	-
Cash outflows	648	1,733	83	2,464	57
- Cash flow hedge					
(Cash inflows)	(117)	(404)	(105)	(626)	-
Cash outflows	236	816	210	1,262	316
Cross currency swaps - cash flow hedge					
(Cash inflows)	(830)	(3,324)	(27,689)	(31,843)	(860)
Cash outflows	752	3,010	25,943	29,705	-
Total derivatives	(453)	(562)	(1,651)	(2,666)	(1,291)
Total	41,755	85,292	207,727	334,774	226,238



# Notes to consolidated financial statements

Thai Oil Public Company Limited

For the year ended 31 December 2022

(Unit: Million Baht)

Maturity of financial liabilities as at 31 December 2022	Separate financial statements				Carrying amount of (Assets/ Liabilities)
	Within 1 year	1 - 5 years	Over 5 years	Total	
Non-derivatives					
Short-term loans from related parties	2,135	-	-	2,135	2,135
Trade and other payables	80,650	-	-	80,650	80,650
Accrued interest	8,134	24,561	80,381	113,076	1,445
Lease liabilities	1,339	4,099	19,080	24,518	15,224
Long-term loans from financial institution	1,700	10,300	-	12,000	19,536
Long-term loans from related party	9,851	-	99,954	109,805	119,858
Debentures	7,516	16,500	15,989	40,005	30,430
Other financial liabilities	85	10,300	99,954	110,339	110,339
<b>Total non-derivatives</b>	<b>111,410</b>	<b>65,760</b>	<b>315,358</b>	<b>492,528</b>	<b>379,617</b>



# Notes to consolidated financial statements

Thai Oil Public Company Limited

For the year ended 31 December 2022

(Unit: Million Baht)

Maturity of financial liabilities as at 31 December 2022	Separate financial statements				Carrying amount of (Assets/ Liabilities)
	Within 1 year	1 - 5 years	Over 5 years	Total	
Derivatives					
Oil price crack spread swap and time spread swap - trading (assets)	(739)	-	-	(739)	(739)
Oil price crack spread swap and time spread swap - trading (liabilities)	204	-	-	204	204
Forward foreign exchange contracts					
- cash flow hedge					
(Cash inflows)	(6,808)	-	-	(6,808)	(658)
Cash outflows	6,111	-	-	6,111	-
Interest rate swaps - cash flow hedge					
(Cash inflows)	(732)	(1,319)	-	(2,051)	385
Cash outflows	648	1,167	-	1,815	-
Cross currency swaps - cash flow hedge					
(Cash inflows)	(859)	(3,437)	(27,770)	(32,066)	1,536
Cash outflows	753	3,010	25,853	29,616	-
Hedging foreign currency income					
- cash flow hedge					
(Cash inflows)	(2,925)	(17,452)	(89,811)	(110,188)	-
Cash outflows	2,738	10,952	89,455	103,145	-
Total derivatives	(1,609)	(7,079)	(2,273)	(10,961)	728
Total	109,801	58,681	313,085	481,567	380,345



# Notes to consolidated financial statements

Thai Oil Public Company Limited

For the year ended 31 December 2022

(Unit: Million Baht)

Maturity of financial liabilities as at 31 December 2021	Separate financial statements				Carrying amount of (Assets/ Liabilities)
	Within 1 year	1 - 5 years	Over 5 years	Total	
Non-derivatives					
Short-term loans from related parties	2,135	-	-	2,135	2,135
Trade and other payables	29,326	-	-	29,326	29,326
Accrued interest	8,116	21,428	79,597	109,141	1,337
Lease liabilities	1,339	4,099	19,080	24,518	15,224
Long-term loans from financial institution	-	19,709	-	19,709	19,536
Long-term loans from related party	-	23,528	96,672	120,200	119,858
Debentures	3,000	14,269	13,292	30,561	30,430
Other financial liabilities	115	43,237	96,951	140,303	140,303
<b>Total non-derivatives</b>	<b>44,031</b>	<b>126,270</b>	<b>305,592</b>	<b>475,893</b>	<b>358,149</b>



# Notes to consolidated financial statements

Thai Oil Public Company Limited

For the year ended 31 December 2022

(Unit: Million Baht)

Maturity of financial liabilities as at 31 December 2021	Separate financial statements				Carrying amount of (Assets/ Liabilities)
	Within 1 year	1 - 5 years	Over 5 years	Total	
Derivatives					
Oil price crack spread swap and time spread swap - trading (assets)	(413)	-	-	(413)	(413)
Oil price crack spread swap and time spread swap - trading (liabilities)	68	-	-	68	68
Forward foreign exchange contracts					
- cash flow hedge					
(Cash inflows)	-	(5,711)	-	(5,711)	(394)
Cash outflows	-	5,276	-	5,276	-
Interest rate swaps - cash flow hedge					
(Cash inflows)	(732)	(1,958)	(93)	(2,783)	-
Cash outflows	648	1,733	83	2,464	57
Cross currency swaps - cash flow hedge					
(Cash inflows)	(830)	(3,324)	(27,689)	(31,843)	(860)
Cash outflows	752	3,010	25,943	29,705	-
<b>Total derivatives</b>	<b>(507)</b>	<b>(974)</b>	<b>(1,756)</b>	<b>(3,237)</b>	<b>(1,542)</b>
<b>Total</b>	<b>43,524</b>	<b>125,296</b>	<b>303,836</b>	<b>472,656</b>	<b>356,607</b>



# Notes to consolidated financial statements

Thai Oil Public Company Limited

For the year ended 31 December 2022

## 37.2 Capital management

### 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 2022, the Group's strategy, which remains unchanged, was to maintain a gearing ratio within 1.0 time and a Baa3 credit rating for Moody's and BBB credit rating for S&P's. In order to increase the strength of capital structure and to maintain an investment grade credit rating. As at 31 December, the gearing ratios of the Group are as follows:

(Unit: Million Baht)

	Consolidated financial statements	
	2022	2021
Net debt (including lease liabilities)	152,340	168,123
Equity (including non-controlling interests)	158,657	123,094
Net debt to equity ratio	1.0 times	1.4 times

### 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 2022, the Group and the Company has complied with certain criteria and condition as specified in the contract.



# Notes to consolidated financial statements

Thai Oil Public Company Limited

For the year ended 31 December 2022

## 38. Fair Value

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.

(Unit: Million Baht)

	Consolidated financial statements				
	as at 31 December 2022				
	Carrying amount	Level 1	Level 2	Level 3	Total
<b>Assets</b>					
Financial assets at fair value through profit or loss					
Debt investments	798	381	-	417	798
Financial assets at fair value through other comprehensive income					
Equity investments of listed company	21,287	21,287	-	-	21,287
Equity investments of non-listed company	107	-	-	107	107
<b>Derivatives</b>					
Current					
Oil price crack spread swap and time spread swap	739	-	739	-	739
Derivatives used for hedge accounting					
Forward foreign exchange contracts	669	-	669	-	669
<b>Liabilities</b>					
Derivatives					
Current					
Oil price crack spread swap and time spread swap	193	-	193	-	193
Non-current					
Interest rate swap	444	-	444	-	444
Cross currency swap	1,536	-	1,536	-	1,536
Financial liabilities not measured at fair value					
Debenture	148,952	-	111,029	-	111,029



# Notes to consolidated financial statements

Thai Oil Public Company Limited

For the year ended 31 December 2022

(Unit: Million Baht)

	Consolidated financial statements				
	as at 31 December 2021				
	Carrying amount	Level 1	Level 2	Level 3	Total
<b>Assets</b>					
Financial assets at fair value through profit or loss					
Debt investments	619	373	-	246	619
Financial assets at fair value through other comprehensive income					
Equity investments of listed company	1,087	1,087	-	-	1,087
Equity investments of non-listed company	169	-	-	169	169
<b>Derivatives</b>					
Current					
Oil price crack spread swap and time spread swap	414	-	414	-	414
Non-current					
Derivatives used for hedge accounting					
Forward foreign exchange contracts	394	-	394	-	394
Cross currency swap	860	-	860	-	860
<b>Liabilities</b>					
<b>Derivatives</b>					
Current					
Forward foreign exchange contracts	2	-	2	-	2
Non-current					
Interest rate swap	373	-	373	-	373
Financial liabilities not measured at fair value					
Debenture	135,868	-	136,481	-	136,481



# Notes to consolidated financial statements

Thai Oil Public Company Limited

For the year ended 31 December 2022

(Unit: Million Baht)

	Separate financial statements				
	as at 31 December 2022				
	Carrying amount	Level 1	Level 2	Level 3	Total
<b>Assets</b>					
Financial assets at fair value through profit or loss					
Debt investments	381	381	-	-	381
Financial assets at fair value through other comprehensive income					
Equity investments of listed company	20,584	20,584	-	-	20,584
Equity investments of non-listed company	2	-	-	2	2
<b>Derivatives</b>					
Current					
Oil price crack spread swap and time spread swap	739	-	739	-	739
Derivatives used for hedge accounting					
Forward foreign exchange contracts	658	-	658	-	658
<b>Liabilities</b>					
Derivatives					
Current					
Oil price crack spread swap and time spread swap	204	-	204	-	204
Non-current					
Interest rate swap	385	-	385	-	385
Cross currency swap	1,536	-	1,536	-	1,536
Financial liabilities not measured at fair value					
Debenture	39,871	-	27,345	-	27,345



# Notes to consolidated financial statements

Thai Oil Public Company Limited

For the year ended 31 December 2022

(Unit: Million Baht)

	Separate financial statements				
	as at 31 December 2021				
	Carrying amount	Level 1	Level 2	Level 3	Total
<b>Assets</b>					
Financial assets at fair value through profit or loss					
Debt investments	373	373	-	-	373
Financial assets at fair value through other comprehensive income					
Equity investments of non-listed company	2	-	-	2	2
<b>Derivatives</b>					
Current					
Oil price crack spread swap and time spread swap	413	-	413	-	413
Non-current					
Derivatives used for hedge accounting					
Forward foreign exchange contracts	394	-	394	-	394
Cross currency swap	860	-	860	-	860
<b>Liabilities</b>					
<b>Derivatives</b>					
Current					
Oil price crack spread swap and time spread swap	68	-	68	-	68
Non-current					
Interest rate swap	57	-	57	-	57
Financial liabilities not measured at fair value					
Debenture	30,430	-	32,400	-	32,400



# Notes to consolidated financial statements

Thai Oil Public Company Limited

For the year ended 31 December 2022

During the current year, there were no changes in the methods and the assumptions used to estimate the fair value of financial instruments and there were no transfers between the levels of the fair value hierarchy.

Fair value measurement of financial assets and liabilities is in accordance with accounting policy disclosed in Note 4.

## 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.
Forward 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 latest price of comparable market securities.



# Notes to consolidated financial statements

Thai Oil Public Company Limited

For the year ended 31 December 2022

## Valuation techniques used in measuring level 3 fair values

Changes in level 3 financial instruments for the period ended 31 December 2022 is as follows:

(Unit: Million Baht)

	Consolidated financial statements		
	Debt investment	Equity investment	Total
Beginning balance as at 1 January 2022	246	169	415
Additions	85	70	155
Gain (loss) recognised in profit or loss	10	(68)	(58)
Reclassify	70	(70)	-
Exchange differences	6	6	12
Ending balance as at 31 December 2022	417	107	524

The Group considers the significant unobservable inputs used in level 3 fair value measurements and concludes that fair value approximates carrying amount. For the fair value measurement of contingent consideration from the investment acquisitions, the Group considers by using future cash flow projection discounted with cost of debt and the assumptions of relating probabilities of conditions in the share purchase agreements.

The Group did not have any transfers between levels during the year.

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, long-term loans from a third party, and long-term loans from a related party approximates their fair value, since their interest rates are close to market rate.



# Notes to consolidated financial statements

Thai Oil Public Company Limited

For the year ended 31 December 2022

## Consolidated financial statements

### Financial assets

- Cash and cash equivalents
- Deposits at a financial institution used as collaterals
- Short-term investments
- Trade receivables
- Other receivables
- Finance lease receivables
- Other non-current assets

### Financial liabilities

- Short-term loans from financial institutions
- Trade payables
- Other payables
- Long-term loans from financial institutions
- Long-term loans from a third party
- Long-term loans from a related party
- Lease liabilities
- Other non-current liabilities

## Separate financial statements

### Financial assets

- Cash and cash equivalents
- Short-term investments
- Trade receivables
- Other receivables
- Finance lease receivables
- Short-term loan to related parties
- Current portion of long-term loans to related parties
- Other non-current assets

### Financial liabilities

- Short-term loans from related parties
- Trade payables
- Other payables
- Long-term loans from financial institutions
- Long-term loans from related parties
- Lease liabilities
- Other non-current liabilities



# Notes to consolidated financial statements

Thai Oil Public Company Limited

For the year ended 31 December 2022

## 39. Events after the reporting period

On 10 February 2023, the Company's Board of Directors passed a resolution to propose to the Annual General Meeting of Shareholders to consider the following matters:

1) Dividend declaration

To approve the dividend payment for the year 2022 at Baht 3.70 per share, totalling Baht 8,265 million. Such a dividend included the interim dividends of Baht 2.00 per share, which the Company has already paid to the shareholders of the Company in November 2022. Therefore, the additional dividend of Baht 1.70 per share, totalling Baht 3,798 million. The dividends were scheduled to be paid on 27 April 2023.

2) Decreasing in registered share capital

To approve the decrease in the Company's registered share capital of Baht 813 million by cancelling of 81.3 million unissued shares with a par value of Baht 10 per share from the existing registered capital of Baht 23,151 million to be Baht 22,238 million.

This dividend declaration and decreasing in registered share capital are subject to the approval of the Company's Annual General Meeting of Shareholders which is to be held on 10 April 2023.

## 40. Approval of financial statements

These financial statements were authorised for issue by the Company's Board of Director on 10 February 2023.



# Auditors' Fees for 2022

## 1. Audit Fee

The Company, subsidiaries and the Member Companies of Thai Oil Group-Registered Provident Fund paid for the audit fees to the auditors' company for the latest account period amounting to Baht 7,258,526 (Seven million two hundred fifty eight thousands five hundred and twenty six baht).

## 2. Non-Audit Fee

The Company and Subsidiaries also paid for other services, including verification of compliance with the BOI Investment Promotion Certificate to the auditor's company for the latest account period amounting to Baht 300,000 (three hundred thousand baht) and for the allocation of newly issued ordinary shares of the Company (Right Offering of newly Issued Ordinary Share) amounting to Baht 4,900,000 (four million and nine hundred thousand baht).









Professionalism

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Striving



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