



THE VITAL FORCE... BEHIND THE SUCCESS

THAI OIL PUBLIC COMPANY LIMITED
ANNUAL REPORT 2016

VISION

A leading fully integrated refining
and petrochemical company in Asia Pacific.

MISSION

To be in top quartile on performance
and return on investment

To create a high-performance organization
that promotes teamwork, innovation,
and trust for sustainability

To emphasize good Corporate Governance (CG)
and commit to Corporate Social Responsibility (CSR)

With the dedication, teamwork, together with experience
and expertise, supported by the operation excellence system,
Thaioil's staff has become the vital force
and key mechanism behind the company success.

Investors can acquire the Company's information
from the Disclosure Report concerning additional information (Form 56 – 1)
as shown in www.sec.or.th or the Company's website at www.thaioilgroup.com

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With Deepest Condolences
For the Great Loss of

His Majesty King Bhumibol Adulyadej

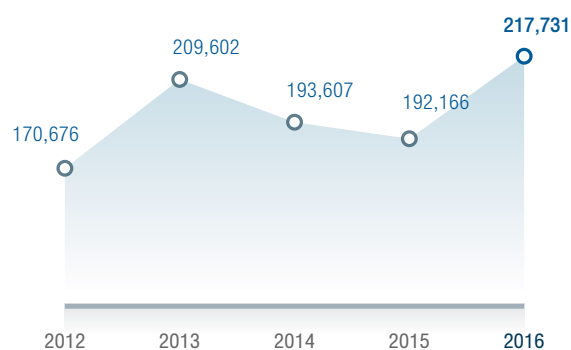
Whose Royal Benevolence and Grace
Shall Remain in Our Hearts Eternally

Board of Directors, Management and Staff of
Thai Oil Public Company Limited and Subsidiaries

FINANCIAL HIGHLIGHTS

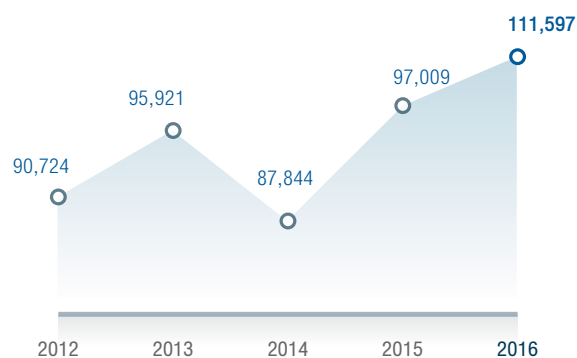
TOTAL ASSETS

217,731 Million Baht



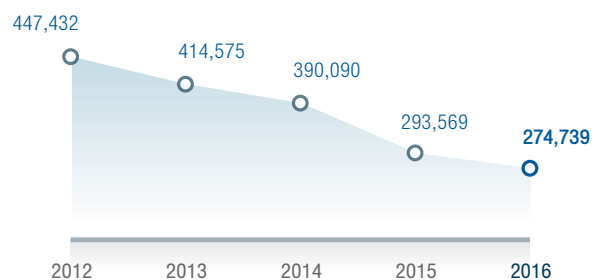
TOTAL EQUITY

111,597 Million Baht



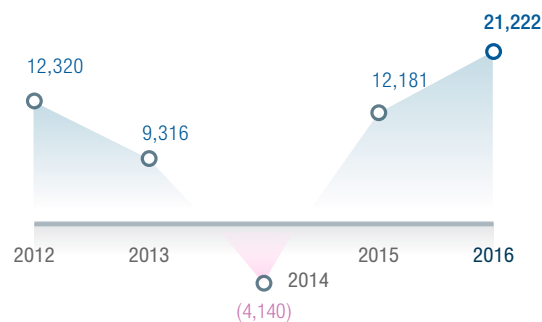
SALES REVENUE

274,739 Million Baht



NET PROFIT

21,222 Million Baht



		2016	2015	2014 ⁽¹⁾	2013 ⁽¹⁾	2012
Operating Results						
Sales Revenue	Million Baht	274,739	293,569	390,090	414,575	447,432
EBITDA	"	32,675	25,492	2,651	22,337	20,350
Net Profit / (Loss)	"	21,222	12,181	(4,140)	9,316	12,320
Basic Earnings / (Loss) per Share	Baht	10.40	5.97	(2.03)	4.57	6.04
Financial Position						
Total Assets	Million Baht	217,731	192,166	193,607	209,602	170,676
Total Liabilities	"	106,134	95,157	105,763	113,681	79,952
Total Equity	"	111,597	97,009	87,844	95,921	90,724
Financial Ratios						
Interest Coverage Ratio	Times	9.4	7.4	0.7	5.9	8.7
Current Ratio	"	3.4	5.0	2.7	2.6	2.9
Net Debt to Equity Ratio	"	0.1	0.2	0.4	0.3	0.2
Return on Equity	Percent	21.3	13.9	(4.7)	10.2	14.8
Return on Assets	"	10.4	6.3	(2.1)	4.5	7.6
Stock Data						
Annual average						
Daily closing stock price	Baht / Share	66.70	53.50	50.40	64.60	65.10
Market Capitalization	Million Baht	136,070	109,141	102,817	131,786	132,806
Dividend Payment	Baht / Share	4.50 ⁽²⁾	2.70	1.16	2.30	2.70
Dividend Yield ⁽³⁾	Percent	6.7	5.0	2.3	3.6	4.2
Book Value	Baht / Share	52.38	45.28	40.88	44.97	42.42

Notes:

⁽¹⁾ Thaioil and Subsidiaries has adopted new and revised Thai Financial Reporting Standards 10 (TFRS 10) on Consolidated Financial Statements which is effective for Annual Accounting periods beginning on or after January 1, 2015, having a restatement on Statement of Financial Position as of December 31, 2013 and 2014 as well as Statement of Income and Statement of Cash Flows as of December 31, 2014.

⁽²⁾ Including the interim dividend for 2016 half-year results at the rate of Baht 1.50 per share which was paid on September 23, 2016, and the remaining dividend Baht 3.00 per share is to be proposed to the 2017 Annual General Meeting of Shareholders' approval.

⁽³⁾ Calculated from the Annual average: Daily closing stock price.

MESSAGE FROM THE BOARD OF DIRECTORS



Mr. Kurujit Nakornthap
Chairman of the Board



Mr. Atikom Terbsiri
Chief Executive Officer and President



To the Shareholders

Thaioil and Subsidiaries are determined and committed to operate the fully integrated refining and petrochemical businesses focusing on stable growth and Good Governance and aligning the Company's vision. The Board of Directors (the Board) recognize their responsibilities and govern the business management to ensure the optimum benefit for the shareholders, society, and national economy.

The Board therefore defined a prudent policy that entails information disclosure to the shareholders in a factual, complete, transparent, and timely way. Both the Board

and the executive laid down strategies and cascaded plans for efficient implementation. The executive and employees dedicate their strength and integrity to ensure effective performance and constant compliance with laws, regulations, and the resolutions of the Board and the shareholders. This drives the businesses of Thaioil and Subsidiaries toward satisfactory growth figures together with remarkable performance outcomes and decent returns to the shareholders. Thaioil stands by integrity and operates under its Code of Conduct and good Corporate Governance along with proper regard for all stakeholders. For over 55 years, Thaioil has taken

For over 55 years, Thailoil has taken pride in being a leading company that enhances the security of energy and the domestic economy, as well as a role model organization that contributes to the society and maintain the environmental quality.

pride in being a leading company that enhances the security of energy and the domestic economy, as well as a role model organization that contributes to the society and maintain the environmental quality.

Determined Workforce

The World economy in 2016 was volatile and sluggish, particularly in the European Union, U.S.A., and China, caused by the fact that superpowers' change in economic policies resulting in different trade patterns and international investment. Major incidents in 2016; for example, the UK's Brexit votes, the US Presidential Election, China's economic structure reform, the stronger US Dollar coupled with volatile crude oil prices — which rose mildly at the year-end after OPEC had agreed

to limit their output capacities amid pressure exerted by rising supply of petroleum products, inevitably affected the Company's business and were considered challenges to Thailoil and Subsidiaries. Yet, due to all employees' commitment and operational excellence, Thailoil efficiently prepared the price and foreign exchange risk management in tandem with Transcendence Project, which raised overall operating revenue by Baht 257 million along with productivity; as well as Orchestra Project which helped lower the costs by Baht 527 million, resulting in the decreased operating cash cost to only 1.8 USD per barrel. These caused Thailoil and Subsidiaries' consolidated profits for the year 2016 Baht 21,222 million — the highest in its 55-year history.

Refining Power

Building on the firm foundation of its core petroleum and petrochemical businesses, Thailoil and Subsidiaries kept initiating projects for continued growth, either by expanding business to add value to the existing products or by enhancing production capacity and competitiveness capability. This year, there were many projects commencing the commercial operation date; for example, Linear Alkyl Benzene Project of Labix Co.,Ltd. with the production capacity of 120,000 tons per year, the new Small Power Plant Project of TOP SPP Co.,Ltd. with a combined capacity of 239 MW; and the acquisition of chemical tankers for Thailoil Marine's fleet. Moreover, Thailoil aims to open new market overseas in order to seek for business growth opportunities in ASEAN countries, known for their remarkable economic growth and energy demand. For example, TOP Solvent Co.,Ltd. started to sell solvent products to Myanmar for the first time.

Also, there are many projects under study or construction process; such as Clean Fuel Project, Specialty Product Development Project, and capability improvement for product distribution by lorry loading and by vessel. The Board is confident that once these projects get underway, Thailoil and Subsidiaries are bound to become even stronger leaders in fully integrated refining and petrochemical businesses in Asia Pacific.

Bolstering Value

Besides Thailoil and Subsidiaries' commitment to enhancing corporate security and national energy security, it dearly values the safety of employees and neighboring communities, evident in Thailoil's safety record being among the top 10 of the domestic petroleum and gas businesses. Meanwhile, Thailoil is also committed to its evolution of innovation originated from employees' expertise and skills causing the Company to win four patents for inventions that raise operating efficiency, including in-pipe inspection robot. One of the key missions of Thailoil and Subsidiaries is to tangibly develop communities, society, and environment to ensure higher quality of life. The project stemming from this mission are as followed: the Trauma and Emergency Building of the Laem Chabang Hospital, Rehabilitation of Aquatic Nursery Ground by using Artificial Seagrass, and the application of expertise and skills to community development in remote areas with limited public utilities, including the Mae Jo Hydropower Plant for Community Project in Chiang Mai Province, and a Community Healthcare and Renewable Energy Development Project at Koh Mak Noi in Phang-Nga Province.

All these notable successes have resulted from the commitment of Thailoil and Subsidiaries, which this year garnered widespread acclaim, including certification

of a member in the Emerging Markets given by Dow Jones Sustainability Indices (DJSI) for the fourth consecutive year, with the highest score in the world energy industry group for the third consecutive year; recognition in RobecoSAM Yearbook as a sustainability leader in the oil and gas industry, also with the highest score; honor bestowed by ASEAN Energy Awards for Energy Management (energy conservation); and certification for ESG 100 listed companies for outstanding performance in environment, society, and corporate governance.

In order to step up as a leading organization in Asia Pacific, the Board, the executive, and all staff are fully determined to efficiently refine energy and create value for Thailand as the Company has been doing for the past 55 years; meanwhile, Thaipet and Subsidiaries are committed to fairly add long-term value for all shareholders and stakeholders, as well as promote a balance among Thailand's economic, social and environmental growth, for always.

Staff

with Determination

Hydrocarbon Management Review





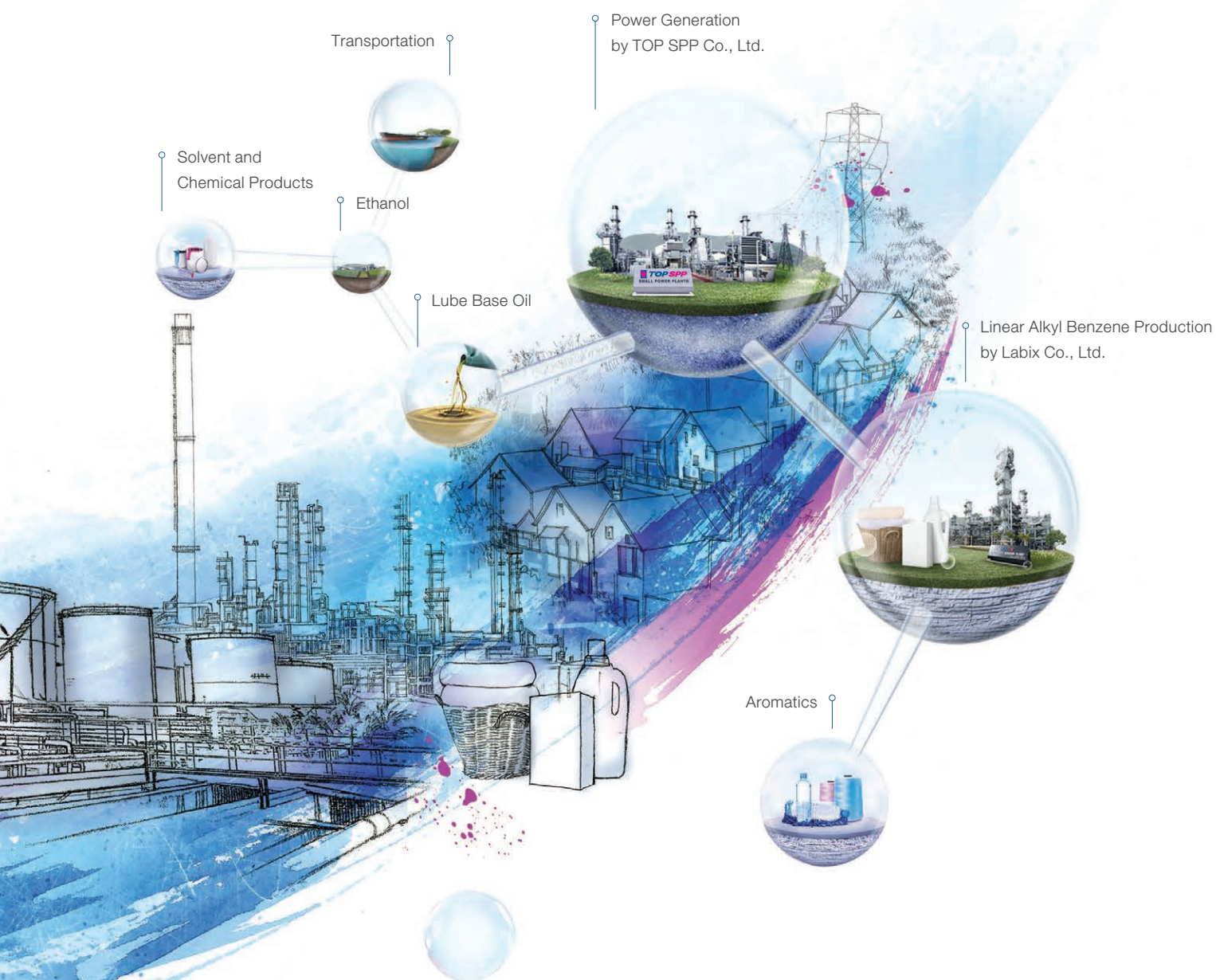
Due to the determination of the Board of Directors, the executive, and staff in pursuit of Operational Excellence and concise planning, Thaioil and Subsidiaries are able to manage factors affecting business operation through efficiency improvement projects. This generates revenues while reducing operating costs, resulting in Thaioil's net profit of Baht 21,222 million. The projects executed in the year 2016 are as followed:

- Hydrocarbon Management Review
- Transcendence Project – improving supply chain
- Orchestra Project – reducing operating costs

Energy Relentlessly and

**Creatively
Refined**





Apart from petroleum refinery which is the Company's core business operated with expertise, emphasizing the integrated business is Thailoil's key strategy. This is aimed to add values while reducing the volatility accompanying the business. The results from the mentioned strategy, together with experience and competency of staff in all levels, have equipped Thailoil to constantly expand the business.

Linear Alkyl Benzene Production Project by Labix Co., Ltd. and new Small Power Plants Project – phase 1 and 2 – by TOP SPP Co., Ltd. are Thailoil's projects whose commercial operation dates were commenced in 2016.

1961

Founded
Thai Oil Refinery
Company Limited

1985

Changed name to
Thai Oil Co., Ltd.

2004

Registered as
public company limited
to Stock Exchange of
Thailand in energy sector
named as "TOP"


In-Pipe Inspection Robot Project

Trauma and Emergency Building
of the Laem Chabang Hospital –
providing medical service and
reducing death rate and disability
from accidents

Values Cultivated toward Sustainability

Thaioil and Subsidiaries operates with integrity, transparency, and fair treatment towards stakeholders. The Company ensures community, society, and environment improvement, along with the development of innovation stemmed from staff's expertise. This is evidenced in many awards recognizing Thaioil as the world leader of sustainable business.





Thaioil and Subsidiaries' Community Health and Learning Center

Energy Management Award hosted by ASEAN Energy Award for utilizing engineering expertise to build Mae Jo Hydropower Plant for community to generate electricity, revenue, and sustainable strength of community

Today

DJSI's third consecutive year of Leader in sustainable business management in Energy Industry and the fourth consecutive year of the Gold Class Leader of Refinery and Oil & Gas Industry announced by RobecoSAM Sustainability Award 2017.

MEMBER OF

**Dow Jones
Sustainability Indices**

In Collaboration with RobecoSAM



ROBECOSAM
Sustainability Award
Gold Class 2017

AUDIT COMMITTEE REPORT



Ms. Chularat Suteethorn
Chairman of the Audit Committee

To the Shareholders

Appointed by the Board of Directors (the Board), the present Audit Committee consisted of four Independent Directors, chaired by Ms. Chularat Suteethorn, with three members; namely, Mr. Siri Jirapongphan, Ms. Suvimol Chrityakierne, and General Thanakarn Kerdnaimongkol. This year the Committee's composition changed with the resignation of Mr. Chulasingh Vasantasingh, effective as from January 31. Ms. Chrityakierne and General Kerdnaimongkol were appointed to fill the vacancies in the Board Meeting no. 1/ 2016 dated January 22, and in the Board Meeting no. 4/ 2016 dated April 27 respectively.

All four members commanded pertinent expertise and experience in economics, finance and accounting, engineering, petroleum-petrochemical-energy business, political science, social science, and security. They are, therefore, qualified to review the credibility of financial

statements against the requirements of the Securities and Exchange Commission (SEC) and the Stock Exchange of Thailand (SET). The Committee independently performed its duties as assigned by the Board and prescribed in the Audit Committee Charter, conforming to the requirements and good practices for audit committees according to the SEC and SET. In 2016, the Committee held 10 meetings, including consultations with the executive, the internal auditor, and the external auditor on relevant agenda. At one meeting, the Committee met separately with the external auditor in the absence of the executive. The Committee performance in 2016 is summarized as followed:

1. Financial Statements

The Committee reviewed key items and issues of quarterly and annual financial statements for Thailoil and Subsidiaries, including the new-format report of the external auditor for 2016, which featured key topics that differed from the previous format; namely, Key Audit Matters (KAMs) and other information. The Committee was provided with the relevant clarification by the external auditor and high-level executives, leading to the conclusion that Thailoil's preparation of financial statements and disclosure in the notes to the financial statements, aligned with Thai Financial Reporting Standards (TFRS), which in turn conformed to International Financial Reporting Standards (IFRS). The external auditor reported an unqualified opinion: no material observation was filed; the internal control system was assessed and found suitable; no data was

concealed; and the auditor could work independently. In addition, the Committee together with the external auditor in the absence of executives discussed matters related to the external auditor working, inclusive of the internal control system as the audit of financial statements, major obstacles during the audit, and the cooperation with Corporate Internal Systems Audit.

2. Connected Transactions

In reviewing connected transactions or those posing potential conflicts of interest with Thailoil and Subsidiaries under the SEC's and SET's announcements, the Committee concluded that Thailoil and Subsidiaries, with the best interest of the Company and its shareholders, observed regular business practices, exercised fairness and sensibility, and produced no benefit siphoning. The Committee also reviewed to ensure the accuracy and completeness of such information for disclosure.

3. Risk Management

To ensure its suitability and continued efficiency improvement, the Committee reviewed Thailoil and Subsidiaries risk management system, regarding it as an element of the good Corporate Governance. It was found that Thailoil and Subsidiaries had assessed, analyzed, and revised risks together with their likelihood and impact, and constantly improved the systems to ensure its efficiency. Key Risk Indicators (KRIs) were also defined to efficiently and promptly address both internal and external changes. To this end, follow-ups were routinely mounted. Risk management practices were effectively executed under the stated policy and plans, and in line with Thailoil and Subsidiaries' short-term and long-term goals and strategic plans.

4. Internal Controls

The Committee reviewed Thailoil and Subsidiaries' internal control system this year to reasonably assure that Thailoil and Subsidiaries have performed efficiently and effectively, and achieved the defined objectives and goals. To this end, Thailoil and Subsidiaries assessed the internal control by assigning the executive to evaluate the sufficiency of the internal control system under the framework of the Committee of Sponsoring Organizations of the Treadway Commission (COSO). The Committee found that Thailoil and Subsidiaries' internal control systems are sufficient and suitable for their businesses, leading to efficient and effective performance. This system assessment was endorsed by the Committee and the Board.

5. Internal Systems Audit Supervision

Having Corporate Internal Systems Audit report directly to the Committee, it ensured the independence of the Corporate Internal Systems Audit. The Committee also reviewed and approved the annual internal audit plans, supervised the audit work against plans, supported the improvement of the audit quality, advised the Corporate Internal Systems Audit, as well as assessed the annual performance of the Vice President-Corporate Internal Systems Audit. In addition, this year the Committee specially valued the current business operation utilizing IT for recording business information; and therefore, approved the Continuous Control Monitoring System (CCMS), phase 1, from the procurement and purchase to the payment processes, using SAP system. Moreover, Governance Risk and Compliance (GRC): Process Control Module was approved to serve as means for executives and related work units to proactively

prevent anomalous items, as well as the consistent auditing tool for Corporate Internal Systems Audit. This system has been activated since October 31.

6. Law Compliance

The Committee reviewed and supervised to ensure that Thailoil and Subsidiaries' businesses are fully complied with securities and exchange laws, the SEC and SET regulations, laws relevant to the revenue code and IT, and other laws related to their businesses.

7. Appointment of the External Auditor for 2017

In selecting the external auditor, this Committee nominated KPMG Phoomchai Audit Ltd. as Thailoil's external auditor, since its past year's performance had been satisfactory and the auditor team had shown independence, skills, competence, and experience in energy-business audits, together with acceptable fees. The Committee therefore advised the Board to seek approval from the Annual General Meeting of Shareholders on appointing Mr. Vairoj Jindamaneepitak, Certified Public Accountant (CPA) registration no. 3565, Mr. Charoen Phosamritlert, CPA registration no. 4068, Mr. Waiyawat Korsamanchaikit, CPA registration no. 6333, or Mr. Natthaphong Tantichattanont, CPA registration no. 8829, as the external auditor as well as approval of the audit fee for the year 2017. The nominated auditors have secured SEC's concurrence.

In summary, the Audit Committee undertook its duties as prescribed in the Audit Committee Charter with diverse expertise, prudence, and independence to support and respond to Thailoil and Subsidiaries' businesses. It concluded that this year Thailoil and Subsidiaries valued efficient and effective business conduct,

prepared sufficient and credible financial statements aligning with financial reporting standards, sufficiently disclose the connected transactions with potential conflicts of interest, commanded the good Corporate Governance as well as sufficient and suitable risk management and internal control system, including fully conforming to relevant laws, legislations, and regulations governing its businesses.

The Audit Committee and Corporate Internal Systems Audit are constantly prepared to cope with changes under emerging regulations whose announcement is imminent.

February 10, 2017

On behalf of the Audit Committee



(Ms. Chularat Suteethorn)

Chairman of the Audit Committee

NOMINATION AND REMUNERATION COMMITTEE REPORT



Adjunct Professor Dr. Thosaporn Sirisumphand
Chairman of the Nomination
and Remuneration Committee

To the Shareholders

The Nomination and Remuneration Committee consists of at least three Directors, most of whom are independent and none of whom is the Chairman of the Board or an Executive Director. The current Committee is chaired by Adjunct Professor Dr. Thosaporn Sirisumphand (Independent Director), with Ms. Chularat Suteethorn (Independent Director) and Mr. Sarun Rungkasiri (Director) serving as members, with the Assistant Executive Vice President–Corporate Governance as the Committee’s secretary. The Committee is in charge of nominating persons whose qualifications meet the relevant criteria and processes for the appointment of Directors, Chief Executive Officer and President (CEO/President), and Board-Committee members. The Committee is also responsible for reviewing the forms and criteria for Directors’ compensation for the Board of Directors’ (the Board’s) endorsement and

the Annual General Meeting of Shareholders’ (AGM) approval respectively.

Meeting six times this year, the Committee completed all its duties stated in the Charter, each time with full attendance of all members who served at different periods. The meeting attendance details appear on page 110.

The Committee performance is summarized as followed:

1. Assessed the CEO/President’s performance as well as consider the merits raised reflecting his actual performance against the criteria for the Board’s approval;
2. Revised the Nomination and Remuneration Committee’s Charter, with the additional details about the roles and responsibilities on nomination, the segregation of the Board’s qualifications from those of the CEO/President for better clarity. Also, details were added about the processes and criteria for nomination, which must be in line with the decided structure and qualifications under good Corporate Governance. The revised Charter was approved by the Board on May 4;
3. Nominated experts for Directors’ appointment in accordance with the processes and criteria and tabled them for the Board’s or the shareholders’ approval as indicated by law. To this end, the Directors’ Pool of the State Enterprise Policy Office and Thai Institute of Directors’ registered professional Directors (IOD Chartered Director) were consulted

together with the overall and individual composition and qualifications of the Board to suit with the Company's size, business type, and complexity. The qualifications included education, knowledge, expertise, skills, experience, specific competency related to Thailoil's businesses, and independence as defined by corporate criteria;

4. Arranged the orientation for and distributed presentation slides of helpful documents or manuals to new Directors;
5. Nominated and selected members for Board-Committees, namely the Nomination and Remuneration Committee, the Audit Committee, the Corporate Governance Committee, and the Risk Management Committee, and tabled lists for the Board's approval of the appointment to fill the vacancies upon Directors' resignation or term completion;
6. Encouraged minor shareholders to propose agenda items and nominate Directors for election at least three months ahead of the 2017 AGM, from September 30 to December 31, 2016;
7. Reviewed the Board's compensation for 2016 in line with their responsibilities and Thailoil's overall performance. The compensation rates and criteria were to remain the same as proposed in the previous year for the Board's endorsement and the AGM's approval respectively;
8. Revised the composition and the overall qualifications of the Board (Skill Matrix) for better suitability and clarity;
9. Reviewed the Committee's own performance which was later reported to the Board.

January 17, 2017

On behalf of the Nomination and
Remuneration Committee



(Adjunct Professor Dr. Thosaporn Sirisumphand)
Chairman of the Nomination and
Remuneration Committee

CORPORATE GOVERNANCE COMMITTEE REPORT



ACM Suthipong Inseeyong

Chairman of the Corporate Governance Committee

To the Shareholders

One of Thailoil and Subsidiaries' key policies and missions is to operate business complying with the good Corporate Governance (CG) and the Code of Conduct, to which the Board of Directors (the Board), executives, and employees of Thailoil and Subsidiaries valued and are committed. To ensure the Company's compliance with the aforementioned policies, the Board appointed and assigned the Corporate Governance Committee to steer, monitor, and promote the businesses of Thailoil and Subsidiaries under the policy and guidelines for CG and the Code of Conduct. The Committee consists of three members with Air Chief Marshal (ACM) Suthipong Inseeyong as Chairman, with Adjunct Professor Dr. Thosaporn Sirisumphand and Mr. Yongyut Jantararotai as members.

This year the Committee carried out all duties as prescribed in the Committee Charter and as assigned by the Board, with five meetings held as planned. All members of a given period were present at each meeting. The resolutions, recommendations and advice on key CG activities and tasks are summarized as followed:

1. Developing, Improving, and Governing Business Operation to Comply with Laws, Regulations, and Best Practices

- >> Advising on and endorsing the 2016 plan for Annual General Meeting of Shareholders (AGM), successfully held under the good CG and the Thai Investors Association's AGM checklists, which Thailoil scored full marks. The Committee also acknowledged the 2016 AGM quality assessment, and provided recommendations to the executive for future improvement;
- >> Reviewing details on criteria for shareholders' proposal of AGM agenda items and nomination of Directors at the 2017 AGM, to ensure that such criteria clearly align with CG and best practices for leading companies. Shareholders were entitled to submit their proposal of agenda and names of qualified persons to be nominated as Directors including related information for the Board's consideration from September 30 to December 31, 2016;
- >> Reviewing complaint-making and whistle-blowing process so that the procedures against complaints become more transparent and efficient, in line with SET's whistle-blowing guidelines;

- >> Endorsing reference data and evidence prepared by the executive under their self-assessments concerning anti-corruption measures for the re-certification of Private Sector Collective Action Coalition against Corruption (CAC);
- >> Reviewing assessment outcomes of the Corporate Governance Report of Thai Listed Companies (CGR) Project, and providing recommendations for the improvement and development of guidelines to ensure the alignment with CGR criteria and recommendations.

2. Promoting Compliance with the Corporate Governance Policy, Anti-Corruption Policy, and Sustainable Development

- >> Providing recommendations and endorsing Thailoil's 2017 Corporate Governance (CG), anti-corruption, and stakeholders' treatment development plans with the focus on relentless cultivation of corporate culture on the good CG and the Code of Conduct for Thailoil and Subsidiaries' employees; constant legislation/standard tracking both domestic and overseas CG measures for Thailoil's further application; promoting fair and equitable treatment for stakeholders; and extending to business partners and stakeholders the advices or suggestions on the good CG and the Code of Conduct;
- >> Endorsing the 2017 Corporate Social Responsibility (CSR) development plan for communities around the refinery including education, environment conservation, energy and natural resources, and community members' quality of life. Thailoil also has development plans for remote communities utilizing the Company's knowledge, experience, and expertise in engineering and energy to benefit the particular area;

- >> Endorsing the 2017 Sustainable Development (SD) plan. The Committee provided recommendations for improvements of the SD plan and the management of future challenges.

3. Assessing the Board Performance

- >> Endorsing the 2015 assessment of the Board performance as well as the 2016 Board's performance assessment forms.

Due to its strong intention to operate businesses under the good CG, the CSR, and the sustainability management, Thailoil's 2016 performance was widely recognized both nationally and internationally. Evidently, Thailoil for four consecutive years, was selected as a member of Dow Jones Sustainability Indices (DJSI), maintaining the top score and recognition as Energy Industry Group Leader for the third year in a row. The Company also achieved the "Excellent" score (90-100 marks) from 2016 CGR's assessment for the eighth consecutive year. Additionally, Thailoil was named by SET among the "Sustainable Stocks" at the Thailand Sustainability Investment 2016 event. Finally, Thailoil also garnered the "Excellence" award for the 2016 SD report, the CSR-DIW Continuous Award for a fifth consecutive year, and the Outstanding Investor Relations Award (Resources category) at the IAA Awards for Listed Companies 2015/2016.

The Corporate Governance Committee is committed to promoting, developing, and governing Thailoil's business to be in line with the good CG, the CSR, and the sustainable development. This is in accordance with the mission, "To emphasize good Corporate Governance and commit

to Corporate Social Responsibility," resonating Thail's capability of sustainable growth, benefit generation, trustworthiness, and international acceptance which leads to Thailand's advantage in general.

January 19, 2017

On behalf of the Corporate Governance Committee



(ACM Suthipong Inseeyong)

Chairman of the Corporate Governance Committee

RISK MANAGEMENT COMMITTEE REPORT



Mr. Sarun Rungkasiri

Chairman of the Risk Management Committee

To the Shareholders

In the year 2016, the Risk Management Committee made its best efforts to fulfill its duties supporting Thailoil's Board of Directors (the Board) on steering of corporate risk management to achieve business goals while promoting confidence and credibility among investors and stakeholders. The current Committee consists of three knowledgeable, competent, and experienced members with mastery of the energy business:

1. Mr. Sarun Rungkasiri Chairman of the
Risk Management Committee
2. Mr. Noppadol Pinsupa Member of the
Risk Management Committee
3. Mr. Atikom Terbsiri Member of the
Risk Management Committee

Performance in 2016

The Committee defined and revised Thailoil's corporate risk management scope, policy, and processes as prescribed in the Risk Management Committee Charter, as well as provide recommendations on suitable approaches of risk management to efficiently conduct businesses in line with strategic directions and business plans. The Committee also constantly supported and improved risk management practices throughout Thailoil under international standards so as to forge a corporate culture. This year the Committee held 11 meetings, summarized below:

1. Endorsed key projects for the Board's consideration, namely:
 - 1.1 Jetty Extension Project (No. 7 and No. 8)
 - 1.2 Front-End Engineering Design (FEED) for the Clean Fuel Project (CFP)
 - 1.3 Suitable CFP contingency outlay in line with the Board's resolution
 - 1.4 New Crude Tank Project
 - 1.5 Office Relocation Project
 - 1.6 Guidelines for ethanol business restructuring
 - 1.7 Application for approval authority amendment for cash management and short-term investment
 - 1.8 Suitability of Operational Excellence Project under the Board's resolution
 - 1.9 Transcendence Project (Implementation Phase);

2. Endorsed for the Board's consideration the ranking of risk issues impacting strategic plans; corporate risks for 2017; amendment of the Risk Management Committee Charter; valuation outcomes of land and buildings, and their market-value rents provided by independent valuers; and the negotiation scope for the values of the lease agreement for the renewal of state property leases;
3. Endorsed for the Board's consideration the amended framework for Margin Hedging together with the framework and target prices for Inventory Hedging;
4. Acknowledged and endorsed for the Board's consideration the risk management outcomes for crude oil and petroleum product prices for the fourth quarter of 2015 and all quarters of 2016;
5. Acknowledged the corporate risk management outcomes for all quarters of 2016, together with this year's risk management plans and the Committee's yearly performance;
6. Acknowledged and provided recommendations on
 - 6.1 Updates on approved projects
 - 6.2 Power failure management measures and communities and stakeholders management measures to accommodate major projects
 - 6.3 Development of Internal Control processes and Control Self Assessment (CSA);

with prevailing circumstances. The Committee met regularly to promptly review key and urgent risks, rendering Thailoil and Subsidiaries' risk management effective. In other words, Thailoil commanded key corporate risk management practices that proved efficient, suitable, and controlled at the manageable level.

December 27, 2016

On behalf of the Risk Management Committee



(Mr. Sarun Rungkasiri)

Chairman of the Risk Management Committee

The Risk Management Committee concluded that this year, Thailoil has developed its corporate risk management system covering all aspects of risks, and commanded risk management practices constantly and in accordance

THAIOIL AND SUBSIDIARIES' VISION, MISSION, AND OPERATING STRATEGIES

For over 55 years of operation in energy business, Thaioil and Subsidiaries have refined knowledge and competency, turning itself into an organization filled with potential for production, marketing, and management in Thailand's energy industry well on the way to becoming a centenary organization.

This year, Thaioil and Subsidiaries remain committed to its **vision** to become a leading fully integrated refining and petrochemical company in Asia Pacific. The goal is to enhance the operating efficiency, return on investment, and sustainable growth with balance among economic, social, and environmental aspects, carrying out **missions** as followed:

01

To be in top quartile on performance
and return on investment

02

To create a high-performance organization
that promotes teamwork, innovation,
and trust for sustainability

03

To emphasize good Corporate Governance
(CG) and commit to Corporate Social
Responsibility (CSR)

As a Strategy-Focused Organization, Thaioil and Subsidiaries constantly review their vision and business directions, develop their caliber and increase their competitiveness in parallel with business growth, and preparedness for emerging challenges and increasingly intensifying competition. Thaioil and Subsidiaries' approaches for sustainable growth consist of the following three key strategies:

1. Operational Excellence in search of TOP Profit Enhancement

Thaioil and Subsidiaries focus on maintaining process safety and reliability, efficiency of production and energy consumption, and flexibility of process. Thaioil and Subsidiaries are to sell quality products matching customers demand, maintain the competitive production cost, and ensured that the corporate risk management covers investment, operation, and business continuity management aspects, supporting its path to become "The Most Reliable Company".

2. Growth Execution

With the focus on the growth of Thaioil's core business and diversified businesses, Thaioil and Subsidiaries strive to add product values, lower volatility of profits, and diversify investment risks. Meanwhile, Thaioil plans to expand businesses into Indonesia, Vietnam, and Myanmar, aiming for more customer bases, thus enhancing its performance and long-term competitiveness.

3. Business Excellence & Sustainability

Thaioil and Subsidiaries focus on enhancing preparedness to achieve their strategic goals through the investment portfolio management project designed to increase the proportion of new businesses in line with industrial trends and future energy consumption. Thaioil also prioritizes the study, research, and development on personnel administration with a focus on forging readiness, skills, knowledge, and competence to enhance the capability to drive Thaioil and Subsidiaries toward success, in order to support overseas business growth and emerging businesses; while maintaining balance among economic, social, and environmental aspects under sustainability management framework.

SUMMARY OF BUSINESS ACHIEVEMENTS IN 2016

1. Strong business performance amid highly volatile global economy and oil prices

This year is another year Thailoil and Subsidiaries adopted a proactive strategy to cope with the highly volatile global economic and social situation. The increasing crude supply in the first half of 2016, caused the Organization of Petroleum Exporting Countries (OPEC) to convene and reach an accord to cut global production in the November meeting. This resulted in the increase of the average oil price in December 2016 compared with the same month in 2015. Although the market was still glutted with refined products as a result of increasing capacity by various refineries to gain from the higher spread between the crude and refined product prices during 2015, Thailoil and Subsidiaries still profited from the Accounting Gross Refining Margin (Accounting GRM), which rose to 6.8 USD per barrel. Moreover, the recovery of the aromatics industry, resulting from a delay in the commissioning of new aromatics facilities, caused Thailoil and Subsidiaries' Accounting Gross Integrated Margin (Accounting GIM) to rise from the previous year to 9.1 USD per barrel.

With a commitment to operational excellence, Thailoil and Subsidiaries' net profit rose to Baht 21,222 million in 2016 – the highest since the Company's foundation. Thailoil always focuses on production efficiency with the refinery utilization of 108%, superior to all other refineries in Thailand and in the region. Apart from the customer-focus operating and the proactive risk



Net Profit rose to
record-high

21,222
million Baht

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management, Thaoil and Subsidiaries is Thailand's major refined product producer, with a domestic sale proportion of 25% of the total domestic consumption. Additional achievements were the completion and commercial commissioning of Labix Co., Ltd., and TOP SPP Co., Ltd.; the two new affiliates, adding profits to Thaoil and Subsidiaries.

Thaoil and Subsidiaries boasted 1.8 USD per barrel in operating cash cost management, a considerably low figure comparing to other leading peers in the same industry.

2. Leader in sustainable business management, evidenced in member of Dow Jones Sustainability Indices (DJSI) Emerging Markets in 2016 for the fourth consecutive year as well as Energy Industry Group Leader with the top assessment score for the third consecutive year

Thaoil and Subsidiaries were selected to be members of the 2016 DJSI's Emerging Market Category for the

fourth year in a row, with the highest score among 159 world-renowned corporations in the global energy industry group for three consecutive years. These achievements proved the Company's capability of business operation in all three major areas; namely, economics, environment, and society. The business operation is to comply with rules and regulations on safety as well as systematic risk management to ensure sustainable growth. This helped boost the confidence among investors, joint ventures, and financial institutions in Thaoil's business operation, thus leading to significant recognition and acceptance in international levels.

Thaoil and Subsidiaries commanded the Development Sustainability Master Plan (2014-2018), aimed for the continuous improvement in all work processes. This year the Company achieved the reduction of 26,406 tons of carbon dioxide equivalent (TOCE) emission through more than 28 energy efficiency improvement projects, biodiesel production and sale expansion,

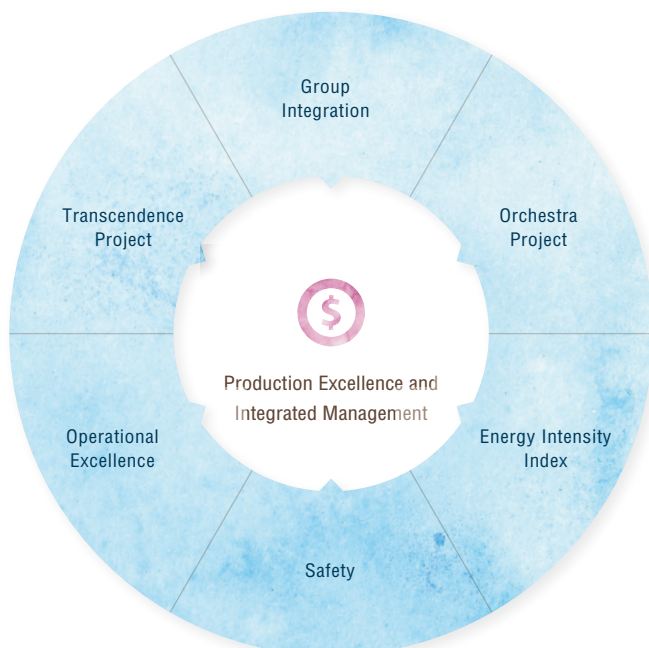


beyond-government-standards air and water quality control, and full compliance with rule and regulation. These led to an improvement in community surroundings and an absence of incidents harming the environment, as well as the efficient management to prevent leaks and spills of oil and chemicals for many years. As a consequence, Thailoil and Subsidiaries were granted the Carbon Footprint for Organization Award and a Low Emission Support Scheme Award from the Thailand Greenhouse Gas Management Organization (Public Organization) this year.

In the social aspect, Thailoil launched a preliminary human rights risk assessment in all major activities under the corporate human rights policy. The assessments were thoroughly conducted to ensure completeness in the policy definition, prevention, mitigation, monitoring, and evaluation in all aspects of possible impacts on human rights issues. The assessment found no risks, reflecting

Thailoil's sufficient practices on human rights. The corporate human rights policies included the Human Rights Policy in the Workplace launched in 2015 and Business and Human Rights Policy for Business Partners introduced in May 2016. Another survey was made to assess community satisfaction of people residing near the refining facility; the result was highly positive. This results from the stakeholder participation under a tripartite cooperation strategy: a jointly strategic operation between Thailoil and Subsidiaries, community leaders, and relevant government agencies. All activities were held under the '5-Together' principle; that is, Thinking Together, Doing Together, Fixing Together, Facing Consequences Together, and Developing Together. This work principle has proven successful, as all parties share the same goal and work toward the same direction for the benefit of the public. (Details are elaborated in the 2016 Sustainability Report.)

The Company was also named in the 2016 RobecoSAM (conduct DJSI assessment) Yearbook as the Oil & Gas Industry Leader in Sustainability with the top assessment score among 122 oil and gas producers worldwide.



3. Production excellence and integrated management

Aiming for the synergy within Thailoil and Subsidiaries, the Company focuses on the "Group Integration" among the refining, aromatics, and lube base oil businesses. Production and distribution plans are jointly laid down, leading to maximum efficiency and product outputs of higher prices and higher quality than simple refineries which can keep up with the market demand. As a result, the Company's Accounting GIM rose by 1.9 USD per barrel.

Thailoil and Subsidiaries' major business strategy in 2016 was the profitability improvement. The important projects included Transcendence Project, designed

to increase profits for the entire supply chain, mainly from refining unconventional crude; very large crude carriers (VLCCs) freight management; energy efficiency improvement project of refining units; and Orchestra Project, designed to reduce operating costs by implementing proactive procurement strategy and refining management to ensure the efficient tank usage.

All activities and projects were planned and executed in pursuit of Operational Excellence, a significant corporate culture. The results were evidenced by the success on production efficiency, supply chain management in all business units, and inventory management. These earned Thailoil and Subsidiaries the position on the list of world's leading refineries, particularly in energy intensity index and cost competitiveness.

In addition, Thailoil has cultivated among employees adherence to safety as the core operating value, buoyed by an outstanding Total Reportable Case Frequency (TRCF) among the 10th percentile of the oil and gas group recognized by Oil and Gas UK Benchmarking for the tenth consecutive year. In order to maximize the potential, the Company has joined PTT Group in administering as a group; for example, consultative meetings on business and price outlooks and PTT Group's Operational Excellence project, with all collaboration based on commercial.

4. Proactive market strategy and risk management

Thailoil and Subsidiaries value the management of marketing strategies, defining the key to success as the management of relations with domestic and international customers. Moreover, the high quality of products against standards, timely delivery, product diversity, prompt and precise service, problem resolution for customers, and safety standards for merchandise delivery

secure 87% domestic sales of production capacity, and increase sales volume by expanding market to ASEAN countries. Thailoil also values the improvement to cater to customers' needs. This year the Company boosted speed and efficiency of the lorry loading, and launched seminars to provide knowledge and address customers' queries about service and product quality. Moreover, it regularly publicizes knowledge and analytical reports on the oil industry for customers, resulting in the customer satisfaction score of 91% this year.

Furthermore, Thailoil successfully expanded and opened new markets both domestically and internationally. For example, Thailoil has expanded the solvent business focusing on adding values to solvent products and distributing non-solvent products to match the market demand and become a leading chemical distributor. In 2016, TOP Solvent Co., Ltd. (TS) has successfully posted the first order of solvent products from a customer in Myanmar. TS has also increased the product sales to other trading allies in the Southeast Asia region, as well as studied the business growth potential.

Recognizing possible risks coupled with business operation, Thailoil and Subsidiaries commanded a proactive approach in risk management by close monitoring all internal and external uncertainties that could impact businesses and investments both short-term and long-term. The Price Risk Management and Foreign Currency Risk Management were deployed to ease impacts on high volatility of oil prices and foreign currencies.

5. Project success and continuous implementation based on strategic plan

Thailoil and Subsidiaries take pride on being the Strategic-Focused Organization, with relentless revision



Small Power Producer (SPP)



Linear Alkyl Benzene (LAB)



Chemical Tanker



of business strategies. This year, the increasingly volatile markets and intensified competition necessitated clear strategies to readily address dynamic business circumstances so that the Company may achieve its goal of becoming the region's refining and petrochemical business leader in performance, business growth, and long-term sustainability.

In 2016, Thailoil and Subsidiaries were proud to successfully executed three main projects as planned:

1. Construction of the Linear Alkyl Benzene (LAB) Production Project by Labix Co., Ltd., a joint venture between Thai Paraxylene Co., Ltd. and Mitsui and Co., Ltd. The LAB production process was successfully connected with Thailoil and Subsidiaries' process structure, creating optimum synergy. The commercial operation date was on February 25, 2016;
2. Construction of the new Small Power Plants (SPPs) operated by TOP SPP Co., Ltd. of 239 MW electricity

and 498 tons per hour of steam. The project is divided into two phases: phase 1 with 124 MW and phase 2 with 115 MW electricity capacity. The commercial operation dates for both phases are on April 1 and June 1, respectively;

3. Procurement of one chemical tanker for solvent and LAB products.

Moreover, Thailoil has ongoing projects that help maintain and also enhance the Company's performance. The projects aforementioned are; for example, the Clean Fuel Project whose investment plan aimed to be finalized in 2017. This project will drive Thailoil and Subsidiaries to become the world leading refinery in Asia Pacific. Another project under the feasibility study is the development of specialty products, both light-end and heavy-end, aimed to add more value to Thailoil's existing products.

Furthermore, Thailoil plans for the investment in logistics and utilities; namely, the project to expand the distribution

capacity of paraxylene and jet fuel, the Lorry Expansion Project, the Jetty Extension Project (no. 7 and no. 8) to ensure safety, reduce the port congestion, as well as accommodate larger vessels for new product transportation and distribution in the future. The ongoing projects also include New Crude Tank Project and Office Relocation Project. All the aforementioned projects have been approved by the Board and are underway.

For international market expansion, investment project studies are being carried out for Indonesia, Vietnam, and Myanmar, selected due to their soaring demand for energy.

Thaioil and Subsidiaries have focused on long-term sustainability reinforcement through an investment in portfolio management to add new businesses that align with industrial trends and future change in energy consumption. The Company has also focused on a support-function project, including personnel development, finance, treasury, social and environmental responsibility, and research innovations, in constant pursuit of a balance between business growth and conviction among shareholders and stakeholders. In 2016, Thaioil has won four patents; namely, K1 Valve Research Project, MOV Display Protection Project, In-Pipe Inspection Robot Project, and Refractory Composite Project.

6. Excellence in corporate governance, corporate social responsibility, and fair treatment towards stakeholders

Apart from the commitment to becoming a High-Performance Organization, the executive encourages Thaioil to fully observe social and environment responsibility and sustainable development achieved through assorted business processes and activities. As a result, the

Company has won extensive acceptance from the business and industrial sectors.

Thaioil and Subsidiaries also recognize and prioritize safety for employees, contractors, the surrounding communities, evidenced in the safety record being ranked among the world best. We truly believe that sustainable growth must accompany the development of communities, society, and environment, achieved through management with clear targets under the good Corporate Governance and business ethics.

In 2016, Thaioil and Subsidiaries have started sustainable projects; namely, the Trauma and Emergency Building of the Laem Chabang Hospital; supports to Kamnoetvidya Science Academy (KVIS) and Vidyasirimedhi Institute of Science and Technology (VISTEC); Mae Jo Hydropower Plant for Community Project; a Community Healthcare Project at Koh Mak Noi; Rehabilitation of Aquatic Nursery Ground by using Artificial Seagrass; and Pracha Rath Project.

Thaioil and Subsidiaries are determined to utilize the knowledge and expertise on energy for half century including the operational excellence and the Good Corporate Governance as well as Corporate Social Responsibility activities and the assurance of stakeholders' highest satisfaction in order to strengthen the Company's businesses, and sustainably grow into a centennial company along with the Thai community and public.

Due to all the above achievements and full commitment, Thaioil and Subsidiaries garnered numerous awards by many international leading organizations as shown under Milestones of 2016.

MILESTONES OF 2016

01 January

DJSI Oil and Gas Industry Leader 2016

Ranked by RobecoSAM, an official assessor of Dow Jones Sustainability Indices (DJSI), Thailoil retained the highest ranking and was named Oil and Gas Industry Leader for two consecutive years, among 59 major worldwide industrial corporations. With the highest score, RobecoSAM also named Thailoil as Industry Leader and was listed in the Gold-Class category for three consecutive years.



02 February

Commercial Operation Commences for LABIX

With production capacity of 120,000 tons per year, LABIX's Linear Alkyl Benzene (LAB) went commercialized on February 25. Thailoil holds 75% shares in Labix Co., Ltd. via Thai Paraxylene Co., Ltd.



03 March



Thailoil wins APEA “Outstanding Category” Award

On March 3, Thailoil was honored with an “Outstanding Category” award in the Asia Pacific Entrepreneurship Awards 2016 Thailand (APEA), organized by Enterprise Asia. The award was given to honor a CEO who is determined and committed to excellence to enhance business growth.

04 April

SAKC earns Good Governance Flag in recognition of maintaining Outstanding Environmental Standard

Sak Chaisidhi Co., Ltd. (SAKC) was honored with the 2015 Good Governance and Safety “White Flag-Green Star” in recognition of its outstanding environmental management in operations for a sixth successive year, together with the 2015 Environment and Safety Audits “White Flag-Gold Star” for its public participation campaigns. Both awards were presented by the Industrial Estate Authority of Thailand.



The 2016 Annual General Meeting of Shareholders (AGM)

Thaioil held its 2016 AGM on April 7, which was well-attended. Thaioil provided opportunities for the shareholders to enquire information in regards to operating results, reflecting operation transparency and bolstering shareholders' confidence.

Commercial Operation of SPP Phase 1

On April 1, TOP SPP Co., Ltd., wholly owned by Thaioil, started operations of Phase 1 of its Small Power Producer (SPP) with a capacity of 124 MW.

06
June**MOU Signing Ceremony of University-Industry Research Collaboration between PTT Group and VISTEC**

Thaioil joined the MOU Signing ceremony of a University-Industry Research Collaboration program between the industrial sector and Vidyasirimedhi Institute of Science and Technology (VISTEC) as part of the contract signing between PTT Group and the institute to establish academic and research capability development that will contribute to national sustainable development.

Commercial Operation of SPP Phase 2

On June 1, TOP SPP Co., Ltd., commenced operations of the second phase of SPP with a capacity of 115 MW. SPP Phase 1 and 2's combined capacity totaled to 239 MW and 498 tons per hour of steam.

07
July**Shareholders' Site-Visit**

Thaioil held its annual site-visits for shareholders twice this year, each with 100 participants, to promote understanding of its businesses and forge confidence in their investment, echoing operating transparency and executives' vision for operating toward sustainable growth.

08 August



Certificate of ESG 100 Company

Thaioil and Subsidiaries won an ESG 100 Certificate from the Thaipat Institute for a second consecutive year in recognition of the top-100 Thai listed companies with outstanding environmental, social, and governance (ESG) performance based on the assessment of 621 Thai SET-listed companies.

IR Excellence Award from IAA Awards for Listed Companies 2015-2016

The IAA Awards for Listed Companies 2015/2016 event was held by the Investment Analysts Association for the seventh time. The event was held to recognize outstanding executive teams of publicly listed companies in eight industry groups for their achievements and sustainable growth. Thaioil was recognized for its IR excellence for the resource industry through nomination and scoring by market analysts and fund managers.



CSR-DIW Continuous Award 2016

Thaioil was honored with the “2016 CSR-DIW Continuous Award” by the Department of Industrial Works (DIW) in promotion of corporate social responsibility and sustainable businesses with local communities. The award was recognized for business alignment with CSR-DIW directions and continual corporate social responsibility (ISO 26000).

Planned Maintenance Shutdown for TLB

Thai Lube Base Plc. (TLB), Thaioil's Subsidiary, successfully underwent a planned shutdown of the lubricating and associated production units from August 20 through September 19. The shutdown did not cause any significant impact on overall production, sales, or business performance of Thaioil and Subsidiaries.

09
September**Regional and National Awards
from Alpha Southeast Asia Magazine**

Thaioil received the 2016 regional award for “the Strongest Commitment to Sustainable Energy in Southeast Asia” from the Alpha Southeast Asia magazine for five consecutive years. This year, three more national-level awards were also given:

- The Strongest Adherence to Corporate Governance, fourth successive year
- The Best Senior Management IR Support, second successive year
- The Most Consistent Dividend Policy, second successive year.

First Runner-Up for ASEAN Energy Awards 2016

Thaioil took the first runner-up award for Energy Management Awards (Large Industry Category) at the ASEAN Energy Awards 2016 event for systematic and sustainable-energy management initiatives.

**Labor Skill Development Award 2015**

Thaioil was presented an award for labor skill development in “the Best of DSD 2016” event, organized by the Department of Skill Development. The event was held for the first time since the charter of the Skill Development Promotion Act in 2002.

**Thaioil Honored as an Organizational
Model on Greenhouse Gas Emission
Reduction**

Thaioil was honored by Thailand Greenhouse Gas Management Organization (Public Organization) with a certificate of being an organizational model on greenhouse gas emission reduction under the 2016 campaign called “Roi Duangjai Ruam Jai Lod Lok Ron” (joining forces to reduce global warming).



10 October

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Thaioil Retained its Global Leader Status

Thaioil has successfully retained its member in DJSI 2016 for four consecutive years. Thaioil is the only Thai listed company to received No.1 ranking among other energy industry group's listed-companies worldwide.

Interim Dividends

Thaioil paid the year's interim dividends of Baht 1.50 per share for 2,040,027,873 shares, totaling Baht 3.06 billion.

Thaioil and Subsidiaries Joined PTT Group CG Day 2016

On October 18, board members and executives of Thaioil and companies within PTT Group participated the commencement ceremony of PTT Group CG Day 2016, under the theme of "See Through the Future". This event included a discussion forum on the topic of "Future Lenses of Anti-Corruption for PTT Group" as, an effort to promote good governance, transparency, and anti-corruption for sustainable growth.



12 December



Thailand Energy Awards 2016 from Ministry of Energy

Thaioil received "Thailand Energy Awards 2016 for Outstanding Energy Management" from Deputy Prime Minister ACM Prajin Juntong. The award recognized energy management and alternative-energy development, as well as the promotion of energy conservation.

Two Awards of Excellence by IR Magazine

Thaioil won two awards of excellence, namely "Best IR by a Senior Management Team" and "Best IR in Energy Sector" at the IR Magazine Awards & Conference South East Asia 2016 event. The event marked the first collaboration between SET and IR Magazine, an international educational and research IR media. This year, the event was held at Plaza Athénée Bangkok Hotel.

MARKET REVIEW 2016 AND INDUSTRY OUTLOOK



Market Review 2016

Global Market and Economy

The International Monetary Fund (IMF) estimated the 2016 global economic growth at 3.1% (reported in January 2017), a contraction from 3.2% in 2015. The sluggish global economy was due to the forecast of developing countries' slight economic growth at 1.6%, a drop from 2.1% in 2015. There were three major speculations impacting such global economy. First, the United Kingdom's economy slowed down after the decision to exit the EU. Also, the United States' economy expanded slower than previously expected. This is due to the investment slowdown in energy sector, US Dollar appreciation, the volatility of financial sector, and the policy uncertainties prior to the US presidential election. Finally, China's economy, the world's second largest, tended to slow down due to the economic reform policy, aimed at reducing dependence on export and industry investment, while stressing domestic consumption expansion.

The economic growth of developing countries, however, continues to climb to 4.1%, higher than that of 2015, resulted from the recovery of Russia's economy and the less stagnation of China's economy. Moreover, the global economy also benefited from 2016 ASEAN economic growth of 4.8%, especially from that of Indonesia, the Philippines and Thailand.

Crude Oil and Petroleum Products in the World Market

The 2016 averaged world crude oil price was 41.3 USD per barrel, declining from that of 2015 at 50.9 USD per barrel, due to market oversupply as the Organization of Petroleum Exporting Countries (OPEC) continuously increased the production volume by 1.4 million barrel per day up to 33.9 million barrels per day in November 2016. This is due especially to Iran, after the lifting of the economic sanction, increased the crude oil export amount by 0.8 million barrels per day. Meanwhile, the non-OPEC production volume was expected to decrease by 0.9 million barrels per day, as US production volume declined by 0.5 million barrels per day from that of previous year, after the US crude oil producers slowed down the oil and gas investment and reduce the production capacity in the unprofitable crude sources.

The world crude oil price, however, spiked up in December as a result of OPEC's agreement in the meeting dated November 30, 2016 to cut production by 1.2 million barrels per day, aimed for six-month implementation beginning from January 1, 2017 onwards. Non-OPEC producers also cooperated on the production cut at 0.558 million barrels per day. The market is expected to resume equilibrium within the first half of the year if both OPEC and non-OPEC producers comply with the agreement. There are, however, risks posed by the facts that Libya and Nigeria are exempted from the agreement; other OPEC producers may produce more than the allocated quota; and the US production volume tended to increase in line with the increasing crude oil

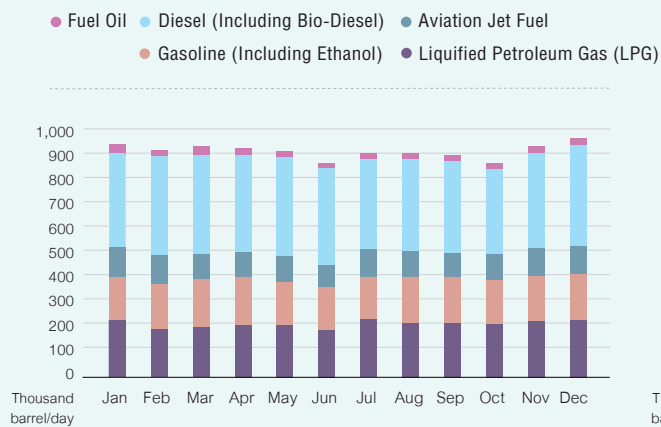
price. These risks may delay market equilibrium to the second half of the year 2017.

The 2016 overall refining market declined slightly from 2015 due to the narrowing spread between gasoline price and the Dubai crude price, mainly driven by the higher increase in supply than that in demand as the refineries increased production capacity and the proportion of gasoline production. The unplanned maintenance shutdowns of gasoline refineries lessened compared with that of last year. Meanwhile, the spreads of both diesel and jet fuel prices against Dubai crude oil have continuously been under pressure from the increased export volumes from new refineries in the Middle East, and from China's decrease in industrial sector's diesel consumption due to its economic slowdown.

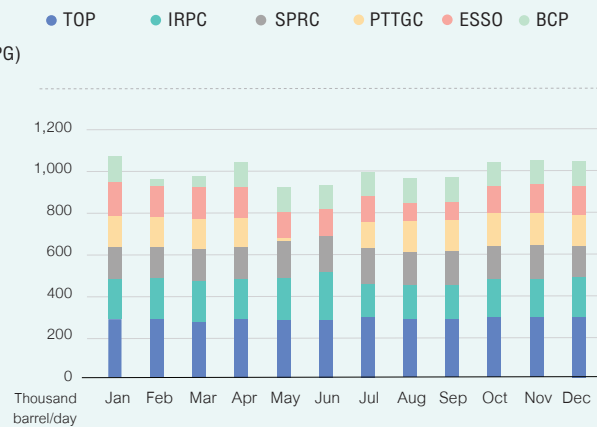
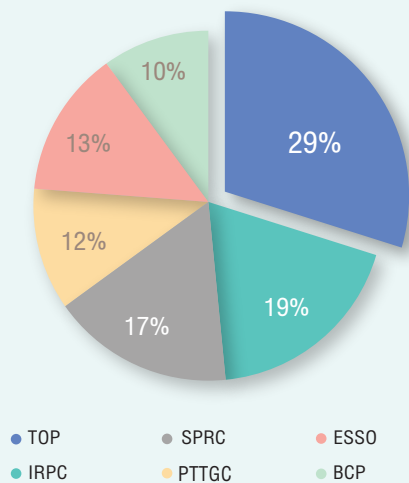
Petroleum Products in Domestic Market

The domestic economic growth of the first three quarters of 2016 was recorded at 3.3%, a increase from the 2.9% of the same period in the previous year. This resulted from the 15.3% growth of service export sector compared with that of the same period last year, due to the revenue growth generated from foreign tourists. The number of tourist arrival was recorded at 24.82 million, equal to a 12.4% increase year-on-year. The increasing revenue was generated mainly from tourists from China, ASEAN and EU countries. Thailand's economic growth was also driven by the private sector's consumption which grew 3.2%, compared to 2.0% of the previous year. This is because of the 0.5% sales volume growth of the automobile sector, with vehicle

Domestic Demand for Refined Products in 2016



Domestic Refining Capacity in 2016

Percentage of 2016
Total Refining Capacity in Thailand

sales increased from 553,832 in 2015 to 556,525 in 2016, due to a series of new models introduced to the market and marketing campaigns. However, Thailand's economy was still under pressure, as public spending was lower than targeted and exports remained modest. The National Economic and Social Development Board (NESDB), projected the 2016 domestic growth at 3.2% (from NESDB's report on Thai economy on November 21, 2016), the lowest among large-economy countries: Indonesia growth at 4.9%, Malaysia at 4.3%, the Philippines at 6.4% and Vietnam at 6.1%.

The 2016 domestic demand for petroleum products rose by 2.3% as a result of steadily low retail oil price. The gasoline consumption grew by 9.8%. The demand of gasohol 95 increased because of the declining spread between Gasohol 95 and 91. The gasohol E20 demand also rose due to the increase of spread

between Gasohol 95 and E20. In the mean time, the consumption growth for diesel was 3.1% and 6.8% of jet fuel caused by increasing flights to accommodate tourist arrival, particularly from China and the EU countries. For fuel oil, the consumption also grew by 10.2% from the industrial and marine transportation sectors' higher consumption, due to its lower price compared to other renewable fuels in the first half of the year.

The average total domestic refining throughput this year amounted to 994,178 barrels per day, declining from 1,036,645 barrels per day in 2015, since there were annual major turnarounds of two facilities: one during February-March and another during May-June. Regarding the share of total refining throughput, Thairoil still retains the largest share of 30% of the overall domestic refining capacity.

Aromatics Market

The paraxylene (PX) market in 2016 recovered from the previous year, mainly due to the decrease in regional supply from unplanned shutdowns, including an aromatics refinery in China (PX capacity of 1.6 million tons per year) from December 2015 to early February 2016, and an aromatics refinery in Singapore (PX capacity of 520,000 million tons per year) in January 2016. Moreover, in the first quarter of 2016, aromatics producers reduced the capacity and use the aromatics in producing premium-priced gasoline, resulting in the decrease of PX supply. The delayed inauguration of PetroRabigh's 1.3-million-ton-per-year new aromatics plant, from Q3/2016 to Q4/2017, led to market relief of PX oversupply. The PX demand increased after the commercial operations of China's PTA Hanbang Petrochemical 2 (with the capacity of 2.2 million tons

per year) in April 2016. The PX market, however, has not much recovered, as the Jurong Aromatics plant in Singapore (with the capacity of 800,000 million tons per year) resumed operations in July 2016 after its shutdown since late 2014, and the Reliance Industries No. 4 Phase I plant in India (with the capacity of 800,000 million tons per year) started operations in December 2016, increasing more supply to the market.

The benzene (BZ) market in 2016 also improved from 2015 with increasing demand, especially from new downstream plants in China, such as Changzhou Xinri plant (styrene monomer (SM) capacity of 300,000 tons per year) starting the production in May 2016 and CNOOC Ningbo Daxie plant (SM capacity of 280,000 tons per year) starting the production in July 2016. Moreover, the SM high averaged gross margin of around USD 200 per ton, caused the increase in demand of BZ as intermediates for further production; while, the BZ supply decrease after the cease operation of plants in the US and France due to high production cost. Excess supply in Southeast Asia reduced in accordance with the increase of demand due to the commercial operation of new downstream plants in Thailand such as Linear Alkyl Benzene plant (with the capacity of 120,000 tons per year) and PTT Phenol plant (with the capacity of 250,000 tons per year). BZ supply also decreased in Q1/2016 because of the unexpected shutdowns of aromatics plants, such as one in China (BZ capacity of 500,000 tons per year), and another plant in Singapore (BZ capacity of 580,000 tons per year). The market, however, continued to be under pressure from new supply from South Korea's Hyundai Chemical plant (BZ capacity of 462,000 tons per year) starting operation in October 2016, Singapore's Jurong Aromatics plant (BZ

capacity of 438,000 tons per year) resuming operation after its shutdown since late 2014, and India's Reliance Industries No. 4 Phase I plant (BZ capacity of 200,000 tons per year) starting operation in December 2016.

Lube Base Oil and Bitumen Market

The lube base oil market in 2016 dropped from the 2015 level, reflecting the continual crude price volatility since late 2014. The Group 2 and Group 3 lube base plants starting operation in 2016 (combined capacity of 2,470,000 tons per year) still posted the oversupply, even though Group 1 lube base plants permanently closed down reducing 1,741,000 tons per year of production. The total capacity remained at 729,000 tons per year, yet higher than that of 2015 with the reduction of 260,000 tons per year. The 2016 demand remained stable in accordance with the global economy. The 2016 overall maintenance shutdown of lube base plants posted the absence of 984,000 tons, lower than the 1,110,000 tons in 2015. The aforementioned shutdowns resulted in the slight increase of Group 1 and Group 2 lube base oil prices, and the minor decrease of the spread between Group 1 lube base oil and fuel oil prices. The averaged spread between Group 1 lube base oil and fuel oil prices was at 412 USD per ton, a drop from that of 2015 by 19 USD per ton.

The bitumen market in 2016 plunged from 2015 due to the sluggish demand of the main bitumen importers in China, Indonesia and Vietnam following the decline in road construction and maintenance projects of each country. The meager demand of China and Vietnam resulted from the 5-year economic development plan (2016-2020) and 3-year economic development plan (2016-2018) respectively, which made 2016

the first year of lower disbursement than budgeted. Moreover, Vietnam's presidential election caused the disbursement delay; while the heavy floods in mid-2016 in Indonesia and India obviously resulted in stagnant demand in the region. Although bitumen import continued in these countries according to the offtake agreements signed since late 2015, the bitumen inventory continued to increase, pressuring the 2016 spread between bitumen and fuel oil to (49) USD per ton.

Solvent Market

The 2016 overall solvent demand slowly improved in line with the global economy, as the countries with high Gross Domestic Product (GDP) such as China, Myanmar and Vietnam, posted the stagnant or stable economic growth. Meanwhile, the economy of other countries such as the US, India, Indonesia and Thailand, have gradually recovered. However, overall solvent gluts still remained, especially the supply from East Asian countries such as China, Japan and Taiwan. The decline of oil prices at the beginning of the year caused the solvent feedstock depressed to reduce, leading to higher solvent supply in the market.

The market for chemical solvents in Asia, on the other hand, was in balance to slightly undersupply throughout 2016, with some producers in Singapore halting production of Isopropyl Alcohol (IPA) since late 2015 due to machinery problems. For aromatics products, the decline of PX price along with the oil price led to higher amount of toluene in the solvent business, resulting in a projected market growth rate of 3-4%.

Thailand's overall solvent market was estimated to grow by 4-5% in line with the 2016 economic growth, coupled

with the anticipated export improvement following the significant drop in 2015. The market was, however, highly competitive with imports of certain products from East Asian countries such as China, Japan, Korea and Taiwan, leading to oversupply at the beginning of the year. In the second half of the year, the higher oil price and the slowdowns or annual maintenance shutdowns of some producers led to undersupply of some products, resulting in new producers investing more in the solvent business and consequently continual price competition through the year.

For domestic production, the process of some products such as aromatics was cut resulting from the stagnant global PX price. The maintenance shutdown of some producers led to more balance between aromatics demand and supply, leading to less price competition than that in the chemical solvent business.

Linear Alkyl Benzene (LAB) Market

Compared with 2015, the LAB market in 2016 slowed down with the LAB price pressured by the falling of oil price and additional supply from a new LABIX plant, starting operation in February (capacity of 120,000 tons per year), leading to an increase of supply in the market. The LAB demand was, also, pressured by longer raining season, resulting in the decline in LAB demand. Even though India imported more LAB after LAB Tamilnadu Petroproducts Limited plant resuming operation in February 2016, the plant did not fully operate in the first half of the year. This resulted in 2016 averaged spread between LAB and its intermediate (BZ) of 495 USD per ton, a decline from that of 2015 at 570 USD per ton.

Petroleum Transportation Industry

The 2016 crude oil, petroleum and petrochemical products marine transportation slowed down, especially the Medium Range Tanker (sized 25,000-49,999 Deadweight Tonnage: DWT), due to more tankers entering the market weakening the 2016 tariff compared to that of 2015. The small vessel fleets, however, rebounded to healthy growth, as neighboring countries imported more crude oil. Meanwhile, the demand for Very Large Crude Carrier (VLCC) increased due to the surge of crude oil demand and the US resuming of crude export after the cancellation of the export limit policy, as well as the improving crude price in late 2016. Moreover, the 2016 continuously low and volatile crude oil price, combined with the postponement of Thailand's 21st petroleum concession bidding, continued to highly affect the demand for offshore vessels, especially the offshore support vessel market which includes the crew boat market, due to exploration and production companies' reducing or maintaining production capacity at low level, causing the crew boat market to continue sluggish.

Ethanol Market

The 2016 domestic demand for ethanol to blend in gasohol production continued to rise from 2015. Ethanol consumption in 2016 was 3.9 million liters per day, a 9.2% increase from that of 2015. The continuous growth was driven mainly by the government policy and measures to promote various grades of gasohol through pricing mechanisms, and the increasing demand for gasoline due to its steadily low price in accordance with the falling world oil. Moreover, the rising number

of vehicles and gas stations with Gasohol E20 and E85 was another factor driving the increase in ethanol consumption.

In 2016, there are 21 ethanol plants in Thailand with the combined capacity of 4.69 million liters per day. It is expected that, in 2017, the production capacity is to increase from two molasses-based ethanol plants (with the capacity of 0.43 million liters per day) and three cassava-based ethanol plants (with the capacity of 0.62 million liters per day).

The 2016 ethanol price declined slightly from that of 2015 after China announced the cancellation of corn subsidiary policy, resulting in the decrease of importing Thailand's cassava. This drove the increase of cassava supply in Thailand, causing the production cost of cassava-based ethanol to reduce closely to that of molasses-based ethanol.

Power Industry

Thailand's economy in 2016 recovered as evidenced in the 3.3% GDP growth, leading to the power demand determined by EGAT's actual generated volume and purchased from private producers to grow by 3.7% to 189,264 million kWh. For 2016, the peak demand was recorded at 22.28 hours on May 11, at 29,618.80 megawatts (MW), a 8.31% growth from the previous year.

Market Review 2017

Global Market and Economy

The International Monetary Fund (IMF) has forecasted 2017 global economic growth at 3.4% (reported in January 2017), a positive growth compared with 3.1% in 2016.

This is due to the recovery of the US economy and the steady growth of India's economy. Meanwhile, the global economy still faces risks and pressure posted by many countries. For example, China has implemented the economic reform policy, which focuses on domestic demand growth while lowering dependence on export and manufacturing investment. For EU countries, the United Kingdom's decision to leave EU (Brexit) has affected the investors' confidence.

Major Contributing Factors to the Global Economy

The US: The US economy, the world's largest, is recovering with expected growth of 2.3% compared to 1.6% of the year 2016. The main contributing factors include a strong recovery of employment rates and the labor market, the strong household spending and the recovery of property markets. The US economy is expected to be further stimulated by Donald Trump's policies on lowering corporate taxes to encourage domestic and infrastructure investments which encourage the short-term economic expansion. Nevertheless, the US economic recovery is limited since the industrial investment is affected by the stagnant investment in energy sector due to the crude oil prices staying lower than the breakeven of many crude oil sources in the US, whereas other sectors are still reluctant to invest. Yet, the improving US economy outlook is one of factors that cause the US Federal Reserve (Fed) to adjust the interest rate three different times in 2017.

India: India's economy is expected to grow on a par with 2016 at 7.6% as a result of investment stimulation policies to promote exports, and the "Make in India" policy aimed to mark India as the world's manufacturing

hub. These policies are the key factor effectively drawing more foreign direct investments to India, together with the business facilitation, transparency, as well as and business procedure relaxation for foreign investors. Moreover, India's economy also benefited from the improvement of the Goods and Services Tax system, which will be rolled out as a single system across the country, reducing revenue collection complexity and encouraging higher investments. However, India still faces critical challenges after the government's revocation of the 500-rupee and 1,000-rupee banknotes, causing liquidity shocks in the system.

EU: The economic growth of the EU is expected to rise by only 1.6%, a slight drop from 1.7% in 2016, as the Brexit led to an economic slowdown in UK and investors' lower confidence. The process of Brexit in March 2017 is closely monitored amid potential chaos in the elections in many European countries including Italy, the Netherlands, France and Germany. The potential candidates, especially those of Italy and France, confirm their standpoints to leave the EU. Under these uncertainties, the European Central Bank (ECB) extended the quantitative easing period by nine more months, ending in December 2017 instead of previously targeted in March, but with limited liquidity injection from Euros 80 billion to 60 billion.

Crude Oil and Petroleum Products in World Market

The Dubai crude price is expected to move within the range of 55-60 USD per barrel in 2017 due to the rising demand of 1.3 million barrels per day, as the global economy continues to improve, while oversupply is expected to subside to an equilibrium level within

the first half of 2017, after the OPEC and non-OPEC producers agreed to cut the production by a total of 1.8 million barrels per day, or 2% of global supply. However, the rise of crude price may be limited by the increasing production volume from Nigeria and Libya, which were exempted from the agreement on export cut. Moreover, the agreement on throughput cut may cause the crude price to increase beyond the shale oil producers' breakeven, leading to the increase of US crude oil production volume in 2017.

Crude Supply: The global crude supply in 2017 is expected to be lower than demand and force the market to a new equilibrium within the first half of 2017, with the throughput cut agreement of 1.2 million barrels per day from OPEC and 0.558 million barrels per day from non-OPEC producers, effective from January 2017, lasting for six months. However, the new equilibrium could be delayed with the possibilities that certain producers, OPEC and non-OPEC, may not be able to collectively reach the cut target, as OPEC throughputs were still rising after the agreement was made. Furthermore, Nigeria and Libya, exempted from the agreement of throughput cut, may export more crude oil as the local unrests ease up; also, the US throughput may rebound in 2017 since the agreement on throughput cut could possibly improve the crude price, reflected by the report of increasing active drilling rigs in the US in the second half of 2016.

Demand for Petroleum Products: The global demand for petroleum products in 2017 is expected to increase to 1.3 million barrels per day compared with that of

2016 (reported by the US EIA in January 2017). This is driven mainly by relatively low oil prices and global economic expansion. Gasoline demand continues to soar, especially in China and India, where local retail prices remain low and automobile sales still thrive. Meanwhile, the diesel demand is also rising since the weather forecast during December 2016 – March 2017 shows lower temperature, hiking the demand for diesel to generate heat. However, China's diesel demand is still under pressure of stagnant condition in the industrial sector, resulted from the economic reform with the focus on domestic demand expansion together with the reduction of dependence on export and industrial investment. Meanwhile, jet fuel demand is expected to grow with the higher numbers of tourists, especially from China and India.

Global Refining Capacity: The global net refining capacity in 2017 is set to rise only by 0.31 million barrels per day despite multiple new refineries in Asia such as in China, India and Vietnam (combined capacity of 0.78 million barrels per day). However, the closure of refineries in Japan complying the regulations of Japan's government, as well as the closure of refineries in EU countries leading to higher competition among Middle-East producers to export to EU countries, with a combined capacity of 0.63 million barrels per day, resulted in a slight increase in the global net refining capacity.

Domestic Market for Petroleum Products

NESDB projected Thailand's 2017 economic growth at 3.0-4.0% (Thailand Economic Report, NESDB, November 21, 2016) mainly due to the expanding export sector,

as the global economy is projected to grow from 3.1% to 3.4% (World Economic Outlook, IMF, January 2017). Thailand's economy is also benefiting from the expanding production of the agricultural sector, which leads to higher household spending, and from the acceleration of government spending on transport infrastructural investment and other projects outlined in the 2017-2021 Eastern Economic Corridor (EEC) development plan. Meanwhile, the tourism market is still healthily driving the economy despite impacts of Thai people grieving for the late king and concerns over the zero-dollar tourism. Tourism is expected to recover and tourist number to expand by 8% to 35.6 million visitors. Thailand's economy, however, faces risks and uncertainties from the US economy with the new president taking office, the Eurozone economy affected by upcoming elections in France and Germany, the implications of the official Brexit, and the potential risks of financial and real estate sectors in China.

The 2017 domestic consumption of petroleum products is expected to expand at a normal rate of 1.1%, compared to the spectacular 2-year growth ending at 2.2% in 2016. To elaborate, the growth in gasoline consumption is expected at 1.3%, diesel at 2.4% and jet fuel at 3.7%. In the mean time, LPG consumption is expected to shrink by 1.6% and fuel oil by 3.6%. Nevertheless, domestic consumption of petroleum products is subject to the implementation of the Ministry of Energy's Thailand Integrated Energy Blueprint (2015-2036), such as the reduction of gasoline types, the discouragement of LPG usage in the transport sector, and the liberalization of LPG imports.

Aromatics Market

The 2017 PX market is projected to slightly weaken due to the expected increase in supply from new plants in India, Vietnam and Saudi Arabia, combined with capacity rises of South Korea's PX plants with the capacity of 2.9 million tons per year. The TPPI plant in Indonesia (capacity of 550,000 tons per year) is also likely to resume operation after its shutdown since May 2014. Nevertheless, PX demand is improving as China, the world's largest PX importer, continues to heighten import to 13.3 million tons per year. The market momentum is also supported by the higher demand for polyester for fiber production in textiles and plastic bottles (PET) rising by 4.5%, and by the new commercial operation of PTA plants in India, China and Taiwan (total capacity of 2.5 million tons per year, equivalent to PX intermediate demand of 1.7 million tons per year).

The 2017 BZ market is likely to stabilize. This is due to the soaring demand in China, importing more BZ from 1.6 million tons in 2016 to 1.9 million tons in 2017. Also, the US, a large importer of Asian BZ, continues to import 2.3 million tons per year. In addition, there are new downstream plants in China starting operation, such as the Qingdao Jianye plant (SM capacity of 500,000 tons per year) and Abel Chemical (SM capacity of 250,000 tons per year). The global BZ market demand is growing by 2.4%, driven mainly by the higher demand for production of electronics, toys, packaging, vehicle parts and electrical appliances, consistently in accordance with the world economic growth. The market, however, is also pressured by the rising BZ supply of 1.5 million tons from new plants in India, China, Vietnam

and Saudi Arabia, and the capacity increase in South Korea.

Lube Base Oil and Bitumen Market

The 2017 lube base oil market is expected to be on a par with 2016, as the demand is rising in line with the global economy while more supply increases from capacity expansion and new refineries operating in 2017. The 2017 supply is projected at 1,200,000 tons per year, which is about the same as the net volatile supply in 2016. However, most of the increased supply is concentrated in the Middle East and the EU, leaving the market in Southeast Asia relatively stable, with prices likely to rise in parallel with recovering oil prices.

The 2017 bitumen market is expected to rise, especially in China, Indonesia and Vietnam, with the anticipation of steady disbursement in China, as it enters the second year of the short-term 5-year economic development plan (2016-2020), and in Vietnam for its continuation of the short-term 3-year economic development plan (2016-2018). The disbursement in Indonesia is expected to relapse to the normal condition for the repair of damaged roads from the heavy floods in the late 2016. In addition, the domestic demand is expected to stabilize at a positive level with the government's development plans to spend over Baht 1.79 trillion during 2015-2017.

Linear Alkyl Benzene (LAB) Market

The 2017 LAB market is likely to rise with a high level of demand due to the improving economy and the growing population, which drives the increase in surfactant consumption. The LAB demand from Asia, especially Southeast Asia, and the Middle East is growing by 2.6%.

With no new supply added, the market tends to relapse to the balanced condition.

Solvent Market

The 2017 overall solvent demand is projected to increase in accordance with the world's continuous economic growth despite slowdowns in countries with high GDPs, such as China, Myanmar and Vietnam, while the economies are still gaining positive momentum in most other countries, such as the US, Brazil, India, Indonesia and Thailand. However, the solvent supply is still expected to be in surplus over demand, especially that from such East Asian countries as China, Japan and Taiwan. More supply is also expected from Saudi Arabia in Q2/2017 after multiple delays of production. For aromatics products, PX prices are expected to stabilize or decline in 2017, as more supply from India and China will drive higher usage of products from toluene xylene and white spirit (TXW) group in solvent production. All in all, Asian solvent market growth is projected at 3-4% per year.

The Bank of Thailand projected Thailand's 2017 economy to grow slightly at 3.2% (reported in October 2016), compared to the growth rate ranging 3.0-3.2% in previous year. The growth is mainly driven by a steady rise in government spending, especially in transport infrastructural investments expected to commence in the latter half of 2017, such as a dual-track rail project and urban mass-transit development projects. Economic growth is also supported by higher household income in the agricultural sector due to higher prices of agricultural commodities in the global market, leading to a recovery in private sector's consumption. Additionally,

exports are expected to improve with the economies of Thailand's trade partners being likely to expand, together with the Baht depreciation. These factors result in higher public spending and soaring employment rates. However, the economy is also impacted by the results of the US presidential election; while, the potential escalation of wars in the Middle East can also impact Thailand's export in 2017.

Thailand's solvent market is predicted to grow at 3-4% in line with the 2017 domestic economic growth and export growth which is expected to increase from that of 2016. However, the market is likely to be more competitive, as the supply of some product groups will relapse to normal condition after some producers needed to shut down due to mechanic and financial problems. This, combined with the fact that some producers reduce the production capacity in order to create balance between demand and supply, leads to the undersupply of some products for a period of time and an increase in product prices, resulting in more profit generated. In 2017, it is estimated that the situation of solvent production will be better with some products relapsed to normal condition.

Petroleum Transportation Industry

The 2017 crude oil, petroleum and petrochemical products transportation is expected to recover, except for MR-sized vessels. The production capacity in the region is projected to rise, resulting in the increase of crude oil import and export. This, together with the high domestic demand for crude oil, ensures the constant demand for marine transportation. It is expected that the 2017 tariff will slightly increase compared to that of 2016. Even though OPEC and non-OPEC countries

have agreed on throughout cut, the demand for VLCCs in 2017 continues to rise, with a low number of new VLCC, likely resulting in higher tariffs for VLCCs. The demand for offshore vessels, especially crew boats and AFRAMAX vessels, are also likely to increase in 2017, due to the anticipation of slightly higher oil prices and the exploration and production companies resuming production, resulting in better offshore business.

Ethanol Market

The 2017 demand for ethanol is expected to increase to around 4 million liters per day, in line with the constant increase in E10, E20 and E85 gasohol demand after the implementation of the state policy on the promotion of gasohol through retail market mechanisms, including the future plan to abolish Gasohol 91, left for only E20 and E85. Moreover, the rising number of vehicles and gas stations with Gasohol E20 and E85 was another factor driving the increase in ethanol consumption, the same condition as that in 2016.

In 2017, five more ethanol plants are expected to start their operation with the combined capacity of 1.05 million liters per day: two of which are molasses-based ethanol plants with the combined capacity of 0.43 million liters per day, and three of which are cassava-based ethanol plants with the combined capacity of 0.62 million liters per day. The five ethanol plants hikes the ethanol production capacity to 5.74 million liters per day. Meanwhile, the 2017 ethanol price tends to increase compared to that of 2016 due to the forecast of the rising price of feedstock, both cassava and molasses compared to that of 2016. Moreover, although the ethanol production capacity tends to increase due to

new ethanol plants in 2017, it is expected that ethanol supply tends to be tight as the amount of molasses is forecasted to decline.

Power Industry

The domestic peak power demand is projected at 30,086 megawatts (MW), a rise by 1.58% from the previous year, with a higher total power reserve of 31.9%. Power-generation capacities of 374 megawatts from Bang Pakong #C3 and SPP Firm plants are set to be off the grid, while a new total capacity of 1,919 megawatts from SPP Firm and SPP Non-firm plants are planned, resulting in the overall power generation capacity of 1,545 megawatts. Natural gas continues to be the primary source of power generation, accounting for 65.8%. Other fuels for power generation are coals (21.7%), followed by other sources such as hydropower and alternatives.

In 2017, there will be planned shutdowns of natural gas production facilities in Myanmar and JDA-A18. Details of these plans and recommended mitigations are as follows:

Scheduled Shutdown Period	Gas Field	Mitigation
February 3-12, 2017	Zawtika (total shutdown)	To be substituted by LNG and hydropower from Laos
March 25-April 2, 2017	Yadana (total shutdown)	1. To be substituted by fuel oil for Ratchaburi and Bang Pakong Power Plants 2. To be substituted by diesel for Ratchaburi Phase I and Phase II and Tri Energy Power Plants 3. To be substituted by natural gas from the East for the North Bangkok Phase I Power Plant
April 12-16, 2017 April 30-May 1, 2017 May 20-21, 2017	Yadana (partial shutdown)	To be substituted by LNG and hydropower from Laos
August 31-September 6, 2017	JDA-A18	To be substituted by diesel for Chana Phase I Power Plant and by fuel oil in stock for Krabi Power Plant
October 21-30, 2017	Yetagun (partial shutdown)	To be substituted by LNG and hydropower from Laos

Power Installation and Decommissioning Plan for 2017

2017	Power plant	Fuel source	Megawatts (MW)
January	Bang Pakong #C3 decommissioning	Natural gas from the East	(314)
January-December	SPP Firm	Natural gas	1,170
January-December	SPP Non-firm	Alternatives	749
January-December	SPP Firm decommissioning	Natural gas	(60)

Additionally, in 2017, PTT Plc. is planning to adjust the gas specifications from the East to support the increasing LNG consumption from the higher number of gas customers, such as industrial customers, NGV customers and SPP Power Plant. The new specifications

will adjust the natural gas quality control by increasing to 1,220-1,340 BTU per standard cubic foot. This results in the engine modification of some facilities in order to support the new specifications of natural gas.

PRODUCTION PROCESS, PROCESS DEVELOPMENT, QUALITY, SECURITY, SAFETY & OCCUPATIONAL HEALTH AND ENVIRONMENT MANAGEMENT



Production Process and Process Development

In 2016, Thailoil generated total refining capacity of crude oil and feedstock of 298,000 barrels per day, representing 108% of the nameplate capacity. While Thai Lube Base Plc. (TLB) and Thai Paraxylene Co., Ltd. (TPX) processed their production capacities at 216,000 tons per year (or 81% of the nameplate capacity) and 676,000 tons per year (or 81% of the nameplate capacity), respectively. Thailoil and Subsidiaries operated under a joint production plan for overall optimization, with all activities during the year summarized as follows:

Thailoil

- >> Won Thailand Energy Awards 2016 for Outstanding Energy Management from the Ministry of Energy and first-runner up award under the same category from ASEAN Energy Awards 2016.
- >> Initiated more than 20 projects under the Profitability Improvement Program, resulting in an extra 0.93 USD per barrel (equivalent to Baht 3,629 million) in total revenue as planned. Achievements under the program included the acquisition of new crudes at suitable prices and with suitable qualities, efficient product distribution management, production planning, production processes improvement, energy conservation, and fuel & loss process improvement.
- >> Initiated more than 19 efficiency improvement programs to reduce energy consumption, leading to energy cost-saving of Baht 164 million per year and

the reduction of greenhouse gas (GHG) emission of approximately 19,000 tons of carbon dioxide per year. Outstanding programs included:

- Utilized the loading checklist to reduce crude loss during offloading from the original port decreased to 0.18% by volume, equivalent to a cost-saving of Baht 84 million.
 - Improved the efficiency of furnaces in various production units.
 - Replacement of catalysts in the Hydrogen Manufacturing Unit-2 to minimize energy consumption, resulting in cost-saving of more than Baht 10 million per year.
- >> Shut down of Crude Distillation Unit-1/2 and replaced catalysts in the Hydrodesulphurization Unit-2 within a shorter timeframe.
- >> Reviewed and adjusted fuel usage in the refining process to match changes in crude prices and pricing structures of various fuel to minimize energy expenses.
- >> Improved the utility unit to increase production of untreated water, resulting in the reduction of low-pressure steam in the Desalination Unit, equivalent to a cost-saving of Baht 10.7 million per year.
- >> Maintained the equilibrium of the steam circulation system for maximum efficiency and prevented the release of excessive steam by cancellation of over-pressure steam production from the boiler, resulting in a cost-saving of Baht 6 million per month.
- >> Adjusted the maintenance frequency of heat exchangers and installing one unit of high-efficiency Compabloc heat exchanger in the Crude Distillation Unit-3, resulting in a fuel cost-saving of Baht 87 million per year.
- >> Re-routed the light naphtha generated from the Thermal Cracking Unit and forwarded it to the Hydrotreating Unit-3 instead of flare, during the planned shutdown of the Hydrotreating Unit-2, resulting in a loss-saving of Baht 6 million.
- >> Installed the Liquid Chloride Guard in the Continuous Catalyst Regeneration Platformer Unit-2 in August, leading to corrosion reduction in the production unit and thereby extending the unit's life.
- >> Analyzed causes in preventing pressure drops in the Continuous Catalyst Regeneration Platformer Unit-2 to maximize generation unit's efficiency, resulting in the operation of Continuous Catalyst Regeneration Platformer Unit-2 with no unplanned shutdown. Such operation save the Company's expense of Baht 7 million.
- >> Shut down of the Hydrocracking Unit-1 and the Hydrogen Manufacturing Unit-1 to replace expired catalysts, resulting in optimal efficient operation.
- >> Shut down of the Hydrocracking Unit-2 to replace the expired catalysts, resulting in a maximum efficient throughput, and improved the efficiency of High Vacuum Unit-3 to separate waxy products from long residue, as well as improving energy consumption of the distillation units with cleaning heat exchangers as one of the processes. These waxy products are feedstock for the Hydrocracking Unit to produce higher-value jet fuel and diesel.
- >> Initiated oil product transportation improvement program by installing tracking system, movement control in product transportation. This includes valves inspection, oil pump control systems, electric-motors

in valves systems, piping systems, oil pumps, and civil works. All of these systems cut redundant work and prevented errors. These systems are to go-live in the first quarter of 2016.

- >> Commenced truck delivery of light naphtha products to Sak Chaisidhi Co., Ltd., a subsidiary of Thairoil, for feedstock in December.
- >> Launched construction work to expand lorry-loading at Thairoil Refinery to five channels to cope with increasing domestic demand. The construction work is set for completion in the first quarter of 2017.

TLB

- >> Achieved several market and product development milestones for new grades of lube base oil, extracts, and bitumen; thus enhancing competitive advantages. New products like bitumen grade 40/50, met a new standard set by the Department of Highways and was delivered in 2016 for the first time in Thailand.
- >> Commissioned a major turnaround (MTA), in line with the six-year planned MTA, which was completed 3.9 days in advance; resulting in higher operation availability.
- >> Significantly increased the energy consumption efficiency index above the target, following a cleanup of heat exchangers during the MTA.

TPX

- >> Successfully operated all paraxylene units this year.
- >> Completed a shutdown of the ED Sulfolane Unit, resulting in lower energy consumption in the distillation unit and higher efficiency in the aromatic extraction compounds.

- >> Initiated the efficiency improvement of furnaces.

- >> Initiated the Bypass Feed program on the Isomar Benzene in Water Cooler as to maintain feedstock temperature in the ED Sulfolane Unit and to reduced energy consumption.

- >> Initiated in an investment project to increase the efficiency of jet fuel and paraxylene products distribution. This involved the installation of a 12-inch paraxylene pipeline from Thairoil to Sea Berth no. 5 of PTT Plc. The project strengthens a higher volume of paraxylene export to cope with customers' larger vessels; thus significantly increase the competitiveness of paraxylene distribution. Completion of this project is set for the first quarter of 2017.

Labix Co.,Ltd. (LABIX)

- >> Pre-commissioned all machines and equipment during January-February and commissioned for commercial operation in February 25.
- >> Initiated in production processes improvement, resulting in significantly reduce energy consumption by 20% from the original design.
- >> Lowered the system pressure in Kerosene Distillation Unit to increase its efficiency.

TOP SPP

- >> Operated two SPP projects with a total production capacity of 239 MW of electricity and 498 tons per hour of steam, providing more revenue and profits to Thairoil and Subsidiaries.
- >> Phase 1 was commercialized on April 1 and began selling electricity to Electricity Generating Authority

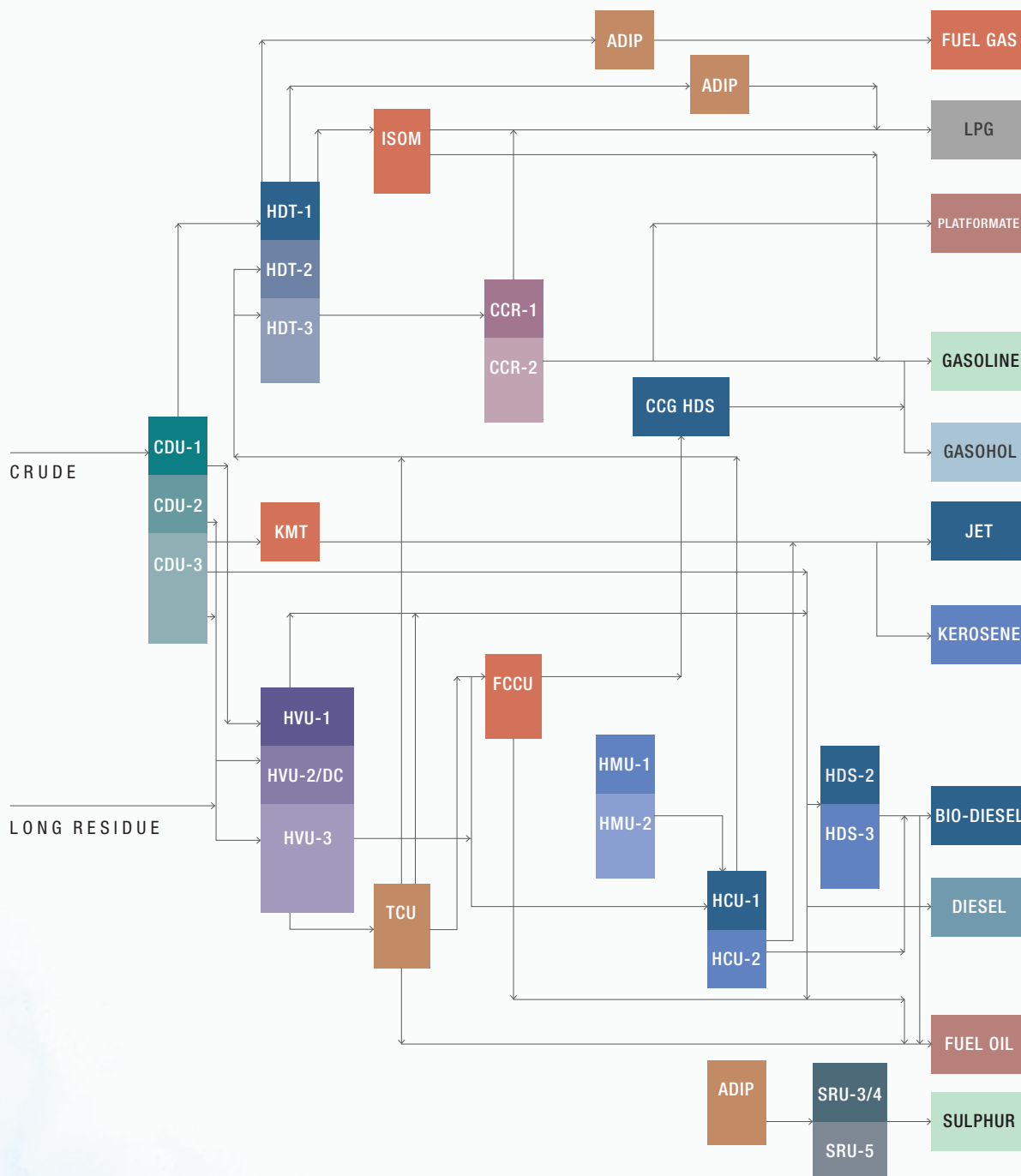
of Thailand (EGAT) under a 90-MW power purchase agreement (PPA), with the excess power and steam sold to Thailoil.

>> Phase 2 was commercialized on June 1 and began selling electricity to EGAT under a 90-MW PPA via the transmission line owned and operated by Provincial Electricity Authority of Thailand (PEA), with the excess power sold to Thailoil and LABIX and excess steam to Thailoil.

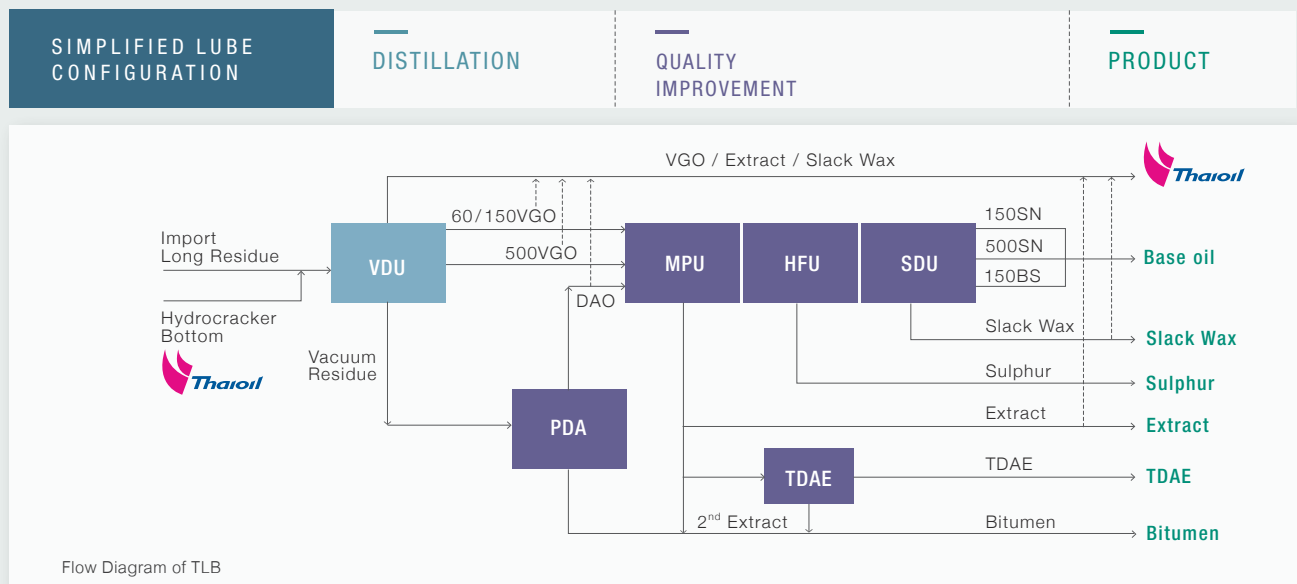
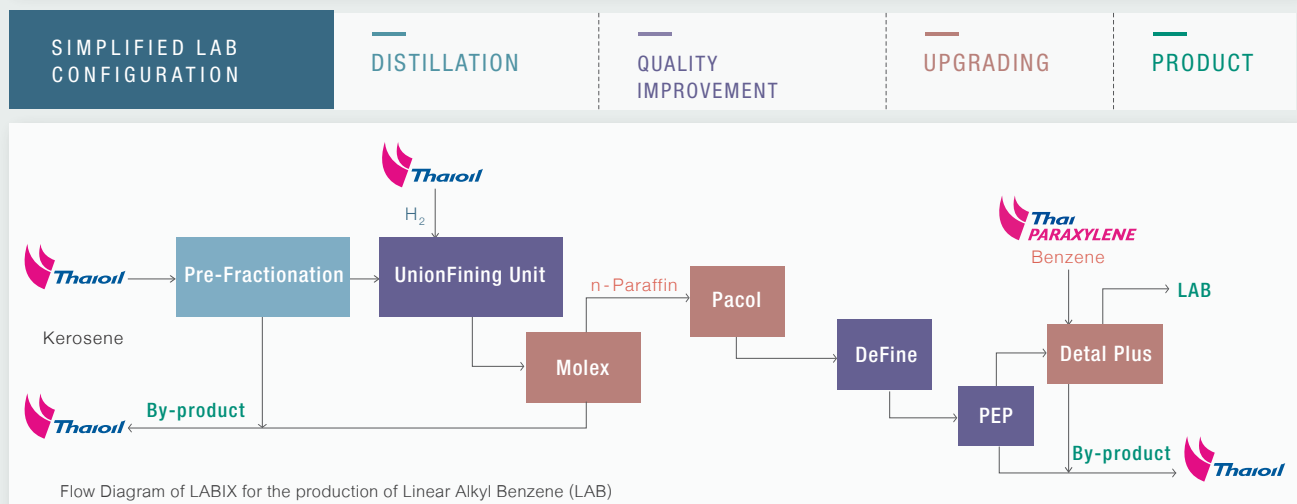
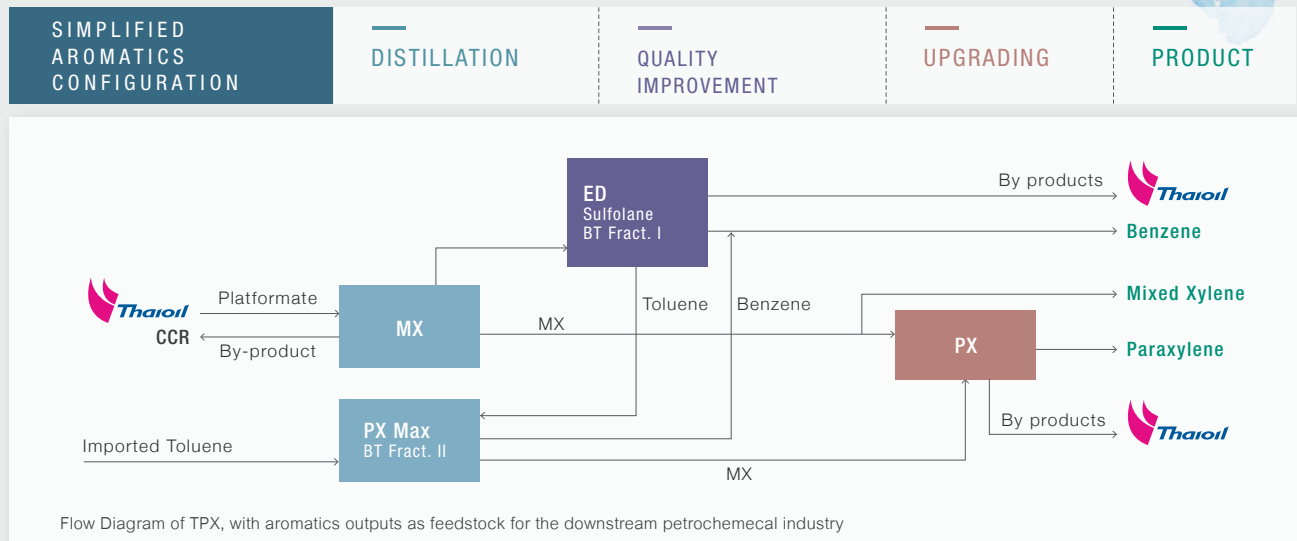
Refining Performance Assessment

Thailoil successfully maintained its oil refining capability to meet plant utilization throughout 2016, with its Solomon's Energy Intensity Index superior to the target. These performances confirmed Thailoil's commitment to continuously improving and developing its refining potential to maintain its leadership in the Asia Pacific.

CRUDE AND FEEDSTOCK REFINING PROCESSES
INCLUDING PETROCHEMICAL AND LUBRICATING OIL PROCESSING OF THAI OIL AND SUBSIDIARIES



Flow Diagram of Thai Oil Refinery, a complex refinery in Thailand



Quality, Security, Safety, Occupational Health, and Environmental Management

Thaioil and Subsidiaries have adopted an integrated operation and management standard of quality, security, safety, occupational health, environment, energy and social responsibility in pursuit of Operational Excellence.

1. TIS 9001 Quality Management System
2. TIS 14001 Environmental Management System
3. TIS 18001 Safety and Occupational Health Management System
4. BS OHSAS 18001 Occupational Health and Safety Management System
5. IMS: Integrated Management Systems
6. ISO/IEC 17025 Management System for Laboratory Assessment
7. ISO 26000 Corporate Social Responsibility (CSR) under the CSR-DIW project
8. ISO/IEC 27001 Data Security Management System
9. ISO 50001 Energy Management System

10. Operational Excellence Management System (OEMS).

Thaioil has maintained and continuously improved all its management systems since 1996. These systems are managed under Thaioil and Subsidiaries' policies on quality, security, safety, occupational health, environment, energy and social responsibility in all following aspects:

- >> Development of quality products and services to meet customers' needs and satisfaction under standard management systems and in compliance with laws and regulations, as well as related standards and specifications.
- >> Formulation of a systematic risk management plan to control and minimize operating risks including physical, chemical, biological, and psychosocial aspects, to prevent incidents that may adversely impact businesses, community and environment, and prevent causes of injuries or illnesses to workers and relevant stakeholders. This is to safeguard the life,

SECURITY, SAFETY & OCCUPATIONAL HEALTH, AND ENVIRONMENTAL MANAGEMENT STRATEGY



SAFE

Maximum Safety



WHITE

Drug-Free Organization



GREEN

Zero Environmental Complaint
from Community

properties, and corporate information by constantly providing security and risks awareness.

- >> Defining business plans, goals and implementation process to control and reduce potential impacts under international practices, covering water, air, sound, heat, waste, GHG emission, energy management, and energy conservation by reviewing, monitoring, and evaluating results for continuous improvement.
- >> Allocation of adequate resources and support on information technology to comply with policies and operations on design, procurement, and services with a focus on efficiency and continuous improvement of quality, security, safety, occupational health, the environment, energy management and social responsibility, as well as the fairness in workplace.
- >> Promotion of continuous development, revision, and updates of policies and operating procedures to keep up with changes in business laws, technological development, and environmental and social circumstances.
- >> Promotion and nurturing awareness among all stakeholders on the importance of maintaining and improving quality, security, safety, occupational health, the environment, energy management, and social responsibility through corporate-wide communications, as well as to the public.

Moreover, Thailoil and Subsidiaries initiated the Safe White Green Strategy to forge awareness and leadership on work safety, and extend the Safe White Green initiative to QSHE roll-out with a more proactive approach, including the launch of operating plans with an emphasis on accessibility and campaigns on raising

awareness of safety, quality, environment, and security of staff in all operating areas, together with enhancing their participation through activities and workplace arrangement. Thailoil and Subsidiaries are fully committed to bringing in more management systems to apply for sustainable development.

Security Management

Thailoil enforces its strict security measures to safeguard Thailoil and Subsidiaries' personnel, properties, data, and reputation from security threats arising from internal and external factors in line with risk levels. All executives and employees are strictly committed to the corporate policies on quality, security, safety, occupational health, the environment, energy management, and social responsibility by conforming to the Universal Declaration of Human Rights, including the following:

- >> Defined and reviewed operating plans on security measures for threats. Created networking for plans and coordinate sharing of intelligence with the public and private sectors, as well as external experts. Organized security drills for emergency response teams to evaluate and improve efficiency to the maximum.
- >> Supervised and promote best security and safety practices stated in the Security and Safety Handbook for Thailoil and Subsidiaries' employees to ensure their safety both at work and at home.
- >> Managed security through the Safe White Green strategy to obtain a White (drug-free) workplace. All suppliers and contractors are invited to take part in policy formulation, planning security programs, promotion, and prevention activities of drugs and all other illegal substances, as well as security violation.

The corporate security strategy is designed and managed under the Defense in Depth approach, dividing areas of responsibility into zones with specific sets of security measures, control systems, and operational management systems for internal zones or areas within facilities. Furthermore, management networking is set up to manage external zones including the communities and other business entities, a different set of security measures is applied, including coordination of security strategy and activities with state security agencies such as Chonburi's Disaster Prevention and Mitigation Unit, the Royal Navy, Laem Chabang Police Station, and the Air and Coastal Defense Command.

Occupational Health and Safety Management

With utmost attention and awareness, Thailoil and Subsidiaries' essential goal is to become an accident-free organization for employees, community members, service contractors, and all stakeholders. With the highest ranking and as leader in the industry among peers, several work programs and activities in occupational health, safety, emergency and crisis responses, have been continuously improved under its five-year plan.

The five-year plan includes programs and activities in occupational health, personal safety, process safety, emergency and crisis management, and safety leadership. A dedicated operating unit takes direct charge of controlling and driving all activities stipulated in the work plan. Executives and employees have been assigned to participate in the occupational health, safety, and environment committee (SHE Committee) with more than 50% of its members representatives of employees at the operating level (excluding the Chairman). The Committee meets at least once a month to share and dissemination

of SHE updates, monitoring of progress, and preparation for future work.

The Operation Excellence Management System (OEMS) is the management system that governs all 12 elements of the corporation, some of which are security, safety, occupational health, and the environment (SSHE). Other elements involve process safety, an element in charge of development and improvement of work and work process safety including Strategy and Leadership, Operation, Management of Change, Reliability and Asset Integrity, Management of Contractors and Suppliers, and communication with all employees across the Company. Performance on work and process safety is designed by using process safety indicators to ensure the organizational capability to consistently maintain its occupational health and safety performance at the outstanding level, while sustainably maintaining its competitive advantage. Programs have been continuously introduced to maintain Thailoil and Subsidiaries' performance excellence on leadership and competency in work related to occupational health, safety, and emergency and crisis management through individual development programs. These programs are specifically designed for all employees to nurture and develop safety awareness and a safety culture aimed to prevent potential accidents.

Under the Safe White Green Strategy, Thailoil and Subsidiaries implemented its QSHS roll-out to all contractors in 2016 to raise awareness of safety leadership, work safety, security, and the environment. The programs were proactively conducted to the workforce in all operating areas.

SAFETY AND OCCUPATIONAL HEALTH MANAGEMENT



Major operating strategies on safety and occupational health included the following:

- >> Develop and continuously improve the safety and occupational health management system and keep current with specific sets of risks at hand.
- >> Continuously assess risks at hand and review existing preventive and controlling safety measures, as well as emergency plans covering severe risks. The planning and security and safety measures are clearly defined for all levels (Defense in Depth) to prevent and mitigate impacts on the operations of Thailoil and Subsidiaries in order to ensure the capability of managing and controlling risks at acceptable levels.
- >> Develop safety procedures and safety checklists for all production processes and put them in place as guides for controlling and monitoring operation and production processes, both for major safety concerns and for high-risk operations. All these measures are not only for work safety permit, but also for regulatory compliance on safe operations. Communication with all employees and contractors are enforced to prevent potential accidents which could impact the lives of people and losses of properties.
- >> Organize management visits led by the CEO/President and high-level executives during the major turnaround of the refining units to provide morale and support to all workers and to demonstrate corporate commitment and support on work safety and good safety leadership practice.
- >> Promote lessons learned with all employees and contractors from past accidents and incidents in the refining and petrochemical industries so as to raise safety awareness and learn ways to prevent recurrence.
- >> Encourage employees and contractors to write Potential Incident Report (PIR) and select the best PIR of the month, which is chosen by the SHE Committee for awarding, and publishing QSHE Newsletter to communicate with employees and contractors.

Environmental Management

Thaioil and Subsidiaries successfully maintained its operational excellence and work performance in environmental management by operating under of the Environmental Master Plan framework, leading Thaioil to retain its top ranking in Dow Jones Sustainability Indices (DJSI). In 2016, a new Environmental Master Plan was introduced for the next five years (2017-2021).

A Triple Bottom Line approach has been adopted by Thaioil and Subsidiaries to develop and balance its management policy on the society, the environment, and the economy. A 5-year Environmental Master Plan for 2012-2016 was developed to respond to the needs and challenges demanded by various stakeholders, including the communities, licensing units, and Thaioil and Subsidiaries' business directions and plans, as well as its desire to excel in environmental management. The 2012-2016 Environmental Master Plan leveraged more than 50 years of work experience and the corporate status in the energy industry, includes nine various development plans.

1. Governance Structure

Thaioil and Subsidiaries have adopted the principle and application of ISO 14001 to steer and develop environmental management. Incorporated with the Eco-Industry environmental framework, Global Reporting Initiative (GRI), and DJSI, the integrated approach was further applied to include input and participation with all stakeholders through the ISO 26000 operation standard on CSR under the CSR-DIW initiative.

2. Technical Procedures

Thaioil and Subsidiaries developed and improved all elements of the Environmental Standard Specifications

for use as operating guides and concrete procedures perceived by various stakeholders, including authorized government agencies, international organizations, and international-accepted best practices. This was used as an operating framework ranging from feasibility studies, project and project extension conceptual design, construction, to production commissioning, all under environmental management. The outcomes reduced environmental impacts, minimized the use of resources, and efficiently response to the needs and expectations of all stakeholders.

In addition, Thaioil and Subsidiaries spelled out its Code of Conduct on Communities, Society, and Environmental responsibilities and nurture all employees in developing full awareness of conservation and protection of natural resources and the environment to prevent potential incident or actions that may cause negative impact to the environment and natural resources. Thaioil also established its Corporate Governance principle on quality, security, safety, occupational health, environment, energy consumption, and Corporate Social Responsibility by company-wide communication through various channels such as QSHE roll-out, a program used for transferring knowledge into practice and experience exchange to ensure true learning.

Under ISO 14001, Thaioil and Subsidiaries managed their environmental system toward operational excellence and knowledge transfer under the Knowledge Management system (KM). The practices are under COSSAI 6, including capture, organize, store, share, apply, and innovate.

3. Climate Strategy

Natural resource conservation is of utmost important to Thaioil and Subsidiaries, particularly fuels and

energy, upstream resources for the environment and the economy. An Energy and Loss Committee (E & L) was established and tasked with energy management planning, monitoring and evaluation, and continuous improvement. A 10-year (2010-2019) Energy Management Master Plan drives Thailoil and Subsidiaries to become one of Asia Pacific's refineries in the first quartile on efficient energy consumption and dramatically cause positive impact on world's atmosphere by reducing GHG emissions.

Under the Environmental Master Plan, studies of impacts from the carbon footprint to climate change have been constantly undertaken. The results have been integrated with production processes to minimize impacts on the climate efficiently.

Moreover, Thailoil participated in a carbon footprint organization model program led by the Federation of Thai Industries and the Thailand Greenhouse Gas Management Organization. Under the program, total GHG emissions are specifically measured, providing Thailoil with readiness for all subsequent GHG management programs to be implemented by relevant government agencies in the future.

4. Water Resource Management

A systematic water resource management is vital to minimize the risk of water shortage in the production processes and to avoid possible conflicts with local communities on water usage. This systematic management also provides auditable information on the quantity and conditions of water supply to the public. Moreover, Thailoil initiated the water resource management framework to sustainably increase efficiency on water management, under the principle of 3Rs (Reduce,

Reuse and Recycle). A Water Resource Management Master Plan was put in place to guide resource allocation. Flood management for areas within the facilities and the vicinities was also incorporated. All studies covering both prevention and mitigation approaches have been implemented.

5. Eco-Efficiency Performance

In addition to full compliance with measures and conditions set forth in the Environmental Impact Assessment (EIA) reports and environmental regulatory controls and legislation, Thailoil and Subsidiaries have taken additional steps in their production processes toward environmental quality:

>> **Air Pollution** – The management process covers the entire range of work and activities from the designing stage to maintenance planning, control of sulfur contents in fuels right from the sources, selection of energy fuels in various proportions, selection of tools and equipment and clean processing, including emission control of air and impurities.

>> **Water Pollution** – Under the most effective natural resource consumption concept of 3Rs, the principle of wastewater treatment began with the reduction of wastewater quantity and segregation of waste. The principle ensures optimal use of natural resources and efficient treatment of waste water.

>> **Industrial Waste** – The current industrial waste management system begins with waste inventory, 3Rs of industrial waste, full control of waste storage, transport, and transfer for safe disposal. All these processes are handled in line with technical principles and all regulatory controls.

In addition, Life-Cycle Assessment (LCA) has been adopted to evaluate impacts of the use of Thailoil and Subsidiaries' products on the environment. Detailed studies are currently used to efficiently identify specific sources of impact on the environment throughout the production chain, leading to the analytical ability to continuously reduce environmental impacts.

6. Biodiversity

As a responsible corporate citizen for the habitat and natural resources surrounding the refinery, Thailoil and Subsidiaries are fully committed to continuously develop the monitoring and tracking mechanisms on environmental impacts, including studies on the baseline and sensitivity areas of the marine ecological system. These studies have been fully integrated with existing assessments and tailor-made for specific uses on environmental and biodiversity prevention and mitigation.

7. Supplier and Contractor Program

Management of suppliers and contractors is crucial to the sustainable operations of the Company. Good management practices of suppliers and contractors also demonstrate full responsibility for the public and the environment, realizing that impacts could be caused by suppliers and contractors. Thailoil defines and develops management programs for suppliers and contractors in areas concerning the environment and society. All suppliers and contractors are encouraged to perform their duties in full compliance with the requirements of Thailoil and Subsidiaries and to participate in the Safe White Green program together with the CSR-DIW initiatives to clearly demonstrate their responsibilities to society. An idea of integrated and joint procurement

system was initiated to provide consistent procedures for all suppliers and contractors to follow. This not only demonstrates joint responsibility to society but also better manages the entire supply chain. This integrated supply chain management project is being developed.

8. Environmental Audit

Through an effective implementation of ISO 14001 on environmental management, no major corrective action (NC major = 0) is identified by the environmental audit assessed by the Management System Certification Institute (Thailand). Thailoil and Subsidiaries is also pursuing its environmental management under the GRI guidelines, including audits, assurance, and reporting on both the environmental management system and environmental operating performance for sustainability assessment to cope with DJSI criteria. Thailoil and Subsidiaries have developed a system to continuously collect and verify all data, reduce errors in data transmission, and increase data transfer efficiency.

9. Management Information Solutions

Thailoil and Subsidiaries have systematically managed its information, resulting in sustainable operations. Operating under the Environment Master Plan, the Company can improve and further develop its monitoring dashboard as means to communication to relevant parties. Moreover, the Environmental Database Center acts as data collection center, leading to analytical and development of work improvement plans; thus lay a foundation of communication with the communities and government sectors. This is to create a common understanding among Thailoil and Subsidiaries. Such project is under continuous improvement.

Under the 2012-2016 Environmental Master Plan framework, an annual management review is mandatory as part of the critical process to support its vision and mission toward the commitment of social responsibility. The framework also fosters stakeholders' satisfaction and engagement, leading to the sustainable growth for Thailoil and Subsidiaries.

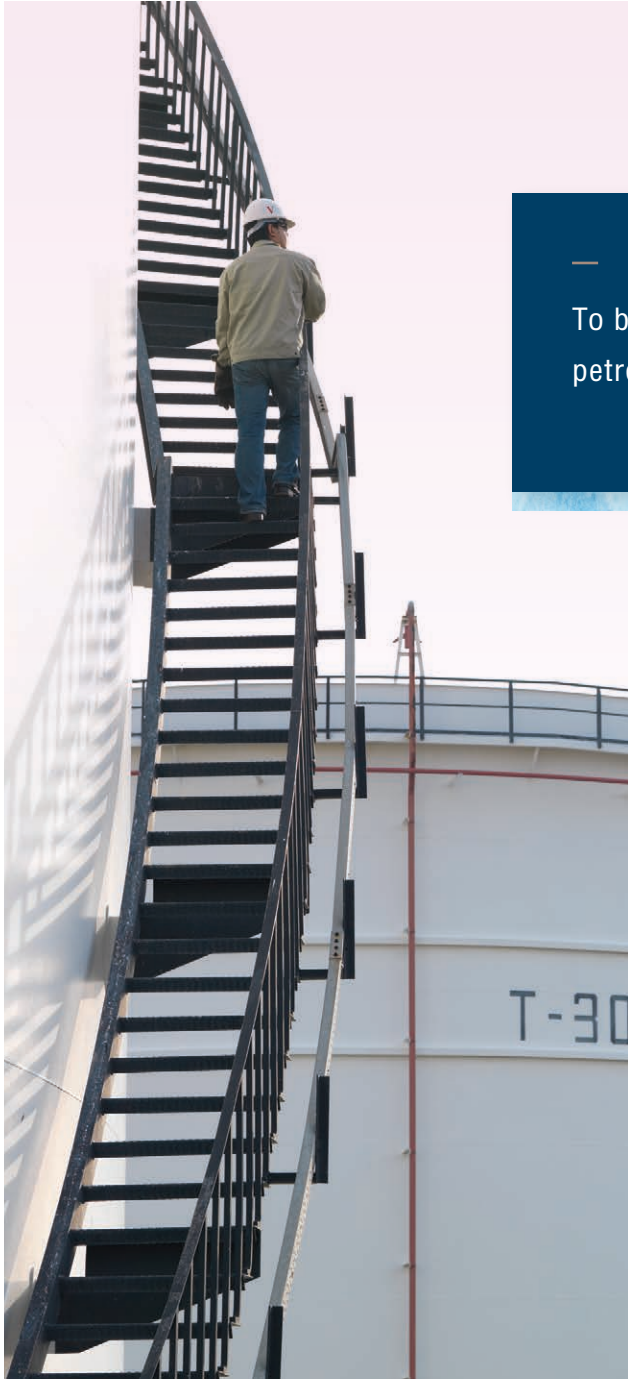
Environmental Education and Training for Employees

Thailoil and Subsidiaries have defined its business code of conduct on community, society, and the environment to refrain in engaging in activities that is harmful to natural resources and the environment, and constantly cultivate awareness on social and environmental responsibilities for all employees. Under this commitment, Thailoil and Subsidiaries has clearly defined operating practices on education and training to employees on environmental conservation and assigned the Quality Management Department to take charge of designing and developing curricula focusing on conveying and sharing knowledge of the corporate environmental policy with all employees from day one and in employees' orientation program, especially to those in the operations groups, technicians, and engineers who are directly involved in environmental stewardship and conservation. These programs include STA.1–Safety, Security and Environment in Refinery, QSHE Week activities, in-house and external environmental training courses for employees, specific environmental classes for managers, supervisors, and operators in charge of wastewater treatment, industrial waste, air pollution, and courses on energy and environmental conservation. Engineers directly responsible for each production unit are encouraged to attend more than 20 technical process training courses run by technology proprietors and vendors.

Meanwhile, Thailoil and Subsidiaries continuously applied the leading environment certification systems and administration system, including ISO 14001 and ISO 26001 through CSR-DIW program. A series of campaigns have been continuously organized to promote awareness of environmental conservation among all employees. Related activities in these campaigns include routine environmental inspection on process areas, cost-effectiveness exploitation of resources in offices, such as lights-off after the use of meeting rooms, suitable temperature control in offices, tapwater saving, and electronic communication wherever possible. Other activities include joint research and studies with leading research institutes, such as PTT Research & Technology Institute, Mahidol University, and private entities with specific expertise. These studies and research continuously support analytical work and improve environment-related operations.

The outcomes of these activities are routinely reported to the management for the annual management review, leading to a cycle of continuous improvement of systems, redesigning of annual work plans, and communication with all employees for effective implementation.

FUTURE PROJECTS



To become a leading fully integrated refining and petrochemical company in Asia Pacific

The strategic investment plan for Thailoil and Subsidiaries is designed to establish sustainable business growth to become a leading fully integrated refining and petrochemical company in Asia Pacific. Countries with economic growth, such as Vietnam, Myanmar, and Indonesia, are investment targets to pave the way for new business opportunities.

The investment plan focuses on adding value to existing products while reducing business risks by tailoring new products to meet market demand. Thailoil also values capacity expansion, as well as investment in efficiency and competitiveness improvement. Business development activities such as logistic services for petroleum and petrochemical products, together with business model adjustment to cope with constant market changes exemplify Thailoil's investment plan to maximize profits for its stakeholders.

Ongoing Projects

Sriracha Logistics Development

Synergizing with PTT Plc., Thaioil is developing a transportation and logistics system in Sriracha, a combination of three sub-projects:

1. Project to improve efficiency of jet fuel distribution:
The pipeline system is modified to increase distribution channels of jet fuel to the lorry loading of Chonburi Terminal Co., Ltd., instead of jetty distribution. The project increases the flexibility of product distribution and reduces PTT Group's overall transportation costs. With a total investment value of around Baht 60 million, the project is now in progress and due for completion in Q1/2017;
2. Project to improve efficiency of paraxylene distribution:
To better meet the more diverse demand from customers, a new pipeline is constructed to distribute the product to large vessels (10,000 DWT) at Sea Berth No. 5 of PTT Plc., increasing distribution channels and sales patterns in addition to the usual distribution through Thaioil's own jetties. The pipeline construction was completed in 2016, and the product distribution is expected to start in Q1/2017;
3. Project to expand the lorry loading capacity from 10 to 15 million liters per day so as to meet rising market demand and boost the speed and flexibility of petroleum product distribution. The project requires an investment of around Baht 1,870 million. After

completion of the expansion, expected within Q1/2017, the lorry loading here will be the largest and most efficient in Eastern Thailand.

New Crude Tank Project for Refinery Security

Thaioil studied the possibility to acquire new crude tanks for storing the legal reserve, the amount of which had been changed in line with the revised Fuel Trade Act, and for increasing the security in refining to ensure constant production and strong competitiveness. As a result, five crude tanks have been planned to be built on the Company's 200-rai area, near PTT's Khao Bo Ya LPG Terminal. This project is currently on the process of Front-End-Engineering-Design (FEED) and land preparation. The project is expected to complete and ready to operate in 2019.

Sriracha Office Relocation Project

In order to maximize the efficiency of the site office area utilization, enhance the production safety and security, and accommodate future business expansion, Thaioil is preparing for the relocation of the office, the product testing laboratory, and the engineering and warehouse building. The new office buildings are divided into three building groups; namely, group 1 consists of office and product testing laboratory; group 2 the engineering and warehouse; group 3 the entrance control and security office. The project is now on the process of detailed design and expected to complete in 2019.

Projects under Feasibility Studies

Clean Fuel Project (CFP)

Considering fierce competition in the refining business and the need to increase refining efficiency, Thailoil deems more investment necessary to achieve improved production processes to raise its competitiveness.

Clean Fuel Project (CFP) was therefore initiated to increasingly turn fuel oil into diesel and jet fuels of higher value. Thailoil's capacity will rise from 275,000 to 400,000 barrels per day after CFP implementation. Thanks to its strategic location and availability of transportation facilities following the completion of jetty extension, Thailoil will become more capable of producing petroleum products to meet higher market demand, both from domestic and those in AEC countries, where imports of petroleum products are taking off. CFP is expected to support Thailoil in becoming an energy leader in Southeast Asia, and growing more income for the country in the future.

Presently, the FEED is in progress for CFP, which is due to complete in the beginning of 2017, prior to construction bidding process in the second half of 2017. Moreover, the Final Investment Decision is expected to complete at the end of 2017 or at the beginning of 2018, in which it will take approximately 3-4 years of construction.

Jetty Extension Project

Thailoil conducted a study on jetty extension to prepare for the distribution of a larger variety of products. Planned for receiving large vessels of up to 50,000 DWT from the current capacity of merely 5,300 DWT, the

extended jetties will increase flexibility and efficiency in product distribution. They will also be ready to facilitate the distribution of new products to support Thailoil's future growth. The project is scheduled for completion and operation in 2019.

Specialty Products

Thailoil's strategic plan is to turn commodity products into specialty products of higher values to increase the number of new groups of customers with specific demands. Studies on specialty products are being carried out to add value to both light-end and heavy-end products by turning them into products for downstream industries, such as food and drugs, cosmetics, and rubber industries, where high returns can be achieved.

Thailoil Marine's Fleet Expansion

Thailoil Marine Co., Ltd. (TM) is determined to become a fleet leader among PTT Group and in Asia Pacific in response to the expansion of energy, petroleum, and petrochemical markets, both domestic and regional. TM's fleet will be improved to keep up with prevailing economic situations. A larger fleet will also be an advantage for business expansion into emerging markets in Myanmar, regarded as an expansion base for Thailoil and Subsidiaries and PTT Group.

Overseas Investment

To become a leading fully integrated refining and petrochemical company in the Asia Pacific, Thailoil has planned overseas investment in its most competent areas. Initially, the investment will be directed to AEC member countries with high growth potential.

Thaioil has continuously sought energy investment opportunities in Myanmar. To this end, Thaioil and PTT Plc. have been selected to take part in the formulation of Myanmar Refinery Master Plan under energy cooperation between Thailand's Ministry of Energy and its counterpart in Myanmar, for which an agreement had been signed on June 15, 2015. The scope of the initial study covered domestic petroleum demand and a survey for a suitable site to construct a refinery. The study is expected for completion by Q1/2017. Expansion of other businesses along Thaioil's supply chain in Myanmar is also being considered.

In Vietnam, Thaioil plans to expand its businesses through TOP Solvent (Vietnam) LLC. (TSV). A study was made into the possibility of expanding the solvent and chemical depot in the north of the country to cope with soaring demand stimulated by the Vietnamese government's economic development policy. Upon project completion, TSV will be the first integrated company for supply and distribution of solvent and chemical products in the North of Vietnam. This will raise Thaioil's competitiveness in order for the future market expansion as well as more distribution channels for products from Sak Chaisidhi Co., Ltd., and other products from Thaioil and Subsidiaries and PTT Group. The study, expected for completion by Q1/2017, is now in its engineering design stage to assess investment value.

Indonesia is viewed as one of the countries with high growth potential in Southeast Asia. Thaioil is seeking viable investment opportunities in refining, petrochemical, and related industries, focusing on seeking partners with strengths which can support Thaioil and Subsidiaries' strategic growth plan.

Other Business Opportunities

The current intensive competition causes it vital for Thaioil to expand its businesses and ventures into new ones to enhance its strengths and be prepared for changes. Thaioil has plans for both domestic and international expansion through business partnership as well as Mergers and Acquisitions (M & A), focusing on businesses that can create synergy, add value to existing ones, and strengthen its value chain. Thaioil also seeks new businesses by leveraging its knowledge and competence as well as its long-term experience to become a future sustainable business leader.

HUMAN RESOURCES AND ORGANIZATION DEVELOPMENT



EMPLOYEE
WELL-BEING

FAIRNESS IN
WORKPLACE

Dow Jones Sustainability Indices'
Average Score in Human Resource
Category Increase:

from

88.6

to

98

Future Leader Project to
promote potential leaders
to executive levels

95%

of all Thaioil's executives

Human Resource Development

Amid the current business challenges and intense competition, efficient human resource management is vital for business goal attainment. Thailoil and Subsidiaries therefore prioritize the personnel readiness in terms of both capacity and capability with the effective systems to ensure the competitive advantage and flexibility supporting future business expansion.

This year, Thailoil and Subsidiaries opted for proactive staff recruitment as preparation for continuous business expansion. In parallel, the repository of job applicants was enlarged through Recruitment Marketing and Employee Branding projects to prompt Thailoil to be one of the leading employers of choice. The attempt increased the number of applications per vacancy from 32:1 to 54:1, an increase of 69% over 2015. Overall, 85% of all vacancies have been filled. Thailoil has also implemented the Future Leader Readiness Project to groom leaders of the new generation, of which the success is seen in the development of Thailoil's own personnel to executive levels. As high as 95% of its executive posts have been filled, an increase of 6% from 2015.

Thailoil and Subsidiaries also greatly value sustainable human resource management, aiming primarily to achieve the continuous 'Employee Well-Being' and become a prototype organization with 'Fairness in Workplace'. In 2016, Thailoil researched into the Flexi-Benefits

program to respond to more diverse needs from staff amid the changing environment. In addition, the Business and Human Rights Policy was enforced, with coverage extended to all stakeholders along the business value chain. The Human Rights Due Diligence and the Human Rights Risk Assessment were also carried out to ensure that Thailoil's workforce is treated fairly. This non-discrimination practice earned Thailoil and Subsidiaries an increased score from 88.6% to 98% on Dow Jones Sustainability Indices (DJSI).

Nonetheless, external challenges cause Thailoil and Subsidiaries to always maintain their workforce readiness. The challenges include Industry 4.0, revolution which requires more workforce with new and diverse skills (New-Skill Workforce), the competition to attract high-potential personnel, particularly in the domestic labor market, which has become so increasingly intense that it is called the War of Talent, as well as different culture and diversity in age, gender, and race. These have brought about the Innovative Rewards program to best respond to the changing demand for compensation benefit and welfare.

In order to face such challenges and to become a prototype organization with human resource management, Thailoil and Subsidiaries are determined to constantly upgrade the strategy to ensure the workforce readiness in terms of both capability and capacity. This year, Thailoil's key HR Strategies devised as followed:

- >> Dynamic Career Management System for Strategic Driver involves cross-functional career plan to support Thailoil's future business direction. The System focuses on personnel with diversified business skill and knowledge including commerce, finance, and marketing;
- >> Future People 4.0 is the development of key modern personality traits, namely adaptability, diversity, mobility, and collective leadership, all essential for future business;
- >> Energize and Awake the Giant Within Project enhances the staff potential through different methods including job wish, special assignment, as well as coaching/mentoring in response to proactive business plans;
- >> Global Sourcing prepares the workforce with new skills that are rarely found in the local labor market.

Organization Development

The Company's vision to become a leading fully integrated refining and petrochemical company, in an attempt to ensure Thailoil and Subsidiaries business strength and sustainability, leads to the way of work adjustment from the so-called silo mode to the cross-functional mode to foster a culture of integration. The adjustments, detailed below, also stress stronger collaboration among diverse work units, and are in line with the organization development to keep up with the changing work culture.

1. Performance Driven Organization Design

Thailoil designed its organization structure and workforce to support its growth strategy and correspond the

corporate vision, which aspires to become a leading fully integrated refining and petrochemical company. Moreover, the scopes of work have been reviewed and improved for the clarity in order to ensure more effective collaboration in the organization, as well as systematic decision-making to achieve business targets and sustainable business growth.

2. Applying Knowledge for Value Creation

In the age of information and knowledge when the world has shifted from Hardware Base focusing on buildings, equipment, and tools, to Software Base emphasizing on knowledge, innovation, and best practice, it is vital to create the Knowledge Asset for Thailoil and Subsidiaries. For further application and development, the Knowledge Asset includes innovation, best practice, work process improvement, tool, and tip & trick.

In 2016, eight projects were conceived and applied with the aforementioned knowledge bringing about as much as Baht 68.12 million in profit for the organization. Thailoil Group Wisdom and Innovation Day 2016 was organized on July 11 to reward and honor knowledgeable staff innovating knowledge valuable to the Company's performance and business, by giving them plaques, certificates, and cash rewards.

3. Improving Business Processes through Balance of Controls, Efficiency & Effectiveness, and Change Management

Thailoil has developed Compliance Process and Framework, a defensive process to keep the business under laws and regulations. Representatives from all business units take part in the process. Moreover, the

process to manage chemicals and hazardous materials, ranging from placing purchase orders and stockpiling to disposal, was improved to ensure that material management meets the required standards. For the change management, Thairoil aims for operational excellence focusing on personnel in operating areas, who are the key changes towards future competition.

4. Developing TOP Group DNA/Leadership Institute

Thairoil constantly conducts the organization check-up and plans to improve the organization health to assure that Thairoil is regarded as an all-around healthy organization. Thairoil also promotes leadership who can inspire Trust and Care, by arranging activities to forge a culture among staff and close gaps identified from

the organization health survey. The executive are, in addition, encouraged to share their experience after having implemented the newly designed ways of work. This will be further implemented and efficiently forge the work culture and team building, leading toward the achievement of business performance and the sustainable healthy organization.

Also, Thairoil is developing a manual which collects knowledge and guidelines on organization development. It features organization structure design, job evaluation, process improvement, knowledge management, and corporate culture creation, which can be further expanded to support ways of work in the future.

BOARD OF DIRECTORS

MR. KURUJIT NAKORNTHAP

Director (Non-Executive)
and Chairman of the Board
Age 61 Yrs.



Director Term Duration

- >> Director (Non-Executive) (Appointed on September 12, 2014 : 2 years 3 months)
- >> Chairman of the Board (Elected on September 26, 2014 : 2 years 3 months)

Board-Committee Term Duration

- None -

Education

- >> Bachelor of Science (Petroleum Engineering), University of Oklahoma, U.S.A.
- >> Master of Science (Petroleum Engineering), University of Oklahoma, U.S.A.
- >> Ph.D. (Petroleum Engineering), University of Oklahoma, U.S.A.

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

- >> Director Accreditation Program (DAP 64/2007)
- >> Audit Committee Program (ACP 32/2010)
- >> Role of Compensation Committee (RCC 12/2011)
- >> R-CF-Chairman Forum (R-CF 2/2013)
- >> Collective Action against Corruption Conference (C-Conference 1/2014)

Other Trainings

- >> National Defence Course, Class 51, National Defence College
- >> Top Executive Program in Commerce and Trade (TEPCoT), Class 3, Commerce Academy, University of the Thai Chamber of Commerce
- >> Training Course on Administrative Justice for Executives, Class 2, Office of the Administrative Courts of Thailand
- >> Capital Market Academy Leader Program, Class 13, Capital Market Academy
- >> Energy Literacy for the World, Class 1, Thailand Energy Academy
- >> Bhumipalung Phandin Course for Executives, Class 2, Chulalongkorn University
- >> Civil Service Executive Program: Visionary and Moral Leadership, Class 46, Office of the Civil Service Commission
- >> Senior Executive Program (SEP), Class 60, London Business School, United Kingdom
- >> Training Course on Leadership for Change, Class 2, Right Livelihood Foundation & Matichon Publishing Group
- >> Systematic Problem Solving and Decision Making (SPSDM), Office of the Civil Service Commission in cooperation with ACI Consultants Co., Ltd.
- >> Academic Seminar : "Money Laundering in Dairy Life that We Must Have"
- >> Seminar : "Anti-corruption: Leadership Role of the Board"

Working Experience in the 5 Preceding Years

2007 - 2014	Director, Esso (Thailand) Plc.
2008 - 2010	Director - General, Department of Mineral Fuels, Ministry of Energy
2010 - Jul 2014	Deputy Permanent Secretary, Ministry of Energy
2011 - 2014	Director and Chairman of the Board, Electricity Generating Authority of Thailand
Jul - Sep 2014	Director - General, Department of Mineral Fuels, Ministry of Energy
Oct 2014 - Sep 2015	Member of the National Reform Council
Oct 2014 - Jun 2015	Deputy Permanent Secretary, Ministry of Energy
Jun - Sep 2015	Permanent Secretary, Ministry of Energy
Oct 2015 - Present	Member of National Reform Steering Assembly Member of the Council of State Co-Chairman (Thailand), Malaysia - Thailand Joint Authority
Nov 2015 - Present	Chairman of Energy Affairs Committee, National Reform Steering Assembly
Feb - Oct 2016	Member of the National Research Council of Thailand
Apr 2016 - Present	Independent Director, Padaeng Industry Plc.
Oct 2016 - Present	Member of the University Council, Khon Kaen University

Other Positions

1. Listed Company (1)

- >> Independent Director, Padaeng Industry Plc.

2. Public Company

- None -

3. Limited Company

- None -

4. Other Organizations / Institutions (4)

- >> Chairman of Energy Affairs Committee and Member of the National Reform Steering Assembly (NRSA)
- >> Member of the Council of State
- >> Co-Chairman (Thailand), Malaysia - Thailand Joint Authority
- >> Member of the University Council, Khon Kaen 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 -

MS. CHULARAT SUTEETHORN

Independent Director (Non-Executive)
Chairman of the Audit Committee
and Member of the Nomination
and Remuneration Committee
Age 62 Yrs.



Director Term Duration

- >> Independent Director (Non-Executive) (Appointed on September 20, 2013 : 1 year 7 months)
- >> Independent Director (Non-Executive) (Re-appointed on April 3, 2015 : 1 year 8 months)

Board-Committee Term Duration

- >> Member of the Audit Committee (Appointed on September 20, 2013 : 1 year 7 months and completed the term in the 2015 Annual General Meeting of Shareholders)
- >> Member of the Audit Committee (Re-appointed on April 3, 2015 and appointed on April 24, 2015 : 1 year 8 months)
- >> Chairman of the Audit Committee (Elected on February 12, 2016 : 10 months)
- >> Member of the Nomination and Remuneration Committee (Appointed on April 27, 2016 : 8 months)

Education

- >> Bachelor of Economics (Banking and Finance) (2nd Class Honors), Kasetsart University
- >> Master of International Development Studies (Economic Policy and Planning), Institute of Social Studies, Rotterdam Erasmus University, Netherlands.

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

- >> Director Accreditation Program (DAP 40/2005)
- >> Director Certification Program (DCP 72/2006)
- >> Finance for Non-Finance Director (FND 28/2006)
- >> Financial Statement for Director (FSD 10/2010)
- >> Audit Committee Program (ACP 39/2012)
- >> The Role of Chairman Program (RCP 28/2012)
- >> Financial Institutions Governance Program (FGP 4/2012)
- >> Role of the Nomination and Governance Committee (RNG 3/2012)
- >> Anti-Corruption for Executive Program (ACEP 10/2014)
- >> Advance Audit Committee Program (AAP 15/2014)
- >> Director Certification Program Update (DCPU 4/2015)
- >> Role of the Compensation Committee (RCC 20/2015)

Other Trainings

- >> Civil Service Executive Program: Visionary and Moral Leadership, Class 41, Office of the Civil Service Commission
- >> Strategic Thinking and Executive Action, Kellogg Executive Program, Northwestern University, U.S.A.
- >> The Joint State-Private Sector Course, Class 19, National Defence College
- >> Advanced Security Management Program, Class 1, National Defence College
- >> Capital Market Academy Leader Program, Class 12, Capital Market Academy
- >> Top Executive Program in Commerce and Trade (TEPCoT), Class 5, Commerce Academy, University of the Thai Chamber of Commerce
- >> Energy Literacy for the World, Class 3, Thailand Energy Academy
- >> Thammasat Leadership Program, Class 4, Thammasat University
- >> Advanced Certificate Course in Politics and Governance in Democratic Systems for Executives, Class 18, King Prajadhipok's Institute
- >> Audit Committee Seminar - Get Ready for the Year End

Working Experience in the 5 Preceding Years

2009 - 2011	Fiscal Policy Advisor, Fiscal Policy Office, Ministry of Finance
2010 - 2014	Director and Chairman of the Investment Committee, Deposit Protection Agency
2011 - 2012	Inspector General, Ministry of Finance
2011 - 2014	Executive Director, Thailand Tobacco Monopoly
2012 - 2014	Director, Public Debt Management Office, Ministry of Finance
	Director-General, the Government Saving Bank
Jul - Oct 2014	Director, MCOT Plc.
2014 - 2015	Vice Minister for Finance, Ministry of Finance

Other Positions

1. **Listed Company (1)**
 - >> Director, MFC Asset Management Plc.
 2. **Public Company (1)**
 - >> Director, Member of the Audit Committee, and Member of the Nomination and Remuneration Committee, Advance Finance Plc.
 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 -

MRS. SUVIMOL CHRITYAKIERNE

Independent Director (Non-Executive)
and Member of the Audit Committee
Age 65 Yrs.

**Director Term Duration**

>> Independent Director (Non-Executive) (Appointed on January 22, 2016,
effective from February 1, 2016 : 11 months)

Board-Committee Term Duration

>> Member of the Audit Committee (Appointed on January 22, 2016,
effective from February 1, 2016 : 11 months)

Education

>> Bachelor of Accountancy, Chulalongkorn University
>> Master of Accountancy, Chulalongkorn University

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

>> Director Certification Program (DCP 92/2007)
>> R-DF-Director Forum (R-DF 1/2010)
>> Audit Committee Program (ACP 36/2011)

Other Trainings

>> Training Course on Tax Law, Class 1,
Institute of Judicial Officer Development
>> Certified Professional Internal Auditor of Thailand, Class 1,
Institute of Internal Auditor of Thailand
>> Balanced Scorecard Course, Faculty of Commerce and Accountancy,
Chulalongkorn University
>> Academic Seminar : "Money Laundering in Dairy Life that We Must Have"

Working Experience in the 5 Preceding Years

1990 - Present Executive Director, DIA Audit Company Limited
2002 - Present Director, 75 C P E Company Limited
2010 - Present Managing Director, DIA International Audit Company Limited
Independent Director and Chairman of Audit Committee,
Khonburi Sugar Plc.

Other Positions

1. Listed Company (1)
>> Independent Director and Chairman of Audit Committee, Khonburi Sugar Plc.
2. Public Company - None -
3. Limited Company (3)
>> Managing Director, DIA International Audit Company Limited
>> Executive Director, DIA Audit Company Limited
>> Director, 75 C P E Company Limited
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. SIRI JIRAPONGPHAN

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

**Director Term Duration**

>> Independent Director (Non-Executive) (Appointed on October 30, 2015,
effective from November 1, 2015 : 5 months)
>> Independent Director (Non-Executive) (Re-appointed on April 7, 2016 :
8 months)

Board-Committee Term Duration

>> Member of the Audit Committee (Appointed on October 30, 2015,
effective from November 1, 2015 : 5 months and completed the term
in the 2016 Annual General Meeting of Shareholders)
>> Member of the Audit Committee (Re-appointed on April 7, 2016
and appointed on April 27, 2016 : 8 months)

Education

>> Bachelor of Engineering (Chemical Engineering) (Honor),
California Institute of Technology, U.S.A.
>> Doctor of Philosophy (Chemical Engineering),
Massachusetts Institute of Technology, U.S.A.

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

>> Director Certification Program (DCP 77/2006)
>> Director Luncheon Briefing (M-DLB 2/2008)

Other Trainings

>> Audit Committee Seminar - Get Ready for the Year End
>> Seminar : "Anti-corruption: Leadership Role of the Board"

Working Experience in the 5 Preceding Years

2010 - Present Executive Director, Petroleum Institute of Thailand

Other Positions

1. Listed Company - None -
2. Public Company - None -
3. Limited Company - None -
4. Other Organizations / Institutions (1)
>> Director and Secretary, Petroleum Institute of Thailand Foundation
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 -

GEN. THANAKARN KERDNAMEONGKOL

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



ACM SUTTIPONG INSEYONG

Independent Director (Non-Executive)
and Member of the
Corporate Governance Committee
Age 59 Yrs.



Director Term Duration

>> Independent Director (Non-Executive) (Appointed on April 7, 2016 : 8 months)

Board-Committee Term Duration

>> Member of the Audit Committee (Appointed on April 27, 2016 : 8 months)

Education

>> Bachelor of Science, Chulachomkiao Royal Military Academy

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

>> Director Certification Program (DCP 227/2016)

Other Trainings

>> Officer Basic Course
>> Officer Advanced Course
>> Mandatory Course, Class 65, Command and General Staff College
>> Relationship Development Course for Executives, Class 13
>> National Defence Course, Class 52, National Defence College
>> Internal Audit Course for Executives, Comptroller General's Department, Ministry of Finance

Working Experience in the 5 Preceding Years

Oct 1, 2011 - Mar 31, 2015	Director, Army Internal Audit Office
Apr 1, 2015 - Mar 31, 2016	Deputy Chief of the Staffs to the Commander-in-Chief, Royal Thai Army
Apr 1 - Sep 30, 2016	Army Special Qualified General, Royal Thai Army

Other Positions

1. Listed Company	- None -
2. Public Company	- None -
3. Limited Company	- None -
4. Other Organizations / Institutions	- None -
5. State Enterprise	- None -

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

Director Term Duration

>> Independent Director (Non-Executive) (Appointed on January 22, 2016, effective from February 1, 2016 : 11 months)

Board-Committee Term Duration

>> Member of the Corporate Governance Committee
(Appointed on April 27, 2016 : 8 months)
>> Chairman of the Corporate Governance Committee
(Elected on November 21, 2016 : 1 month)

Education

>> Bachelor of Science (Aeronautical Engineering)
Navaminda Kasatidhiraj Royal Air Force Academy
>> Master of Political Science (International Relations and Comparative
Politics and Government), Sukhothai Thammathirat Open University

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

>> Director Accreditation Program (DAP 114/2015)

Other Trainings

>> Pilot Training Course, Flying Training School, Royal Thai Air Force
>> Flight Safety Course, Royal Thai Air Force
>> Chief of Staff Course, Royal Thai Air Force
>> Air War Course, Royal Thai Air Force
>> National Defence Course, Class 52, National Defence College

Working Experience in the 5 Preceding Years

2011 - 2012	Commandant of Air War College, Education Department of the Air Force, Royal Thai Air Force Headquarters
2012 - 2013	Director of Operations, Royal Thai Air Force Headquarters
2013 - 2014	Assistant Chief of the Air Staff for Operations, Royal Thai Air Force Headquarters
2014 - 2015	Deputy Chief of the Air Staff, Royal Thai Air Force Headquarters Independent Director, Chairman of the Corporate Governance and Member of Audit Committee, Global Power Synergy Plc.
2015 - Sep 30, 2016	Commander of Directorate of Air Operation Control, Royal Thai Air Force
Oct 1, 2016 - Present	Assistant Commander-in-Chief, Royal Thai Air Force Headquarters
Oct 13, 2016 - Present	Member of the National Legislative Assembly

Other Positions

1. Listed Company	- None -
2. Public Company	- None -
3. Limited Company	- None -
4. Other Organizations / Institutions (1)	
>> Member of the National Legislative Assembly	
5. State Enterprise	- None -

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

MR. YONGYUT JANTARAROTAI

Director (Non-Executive)
and Member of the
Corporate Governance Committee

Age 57 Yrs.

**ADJUNCT PROFESSOR****DR. THOSAPORN SIRISUMPHAND**

Independent Director (Non-Executive),
Chairman of the Nomination
and Remuneration Committee
and Member of the
Corporate Governance Committee

Age 56 Yrs.

**Director Term Duration**

>> Director (Non-Executive) (Appointed on April 2, 2014 : 2 years 8 months)

Board-Committee Term Duration

>> Member of the Corporate Governance Committee
(Appointed on April 25, 2014 : 2 years 8 months)

Education

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

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

>> Corporate Governance for Executives Program (CGE 5/2015)
>> Financial Statements for Directors (FSD 30/2016)

Other Trainings

>> Civil Service Executive Program, Class 59,
Office of the Civil Service Commission
>> National Defence Course, Class 52, National Defence College
>> Training Course on Government Fiscal Management for Executives, Class 1,
Comptroller General's Department
>> The 6th Training Course on Administrative Justice for Executives,
Office of the Administrative Courts of Thailand
>> Academic Seminar : "Money Laundering in Dairy Life that We Must Have"

Working Experience in the 5 Preceding Years

Jul 13, 2011	Director, Bureau of Energy Studies
Jan 1, 2012	Expert on Energy Strategy, Central Administration
Jan 16, 2012	Director, Bureau of Public Participation Cooperation
Mar 18 - Oct 31, 2013	Director, Office of the Minister, Ministry of Energy
Nov 1, 2013 - Nov 16, 2014	Assistant for Permanent Secretary, Ministry of Energy
Nov 17, 2014 - Sep 30, 2015	Deputy Director General of the Department of Alternative Energy Development and Efficiency, Ministry of Energy
Oct 1, 2015 - Present	Inspector, Ministry of Energy

Other Positions

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

Director Term Duration

>> Independent Director (Non-Executive)
(Appointed on May 25, 2012 : 2 years 11 months)
>> Independent Director (Non-Executive)
(Re-appointed on April 3, 2015 : 1 year 8 months)

Board-Committee Term Duration

>> Member of the Corporate Governance Committee
(Appointed on June 22, 2012 : 2 years 10 months and completed the term
in the 2015 Annual General Meeting of Shareholders)
>> Chairman of the Corporate Governance Committee
(Elected on August 31, 2013 : 1 year 8 months and completed the term
in the 2015 Annual General Meeting of Shareholders)
>> Member of the Nomination and Remuneration Committee
(Appointed on September 26, 2014 : 7 months and completed the term
in the 2015 Annual General Meeting of Shareholders)
>> Member of the Nomination and Remuneration Committee
(Re-appointed on April 3, 2015 and appointed on April 24, 2015 : 1 year 8 months)
>> Member of the Corporate Governance Committee
(Re-appointed on April 3, 2015 and appointed on April 24, 2015 : 1 year 8 months)
>> Chairman of the Corporate Governance Committee
(Elected on July 22, 2015 and resigned from the position of "Chairman of the
Corporate Governance Committee" on August 19, 2016 : 1 year 1 month)
>> Chairman of the Nomination and Remuneration Committee
(Elected on April 19, 2016 : 8 months)

Education

>> Bachelor of Public Administration (Honors), Chulalongkorn University
>> Master of Public Administration (Pi Alpha Alpha), (National Honor Society
for Public Affairs and Administration), Northern Illinois University, U.S.A.
>> Ph.D. in Policy Analysis, Public Administration, and Comparative Politics,
Northern Illinois University, U.S.A.

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

>> Director Certification Program (DCP 80/2006)
>> Finance for Non-Finance Director (FND 30/2006)
>> Director Certification Program Update (DCPU 4/2015)

Other Trainings

>> Capital Market Academy Leader Program, Class 10, Capital Market Academy
>> The Programme for Senior Executives on Justice Administration Batch,
Class 15, Judicial Training Institute, National Justice Academy
>> Energy Literacy for the World, Class 4, Thailand Energy Academy
>> Corporate Governance : Effectiveness and Accountability in the Boardroom
2014, Kellogg School of Management, Northwestern University, U.S.A.

Working Experience in the 5 Preceding Years

2002 - 2013	Secretary General, the Public Sector Development Commission
2012 - 2013	Independent Director, Siam Commercial Bank Plc.
2013 - 2014	Independent Director and Chairman of the Corporate Governance Committee, PTT Plc. Independent Director and Chairman of the Good Corporate Governance and Corporate Social Responsibility Committee, CAT Telecom Plc. Secretary General, the Higher Education Commission
2014 - Sep 30, 2016	Advisor, Prime Minister's Office
Oct 1, 2016 - Present	Secretary General, the Public Sector Development Commission

Other Positions

1. Listed Company	- None -
2. Public Company	- None -
3. Limited Company	- None -
4. Other Organizations / Institutions (4)	
>> Member of Chulalongkorn University Council	
>> Advisor to Executive Board, Thailand Institute of Justice (Public Organization)	
>> Director, Electronic Government Agency (Public Organization)	
>> Councilor, Thailand Management Association	
5. State Enterprise	- None -
% of Shareholding in Thailo	- None -
Conflict of Interest	- None -
Family Relation with Other Directors	- None -
Dispute in the 10 Preceding Years	- None -

MR. SARUN RUNGKASIRI

Director (Non-Executive)
Chairman of the
Risk Management Committee
and Member of the Nomination
and Remuneration Committee
 Age 59 Yrs.

**Director Term Duration**

>> Director (Non-Executive) (Appointed on April 7, 2016 : 8 months)

Board-Committee Term Duration

>> Member of the Nomination and Remuneration Committee
 (Appointed on April 8, 2016 : 8 months)
 >> Member of the Risk Management Committee
 (Appointed on April 27, 2016 : 8 months)
 >> Chairman of the Risk Management Committee
 (Elected on May 11, 2016 : 7 months)

Education

>> Bachelor of Engineering (Industrial Engineering), Chulalongkorn University
 >> Master of Science (Management), Polytechnic Institute of New York , U.S.A.

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

>> Company Secretary Program (CSP 8/2004)
 >> Directors Certification Program (DCP 61/2005)
 >> Finance for Non-Finance Director (FND 19/2005)

Other Trainings

>> The Joint State - Private Sector Course, Class 23, National Defense College
 >> Top Executive in Industrial Business and Investment Development, Class 1,
 Institute of Business and Industrial Development
 >> The Executive Program in Energy Literacy for a Sustainable Future, Class 5,
 Thailand Energy Academy
 >> Thirty Fourth Oxford Energy Seminar, St.Catherine's College,
 Oxford University, United Kingdom
 >> NIDA-Wharton Executive Leadership Program 2009,
 The Wharton School of the University of Pennsylvania, U.S.A.
 >> Seminar : "Anti-corruption: Leadership Role of the Board"

Working Experience in the 5 Preceding Years

2008 - 2009	Executive Vice President, Corporate Communication & Social Responsibility, PTT Plc.
2009 - 2010	Executive Vice President, Commercial & International Marketing, PTT Plc.
2010 - 2011	Executive Vice President, Retail Marketing, PTT Plc.
2011 - 2013	Senior Executive Vice President, Oil Business Unit, PTT Plc.
Oct 1, 2013 - Present	Chief Operating Officer, Downstream Petroleum Business Group, PTT Plc.

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

>> Chief Operating Officer, Downstream Petroleum Business Group, PTT Plc.
 >> Director, Member of the Nomination and Remuneration Committee,
 and Member of the Risk Management Committee,
 PTT Global Chemical Plc.

2. Public Company

- None -

3. Limited Company (1)

>> Director and Chairman of the Board,
 PTT Asahi Chemical Co., Ltd.

4. Other Organizations / Institutions

- None -

5. State Enterprise

- None -

% of Shareholding in Thaioil

- None -

Conflict of Interest

- None -

Family Relation with Other Directors

- None -

Dispute in the 10 Preceding Years

- None -

MR. NOPPADOL PINSUPA

Director (Non-Executive)
and Member of the
Risk Management Committee
Age 52 Yrs.



Director Term Duration

- >> Director (Non-Executive) (Appointed on September 25, 2015, effective from October 1, 2015 : 7 months)
- >> Director (Non-Executive) (Re-appointed on April 7, 2016 : 8 months)

Board-Committee Term Duration

- >> Member of the Risk Management Committee
(Appointed on September 25, 2015, effective from October 1, 2015 : 7 months and completed the term in the 2016 Annual General Meeting of Shareholders)
- >> Member of the Risk Management Committee (Re-appointed on April 7, 2016 and appointed on April 27, 2016 : 8 months)

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 Statement for Director (FSD 12/2011)

Other Trainings

- >> Capital Market Academy Leader Program, Class 22, Capital Market Academy
- >> G-20 Y Summit 2015, France
- >> Mitsui-HBS Global Management Academy 2015, Japan and U.S.A.
- >> The Programme for Senior Executives on Justice Administration Batch, Class 19, Judicial Training Institute, National Justice Academy
- >> PTT Leadership Development Program 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
- >> Financial Statements for Directors by PTT Plc.
- >> Seminar : "Anti-corruption: Leadership Role of the Board"

Working Experience in the 5 Preceding Years

2007 - 2009	Vice President - Natural Gas Distribution Pipeline System, PTT Plc.
2010 - 2012	Executive Vice President - Natural Gas Distribution Pipeline System, PTT Plc.
2012 - 2014	Executive Vice President - Natural Gas Vehicle, PTT Plc.
2015	Senior Executive Vice President, Global Power Synergy Plc.
Oct 2014 - Sep 2015	President, Global Power Synergy Plc.
Oct 2015 - Present	Senior Executive Vice President – Gas Business Unit, PTT Plc.

Other Positions

1. Listed Company (1)
 - >> Senior Executive Vice President – Gas Business Unit, PTT Plc.
 2. Public Company - None -
 3. Limited Company (3)
 - >> Director and Chairman of the Board, Amata Natural Gas Distribution Co., Ltd.
 - >> Director and Chairman of the Board, PTT Natural Gas Distribution Co., Ltd.
 - >> Director, Ratchaburi Power 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 -

MRS. SRIWAN EAMRUNGROJ

Director (Non-Executive)

Age 59 Yrs.

**MRS. NITIMA THEPVANANGKUL**

Director (Non-Executive)

Age 59 Yrs.

**Director Term Duration**

>> Director (Non-Executive) (Appointed on September 25, 2015, effective from October 1, 2015 : 7 months and completed the term in the 2016 Annual General Meeting of Shareholders)

>> Director (Non-Executive) (Re-appointed on April 7, 2016 : 8 months)

Board-Committee Term Duration

- None -

Education

>> Bachelor of Engineering (Mechanical Engineering), (2nd Class Honors), Kasetsart University

>> Master of Business Administration, Thammasat University

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

>> The Board's Role in Mergers and Acquisitions (M&A 1/2011)

>> Director Certification Program (DCP 160/2012)

>> Special Seminar (R-SS 5/2008)

Other Trainings

>> The Strategy Challenge (TSC) Program, Class 2010, IMD Business School, Switzerland

>> INSEAD Business School, Class 2010, INSEAD Executive Education, France

>> Advance Management Program (AMP), Class 183/2012, Harvard Business School, U.S.A.

>> The Strategic Marketing Management Program, Class 2014, Stanford Graduate School of Business, U.S.A.

>> Energy Literacy for the World, Class 8, Thailand Energy Academy

Working Experience in the 5 Preceding Years

2009 - 2011 Executive Vice President, Strategy & Portfolio Management, PTT Plc.

2011 - 2015 Executive Vice President, Petrochemicals and Refining Business Unit, PTT Plc. Secondment to PTT Global Chemical Plc.

as Executive Vice President, Marketing Commercial and Supply

Oct 2015 - Present Senior Executive Vice President, Corporate Strategy, PTT Plc.

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

>> Senior Executive Vice President, Corporate Strategy, PTT Plc.

2. Public Company

- None -

3. Limited Company (1)

>> Director and Chairman of the Board, PTT MCC Biochem Co., Ltd.

4. Other Organizations / Institutions

- None -

5. State Enterprise

- None -

% of Shareholding in Thaioil

- None -

Conflict of Interest

- None -

Family Relation with Other Directors

- None -

Dispute in the 10 Preceding Years

- None -

Director Term Duration

>> Director (Non-Executive) (Appointed on October 28, 2016 : 2 months)

Board-Committee Term Duration

- None -

Education

>> Bachelor of Accounting, Chulalongkorn University

>> Master of Finance, National Institute of Development Administration

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

>> Director Certification Program (DCP 126/2009)

>> Risk Management Committee Program (RMP 3/2014)

>> Anti Corruption : The Practical Guide (ACPG 18/2015)

>> Ethical Leadership Program (ELP 3/2016)

Other Trainings

>> NIDA - Wharton Executive Leadership Program,

The Wharton School, University of Pennsylvania , U.S.A.

>> PTT Executive Leadership Program, General Electric, New York, U.S.A.

Working Experience in the 5 Preceding Years

2011 - Apr 2014 Executive Vice President,

PTT Plc. Secondment to Thai Oil Plc. as

Executive Vice President - Finance and Accounting

May 2014 - May 2016 Executive Vice President, Corporate Accounting, PTT Plc.

Jun - Sep 2016

Executive Vice President,

Group Finance and Accounting Policy, PTT Plc.

Oct 1, 2016 - Present Executive Vice President, Acting Chief Financial Officer,

PTT Plc.

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

>> Executive Vice President,

Acting Chief Financial Officer, PTT Plc.

2. Public Company

- None -

3. Limited Company (2)

>> Director and Chairman of the Board,

PTT International Trading Pte. Ltd.

>> Director, PTT Energy Resources Co. Ltd.

4. Other Organizations / Institutions

- None -

5. State Enterprise

- None -

% of Shareholding in Thaioil

2,000 Shares or 0.0000

Conflict of Interest

- None -

Family Relation with Other Directors

- None -

Dispute in the 10 Preceding Years

- None -

MS. NANTIKA THANGSUPHANICH

Director (Non-Executive)

Age 51 Yrs.



Director Term Duration

>> Director (Non-Executive) (Appointed on November 25, 2016 : 1 month)

Board-Committee Term Duration

- None -

Education

- >> Bachelor of Arts (Political Science), Kasetsart University
- >> Master of Arts (Urban Studies), Long Island University, U.S.A.

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

- None -

Other Trainings

- >> Energy Literacy for the World, Class 7, Thailand Energy Academy
- >> Public Director Certification Program, Class 10,
Public Director Institute, King Prajadhipok's Institute
- >> e-Government Executives Program (e-GAP), Class 2,
Electronic Government Agency (Public Organization)
- >> Strengthen Ministry Inspector General Skills, Class 2010,
Office of the Civil Service Commission and The Prime Minister's Office
- >> Civil Service Executive Program: Visionary and Moral Leadership, Class 66,
Office of the Civil Service Commission

Working Experience in the 5 Preceding Years

2009 - Present Inspector General, Ministry of Energy

Other Positions

1. Listed Company - None -
2. Public Company (1)
 - >> Director, CAT Telecom Public Company Limited
- 3 Limited Company (1)
 - >> Director, Thailandpost Distribution Company Limited
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 -

MR. ATIKOM TERBSIRI

Director (Executive)
Member of the
Risk Management Committee
Chief Executive Officer
and the President
and the Secretary to the
Board of Directors
Age 55 Yrs.

**Director Term Duration**

- >> Director (Appointed on September 12, 2014 : 1 month)
- >> Director (Executive) (Appointed on September 26, 2014, effective from October 1, 2014 : 6 months)
- >> Director (Executive) (Re-appointed on April 3, 2015 : 1 year 8 months)

Board-Committee Term Duration

- >> Member of the Risk Management Committee (Appointed on October 1, 2014 : 6 months and completed the term in the 2015 Annual General Meeting of Shareholders)
- >> Member of the Risk Management Committee (Appointed on April 3, 2015 : 1 year 8 months)

Education

- >> Bachelor of Business Administration, Assumption University
- >> Master of Business Administration, (Finance & International Business), (High Distinction), Armstrong University, U.S.A.

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

- >> Director Certification Program (DCP 125/2009)
- >> National Director Conference (NDC 1/2013)
- >> Collective Action Against Corruption Conference (C-Conference 1/2013)
- >> Collective Action Against Corruption Conference (C-Conference 1/2014)
- >> Risk Management Program for Corporate Leaders (RCL 4/2016)

Other Trainings

- >> Energy Literacy for the World, Class 6, Thailand Energy Academy
- >> The State, Private Sector and Political Sectors Course, Class 5, National Defence College
- >> Advanced Security Management Program, Class 1, National Defence College
- >> Capital Market Academy Leader Program, Class 17, Capital Market Academy
- >> Executive Education Program, Harvard Business School, Harvard University, U.S.A.
- >> Seminar : "Anti-corruption: Leadership Role of the Board"

Working Experience in the 5 Preceding Years

- | | |
|--------------------|---|
| 2011 - 2013 | President, IRPC Plc. |
| 2013 - Sep 2014 | Senior Executive Vice President - Petrochemicals & Refining Business Unit, PTT Plc. |
| Oct 2014 - Present | Chief Executive Officer and the President, Thai Oil Plc.
Senior Executive Vice President, PTT Plc. |

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

- >> Director and Member of the Risk Management Committee, Global Power Synergy Plc.
- >> Senior Executive Vice President, PTT Plc.

2. Public Company (1)

- >> Director and Chairman of the Board, Thai Lube Base Plc.

3. Limited Company (7)

- >> Director and Chairman of the Board, Thai Paraxylene Co., Ltd.
- >> Director and Chairman of the Board, Labix Co., Ltd.
- >> Director and Chairman of the Board, Thailoil Power Co., Ltd.
- >> Director and Chairman of the Board, TOP SPP Co., Ltd.
- >> Director and Chairman of the Board, Thailoil Solvent Co., Ltd.
- >> Director and Chairman of the Board, TOP Solvent Co., Ltd.
- >> Director and Chairman of the Board, Thailoil Marine Co., Ltd.

4. Other Organizations / Institutions (9)

- >> Member of Trustee (as Company representative), Petroleum Institute of Thailand
- >> Director, Policy Planning on Materials Technology Development, National Science Technology and Innovation Policy Office
- >> Director, Thai Industries Estate Foundation
- >> Director, Power of Innovation Foundation
- >> Director, Power of Learning Foundation
- >> Member of Expert Council, Vidyasirimedhi Institute of Science and Technology
- >> Executive Director, Thailand Energy Academy
- >> Executive Director, Thailand Swimming Association
- >> Director, The Federation of Thai Industries Board

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 - |

MR. TANASAK WAHAWISAN

Independent Director (Non-Executive)

(Resigned from Directorship :

January 11, 2016)

Age 58 Yrs.



Director Term Duration

>> Independent Director (Non-Executive) (Appointed on May 29, 2015 : 7 months)

Board-Committee Term Duration

- None -

Education

>> Bachelor of Arts (Political Science), Chulalongkorn University

>> Master of Arts, the Ohio State University, U.S.A.

>> Master of Arts, University of Denver, U.S.A.

>> Doctor of Philosophy, University of Denver, U.S.A.

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

>> Director Certification Program (DCP 85/2007)

>> Director Accreditation Program (DAP 61/2007)

>> Corporate Governance of Capital Marketing Intermediaries (CGI 5/2015)

Other Trainings

- None -

Working Experience in the 5 Preceding Years

2007 - 2010 Managing Director, Pacific Assets Plc.

2001 - Present Executive Advisor, Apollo (Thailand) Co., Ltd.

Other Positions

1. Listed Company (1)

>> Independent Director, Member of the Audit Committee,
and Member of the Risk Management Committee, Seamico Securities Plc.

2. Public Company (1)

>> Independent Director and Member of the Audit Committee,
Advance Finance Plc.

3. Limited Company (2)

>> Director, Apollo (Thailand) Co., Ltd.

>> Director, PHM International Co., Ltd.

4. Other Organizations / Institutions (1)

>> Lecturer, Institute of Diplomacy and International Studies,
Rangsit 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 -

MR. CHULASINGH VASANTASINGH**Independent Director (Non-Executive)
and Chairman of the Audit Committee**

(Resigned from Directorship :

January 31, 2016)

Age 66 Yrs.

**Director Term Duration**

- >> Independent Director (Non-Executive) (Appointed on November 29, 2013 : 1 year 4 months)
- >> Independent Director (Non-Executive) (Re-elected on April 3, 2015 : 9 months)

Board-Committee Term Duration

- >> Member of the Audit Committee (Appointed on November 29, 2013 : 1 year 4 months and completed the term in the 2015 Annual General Meeting of Shareholders)
- >> Chairman of the Audit Committee (Elected on May 8, 2014 : 11 months and completed the term in the 2015 Annual General Meeting of Shareholders)
- >> Member of the Audit Committee (Re-elected on April 3, 2015 and appointed on April 24, 2015 : 9 months)
- >> Chairman of the Audit Committee (Elected on May 11, 2015 : 8 months)

Education

- >> Bachelor of Laws (Honors), Chulalongkorn University
- >> Barrister at Law, the Institution of Legal Education
- >> Master of Comparative Law, University of Illinois, U.S.A.
- >> Honorary Doctorate Degree (Laws), Ramkhamhaeng University
- >> Honorary Doctorate Degree (Laws), Chulalongkorn University
- >> Honorary Doctorate Degree (Laws), Yonok University
- >> Certificate, Harvard Business School, U.S.A.

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

- >> Director Certification Program (DCP 35/2003)
- >> Finance for Non-Finance Director (FND 7/2003)
- >> Understanding the Fundamental of Financial Statements (UFS 1/2006)
- >> Audit Committee Program (ACP 17/2007)
- >> DCP Refresher Course (DCP Re 1/2008)
- >> Financial Institutions Governance Program (FGP 4/2012)

Other Trainings

- >> National Defence Course, Class 388, National Defence College
- >> Advanced Certificate Course in Politics and Governance in Democratic Systems for Executives, Class 8, King Prajadhipok's Institute
- >> Capital Market Academy Leader Program, Class 5, Capital Market Academy
- >> Energy Literacy for the World, Class 1, Thailand Energy Academy
- >> Top Executive Program in Commerce and Trade (TEPCoT), Class 5, Commerce Academy, University of the Thai Chamber of Commerce
- >> Bhumipalung Phandin Course for Executives, Class 1, Chulalongkorn University
- >> Audit Committee Seminar – Get Ready for the Year End

Working Experience in the 5 Preceding Years

- | | |
|-----------------|---|
| 2005 - 2009 | Deputy Attorney General, Office of the Attorney General |
| 2009 - 2013 | Attorney General, Office of the Attorney General |
| 2010 - 2013 | Independent Director and Chairman of the Audit Committee, PTT Plc. |
| | Independent Director and Chairman of the Audit Committee, Thai Airways International Plc. |
| 2010 - 2014 | Independent Director and Chairman of the Audit Committee, Krungthai Bank Plc. |
| 2011 - May 2015 | President, Chulalongkorn University Alumni Association |

Other Positions**1. Listed Company (4)**

- >> Independent Director, Chairman of the Nomination and Remuneration Committee, and Member of the Audit Committee, Global Power Synergy Plc.
- >> Independent Director, Chairman of the Audit Committee, and Member of the Nomination and Remuneration Committee, Quality House Plc.
- >> Independent Director, TPI Polene Plc.
- >> Independent Director and Chairman of the Board, AQUA Corporation Plc.

2. Public Company (1)

- >> Director and Chairman of the Audit Committee, Tanachart Insurance Plc.

3. Limited Company

- None -

4. Other Organizations / Institutions (3)

- >> Adjunct Professor, Chulalongkorn University
- >> Member of the Council of State
- >> Director, Property Management Office, Chulalongkorn University

5. State Enterprise

- None -

% of Shareholding in Thaioil

- None -

Conflict of Interest

- None -

Family Relation with Other Directors

- None -

Dispute in the 10 Preceding Years

- None -

GEN. JIRADEJ MOKKHASHMIT

Independent Director (Non-Executive)
and Chairman of the Nomination
and Remuneration Committee
(Term Completion : April 7, 2016)
Age 62 Yrs.



Director Term Duration

- >> Independent Director (Non-Executive) (Appointed on November 21, 2011 : 1 year 5 months)
- >> Independent Director (Non-Executive) (Re-elected on April 2, 2013 : 3 years)

Board-Committee Term Duration

- >> Member of the Nomination and Remuneration Committee
(Appointed on February 10, 2012 : 1 year 2 months and completed the term in the 2013 Annual General Meeting of Shareholders)
- >> Member of the Nomination and Remuneration Committee
(Appointed on April 26, 2013 : 3 years and completed the term in the 2016 Annual General Meeting of Shareholders)
- >> Chairman of the Nomination and Remuneration Committee
(Elected on April 10, 2014 : 2 year and completed the term in the 2016 Annual General Meeting of Shareholders)

Education

- >> Bachelor of Science, Class 24, Chulachomklao Royal Military Academy
National Defence Course

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

- >> Director Accreditation Program (DAP 16/2004)

Other Trainings

- >> Infantry Officer Advance Course, Australia
- >> Infantry Officer Advance Course, Fort Benning, U.S.A.
- >> Mandatory Course, Class 65, Command and General Staff College
- >> Energy Literacy for the World, Class 3, Thailand Energy Academy

Working Experience in the 5 Preceding Years

2008 - 2009	Deputy Commander, 1 st Army Area, Royal Thai Army
2009 - 2010	Commander, 1 st Army Corps, Royal Thai Army
2010 - 2012	Deputy Chief of Staff, Royal Thai Army
2012 - 2013	Assistant Commander in Chief, Royal Thai Army
2013 - 2014	Chairman of the Advisory Board, Royal Thai Army
2014 - Present	Member of the National Legislative Assembly

Other Positions

1. Listed Company	- None -
2. Public Company	- None -
3. Limited Company	- None -
4. Other Organizations / Institutions (1)	
>> Member of the National Legislative Assembly	
5. State Enterprise	- None -
% of Shareholding in Thaoil	- None -
Conflict of Interest	- None -
Family Relation with Other Directors	- None -
Dispute in the 10 Preceding Years	- None -

MR. NUTTACHAT CHARUCHINDA

Director (Non-Executive)
Chairman of the
Risk Management Committee
and Member of the Nomination
and Remuneration Committee
 (Term Completion : April 7, 2016)
 Age 61 Yrs.

**Director Term Duration**

- >> Director (Non-Executive) (Appointed on May 25, 2012 : 11 months)
- >> Director (Non-Executive) (Re-elected on April 2, 2013 : 3 years)

Board-Committee Term Duration

- >> Member of the Risk Management Committee (Appointed on June 22, 2013 : 10 months and completed the term in the 2013 Annual General Meeting of Shareholders)
- >> Member of the Risk Management Committee (Re-elected on April 2, 2013, appointed on April 26, 2013 and resigned on September 26, 2014 : 1 year 5 months)
- >> Member of the Nomination and Remuneration Committee (Appointed on January 24, 2014 : 2 years 3 months and completed the term in the 2016 Annual General Meeting of Shareholders)
- >> Member of the Risk Management Committee (Appointed on September 25, 2015 : 7 months and completed the term in the 2016 Annual General Meeting of Shareholders)
- >> Chairman of the Risk Management Committee (Elected on October 12, 2015 : 6 months and completed the term in the 2016 Annual General Meeting of Shareholders)

Education

- >> Bachelor of Engineering, Chiangmai University
- >> Master of Business Administration, Thammasat University

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

- >> Director Certification Program (DCP 129/2010)

Other Trainings

- >> Program for Global Leadership (PGL), Harvard Business School, U.S.A.
- >> Oxford Energy Seminar, UK
- >> Break through Program for Senior Executives (BPSE), International Leading Business School (IMD), Lausanne, Switzerland
- >> The Joint State - Private Sector Course, Class 20, National Defence College,
- >> Capital Market Academy Leader Program, Class 15, Capital Market Academy
- >> Energy Literacy for the World, Class 3, Thailand Energy Academy

Working Experience in the 5 Preceding Years

2010 - 2011	Senior Executive Vice President, Corporate Strategy, PTT Plc.
2011 - 2013	Chief Operating Officer, Downstream Petroleum Business Group, PTT Plc.
2013 - Sep 2015	Chief Operating Officer, Upstream Petroleum & Gas Business Group, PTT Plc.
2013 - Nov 2015	Director PTT Exploration and Production Plc.
May 2014 - Apr 2016	Chairman of the Board of Directors, PTT Energy Resources Co., Ltd.

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

- >> Advisor to PTT Plc.
- >> Director and Chairman of the Risk Management Committee, IRPC Plc.

2. Public Company (1)

- >> Advisor to National Power Supply Plc.

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. THAWORN PHANICHAPHAAN

**Independent Director (Non-Executive),
Chairman of the
Corporate Governance Committee
and Member of the Nomination
and Remuneration Committee**
(Resigned from Directorship :
October 1, 2016)
Age 66 Yrs.



Director Position

- >> Independent Director (Non-Executive) (Appointed on November 29, 2013 : 5 months)
- >> Independent Director (Non-Executive) (Re-elected on April 2, 2014 : 2 years 4 months)

Board-Committee Term Duration

- >> Member of the Corporate Governance Committee
(Appointed on November 29, 2013 : 5 months and completed the term in the 2014 Annual General Meeting of Shareholders)
- >> Member of the Nomination and Remuneration Committee
(Re-elected on April 2, 2014 and appointed on April 25, 2014 : 2 years 5 months)
- >> Member of the Corporate Governance Committee
(Appointed on May 29, 2015 : 1 year 4 months)
- >> Chairman of the Corporate Governance Committee
(Elected on August 19, 2016 and effective from August 20, 2016 : 1 month)

Education

- >> Bachelor of Laws (Honors), Chulalongkorn University
- >> Barrister at Law, The Institution of Legal Education
- >> Master of Laws, Chulalongkorn University

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

- >> Understanding the Fundamental of Financial Statements (UFS 8/2007)
- >> Director Certification Program (DCP 108/2008)
- >> Director Accreditation Program (DAP 73/2008)
- >> Audit Committee Program (ACP 22/2008)

Other Trainings

- >> National Defence Course, Class 13, National Defence College
- >> Advanced Certificate Course in Politics and Governance in Democratic Systems for Executives, Class 14, King Prajadhipok's Institute

Working Experience in the 5 Preceding Years

2007 - 2013	Deputy Attorney General, Office of the Attorney General
2010 - Feb 2015	Director, Financial Institutions Development Fund
2010 - Oct 2015	Director (Legal), Deposit Protection Agency
2011 - Mar 2015	Qualified expert in Legal, Anti-Money Laundering Board
Present	Senior Public Prosecutor, State Attorney Commission

Other Positions

- | | |
|---|----------|
| 1. Listed Company | - None - |
| 2. Public Company | - None - |
| 3. Limited Company | - None - |
| 4. Other Organizations / Institutions (3) | |
| >> Chairman of Legal Counsel Committee, Office of the Narcotics Control Board | |
| >> Chairman of Legal Counsel Committee, Anti-Money Laundering Board | |
| >> Senior Public Prosecutor, State Attorney Commission | |
| 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. WIRAT UANARUMIT**Director (Non-Executive)**(Resigned from Directorship :
October 1, 2016)

Age 54 Yrs.

**Director Term Duration**>> Director (Non-Executive) (Appointed on December 18, 2015,
effective from January 1, 2016 : 10 months)**Board-Committee Term Duration**

- None -

Education>> Bachelor of Engineering (Electrical Engineering), Chulalongkorn University
>> Master of Business Administration (Financial Management),
Pennsylvania State University, U.S.A.**Director Training Courses of Thai Institute of Directors Association (IOD)**>> Director Certification Program (DCP 8/2011)
>> Audit Committee Program (ACP 38/2012)
>> IOD Exclusive Event (M-IEE 1/2015)
>> Director Certificate Program Update (DCPU 5/2015)**Other Trainings**>> Advance Management Program, INSEAD Business School, France
>> Advance Management Program (AMP), Class 184,
Harvard Business School, U.S.A.
>> Capital Market Academy Leader Program, Class 4, Capital Market
>> The Programme for Senior Executives on Justice Administration Batch,
Class 16, Judicial Training Institute, National Justice Academy
>> Advanced Security Management Program, Class 2,
The National Defence College Association of Thailand
>> TLCA Executive Development Program, Class 1,
Association of Listed Companies, Stock Exchange of Thailand
>> The Joint State-Private Sector Course, Class 26, National Defence College
>> Executive Management with Business Development and Investment
Program, Class 2, Institute of Business and Industrial Development
>> Advanced Certificate Course in Politics and Governance in Democratic
Systems for Executives, Class 20, King Prajadhipok's Institute**Working Experience in the 5 Preceding Years**2012 - 2014 Executive Vice President – Corporate Finance, PTT Plc.
2014 - Sep 30, 2016 Chief Financial Officer, PTT Plc.
Oct 1, 2016 - Present Chief Operation Officer, Upstream Petroleum
and Gas Business Group, PTT Plc.**Other Positions****1. Listed Company (1)**>> Director and Member of the Risk Management Committee,
PTT Exploration and Production Plc.**2. Public Company**

- None -

3. Limited Company (2)>> Director, PTT Energy Resources Co., Ltd.
>> Director, Sakari Resources Limited**4. Other Organizations / Institutions (6)**>> Advisory Committee, Trade, Investment Promotion & Business Council,
The Federation of Thai Industries
>> Chairman, Thailand – Malaysia Business Council,
The Federation of Thai Industries
>> Director, Chulalongkorn University Alumni Association
>> Director and Audit Committee, Thailand Management Association
>> Director, Joint Standing Committee on Commerce,
Industry and Banking of Thailand (JSCCIB-Thailand) for Crowdfunding
>> Advisory Committee, Association of Capital Market Academy Alumni**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. THAMMAYOT SRICHUAI

**Director (Non-Executive)
and Member of the
Risk Management Committee**
(Resigned from Directorship :
November 8, 2016)
Age 58 Yrs.



Director Term Duration

>> Director (Non-Executive) (Appointed on April 3, 2015 : 1 year 7 months)

Board-Committee Term Duration

>> Member of the Risk Management Committee
(Appointed on September 25, 2015 : 1 year 2 months)

Education

>> Bachelor of Engineering (Electrical Power Engineering),
Rajamangala University of Technology

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

>> Corporate Governance for Executives Program (CGE 5/2015)

Other Trainings

>> Advanced Training Course on Energy for Executives, Class 1,
Ministry of Energy
>> Joint Staff Program, Class 47, National Defence Studies Institute,
Supreme Command Headquarter (Royal Thai Armed Force Headquarter)
>> Civil Service Executive Program: Visionary and Moral Leadership, Class 56,
Office of the Civil Service Commission
>> National Defence Course, Class 52, National Defence College

Working Experience in the 5 Preceding Years

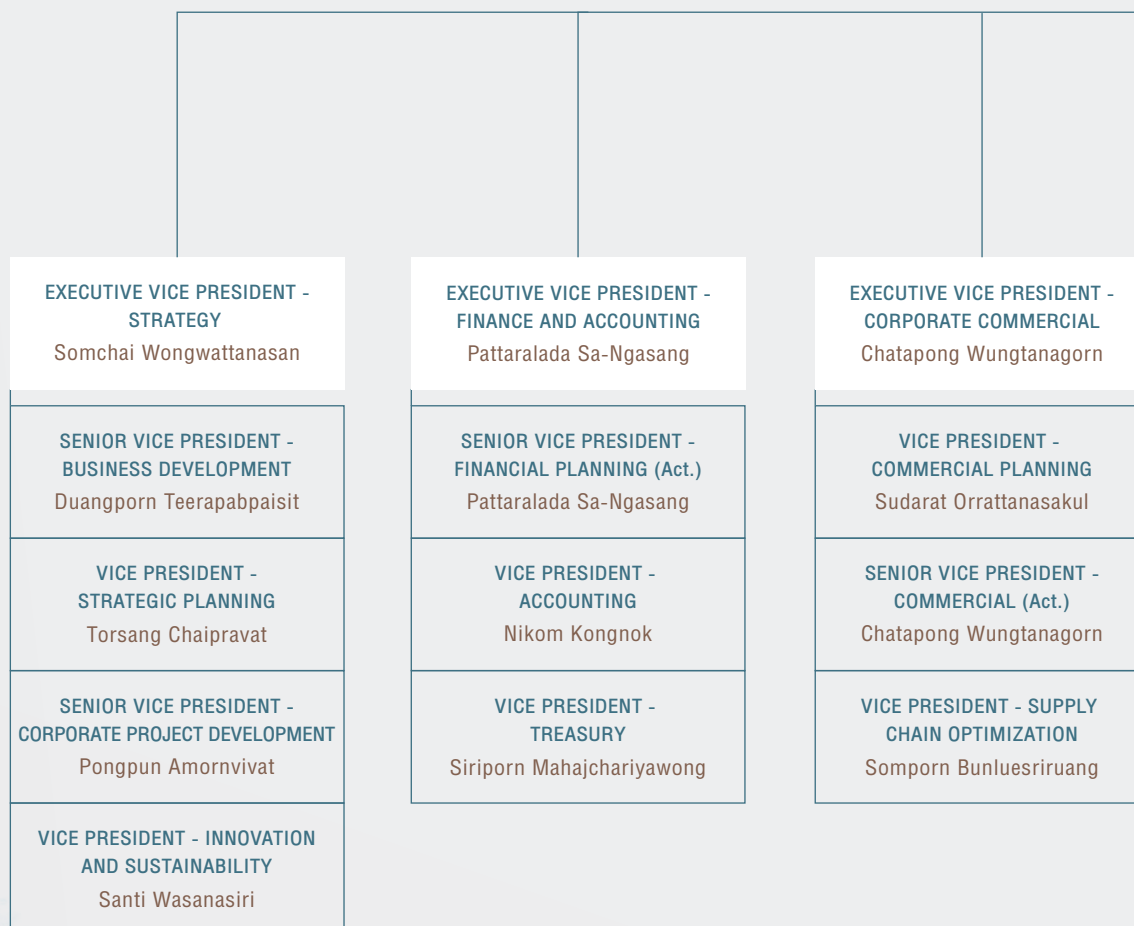
2007 - 2014	Deputy Director General of the Department of Alternative Energy Development and Efficiency, Ministry of Energy
Oct 1, 2014 - Sep 30, 2016	Director General of the Department of Alternative Energy Development and Efficiency, Ministry of Energy
Oct 1, 2016 - Present	Deputy Permanent Secretary, Ministry of Energy

Other Positions

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

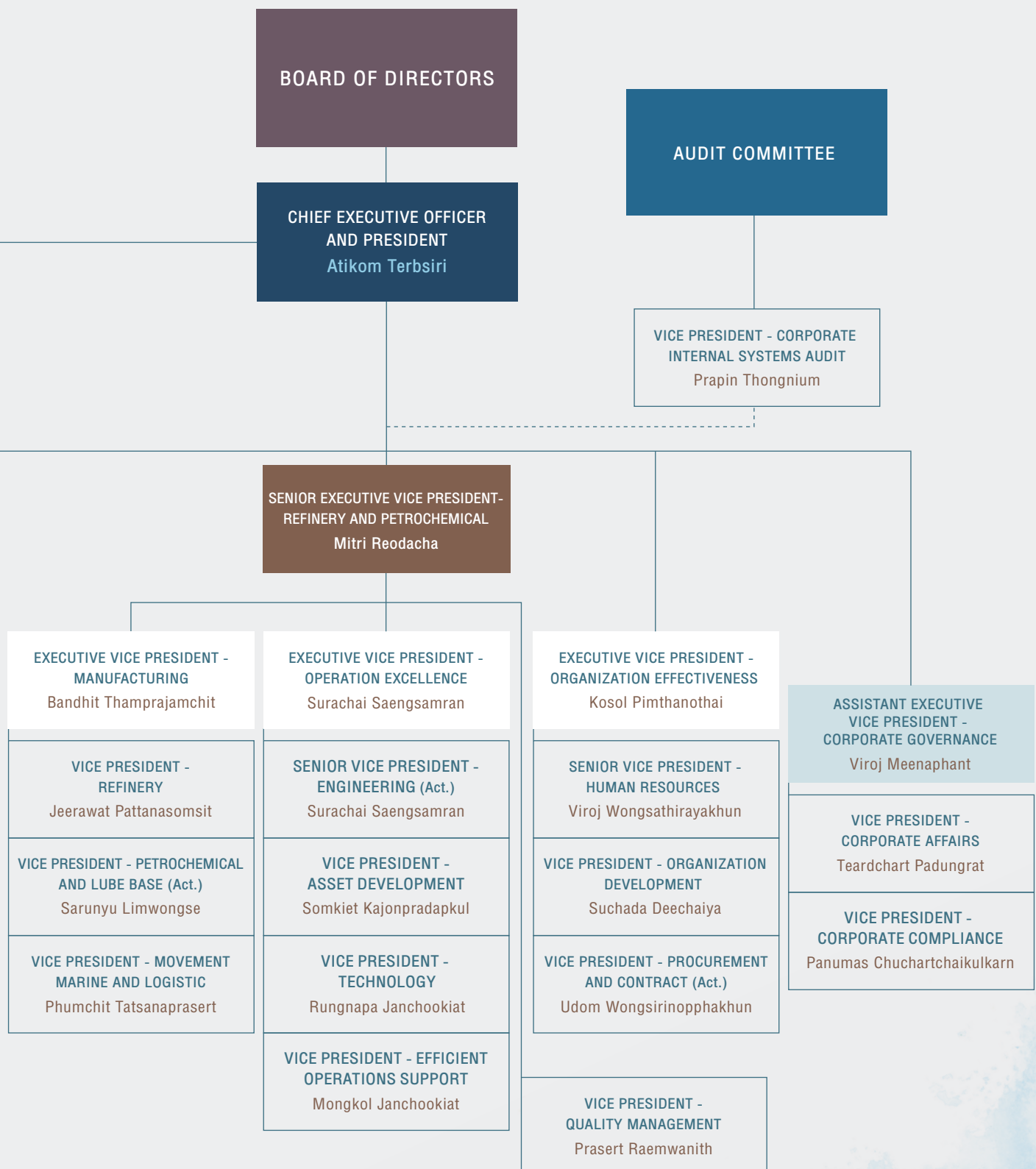
ORGANIZATIONAL STRUCTURE

MANAGING DIRECTOR - TLB
MANAGING DIRECTOR - TPX
MANAGING DIRECTOR - TM
MANAGING DIRECTOR - TES
MANAGING DIRECTOR - TP
MANAGING DIRECTOR - TET
MANAGING DIRECTOR - TS
MANAGING DIRECTOR - SAKC
MANAGING DIRECTOR - LABIX
MANAGING DIRECTOR - TOP SPP



Remark :

- | | |
|--|---|
| 1 May 2009 >> Nitas Krongvanitchayakul | Senior Vice President-Assignment as Managing Director, Thaioil Marine Co., Ltd. |
| 1 Jan 2013 >> Viroj Wongsathirayakhun | Senior Vice President-Assignment as Managing Director, Thaioil Energy Services Co., Ltd. |
| 10 Jan 2013 >> Klahan Tochamnanvit | Vice President-Assignment as Organization Excellence, Global Power Synergy Plc. |
| 11 Jul 2013 >> Suchart Monyanont | Senior Vice President-Assignment as Managing Director, Labix Co., Ltd. |
| 7 May 2015 >> Acharee Tiyaibhorn | Vice President-Assignment as Managing Director, TOP Solvent Co., Ltd. |
| 3 Jun 2015 >> Acharee Tiyaibhorn | Vice President-Assignment as Managing Director, Thaioil Solvent Co., Ltd. |
| 16 May 2016 >> Charlee Balmongkol | Vice President-Assignment as Managing Director, Thaioil Power Co., Ltd. and TOP SPP Co., Ltd. |
| 1 Aug 2016 >> Sarunyu Limwongse | Vice President-Assignment as Managing Director, Thai Lube Base Plc. and Thai Paraxylene Co., Ltd. |
| 1 Aug 2016 >> Ampon Singsakda | Vice President-Assignment as Managing Director, Sak Chaisidhi Co., Ltd. |



EXECUTIVES

As of December 31, 2016



01



02



03



04



05



06



07



08



09



10

01 Mr. Atikom Terbsiri
Chief Executive Officer and President

02 Mr. Mitri Reodacha
Senior Executive Vice President -
Refinery and Petrochemical

03 Mr. Kosol Pimthanothai
Executive Vice President - Organization Effectiveness

04 Mr. Somchai Wongwattanasan
Executive Vice President - Strategy

05 Mr. Chatapong Wungtanagorn
Executive Vice President - Corporate Commercial
Senior Vice President - Commercial (Act.)

06 Ms. Pattaralada Sa-NGasang
Executive Vice President - Finance and Accounting
Senior Vice President - Financial Planning (Act.)

07 Mr. Surachai Saengsamran
Executive Vice President - Operation Excellence
Senior Vice President - Engineering (Act.)

08 Mr. Bandhit Thamprajamchit
Executive Vice President - Manufacturing

09 Mr. Viroj Meenaphant
Assistant Executive Vice President -
Corporate Governance

10 Mr. Klahan Tochamnanvit
Vice President - Assignment as Organization Excellence,
Global Power Synergy Plc.



11 Mr. Jeerawat Pattanasomsit
Vice President - Refinery

12 Mr. Charlee Balmongkol
Vice President - Assignment as Managing Director,
Thaioil Power Co., Ltd. and TOP SPP Co., Ltd.

13 Ms. Duangporn Teerapabpaisit
Senior Vice President - Business Development

14 Ms. Torsang Chaipravat
Vice President - Strategic Planning

15 Mr. Teardchart Padungrat
Vice President - Corporate Affairs

16 Mr. Nikom Kongnok
Vice President - Accounting

17 Mr. Nitas Krongvanitchayakul
Senior Vice President - Assignment as Managing Director,
Thaioil Marine Co., Ltd.

18 Ms. Prapin Thongnium
Vice President - Corporate Internal Systems Audit

19 Mr. Prasert Raemwanith
Vice President - Quality Management



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20 Mr. Pongpun Amornvivat
Senior Vice President - Corporate Project Development

21 Ms. Panumas Chuchartchaikularn
Vice President - Corporate Compliance
Company Secretary

22 Mr. Phumchit Tatsanaprasert
Vice President - Movement Marine and Logistic

23 Mr. Mongkol Janchookiat
Vice President - Efficient Operations Support

24 Ms. Rungnapa Janchookiat
Vice President - Technology

25 Mr. Viroj Wongsathirayakhun
Senior Vice President - Human Resources
Senior Vice President - Assignment as
Managing Director, Thairoil Energy Services Co., Ltd.

26 Mr. Saran Harinsuta
Manager - Assignment as Managing Director,
Thairoil Ethanol Co., Ltd.

27 Mr. Sarunyu Limwongse
Vice President - Petrochemical and Lube Base (Act.)
Vice President - Assignment as Managing Director,
Thai Lube Base Plc. and Thai Paraxylene Co., Ltd.

28 Ms. Siriporn Mahajchariyawong
Vice President - Treasury



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29 Mr. Somkiet Kajonpradapkul
Vice President - Asset Development

30 Ms. Somporn Bunluesriruang
Vice President - Supply Chain Optimization

31 Mr. Santi Wasanasiri
Vice President - Innovation and Sustainability

32 Ms. Suchada Deechaiya
Vice President - Organization Development

33 Mr. Suchart Monyanont
Senior Vice President - Assignment as Managing Director,
Labix Co., Ltd.

34 Ms. Sudarat Orrattanasakul
Vice President - Commercial Planning

35 Ms. Acharee Tiyaabhorn
Vice President - Assignment as Managing Director,
Thairoil Solvent Co., Ltd. and TOP Solvent Co., Ltd.

36 Mr. Ampon Singsakda
Vice President - Assignment as Managing Director,
Sak Chaisidhi Co., Ltd.

37 Mr. Udom Wongsirinopphakhun
Vice President - Procurement and Contract (Act.)

ASSETS AND SHAREHOLDERS INFORMATION AND MANAGEMENT STRUCTURE

Assets and Shareholders Information

THB 20,400,278,730, comprised of 2,040,027,873 ordinary shares at the par value at THB 10 per share.

Registered and Paid-up Capitals

Ordinary Shares

On the share registration book closing date as of October 31, 2016, the Company's registered capital was THB 20,400,278,730 and the paid-up capital was

Shareholders

As of October 31, 2016, the first ten major shareholders are as followed:

Top 10 Major Shareholders ⁽¹⁾	Number of Shares	Shareholding Percentage
1 PTT PUBLIC COMPANY LIMITED ⁽²⁾	1,001,647,483	49.10%
2 STATE STREET BANK EUROPE LIMITED	72,833,858	3.57%
3 CHASE NOMINEES LIMITED	60,463,282	2.96%
4 NORBAX, INC.	36,297,505	1.78%
5 STATE STREET BANK AND TRUST COMPANY	35,339,282	1.73%
6 GIC PRIVATE LIMITED	17,890,000	0.88%
7 SOCIAL SECURITY OFFICE	16,899,000	0.83%
8 IRPC PUBLIC COMPANY LIMITED	14,670,000	0.72%
9 HSBC (SINGAPORE) NOMINEES PTE LTD	14,390,725	0.70%
10 PEOPLE'S BANK OF CHINA	10,512,500	0.52%
Total	1,280,943,635	62.79%

Remark:

⁽¹⁾ Excluding shareholders of 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 right to vote at meetings of listed companies.

⁽²⁾ As a major shareholder of Thailoil, PTT Public Company Limited (PTT) participates in formulating the Company's management and operational policies via Directors nominated to Thailoil's Board of Directors and casting their votes in Board meetings. As of December 31, 2016, there are 5 Directors from a total of 14 who are also holding position as PTT Board of Directors and/or Management team.

Issuance of Other Securities

Debentures

The Company issued two unsecured debentures of USD 1 billion in total, comprised of USD 500 million due in 2023 and USD 500 million due in 2043.

Also, the Company issued four unsecured and unsubordinated debentures of THB 28 billion in total, comprised of THB 4.5 billion due in 2017, THB 3 billion due in 2019, THB 3 billion due in 2021, THB 3 billion due in 2022, THB 7 billion due in 2024, and THB 7.5 billion due in 2027.

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. Payment of such dividend is subject to the cash flows and investment plans of Thailoil and its subsidiaries in each year, and other requirements and considerations as determined by the Board of Directors. The Board of Directors may consider paying the annual dividend with approval from the Annual General Meeting of Shareholders (AGM), except payment of interim dividend which the Board is authorized to approve periodically when the Company's profit deems it appropriate. The interim dividend payment shall be reported at the following Shareholders' meeting.

The dividend policy for Thailoil's subsidiaries shall be considered by the Board of Directors of each subsidiary and later proposed to each subsidiary's AGM for approval. Consideration shall be given to investment plans and other requirements and considerations, such as the adequacy of cash flow of each company after deducting reserve funds in accordance with the law.

Dividend Payout Information

Year	2010	2011	2012	2013 ⁽¹⁾	2014 ⁽¹⁾	2015
Earnings (Baht per share)	4.39	7.28	6.04	4.57	(2.03)	5.97
Dividend (Baht per share)	2.00	3.30	2.70	2.30	1.16	2.70
Dividend Payout (%)	45.0	45.0	45.0	50.0	N/A	45.0

⁽¹⁾ Revised in accordance with Thai Financial Reporting Standards 10 (TFRS 10) on Consolidated Financial Statements which is effective for Annual Accounting periods beginning on or after January 1, 2015, having a restatement on Statement of Financial Position as of December 31, 2013 and 2014 as well as Statement of Income and Statement of Cash Flows as of December 31, 2014.

Management Structure

The management structure of Thai Oil Public Company Limited comprises:

- >> The Board of Directors
- >> The four Board-Committees supporting the consideration and important issues as assigned by the Board of Directors: the Audit Committee, the Nomination and Remuneration Committee, the Corporate Governance Committee, and the Risk Management Committee

>> The executive with the Chief Executive Officer and President as the highest executive of the Company

The Board of Directors

As of December 31, 2016, the Board of Directors is comprised of 14 Directors as followed:

- >> Thirteen Non-Executive Directors, seven of which are Independent Directors
- >> One Executive Director, namely the Chief Executive Officer and President

The Board of Directors as of December 31, 2016 comprised of:

Name - Surname	Position	Appointment Date
1. Mr. Kurujit Nakornthap	Director Chairman of the Board	September 12, 2014 September 26, 2014
2. Ms. Chularat Suteethorn	Independent Director Member of the Audit Committee Chairman of the Audit Committee Member of the Nomination and Remuneration Committee	April 3, 2015 (Re-elected) April 24, 2015 February 12, 2016 April 27, 2016
3. Mrs. Suvimol Chrityakierne ⁽¹⁾	Independent Director Member of the Audit Committee	January 22, 2016 January 22, 2016
4. Mr. Siri Jirapongphan	Independent Director Member of the Audit Committee	April 7, 2016 (Re-elected) April 27, 2016
5. Gen. Thanakarn Kerdnaimongkol ⁽²⁾	Independent Director Member of the Audit Committee	April 7, 2016 April 27, 2016
6. ACM Suttipong Inseepong ⁽³⁾	Independent Director Member of the Corporate Governance Committee Chairman of the Corporate Governance Committee	January 22, 2016 April 27, 2016 November 21, 2016
7. Mr. Yongyut Jantararotai	Director Member of the Corporate Governance Committee	April 2, 2014 April 25, 2014
8. Adjunct Professor Dr. Thosaporn Sirisumphand	Independent Director Member of the Nomination and Remuneration Committee Member of the Corporate Governance Committee Chairman of the Nomination and Remuneration Committee	April 3, 2015 (Re-elected) April 24, 2015 April 24, 2015 April 19, 2016

Name - Surname	Position	Appointment Date
9. Mr. Sarun Rungkasiri ⁽⁴⁾	Director Member of the Nomination and Remuneration Committee Member of Risk Management Committee Chairman of the Risk Management Committee	April 7, 2016 April 8, 2016 April 27, 2016 May 11, 2016
10. Mr. Noppadol Pinsupa	Director Member of the Risk Management Committee	April 7, 2016 (Re-elected) April 27, 2016
11. Mrs. Sriwan Eamrungraj	Director	April 7, 2016 (Re-elected)
12. Mrs. Nitima Thepvanangkul ⁽⁵⁾	Director	October 28, 2016
13. Ms. Nantika Thangsuphanich ⁽⁶⁾	Director	November 25, 2016
14. Mr. Atikom Terbsiri ⁽⁷⁾	Director Member of the Risk Management Committee Chief Executive Officer and President / Secretary to the Board of Directors	April 3, 2015 (Re-elected) September 26, 2014 September 26, 2014

⁽¹⁾ Appointed as Independent Director and Member of the Audit Committee replacing Mr. Chulasingsh Vasantasingh in the Board of Director Meeting No. 1/2016 on January 22, 2016 with the effective date on February 1, 2016

⁽²⁾ Appointed as Independent Director replacing Gen. Jiradej Mokkahasmit in the 2016 Annual General Meeting of Shareholders on April 7, 2016

⁽³⁾ Appointed as Independent Director replacing Mr. Tanasak Wahawisan in the Board of Director Meeting No. 1/2016 on January 22, 2016 with the effective date on February 1, 2016

⁽⁴⁾ Appointed as Director replacing Mr. Nuttachat Charuchinda in the 2016 Annual General Meeting of Shareholders on April 7, 2016

⁽⁵⁾ Appointed as Director replacing Mr. Wirat Uanarumit in the Board of Director Meeting No.10/2016 on October 28, 2016

⁽⁶⁾ Appointed as Director replacing Mr. Thammayot Srichuai in the Board of Director Meeting No. 11/2016 on November 25, 2016

⁽⁷⁾ Appointed as Member of the Risk Management Committee in the Board of Directors Meeting No. 10/2014 on September 26, 2014

The List of Directors who Resigned and Completed the Term in the Year 2016:

Name - Surname	Position	Reason for Retirement
1. Mr. Tanasak Wahawisan	Independent Director	Resigned, effective on January 11, 2016
2. Mr. Chulasingsh Vasantasingh	Independent Director Chairman of the Audit Committee	Resigned, effective on January 31, 2016
3. Gen. Jiradej Mokkahasmit	Independent Director Chairman of the Nomination and Remuneration Committee	Completed the Term in the 2016 Annual General Meeting of Shareholders
4. Mr. Nuttachat Charuchinda	Director Chairman of the Risk Management Committee Member of the Nomination and Remuneration Committee	Completed the Term in the 2016 Annual General Meeting of Shareholders

Name - Surname	Position	Reason for Retirement
5. Mr. Thaworn Phanichaphan	Independent Director Chairman of the Corporate Governance Committee	Resigned, effective on October 1, 2016
6. Mr. Wirat Uanarumit	Director	Resigned, effective on October 1, 2016
7. Mr. Thammayot Srichuai	Director Member of the Risk Management Committee	Resigned, effective on November 8, 2016

Shareholding Report of the Board of Directors and the Company's Management in 2016
(Inclusive of Spouse, Unmarried Partner, and Minor)
Information as of December 31, 2016:

Name - Surname	No. of Share (shares)		No. of Shares Addition (Reduction) During the Year
	Dec 31, 2015	Dec 31, 2016	
1. Mr. Kurujit Nakornthap	-	-	-
By Spouse and Minor	-	-	-
2. Ms. Chularat Suteethorn	-	-	-
By Spouse and Minor	-	-	-
3. Mrs. Suvimol Chrityakierne	N/A	-	N/A
By Spouse and Minor	N/A	-	N/A
4. Mr. Siri Jirapongphan	-	-	-
By Spouse and Minor	-	-	-
5. Gen. Thanakarn Kerdnaimongkol	N/A	-	N/A
By Spouse and Minor	N/A	-	N/A
6. ACM Suttipong Inseeyong	N/A	-	N/A
By Spouse and Minor	N/A	-	N/A
7. Mr. Yongyut Jantararotai	-	-	-
By Spouse and Minor	-	-	-
8. Adjunct Professor Dr. Thosaporn Sirisumphand	-	-	-
By Spouse and Minor	-	-	-
9. Mr. Sarun Rungkasiri	N/A	-	N/A
By Spouse and Minor	N/A	-	N/A

Name - Surname	No. of Share (shares)		No. of Shares Addition (Reduction) During the Year
	Dec 31, 2015	Dec 31, 2016	
10. Mr. Noppadol Pinsupa	-	-	-
By Spouse and Minor	-	-	-
11. Mrs. Sriwan Eamrunroj	-	-	-
By Spouse and Minor	-	-	-
12. Mrs. Nitima Thepvanangkul	N/A	2,000	N/A
By Spouse and Minor	N/A	-	N/A
13. Ms. Nantika Thangsuphanich	N/A	-	N/A
By Spouse and Minor	N/A	-	N/A
14. Mr. Atikom Terbsiri	-	-	-
By Spouse and Minor	-	-	-
Directors who Resigned and Completed the Term in the Year 2016			
1. Mr. Tanasak Wahawisan	-	N/A	N/A
By Spouse and Minor	-	N/A	N/A
2. Mr. Chulasingh Vasantasingh	-	N/A	N/A
By Spouse and Minor	-	N/A	N/A
3. Gen. Jiradej Mokkhasmit	-	N/A	N/A
By Spouse and Minor	-	N/A	N/A
4. Mr. Nuttachat Charuchinda	-	N/A	N/A
By Spouse and Minor	-	N/A	N/A
5. Mr. Thaworn Phanichaphan	-	N/A	N/A
By Spouse and Minor	-	N/A	N/A
6. Mr. Wirat Uanarumit	-	N/A	N/A
By Spouse and Minor	-	N/A	N/A
7. Mr. Thammayot Srichuai	-	N/A	N/A
By Spouse and Minor	-	N/A	N/A
Company's High-Level Executive			
1. Mr. Atikom Terbsiri	-	-	-
Chief Executive Officer and President			
By Spouse and Minor	-	-	-

Name - Surname	No. of Share (shares)		No. of Shares Addition (Reduction) During the Year
	Dec 31, 2015	Dec 31, 2016	
2. Mr. Mitri Reodacha Senior Executive Vice President – Refinery and Petrochemical By Spouse and Minor	10,000 - -	10,000 - -	- - -
3. Mr. Kosol Pimthanothai Executive Vice President – Organization Effectiveness By Spouse and Minor	- - -	- - -	- - -
4. Mr. Somchai Wongwattanasan Executive Vice President - Strategy By Spouse and Minor	- - -	- - -	- - -
5. Mr. Chatapong Wungtanagorn Executive Vice President – Corporate Commercial Senior Vice President – Commercial (Act.) By Spouse and Minor	97,400 - -	97,400 - -	- - -
6. Ms. Pattaralada Sa-Ngasang Executive Vice President – Finance and Accounting Senior Vice President – Financial Planning (Act.) By Spouse and Minor	- - -	- - -	- - -
7. Mr. Surachai Saengsamran Executive Vice President – Operation Excellence Senior Vice President – Engineering (Act.) By Spouse and Minor	98,500 - -	98,500 - -	- - -
8. Mr. Bandhit Thamprajamchit Executive Vice President – Manufacturing By Spouse and Minor	12,200 - -	12,200 - -	- - -
9. Ms. Siriporn Mahajchariyawong Vice President - Treasury By Spouse and Minor	18,000 - -	18,000 - -	- - -
10. Mr. Nikom Kongnok Vice President - Accounting By Spouse and Minor	- - -	- - -	- - -

Remark: N/A means no information since the Director or executive was appointed, resigned, or completed the term during the year 2016.

Structure of the Board of Directors

According to the Company's Articles of Association, the Board of Directors shall consist of at least five members and not more than 15 members. Not less than half of the number of such Directors must reside in the Kingdom of Thailand. A Director needs not be a shareholder of the Company.

Appointment and Termination of Directors

The nomination, appointment, removal and termination of Directors are prescribed in the Company's Article of Association, which can be summarized as followed:

Appointment of Directors

The appointment of Directors must be explicitly made at the Annual General Meeting of Shareholders under the following criteria and procedures:

1. Each shareholder shall have one vote for one share;
2. Each shareholder may exercise all the votes he or she has under (1) to elect one or several persons as Directors, but the shareholder cannot divide his or her votes to any person in any number; and
3. The indicated number of nominees who receive the largest number of votes in descending order shall be elected. In the event of the number of nominees receiving equal votes exceeds the number of vacancies to be filled, the chairman of the meeting shall cast the decisive vote.

Since 2007, the Board of Directors has adopted a resolution to allow minor shareholders' nomination of qualified Director candidates, which must be explicitly made before the AGM and under the Company's nomination criteria. However, in the year 2016, there was no nomination proposed by minor shareholders (see detail in Corporate Governance Policy Section on page 134)

Removal and Termination of Directors

1. At every Annual General Meeting of Shareholders, one-third of the Directors, or, if the number of Directors cannot be divided exactly into three parts, the number of Directors nearest to one-third shall vacate office. A vacating Director may be eligible to re-election. The Directors to vacate office in the first and second years following the registration of the conversion of the company shall be drawn by lots. In subsequent years, the Directors who have remained in office for the longest time shall vacate office.
2. Apart from completing the term, a Director shall vacate office upon death, resignation, lack of qualifications or disqualifications under the law pertaining to Public Company Limited and/or under the Securities and Exchange Act, removal pursuant to resolution passed at the Shareholders' meeting, or removal pursuant to a court order.
3. To resign from office, a Director has to hand in his resignation letter. Such resignation shall become effective on the date it reaches the company. The Director who has resigned may also inform the registrar of the facts.
4. The Shareholders' meeting may pass a resolution to remove any Director from office prior to the term completion, by the vote of not less than three-fourths of the number of shareholders attending the meeting and having the right to vote and the shares held by them shall, in aggregate, be not less than half of the number of shares held by the shareholders attending the meeting and having the right to vote.
5. In the event that a position of Director becomes vacant for any reason other than the completion of his office term, the Board of Directors shall on the next Board meeting appoint a qualified person, not having unacceptable qualities under the laws pertaining

to Public Limited Company and the Securities and Exchange Act to be a new Director, except if such office term remaining is less than two months. The replacement Director shall hold office only for the remainder of the office term of the Director whom he replaces. The resolution of the Board of Directors must be approved by the votes of not less than three-fourths of the number of the remaining Directors.

Authorized Directors

According to the Company's Articles of Association, Chief Executive Office and the President (CEO/President) or two 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.

Through the Board of Directors' Meeting No. 10/2016 on October 28, 2016, the Board of Directors has approved Directors having authority to sign on behalf of the Company, namely Mr. Atikom Terbsiri, CEO/President, signing with affixation of the Company's seal; or, Mr. Kurujit Nakornthap, Mr. Sarun Rungkasiri, Mrs. Nitima Thepvanangkul, and Mr. Noppadol Pinsupa, any two of the four representative Directors jointly sign together with the affixation of the Company's seal.

Board of Directors Roles and Responsibilities

Observing Company's regulations, the Board of Directors is authorized to conduct roles and responsibilities under the law, Company's objectives, regulations, and resolutions approved by Shareholders' meetings. Directors must observe the "Code of Practice for Directors of Listed Companies" stipulated by Stock Exchange of Thailand (SET) with integrity and prudence to protect the Company's interests and maximize profits for its shareholders. To enable employees to observe the business principles and establish credibility among

shareholders and investors, the Company has defined the following roles and responsibilities for the Board of Directors:

1. Define the business vision and be responsible for the Company's and executives' performance outcomes to give the business long-term continuity and provide for employees' development plans and executives' continuity;
2. Review and endorse significant strategies and policies with a focus on business objectives, financial targets, risks, work programs and budgets, and ensure that the management efficiently and effectively follow policies and plans;
3. Review and endorse actions required by law, and serve as leaders/role models for performance, compliance with the law, and alignment with corporate governance guidelines;
4. Provide assurance of the accounting system, financial reporting, and audits by efficiently and effectively forging processes for suitable internal control and audit, and oversee financial reporting and monitoring progress;
5. Institute a corporate risk management policy by seeking quarterly risk management reports from the management via the Audit Committee, and encouraging the Company to conduct risk management system assessment at least once a year, while paying due attention to warning signs and anomalies;
6. Oversee and resolve potential conflicts of interest and connected transactions, and set practical guidelines to prevent them with a focus on maintaining the best interests of the shareholders and stakeholders at large; institute transaction guidelines prohibiting stakeholders with vested interests from decision-making on such matters; and establish standard procedures and thorough information disclosure of all potential conflicts of interest;

7. Promote a written code of conduct for directors, executives, and employees to ensure full understanding of the Company's business standards, including earnest, periodic follow-ups of compliance;
8. Conduct the annual performance appraisal and decide compensation for the CEO/President.

Chairman Roles and Responsibilities

Stated in the Corporate Governance and Code of Conduct Manual, roles and responsibilities of the Chairman of the Board (the Chairman) are as followed:

1. By oneself or assign a delegate, calls the meetings of the Board of Directors with meeting notices sent at least seven days prior to the meeting date so that the Directors may have adequate time to study, review, and make proper decisions;
2. Jointly with the CEO/President, defines the agenda of each meeting;
3. Ensures the efficiency of each meeting by allocating enough time for the executives to present information, encouraging and allowing Directors' queries and expression of free views, controlling the issues under discussion, and summarizing the meeting's resolutions;
4. Plays a key role in encouraging the Board of Directors' conformance to corporate governance principles, including identifying themselves, refraining from voting, and leaving the meeting in case of having conflicts of interest in any agenda;
5. Informs the Board of Directors all significant matters;
6. Encourages the Board of Directors to attend Shareholders' meetings and presides over such meetings to ensure the meeting efficiency and address shareholders' queries;

7. Encourages the Board of Directors to perform their duties under the scope of authority given by laws, and the corporate governance.

Chief Executive Officer and President (CEO/President) Roles and Responsibilities

Assigned by the Board of Directors to conduct the Company business under the approved plans and budgets with rigor and integrity, while protecting the best interests of the Company and its shareholders, the CEO/President must not be engaged in any conflicts of interest with Thailoil and Subsidiaries. His roles and responsibilities consist of the following:

1. Prepares and proposes to the Board of Directors 5-year and 10-year business plans, including the Company's strategic imperatives;
2. Prepares and provides to the Board of Directors information relevant to the Company business and activities, as well as other information needed;
3. Manages the Company business and activities under the approved plans and budgets, as well as business strategies;
4. Structures and manages the organization under guidelines given by the Board of Directors;
5. Fine-tune the Company's POSITIVE culture in support of its vision, mission, and strategic imperatives.;
6. Executes all other tasks assigned by the Board of Directors;
7. Delegates authority and/ or assigns others to act on his or her behalf, or both, under the rules, terms, principles, and orders given by the Board of Directors or the Company, or both;
8. Prepares and presents the significant company business performance and activity reports as well as other reports required by the Board of Directors;
9. Represents the Company in external contacts.

Meeting Attendance of the Board of Directors, Board-Committees, and AGM in 2016

Name - Surname	Position	Board of Directors (13 times)	Audit Committee (10 times)	Nomination and Remuneration Committee (6 times)	Corporate Governance Committee (5 times)	Risk Management Committee (11 times)	Annual General Meeting of Shareholders (AGM) (1 time)	Independent Directors Meeting (2 times)	Non-Executive Directors Meeting (1 time)
1 Mr. Kurujit Nakornthap	Director/Chairman of the Board	13/13					1/1		1/1
2 Ms. Chularat Suteethom ⁽¹⁾	Independent Director/ Chairman of the Audit Committee/ Member of the Nomination and Remuneration Committee	12/13	10/10	2/2			1/1	2/2	1/1
3 Mrs. Suvimol Chrityakierne ⁽²⁾	Independent Director/ Member of the Audit Committee	12/12	8/8				1/1	2/2	1/1
4 Mr. Sri Jirapongphan ⁽³⁾	Independent Director/ Member of the Audit Committee	12/13	9/10				1/1	2/2	1/1
5 Gen. Thanakam Kerdhalmongkol ⁽⁴⁾	Independent Director/ Member of the Audit Committee	10/10	5/6				N/A	2/2	1/1
6 ACM Suttipong Inseepong ⁽⁵⁾	Independent Director/ Chairman of the Corporate Governance Committee	11/12			4/4		1/1	2/2	1/1
7 Mr. Yongyut Jantararatai	Director/Member of the Corporate Governance Committee	12/13			5/5		1/1		0/1
8 Adjunct Professor Dr. Thosaporn Srisumphan ⁽⁶⁾	Independent Director/Chairman of the Nomination and Remuneration Committee/ Member of the Corporate Governance Committee	12/13		6/6	5/5		1/1	2/2	1/1
9 Mr. Sarun Rungkasin ⁽⁷⁾	Director/Chairman of the Risk Management Committee/ Member of the Nomination and Remuneration Committee	10/10		3/3		9/9	N/A		1/1
10 Mr. Noppadol Pinsupa ⁽⁸⁾	Director/Member of the Risk Management Committee	10/13				9/11	1/1		1/1
11 Mrs. Sriwan Eamrunroj ⁽⁹⁾	Director	9/13					1/1		1/1
12 Mrs. Nitima Thepvannangkul ⁽¹⁰⁾	Director	2/2					N/A		N/A
13 Ms. Nantika Thangsuphanich ⁽¹¹⁾	Director	1/1				11/11	N/A		N/A
14 Mr. Atikom Terbsiri	Director/Member of the Risk Management Committee/ Chief Executive Officer and President/ Secretary to the Board	13/13					1/1		
Directors who Resigned and Completed the Term in the Year 2016									
1 Mr. Tanasak Wahawisan	Independent Director (Resigned on January 11, 2016)	N/A					N/A	N/A	N/A
2 Mr. Chulesingh Vasantasingh	Independent Director/ Chairman of the Audit Committee (Resigned on January 31, 2016)	0/1	2/2				N/A	N/A	N/A
3 Gen. Jiradej Mokkhasmit	Independent Director/Chairman of the Nomination and Remuneration Committee	3/3		3/3			1/1		N/A
4 Mr. Nuttachat Charuchinda	Director/Chairman of the Risk Management Committee/ Member of the Nomination and Remuneration Committee	3/3		3/3		2/2	1/1	N/A	N/A
5 Mr. Thaworn Phanichaphan ⁽¹²⁾	Independent Director/ Chairman of the Corporate Governance Committee/ Member of the Nomination and Remuneration Committee (Resigned on October 1, 2016)	9/10		4/4	3/3		1/1	1/1	N/A
6 Mr. Wirat Uanarunit	Director (Resigned on October 1, 2016)	10/10					1/1		N/A
7 Mr. Thammayot Srichai	Risk Management Committee (Resigned on November 8, 2016)	11/11				8/9	1/1		1/1

Remark:

N/A means not attend since the Director resigned or was appointed during the year 2016.

- (1) Elected as Chairman of the Audit Committee in the Audit Committee Meeting No. 3/2016 on February 12, 2016, and appointed as Member of the Nomination and Remuneration Committee in the Board of Directors Meeting no. 4/2016 on April 27, 2016
- (2) Appointed as Independent Director and Member of the Audit Committee in the Board of Directors Meeting no. 1/2016 on January 22, 2016, effective on February 1, 2016
- (3) Term completed and re-elected as Independent Director in the 2016 Annual General Meeting of Shareholders on April 7, 2016, and appointed as Member of the Audit Committee in the Board of Directors Meeting no. 4/2016 on April 27, 2016
- (4) Appointed as Independent Director in the 2016 Annual General Meeting of Shareholders on April 7, 2016, and appointed as Member of the Audit Committee in the Board of Directors Meeting no. 4/2016 on April 27, 2016
- (5) Appointed as Independent Director in the Board of Directors Meeting no. 1/2016 on January 22, 2016 effective on February 1, 2016; appointed as Member of the Corporate Governance Committee in the Board of Directors Meeting no. 4/2016 on April 27, 2016; and elected as Chairman of the Corporate Governance Committee in the Corporate Governance Committee Meeting no. 4/2016 on November 21, 2016
- (6) Elected as Chairman of the Nomination and Remuneration Committee in the Nomination and Remuneration Committee Meeting no. 4/2016 on April 19, 2016 and resigned from Chairman of the Corporate Governance Committee on August 19, 2016
- (7) Appointed as Director in the 2016 Annual General Meeting of Shareholders on April 7, 2016; appointed as Member of the Nomination and Remuneration Committee in the extraordinary Board of Directors Meeting no. 1/2016 on April 8, 2016; appointed as Member of the Risk Management Committee in the Board of Directors Meeting no. 4/2016 on April 27, 2016; and elected as Chairman of the Risk Management Committee in the Risk Management Committee Meeting no. 3/2016 on May 11, 2016
- (8) Term completed and re-elected as Director in the 2016 Annual General Meeting of Shareholders on April 7, 2016, and appointed as Member of the Risk Management Committee in the Board of Directors Meeting no. 4/2016 on April 27, 2016
- (9) Term completed and re-elected as Director in the 2016 Annual General Meeting of Shareholders on April 7, 2016
- (10) Appointed as Director in the Board of Directors Meeting no. 10/2016 on October 28, 2016
- (11) Appointed as Director in the Board of Directors Meeting no. 11/2016 on November 25, 2016
- (12) Elected as Chairman of the Corporate Governance Committee in the Corporate Governance Committee Meeting no. 2/2016 on August 19, 2016, effective on August 20, 2016

Information of Directors, Executive Officers and Control Executives as of December 31, 2016

[illegible]

Information of Directors, Executive Officers and Control Executives as of December 31, 2016

Name	Subsidiaries								Indirect Subsidiaries							Jointly-Controlled Entity of Subsidiaries				Associates					Related Companies		
	Thai Lube Base Plc.	Thai Paraxylene Co., Ltd.	Thailo Marine Co., Ltd.	Thailo Energy Services Co., Ltd.	Thailo Solvent Co., Ltd.	Thailo Ethanol Co., Ltd.	Thailo Power Co., Ltd.	TOP SPP Co., Ltd.	TOP Solvent Co., Ltd. ⁽¹⁾	Sak Chaisidhi Co., Ltd. ⁽²⁾	TOP Solvent (Vietnam) LLC ⁽³⁾	Saphir Co., Ltd. ⁽⁴⁾	Thailo Marine International Plc. Ltd. ⁽⁵⁾	TOP Maritime Service Co., Ltd. ⁽⁶⁾	Labix Co., Ltd. ⁽⁷⁾	TOP-NTL Plc. Ltd. ⁽⁸⁾	TOP Nautical Star Co., Ltd. ⁽⁹⁾	TOP-NYK MarineOne Plc. Ltd. ⁽¹⁰⁾	PTT ICT Solutions Co., Ltd.	PTT Energy Solutions Co., Ltd.	Global Power Synergy Plc.	Maesod Clean Energy Co., Ltd. ⁽¹¹⁾	Ubon Bio Ethanol Co., Ltd. ⁽¹²⁾	T.M. Ship Management (Thailand) Co., Ltd. ⁽¹³⁾			
28 Mr. Teardchart Padungrat	✱																										Thai Petroleum Pipeline Co., Ltd.
29 Mr. Nikom Kongnok	✱																										
30 Mr. Nitas Krongvanitchayakul	✱		✱										✱	✱	✱			✱	✱						✱		
31 Ms. Praphin Thongnum	✱																										
32 Mr. Prasert Raemwanith	✱																										
33 Mr. Pongpun Amornvivat	✱					✱							✱														✱
34 Ms. Panumas Chuchartchaikulam	✱																										
35 Mr. Phunchit Taisanaprasert	✱																										
36 Mr. Mongkol Janchookiat	✱																										
37 Ms. Rungnara Janchookiat	✱																										
38 Mr. Viroj Wongsathirayakhun	✱			✱								✱															
39 Mr. Saran Harinsuta	✱					✱						✱											✱				
40 Mr. Saruny Limwongse	✱	✱	✱													✱											
41 Ms. Siriporn Mahajachaiyawong *	✱										✱																
42 Mr. Somkiet Kajonpradapkul *	✱																										
43 Ms. Somporn Bunluesruang	✱																										
44 Mr. Santi Wasanasiri	✱																										
45 Ms. Suchada Deechaiya	✱																										
46 Mr. Suchart Monyanont	✱															✱	✱										
47 Ms. Sudarat Orrattanasakul	✱																										
48 Ms. Acharee Tiyaabhorn	✱		✱	✱	✱				✱	✱	✱																
49 Mr. Ampon Signsakda	✱									✱																	
50 Mr. Udom Wongsirinnopphakhun	✱																										

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

*Retired on December 31, 2016

- (1) TOP Solvent Co.,Ltd. is a subsidiary of Thailo Solvent Co.,Ltd. (TOS), in which TOS holds 100% of shares.
(2) Sak Chaisidhi Co.,Ltd. is a subsidiary of TOP Solvent Co.,Ltd. (TS), in which TS holds 80.52% of shares.
(3) TOP Solvent Vietnam LLC. is a subsidiary of TOP Solvent Co.,Ltd. (TS), in which TS holds 100% of shares.
(4) Saphip Co.,Ltd. is a subsidiary of Thailo Ethanol Co.,Ltd. (TET), in which TET holds 50% of shares.
(5) Thailo Marine International Plc. Ltd. is a subsidiary of Thailo Marine Co.,Ltd. (TM), in which TM holds 100% of shares.
(6) TOP Maritime Service Co.,Ltd. is a subsidiary of Thailo Marine Co.,Ltd. (TM), in which TM holds 55% of shares.
(7) Labix Co.,Ltd. is a subsidiary of Thai Paraxylene Co.,Ltd. (TPX), in which TPX holds 75% of shares.
(8) TOP-NYK Plc. Ltd. is a jointly-controlled entity of Thailo Marine Co.,Ltd. (TM), in which TM holds 50% of shares.
(9) TOP Nautical Star Co.,Ltd. is a jointly-controlled entity of Thailo Marine Co.,Ltd. (TM), in which TM holds 35% of shares.
(10) TOP-NYK MarineOne Plc. Ltd. is a jointly-controlled entity of Thailo Marine International Plc. Ltd. (TOMI), in which TOMI holds 50% of shares.
(11) Global Power Synergy Plc. has become public company limited since 27 November 2014.
(12) Maesod Clean Energy Co.,Ltd. is an associate company of Thailo Ethanol Co.,Ltd. (TET), in which TET holds 30% of shares.
(13) Ubon Bio Ethanol Co.,Ltd. is an associate company of Thailo Ethanol Co.,Ltd. (TET), in which TET holds 21.28% of shares.
(14) T.M. Ship Management Co.,Ltd. is an associate company of Thailo Marine Co.,Ltd. (TM), in which TM holds 33.3% of shares.

Management Team

As of December 31, 2016:

Name – Surname	Position
1. Mr. Atikom Terbsiri	Chief Executive Officer and President
2. Mr. Mitri Reodacha	Senior Executive Vice President – Refinery and Petrochemical
3. Mr. Kosol Pimthanothai	Executive Vice President – Organization Effectiveness
4. Mr. Somchai Wongwattanasan	Executive Vice President – Strategy
5. Mr. Chatapong Wungtanagorn	Executive Vice President – Corporate Commercial
	Senior Vice President – Commercial (Act.)
6. Ms. Pattaralada Sa-NGasang	Executive Vice President – Finance and Accounting
	Senior Vice President – Financial Planning (Act.)
7. Mr. Surachai Saengsamran	Executive Vice President – Operation Excellence
	Senior Vice President – Engineering (Act.)
8. Mr. Bandhit Thamprajamchit	Executive Vice President – Manufacturing
9. Mr. Viroj Meenaphant	Assistant Executive Vice President – Corporate Governance
10. Mr. Klahan Tochananvit	Vice President – Assignment as Organization Excellence, Global Power Synergy Plc.
11. Mr. Jeerawat Pattanasomsit	Vice President – Refinery
12. Mr. Charlee Balmongkol	Vice President – Assignment as Managing Director, Thaioil Power Co., Ltd. and TOP SPP Co., Ltd.
13. Ms. Duangporn Teerapabpaisit	Senior Vice President – Business Development
14. Ms. Torsang Chaipravat	Vice President – Strategic Planning
15. Mr. Teardchart Padungrat	Vice President – Corporate Affairs
16. Mr. Nikom Kongnok	Vice President – Accounting
17. Mr. Nitas Krongvanitchayakul	Senior Vice President – Assignment as Managing Director, Thaioil Marine Co., Ltd.
18. Ms. Prapin Thongnium	Vice President – Corporate Internal Systems Audit
19. Mr. Prasert Raemwanith	Vice President – Quality Management
20. Mr. Pongpun Amornvivat	Senior Vice President – Corporate Project Development
21. Ms. Panumas Chuchartchaikularn	Vice President – Corporate Compliance and Company Secretary
22. Mr. Phumchit Tatsanaprasert	Vice President – Movement Marine and Logistic
23. Mr. Mongkol Janchookiat	Vice President – Efficient Operations Support
24. Ms. Runghapa Janchookiat	Vice President – Technology
25. Mr. Viroj Wongsathirayakhun	Senior Vice President – Human Resources
	Senior Vice President – Assignment as Managing Director, Thaioil Energy Services Co., Ltd.

Name – Surname	Position
26. Mr. Saran Harinsuta	Manager – Assignment as Managing Director, Thailoil Ethanol Co., Ltd.
27. Mr. Sarunyu Limwongse	Vice President – Petrochemical and Lube Base (Act.) Vice President – Assignment as Managing Director, Thai Lube Base Plc. and Thai Paraxylene Co., Ltd.
28. Ms. Siriporn Mahajchariyawong	Vice President – Treasury
29. Mr. Somkiet Kajorpradapkul	Vice President – Asset Development
30. Ms. Somporn Bunluesriruang	Vice President – Supply Chain Optimization
31. Mr. Santi Wasanasiri	Vice President – Innovation and Sustainability
32. Ms. Suchada Deechaiya	Vice President – Organization Development
33. Mr. Suchart Monyanont	Senior Vice President – Assignment as Managing Director, Labix Co., Ltd.
34. Ms. Sudarat Orrattanasakul	Vice President – Commercial Planning
35. Ms. Acharee Tiyaabhorn	Vice President – Assignment as Managing Director, Thailoil Solvent Co., Ltd. and TOP Solvent Co., Ltd.
36. Mr. Ampon Signsakda	Vice President – Assignment as Managing Director, Sak Chaisidhi Co., Ltd.
37. Mr. Udom Wongsirinopphakhun	Vice President – Procurement and Contract (Act.)

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 Annual General Meeting of Shareholders. The Company Secretary must monitor and coordinate to ensure that the Board and shareholders' resolutions are fully complied. The Company Secretary is also assigned to keep the Company's important documents as required by the laws. In 2015, the Board of Directors meeting no. 4/2015 held on April 24, 2015 passed the resolution on appointing Ms. Panumas Chuchartchaikularn as the Company Secretary.

Brief Biography:

Name:	Ms. Panumas Chuchartchaikularn
Education:	>> Bachelor of Business (Banking and Finance), Ramkhamhaeng University >> Certificate of Business Administration, Chulalongkorn University
Experience:	
2011 - 2012	Assistant to Chief Executive Officer and Corporate Support Manager (Act.)
2013 - April 23, 2015	Vice President - Corporate Compliance and Corporate Support Manager (Act.)
April 24, 2015 - Present	Vice President - Corporate Compliance, Corporate Support Manager (Act.), and Company Secretary

Company Secretary Training:

Thai Institute of Directors (IOD)

- >> Company Secretary Program (CSP 36/2010)
- >> Company Reporting Program (CRP 49/2013)
- >> Board Reporting Program (BRP 10/2013)
- >> Effective Minute Taking (EMT 25/2013)
- >> Director Certification Program (DCP 216/2016)

King Prajadhipok's Institute

- >> Basic Concepts on Public Policy Management through Peaceful Means, Class 8
- >> Intermediate Certificate Course in Negotiation, Class 5

Thai Listed Companies Association (TLCA)

- >> Fundamental Practice for Corporate Secretary (FPCS), Class 30
- >> Fundamental Practice of Law for Corporate Secretaries, Class 12

Legal Guardian Co., Ltd.

- >> Seminar on Responsibilities of Corporate and State Enterprise Directors

Chief of the Internal Audit:

Vice President - Corporate Internal Systems Audit

In the Audit Committee Meeting No. 12/2014 on December 17, 2014, the Committee appointed Ms. Prapin Thongnium as the Chief of the Internal Audit Unit due to qualified competency, experience, and administration skill elaborated as followed:

Work experience: Ms. Thongnium has worked for the Company for more than 28 years, being appointed one of the executive team as Vice President - Accounting in 2006. She is competent in accounting and is able to oversee the audit work. She is also considered one of the key persons who increases value and reduces possible risks exposed to the Company, understands the nature

of the Company business, and is able to achieve the strategic target of the Company. All qualifications are beneficial and applicable to the internal audit.

Training record: In preparing and equipping herself for the audit work, Ms. Thongnium has joined many training courses both in-house and external from different institutes inclusive of strategic planning, finance and accounting, and leadership enhancement.

The appointment, removal, and replacement of the Chief of the Internal Audit 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 stated in the Audit Committee Charter.

Brief Biography:

Name: Ms. Prapin Thongnium
Education: >> Bachelor of Accounting, Thammasat University
 >> Master of Business Administration, Burapha University

Working Experience in the 5 Preceding Years:

2007 - 2014 Vice President - Accounting
 2015 - Present Vice President - Corporate Internal Systems Audit

Internal Audit Training:

- >> CIA Review Part 1
- >> Verifying The CAC Checklist; Experience sharing From Auditors
- >> Using COSO 2013 In Practice, IA Profession Practice, Risk-Based IA Plan, Proactive & Updated Techniques
- >> Internal Audit Methodology, Transforming IA And Challenges In Oil And Gas Industry And Experience Sharing In Best Practice

- >> Practical Fraud Prevention, Detection & Investigation Strategies
- >> TLCA Executive Development Program (EDP)
- >> Financial Executive Development Program (FINEX)
- >> Field trip to more experience on internal audit in the leading public companies
- >> Board Reporting Program (BRP 21/2016)
- >> IA DAY: The Power Of Professional Alliances
- >> THE IA INSIGHTS: The Professional Of Sustainable Development
- >> Cyber Defense Initiative Conference: CDIC 2016
- >> IT Risk and IT Governance
- >> Internal Audit's Challenge in Value Adding
- >> IA Clinic

Directors and Executives Remuneration

Director Remuneration

The Annual General Meeting of Shareholders (AGM) in 2016 set the monthly remuneration for the Company Directors and Board-Committees including meeting fee and a special bonus reflecting the Company performance as followed:

2016 Remuneration Structure

Retainer Fee	Baht per Month
Chairman of the Board ⁽¹⁾	75,000
Vice Chairman of the Board (If any) ⁽¹⁾	67,500
Member of the Board	60,000
Special Bonus for the Board of Directors ⁽²⁾	36.5 Million Baht/Year

Board-Committees' Remuneration

(Comprised of the Audit Committee, the Nomination and Remuneration Committee, the Corporate Governance Committee, and the Risk Management Committee)

Retainer Fee

Chairman of the Board ⁽¹⁾	31,250
Member of the Board	25,000

Meeting Fee for Directors who attend the Meeting

Chairman of the Board ⁽¹⁾	18,750 Baht/meeting
Vice Chairman of the Board (If any) ⁽¹⁾	16,875 Baht/meeting
Member of the Board	15,000 Baht/meeting

Remark:

⁽¹⁾ Chairman of the Board and Chairman of the Board-Committees shall receive monthly remuneration of 25% higher than the Directors. Vice Chairman of the Board (if any) shall receive monthly remuneration of 12.5% higher than the Directors.

⁽²⁾ The special bonus is for the Board of Directors in office in the year 2015 including those Directors who resigned or whose term completed during 2015. The bonus is allocated due to each Directors' office period. The Chairman of the Board shall receive the bonus of 25% higher than the Directors.

In summary, the remuneration of 27 Directors, which includes Directors in office during 2016 for a period of 12 months ending as of December 31, 2016, and Directors who completed their terms or resigned during 2016, totals Baht 17.94 million. This comprises monthly remuneration for the Company Directors of Baht 10.67 million, monthly remuneration for Board-Committees of Baht 4.61 million, and meeting fee of Baht 2.66 million. Directors' remuneration in the form of the special bonus for 2015 performance of 36.5 million Baht, the resolution of which was passed by the 2016 AGM on April 7. The remuneration is considered through the comparison with organizations with the equal size in the same industry, as well as the Company performance, achievement, responsibilities of the Board of Directors, and overall business circumstances. In addition, the Company provides vehicles for Chairman of the Board of Directors to facilitate during the Chairman on duty in office.

2016 Directors Remuneration

No.	Name - Surname	Position	Meeting Fee	Board of Directors	Board-Committees				(Bant)
					Audit Committee	Nomination and Remuneration Committee	Corporate Governance Committee	Risk Management Committee	
1	Mr. Kurujit Nakomthap	Director / Chairman of the Board	243,750.00	900,000.00	-	-	-	-	1,143,750.00
2	Ms. Chularat Suteethorn ⁽²⁾	Member of the Nomination and Remuneration Committee	180,000.00	720,000.00	366,379.31	203,333.33	-	-	1,469,712.64
3	Mrs. Suwimol Chitryakietme ⁽³⁾	Independent Director / Member of the Audit Committee	180,000.00	660,000.00	275,000.00	-	-	-	1,115,000.00
4	Mr. Sri Jirapongphan ⁽⁴⁾	Independent Director / Member of the Audit Committee	180,000.00	720,000.00	278,333.33	-	-	-	1,178,333.33
5	Gen. Thanakorn Kerdhaimongkol ⁽⁵⁾	Independent Director / Member of the Audit Committee	150,000.00	526,000.00	203,333.33	-	-	-	879,333.33
6	ACM Sutitpong Inseeyong ⁽⁶⁾	Independent Director /	150,000.00	660,000.00	-	-	211,666.67	-	1,021,666.67
7	Mr. Yoryut Jantararat	Chairman of the Corporate Governance Committee	180,000.00	720,000.00	-	-	300,000.00	-	1,200,000.00
8	Adjunct Professor Dr. Thosapon Sirsumphand ⁽⁷⁾	Director/Member of the Corporate Governance Committee and Remuneration Committee / Member of the Corporate Governance Committee	180,000.00	720,000.00	-	352,500.00	347,580.65	-	1,600,080.65
9	Mr. Sarun Rungkasiri ⁽⁸⁾	Director / Chairman of the Risk Management Committee / Member of the Nomination and Remuneration Committee	150,000.00	526,000.00	-	219,166.67	-	251,317.20	1,146,483.87
10	Mr. Nopadol Pinsupa ⁽⁹⁾	Director / Chairman of the Risk Management Committee / Member of the Nomination and Remuneration Committee	150,000.00	720,000.00	-	-	-	278,333.33	1,148,333.33
11	Mrs. Sriwan Eamrungsri ⁽¹⁰⁾	Director	135,000.00	720,000.00	-	-	-	-	855,000.00
12	Mrs. Nitima Thapvanangkul ⁽¹¹⁾	Director	30,000.00	127,741.94	-	-	-	-	157,741.94
13	Ms. Nantika Thangsuphanich ⁽¹²⁾	Director	15,000.00	72,000.00	-	-	-	-	87,000.00
14	Mr. Atikom Terbsiri	Director / Member of the Risk Management Committee / Chief Executive Officer and President / Secretary to the Board	195,000.00	720,000.00	-	-	-	300,000.00	1,215,000.00
Directors who Resigned and Completed the Term in the Year 2016									
1	Mr. Tanasak Wahawisan	Independent Director (Resigned on January 11, 2016)	-	19,354.84	-	-	-	-	19,354.84
2	Mr. Chulasingh Vasanasingsh	Independent Director / Chairman of the Audit Committee (Resigned on January 31, 2016)	-	58,064.52	30,241.94	-	-	-	88,306.46
3	Gen. Jiradej Molkhasmit	Independent Director / Chairman of the Nomination and Remuneration Committee (Term completed on April 7, 2016)	45,000.00	194,000.00	-	101,041.67	-	-	340,041.67
4	Mr. Nittachai Charuchinda	Director / Chairman of the Risk Management Committee / Member of the Nomination and Remuneration Committee (Term completed on April 7, 2016)	45,000.00	194,000.00	-	80,833.33	-	101,041.67	420,875.00
5	Mr. Thaworn Phanichaphan ⁽¹³⁾	Independent Director / Chairman of the Corporate Governance Committee / Member of the Nomination and Remuneration Committee (Resigned on October 1, 2016)	135,000.00	540,000.00	-	225,000.00	233,669.35	-	1,133,669.35
6	Mr. Wirat Unarumit	Director (Resigned on October 1, 2016)	150,000.00	540,000.00	-	-	-	-	690,000.00
7	Mr. Thammayot Sirchui	Director / Member of the Risk Management Committee (Resigned on November 8, 2016)	165,000.00	614,000.00	-	-	-	255,833.33	1,034,833.33
Directors who Resigned during the Year 2015 (Received Annual Bonus for 2015 Performance)									
1	Mr. Twarah Sutabutr	Director / Member of the Risk Management Committee	-	-	-	-	-	-	220,468.61
2	Mr. Praipol Koomsup	Independent Director /	-	-	-	-	-	-	689,853.38
3	Mr. Bowon Vongsnuodom	Member of the Corporate Governance Committee	-	-	-	-	-	-	-
4	Mr. Swit Maesincee	Director / Member of the Risk Management Committee	-	-	-	-	-	-	1,173,461.93
5	Mr. Apsak Tantivorawong	Independent Director /	-	-	-	-	-	-	1,621,511.03
6	Mr. Chansin Treenuchagron	Chairman of the Risk Management Committee	-	-	-	-	-	-	1,621,511.03
Total			2,658,750.00	10,671,161.30	1,153,287.91	1,181,875.00	1,092,916.67	1,186,525.53	17,944,516.41
Annual Bonus for 2015 Performance⁽¹⁾									
Total									36,500,000.00

Remark:

- ⁽¹⁾ Special Bonus for 2015 Company Performance as resolved by the 2016 Annual General Meeting of Shareholders on April 7, 2016 paid to the Directors on April 28, 2016.
- ⁽²⁾ Elected as Chairman of the Audit Committee in the Audit Committee Meeting No. 3/2016 on February 12, 2016, and appointed as Member of the Nomination and Remuneration Committee in the Board of Directors Meeting no. 4/2016 on April 27, 2016
- ⁽³⁾ Appointed as Independent Director and Member of the Audit Committee in the Board of Directors Meeting no. 1/2016 on January 22, 2016, effective on February 1, 2016
- ⁽⁴⁾ Term completed and re-elected as Independent Director in the 2016 Annual General Meeting of Shareholders on April 7, 2016, and appointed as Member of the Audit Committee in the Board of Directors Meeting no. 4/2016 on April 27, 2016
- ⁽⁵⁾ Appointed as Independent Director in the 2016 Annual General Meeting of Shareholders on April 7, 2016, and appointed as Member of the Audit Committee in the Board of Directors Meeting no. 4/2016 on April 27, 2016
- ⁽⁶⁾ Appointed as Independent Director in the Board of Directors Meeting no. 1/2016 on January 22, 2016, effective on February 1, 2016; appointed as Member of the Corporate Governance Committee in the Board of Directors Meeting no. 4/2016 on April 27, 2016; and elected as Chairman of the Corporate Governance Committee in the Corporate Governance Committee Meeting no. 4/2016 on November 21, 2016
- ⁽⁷⁾ Elected as Chairman of the Nomination and Remuneration Committee in the Nomination and Remuneration Committee Meeting no. 4/2016 on April 19, 2016 and resigned from Chairman of the Corporate Governance Committee on August 19, 2016
- ⁽⁸⁾ Appointed as Director in the 2016 Annual General Meeting of Shareholders on April 7, 2016; appointed as Member of the Nomination and Remuneration Committee in the extraordinary BOD Meeting no. 1/2016 on April 8, 2016; appointed as Member of the Risk Management Committee in the Board of Directors Meeting no. 4/2016 on April 27, 2016; and elected as Chairman of the Risk Management Committee in the Risk Management Committee Meeting no. 3/2016 on May 11, 2016
- ⁽⁹⁾ Term completed and re-elected as Director in the 2016 Annual General Meeting of Shareholders on April 7, 2016, and appointed as Member of the Risk Management Committee in the Board of Directors Meeting no. 4/2016 on April 27, 2016
- ⁽¹⁰⁾ Term completed and re-elected as Director in the 2016 Annual General Meeting of Shareholders on April 7, 2016
- ⁽¹¹⁾ Appointed as Director in the Board of Directors Meeting no. 10/2016 on October 28, 2016
- ⁽¹²⁾ Appointed as Director in the Board of Directors Meeting no. 11/2016 on November 25, 2016
- ⁽¹³⁾ Elected as Chairman of the Corporate Governance Committee in the Corporate Governance Committee Meeting no. 2/2016 on August 19, 2016, effective on August 20, 2016

Executives Remuneration

As of the fiscal year ended on December 31, 2016, the remuneration of 31 executives totaled to Baht 243.64 million. This comprises remuneration in the forms of monthly salaries and allowances of Baht 159.58 million, special bonus of Baht 46.93 million, provident fund contributions of Baht 16.72 million, retirement gratuity fund payments of Baht 12.68 million, and other payments of Baht 7.73 million.

Remark:

>> The Remuneration for 31 executives as of December 31, 2016 Excludes the following executives who work in the subsidiary companies :

Mr. Klahan Tochananvit

Mr. Nitas Krongvanitchayakul

Ms. Acharee Tiyaabhorn

Mr. Suchart Monyanont

Mr. Charlee Balmongkol (divided by the proportion of the managing position of companies within Thairoil and Subsidiaries)

Mr. Viroj Wongsathirayakhun (divided by the proportion of the managing position of companies within Thairoil and Subsidiaries)

Mr. Ampon Signsakda (from August 2016 onwards)

Mr. Saruny Limwongse (from August 2016 onwards)

RISK FACTORS AND CORPORATE RISK MANAGEMENT

Background

Thaioil is determined to constantly develop the Enterprise Risk Management (ERM) in order to ensure the compliance with best practices and international standards including Committee of Sponsoring Organizations of the Treadway Commission (COSO ERM), AS/NZS 4360:2004, and ISO 31000:2009 (Risk Management Principles and Guidelines), etc. Thaioil focuses on the integrated management, embracing Thaioil and Subsidiaries' risk management under the five "Risk Appetites", namely Performance and Investment, Compliance, Safety Occupational Health & Environment, Reputation, and Fraud & Corruption. Thaioil then links Risk Appetites to the formulation process of strategy, investment, and business planning to align with short-term, medium-term, and long-term corporate objectives and goals, identifying internal and external key risk factors, laying out measures to tackle those risk factors, defining Key Risks, and utilizing early-warning Key Risk Indicators (KRIs) to closely monitor key risks and risk management outcomes. Key risk management outcomes are summarized and reported to the Risk Management Steering Committee (RMSC), the Risk Management Committee (RMC), and the Board of Directors (the Board) to ensure efficient corporate risk management and eventually the corporate culture in long term.

To cope with different forms of catastrophe that might happen and cause the Company's business to stop, Thaioil has put in place the Business Continuity Management Plan (BCP) for all key processes, with an appointment

of the Business Continuity Management Task Force to support the pursuit of BCP efficiency in line with international standards. Various simulated disasters were defined for BCP drills in conjunction with the refinery's regular, continual emergency drills. Thaioil also promotes sound knowledge and attitude among employees to improve their caliber for risk management and BCP for readiness to deal with risk factors. Annually, Thaioil organizes employees' knowledge and attitude assessment that is thorough and on par with international standards and in line with good Corporate Governance.

Corporate Risks and Risk Management Plans or Measures

Thaioil promotes systematic monitoring and revision of its risk and effectiveness of risk management measures. The 2016 set of risks, risk management measures, and risk management findings based on KRIs were presented for the RMC's endorsement and later to the Board. Thaioil classifies risks into five major areas and seven distinct risks, and develops measures or plans to prevent or mitigate their impacts to achieve the corporate goals.

Strategic Risks

1. Loss of Competitiveness

Presently, due to more advanced refining technology, the refining business has become more competitive in term of production cost. In order for Thaioil to stand and compete with the leading refineries in the region, the

Company needs to improve the production capability. The Transcendence Project is designed to further optimize the supply chains, thoroughly reviewing and improving the crude acquisition, the production, the selling, and the distribution to its best efficiency. At the same time, Thailoil has come up with the Cost Management Master Plan to efficiently operating expenses and ensure that it still commands competitive advantages compared to regional refinery industry leaders.

2. Sustainable Business Growth Risk

For overall growth and sustainability, Thailoil has defined its investment strategy for expanding its business and pursuing current and future business opportunities through various strategic projects. This year, it scored a major success in having the Linear Alkyl Benzene (LAB) project started production in February. LAB is a intermediate in the production of surfactants under Labix Co., Ltd. with the production capacity of 120,000 tons per year. Other successes were the Commercial Operation Dates of small power plants (first project: 124 MW, second project: 115 MW) in April and June respectively, to produce electricity and steam for Thailoil and Subsidiaries in support of their security and sustainability. The income from power distribution provides sustainable commercial revenue. Inaugurated power distribution to Electricity Generating Authority of Thailand is amounted to 180 MW.

Commercial Risks

3. Market/Commercial Risk

Crude oil prices and spreads of petroleum products, which represent key indices of Thailoil's profitability, were still highly volatile, causing the forecast increasingly

difficult. Thailoil, therefore, deployed more proactive Price Risk Management which included Margin Hedging and Inventory Hedging. The Hedging Steering Committee was appointed and in charge of screening and considering the corporate strategic plans and targets on Price Risk Management transaction under the framework agreed by the RMC before presenting for the Board's approval. This helped minimize the impact from such risks, enhance the monitoring and analyzing market information, study and seek for new crude resources, as well as expand the capacity of oil reserve to meet the demand for Thailoil and Subsidiaries' feedstock.

In addition, Thailoil has constantly developed and improved its approach for crude oil supply, processes, and delivery to customers. This led to the Transcendence Project, which optimizes the supply chains, thoroughly reviews and improves the crude acquisition, the production, the selling, and the distribution to its best efficiency.

Financial Risks

4. Financial Risk

Fluctuation of currency exchange rates, interest rates, and funding management for large projects do affect Thailoil's performance, since the major production cost of Thailoil is the crude oil or other feedstock, which is in US Dollars. Thailoil and Subsidiaries' debt structure is, therefore, structured through Natural Hedge to ensure the proper ratio between US Dollar currency and the revenue structure. Other measures implemented in previous years are Forward Contracts for transactions in foreign currencies for loan withdrawals and loan repayment.

Continuing to value cost management, Thailoil launched the Orchestra Project to brainstorm and closely review all sectors' operating costs with a focus on system integration, which has lowered costs by about 10%.

Operation Risks

5. Business Disruption Risk

The risks of severe incidents affecting business operation or causing business disruption could result from equipment failure or abnormal conditions of key process machinery; water shortage that necessitates capacity reduction or process suspension; and community complaint or events extensively affecting the surroundings, communities, and society such as oil leaks and major mishaps. All these key risks affect Thailoil's business operation, properties, and reputation, leading to the preparedness and consistency for the Business Continuity Management (BCM) with the Business Continuity Management Plan (BCP) for all processes laid out and practiced. This year, the BCP drill followed the emergency drill at the refinery as part of the Integrated Exercise: a simulated severe incident at the crude distillation unit of the refinery, in line with ISO 22301. Based on the water shortage forecast in 2016, likely to affect the Company's operation, Thailoil prepared for such water shortage according to BCP implementing the Principle of Tripartite 3Rs (Reduce, Reuse, and Recycle), starting Desalination Unit, and water stockpiling on the compound of the refinery, as well as bringing raw water from other sources. BCP updates were constantly reported to the executive every week. In addition to the refinery's preventive measures, Corporate Social Responsibility (CSR) programs and community relations network building

proceeded steadily. The meetings among three parties (Tripartite) namely community leaders, government agencies, and Thailoil regularly took place. All CSR activities are governed by the "5-Together" principles: Thinking Together, Doing Together, Fixing Together, Facing Consequences Together, and Developing Together. This assures that Thailoil has fully communicated with stakeholders, as well as taken care of community hygiene, supported youth education, and educated communities.

As for news intelligence monitoring security threats, Thailoil extends cooperation with government agencies, military and police units, and provincial authorities on tracking security situations inside and outside its areas. Thailoil incorporates meetings to map out joint preventive operations with PTT Group and coordinates Thailoil and Subsidiaries' emergency response plans with those of provincial authorities. All these activities and plans support risk management plans to make possible zero business disruption, including delivery of products to customers as planned, and prevent losses of lives and properties of communities and the environment.

6. Regulation/Legislative Change and Compliance Risk

Due to changes in government policies with a focus on economic development aligning with the development of society, communities, and the environment, which affect current businesses and investment expansion in new projects under Thailoil and Subsidiaries' strategic plans, Thailoil therefore requires timely tracking of such changes. For example, the change in legal reserve amount was presented in the RMC and the Board meetings, resulting in the approval of the construction

of new crude tanks for storing legal reserve. Also, the Transfer Pricing Working Team was set up to monitor and ensure Thailoil and Subsidiaries' compliance with accounting standards and new tax laws. The TOP Group Compliance Committee was, as well, established to monitor and ensure compliance with current laws. This monitoring enabled Thailoil to completely pass third-party compliance audits by the Management System Certification Institute (Thailand) (MASCI) in October. The Company also planned monitoring of new legislation, including laws concerning Thailand's greenhouse gas reduction as a result of its compliance with the COP 21 meeting in Paris, France. Thailoil also requires awareness of the significance of compliance among all employees and self-assessment designed to verify the efficiency and effectiveness of the compatibility between Thailoil's business and relevant public policies, rules, and legislation.

Corporate Risks

7. Failure to Attain and Retain Human Capital

Current business operation and future business expansions call for adequate human resources that are competent to drive and support the fulfillment of short-term and long-term strategies. Thailoil thus needs to both retain its employees and recruit new ones in time for its various strategic plans. Those include policy revision on compensation to suit the market, recruitment marketing and HR branding, the launch of Thailoil Academy for positions difficult to recruit. Moreover, there are strategies for future development of the quantity and quality of leaders, namely the Future Leader Readiness Project and the Talent Retention Program to accelerate personnel development to suit strategic plans so that their job performance could keep pace with corporate growth while enabling Thailoil to handle more diverse businesses.

INTERNAL CONTROLS

Thaioil constantly values internal control by following the scope of The Committee of Sponsoring Organizations of Treadway Commission (COSO 2013), and applying the “Three Lines of Defense”, where the “1st Line” means a given unit’s internal control; the “2nd Line”, risk management practices and performance monitoring; and the “3rd Line”, overall performance review. Ultimately, operators are expected to realize the value of internal control and its requirement in their working unit. In addition, Thaioil can ensure stakeholders that it commands an internal control system that adequately and suitably embraces all activities and efficiently enhances business operation.

Each year the Board of Directors (the Board) assigns the Audit Committee to review the sufficiency assessment of the internal control system; which, this year, was monitored and revised by the Strategic Risk and New Investment Risk unit. The Board and the Audit Committee agreed that Thaioil’s internal control system is sufficient and suitable for its businesses, supporting Thaioil to accomplishing its objectives. The five components of internal control system are as followed:

1. Control Environment

Thaioil commands a sound appropriate and sufficient internal control environment, operating business under the principles of good Corporate Governance and the Code of Conduct, which aligns the written Corporate Governance Policy and the Code of Conduct. This defines roles and responsibilities as well as the codes for the

Board, the executive and employees conduct, the code for conflicts of interest, written whistle-blowing measures, and the guidelines for practice with business partners. In light of reporting the conflict of interest, each year the executive and employees are to report via the Conflict of Interest Disclosure Electronic System. Thaioil also defines monitoring and compliance assessment processes in accordance with the Corporate Governance and Code of Conduct Manual. In 2016, Thaioil took parts in the corporate governance assessment with criteria internationally recognized; for instance, the assessment by the Thai Listed Companies Association, the Securities and Exchange Commission, and Thaipat Institute. Thaioil also earned an “Excellence” award for its sustainability report, regarded as the top acclaim, to constantly develop, support, and promote business operation under the principles of good Corporate Governance.

Well aware of corruption problems, which pose hindrances to fair straightforward and transparent business conduct, Thaioil announced and enforced its Anti-corruption Policy. The roles, responsibilities, guidelines and measures for Directors, the executive and employees are defined in the Corporate Governance and Code of Conduct Manual. The Audit Committee is to review the suitability of operation, for which the executive has conducted self-assessment on anti-corruption measures.

Independent from the executive, the Board steers and develops internal controls, ensures definition of clear and measurable business goals, develops timely

strategic planning processes in line with dynamic business circumstances, together with regularly and constantly monitor the internal control operation.

Thaioil structures itself by line of command, with defined authorization and written policies and procedures, and files them in the TOP Group Document System in support of efficient performance with proper checks and balances under the Board's supervision.

Thaioil defines human resource policies and guidelines by systematically connecting them to the corporate policies and strategies in order to assure that its business requisitions can be fulfilled with the recruitment process, development and career growth management, retention of knowledgeable personnel, compensation management, including readiness assessment and yearly succession plan review.

Thaioil has also declared the HR Policy of Thaioil and Subsidiaries, aiming for systematic and sustainable HR management to ensure its employees' capability. The policy embraces the aspects of "Attracting", "Developing", and "Retaining & Engaging" of people. Moreover, the policy aims for diversified recruitment strategies which are suitable for business environment, accommodate future business expansion plans and the challenges from external labor markets.

2. Risk Assessment

Thaioil values and establishes corporate risk management. The Board assigned the Risk Management Committee to devise policies and institute risk management protocols and processes that efficiently and comprehensively

covers the entire corporation so as to ease impacts on business and ensure corporate goal achievement.

Thaioil's plans focus on integrated risk management, monitoring uncertainty derived from external and internal risk factors that could affect business and investment, both short-term and long-term. To lower the risks to business, various risks are reviewed: strategic, marketing, financial, operation, and corporate administration; and the risk management measures are monitored. To this end, Thaioil establishes the Risk Appetites, Key Risk Indicators (KRIs), as well as Business Continuity Management. The key risks and the management measures are tabled for Thaioil and Subsidiaries' Risk Management Steering Committee, Risk Management Committee, and the Board respectively.

Furthermore, Thaioil has reviewed and included risk management measures on Margin Hedging, Inventory Hedging, and Currency Exchange Risks. At the same time, the internal control measures are to be revised in line with such added measures.

The Board assigns the Audit Committee to review financial reports, devise rules, and review the adoption of accounting policies under generally accepted accounting principles and those compatible with Thaioil's businesses. To this end, requirements are made for systematic reporting, approval for adoption, and change in accounting policies. The Audit Committee regularly consults the executive, internal auditor, and external auditor. Also, in absence of the executive, the meeting between the Audit Committee, the external auditor, and the related parties are held as deemed necessary.

3. Control Activities

Thaioil commands rules, policies, protocols, and internal control measures which consist of Corporate Authorization Procedures. The measures clearly define in writing the scopes and approval authorities of the executive and employees by approval level. The distinction of responsibilities enable mutual checks and balances and flexibility for business agility as well as suitable internal controls. This year, Thaioil further developed its internal control and audit using Governance, Risk Management, and Compliance (GRC) system to prevent and monitor automated control under the SAP system. It also developed Control Self Assessment (CSA) forms for the Order-to-Cash process to improve internal control. The Cyber Emergency Response Team (CERT) was also set up to tackle the cyber-threats to Thaioil's technological systems.

In addition, Thaioil clearly defines the process on approving the connected transactions which must be endorsed by the Assistant Managing Director Meeting and the Audit Committee before tabled to the Board for approval.

Concerning the administration of Thaioil and Subsidiaries, Thaioil administers "TOP Group Affiliated Management (TAM)" and "TOP Way of Conduct" for the uniformity of all affiliates through joint deliberation and decision-making on key matters, and regularly monitoring of subsidiaries' or associates' business execution. To this end, Thaioil has appointed the executive to serve as Managing Director and member of the board in the subsidiaries, and so enables Thaioil to take part in policy-making, periodical information sharing, and monitoring performance against KPIs.

4. Information & Communication

Thaioil values information and communication systems that systematically support business operation, execution, management, and financial reports. These systems facilitate the decision making of the Board and Thaioil's executive, and enhance the effective internal control execution. With this regard, Thaioil has suitably defined the information and communication technology (ICT) policy together with ICT security protocols, resulting in achieving the ISO/IEC 27001: Information Security Management System certification for seven consecutive years.

By sending out documents to Directors prior to the Board meeting, Thaioil assures that the Directors properly receive all essential information for their deliberation.

Thaioil has establishes internal communication channels, under which its personnel receive the information through the intranet, e-mail, and the Akanee (internal publication). Thaioil also promotes the communication between the executive and staff under the working line to ensure the goal achievement. As for external communication, Thaioil discloses information to stakeholders through various channels including Thaioil's website. The units, responsible for communicating Thaioil's information, are Investor Relations, Corporate Affairs Public Relations and Branding, and Corporate Governance Sections.

In addition, Thaioil has established complaints and whistle-blowing channels so that employees and external parties may report or provide information related to law

breaches, regulation violations, frauds, or other acts for undue or unlawful gains.

5. Monitoring Activities

Thaioil deems it vital for all executives to steer, govern, and audit the work systems within their units to ensure the efficiency and compliance to policies, regulations, requirements and practices under a strict internal control system.

To this end, Strategic Risk and New Investment Risk Unit is tasked with the monitoring and reviewing of the internal control system through CSA on yearly basis. At the same time, Corporate Internal Systems Audit provides reviews on corporate internal control systems, and independently and straightforwardly reports audit findings to the Audit Committee. The Corporate Internal Systems Audit also informs suggestions on the audit findings to the executive, provides recommendations for proper corrective actions, and monitors the progress of such corrective actions till their completion.

CORPORATE GOVERNANCE REPORT

Thaioil is strongly committed to conducting business with fairness, integrity, and transparency by adhering to Good Corporate Governance and its Code of Conduct. This helps Thaioil achieve one of its missions, **“to emphasize good Corporate Governance and commit to Corporate Social Responsibility.”** It also lays the foundation to forge confidence among investors and all stakeholders, enhance competitiveness, and promote Thaioil’s sustainable growth.

The Board of Directors (The Board) and executives always focus on compliance with policies, Good Corporate Governance, and rules of the regulators, both the Securities and Exchange Commission (SEC) and Stock Exchange of Thailand (SET). Thaioil’s Board established the “Corporate Governance Committee” to supervise, monitor, and promote its conduct to ensure compliance with policies and guidelines on corporate governance and the Code of Conduct. This helps Thaioil maintain its standard in complying with the regulations and domestic and international assessment criteria. As a result, this year Thaioil gained recognitions for its corporate governance practices, both national and international levels. Details are shown under “Corporate Governance Committee Report” on page 21.

1. Corporate Governance Policy

The Board formulated the Corporate Governance Policy in written form in 2001, and the most updated version was issued in 2013. All Directors, executives and employees are responsible for acknowledging and abiding by this policy.

Thaioil regularly reviews the policy, principles and guidelines related to corporate governance. In 2016, it studied SEC and SET rules, notices and guidelines on good corporate governance together with improved assessment principles and criteria of other institutions. This includes Thaioil’s business strategies and direction. Without any significant change, the policy and principles of corporate governance remain relevant and consistent. However, the following conduct was reviewed:

- >> Whistle-blowing measures and process to effectively and comprehensively receive the complaints.
- >> Criteria for proposing meeting agendas and nominating qualified persons for director candidates in line with Section 89/28 of the Securities and Exchange Act, with clearer implementation.

Thaioil disseminated this policy, principles and guidelines via Thaioil’s website at www.thaioilgroup.com, which allows the interested public to study and download the information.

1.1 Corporate Governance Principles

Thaioil has defined its Corporate Governance principles (REACT+E) to make it easier to communicate to the Board, executives, and employees to comply with the principles and business Code of Conduct. Thaioil has established the principles as followed:

1. Responsibility for performing duties with due competence and adequate efficiency
2. Equitable treatment of all stakeholders

3. Accountability for one's own decision-making and acts, as well as those of others under one auspices
4. Creation of long-term value
5. Transparency in conducting business, openness to scrutiny, and transparent disclosure of corporate information to related parties
6. Ethically under taking business operation and conformance to the Code of Conduct.

2. Corporate Governance and Code of Conduct

2.1 Code of Conduct

Thaioil establishes the business Code of Conduct which focuses on the key essences of Corporate Governance principles under equitable treatment, fairness, and transparency with utmost respect for all stakeholders' rights. The Code of Conduct is used as guidelines for business conduct for the Board, executives, and employees to comply with. Thaioil always values the development of its employee ethics as well as cultivating perseverance, patience, and responsibilities on the basis of human dignity. The Board and executives are required to be the ethical leaders and the role models in performing their duties with integrity, honesty, fairness, and transparency in accordance with Thaioil's Corporate Governance and the Code of Conduct, which consist of the following areas:

1. Code of Conduct for the Board, Executives, and Employees
 - 1) Behavior
 - 2) Treatment of Colleagues
 - 3) Treatment of Company
2. Code of Conduct
 - 1) Stakeholders
 - 2) Purchasing

- 3) Respect for Principles of Universal Human Rights
- 4) Compliance with Laws and Regulations and the Respect for Cultures and Customs
- 5) Political Neutrality
- 6) Charitable Contribution and Sponsorship
- 7) Giving or Acceptance of Presents, Assets, or Other Benefits
- 8) Conflicts of Interest
- 9) Connected Transactions
- 10) Maintaining Confidential Information and Use of Inside Information
- 11) Marketing Communications
- 12) Intellectual Properties
- 13) Application of Information and Communication Technology

2.2 Communication and Promotion of Corporate Governance

In 2016, Thaioil communicated and encouraged all Thaioil and Subsidiaries' employees as well as stakeholders to acquire knowledge and understanding on the importance of Corporate Governance Policy and the Code of Conduct; thus promoted the policy and practices into concrete actions as follows:

Corporate Governance and Code of Conduct Manual

Thaioil issued the **Corporate Governance and Code of Conduct Manual** since 2004 and distributed to all Directors, executives, and employees of Thaioil and Subsidiaries. Upon receiving, they are required to study the contents, sign the acknowledgment form, and return the form to the Corporate Compliance Department for record-keeping. In 2014, Thaioil launched an amendment of the manual to cope with international standards covering corporate governance, business ethics, and anti-corruption principles and practices.

The current version of this manual is the fourth revision. With approval from the Board, Thailoil distributed the manual to all employees in March 2015. In order to create awareness of the importance of this manual, Thailoil has distributed the manual to the Board in a Board Meeting, to the executives in a Corporate Management Meeting, and a roadshow campaign for employees of various sections. In addition, Thailoil has sent a notification to inform Thailoil's business partners and customers of the amendment of the manual and whistle-blowing process for their acknowledgment.

Moreover, the manual has been published on Thailoil's website, so that the stakeholders and the public can easily access such information.

New Employee Orientation, Training, Activities and Communication

Thailoil and Subsidiaries communicate the Corporate Governance Policy, the Code of Conduct, and the Anti-Corruption Policy to all new employees to foster the conscience on the first day they become Thailoil and Subsidiaries' members. To continuously create awareness, Thailoil hosted several activities to promote corporate governance, the Code of Conduct, and anti-corruption practices throughout 2016. For example, **CG Forum** under the topic of "Business Ethics – Integration Into Daily Practice" invited Mr. Danai Chanchaochai as a special speaker. He is a thinker, author, and marketing management expert who popularized the White Ocean Strategy. The forum gave the employees a chance to share knowledge, ideas, and experiences in corporate governance, Code of Conduct, and relevant practices. Thailoil also continued **promoting CG e-learning** to encourage employees to learn more about corporate

governance, the Code of Conduct, and anti-corruption practices anywhere and anytime. Moreover, Thailoil together with affiliates under PTT Group hosted **PTT Group CG Day 2016** under the theme of "See through the Future" to campaign for and put a stress on PTT Group as a transparent organization that pays close attention to anti-corruption practices. Each company invited their business partners to join this activity. Additionally, Thailoil **communicated its "No-Gift Policy"**, whereby all employees are not allowed to receive any gifts or tokens, via different communication channels, such as e-news, Thailoil's website, and signage at different locations in Bangkok and Sriracha offices.

Moreover, Thailoil regularly communicates corporate governance and the code of conduct principles to all employees in Akaanee Journal (for internal communication) and corporate e-newspaper throughout the year.

CG e-learning

Thailoil established CG e-learning in 2007 so that the employees at all levels can learn the principle of corporate governance and the Code of Conduct. In 2016, CG e-learning was re-introduced, with edited content. In addition to corporate governance and the Code of Conduct, it covers anti-corruption and safety practices. Such learning provided edutainment, which educated the employees by using fun and interactive games.

Communication of the Policy and Compliance with Corporate Governance to Stakeholders

In addition to the publication of the Corporate Governance and Anti-Corruption Policies and the Code of Conduct practices on Thailoil's website, Thailoil also publishes these policies and practices together with whistle-blowing channels through various events, for instance, Thailoil's

Analyst Meeting and Supplier Conference. Thailoil also publishes corporate governance articles in the IR e-newsletter, distributes a conforming letter to customers, business partners, financial institutions and business associates for their cooperation to refrain from offering gifts to Thailoil and Subsidiaries' employees during the New Year festival, etc. Furthermore, Thailoil allows external agencies to visit Thailoil to share knowledge, thoughts, and experience on corporate governance and anti-corruption practices.

Corporate Governance and the Code of Conduct Employee Survey

Thailoil has incorporated the corporate governance survey in the Employee Engagement Survey every other year to obtain feedback to enable Thailoil to further develop its corporate governance, the Code of Conduct, and whistle-blowing system.

2.3 Enforcement and Guidelines

Thailoil has defined the duties and responsibilities for Directors, the executives, and all employees to acknowledge and comply with the policies and terms of the Corporate Governance and Code of Conduct Manual. Furthermore, the Board and executives are required to be ethical leaders and roles models in performing their duties with integrity, honesty, fairness, and transparency. They are also to supervise and promote their subordinates to take responsibility, understand, and strictly comply with this manual. If Directors, executives, and employees violate these principles, 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 be handed to public officials for prosecution.

If employees find it difficult to decide on any given matter or deal with any portion of the Code of Conduct not explicitly stated in Thailoil's Code of Conduct, they should ask themselves the following questions:

1. Is this action against the law?
2. Is this action against Thailoil's policy, its Code of Conduct, or its image?
3. Is this action going to severely affect Thailoil and Subsidiaries' stakeholders?
4. Is this action socially acceptable and disclosable?

If employees detect violation of the law or the corporate governance principles, or both, they are to inform the channels under the whistle-blowing measures, Thailoil will begin its probe, while protecting whistle-blowers.

Compliance with the Law, Rules, and Regulations

To ensure compliance with the law, rules, and regulations in Thailoil's operations, Thailoil has regularly audited and monitored the performance of each unit against the law, rules, and regulations. In addition, Thailoil set up the "TOP Group Compliance Committee" to enhance its governance systems and processes to be effective, maintain its standard for employees to follow and concretely comply with its best practices, as well as prevent risks on non-compliance with relevant law, rules and regulations.

2.4 Whistle-Blowing Measures and Whistle-Blower Protection Mechanism

Thailoil has put in place whistle-blowing channels covering the scope of complaint and whistle-blowing, complainants details, complaint-making and whistle-blowing process, false reporting process, and protection of complainants, whistle-blowers, and related parties to monitor the

performance of Directors, executives, and employees of Thailoil and Subsidiaries, in accordance to the law, rules and regulations, the Corporate Governance Policy, Thailoil's Code of Conduct, and unlawful acts implying corrupt practices. Such details have been clearly stated in Thailoil's Corporate Governance and Code of Conduct Manual as well as on Thailoil's website.

Scope of Complaint and Whistle-Blowing

Thailoil encourages stakeholders, employees, related officers, or external parties that come across or are aware of clues, as well as those affected by Thailoil and Subsidiaries' business or by the job performance of Directors, executives, and employees to file a complaint or whistle-blowing in the areas as followed:

- >> Violation of laws, regulations, the Corporate Governance Policy or principles, the Code of Conduct, and Thailoil's regulations
- >> Unlawful acts implying corrupt practices for undue benefits, either for personal or others' gains, including embezzlement, corrupt practices, and fraud.

Complaint-Making and Whistle-Blowing Channels

Complainants can file their cases by clearly spelling out "Confidential" through the following channels:



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

Thai Oil Public Company Limited
555/1 Energy Complex Building A, 11th Floor
Vibhavadi Rangsit Road, Chatuchak, Chatuchak,
Bangkok 10900



cgcoordinate@thailoilgroup.com

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



+66(0) 2797-2900 or
+66(0) 2797-2999 or
+66(0) 2299-0000 ext. 7440-7442

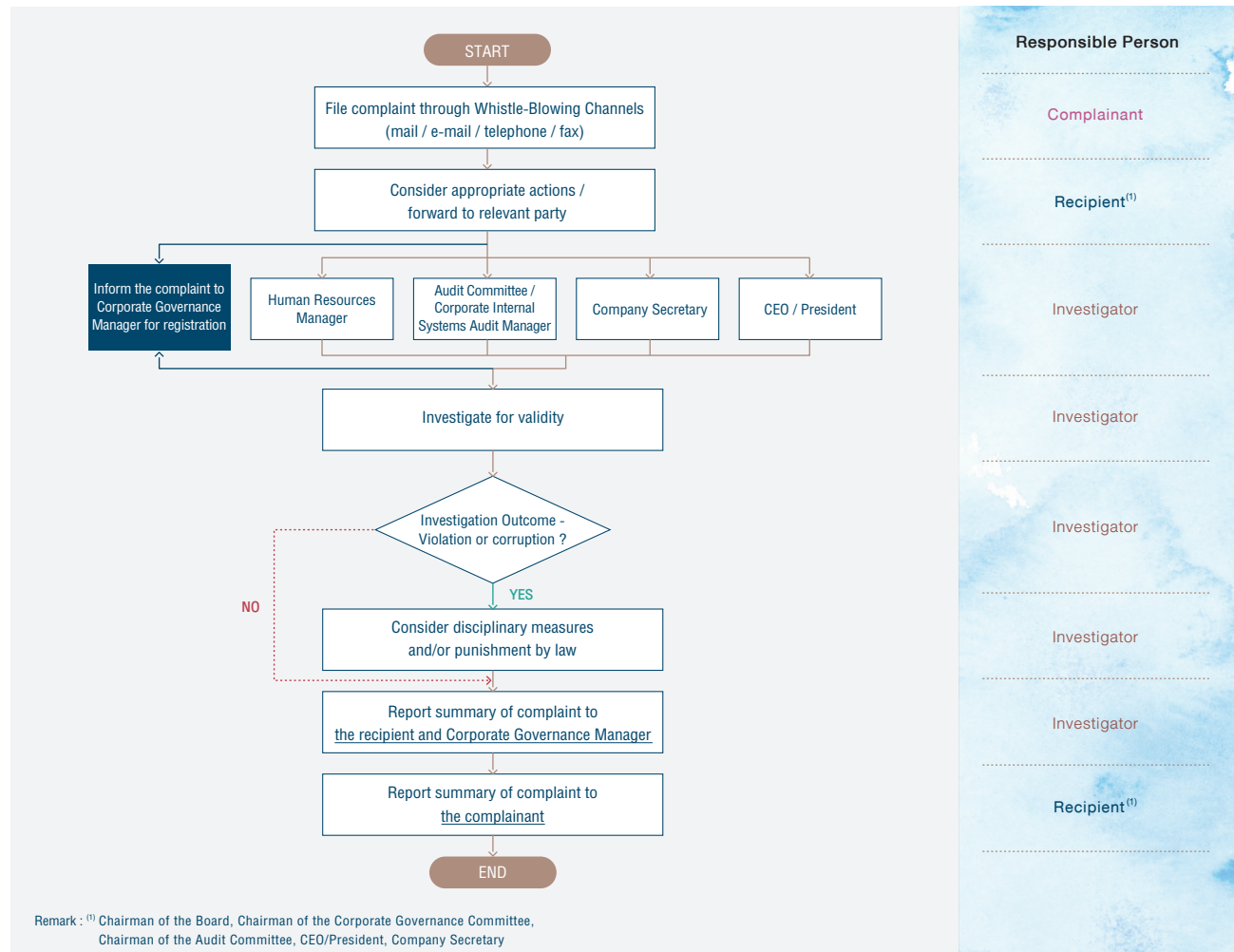


+66(0) 2797-2973

Complaint-Making and Whistle-Blowing Process

If one comes across violations as stated in the scope of complaint and whistle-blowing, one can file a complaint through designated channels. An employee coming across such acts should consult his or her supervisor first. If unsure or uneasy to do so, he or she can use designated channels.

Once the complaint has been received, the recipient will decide suitable further action or forward the matter to relevant parties and track progress. This is to ensure that Thailoil's action fits the complaints. Below is the complaint-making and whistle-blowing process.



However, if a violation is proved valid, the guilty party is subject to Thailoil's disciplinary measures or punishment by law if the violation is unlawful, or both.

Protection of Complainants, Whistle-Blowers, and Related Parties

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

with knowledge of complaints or related information must maintain confidentiality and not disclose it except when required by law. If this is intentionally violated, Thailoil will punish them under its regulations or the law, or both, as seen fit.

This year, Thailoil received three complaints. The first issue was settled because the complaint was made in an anonymous letter. After the investigation, it turned out to be a personal conflict. The other two were under investigation process.

3. Compliance with the Principles of Good Corporate Governance

3.1 Right of Shareholders

Thaioil values rights and equality of all shareholders, whether they are minor or major shareholders, institutional investors, or foreign investors. Thaioil encourages the shareholders to exercise their rights including fundamental legal rights such as the right to sell or transfer shares, the right to attend or delegate others to attend shareholders' meeting, the right to vote in the shareholders' meeting, the right to share in the profit, equal right in share buy-back by Thaioil, the right to receive adequate information, etc.

Beyond such fundamental rights, Thaioil allows minor shareholders, analysts, and investors to attend Thaioil's site-visits and provides an opportunity for shareholders to propose agenda and nominate Director candidates before the date of the shareholders' meeting. Thaioil also sends e-newsletters to minor shareholders to provide essential information on business in a clear and timely manner, even if the information is not required by law. Thaioil also provides material information for the shareholders through Thaioil's website and SET's SCP system.

Annual General Meeting of Shareholders (AGM) 2016

The Annual General Meeting of Shareholders (AGM) is considered an important meeting for shareholders to vote on essential matters including selection of Directors to drive business. Shareholders are also encouraged to provide suggestions and ask questions during the AGM. Thaioil arranges the AGM every year within four months after the end of each fiscal year. In 2016, Thaioil organized the AGM on Thursday, April 7, 2016 from

14.00 hrs. at Bangkok Convention Center, 5th Floor, Central Ladprao, a location convenient for transportation, whether by car, underground train (MRT), or public transport. This year, Thaioil saw a total attendance of 1,743 shareholders comprising of 1,311 shareholders and 432 representatives by proxy, representing 1,479,246,872 shares or 72.51 percent of the total issued share capital. The meeting was organized in accordance with the process and procedures of the AGM Checklist, prepared by the Thai Investors Association (TIA), the Thai Listed Companies Association (TLCA) and SEC as followed:

Before the AGM

>> **Provide an opportunity for shareholders to propose agenda and to nominate Director candidates.** The details and procedures are placed on Thaioil's website and SET's SCP system **at least three months prior to the year-end** (from October 1 to December 31, 2015) and via letter to the SET. The proposed agenda will be considered in accordance to criteria specified by Thaioil to be applicable to its business and for the utmost benefits. The nominated Directors, with proper qualifications by Thaioil's Articles of Association and regulations to be elected in the AGM, will be considered by the Nomination and Remuneration Committee before presenting them to the Board meeting. For 2016, none of the shareholders has proposed agenda or nominate Director candidates for the Board.

>> Thaioil submits news releases to SET's SCP system. On February 12, 2016, a resolution was passed by the Board to set the 2016 AGM date. The Record Date for shareholders who are eligible to receive dividends and exercise their meeting attendance right was set

to be February 26, 2016, along with the closing date and dividend payment by notification via Thailoil's website and SET's SCP system.

- >> **Thailoil published the 2016 AGM invitation notice via Thailoil's website in both Thai and English for at least 30 days prior to the date of the AGM** (February 29, 2016). The invitation notice comprised the invitation letter and meeting agenda with the opinions of the Board. It also provided a clear explanation of stipulating conditions and methods of registration, proxy forms comprising form A, B, and C (for foreign shareholders that have appointed custodians in Thailand) in accordance with the Ministry of Commerce, together with the list of Independent Directors as shareholders' representatives, the annual report and/or the sustainability report requisition form, and Thailoil's site-visit correspondence form as to ensure adequate time for the shareholders to study the agenda, prepare for the AGM, and have information related to voting decision that is sufficient, accurate, complete and clear
- >> **Distribute the AGM invitation notice along with its annual report and sustainability report in the CD-ROM format to shareholders no less than 21 days prior to the meeting** (March 14, 2016). Thailoil also announced the date of the AGM in newspapers in both Thai and English for three consecutive days and at least three days prior to the AGM for the shareholders to prepare themselves for the meeting.

For institutional investors, Thailoil facilitated the AGM registration process. Thailoil has contacted institutional investors to coordinate on preparation of proxy forms prior to the date of the meeting.

On the Date of the AGM

- >> Thailoil held the 2016 AGM on Thursday, April 7, 2016 at Bangkok Convention Center, 5th Floor, Central Ladprao. Thailoil ensured that the meeting venue has enough room to accommodate shareholders in attendance. To ensure the safety of all shareholders, a contingency plan is in place for emergencies. Surrounding the AGM venue are exhibitions that display Thailoil's key information. Thailoil also provided an Investor Relations (IR) corner to facilitate shareholders, welcoming staff, document verification service, registration system, and sufficient amount of snacks and beverages to accommodate shareholders upon arrival.
- >> To facilitate all shareholders at the meeting date, the bar code system was implemented in the shareholders' registration process and counting of votes for accuracy and more convenience. Thailoil made the registration process available two hours prior to the meeting. Furthermore, after this registration period, shareholders who wished to attend the meeting could register to attend without losing their rights. Shareholders were also included as part of the quorum and could vote on the agenda on consideration process and had not yet been voted on.
- >> Thailoil values the voting right of shareholders of one share equals one vote. For the convenience of voting and ballot-counting, Thailoil has prepared separate ballots for each agenda item. **Specifically, on the agenda on the appointment of new Directors, Thailoil provided separate ballots for each of the Director.** Once the voting ends, the ballots are added to the votes given in proxy forms so that the tallies and announcement can be undertaken immediately on

the meeting date. Thailoil allows independent legal counselors and volunteers from the shareholders to be witnesses in the vote counting. Thailoil also provides the opportunity for the shareholders to inquire about the voting procedures.

- >> At the meeting's commencement, the Chairman of the Board (Chairman), the Chairman of each committee, Thailoil's Directors, executives, auditors, and independent legal counselors must be at the meeting. The Chairman will clarify rules and criteria in relation to the meeting, such as voting procedures, and counting of shareholders' votes for each session. **Thailoil will organize the meeting in the orders of the agenda in the invitation notice without changing the sequence.** Thailoil refrains from considering agenda that are not listed in the invitation notice and **does not have a policy to add agenda items to the meeting without prior notice to shareholders.**

Thailoil has specified Director's vested interests in the invitation notice and in the AGM. If Directors have particular vested interests or personal involvement on any agenda, the Chairman of the meeting must notify the participants prior to each agenda. Such Directors must not participate in the meeting and must abstain from voting on such matter.

- >> The Chairman of the meeting allocates adequate meeting time and conduct the meeting in an appropriate and transparent manner. Thailoil **encourages all shareholders to exercise their rights and protect their own interests by asking questions, expressing opinions, and making recommendations** prior to voting and the announcement of resolution for each agenda. Thailoil **records questions and comments in**

the minutes of the AGM for shareholders' verification, and allows shareholders to propose questions prior to the meeting as indicated in the invitation notice. To facilitate foreign shareholders, Thailoil provides staff to translate responses from Thai to English, and reply to the questions or comments.

- >> Provide quality assessment of the AGM for further improvement of the meeting to ensure effectiveness, transparency, and benefit to shareholders.

After the AGM

- >> Thailoil **discloses the resolutions of the AGM along with the vote results on the same day after the meeting** by notifying SET in the form of a newsletter through SET's SCP system and on Thailoil's website.
- >> Thailoil must prepare the minutes of the shareholder's meeting in both Thai and English which includes the names of Directors in attendance, complete and appropriate records of the meeting, voting and questioning process of the shareholders in each session, and disseminates full details of the meeting and must notify SET within 14 days after the meeting (April 20, 2016) in accordance with SET's regulations. Thailoil must also include video recordings and the minutes of the AGM for shareholders' acknowledgment on Thailoil's website.

Thanks to the application of the recommendations and opinions received from the shareholders in the AGM quality assessment to improvement of the following AGM, Thailoil received the full score of 100 points on the quality assessment of the 2016 AGM Checklist, organized by the Thai Investors Association (TIA), the Thai Listed Companies Association (TLCA), and SEC.

3.2 Equitable Treatment of Shareholders

All shareholders are entitled to identical treatment and protection of fundamental rights, whether they are minor or major shareholders, institutional investors, executive and non-executive shareholders or foreign investors, and regardless of their gender, age, skin color, nationality, religious belief, faith, political view, or disability. Thailoil therefore adopts good practices to protect the rights of the shareholders fairly and equally.

- >> If shareholders are unable to attend the meeting, they are entitled to assign proxies to the meeting to cast ballots for them. Shareholders can use Thailoil's proxy form that incorporated in the invitation notice, hence the shareholders can cast their votes (agree, disagree, or abstain from voting) on each agenda. Shareholders may also delegate proxies to any of the seven Independent Directors, and are entitled to receive Independent Directors' complete profiles, data on work experiences, and reports on conflicts of interest for their consideration.
- >> Thailoil has a direct channel for all shareholders and investors to request information, feedback, make comments through email at ir@thailoilgroup.com or by direct telephone at +66 (0) 2797-2961. The Investor Relations (IR) section is in charge of this channel and is responsible for providing information to shareholders and investors.
- >> Thailoil organizes various activities for its shareholders, to maintain good relations among shareholders, such as a site-visit to Thailoil Refinery, which located in Sriracha, Chonburi Province. Shareholders not only visit the refinery, but also meet executives to obtain business information. Thailoil also joins events for

shareholders organized by SET, for instance, Opportunity Day, which are normally held after the announcement of the financial statements each quarter.

In addition, Thailoil has policies and procedures to promote equitable treatment of shareholders and establishes a system to prevent the use of inside information. Such details can be found in "the Use of Inside/Confidential Information" on page 149.

3.3 Roles toward the Stakeholders

Thailoil is committed to conducting its business with fairness to all stakeholders for common sustainable interests. The Board recognizes the values of all stakeholders and supervises business operations in line with their rights under applicable laws or agreements with Thailoil. To provide clear guidelines, Thailoil establishes policies and ethical guidelines for each group of stakeholders in the Corporate Governance and Code of Conduct Manual, which can be downloaded from Thailoil's website. All employees are to strictly adhere to these policies to add value to the shareholders, while paying due regard for impacts on stakeholders in tandem with social and environmental stewardship. Thailoil must conduct its business with due respect for the stakeholders' fundamental rights.

Thailoil has publicized its Sustainability Report based on the Global Reporting Initiative (GRI) framework, in addition to the Annual Report. The Sustainability Report discloses information on economic, social, and environment factors for shareholders' acknowledgment. Presently, Thailoil is investigating the feasibility of an Integrated Report.

Equitable Treatment of Stakeholders

In 2016, Thailoil conducted its business in accordance with the policies, corporate plans, and projects for all stakeholders as followed:

Shareholders, Investors, and Analysts

Thailoil is committed to conducting business with transparency and fairness and promotes shareholders' to exercise of their rights. Thailoil always taking into account its long-term growth and suitable returns, and command reliable financial and accounting systems. It reports the status and performance outcomes to all shareholders equally, regularly, and thoroughly. Thailoil also refrains from any activities that could cause conflicts of interest and serve self-interest.

In 2016, in addition to the "Rights of Shareholders" and "Equitable Treatment of Shareholders," Thailoil regularly communicated its performance outcomes and assorted data with domestic and international investors through SET's SCP system, Thailoil's website and organized various activities including quarterly analysts meeting on Thailoil's performance outcomes, quarterly meetings with investors on SET's Opportunity Day, preparation of the IR Website; IR e-newsletters; oil situation reviews; and essential information on Thailoil's industrial status during key changes and transitions.

Customers

Customer satisfaction is achieved through delivery of quality products which meet their requirements, in addition to honoring agreements and conditions made with customers fairly, regularly, completely, promptly, and factually. Thailoil values customers' confidentiality and by no means defines unfair conditions for them, in

addition to maintaining cordial and sustainable relations with them. Thailoil has set up "Customers Relationship Management Section", responsible for customer care and direct communication with them.

Over the past several years, Thailoil has conducted various activities to create customers' satisfaction:

- >> Apply the **CARE Model** to support customers, that is, **C-Customer Knowledge**, to create a customer database through iCare system; **A-Adding Value to Customer**, to share knowledge and experience on oil situations and other technical information; **R-Reliable Commercial Support System**, to support accuracy in transactions electronically and exchange essential information through web service; and **E-Efficiency of Commercial Activity**, to improve land product distribution system, from the moment they arrive at the distribution point, queue system, distribution and tracking system.
- >> **Regularly visit customers to forge good relationship**, receive comments to address areas of improvement, and report on domestic and international market outlooks.
- >> **Explore customers' satisfaction and engagement** by applying outcomes of the customer satisfaction survey to organizing a Customer Satisfaction Improvement Workshop with relevant sections to brainstorm ideas on increasing customers' satisfaction.
- >> **Organize customer events to thank and forge good relationship with them**. This year Thailoil hosted a seminar under the topic of "Shifting Global Business Landscape", held CSR activities (forest ordination and reforestation), and took the customers on a refinery

open-house to hear technicians' explanation about production processes and land and tanker transport of fuels.

- >> **Send oil outlooks** and Thailoil's CSR movement via Weekly Customer Newsletters.
- >> **Formulate business plans with customers** to sustainably grow together. Customers' needs are incorporated in business plans and business process development plans.
- >> **Listen and respond to the voice of the customers.** If there is any unfair treatment or dissatisfaction of the customers about Thailoil and Subsidiaries' service, customers can directly file complaints at crm@thailoilgroup.com.

Business Partners

Thailoil realizes that the procurement and service process must be made in a professional, fair, and transparent manner under acceptable international management standards. It is one of the key elements that supports the sustainability of Thailoil. To ensure that procurement process is systematic, efficient, and in compliance with corporate governance principles, **the procurement and selection process must comply with the regulations and criteria of Thailoil, obtain an efficient assessment of potential partners, and execute with clear selection methods. The outcome must also be systematically recorded.** Thailoil has appointed a tender committee to oversee procurement procedures to ensure that they are systematic, effective, transparency and in accordance with good corporate governance principles.

Furthermore, Thailoil has defined "Suppliers' Code of Conduct", "Code of Conduct: Purchasing", and "the Anti-Corruption Policy" in the Corporate Governance and Code of Conduct Manual as guidelines for employees to strictly adhere to and work with transparency and accountability. Thailoil has set up the "Supplier Relationship Management Section" to take care and communicate with Thailoil's business partners/suppliers. It also conducts employee and business partners/suppliers satisfaction surveys annually used to improve Thailoil's procurement service.

This year Thailoil set additional policies related to this issue, namely, the **"Business and Human Rights Policy for Business Partners"** to ensure that Thailoil and Subsidiaries' human rights implementation covers communities and vendors in Thailoil and Subsidiaries' value chain.

For supplier relationship management, this year Thailoil hosted a seminar under the topic of **"Sustainable World, Sustainable Thailoil: Procurement under Good Governance"** to continuously educate suppliers from 124 participating companies on its procurement system and Thailoil and Subsidiaries' Suppliers Code of Conduct. The event displayed exhibitions and informed them about the Corporate Governance, Code of Conduct, whistle-blowing measures, and anti-corruption practices. Furthermore, **Thailoil forged a relationship with suppliers by inviting them to join various activities, such as PTT Group CG Day 2016.** It is also preparing a capacity-building project for Thailoil and Subsidiaries' business partners. In collaboration with related agencies, it developed a framework, designed a format, formulated an action plan, and used suppliers' interests as a reference to

obtain a **Supplier Development Program**. Business partners can follow procurement news on the “Procurement” page in Thailoil’s website and directly contact the Supplier Relationship Management Section at srm@thailoilgroup.com.

Creditors

Thailoil stringently honors contracts, agreements, and conditions given to creditors and consistently reports Thailoil’s financial status with professional, integrity, accuracy, and promptly to creditors. If conditions cannot be honored, it negotiates with creditors well in advance to jointly find remedies and prevent damage. In its treatment of creditors, Thailoil has appointed officers directly responsible for communicating with creditors to ensure that all creditors are equally and fairly informed.

Thailoil also discloses information to **bondholders** and creditors. The issuing of any debentures will be made strictly according to the law and announcements made by the SEC, as well as the policies and resolutions agreed on at shareholders’ meetings. In addition, Thailoil has taken responsibility for complying with terms and duties of the issuer, loan agreements, and disclosing complete and accurate information to stakeholders.

Employees

Employees, as the primary driver of business toward success, are considered the most valuable assets. Thailoil is strongly committed to managing human resources, building a corporate culture and work ambience, offering fair compensation, and creating a safe workplace and work environment. This aims to strengthen their confidence and provide morale support. Thailoil clearly defined “Human Resources Management

Policy” and “Code of Conduct: Stakeholders (Employees)” with following key guidelines:

- >> Thailoil strictly complies with the Universal Declaration of Human Rights at national and international levels, labour law, and regulations of Thailoil. It treats all personnel equally on the basis of fundamental human rights principles as listed in the “Code of Conduct: Respect for Principles of Universal Human Rights”. In 2015, Thailoil establishes “**Human Rights in Workplace Policy**” to concretely support the human rights principles. Moreover, Thailoil has acquired membership of the United Nations Global Compact (UNGC) since 2012 at the active level, which enables it to apply the ten principles in its business operations.
- >> Since the energy sector is fast-growing and a highly competitive business, Thailoil must always be prepared for changes. One way is to recruit qualified employees. As a result, Thailoil conducts **proactive personnel recruitment** under the SPEED Strategy (S: Source Expansion, P: Partnership, E: Employer Brand, E: Employee Referral, D: Driving Fast Recruitment). On the basis of equality, Thailoil gives an equal chance to all candidates. It considers knowledgeable, capable, experienced, moral and qualified candidates for positions and job descriptions.
- >> **Thailoil has a fair remuneration and welfare policy** which is comparable to peers, aligned with labor law, appropriate with knowledge, capacity and responsibility of each executive and employee, and related to the performance of each employee. That is why Thailoil annually reviews the policy to ensure that its remuneration remains in the industry’s top quartile.

To make sure that employees' remuneration is aligned with short-term and long-term corporate performance, Thailoil considers salary adjustment for the management and employees once a year as a factor of the Key Performance Indicator (KPI). This includes current performance (short-term) and performance based on long-term strategies to lay the foundation for future business growth. Thanks to this evaluation, the remuneration of management and employees is in line with both short-term and long-term corporate performance. Furthermore, Thailoil defines variable bonus payment linked to yearly performance and employee performance (for department managers upward) to motivate them to achieve annual corporate goals. To keep motivating employees to work and gear the organization toward long-term goals, Thailoil sets remuneration policies, such as annual-wage increase guidelines. There is also a **provident fund** to secure their living once their employment ends or they are retired. Thailoil increases its contribution rate in proportion with the employees' years of service. Each month, employees are to contribute 2%-15% of their salaries, whereas Thailoil contributes another 2%-15% of employees' salaries.

Moreover, Thailoil also provides medical benefits for employees and their families, housing allowances, various allowances, accidental insurances, special service-year tokens, club memberships and leisure services, Thailoil Savings Cooperative, and Thailoil Consumers Cooperative.

- >> To support its growth, Thailoil is committed to enhancing the abilities of its employees for supporting the growth of new and international businesses. Thailoil promotes employees attendance at in-house, local, and

overseas training. In 2016, Thailoil and Subsidiaries' employees spent an average of 84.74 training hours per person. Moreover, Thailoil implemented other capability development program, such as, Leadership & Talent Development Program, Functional Competency Management Program, and Specialist Track Management Program. Thailoil also provides academic scholarships for its employees to pursue master's degrees abroad and provides educational support for its employees to study the English language (after working hours or on weekends) to support the expansion toward internationalization and the ASEAN Economic Community.

Thailoil has been developing executives to be prepared for internal rotation, starting from division managers, section managers to department managers. It also comes up with succession plans by comprehensively evaluating the readiness of successors at the level of division manager and higher. This plan is defined to serve business expansion, restructure Thailoil, and replace retired employees. Thailoil translates evaluation results into individual development plans to ensure that the successors are ready to take up the positions and create continued growth for the organization. Moreover, Thailoil reviews these succession plans yearly.

- >> Thailoil conducts employee engagement surveys every other year to study factors that affect employees' satisfaction and engagement, analyze them to find ways to improve their satisfaction and engagement, and define guidelines to further increase such engagement. In the year when this survey is exempted, Thailoil organizes "Organizational Health Index" (OHI), using OHI Survey as the criteria to indicate corporate

efficiency. The outcome is applied to continuously develop organizational health.

Competitors

Thaioil complies with the rules of fair competition and treats business competitors fairly for mutually fair returns. It refrains from dishonestly or improperly seeking confidential information of business competitors and refrains from defaming business competitors through slander.

Community, Society, and Environment

Thaioil establishes policies on the management of quality, security, safety, occupational health, environment, energy, and social responsibility to bolster quality of lives for the community, the society, and the environment. Operating with transparency and ethics, Thaioil uses these policies as guidelines in its operation to achieve vision, excellence in operation, and raise stakeholders' satisfaction. The details of these policies can be found in the "Quality, Security, Safety & Occupational Health and Environment Management" section on page 60.

For Corporate Social Responsibility (CSR), Thaioil is determined to drive sustainable business growth in parallel with environmental care and concern for community and social impact. It also fosters good relationship with neighboring and remote communities and improves their quality of life. Thaioil therefore implements its social responsibility under four frameworks: education, energy and natural resources, environmental conservation, and quality of life. Its internal units are as follows:

The Community Affairs Section takes care of communities around the refinery, zoned by Laem Chabang Municipality.

Thaioil established "Environment and Community Relations Committee under Thaioil and Subsidiaries" as a mechanism to promote community participation. Consisting of representatives from different parties, the committee helps develop communities to ensure sustainability under the Principle of Tripartite, which contain practical guidelines to integrate healthy collaboration among Thaioil, communities, and the local government. These three parties can think, act, solve problems, share benefits, and generate development together. Thaioil's Health and Learning Center for Community serves as the community integration center in aspects of health, education, religion, tradition and culture, and environment. Moreover, Thaioil publishes and distributes a bulletin called "Our Community" to surrounding communities to educate them and promote activities.

The CSR Management Section develops national CSR projects for communities, focusing on leveraging strength, experience, and knowledge of personnel in the energy business. It also creates and develops CSR projects with partners to initiate and design creative CSR, which takes into consideration co-existence among Thaioil, the community, and society. The unit contributes knowledge, experience and expertise on engineering and energy, not only the development of renewable energy, but also use natural resources for optimal results under the philosophy of self-sufficient economy in a bid to build communities that are truly self-sufficient in energy.

In 2016, Thaioil implemented projects to strengthen its relationship and gain recognition from the communities around work sites and the refinery. The annual projects

and activities implemented around the refinery included Graduates Love Home project, academic scholarships, Community Medicine program, Dental Health Promotion project, and religious activities including Thot Kathin ceremony and traditional Lent candle offering. Moreover, Thailoil funded the construction of the Trauma and Emergency Building at Laem Chabang Hospital. It was handed over on October 17. Thailoil was well-awared of local people's needs and difficulties caused by insufficient emergency healthcare facilities. Hospitals became crowded because of urbanization and an increasing population. Thailoil also held activities to make merit for HM the late King Bhumibol. For example, volunteer groups around Thailoil made black ribbons with the message "The King is always in our heart".

Thailoil leverages the knowledge, expertise and experience in energy to launch national projects and develop society at large. First, the "Mae Jo Community Hydropower Plant" was a joint project with Energy for Environment Foundation in Mae Taeng, Chiang Mai Province. It aims to not only develop and secure power for communities, but also support organic agriculture in upgrading the community's quality of life. "Managing Waste from Rubber Sheet Production Process and Household (Phase 3)" at Koh Mak Noi, Phang-Nga Province, was a collaborative project with Thanksin University, Phatthalung Campus. With biogas tanks, it converts waste water from rubber sheet production processes and organic waste from households into cooking gas. The project not only lowered expenses on cooking gas, but also used water and sediment from treatment processes to plant chemical-free vegetables to ensure the communities' well-being. It developed

alternative energy from local resources and created a model community on renewable energy. In the management for sufficient economy project, "Canal and Community Building (Phase 3)" in Buriram Province, Thailoil joined hands with the Education and Public Welfare Foundation to promote the creation of water resources for agricultural purposes based on the Sufficiency Economy philosophy. The project enhanced community leaders' skills in water resource management, agricultural production planning, and project management.

Additionally, this year Thailoil co-hosted Pracha Rath (Education) Project with PTT Group - a collaborative project among public, private, and civil society sectors to drive and raise basic education standards. Thailoil sponsored the development of six schools participating in various aspects of the project, such as developing the educational executives and teachers, fostering morale, ethics, and volunteer mind among students, and developing new-generation leaders. In commemoration of HM the late King Bhumibol Adulyadej, Thailoil held a merit-making activity called "Good Deeds for Father by Thailoil and Subsidiaries". More than 200 volunteers, both Thailoil management and employees, together with PTT Group, made merit to pay tribute to the late King at Sanam Luang in Bangkok between December 5 and 9, 2016. The detailed CSR implementation of Thailoil and Subsidiaries was included in Sustainability Report 2016.

Government Authorities and Associated Organizations

Thailoil assesses its compliance with related laws, including monitoring the enactment of new ones. In relationship building, it has been cooperating and sharing business information and experiences with

government agencies and organizations that request them for the benefit of the country and public good. Moreover, Thailoil focuses on regularly fostering the conscience of legal compliance among employees. All employees must study and understand the laws related to their work. Furthermore, they must neither violate these laws nor support evasion or infringement of these laws.

Policies and Practices of Non-Infringement of Intellectual Properties or Copyrights

Thailoil has “**Code of Conduct: Intellectual Properties**” which identified that Thailoil must run its business in compliance with all laws and regulations of each host company. Thailoil’s personnel must maintain commercial secrets and formulae, product process, and sensitive business procedures by ensuring their safest storage and preventing leaks. They are also required to respect others’ intellectual property rights while refraining from exploiting these for personal gains without the owners’ prior approval or without giving them due compensation. Thailoil also has the “**Code of Conduct: Application of Information and Communication Technology**”, which strictly prohibits the installation and the use of illegal computer software in the workplace.

Anti-Corruption Practices

Thailoil is committed to basing business on fairness, integrity, transparency, responsibility to society and all stakeholders. The Board is aware that corruption is a major obstacle to objective achievement and is also a problem to national economic and social development. So in 2013, the Board established an explicit “**Anti-Corruption Policy**”: “The Board, executives, and employees must

not corrupt or accept corruption of all forms in any circumstances, covering the business of Thailoil in every country and in every relevant agency. Thailoil defines guidelines, operating measures, and roles and duties of responsible persons, as well as regular monitoring and reviewing the implementation of the Anti-Corruption Policy, in compliance with changes in businesses, rules, regulations, and relevant laws.” Apart from the policy, Thailoil provides definitions of the Anti-Corruption Policy, roles and responsibilities, implementation, and measures of the policies. The Board, executives, all employees within Thailoil and Subsidiaries are required to comply with this policy.

The Anti-Corruption Policy is annually reviewed and improved in line with prevailing circumstances and in response to changing risks. The policy was reported to the Corporate Governance Committee and the Board respectively for approval. This year, however, there was no significant change in criteria, announcements and guidelines on corporate governance posted by the regulators (SEC and SET) or other institutes. As a result, the Anti-Corruption Policy remains appropriate and relevant.

In addition to the Anti-Corruption Policy, Thailoil has Code of Conduct related on anti-corruption matter; such as, giving or acceptance of presents, assets, or other benefits, conflicts of interest, maintaining confidential information and use of inside information, etc. These codes of conduct and the Anti-Corruption Policy can be found in the Corporate Governance and Code of Conduct Manual. All employees of Thailoil and Subsidiaries are required to observe the principles in the manual and

conduct their businesses under the highest standard. The manual is downloadable from Thailoil's website.

Thailoil is obliged to adopt the Anti-Corruption Policies, its implementation and measures, and to perform its business under the following framework:

>> **Promote the Anti-Corruption Policy and practice them both inside and outside Thailoil.** Thailoil has communicated the policy to the Board, executives and employees via internal circular, e-mail, internal intranet system, employees' orientation, training, e-newsletters, and articles in the internal publication (Akanee). In 2016, Thailoil held its CG Forum entitled "Business Ethics – Integration Into Daily Practice", which discussed ideas and experiences on corporate governance, ethical, anti-corruption, and relevant practices. Furthermore, Thailoil re-introduced CG e-learning, whose contents covered anti-corruption practices and which educated the employees through edutainment. When the festive season approached, Thailoil promoted the "No-Gift Policy" among employees via internal and external communication channels such as e-news, Thailoil's website, and signage at different locations in Bangkok and Sriracha offices to promote business transparency and comply with the corporate governance principles and business Code of Conduct.

For external communication, Thailoil publishes the policy via its website for public interest. In addition, Thailoil's announcements have been made to customers and business partners. This includes the conforming letter for their cooperation to refrain from offering gifts to Thailoil and Subsidiaries' employees during the New Year festival. Such practices are to avoid and prevent

actions leading to violations of the Anti-Corruption Policy in order to serve our customers and all business partners, based on fairness and equality.

>> Thailoil encourages its employees to join external workshops and seminars relating to anti-corruption to gain knowledge and understanding on anti-corruption practices including:

- Tone at the Top Series: "Clean Business Engagement with Public Sector", organized by the Thai Institute of Directors (IOD)
- Dialogue on "Combating Corruption, View on the World, View on Thailand", organized by the Institute of Asian Studies, Chulalongkorn University, together with the Thailand Research Fund (TRF), Thailand Development Research Institute (TDRI), Openworlds Publishing House, and Total Access Communication Plc.

>> **Put in place an internal control system to prevent corruption risks** such as the Corporate Authorization Procedures in considering the scope, duties, and responsibilities of each position as criteria in the authorization process, add flexibility to business operations, and exercise an appropriate internal control system. Thailoil also has a systematic monitoring and reporting system for its budget control. The Corporate Internal Systems Audit Department is in charge of monitoring operations in various sections to ensure that the performance of each section is in accordance with this procedure.

>> **The Risk Management Department is in charge of managing risks for Thailoil and Subsidiaries.** A plan

on managing risks, procedures, internal and external risk assessment and analysis, and mitigation plan for each risk were put in place to manage risks at an acceptable level. This plan covers the process of forming corporate strategies, investments, anti-corruption, as well as other business operations.

For high corruption-risk activities, Thailoil has procedures to closely monitor such practices, as stated in the Anti-Corruption Policy and business Code of Conduct. These activities include political contribution, charitable contribution and sponsorship, and gifts, hospitality, and expenses.

- >> In monitoring and evaluating compliance, Corporate Internal Systems Audit, directly under Audit Committee and independent of the Board, is responsible for reviewing the work of different departments. This covers key activities like commercial activities, procurement, and financial reports. It also reviews the operations to see if they follow the protocols, rules, and regulations. Furthermore, it gives advice to make sure that the operational system is more effective and internal control system can achieve the target.
- >> Based on CAC membership renewal (re-certification) preparation, Corporate Internal Systems Audit reviewed self-assessment forms, made a summary report and recommendations, and proposed them to the Audit Committee. Thailoil then applied the recommendations from the committee to its plans to enhance the efficiency and effectiveness of anti-corruption practices.
- >> In addition to various Anti-corruption activities within Thailoil, **Thailoil has established the Thailoil Group**

Suppliers Code of Conduct manual to promote common understanding between Thailoil and business partners, based on sustainability. One of the topics listed in this manual is the Anti-Corruption Policy. This year, business partners were invited to participate in the PTT Group CG Day 2016 activities to promote Thailoil's corporate governance and anti-corruption practices as well as setting guidelines for business partners' development. Thailoil is preparing to include anti-corruption as a topic in "Supplier Development Program" to disseminate the knowledge, experiences and benefits gained from CAC membership certification. This will encourage suppliers to appreciate anti-corruption practices, jointly declare their intention, and join the certification in the future.

Thailoil is also committed to countering corruption in conjunction with external agencies. Thailoil has participated in the following activities:

- >> In 2010, Thailoil joined the Private Sector Collective Action Coalition against Corruption (CAC). The CAC was initiated by the IOD, Thai Chamber of Commerce, Joint Foreign Chambers of Commerce in Thailand, Thai Listed Companies Association, Thai Bankers Association, and Federation of Thai Industries. The project was also supported by the government and the Office of National Anti-Corruption Commission.
- >> In 2012, Thailoil acquired the membership of the United Nations Global Compact (UNGC), which enabled it to apply the ten UNGC principles, internationally recognized in the promotion of good governance on human rights, labour, environment, and anti-corruption in its business operation.

- >> In 2014, Thailoil developed a self-assessment form for anti-corruption measures, which accompanies supporting evidence related to business policy, measures and procedures, and its internal control system. All documents were submitted to the CAC panel as part of Thailoil's application for CAC membership. Thailoil was recognized as a **"Certified Company"** on April 4, 2014, a proof of its commitment to transparent business through continual upgrading of its work process, which promotes good image and confidence among stakeholders.
- >> In 2015, Thailoil became a member of Partnership Against Corruption for Thailand (PACT Network), which was initiated by Thaipat institute.
- >> On September 11, 2016, Thailoil's executives and staff representative joined the "National Anti-Corruption Day 2016", organized by the Anti-Corruption Organization of Thailand along with participants from the government and the Private sectors at Sanam Luang.
- >> In December 2016, Thailoil applied for renewal of CAC membership certification (re-certification).

3.4 Disclosure and Transparency

Disclosure of Information

Thailoil values the disclosure of information on material matters, key information includes financial and non-financial information to SEC, SET, and shareholders presented in an accurate, complete, simplified, timely, and transparent manner through readily accessible channels in both Thai and English. Thailoil shall disclose information to ensure equitable access by shareholders in SEC's and SET's Community Portal System and Thailoil's website, which have been conducted to date. Shareholders,

investors, and the general public may use this information as a reference in a convenient and timely manner. This includes useful information about current projects as well as the performance, which are presented on a quarterly basis, documents for publication, corporate governance information, CSR information, sustainability information, etc.

In 2016, Thailoil disclosed all key information through SEC and SET's Community Portal, including externally audited financial information, prepared under generally accepted accounting standards as well as non-financial information. The Audit Committee is to review the financial information and must obtain the Board's approval prior to the disclosing to the shareholders and the public. Furthermore, Thailoil's Board of Directors' responsibility for financial reporting and the external auditor's report must be incorporated in Thailoil's annual report. For non-financial information, Thailoil must disclose the information as stipulated by SEC and SET, including dividend payment, invitation and resolution of the AGM, and other information that may affect investment decisions, apart from all information disclosed in SEC and SET's Community Portal System and Thailoil's website.

The following is a list of channels that the Company releases disclosures in Thai and English:

- >> SEC and SET's Community Portal systems
- >> Thailoil's website at www.thailoilgroup.com
- >> Annual Registration Statement (Form 56-1) and Annual Report (Form 56-2)
- >> Public channels such as newspapers, magazines, press conferences, interviews, and press releases.

Investor Relations

Thaioil takes most seriously relations with investors, shareholders, and analysts, therefore, Thaioil set up the Investor Relations Section as a focal point to proactively conducting investor relations activities with investors, shareholders, and analysts, by focusing on performing duties with utmost responsibility, integrity, and dedication on disclosure of correct, reliable, and adequate information in a fair, transparent, and comprehensive manner. Investor Relations reports its performance to the Corporate Governance Committee for acknowledgment and recommendations at least once a year.

In 2016, Thaioil organized various activities in support of the shareholders, analysts, and investors as followed:

Meeting with Investors / Shareholders

Domestic Company Visit & Preview Meeting	8 times
Domestic Conference Call	4 times
Domestic Roadshow	5 times
International Company Visit	28 times
International Conference Call	11 times
International Roadshow	11 times
Opportunity Day organized by SET	4 times
Analyst Meeting	4 times
Information provided via telephone per day	5 times (approximately)

Meeting with Credit Rating Institutes

Annual Review (S&P's, Moody's, Fitch Ratings)	3 times (once a year for each institute)
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Conference Call	12 times (4 times a year for each institute)
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Information Disclosure

SET Portal	25 times
Monthly Presentation	12 publications
IR e-Newsletter	4 publications

Activities

Shareholders' Company Site-Visit	2 times
Investors' Company Site-Visit	7 times

The Investor Relations Department reports on the operations of Investor Relations to the Corporate Governance Committee at least once a year. Interested parties, major shareholders, minor shareholders, or investors can request this information from the Investor Relations Section via the following channels:



Thai Oil Public Company Limited

Investor Relations

555/1 Energy Complex Building A, 11th floor
Vibhavadi Rangsit Road, Chatuchak, Chatuchak,
Bangkok 10900



ir@thaioilgroup.com



+66(0) 2797-2961 (Direct) or
+66(0) 2797-2999 or
+66(0) 2299-0000 ext. 7370-7374



+66(0) 2797-2977-8

Use of Inside/Confidential Information

The use of inside information is one of Corporate Governance Principles (Equitable Treatment of Shareholders) that is crucial for all listed companies; Thailoil has taken preventive measures on the use of inside and confidential information. In order to prevent taking advantages of other shareholders and to promote equality among the shareholders, Thailoil has put in place measures and systems for controlling the confidentiality of inside information as follows:

>> Thailoil establishes the “**Code of Conduct: Maintaining Confidential Information and Use of Inside Information**” as detailed in the Corporate Governance and Code of Conduct Manual. Thailoil’s Directors, executives, and employees are to maintain the confidentiality of inside information and refrain from exploiting it for themselves, their families, or their associates. This includes information influencing the stock price, commercial secrets, formulae, and inventions. Thailoil has assigned roles and responsibilities to all superiors

for the prevention of leaks of key information; thus instituted strict measures and processes for safeguarding the information within its departments to prevent publicity before its formal distribution.

>> Thailoil establishes a “**Personal Non-Disclosure Agreement**” between Thailoil, its executives, and employees who are involved with ongoing projects and projects not to be disclosed information to the public and to be cautious when using such material information.

>> Thailoil consistently notifies its Directors, executives, and employees about the policies relating to the use of inside information through various meetings such as Board meetings (via an agenda item to be informed by the Chairman), corporate governance training, and articles in internal publications to ensure that the criteria and policies have been complied with.

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

>> Under section 59 of the Securities and Exchange Act, Thailoil assigns the Directors and high-level executives (Executive Vice President and higher including Vice Presidents in Finance and Accounting Department) to report their shareholding information upon taking position and after share buying, selling, or transferring within three days to SEC.

Moreover, the Board is also responsible for monitoring the use of inside information. To this end, **Directors must inform Board meetings their shareholding information, including that for the high-level executives, at each Board meeting.** The shareholding information of the Directors and high-level executives at the end of previous and present year can be found in the Shareholding Report on page 104.

Prevention of Conflicts of Interest

Thaioil includes “**Code of Conduct: Conflicts of Interest**” in the Corporate Governance and Code of Conduct Manual. Directors, executives, and employees are to strictly follow this principle. All Thaioil and Subsidiaries’ employees must prepare conflicts of interest disclosure reports on the first day of work and annually or each time it is suspected that conflicts exist during the year in the Conflicts of Interest Disclosure Electronic System. This practice promotes employees’ operation in a transparent and accountable manner. Conflicts of Interest Disclosure Report 2016 showed five employees who suspected conflicts of interest, such as holding employee stocks of PTT Group and having spouses who work in the same industry or in companies with the same nature of business. Thaioil has already investigated these cases to conclude that none conflicted with its interests.

At Board meetings, Directors who have direct or potential conflicts of interest shall remove themselves from the meeting. The Chairman may authorize such Directors to stay to provide information and allow other Directors to ask questions. However, such directors must abstain from voting on the agenda item. The Company Secretary or Secretaries to the Board and Board-Committees must

record the relevance of directors in the minutes of meetings for the Board or Board-Committees’ consideration each time this happens.

Vested Interests Disclosure by the Board

Thaioil set a policy for the Directors and high-level executives (Executive Vice President and higher including Vice Presidents in Finance and Accounting Department) to quarterly report changes in their vested interests to Thaioil and Subsidiaries and annually update their reports. Such information is to be kept within Thaioil to conform to the Capital Market Supervisory Board’s announcement, Tor Jor 2/2009, regarding the report on vested interests of Directors, executives, and related parties.

3.5 Board Responsibilities

The Board plays a significant role as a representative of the shareholders to ensure that Thaioil’s business activities are ethical and legitimate. **The Board must be free of the executive** through a clearly defined separation of roles and responsibilities, and levels of approval authority of the Board, the Chairman, and the Chief Executive Officer and President (CEO/President). The roles and responsibilities of the Board can be found on page 108-109. The Board also plays significant roles in the following activities:

- **Defining Business Strategies, Policies, and Directions**

The Board performs crucial roles in determining and reviewing Thaioil’s vision, missions, business strategies, operations plans, and budget. It must adapt to a quickly evolving business environment. The Board must approve important aspects of Thaioil and Subsidiaries’ operations at least once a year. In 2016, **the Board reviewed and approved Thaioil’s vision, missions, and business**

strategies in the annual Strategic Thinking Session (STS) meeting. Organized in August 2016, the Board along with top executives jointly reviewed vision, missions, and short-term and long-term business strategies against business directions and future trends. Assigned by the Board, the executives are responsible for reporting progress once each quarter in Board Meetings. This will allow the Board to keep track of the progress and review appropriate actions in preparation of the evolving business environment.

- **Corporate Governance and Business Code of Conduct**
The Board establishes the Corporate Governance Policy, Anti-Corruption Policy, and the Code of Conduct for all Directors, executives, and employees to adhere to while operating businesses. This is to ensure that the businesses are operated under good ethical standards, transparency, and justification. Assigned by the Board, the Corporate Governance Committee is tasked to ensure that activities relating to corporate governance matters comply with applicable laws, rules, and regulations. They are to also promote compliance with Corporate Governance Policy, Anti-Corruption Policy, Sustainable Development, etc. The Corporate Governance Section is the focal point for monitoring such activities.

- **Internal Control, Internal Audit, and Risk Management**
The Board instituted a corporate risk management policy and process to cover Thaioil and Subsidiaries' operations. It is required that Thaioil's executives comply with the policy and periodically report the Key Risk Indicators (KRIs) results to the Risk Management Committee, as assigned by the Board, for consideration prior to report such results to the Board for approval. Such details can be found in the "Risk Factors and Corporate Risk Management" section on page 120.

In addition to risk management, the Board highly values internal control and internal audit systems in business operations to ensure that operations are at acceptable risks by requiring that Thaioil and Subsidiaries commands an efficient internal control system is compatible with manageable risk levels. The Audit Committee and the Corporate Internal Systems Audit Department are assigned to ensure that Thaioil and Subsidiaries has internal control, internal audit, and risk management systems that are suitable and effective. They may recommend review or audit of any item regarded as essential, while providing recommendations on improvement to such items. The review outcomes are to be submitted to the Board. Due regard should be paid to a good and adequate in the five-point highlights of the internal control system. Such details can be found in the "Internal Control" section on page 124.

- **Prevention of Conflicts of Interest**

The Board plays an important role in monitoring and resolving conflicts of interest that may occur among Thaioil's stakeholders. The Board sets guidelines regarding such transactions for the utmost benefits of Thaioil and shareholders as a whole. Parties with vested interest should play no part in the decision-making process and must disclose information on conflicts of interest in a correct and complete manner. The details can be found in the "Prevention of Conflicts of Interest" section on page 150.

Board Approval Authority

The Board is authorized to approve Thaioil's various businesses under the scope given by law, Thaioil's regulations, and shareholders' resolutions. An approval framework has been clearly defined for the Board and

the management on various matters, including personnel administration, finance, and accounting.

Board Composition

The Board plays a major role in corporate governance for Thailoil's maximum benefit. Appointed by the shareholders' votes at AGMs, the Board must be qualified, capable, accountable, generally acceptable and must not have prohibited characteristics specified by the Public Limited Company Act. **Thailoil also sets a policy for the Board's diversity, which consists of diversity in genders, skills, professions, and specialization, namely industrial, financial, business, management, marketing, strategic management, law, and security** There should be Independent Directors at least one-third of all Directors and the number must be at least three. The composition of the Board must have a proportional number of Independent Directors for checks and balances of the Board and the executives. Presently, the number of Thailoil's Independent Directors exceeds that required by law. Independent Directors must also be fully qualified by the requirements of the Capital Market Supervisory Board as shown in page 153.

Recognizing the value of efficient and effective Director job performance, the Board has also established a policy on the number of listed companies that the Directors can take. To ensure that Directors can devote their time and effort to performing duties, **the Directors can serve no more than five listed companies.**

Thailoil's Board of Directors consists of 14 Directors including one executive Director and 13 non-executive Directors, six of whom are Independent Directors. There is two female Independent Directors on the Board. The names and roles of the Board can be found in the Board

section on page 102. There are four Board-Committees namely the Audit Committee, the Nomination and Remuneration Committee, the Corporate Governance Committee, and the Risk Management Committee. The names and roles of the Board-Committee members can be found in the "Board-Committees" section on page 155. The number of meeting and Directors' meeting attendance can be found in the "Meeting Attendance of the Board" on page 110.

Nomination and Appointment of Directors

Nomination Criteria

- >> The Directors must have **qualifications consistent with the Public Company Limited Act and Thailoil's regulations.**
- >> The Directors must be knowledgeable and possess diverse skills. As a tool in the consideration process, Thailoil establishes the **Board Skill Matrix according to the Board Diversity Policy to create a wide range of expertise in line with Thailoil's core strategies.**
- >> Thailoil searches and selects qualified Directors through the **State Enterprise Policy Office's Directors Pool and the IOD Chartered Directors.**
- >> The nomination and appointment of Independent Directors must take into account the number of Independent Directors on the Board. There should be at least one-third Independent Directors of all Directors and the number must not be less than three. The composition of the Board must have a proportional number of Independent Directors for checks and balances of the Board and the management.

>> The Directors can devote sufficient time and effort to performing duties.

>> Thailoil considers potential conflicts of interest that the directors may have with it.

Appointment of New Directors

The Board has assigned the Nomination and Remuneration Committee to select qualified candidates to be elected as Directors to replace those who have completed their terms or retired by rotation. The Nomination and Remuneration Committee considers and proposes names of qualified candidates and entitles shareholders to do the same under the SEC law and Thailoil's regulations. An announcement is posted on the website for at least 90 days prior to each AGM to invite such nomination.

- **To appoint Directors to replace those who have completed their terms**, the Nomination and Remuneration Committee selects and proposes to the Board for consideration the names of qualified candidates in accordance with relevant laws and regulations, experience, and knowledge. After the Board's endorsement, the list of candidates is proposed to the AGM to approve the election by majority votes. In accordance with Thailoil's regulation, each shareholder has one vote per share. Shareholders may exercise all the votes they have to elect one or several persons as Director or Directors, but they cannot divide their votes to any person in any number. Thailoil also gives an opportunity to shareholders to vote for individual Directors to allow shareholders to choose the right person of their choice.

- **In case of vacancies due to reasons other than expiration of the term**, as a rule, the Nomination and Remuneration

Committee considers the criteria and nominate qualified persons to fill the vacant posts and proposes them to the Board for consideration. With votes of no less than three-fourths of the remaining Directors, a selected Director will serve only for the remainder of the term of the replaced Director.

- **The Nomination and Remuneration of Board-Committees' members**, the Nomination and Remuneration Committee also considers qualified Directors as committee members to fill vacancies in accordance with the qualifications listed in the respective Board-Committees' Charters. The names of selected Directors are to be proposed to the Board for approval.

Independent Directors and Qualifications

Independent Directors must be independent of major shareholders and Thailoil's management. To protect the best interests of shareholders, Independent Directors must regularly attend Board Meetings and have sufficient access to Thailoil's financial and business information. Upon their appointment, Independent Directors shall report and disclose their independency in the annual report. Independent Directors must have all the qualifications required by the Capital Market Supervisory Board, namely:

1. Holding shares not exceeding 0.5 percent of the total number of shares with voting rights of Thailoil, its parent company, subsidiary, affiliate, major shareholder or controlling person, including shares held by their related persons.
2. Neither being nor used to be an executive Director, employee, advisor who receives salary, or controlling person of Thailoil, its parent company, subsidiary,

affiliate, same level subsidiary company, major shareholder or controlling person, unless the foregoing status has ended not less than two years prior to taking the independent dictatorship.

3. Not being a person related by blood or legal registration as father, mother, spouse, sibling, and child, including spouse of child to other Director, executive, major shareholder, controlling person, or person to be nominated as Director, executive or controlling person of Thailoil or its subsidiary.
4. Neither having nor used to have a business relationship with Thailoil, its parent company, subsidiary, affiliate, major shareholder or controlling person, in the manner which may interfere with his/ her independent judgment, and neither being nor used to be a significant shareholder or controlling person of any person having a business relationship with Thailoil, its parent company, subsidiary company, affiliate, major shareholder or controlling person, unless the foregoing relationship has ended not less than two years prior to taking the independent dictatorship.

The term 'business relationship' under the first paragraph shall include any normal business transaction; rental or lease of immovable property; transaction relating to assets or services or granting or receipt of financial assistance through receiving or extending loans; guarantee; providing assets as collateral; and any other similar actions, which result in Thailoil or the counterparty being subject to indebtedness payable to the other party in the amount of three percent or more of the net tangible assets of the company or Baht 20 million or more, whichever is lower. The amount of such indebtedness shall be calculated according to the method for

calculation of value of connected transactions under the Notification of the Capital Market Supervisory Board. The consideration of such indebtedness shall include indebtedness occurred during the period of one year prior to the date on which the business relationship with the person commences.

5. Neither being nor used to be an auditor of Thailoil, its parent company, subsidiary, affiliate, major shareholder or controlling person, and not being a significant shareholder, controlling person, or partner of an audit firm which employs auditors of Thailoil, its parent company, subsidiary, affiliate, major shareholder or controlling person, unless the foregoing relationship has ended not less than two years prior to taking the independent dictatorship.
6. Neither being nor used to be a provider of any professional services including those as legal advisor or financial advisor who receives service fees exceeding Baht 2 million per year from Thailoil, its parent company, subsidiary, affiliate, major shareholder or controlling person, and not being a significant shareholder, controlling person or partner of the provider of professional services, unless the foregoing relationship has ended not less than two years prior to taking the independent dictatorship.
7. Not being a Director appointed as representative of Directors of Thailoil, major shareholder or shareholder who is related to major shareholder.
8. Not undertaking any business in the same nature and in competition with the business of Thailoil or subsidiary company or not being a significant partner in a partnership or being an executive Director, employee, advisor who receives salary or holding shares exceeding one percent of the total

number of shares with voting rights of other company which undertakes business in the same nature and in competition with the business of Thaioil or its subsidiary company.

9. Not having any other characteristics which cause the inability to express independent opinions with regard to Thaioil's business operations.
10. Thaioil's Independent Directors shall serve no more than six consecutive years from the date of the appointment (effective from the date when the Board approved this policy on August 23, 2012, onwards).

Board-Committees

The Board has appointed four Board-Committees; the Audit Committee, the Nomination and Remuneration Committee, the Corporate Governance Committee, and the Risk Management Committee to scrutinize and supervise its operation over specific issues, in order to perform their duties efficiently and effectively. For maximum efficiency, Thaioil has established the Board-Committees Charters to define the roles and responsibilities of each committee, which are also disclosed at Thaioil's website and regularly reviewed. In 2016, all of the Board-Committees' Charters were revised to cover Thaioil's changing business contexts and align with the regulators' announcements and practical guidelines. They are also compared with respective charters of other listed companies' committees. All Board-Committees must regularly report their performance in the Board meeting for the Board's acknowledgement. The performance in the past year must be annually reported to the shareholders in the Annual Registration Statement (Form 56-1) and annual report (Form 56-2).

The Board-Committees, as of December 31, 2016, are as follows:

1) The Audit Committee

The Board appointed the Audit Committee, which consists of fully qualified members against SEC and SET requirements. A minimum of three members must be Independent Directors, at least one of whom must be an accounting graduate with adequately qualified and experienced in reviewing the credibility of financial statements. The Committee reviews Thaioil's performance outcomes, financial reports, internal control system, and consider related-party transactions, the appropriateness of accounting (external) auditors, including the selection and appointment process.

The Audit Committee, as of December 31, 2016, consisted of four Independent, Non-Management Directors:

Name	Position
1. Ms. Chularat Suteethorn	Chairman of the Audit Committee (Independent)
2. Mrs. Suvimol Chrityakierne	Member of the Audit Committee (Independent), an accounting graduate with qualified knowledge and experience in accounting and finance to review the reliability of the financial statements
3. Mr. Siri Jirapongphan	Member of the Audit Committee (Independent)
4. Gen. Thanakarn Kerdhaimongkol	Member of the Audit Committee (Independent)

Ms. Prapin Thongnium, Vice President – Corporate Internal Systems Audit, serves as Secretary to the Audit Committee.

Roles and Responsibilities of the Audit Committee

1. Reviews the efficiency and effectiveness of the good corporate governance, risk management, and internal control processes.
2. Reviews the Company's financial reporting process to ensure its accuracy, credibility, and sufficient information disclosure by coordinating with the external auditors. The responsible executive is required to prepare quarterly and annually financial reports to comply with the Thai Financial Accounting Standards and to promote the development of accounting systems to be comparable to the International Financial Accounting Standards.
3. Reviews the Company's compliance with laws governing securities and stock exchange, or requirements of the Stock Exchange of Thailand, and other policies, rules, regulations, charters, and laws applicable to the Company's business.
4. Reviews the Connected Transactions or the transactions that may lead to conflicts of interests and consider the information disclosure to ensure that they are in compliance with the laws and the Stock Exchange of Thailand's regulations.
5. Considers to select, nominate, re-elect, and terminate the Company's external auditors and to propose the auditors' remuneration to the Board of Directors before tabling to the shareholder's meeting for approval respectively. The Audit Committee, also, is to meet with the external auditor without executives at least once a year.
6. Reviews and provides opinion on internal audit plan and system to meet internationally accepted methods and standards.
7. Considers the independence of the Internal Systems Audit Section including the adequacy of the budget and workforce of the Internal Systems Audit Section, and considers to approve the appointment and relocation of, and evaluates the annual performance of the Head of the Internal Systems Audit Section.
8. The Audit Committee may seek independent opinions from professional advisors or specialists in other fields when needed under the Company's expense with the approval from the Board of Directors. The employment of advisors or specialists must comply with the Company's regulations.
9. Chairman or members of the Audit Committee shall attend the shareholders' annual general meeting in order to clarify issues associated with the Audit Committee or appointment of the external auditors.
10. Approves the disclosure of quarterly financial statements to the Stock Exchange of Thailand.
11. Reports the operating results of the Internal Audit to the Board of Directors annually. Such report must include the Audit Committee's opinion on internal audit, opinions on financial reports, adequacy of internal control systems, and other applicable topics to the Board of Directors as deemed appropriate.
12. Approves the Audit Committee Charter before presenting to the Board of Directors for approval. The Committee shall review its charter at least once a year.

13. Prepares the Audit Committee's report signed by the Chairman of the Audit Committee. The report is to be disclosed in the Company's annual report in accordance with the requirement of the Stock Exchange of Thailand, and shall consist of at least the following information:

- 1) Opinion(s) on the accuracy and credibility of the Company's financial report;
- 2) Opinion(s) on the adequacy of the Company's internal control system;
- 3) Opinion(s) on the compliance with the law on the Securities and Exchange Commission, the Stock Exchange of Thailand's regulations, or laws applicable to the Company's business;
- 4) Opinion(s) on the suitability of the external auditors;
- 5) Opinion(s) on the transactions that may lead to conflicts of interests;
- 6) The number of the Audit Committee's meetings and the attendance of such meetings of each committee member;
- 7) Opinion(s) or overview comment gained from the Audit Committee's its performance or duties in accordance with the Committee Charter; and
- 8) Other reports which should be known to the shareholders and general investors under the roles and responsibilities as assigned by the Company's Board of Directors.

14. After the Audit Committee receives from the auditors the information on any suspicious circumstances that the Director, manager or any person responsible for the Company's operation commits an offence under the Securities and Exchange Act, the Audit

Committee is required to report the preliminary inspection to the Company's Board of Directors prior to reporting the Securities and Exchange Commission and the Company's auditors within 30 days from the date of the auditor's notification is received.

15. For the Audit Committee's duty, if it is found or suspected that there is any transaction or action that may materially affect the Company's financial condition and operating results, the Committee shall promptly report it to the Board of Directors for rectification in a timely manner.

- >> A transaction which causes a conflict of interest;
- >> Any fraud, irregularity, or material defect in the internal control system;
- >> An infringement of laws or the Stock Exchange of Thailand's regulations, and any laws applicable relating to the Company's business.

If the Audit Committee reports to the Board of Directors on suspicious actions and discusses with the Board and executives on the rectification of such issue, when it is due time, as agree by all involved. If the Audit Committee finds that the Board or executives fail to make corrective actions without a justifiable reason, any member of the Audit Committee may report such transaction or action directly to the Securities and Exchange Commission or the Stock Exchange of Thailand.

16. Performs other duties as assigned by the Company's Board of Directors, with the approval of the Audit Committee.

In 2016, the Audit Committee performed its duties under the aforementioned roles. The summary of activities is shown in the "Audit Committee Report" on page 16.

2) The Nomination and Remuneration Committee

Appointed by the Board, the Nomination and Remuneration Committee consists of at least three Directors, most of whom must be Independent Directors and must not be Chairman of the Board nor the CEO/President. All of the members fully qualified as Directors in accordance with the Nomination and Remuneration Committee Charter.

As of December 31, 2016, the Nomination and Remuneration Committee consists of three Directors as follows:

Name	Position
1. Adjunct Professor Dr. Thosaporn Sirisumphand	Chairman of the Nomination and Remuneration Committee (Independent)
2. Ms. Chularat Suteethorn	Member of the Nomination and Remuneration Committee (Independent)
3. Mr. Sarun Rungkasiri	Member of the Nomination and Remuneration Committee

Mr. Viroj Meenaphant, Assistant Executive Vice President-Corporate Governance, serves as Secretary to the Nomination and Remuneration Committee.

Roles and Responsibilities of the Nomination and Remuneration Committee

1. Nomination

1.1 Considers the Board of Directors' composition and qualifications of both the Board and individual Director to suit the size, type, and complexity of the business focusing on education, knowledge,

expertise, skills, experience, and specialization that associate with the Company's; business as well as their independency in accordance to the Company's criteria.

1.2 Considers the qualifications of the Chief Executive Officer and President to suit the Company's business management in order to achieve the Company's objectives, covering education, experience, knowledge, and expertise; as well as take the essential and relevant business environments such as economic and industry trends and business competitiveness into consideration.

1.3 Defines nomination process and criteria in accordance with the composition and qualifications stated in 1.1 and 1.2 in compliance with good corporate governance principles.

1.4 Supervises to ensure that the Company arranges orientation programs and provide welcoming package that is beneficial to the newly appointed Director(s) to perform the roles and responsibilities.

1.5 Develops and review the succession plan for Chief Executive Officer and President as continuous preparation plan for readiness and successor to ensure the Company's continuity of business management and operation.

1.6 Encourages the Company to provide opportunity for minor shareholders to propose candidate to be nominated as the Company's Director.

1.7 Selects qualified Director(s) to take position in the Board-Committees and table the name(s) to the Board for consideration and approval in the case of vacancy.

2. Remuneration

2.1 Reviews and proposes remuneration form and criteria to suit the responsibilities of the Board of Directors; taking into consideration the Company's overall performance to motivate and retain Directors with competency, quality, and potentiality. The Board of Directors is to consider such matter prior to presenting it to the shareholders in the Annual General Meeting of Shareholders for approval.

2.2 Conducts the performance evaluation and consider to adjust the appropriate remuneration rate for the Company's Chief Executive Officer and President before proposing to the Board of Directors for approval.

3. Reviews the Nomination and Remuneration Committee Charter regularly.

4. Responsible for other tasks assigned by the Board of Directors.

In 2016, the Nomination and Remuneration Committee performed its duties under the aforementioned roles. The summary of activities is shown in the "Nomination and Remuneration Committee Report" on page 19.

3) The Corporate Governance Committee

Appointed by the Board, the Corporate Governance Committee consists of at least three Non-Executive Directors, most of whom must be Independent Directors. All of the members are fully qualified as Directors in accordance with the Corporate Governance Committee Charter.

As of December 31, 2016, the Corporate Governance Committee consists of three Directors as followed:

Name	Position
1. ACM Suttipong Inseepong	Chairman of the Corporate Governance Committee (Independent)
2. Adjunct Professor Dr. Thosaporn Sirisumphand	Member of the Corporate Governance Committee (Independent)
3. Mr. Yongyut Jantararotai	Member of the Corporate Governance Committee

Ms. Panumas Chuchartchaikularn, Vice President-Corporate Compliance and Company Secretary, serves as Secretary to the Corporate Governance Committee.

Roles and Responsibilities of the Corporate Governance Committee

1. Defines corporate governance policies, practices, and related operations including sustainability management and corporate social responsibility aspects to conform with principles, standards, and requirements as stipulated by the Stock Exchange of Thailand, the Securities and Exchange Commission, and other recognized institutions domestically and internationally. The aim is to promote corporate strategies and goals, as well as to regularly review such policies and practices.
2. Defines guidelines, as well as supervise and monitor process, to ensure that the Company's operations are in compliance with established policies and practices in order to continuously develop and enhance corporate governance of the Company.
3. Promotes corporate governance culture among all executives and employees for clear understanding and actual implementation within Thailoil Group.

4. Promotes and provides advice for the Company on participating in the corporate governance-related assessment or rating to continuously develop and enhance the Company's corporate governance standard.
5. Considers and approve the Board's performance evaluation form, including approving the overall evaluation results and give consent before proposing to the Board.
6. Reviews the Corporate Governance Committee Charter regularly.
7. Responsible for other tasks assigned by the Board of Directors.

In 2016, the Corporate Governance Committee performed its duties under the aforementioned roles. The summary of activities is shown in the "Corporate Governance Committee Report" on page 21.

4) The Risk Management Committee

Appointed by the Board, the Risk Management Committee consists of a minimum of three Directors, with the CEO/President serving as one of the members. All of the members are fully qualified as Directors in accordance with the Risk Management Committee Charter.

As of December 31, 2016, the Risk Management Committee consists of three Directors as followed:

Name	Position
1. Mr. Sarun Rungkasiri	Chairman of the Risk Management Committee
2. Mr. Noppadol Pinsupa	Member of the Risk Management Committee

Name	Position
3. Mr. Atikom Terbsiri	Member of the Risk Management Committee/ Chief Executive Officer and President

Mr. Somboon Chuaykoblap, Corporate Strategic Risk Manager, serves as Secretary to the Risk Management Committee

Roles and Responsibilities of the Risk Management Committee

1. Defines and reviews risk management framework, Risk Management Committee Charter, risk management policies and process including suitably and effectively suggest the guidelines to risk management relating to the Company's business to correspond with business strategies, business plans, and volatile circumstances.
2. Continuously and effectively promotes and develops risk management and risk management tools in all levels across the organization, as well as encourage the development of risk management culture in the organization.
3. Supervises, monitors, and reviews key risk management plan and report including give necessary advice to ensure effective risk management at an acceptable level corresponding with risk management policy.
4. Report significant risk management performance to the Board of Directors; in case there are factors or events that might have significant impact on the Company, the Committee shall notify the Board of Directors in a timely manner.

5. Responsible for other tasks assigned by the Board of Directors.

In 2016, the Risk Management Committee performed duties under the aforementioned roles. The summary of activities is shown in the “Risk Management Committee Report” on page 24.

Board Meetings

Annually, Board meetings are scheduled in advance so that Directors can schedule themselves to attend. If there is any special meeting (urgent), Thailoil shall notify the Directors in advance. Thailoil is responsible for preparing and delivering the meeting agenda and relevant documents to all Directors well in advance, with the exception of urgent matters. **Meeting invitations are delivered to Directors at least seven days prior to meeting date** to give them adequate preparation time and enable them to make sound decisions on all agenda items. In consultation with the CEO/President, the Chairman must endorse each meeting and its agenda. Other significant matters proposed by Directors are also considered. High-level executives should attend Board meetings to provide additional relevant information and allow the Board to get to know them, which will be useful for their review of succession plans.

In 2016, Thailoil managed a total of 12 Board Meetings, two Independent Directors meetings, and one Non-Executive Directors meeting in the absence of the executive. Thailoil encourages the Directors to independently discuss, recommend, and openly express their opinions during these meetings. The details on Board’s meeting attendance can be found on page 110.

In Board meetings, the Board has set up a policy that requires no less than two-thirds of the total Board in

attendance to make a quorum unless where there is an urgent need to conduct a meeting which may otherwise jeopardize Thailoil’s operation, or in the event of an urgent call for a meeting or any other reason where the Board deems appropriate. There is also a clearly defined policy for the Board’s conflicts on an agenda and for a confidential agenda. The Chairman encourages the Directors to independently and openly express their opinions. Moreover, in order to consider critical issues on the meeting agenda, the resolution of the meeting shall be deemed a majority of the vote. One member has one vote and Directors with vested interests must abstain on voting on such matter. If the votes are equal, the Chairman of the meeting can cast a decisive vote.

At the end of the meeting, the Company Secretary must produce minutes of the meeting for the Board’s approval in the following meeting. The meeting report consists of minutes of the meeting, Board’s comments, and clear and complete resolutions for future reference.

Directors’ Remuneration

It is Thailoil’s policy to compensate Directors reasonably to motivate and retain quality Directors, or at levels comparable to industrial practices. Compensation is linked to each Director’s performance and responsibility as well as Thailoil’s performance and benefits to the shareholders. Directors tasked with greater responsibilities are paid more accordingly, and Chairmen of the Board and Board-Committees may likewise receive higher compensation than Directors. The Nomination and Remuneration Committee sets the remuneration principles and payment method, and present it to the Board and the AGM for approval, respectively. The 2016 AGM reviewed compensation for the Board and Board-Committees is detailed in Director Remuneration on page 117 and

individual Directors' compensation can be found in "the 2016 Remuneration of Directors" on page 118.

Board's Performance Assessment

The annual performance assessment is done in three steps, namely:

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

Board's Performance Assessment Process

The Board assigns the Corporate Governance Committee to annually endorse all three Board's performance assessment forms to ensure that they are complete and align with prevailing circumstances. In 2016, the Corporate Governance Committee approved the 2015 performance assessment outcomes, which comprehensively covered key contents and issues in line with the example provided by SET. After the Committee's approval, the assessments were handed out to all Directors. The Directors have to complete the assessment form and return it to Thaioil for analysis.

After the analysis, Thaioil must present the results and comments of the Directors to the Corporate Governance Committee and the Board, respectively, to form the basis for improving Board performance in the future. The CEO/President also participates in explaining his expectations for support from the Board.

Board's Performance Assessment Criteria

Thaioil's appraisal form covers additional significant criteria as follows:

- 1) Board Policy
- 2) Board Composition and Qualifications
- 3) Board Meeting

4) Practices, Roles, Duties and Responsibilities of the Board, which consist of preparedness of the Board, risk management and internal control, handling of conflicts of interest, financial control and monitoring, selection process, compensation process, and performance appraisal.

The criteria for the evaluation represent the percentage in each item as follows:

Over 85%	=	Excellent
Over 75%	=	Very Good
Over 65%	=	Good
Over 50%	=	Satisfactory
Under 50%	=	Poor

The 2016 Performance Assessment of the Board can be summarized as followed:

Rating Assessment of the Board in 2016	2016 (%)	Rating
Form 1: Individual Director Assessment (Self-Assessment)	99	Excellent
Form 2: Board and Board-Committees Assessment	98	Excellent
- Corporate Governance Committee Assessment	97	Excellent
- Audit Committee Assessment	99	Excellent
- Nomination and Remuneration Committee Assessment	98	Excellent
- Risk Management Committee Assessment	99	Excellent
Form 3: Peer Assessment	99	Excellent
The Company randomly selected assessors for each Directors		

The overall result of the 2016 Board Assessment indicates an average rating of “excellent” at the score of 98%.

Directors’ Development

Orientation for New Directors

Thaioil prepares a welcoming package for new Directors to provide essential information including Board’s meeting schedule, business overview, business structures, and strategic plans. Others include Thaioil’s Articles of Association, Memorandum of Association, the Corporate Governance and Code of Conduct Manual, Board-Committee Charters, Independent Director Handbook, etc. The CEO/President along with other high-level executives will also personally provide information about the nature of business and essential data that are beneficial to the performance of the Directors.

Performance Development for the Board

Thaioil has promoted Directors’ training conducted by the Thai Institute of Directors (IOD) and other courses and seminars as part of continuous development in support of the duties of the Board. Moreover, external experts in various fields were also invited to Board meetings to share their knowledge and experience with the Directors. Thaioil also holds a Board meeting at the Refinery at least once a year to visit refinery operations and participate in community relations activities. The details of courses attended by the Board can be found on page 166.

Nomination, Appointment, Position-Holding Policy, and Succession Plan for the CEO/President

For the nomination of qualified persons to fill the vacant position of CEO/President (the highest level of

executives), the Board appoints the Nomination and Remuneration Committee to consider the qualifications and experience of qualified persons that will prove beneficial to Thaioil as well as their potential conflicts of interest and submit them to the Board for consideration and approval.

Thaioil also has a succession plan for this position. A qualified person must meet the succession criteria and readiness for the position in the future. The succession plan is regularly reviewed. This is to bolster shareholders’ and investors’ confidence that Thaioil and Subsidiaries’ business will continue its excellence in a timely manner.

The Board allows the CEO/President to serve as Director of subsidiary companies to ensure a unity, mutually supporting direction among Thaioil and Subsidiaries for maximum efficiency and effectiveness. It also defines **guidelines for Thaioil’s executives and employees that are invited to serve in other companies, agencies, or entities** in Thaioil’s Corporate Governance and Code of Conduct Manual. If the CEO/President is to be appointed as a member of a committee, he or she is to seek endorsement from the Board before assuming the position. If the matter applies to executives or employees, the matter is to be raised to the Assistant Managing Director Meeting (AMM) for acknowledgment or endorsement.

CEO/President’s Performance Assessment and Remuneration

The Nomination and Remuneration Committee, in charge of the annual performance assessment of the CEO/President, must forward the assessment outcome to the Board for endorsement. The performance assessment for the CEO/President has three parts as follows (each part has different weight percentage):

Part 1 - Corporate Key Performance Indicator (KPI) Achievements

Part 2 - Leadership Competency

Part 3 - Efficiency on Budget and Project Management

The performance appraisal outcome, influencing the salary raise for the CEO/President, is presented to the Board for further approval. However, the outcome of this assessment is considered confidential information and cannot be disclosed.

Thaioil defines the **Compensation Policy for the CEO/President** by linking the CEO/President's salary to his or her performance. The compensation must be attractive enough to inspire performance, while on a par with peer industry companies. **The Nomination and Remuneration Committee appraises the CEO/President's annual performance** against the goals previously set and agreed with him or her. These goals include short-term performance, operating performance, and long-term strategic objectives. The Committee then recommends its findings to the Board for endorsement, and the Chairman then informs the CEO/President about the decision.

4. Supervision of Subsidiaries' Operations

In the supervision of Thaioil's operations, Thaioil has appointed the CEO/President along with other senior executives to serve as members of the boards in the subsidiaries where Thaioil holds all the shares.

For a uniform direction, Thaioil defined the Thaioil Group Affiliates Management (TAM) policy with explicit roles and responsibilities of assigned-representatives to manage all subsidiaries. This year, Thaioil also published

a "TOP Way of Conduct" manual, which compiled TAM-based practical guidelines to serve as a shared principle and policy framework for subsidiaries to uphold in line with Thaioil and Subsidiaries' values and goals. This would enhance Thaioil's competitiveness, which would in turn lead to the achievement of long-term goals and sustainable growth. **The Corporate Governance and Anti-corruption Policies represent part of the policies Thaioil and Subsidiaries need to follow, based on its management guidelines.**

Connected Transactions or Acquisition or Disposal of Assets of Thaioil and Subsidiaries

Thaioil establishes a connected transaction policy in compliance with the rules and regulations of the SEC and accounting standards. **The Audit Committee then provides opinions on the suitability of connected transactions.** If the Audit Committee lacks expertise to consider such matter, Thaioil will secure the opinions of a qualified person. Afterward, these opinions will be proposed to the Board or AGM for case-by-case approval.

In case Thaioil or its subsidiaries* involves in a connected transaction or an activity in which substantial assets of Thaioil are acquired or disposed of, according to the principles of SET, Thaioil must take action stipulated by SET. This requires approval from the shareholders to enter a connected transaction or to acquire or dispose of substantial assets of Thaioil with a majority vote of no less than three-fourths of all votes of the shareholders or proxies attending the meeting and eligible to vote without counting the votes of shareholders involved in the conflicts of interest.

(*Companies in which Thai Oil Plc., directly or indirectly, has a shareholding of more than 50 percent of the registered paid-up capital)

In summary, in 2016, Thailoil complied with all elements of the corporate governance policy for listed companies as required by SET, with exception for the following point. First, **the Board should consist of 5-12 Directors**, whereas as of December 31 this year, Thailoil's Board consisted of 14 Directors. This follows Thailoil Regulation, Section 5, Item 16, which indicates that the Board is to contain no less than five and no more than 15 Directors

to enable the Board to command a proper size for its complexity. The Board should be made up of competent Directors with extensive credibility, while they should be diverse in background, including industrial, finance and accounting, business, management, strategic, legal, and good governance, among others. Another point is **the Cumulative Voting**. According to Thailoil's Regulation, Section 5, Item 17, states one share carries one vote, and each shareholder may choose to exercise all of his or her votes for one or more Directors, but may not divide his or her votes for any preferred candidate.

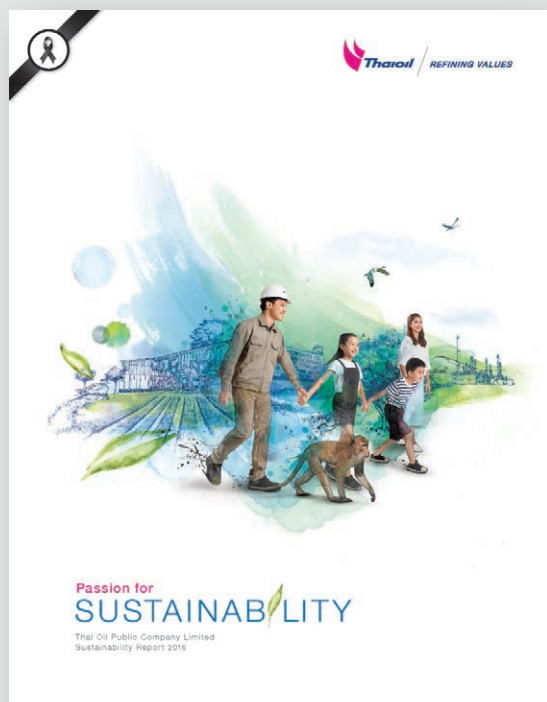
Thai Institute of Directors Association (IOD) Courses attended by Directors

Director	Position	Director Certification Program (DCP)	Director Accreditation Program (DAP)	Audit Committee Program (ACP)	Role of the Compensation Committee (RCC)	Role of the Nomination and Governance Committee (RNG)	Role of the Chairman Program (RCP)	Financial Statements for Directors (FSD)	Others
1 Mr. Kurujit Nakornthap	Director and Chairman of the Board		DAP 64/2007	ACP 32/2010	RCC 12/2011				R-CF 2/2013 C-Conference 1/2014
2 Ms. Chulanat Suteethorn	Independent Director, Chairman of the Audit Committee and Member of the Nomination and Remuneration Committee	DCP 72/2006	DAP 40/2005	ACP 39/2012	RCC 20/2015	RNG 3/2012	RCP 28/2012	FSD 10/2010	FND 28/2006 FGP 4/2012 ACEP 10/2014 AACP 15/2014 DCPU 4/2015
3 Mrs. Suvinol Chrityakierne	Independent Director and Member of the Audit Committee	DCP 92/2007		ACP 36/2011					R-DF 1/2010
4 Mr. Siri Jirapongphan	Independent Director and Member of the Audit Committee	DCP 77/2006							M-DLB 2/2008
5 Gen. Thanakam Kerdnaimongkol	Independent Director and Member of the Audit Committee	DCP 227/2016							
6 ACM Suttipong Inseeyong	Independent Director and Chairman of the Corporate Governance Committee		DAP 114/2015						
7 Mr. Yongyut Jantarotai	Director and Member of the Corporate Governance Committee							FSD 30/2016	CGE 5/2015
8 Adjunct Professor Dr. Thosaporn Sirsumphand	Independent Director, Chairman of the Nomination and Remuneration Committee and Member of the Corporate Governance Committee	DCP 80/2006							FND 30/2006 DCPU 4/2015
9 Mr. Sarun Rungkasiri	Director, Chairman of the Risk Management Committee and Member of the Nomination and Remuneration Committee	DCP 61/2005							CSP 8/2004 FND 19/2005
10 Mr. Noppadol Pinsupa	Director and Member of the Risk Management Committee	DCP 146/2011						FSD 12/2011	
11 Mrs. Sriwan Eamrungraj	Director	DCP 160/2012							M & A 1/2011 R-SS 5/2008
12 Mrs. Nilima Thepvanangkul	Director	DCP 126/2009							RMP 3/2014 ACPG 18/2015 ELP 3/2016
13 Ms. Nantika Thangsuphanich	Director								NDC 1/2013 C-Conference 1/2013 C-Conference 1/2014 RCL 4/2016
14 Mr. Aikkom Tertsiri	Director, Member of the Risk Management Committee, Chief Executive Officer and President, Secretary to the Board	DCP 125/2009							
Director who resigned and completed their terms during the year									
1 Mr. Tanasak Wahawisan	Independent Director (Resigned on January 11, 2016)	DCP 85/2007	DAP 61/2007						CGI 3/2015
2 Mr. Chulasingh Vasanasingh	Independent Director and Chairman of the Audit Committee (Resigned on January 31, 2016)	DCP 35/2003		ACP 17/2007					FND 7/2003 UFS 1/2006 DCP Refresher 1/2008 FGP 4/2012
3 Gen. Jiradej Mokhasmit	Independent Director and Chairman of the Nomination and Remuneration Committee (Completed their term in the 2016 AGM)		DAP 16/2004						
4 Mr. Nittachai Charuchinda	Director, Chairman of the Risk Management Committee and Member of the Nomination and Remuneration Committee (Completed their term in the 2016 AGM)	DCP 129/2010							RNG 5/2013
5 Mr. Thaworn Phanichaphan	Independent Director, Chairman of the Corporate Governance Committee and Member of the Nomination and Remuneration Committee (Resigned on October 1, 2016)	DCP 108/2008	DAP 73/2008	ACP 22/2008					UFS 8/2007
6 Mr. Wirat Unanarumit	Director (Resigned on October 1, 2016)	DCP 8/2001		ACP 38/2012					DCPU 5/2015 M-DBT 1/2013 M-EE 1/2015 CGE 5/2015
7 Mr. Thammayot Sichuai	Director and Member of the Risk Management Committee (Resigned on November 8, 2016)								

Training Course in year 2016 attended by Directors

No. Name - Surname	Position	Training Course in year 2016
1 Mr. Kurujit Nakornthap	Director and Chairman of the Board	>> Academic Seminar : “Money Laundering in Dairy Life that We Must Have” >> Seminar : “Anti-corruption : Leadership Role of the Board”
2 Mrs. Suvimol Chrityakierne	Independent Director and Member of the Audit Committee	>> Academic Seminar : “Money Laundering in Dairy Life that We Must Have”
3 Mr. Siri Jirapongphan	Independent Director and Member of the Audit Committee	>> Seminar : “Anti-corruption : Leadership Role of the Board”
4 Gen. Thanakarn Kerdnaimongkol	Independent Director and Member of the Audit Committee	>> Director Certification Program (DCP 227/2016)
5 Mr. Sarun Rungkasiri	Director, Chairman of the Risk Management Committee and Member of the Nomination and Remuneration Committee	>> Seminar : “Anti-corruption: Leadership Role of the Board”
6 Mr. Yongyut Jantararotai	Director and Member of the Corporate Governance Committee	>> Financial Statements for Directors (FSD 30/2016) >> Academic Seminar : “Money Laundering in Dairy Life that We Must Have”
7 Mr. Noppadol Pinsupa	Director and Member of the Risk Management Committee	>> Training Course for Executives, Class 22, Capital Market Academy >> Seminar : “Anti-corruption: Leadership Role of the Board”
8 Mrs. Nitima Thepvanangkul	Director	>> Ethical Leadership Program (ELP 3/2016)
9 Mrs. Sriwan Eamrungraj	Director	>> Energy Literacy for the World, Class 8, Thailand Energy Academy
10 Mr. Atikom Terbsiri	Director, Member of the Risk Management Committee, Chief Executive Officer and President, Secretary to the Board	>> Seminar : “Anti-corruption: Leadership Role of the Board” >> Risk Management Program for Corporate Leaders (RCL 4/2016)

THAIOIL AND SUBSIDIARIES' SOCIAL RESPONSIBILITY



The performance of Thaioil and Subsidiaries concerning social and environmental responsibility was disclosed in the 2016 Sustainability Report.

In preparing this sustainability report, Thaioil conducted materiality assessment under Global Reporting Initiative Guidelines version 4.0 (GRI G4) and Oil and Gas Sector Supplement. GRI G4 is the latest universal standard for the disclosure of corporate approaches and performance in economic, social, and environmental aspects. Thaioil has also presented the progress of the implemented United Nations Global Compact's (UNGC's) 10 principles, and corresponded with the UN's Sustainability Development Goals (SDGs). The 2016 Sustainability Report including the materiality assessment process and accuracy of environmental and safety performance is verified through independent third-party assurance.



Materiality Assessment of Thaioil and Subsidiaries' Sustainability

01 Material Aspect Identification

Reviewed material aspects for 2015 by taking into account additional elements of international practices, including GRI, Dow Jones Sustainability Indices (DJSI), SDGs, report review questionnaires, and stakeholders' expectations.

02 Prioritization

With relevant units, reviewed the ranking of sustainability material aspects of 2015 with priority given to two aspects: significant impacts on and probability borne by Thaioil and Subsidiaries' businesses, and issues of stakeholders' interest.

03 Validation

Verified the integrity of material aspects by sustainable development units and issue-owner units before tabling the findings to the Assistant Managing Director Meeting, chaired by the CEO/President, for approval and confirmation of the materiality assessment under the impact scope inside and outside the corporation.

Finally, this process was audited by an independent third party, which included the stakeholder engagement and data on safety and environmental performance for accuracy, clarity, and completeness.



CORPORATE INFORMATION

Thai Oil Public Company Limited

Symbol	TOP
Registration Number	0107547000711
Business	<p>Thaioil is Thailand's largest refinery and supplier of petroleum products. Founded in 1961, we operate one of the most efficient refineries in Asia Pacific with the current capacity of 275,000 barrels per day.</p> <p>Thaioil operates under the Operational Excellence principle, operating as an integrated group of businesses in oil refinery, petrochemicals and lube base oil with supporting businesses, e.g. power generation, solvents, logistics and renewable energy generation, LAB : an intermediate in the production of surfactants, marine and pipeline transportation and storage services of crude, petroleum and petrochemical products, as well as recruitment services for Thaioil and Subsidiaries. Thaioil leads the Thai refinery industry through a well-planned and integrated production process, yielding optimum efficiency. Our products are of high quality, rated in the top quartile of refineries in Asia Pacific, at lower production costs – giving Thaioil a recognized competitive advantage.</p>
Registered Capital	<p>20,400,278,730 Baht</p> <p>Comprising 2,040,027,873 fully paid-up common shares of 10 Baht per share</p>
Number of Employees	726 persons (as of December 31, 2016)
Address	<p>Bangkok Office</p> <p>555/1 Energy Complex Building A, 11th Floor, Vibhavadi Rangsit Road, Chatuchak, Chatuchak, Bangkok 10900, Thailand</p> <p>Telephone : +66 (0)-2797-2999, +66 (0)-2797-2900, +66 (0)-2299-0000</p> <p>Fax : +66 (0)-2797-2970</p> <p>Sriracha Office and Refinery</p> <p>42/1 Moo 1, Sukhumvit Road Km.124, Tungsukla, Sriracha, Chonburi 20230, Thailand</p> <p>Telephone : +66 (0)-3840-8500, +66 (0)-3835-9000</p> <p>Fax : +66 (0)-3835-1554, +66 (0)-3835-1444</p>
Website	www.thaioilgroup.com
Investor Relations	<p>Telephone : +66 (0)-2797-2961</p> <p>e-mail : ir@thaioilgroup.com</p>

General Information of the Subsidiaries

Company Name and Address	Registration Number	Business	Registered Capital in Baht	Type of Shares	Number of Shares (Issued)	Value of Share (Baht per share)	Shareholding (%)
Lube Base Oil Business							
Thai Lube Base Public Company Limited 555/1 Energy Complex Building A, 11 th 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
Petrochemical Business							
Thai Paraxylene Company Limited 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
Labix Company Limited 555/1 Energy Complex Building A, 11 th 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.)
Thaioil Solvent Company Limited 555/1 Energy Complex Building A, 11 th 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 business	1,250,000,000	Common	125,000,000	10	100

Company Name and Address	Registration Number	Business	Registered Capital in Baht	Type of Shares	Number of Shares (Issued)	Value of Share (Baht per share)	Shareholding (%)
TOP Solvent Company Limited 555/1 Energy Complex Building A, 11 th 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 product distributor	1,200,000,000	Common	120,000,000	10	100 (Shareholding through Thairoil Solvent Co., Ltd.)
Sak Chaisidhi Company Limited 555/1 Energy Complex Building A, 11 th Floor, Vibhavadi Rangsit Road, Chatuchak, Chatuchak, Bangkok 10900, Thailand Tel : +66 (0)-2299-0003, +66 (0)-2797-2993 Fax : +66 (0)-2797-2983	0105527011880	Hydrocarbon solvent manufacturer and distributor	180,000,000	Common	1,800,000	100	80.52 (Shareholding through TOP Solvent Co., Ltd.)
TOP Solvent (Vietnam) Limited Liability Company Go Dau Industrial Zones, Long Thanh District, Dong Nai Province, Vietnam Tel : +84-83827-9030-4 Fax : +84-83827-9035	472043000745 (Registered in Vietnam)	Solvent and petrochemical products distributor in Vietnam	373,520,000,000 VND	Common	-	-	100 (Shareholding through TOP Solvent Co., Ltd.)
Power Generation Business Thairoil Power Company Limited 555/1 Energy Complex Building A, 11 th Floor, Vibhavadi Rangsit Road, Chatuchak, Chatuchak, Bangkok 10900, Thailand Tel : +66 (0)-2299-0000, +66 (0)-2797-2999 Fax : +66 (0)-2797-2970	0105539103296	Power and steam generator and distributor	2,810,000,000	Common	281,000,000	10	73.99

Company Name and Address	Registration Number	Business	Registered Capital in Baht	Type of Shares	Number of Shares (Issued)	Value of Share (Baht per share)	Shareholding (%)
Global Power Synergy Public Company Limited 555/2 Energy Complex Building B, 5 th 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	14,983,008,000	Common	1,498,300,800	10	8.91 and 20.79 (Shareholding through Thailoil Power Co., Ltd.)
TOP SPP Company Limited 555/1 Energy Complex Building A, 11 th Floor, Vibhavadi Rangsit Road, Chatuchak Chatuchak, Bangkok 10900, Thailand Tel : +66 (0)-2797-2999, +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
Transportation Business Thailoil Marine Company Limited 223/97 Country Complex Building A, 22 nd Floor, Sanphawut Road, Bangna, Bangkok 10260, Thailand Tel : +66 (0)-2361-7500 Fax : +66 (0)-2361-7498-9	0105541047578	Provide marine transportation of petroleum and petrochemical products	970,000,000	Common	97,000,000	10	100
Thailoil Marine International Private Limited 391A Orchard Road #12-01104, #12-05 & 12-10, Ngee Ann City Tower A, Singapore 238873 Tel : +65-6734-6540 Fax : +65-6734-3397, +65-6734-5801	201021606H (Registered in Singapore)	Investment in marine transportation of crude oil and petroleum products	9,000,000 USD	Common	9,000,000	1 USD per share	100 (Shareholding through Thailoil Marine Co., Ltd.)

Company Name and Address	Registration Number	Business	Registered Capital in Baht	Type of Shares	Number of Shares (Issued)	Value of Share (Baht per share)	Shareholding (%)
TOP-NYK MarineOne Private Limited 1 Harbourfront Place #13-01, Harbourfront Tower One, Singapore 098633 Tel : +65-6290-8405 Fax : +65-6293-2080	201104774G (Registered in Singapore)	Marine transportation of crude oil and petroleum products	18,000,000 USD	Common	18,000,000	1 USD per share	50 (Shareholding through Thail Marine International Pte. Ltd.)
TOP Maritime Service Company Limited 223/97 Country Complex Building A, 22 nd Floor, Sanphawut Road, Bangna, Bangkok 10260, Thailand Tel : +66 (0)-2361-7500 Fax : +66 (0)-2361-7498-9	0115554017087	Marine transportation services for crew and supplies in the Gulf of Thailand	270,000,000	Common	2,700,000	100	55 (Shareholding through Thail Marine Co., Ltd.)
T.I.M. Ship Management Company Limited 88 Soi Bangna-Trad 30, Bangna-Trad Road, Bangna, Bangkok, Bangkok 10260, Thailand Tel : +66 (0)-2331-0080-5 Fax : +66 (0)-2331-0086	0105551087343	Ship management and international-standard fleet development services as well as crew development consultation (technical operation and marine transportation quality)	3,000,000	Common	30,000	100	33.3 (Shareholding through Thail Marine Co., Ltd.)
TOP-NTL Private Limited 5 Temasek Boulevard #11-02 Suntec Tower Five, Singapore 038985 Tel : +65-6361-0383 Fax : +65-6361-0377	201202478W (Registered in Singapore)	Trustee Management	20,000 SGD	Common	20,000	1 SGD per share	50 (Shareholding through Thail Marine Co., Ltd.)

Company Name and Address	Registration Number	Business	Registered Capital in Baht	Type of Shares	Number of Shares (Issued)	Value of Share (Baht per share)	Shareholding (%)
TOP Nautical Star Company Limited 88 Soi Bangna-Trad 30, Bangna-Trad Road, Bangna, Bangna, Bangkok, 10260, Thailand Tel : +66 (0)-2331-0080-5 Fax : +66 (0)-2331-0086	0105556123275	Large vessels provider for storage and transportation of crude oil, feedstock, and petroleum products	150,000,000	Common	1,500,000	100	35 (Shareholding through Thaioil Marine Co., Ltd.) 30 (Shareholding through TOP-NTL Pte. Ltd.)
Thai Petroleum Pipeline Company Limited 2/8 Moo 11, Lumlukka Road, Ladsawai, Lumlukka, Pathumthani 12150, Thailand Tel : +66 (0)-2991-9130-59 Fax : +66 (0)-2533-2186	0105534002696	Pipeline transportation of petroleum products	8,479,000,000	Common	84,790,000	100	9.19
Other Business Thaioil Energy Services Company Limited 555/1 Energy Complex Building A, 11 th 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
Thaioil Ethanol Company Limited 555/1 Energy Complex Building A, 11 th 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

Company Name and Address	Registration Number	Business	Registered Capital in Baht	Type of Shares	Number of Shares (Issued)	Value of Share (Baht per share)	Shareholding (%)
Sapthip Company Limited 68 Soi Santipap, Sap Road, Sipraya, Bangkok, 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 Thailoil Ethanol Co., Ltd.)
Maesod Clean Energy Company Limited 191/18-25 CTI Tower, 26 th Floor, Ratchadapisek Road, Klongtoey, Klongtoey, Bangkok 10110, Thailand Tel : +66 (0)-2656-7761-3 Fax : +66 (0)-2251-1138	0105549129891	Cane-based and molasses-based ethanol manufacturer and distributor	675,000,000	Common	67,500,000	10	30 (Shareholding through Thailoil Ethanol Co., Ltd.)
Ubon Bio Ethanol Company Limited 333 Moo 9, Nadee, Navear, Ubonratchatani 34160, Thailand Tel : +66 (0)-4525-2777 Fax : +66 (0)-4525-2776	0345550000315	Cassava-based and molasses-based ethanol manufacturer and distributor	2,740,000,000	Common	2,740,000	1,000	21.28 (Shareholding through Thailoil Ethanol Co., Ltd.)
PTT ICT Solutions Company Limited 555/1 Energy Complex Building A, 4 th -5 th 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
PTT Energy Solutions Company Limited Room No. 1201, 12 th Floor, Central Plaza Ladprao 1693 Phaholyothin Road, Chatuchak Chatuchak, Bangkok 10900, Thailand Tel : +66 (0)-2140-3460 Fax : +66 (0)-2140-3499	0105554075621	Engineering technique consultation and other services	150,000,000	Common	1,500,000	100	20

Reference

Securities Registrar

Thailand Securities Depository Company Limited (TSD)
The Stock Exchange of Thailand Building,
93 Ratchadapisek Road, Dindaeng,
Bangkok 10400, Thailand
Tel : +66 (0)-2009-9000,
+66 (0)-2009-9999 (Call center)
Fax : +66 (0)-2009-9991

Debenture Registrar and Principal Paying Agent

Thai Military Bank Public Company Limited
Securities Services and Fund Operations
3000 Head Office Floor 5 A, Phaholyothin Road,
Chompon, Chatuchak, Bangkok 10900, Thailand
Tel : +66 (0)-2299-1830
Fax : +66 (0)-2242-3270

Bangkok Bank Public Company Limited

Head of Marketing & Sales Investor Services
333 Trinity Building, Silom Road, Silom, Bangrak
Bangkok 10500, Thailand
Tel : +66 (0)-2230-1477, +66 (0)-2230-1478
Fax : +66 (0)-2626-4545-6

KASIKORNBANK Public Company Limited

Registrar and Account Administration,
Securities Services, 18th Floor
33/4 the Ninth Towers Grand Rama IX (Tower A)
Rama 9 Road, Huaykwang, Huaykwang,
Bangkok 10310, Thailand
Tel : +66 (0)-2470-6662
Fax : +66 (0)-2273-2279

Auditors

KPMG Phoomchai Audit Limited
51st Floor, Empire Tower, 1 South Sathorn Road,
Bangkok 10120, Thailand
Tel : +66 (0)-2677-2000
Fax : +66 (0)-2677-2222

Other Services (Loss of Share Certificate, Change of Particulars in Securities Register, and Other Services)

Counter Service

The Stock Exchange of Thailand Building, 1st Floor,
93 Ratchadapisek 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 Ratchadapisek Road, Dindaeng,
Bangkok 10400, Thailand
Tel : +66 (0)-2009-9000,
+66 (0)-2009-9999 (Call center)
Fax : +66 (0)-2009-9991

THAIOIL AND SUBSIDIARIES BUSINESS STRUCTURE

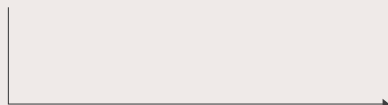
Oil Refinery



Thai Oil Plc.

Capacity:

275,000 barrels/day



Platformate

1.8 million tons/annum

Petrochemical & Lube Base Oil



Thai Paraxylene Co.,Ltd.

Aromatics

Capacity:

Paraxylene

527,000 tons/annum

Mixed Xylene

52,000 tons/annum

Benzene

259,000 tons/annum

Total

838,000 tons/annum

● 75% **Labix Co.,Ltd.**
LAB Producer and Distributor
Capacity : 120,000 tons/annum
COD : 2016

● 100% **Thaioil Solvent Co.,Ltd.**

100%

TOP Solvent Co.,Ltd.

Solvent Distributor in Thailand

80.5%

100%

Sak Chaisidhi Co.,Ltd.

Solvent Manufacturer

Capacity:

141,000 tons/annum

TOP Solvent (Vietnam) LLC.

Solvent Distributor in Vietnam



Thai Lube Base Plc.

Lube Base Oil

Capacity:

Lube Base Oil

267,015 tons/annum

Bitumen

350,000 tons/annum

TDAE

67,520 tons/annum

Core Business

Value Enhancement

Thaioil is Thailand's largest refinery and supplier of petroleum products. Founded in 1961, we operate one of the most efficient refineries in Asia Pacific with the current capacity of 275,000 barrels per day.

Thaioil operates under the Operational Excellence principle, operating as an integrated group of businesses in oil refinery, petrochemicals and lube base oil with supporting businesses, e.g. power generation, solvents, logistics and renewable energy generation, LAB : an intermediate in the production of surfactants, marine and pipeline transportation and storage services of crude, petroleum and petrochemical products, as well as recruitment services for Thaioil and Subsidiaries. Thaioil leads the Thai refinery industry through a well-planned and integrated production process, yielding optimum efficiency. Our products are of high quality, rated in the top quartile of refineries in Asia Pacific, at lower production costs – giving Thaioil a recognized competitive advantage.

Power Generation

Transportation & Others



Thaioil Power Co.,Ltd.

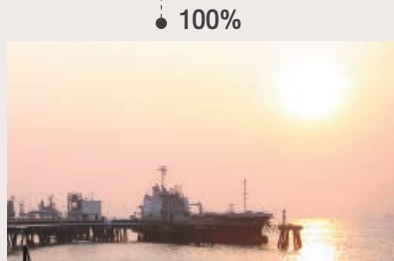
Sells Electricity/Steam to Thaioil and Subsidiaries

Small Power Producer (SPP)
3-on-1 Combined Cycle
Capacity:
Electricity: 118 megawatts
Steam: 216 tons/hour

- 100% **TOP SPP Co.,Ltd.**
2 Small Power Producer (SPP)
Capacity:
Electricity: 239 megawatts
Steam: 498 tons/hour
COD: 2016

- 22.6% PTT Plc.
- 22.7% PTT Global Chemical Plc.
- 25% Free Float in SET

- 20.8%
- 8.9% **Global Power Synergy Plc.**
Principal power plant of PTT Group
Capacity:
Electricity: 1,922 megawatts
Steam: 1,582 tons/hour
Industrial water: 2,080 cubic meters/hour
Chilled water: 12,000 refrigerator tons



Thaioil Marine Co.,Ltd.

5 Oil & Chemical Tankers

Capacity: 52,350 deadweight tonnage

3 Crude Tankers VLCCs

Capacity: 881,050 deadweight tonnage

14 Crew & Utility Boats

Capacity: 120 deadweight tonnage each

2 Large Vessels for Crude, Feedstock & Product Storage and Transportation Services

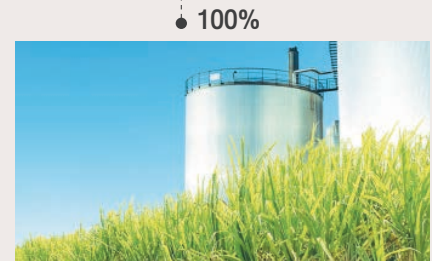
Capacity: 200,000 deadweight tonnage

Ship Management Services

- 40.4% PTT Plc.
- 50.4% Others

Thai Petroleum Pipeline Co.,Ltd.

Multi-product Pipeline
Capacity: 26,000 million litres/annum



Thaioil Ethanol Co.,Ltd.

- 30% **Maesod Clean Energy Co.,Ltd.**
Sugarcane Based Ethanol
Capacity: 230,000 litres/day
- 50% **Sapthip Co.,Ltd.**
Cassava Based Ethanol
Capacity: 200,000 litres/day
- 21.3% **Ubong Bio Ethanol Co.,Ltd.**
Cassava and Molasses Based Ethanol
Capacity: 400,000 litres/day

Thaioil Energy Services Co.,Ltd.

Provide Recruitment Service for Thaioil and Subsidiaries

- 40% PTT Plc.
- 20% PTT Global Chemical Plc.
- 20% IRPC Plc.

PTT Energy Solutions Co.,Ltd.

Provides engineering technique consulting services

- 80% PTT GROUP

PTT ICT Solutions Co.,Ltd.

IT and communication services

Earning Stability

Marketing/IT Support

REVENUE STRUCTURE

Thaioil's core earnings were derived from our oil refinery business. Other revenue contributors were the lube base oil refinery, petrochemical, power generation, marine transportation services, solvent, ethanol and other businesses.

(in million Baht)

			For the year ended December 31					
		Ownership interest	2016		2015		2014 (Restated)	
Operator ⁽⁴⁾		(%)	Amount	%	Amount	%	Amount	%
A. Net Sales								
1. Oil refinery	TOP	-	283,293	103	290,113	98	389,779	99
2. Lube base oil refinery	TLB	100	13,536	5	18,944	6	26,560	7
3. Petrochemical	TPX	100	48,384	17	40,635	13	56,711	15
4. Power generation	TP/TOP SPP	74/100	9,131	3	5,075	1	5,219	1
5. Marine transportation services	TM	100	878	-	1,219	-	1,199	-
6. Solvent	TOS	100	7,630	3	7,828	3	9,822	2
7. Ethanol	TET	100	1,539	1	1,536	1	1,704	-
8. Other	TES	100	900	-	814	-	561	-
Less: Eliminations			(90,552)	(33)	(72,595)	(24)	(101,465)	(26)
Total			274,739	99	293,569	98	390,090	98
B. Net Derivative Gain on Hedging ⁽¹⁾								
1. Oil refinery	TOP	-	-	-	1,489	1	2,218	1
2. Petrochemical	TPX	100	1	-	-	-	-	-
Total			1	-	1,489	1	2,218	1
C. Net Foreign Exchange Gain ⁽²⁾								
1. Oil refinery	TOP	-	372	-	-	-	872	-
2. Lube base oil refinery	TLB	100	10	-	-	-	38	-
3. Petrochemical	TPX	100	58	-	-	-	27	-
4. Power generation	TP/TOP SPP	74/100	5	-	-	-	35	-
5. Marine transportation services	TM	100	(3)	-	-	-	3	-
6. Solvent	TOS	100	6	-	-	-	21	-
7. Ethanol	TET	100	(2)	-	-	-	-	-
Total			446	-	-	-	996	-

(in million Baht)

			For the year ended December 31					
		Ownership interest	2016		2015		2014 (Restated)	
Operator ⁽⁴⁾		(%)	Amount	%	Amount	%	Amount	%
D. Other Revenues ⁽³⁾								
1. Oil refinery	TOP	-	2,926	1	2,777	1	3,222	1
2. Lube base oil refinery	TLB	100	82	-	115	-	138	-
3. Petrochemical	TPX	100	196	-	218	-	393	-
4. Power generation	TP/TOP SPP	74/100	10	-	8	-	23	-
5. Marine transportation services	TM	100	28	-	22	-	16	-
6. Solvent	TOS	100	54	-	30	-	23	-
7. Ethanol	TET	100	8	-	6	-	22	-
8. Other	TES	100	1	-	-	-	1	-
Less: Eliminations			(2,186)	-	(1,678)	-	(1,753)	-
Total			1,119	1	1,498	1	2,085	1
Total revenues (A-D)			276,305	100	296,556	100	395,389	100

Remarks:

⁽¹⁾ Oil refinery has net derivative loss on hedging in 2016.

⁽²⁾ Net foreign exchange loss in 2015.

⁽³⁾ Comprises received interests, export tax subsidy, revenues from services provided to subsidiary companies, land lease, single buoy mooring service fee, oil storage tank lease, etc.

⁽⁴⁾ TOP is Thai Oil Plc.

TLB is Thai Lube Base Plc.

TPX is Thai Paraxylene Co., Ltd. having respective interests in Labix Co., Ltd.

TP is Thairoil Power Co., Ltd.

TOP SPP is TOP SPP Co., Ltd.

TM is Thairoil Marine Co., Ltd. having respective interests in Thairoil Marine International Pte. Ltd. and

TOP Maritime Service Co., Ltd.

TOS is Thairoil Solvent Co., Ltd. having respective interests in TOP Solvent Co., Ltd., Sak Chaisidhi Co., Ltd. and

TOP Solvent (Vietnam) LLC.

TET is Thairoil Ethanol Co., Ltd. having respective interests in Sapthip Co., Ltd.

TES is Thairoil Energy Services Co., Ltd.

MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL POSITION AND OPERATING RESULTS

Consolidated Results

		2016	2015	+ / (-)
Gross Integrated Margin (GIM) ⁽¹⁾				
:excluding stock gain/(loss) ⁽¹⁾	USD/barrel	7.5	9.1	(1.6)
:including stock gain/(loss) ⁽¹⁾	"	9.1	7.2	1.9
Sales Revenue	Million Baht	274,739	293,569	(18,830)
Hedging Gain/(Loss)	"	(243)	1,489	(1,732)
EBITDA	"	32,675	25,492	7,183
Finance Costs	"	(3,461)	(3,435)	(26)
Foreign Exchange Gain/(Loss)	"	446	(2,754)	3,200
Income Tax Expenses/(Reversal)	"	(2,295)	(1,597)	(698)
Net Profit/(Loss) ⁽²⁾	"	21,222	12,181	9,041
Basic Earnings/(Loss) per Share	Baht	10.40	5.97	4.43
Stock Gain/(Loss)	Million Baht	6,138	(6,945)	13,083
Petroleum Inventory write-down to NRV/(Reversal)	"	1,041	1,338	(297)
Net Profit/(Loss) excluding stock gain/(loss) and inventory write-down to NRV ⁽³⁾	"	14,043	17,789	(3,746)

Remarks:

⁽¹⁾ Gross Integrated Margin (GIM) includes Thai Oil Plc., Thai Paraxylene Co., Ltd. (TPX), Labix Co., Ltd. (LABIX), and Thai Lube Base Plc.(TLB)

⁽²⁾ Including dividends of Baht 247 million received from Thai Petroleum Pipeline Co., Ltd. (THAPPLINE) in 2016 and Baht 48 million in 2015

⁽³⁾ Excluding pre-tax stock gain / (loss) and pre-tax petroleum inventory write-down to NRV / (a reversal of petroleum inventory write-down to NRV). Such items are included in the costs of sale of goods and services rendered in the financial statements

For the year 2016, Thailoil and Subsidiaries maintained a high throughput. Thailoil posted a capacity utilization rate of 108%, whereas the aromatics and the lube base oil businesses posted 81% utilization of their capacities. Thailoil boasted Baht 274,739 million in sales revenue, Baht 18,830 million down from previous year due to the plunging average product selling prices. Still, Thailoil and Subsidiaries achieved the GIM including stock gain/(loss) of 9.1 USD/barrel, an increase of 1.9 USD/barrel. This

was because TPX had improved the performance, and LABIX commenced the commercial operation in February this year. Besides, Thailoil and Subsidiaries launched the Profitability Improvement Project, consisting of three key aspects; namely, Supply and Marketing Management, Hydrocarbon Management, and Orchestra Project. In addition, the rising crude oil prices from the beginning of the year provided Thailoil and Subsidiaries with Baht 6,138 million in stock gain against the Baht

6,945 million stock loss of the previous year. The reversal of petroleum inventory write-down to NRV earned Thairoil and Subsidiaries Baht 1,041 million, a drop of Baht 297 million; while Thairoil and Subsidiaries had hedging loss of Baht 243 million against the hedging gain in previous year of Baht 1,489 million. Nevertheless, this year Thairoil and Subsidiaries registered Baht 32,675 million in EBITDA, a rise of Baht 7,183 million, which included LABIX and TOP SPP (commencing the commercial operation since the first and second quarters of this year respectively). Finally, Thairoil and Subsidiaries had foreign exchange gain by Baht 446 million in, when the depreciation, finance costs, and income tax expense were deducted, Thairoil and Subsidiaries registered Baht 21,222 million in net profit, equaling to Baht 10.40 per share, a rise of Baht 9,041 million from the previous year.

2016 Results by Company

Thai Oil Plc. (Thairoil): For the year 2016, Thairoil Refinery maintained its high capacity utilization rate of 108% and increased total product sale volume by 7% of all products higher than previous year. Still, with the lower average selling prices due to market gluts, its sales revenue fell by Baht 6,820 million to Baht 283,293 million. In 2016, Thairoil's Gross Refining Margin (GRM) including stock gain/(loss) increased by 0.9 USD/barrel to 6.8 USD/barrel, as the average crude oil price steadily rose since the beginning of the year, resulting in stock gain of 1.6 USD/barrel or Baht 6,138 million, against stock loss of Baht 6,945 million in previous year. In addition, there was a reversal of the petroleum inventory write-down to NRV of Baht 1,041 million, when combine with the hedging loss of Baht 245 million, EBITDA equal to Baht 21,140 million (an increase of Baht 2,502 million from previous year). In addition, Thairoil and Subsidiaries had foreign exchange gain by Baht 372 million against

foreign exchange loss of Baht 3,017 million last year, when the depreciation, finance costs, and income tax expense were deducted, this year Thairoil recorded net profit of Baht 14,028 million, an increment of Baht 6,145 million from previous year.

Thai Paraxylene Co., Ltd. (TPX): For the year 2016, TPX posted 81% of its aromatics capacity utilization, virtually the same rate as previous year, whereas its sales revenue of Baht 37,966 million dropped by Baht 2,670 million due to the lower product selling prices in line with falling crude oil price. However, there were healthy rises in the aromatics spread due to climbing demand from downstream producers coupled with the falling supply surplus. This resulted in TPX's Product-to-Feed Margins rising by 37 USD/ton to 100 USD/ton. The EBITDA rose by Baht 3,156 million to Baht 4,933 million. In 2016, TPX's income tax expense stood as Baht 535 million, a rise of Baht 528 million from previous year because TPX had fully utilized its loss carry forward in the second quarter this year. Therefore, this year TPX reported net profit of Baht 3,091 million, a rise of Baht 2,460 million from previous year.

Labix Co., Ltd. (LABIX): LABIX has commenced the commercial operation since February 25 this year, achieving 102% Linear Alkyl Benzene (LAB) capacity utilization, generating Baht 11,276 million in sales revenue and Baht 816 million in EBITDA. A foreign exchange gain of Baht 20 million was made, most of which resulted from the unrealized translation gain of USD-denominated loans. When depreciation and finance costs were deducted, LABIX posted net loss of Baht 5 million in 2016.

This year the aromatics business group (TPX held 75% shares in LABIX) posted a consolidated sales revenue of Baht 48,385 million with Baht 5,749 million in EBITDA.

The aromatics business group had consolidated net profit of Baht 3,087 million, an increment of Baht 2,488 million from previous year.

Thai Lube Base Plc. (TLB): With the 81% capacity utilization this year (5% decline from previous year due to the 31-day planned major turnarounds during the third quarter this year), TLB experienced a decline in total product sales volume. In addition, product prices fell in accordance with those of crude oil price, resulting in Baht 13,536 million in sales revenue, a drop of Baht 5,408 million. Meanwhile, the lube base oil and bitumen spread over fuel oil dropped owing to a pressure from higher fuel oil price and weaker demand for lube base oil and bitumen. Nevertheless, TLB managed to hike the sales proportion of specialty products, while energy costs fell in line with those of natural gas price. As a result, the Product-to-Feed Margin dropped by only 17 USD/ton to 107 USD/ton, and EBITDA equaled Baht 2,004 million, a slight drop of Baht 925 million. This year, TLB earned net profit of Baht 1,261 million, a drop of Baht 789 million from previous year.

Thaioil Power Co., Ltd. (TP): In 2016, TP reported sales revenue from electricity and steam of Baht 4,264 million, a drop of Baht 652 million from previous year in line with the steep falls of natural gas price and Float time (Ft) rate. Still, TP boasted higher sales volume of electricity dispatched and steam exported, driving EBITDA to Baht 915 million, an increase of Baht 111 million. Once financial costs and income tax expense were deducted, TP booked net profit of Baht 555 million, a rise of Baht 73 million, excluding share of profit from the investment in Global Power Synergy Plc. (GPSC), while Thaioil and Subsidiaries booked, without non-controlling interest, share of the profit from the investment in GPSC this year of Baht 656 million, an increment of Baht 130 million from previous year.

TOP SPP Co., Ltd. (TOP SPP): TOP SPP commences the commercial operation this year: the first project on April 1 and the second on June 1. This year it generated electricity and steam sales revenue of Baht 4,868 million, with Baht 1,473 million in EBITDA. Deducting depreciation, financial costs, and income tax expense, TOP SPP recorded net profit of Baht 894 million.

Thaioil Solvent Co., Ltd. (TOS): TOS, solvent producer and distributors, boasted a capacity utilization rate of 109% in 2016, increased by 24% from previous year. The solvent sales volume rose by about 37,000 tons from previous year in line with the domestic demand that hiked up in line with the economic growth, as well as the climbing of solvent exports. This year saw a fall in the average solvent unit selling price in parallel with the weakening average global oil price. As a result, TOS made Baht 7,630 million in total sales revenue, a reduction of Baht 198 million from previous year. Nevertheless, TOS gross profit margin rose this year due to its capability to mark up selling price in some product groups which had limited supply in the market. The EBITDA thus, was Baht 793 million, greater than the prior year by Baht 178 million. Once depreciation, finance costs, and income tax expense deducted, this year TOS reported net profit of Baht 376 million, risen by Baht 64 million from year earlier.

Thaioil Marine Co., Ltd. (TM): For the year 2016, TM reported Baht 878 million in consolidated services revenue, a drop of Baht 341 million from previous year. This was caused mainly by the slowdown in the Exploration and Production (E & P) industry, resulting in some vessels to stay idle, waiting for a service call. Moreover, the fall of chartering rates. TM, therefore, booked consolidated EBITDA of Baht 264 million, dropped by Baht 156 million. Note that TM had a profit share from

investment in TOP-NYK MarineOne Pte. Ltd. of Baht 42 million, which was Baht 5 million, lower than previous year, as well as with Baht 33 million in the profit share in other associates. When depreciation, finance costs, and income tax expense were deducted, TM was left with Baht 57 million in consolidated net profit, a drop of Baht 128 million from previous year.

Thaioil Ethanol Co., Ltd. (TET): TET had consolidated sales revenue from Sapthip Co., Ltd. of Baht 1,538 million,

while its EBITDA stood at Baht 296 million, around Baht 75 million higher than previous year, due mainly to higher gross profit margin as a result of lower feedstock cost. TET faced a share of loss due to its investment in Maesod Clean Energy Co., Ltd. of Baht 39 million along with a profit share in Ubon Bio Ethanol Co., Ltd. of Baht 21 million. Once the finance costs of Baht 43 million were deducted, TET recorded net profit of Baht 38 million, a rise of Baht 17 million from previous year.

Analysis of Consolidated Financial Position

Financial Position (Million Baht)	Dec 31, 2016	Dec 31, 2015	+/(−)
Total Assets	271,731	192,166	25,565
Total Liabilities	106,134	95,157	10,977
Total Equity	111,597	97,009	14,588

Total Assets

As of December 31, 2016, Thaioil and Subsidiaries posted Baht 271,731 million in total assets, a gain from the same time previous year of Baht 25,565 million, mainly due to a rise in cash and cash equivalents and current investment of Baht 7,646 million, from the operating cash flow during the year 2016, and dividend received. Other current assets rose by Baht 17,595 million along with a rise in inventories of Baht 14,306 million in line with the inventory level and the average crude oil price in December 2016 (which exceeded that of the same time previous year). Trade accounts receivable rose by Baht 5,359 million from the higher average petroleum product prices in December 2016 than December 2015. Meanwhile, LABIX's and TOP SPP's trade accounts receivable grew in number with commercial operations

commenced this year. In contrast, other receivables dropped by Baht 1,475 million. For the non-current assets, its increased by Baht 324 million, mainly because of a rise in intangible assets of Baht 1,200 million to reflect LABIX's deferred license fees. However, the property, plant, and equipment had a net decreased Baht 947 million mainly from assets depreciation.

Total Liabilities

As of December 31, 2016, Thaioil and Subsidiaries incurred Baht 106,134 million in total liabilities, which grew from the same time previous year by Baht 10,977 million. This resulted from an increment of Baht 10,190 million in current liabilities, in line with the increase of Baht 7,835 million in trade accounts payable, which is due to the rising average crude oil price in December

2016 compared with December 2015. In addition, other payables rose by Baht 607 million. For long-term borrowings and debentures (including the portions due in one year) rose by Baht 341 million, as LABIX had net additional borrowings of Baht 1,426 million for its plant construction. Also, Sak Chaisidhi Co., Ltd. (shares indirectly held by TOP Solvent Co., Ltd.) repaid its Baht-denominated borrowings of Baht 288 million as scheduled. Thail Marine Co., Ltd. and TOP Maritime Service Co., Ltd. (indirectly held through Thail Marine Co., Ltd.) had repayment of their due Baht-denominated borrowings of Baht 304 million. Finally, due to an appreciation in Thai Baht against US Dollar, Thail's USD-denominated debentures fell by Baht 245 million.

Total Equity

As of December 31, 2016, Thail and Subsidiaries posted Baht 111,597 million in total equity, a rise of Baht 14,588 million from December 31, 2015 resulted from the total comprehensive income this year of Baht 21,582 million were offset by dividends paid from Thail and Subsidiaries totally of Baht 6,994 million.

Analysis of Cash Flow and Financial Ratios

As of December 31, 2016, Thail and Subsidiaries commanded Baht 31,121 million in cash and cash equivalents and current investments of Baht 29,654 million. These consisted of Baht 23,182 million in cash flows provided by operating activities and Baht 18,352 million in cash flows used in investing activities. The

investing activities included the purchases of property, plant, and equipment of Baht 6,393 million. The key projects this year included the Oil Movement Improvement Project, the Lorry Loading Terminal Expansion Project, HVU-3 Reliability Improvement Project, Oil Distillation Control System Improvement Project, Marine Hose Replacement Project, Linear Alkyl Benzene Production Project, and New Small Power Plants Project (SPPs). Finally, Thail and Subsidiaries had net additional of current investments by Baht 12,057 million.

Cash flows used in financing activities this year amounted to Baht 9,397 million. This was attributable to dividends paid of Baht 6,994 million and finance costs paid of Baht 3,443 million. Net cash receipts from short-term and long-term borrowings, meanwhile, amounted to Baht 454 million and Baht 586 million respectively.

As a result of these cash flow activities, Thail and Subsidiaries reported cash and cash equivalents decreased by Baht 4,567 million from December 31, 2015. In addition, Thail and Subsidiaries recorded loss from the effect of exchange rate changes on balance held in foreign currencies at the end of year of Baht 76 million. Hence, Thail and Subsidiaries had cash and cash equivalents of Baht 31,121 million (cash and cash equivalents including current investments were Baht 60,775 million) as of December 31, 2016.

Financial Ratios

		2016	2015	+ / (-)
Profitability Ratios				
Quality of Earnings ratio	%	12	9	3
Gross Profit Margin ratio	"	13	9	4
Net Profit Margin ratio	"	8	4	4
Liquidity Ratios				
Current ratio	times	3.4	5.0	(1.6)
Quick ratio	"	2.4	3.7	(1.3)
Financial Policy Ratios				
Total Liability / Total Equity	times	1.0	1.0	-
Net Debt / Equity ratio	"	0.1	0.2	(0.1)
Long-term loan / Total Equity	"	0.7	0.8	(0.1)
Interest Coverage ratio	"	9.4	7.4	2.0
Long-term loan / Total Capitalization	%	40	44	(4)

Note:

Quality of Earnings ratio (%)	=	EBITDA/Sales Revenue
Gross Profit Margin ratio (%)	=	Gross Profit/Sales Revenue
Net Profit Margin ratio (%)	=	Net Profit/Total Revenue
Current ratio (times)	=	Current Assets/Current Liabilities
Quick ratio (times)	=	(Cash and Cash Equivalents + Current investments + Account receivables)/Current Liabilities
Total Liabilities/Total Equity (times)	=	Total Liabilities/Total Equity
Long-term loan/Total Equity (times)	=	Long-term loan/Total Equity
Long-term loan	=	Long-term borrowings from financial institutions + Debentures (includes current portion)
Interest Coverage ratio (times)	=	EBITDA/ Interest Expenses (Finance Costs)
Long-term loan/Total Capitalization (%)	=	Long-term loan/Total Capitalization
Total Capitalization	=	Long-term loan + Total Equity
Net Debt to Equity ratio (times)	=	Net Debt/Total Equity
Net Debt	=	Interest bearing debt – Cash and Cash equivalents - Current investments

CONNECTED TRANSACTIONS

For the 2016 accounting period, Thailoil or its subsidiaries (or both) entered into significant business transactions with subsidiaries and related parties with common major shareholders or Directors (or both), as seen in the notes to its financial statements. Connected transactions were based on market prices or, in the absence of reference market prices, the prices agreed in previous contracts. Below are details of the relationships with these companies.

Company	Current Relationship with Thailoil, as of December 31, 2016
PTT Plc. (PTT)	>> Major shareholder, with 49.10% of Thailoil's shares
Thai Paraxylene Co., Ltd. (TPX)	>> Wholly owned by Thailoil >> Common Director: Mr. Atikom Terbsiri >> Thailoil executive members on TPX's Board: Mr. Chatapong Wungtanagorn, Mr. Bandhit Thamprajamchit, and Mr. Sarunyu Limwongse
Thai Lube Base Plc. (TLB)	>> Wholly owned by Thailoil >> Common Director: Mr. Atikom Terbsiri >> Thailoil executive members on TLB's Board: Mr. Mitri Reodacha, Mr. Chatapong Wungtanagorn, Ms. Pattaralada Sa-Ngasang, and Mr. Sarunyu Limwongse
Thailoil Power Co., Ltd. (TP)	>> 26.01% owned by PTT >> 73.99% owned by Thailoil >> Common Director: Mr. Atikom Terbsiri >> Thailoil executive members on TP's Board: Mr. Mitri Reodacha, Mr. Somchai Wongwattanasan, Mr. Kosol Pimthanothai, and Mr. Charlee Balmongkol
TOP SPP Co., Ltd. (TOP SPP)	>> Wholly owned by Thailoil >> Common Director: Mr. Atikom Terbsiri >> Thailoil executive members on TOP SPP's Board: Ms. Pattaralada Sa-Ngasang and Mr. Charlee Balmongkol
TOP Solvent Co., Ltd. (TS)	>> Wholly owned by Thailoil Solvent Co., Ltd. >> Common Director: Mr. Atikom Terbsiri >> Thailoil executive members on TS's Board: Mr. Chatapong Wungtanagorn, Ms. Pattaralada Sa-Ngasang, Ms. Duangporn Teerapabpaisit, and Ms. Acharee Tiayabhorn

Company	Current Relationship with Thailoil, as of December 31, 2016
Sak Chaisidhi Co., Ltd. (SAKC)	<ul style="list-style-type: none"> >> 80.52% owned by TS >> Thailoil executive members on SAKC's Board: Mr. Mitri Reodacha, Mr. Somchai Wongwattanasan, Mr. Chatapong Wungtanagorn, Ms. Pattaralada Sa-NGasang, Ms. Acharee Tiyaabhorn, Mr. Jeerawat Pattanasomsit, and Mr. Ampon Singsakda
TOP Solvent (Vietnam) LLC. (TSV)	<ul style="list-style-type: none"> >> Wholly owned by TS >> Thailoil executive members on TSV's Board: Mr. Chatapong Wungtanagorn, Ms. Siriporn Mahajchariyawong, and Ms. Acharee Tiyaabhorn
Sapthip Co., Ltd. (SAP)	<ul style="list-style-type: none"> >> 50% owned by Thailoil Ethanol Co., Ltd. >> Thailoil executive members on SAP's Board: Mr. Mitri Reodacha, Mr. Chatapong Wungtanagorn, Ms. Pattaralada Sa-NGasang, and Mr. Saran Harinsuta
TOP Maritime Service Co., Ltd. (TMS)	<ul style="list-style-type: none"> >> 55% owned by Thailoil Marine Co., Ltd. >> Thailoil executive members on TMS's Board: Ms. Pattaralada Sa-NGasang, Mr. Nitas Krongvanitchayakul, and Mr. Viroj Meenaphant
Labix Co., Ltd. (LABIX)	<ul style="list-style-type: none"> >> 75% owned by TPX >> Common Director: Mr. Atikom Terbsiri >> Thailoil executive members on LABIX's Board: Ms. Pattaralada Sa-NGasang, Mr. Saruny Limwongse, and Mr. Suchart Monyanont
Thai Petroleum Pipeline Co., Ltd. (THAPPLINE)	<ul style="list-style-type: none"> >> 40.40% owned by PTT >> 9.19% owned by Thailoil >> Thailoil executive member on THAPPLINE's Board: Mr. Pongpun Amornvivat
PTT Energy Solutions Co., Ltd. (PTTES)	<ul style="list-style-type: none"> >> 40% owned by PTT >> 20% owned by Thailoil >> Thailoil executive member on PTTES's Board: Mr. Mitri Reodacha
IRPC Plc. (IRPC)	<ul style="list-style-type: none"> >> 38.51% owned by PTT
PTT Global Chemical Plc. (PTTGC)	<ul style="list-style-type: none"> >> 49.42% owned by PTT >> Common Director: Mr. Sarun Rungkasiri

Company	Current Relationship with Thaioil, as of December 31, 2016
PTT International Trading Pte. Ltd. (PTTT)	>> Wholly owned by PTT
PTT Exploration and Production Plc. (PTTEP)	>> 65.29% owned by PTT
PTT Phenol Co., Ltd. (PPCL)	>> Wholly owned by PTTGC
Global Green Chemicals Plc. (GGC)*	>> Wholly owned by PTTGC

Remarks : * Name changed from "Thai Oleochemicals Co., Ltd." with effect from February 18, 2016

Connected Transactions between Thaioil or Subsidiaries (or both) with Major Shareholders

Connected Transactions between Thaioil and PTT

Company	Transactions	Value in 2016 (Million Baht)
PTT	>> Revenues from the sale of oil products: Thaioil entered into a Product Offtake and Crude Supply Agreement (POCSA) with PTT, under which both parties agreed on the sale and purchase of refined products at market prices and agreed to follow certain procedures to reach an agreed volume as well as other terms and conditions stipulated in the contract.	127,877
	>> Expenses on the purchase of oil and natural gas products: Thaioil entered into a POCSA with PTT. Both parties agreed on the sale and purchase of refined products at market prices and to follow certain procedures to reach an agreed volume as well as other terms and conditions stipulated in the contract.	100,076
	>> Thaioil entered into a 10-year (2014-2023) contract and a 15-year (2007-2022) contract with PTT for the supply of natural gas to feed the refinery at an agreed volume based on market prices, considered normal business practice.	

Connected Transactions between Thairoil's Subsidiaries and PTT

Company	Transactions	Value in 2016 (Million Baht)
TPX	>> Expenses for occasional purchases of petroleum products, considered normal business practice	274
TLB	>> Revenues from occasional sales of lube base products to PTT, considered normal business practice	2,961
	>> TLB entered into a 5-year gas supply contract with PTT for an agreed volume based on market prices, considered normal business practice.	429
TP	>> TP entered into a 25-year gas sales agreement (1998-2022) with PTT at an agreed volume based on market prices, considered normal business practice.	2,475
TOP SPP	>> TOP SPP entered into a 25-year gas sales agreement (2016-2041) with PTT at an agreed volume based on market prices, considered normal business practice.	2,934
SAP	>> SAP entered into a 10-year ethanol sales agreement (2011-2021) with PTT at an agreed volume based on market prices, considered normal business practice.	633
LABIX	>> LABIX entered into a 10-year gas sales agreement (2015-2025) with PTT at an agreed volume based on market prices, considered normal business practice.	434

Connected Transactions between Thailoil and Subsidiaries (with less than 100% shareholding) or Other Related Companies

Company	Transactions	Value in 2016 (Million Baht)
TP	>> Thailoil entered into a 24-year contract, starting April 1, 1998, with TP to provide maintenance and other supporting services as well as supply of feedstock, parts, and reserved fuels to TP. The service charge is based on cost-plus pricing, considered normal business practice.	744
	>> Thailoil entered into a 24-year infrastructure sharing contract with TP, starting April 1, 1998. TP agreed to pay for the consumption at 2% of its monthly revenue.	
	>> Thailoil entered into a 25-year contract (1998-2022) with TP for the supply of electricity and steam at an agreed volume based on market prices.	1,680
PTTES	>> Expenses for technical consultancy services as agreed in a 5-year contract	106
THAPPLINE	>> Revenue from THAPPLINE's dividends	247
PTT ICT Solutions Co., Ltd. (PTTICT)	>> Expenses for ICT services as agreed in a 5-year contract	116
GGC	>> Expenses for occasional purchases of petroleum products from GGC, considered normal business practice	998
PTTT	>> Expenses for occasional purchases of petroleum products from PTTT, considered normal business practice	472

Connected Transactions between Subsidiaries and Related Companies

Company	Related Company	Transactions	Value in 2016 (Million Baht)
TP	TPX	>> TP entered into a 25-year contract to supply TPX with electricity and steam at market prices. The contract will end in 2022.	1,112
	TLB	>> TP entered into a 25-year contract to supply TLB with electricity and steam at market prices. The contract will end in 2022.	605
TLB	IRPC	>> Occasional purchases of by-products, considered normal business practice	280
TPX	IRPC	>> Occasional sales of aromatics, considered normal business practice	819
	PTTGC	>> Occasional sales of aromatics, considered normal business practice	136
	PTTT	>> Occasional sales of aromatics, considered normal business practice	2,254
TS	IRPC	>> Occasional purchases of solvents, considered normal business practice	1,217
	PPCL	>> Occasional purchases of solvents, considered normal business practice	146
SAKC	IRPC	>> SAKC entered into a feedstock purchase contract from IRPC at an agreed volume based on reference market prices. The one-year contracts ended in 2016.	251
	PTTGC	>> SAKC entered into a feedstock purchase contract from PTTGC at an agreed volume based on reference market prices. The contract will end upon a written notice from either party.	1,581
TSV	IRPC	>> Occasional purchases of solvents, considered normal business practice	738

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 with the requirements of the Public Company Act B.E. 2535 (1992), the Securities and Exchange Act B.E. 2535 (1992), the Announcement of the Department of Business Development dated September 28, 2011 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.

The Board of Directors is responsible for the financial statements which have been prepared to provide

assurance that the financial position, results of operations and cash flows are presented accurately, the effective internal control system has been established, accounting records have been properly and adequately maintained to safeguard assets and prevent fraud and other irregularities with material implications, suitable accounting policies have been selected in the preparation of the financial statements and consistently applied in accordance with Financial Reporting Standards, and key information has been adequately disclosed in the notes to the financial statements. The independent auditor has expressed opinion on the financial statements of Thai Oil Public Company Limited and the consolidated financial statements of Thai Oil Public Company Limited and its subsidiaries in the Auditor's Report.



(Kurujit Nakornthap)
Chairman of the Board



(Atikom Terbsiri)
Chief Executive Officer and President

INDEPENDENT AUDITOR'S REPORT

To the Shareholders of Thai Oil Public Company Limited

Opinion

I have audited the consolidated and separate financial statements of Thai Oil Public Company Limited and its subsidiaries (the "Group") and of Thai Oil Public Company Limited (the "Company"), respectively, which comprise the consolidated and separate statements of financial position as at 31 December 2016, and the consolidated and separate statements of income, comprehensive income, changes in equity and cash flows for the year then ended, and notes, comprising a summary of significant accounting policies and other explanatory information.

In my opinion, the accompanying consolidated and separate financial statements present fairly, in all material respects, the financial position of the Group and the Company, respectively, as at 31 December 2016 and their financial performance and cash flows for the year then ended in accordance with Thai Financial Reporting Standards (TFRSs).

Basis for Opinion

I conducted my audit in accordance with Thai Standards on Auditing (TSAs). My responsibilities under those standards are further described in the Auditor's Responsibilities for the Audit of the Consolidated and Separate Financial Statements section of my report. I am independent of the Group and the Company in accordance with the Code of Ethics for Professional Accountants issued by the Federation of Accounting Professions under the Royal Patronage of His Majesty the King that is relevant to my audit of the consolidated and separate financial statements, and I have fulfilled my other ethical responsibilities in accordance with these requirements. I believe that the audit evidence I have obtained is sufficient and appropriate to provide a basis for my opinion.

Key Audit Matters

Key audit matters are those matters that, in my professional judgment, were of most significance in my audit of the consolidated and separate financial statements of the current period. These matters were addressed in the context of my audit of the consolidated and separate financial statements as a whole, and in forming my opinion thereon, and I do not provide a separate opinion on these matters.

INDEPENDENT AUDITOR'S REPORT

Impairment assessment of goodwill

Refer to Note 15 to the consolidated and separate financial statements.

The key audit matter	How the matter was addressed in the audit
<p>TOP Solvent (Vietnam) Limited Liability Company ("TSV"), an indirect subsidiary of the Company which operates in Vietnam, has a historical business combination which resulted significant goodwill balance amounting to Baht 655 million. Goodwill is subjected to an annual impairment test. No impairment charge has been recorded by management against this balance in the current financial year.</p> <p>Due to the high level of the management's judgement involved in respect of the assumptions used to support goodwill value, and the significance of the carrying amounts involved, this is one of the key judgmental areas that my audit is concentrated on.</p>	<p>My audit procedures in this area included, among others:</p> <ul style="list-style-type: none"> - evaluating the Group's forecasting and budgeting procedures and testing of the principles and accuracy of the calculation derived from forecast model and evaluating the reasonableness of key inputs in the calculations such as revenue growth, discount rate and working capital assumptions, by reference to the Board approved forecast models, data external to the Group and my own views; - consulting KPMG valuation specialists in Vietnam when considering the reasonableness of the discount rate and growth rate; - evaluating the accuracy of forecasts by comparing the actual results for the year with the original forecasts; and - evaluating the adequacy of disclosure in respect of key assumptions applied and sensitivity analysis in note to the financial statements.

Valuation of inventory

Refer to Note 9 to the consolidated and separate financial statements.

The key audit matter	How the matter was addressed in the audit
<p>Inventory is required to be carried at the lower of its cost and net realisable value. Inventory is a significant balance and the group's main raw materials and finished goods are commodities which can be subject to price volatility which may lead to the provision for declining in value of inventory being misstated.</p>	<p>My audit procedures in this area included, among others:</p> <ul style="list-style-type: none"> - understanding and performing test of design and implementation as well as operating effectiveness of controls over inventory valuation process; - assessing the appropriateness of the methodology used to calculate the provisions held against inventory at year end, considering the reasonableness of selling price used by reference to commodity price, and assessing the accuracy of the calculation; and - evaluating the adequacy of disclosure in relation to provision for declining in value of inventory in note to the financial statements.

INDEPENDENT AUDITOR'S REPORT

Other Information

Management is responsible for the other information. The other information comprises the information included in the annual report, but does not include the consolidated and separate financial statements and my auditor's report thereon.

My opinion on the consolidated and separate financial statements does not cover the other information and I will not express any form of assurance conclusion thereon.

In connection with my audit of the consolidated and separate financial statements, my responsibility is to read the other information and, in doing so, consider whether the other information is materially inconsistent with the consolidated and separate financial statements or my knowledge obtained in the audit, or otherwise appears to be materially misstated. If, based on the work I have performed, I conclude that there is a material misstatement of this other information, I am required to report that fact. I have nothing to report in this regard.

Responsibilities of Management and Those Charged with Governance for the Consolidated and Separate Financial Statements

Management is responsible for the preparation and fair presentation of the consolidated and separate financial statements in accordance with TFRSs, and for such internal control as management determines is necessary to enable the preparation of consolidated and separate financial statements that are free from material misstatement, whether due to fraud or error.

In preparing the consolidated and separate financial statements, management is responsible for assessing the Group's and the Company's ability to continue as a going concern, disclosing, as applicable, matters related to going concern and using the going concern

basis of accounting unless management either intends to liquidate the Group and the Company or to cease operations, or has no realistic alternative but to do so.

Those charged with governance are responsible for overseeing the Group's and the Company's financial reporting process.

Auditor's Responsibilities for the Audit of the Consolidated and Separate Financial Statements

My objectives are to obtain reasonable assurance about whether the consolidated and separate financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditor's report that includes my opinion. Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with TSAs will always detect a material misstatement when it exists. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of these consolidated and separate financial statements.

As part of an audit in accordance with TSAs, I exercise professional judgment and maintain professional skepticism throughout the audit. I also:

- Identify and assess the risks of material misstatement of the consolidated and separate financial statements, whether due to fraud or error, design and perform audit procedures responsive to those risks, and obtain audit evidence that is sufficient and appropriate to provide a basis for my opinion. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control.

INDEPENDENT AUDITOR'S REPORT

- Obtain an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Group's and the Company's internal control.
- Evaluate the appropriateness of accounting policies used and the reasonableness of accounting estimates and related disclosures made by management.
- Conclude on the appropriateness of management's use of the going concern basis of accounting and, based on the audit evidence obtained, whether a material uncertainty exists related to events or conditions that may cast significant doubt on the Group's and the Company's ability to continue as a going concern. If I conclude that a material uncertainty exists, I am required to draw attention in my auditor's report to the related disclosures in the consolidated and separate financial statements or, if such disclosures are inadequate, to modify my opinion. My conclusions are based on the audit evidence obtained up to the date of my auditor's report. However, future events or conditions may cause the Group and the Company to cease to continue as a going concern.
- Evaluate the overall presentation, structure and content of the consolidated and separate financial statements, including the disclosures, and whether the consolidated and separate financial statements represent the underlying transactions and events in a manner that achieves fair presentation.
- Obtain sufficient appropriate audit evidence regarding the financial information of the entities or business activities within the Group to express an opinion on the consolidated financial statements. I am responsible for the direction, supervision and performance of the group audit. I remain solely responsible for my audit opinion.

I communicate with those charged with governance regarding, among other matters, the planned scope and timing of the audit and significant audit findings, including any significant deficiencies in internal control that I identify during my audit.

I also provide those charged with governance with a statement that I have complied with relevant ethical requirements regarding independence, and to communicate with them all relationships and other matters that may reasonably be thought to bear on my independence, and where applicable, related safeguards.

From the matters communicated with those charged with governance, I determine those matters that were of most significance in the audit of the consolidated and separate financial statements of the current period and are therefore the key audit matters. I describe these matters in my auditor's report unless law or regulation precludes public disclosure about the matter or when, in extremely rare circumstances, I determine that a matter should not be communicated in my report because the adverse consequences of doing so would reasonably be expected to outweigh the public interest benefits of such communication.



(Waiyawat Kosamarnchaiyakij)

Certified Public Accountant

Registration No. 6333

KPMG Phoomchai Audit Ltd.

Bangkok

15 February 2017

STATEMENT OF FINANCIAL POSITION

Thai Oil Public Company Limited and its Subsidiaries

(in Baht)					
		Consolidated financial statements		Separate financial statements	
		31 December		31 December	
Assets	Note	2016	2015	2016	2015
Current assets					
Cash and cash equivalents	5, 18	31,120,762,001	35,764,436,289	28,239,977,434	33,073,935,374
Current investments	6, 18	29,653,734,039	17,364,300,000	29,197,634,039	16,750,000,000
Trade accounts receivable	4, 7	19,535,642,239	14,176,598,161	20,842,637,445	13,940,866,357
Other receivables	4, 8	934,198,672	2,409,185,967	1,014,115,419	2,317,089,056
Short-term loans to related parties	4	90,000,000	90,000,000	12,583,500,000	9,409,000,000
Inventories	4, 9	33,188,883,131	18,882,707,554	28,995,995,574	16,057,622,913
Prepaid corporate income tax		99,075,367	671,351,768	52,772,768	638,790,484
Value added tax receivable		942,031,764	982,544,844	41,899,088	-
Receivable from Oil Fuel Fund		164,124,584	146,351,741	164,124,584	146,351,741
Other current asset		2,190,579	2,202,790	786,816	-
Total current assets		115,730,642,376	90,489,679,114	121,133,443,167	92,333,655,925
Non-current assets					
Investments in subsidiaries	10	-	-	14,545,419,002	14,545,419,002
Investments in associates	12	13,361,234,567	12,986,194,013	1,260,604,927	1,260,604,927
Investments in joint ventures	12	505,359,648	454,775,767	-	-
Other long-term investments	6	1,023,869,164	914,991,059	1,023,869,164	914,991,059
Investment properties	13	94,359,064	88,143,439	1,086,066,587	1,084,976,420
Property, plant and equipment	14	82,311,540,232	83,258,134,332	36,072,463,472	37,662,738,602
Intangible assets	15	3,106,015,414	1,906,065,607	516,587,191	400,846,331
Deferred tax assets	16	440,702,577	578,724,894	433,160,060	569,726,832
Other non-current assets	17	1,157,489,075	1,488,983,143	1,073,959,885	1,145,569,060
Total non-current assets		102,000,569,741	101,676,012,254	56,012,130,288	57,584,872,233
Total assets		217,731,212,117	192,165,691,368	177,145,573,455	149,918,528,158

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

STATEMENT OF FINANCIAL POSITION

Thai Oil Public Company Limited and its Subsidiaries

(in Baht)

Liabilities and equity	Note	Consolidated financial statements		Separate financial statements	
		31 December		31 December	
		2016	2015	2016	2015
Current liabilities					
Short-term borrowings	18	867,425,000	413,425,000	-	-
Trade accounts payable	4, 19	19,887,404,066	12,052,878,806	22,550,468,532	13,340,884,104
Other payables	4, 20	3,564,903,748	2,958,366,554	2,850,182,768	2,289,768,595
Short-term borrowings from related parties	4, 18	-	-	531,173,102	5,839,610,737
Current portion of long-term borrowing	18	2,206,025,140	1,373,804,518	-	-
Current portion of debentures	18	4,931,799,674	-	4,931,799,674	-
Excise duty payable		1,449,612,843	1,032,079,906	1,449,612,843	1,032,079,906
Income tax payable		1,238,657,600	361,590,498	698,501,935	-
Total current liabilities		34,145,828,071	18,192,145,282	33,011,738,854	22,502,343,342
Non-current liabilities					
Long-term borrowings	18	9,374,480,980	9,620,943,604	-	-
Debentures	18	58,921,228,965	64,097,754,801	58,921,228,965	64,097,754,801
Deferred tax liability	16	9,600,547	-	-	-
Employee benefit obligations	21	3,296,501,237	3,176,126,445	3,003,033,386	2,922,163,146
Other non-current liabilities		386,268,299	69,979,331	459,241,187	428,820,270
Total non-current liabilities		71,988,080,028	76,964,804,181	62,383,503,538	67,448,738,217
Total liabilities		106,133,908,099	95,156,949,463	95,395,242,392	89,951,081,559

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

STATEMENT OF FINANCIAL POSITION

Thai Oil Public Company Limited and its Subsidiaries

(in Baht)					
Liabilities and equity	Note	Consolidated financial statements		Separate financial statements	
		31 December		31 December	
		2016	2015	2016	2015
Equity					
Share capital	22				
Authorised share capital		20,400,278,730	20,400,278,730	20,400,278,730	20,400,278,730
Issued and paid-up share capital		20,400,278,730	20,400,278,730	20,400,278,730	20,400,278,730
Additional paid-in capital					
Premium on ordinary shares	23	2,456,261,491	2,456,261,491	2,456,261,491	2,456,261,491
Retained earnings					
Appropriated					
Legal reserve	23	2,040,027,873	2,040,027,873	2,040,027,873	2,040,027,873
Other		244,500,000	244,500,000	244,500,000	244,500,000
Unappropriated		81,621,935,504	67,131,185,613	56,687,731,314	34,915,797,048
Surplus on business restructuring					
under common control		330,835,954	330,835,954	-	-
Other components of equity		(237,264,362)	(231,638,703)	(78,468,345)	(89,418,543)
Equity attributable to					
owners of the Company		106,856,575,190	92,371,450,958	81,750,331,063	59,967,446,599
Non-controlling interests	11	4,740,728,828	4,637,290,947	-	-
Total equity		111,597,304,018	97,008,741,905	81,750,331,063	59,967,446,599
Total liabilities and equity		217,731,212,117	192,165,691,368	177,145,573,455	149,918,528,158

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

STATEMENT OF INCOME

Thai Oil Public Company Limited and its Subsidiaries

(in Baht)

	Note	Consolidated financial statements		Separate financial statements	
		For the year ended 31 December		For the year ended 31 December	
		2016	2015	2016	2015
Revenue from sale of goods and rendering of services	4, 31	274,738,948,755	293,569,482,323	283,293,177,390	290,113,102,150
Cost of sale of goods and rendering of services	4, 9	(247,261,172,102)	(273,819,446,323)	(265,517,766,964)	(275,881,859,538)
Gross profit		27,477,776,653	19,750,036,000	17,775,410,426	14,231,242,612
Dividend income	4, 10, 12	247,336,954	48,088,867	14,475,224,501	3,281,948,854
Net derivative gain (loss) on hedging		(243,242,172)	1,489,177,878	(244,566,022)	1,489,177,878
Net foreign exchange gain (loss)		446,107,240	(2,753,606,034)	372,391,866	(3,017,217,912)
Other income	4, 25	1,118,812,470	1,498,098,129	2,925,959,797	2,777,050,322
Selling expenses	4	(451,266,945)	(452,497,423)	(270,370,604)	(357,849,120)
Administrative expenses	4, 26	(2,182,087,017)	(2,754,634,587)	(2,176,040,397)	(2,875,840,357)
Share of profit of associates and joint ventures	12	929,669,665	712,187,506	-	-
Profit before finance costs and income tax expense		27,343,106,848	17,536,850,336	32,858,009,567	15,528,512,277
Finance costs	4, 29	(3,460,705,140)	(3,435,184,021)	(3,133,580,838)	(3,434,605,107)
Profit before income tax expense		23,882,401,708	14,101,666,315	29,724,428,729	12,093,907,170
Income tax expense	30	(2,295,464,004)	(1,597,354,887)	(1,221,333,598)	(929,095,059)
Profit for the year		21,586,937,704	12,504,311,428	28,503,095,131	11,164,812,111
Profit for the year attributable to:					
Owners of the Company		21,221,910,756	12,181,368,996	28,503,095,131	11,164,812,111
Non-controlling interests	11	365,026,948	322,942,432	-	-
Profit for the year		21,586,937,704	12,504,311,428	28,503,095,131	11,164,812,111
Basic earnings per share	32	10.40	5.97	13.97	5.47

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

STATEMENT OF COMPREHENSIVE INCOME

Thai Oil Public Company Limited and its Subsidiaries

(in Baht)					
		Consolidated financial statements		Separate financial statements	
	Note	For the year ended 31 December		For the year ended 31 December	
		2016	2015	2016	2015
Profit for the year		21,586,937,704	12,504,311,428	28,503,095,131	11,164,812,111
Other comprehensive income (loss)					
Item that will never be reclassified to profit or loss					
Defined benefit plan actuarial losses	21	-	(220,068,532)	-	(208,715,039)
Total item that will never be reclassified to profit or loss		-	(220,068,532)	-	(208,715,039)
Item that are or may be reclassified to profit or loss					
Net change in fair value of available-for-sale investments		10,950,198	(2,561,178)	10,950,198	(2,561,178)
Foreign currency translation differences		(21,032,170)	73,222,339	-	-
Share of other comprehensive income of associate		5,448,281	3,661,958	-	-
Total item that are or may be reclassified to profit or loss		(4,633,691)	74,323,119	10,950,198	(2,561,178)
Other comprehensive income (loss) for the year, net of income tax		(4,633,691)	(145,745,413)	10,950,198	(211,276,217)
Total comprehensive income for the year		21,582,304,013	12,358,566,015	28,514,045,329	10,953,535,894
Total comprehensive income attributable to:					
Owners of the Company		21,216,285,097	12,034,703,253	28,514,045,329	10,953,535,894
Non-controlling interests	11	366,018,916	323,862,762	-	-
Total comprehensive income for the year		21,582,304,013	12,358,566,015	28,514,045,329	10,953,535,894

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

STATEMENT OF CHANGES IN EQUITY

Thai Oil Public Company Limited and its Subsidiaries

Consolidated financial statements															(in Baht)
	Note	Retained earnings				Other components of equity							Non-controlling interests	Total equity	
		Issued and paid-up share capital	Premium on ordinary shares	Legal reserve	Other	Unappropriated	Surplus on business restructuring under common control	Other comprehensive income (loss)			Deficit from the change in the ownership interests in subsidiary				
								Fair value changes in available-for-sale investments	Currency translation differences	Share of other comprehensive income of associate		Equity attributable to owners of the Company			
Year ended 31 December 2015															
Balance at 1 January 2015		20,400,278,730	2,456,261,491	2,040,027,873	244,500,000	58,229,324,883	330,835,954	(86,857,365)	(90,579,732)	221,766	(127,795,383)	83,396,218,217	4,447,915,971	87,844,134,188	
Dividend	33	-	-	-	-	(3,059,470,512)	-	-	-	-	-	(3,059,470,512)	(134,487,786)	(3,193,958,298)	
Comprehensive income (loss) for the year															
Profit for the year		-	-	-	-	12,181,368,996	-	-	-	-	-	12,181,368,996	322,942,432	12,504,311,428	
Other comprehensive income (loss)		-	-	-	-	(220,037,754)	-	(2,561,178)	73,222,339	2,710,850	-	(146,665,743)	920,330	(145,745,413)	
Total comprehensive income (loss) for the year		-	-	-	-	11,961,331,242	-	(2,561,178)	73,222,339	2,710,850	-	12,034,703,253	323,862,762	12,358,566,015	
Balance at 31 December 2015		20,400,278,730	2,456,261,491	2,040,027,873	244,500,000	67,131,185,613	330,835,954	(89,418,543)	(17,357,393)	2,932,616	(127,795,383)	92,371,450,958	4,637,290,947	97,008,741,905	
Year ended 31 December 2016															
Balance at 1 January 2016		20,400,278,730	2,456,261,491	2,040,027,873	244,500,000	67,131,185,613	330,835,954	(89,418,543)	(17,357,393)	2,932,616	(127,795,383)	92,371,450,958	4,637,290,947	97,008,741,905	
Dividend	33	-	-	-	-	(6,731,160,865)	-	-	-	-	-	(6,731,160,865)	(262,581,035)	(6,993,741,900)	
Comprehensive income (loss) for the year															
Profit for the year		-	-	-	-	21,221,910,756	-	-	-	-	-	21,221,910,756	365,026,948	21,586,937,704	
Other comprehensive income (loss)		-	-	-	-	-	-	10,950,198	(21,032,170)	4,456,313	-	(5,625,659)	991,968	(4,633,691)	
Total comprehensive income (loss) for the year		-	-	-	-	21,221,910,756	-	10,950,198	(21,032,170)	4,456,313	-	21,216,285,097	366,018,916	21,582,304,013	
Balance at 31 December 2016		20,400,278,730	2,456,261,491	2,040,027,873	244,500,000	81,621,935,504	330,835,954	(78,468,345)	(38,389,563)	7,388,929	(127,795,383)	106,856,575,190	4,740,728,828	111,597,304,018	

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

STATEMENT OF CHANGES IN EQUITY

Thai Oil Public Company Limited and its Subsidiaries

Separate financial statements									(in Baht)
	Note	Issued and paid-up share capital	Premium on ordinary shares	Retained earnings			Other components of equity		
				Legal reserve	Other	Unappropriated	Fair value changes in available-for-sale investments	Total equity	
Year ended 31 December 2015									
Balance at 1 January 2015		20,400,278,730	2,456,261,491	2,040,027,873	244,500,000	27,019,170,488	(86,857,365)	52,073,381,217	
Dividend	33	-	-	-	-	(3,059,470,512)	-	(3,059,470,512)	
Comprehensive income (loss) for the year									
Profit for the year		-	-	-	-	11,164,812,111	-	11,164,812,111	
Other comprehensive income (loss)		-	-	-	-	(208,715,039)	(2,561,178)	(211,276,217)	
Total comprehensive income (loss) for the year		-	-	-	-	10,956,097,072	(2,561,178)	10,953,535,894	
Balance at 31 December 2015		20,400,278,730	2,456,261,491	2,040,027,873	244,500,000	34,915,797,048	(89,418,543)	59,967,446,599	
Year ended 31 December 2016									
Balance at 1 January 2016		20,400,278,730	2,456,261,491	2,040,027,873	244,500,000	34,915,797,048	(89,418,543)	59,967,446,599	
Dividend	33	-	-	-	-	(6,731,160,865)	-	(6,731,160,865)	
Comprehensive income (loss) for the year									
Profit for the year		-	-	-	-	28,503,095,131	-	28,503,095,131	
Other comprehensive income (loss)		-	-	-	-	-	10,950,198	10,950,198	
Total comprehensive income (loss) for the year		-	-	-	-	28,503,095,131	10,950,198	28,514,045,329	
Balance at 31 December 2016		20,400,278,730	2,456,261,491	2,040,027,873	244,500,000	56,687,731,314	(78,468,345)	81,750,331,063	

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

STATEMENT OF CASH FLOWS

Thai Oil Public Company Limited and its Subsidiaries

(in Baht)

		Consolidated financial statements		Separate financial statements	
		For the year ended 31 December		For the year ended 31 December	
	Note	2016	2015	2016	2015
Cash flows from operating activities					
Profit for the year		21,586,937,704	12,504,311,428	28,503,095,131	11,164,812,111
Adjustments for					
Reversal of allowance for decline in value of inventories adjusted to net realisable value		(1,052,609,007)	(1,545,737,619)	(1,040,788,174)	(1,337,772,257)
Depreciation and amortisation	28	7,761,793,520	6,765,600,251	4,373,672,953	4,436,957,371
Finance costs	29	3,460,705,140	3,435,184,021	3,133,580,838	3,434,605,107
Unrealised (gain) loss on foreign exchange		(97,403,092)	3,369,334,446	(218,926,173)	3,331,520,026
Share of profit of associates and joint ventures	12	(929,669,665)	(712,187,506)	-	-
Dividend income	4, 10, 12	(247,336,954)	(48,088,867)	(14,475,224,501)	(3,281,948,854)
Reversal of impairment loss on property, plant and equipment		(1,405,620)	-	-	-
Bad debt		28,472,981	-	-	-
Loss from the change in the ownership interests in associate		-	4,625,771	-	-
Loss on disposal of investment		-	9,519,413	-	9,519,413
(Gain) loss on disposal of property, plant and equipment		52,536,630	99,691,660	(1,078)	46,320,916
Realisation of deferred land lease and other income		(25,834,791)	(26,484,118)	(140,107,684)	(137,040,541)
Income tax expense	30	2,295,464,004	1,597,354,887	1,221,333,598	929,095,059
		32,831,650,850	25,453,123,767	21,356,634,910	18,596,068,351

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

STATEMENT OF CASH FLOWS

Thai Oil Public Company Limited and its Subsidiaries

(in Baht)					
	Note	Consolidated financial statements		Separate financial statements	
		For the year ended 31 December		For the year ended 31 December	
		2016	2015	2016	2015
Changes in operating assets and liabilities					
Trade accounts receivable		(5,370,916,668)	1,959,778,410	(6,911,018,387)	2,471,985,527
Other receivables		971,492,580	(748,845,748)	786,385,785	(919,061,035)
Value add tax receivable		40,513,080	534,482,973	198,847,666	426,160,943
Inventories		(13,237,297,570)	11,196,507,230	(11,897,584,487)	9,317,733,498
Other non-current assets		145,829,924	(263,400,535)	(105,199,815)	(64,381,488)
Trade accounts payable		7,846,884,729	(5,748,472,098)	9,221,945,029	(5,108,240,252)
Other payable		92,916,646	(420,932,094)	187,512,485	(394,514,832)
Excise duty payable		417,532,937	149,396,434	417,532,937	149,396,434
Other non-current liabilities		141,562,292	119,635,023	128,074,355	250,742,479
Cash generated from operating activities		23,880,168,800	32,231,273,362	13,383,130,478	24,725,889,625
Income tax received		591,672,268	-	586,236,807	-
Income tax paid		(1,290,208,833)	(522,796,388)	(386,483,982)	(52,574,918)
Net cash from operating activities		23,181,632,235	31,708,476,974	13,582,883,303	24,673,314,707

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

STATEMENT OF CASH FLOWS

Thai Oil Public Company Limited and its Subsidiaries

(in Baht)

		Consolidated financial statements		Separate financial statements	
		For the year ended 31 December		For the year ended 31 December	
	Note	2016	2015	2016	2015
Cash flows from investing activities					
Dividends received		753,954,120	452,795,162	14,475,224,501	3,281,948,854
Purchase of current investments		(12,056,729,550)	(368,800,000)	(12,214,929,550)	-
Sale of current investments		-	13,250,000,000	-	13,250,000,000
Purchase of other long-term investment		(27,660,014)	-	(27,660,014)	-
Sale of other long-term investment		-	15,517,136	-	15,517,136
Cash outflow on short-term loans to related parties	4	-	-	(5,723,500,000)	(6,142,000,000)
Cash inflow on short-term loans to related parties	4	-	-	2,549,000,000	746,000,000
Cash inflow on long-term loans to savings co-operative of employees		595,910	45,330,750	595,910	45,330,750
Purchase of property, plant and equipment		(6,393,094,429)	(10,866,565,774)	(2,070,514,173)	(1,175,747,326)
Sale of property, plant and equipment		597,728	36,162,709	18,000	768,228,681
Purchase of intangible assets		(625,814,122)	(39,300,647)	(193,971,674)	(27,731,506)
Currency translation differences		(3,636,586)	4,447,233	-	-
Net cash from (used in) investing activities		(18,351,786,943)	2,529,586,569	(3,205,737,000)	10,761,546,589

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

STATEMENT OF CASH FLOWS

Thai Oil Public Company Limited and its Subsidiaries

(in Baht)					
		Consolidated financial statements		Separate financial statements	
		For the year ended 31 December		For the year ended 31 December	
	Note	2016	2015	2016	2015
Cash flows from financing activities					
Finance costs paid		(3,443,153,947)	(3,388,790,466)	(3,116,753,040)	(3,386,375,053)
Dividends paid		(6,993,741,900)	(3,193,958,298)	(6,731,160,865)	(3,059,470,512)
Proceeds from short-term borrowings		1,324,000,000	461,000,000	-	-
Repayment of short-term borrowings		(870,000,000)	(545,000,000)	-	-
Proceeds from short-term borrowings from related parties	4	800,000,000	-	800,000,000	2,079,416,645
Repayment of short-term borrowings from related parties	4	(800,000,000)	-	(6,108,437,636)	-
Proceeds from long-term borrowings		1,967,222,563	4,509,800,000	-	-
Repayment of long-term borrowings		(1,381,629,843)	(993,355,851)	-	-
Redemption of debenture		-	(11,589,620,000)	-	(11,589,620,000)
Net cash used in financing activities		(9,397,303,127)	(14,739,924,615)	(15,156,351,541)	(15,956,048,920)
Net increase (decrease) in cash and cash equivalents					
		(4,567,457,835)	19,498,138,928	(4,779,205,238)	19,478,812,376
Effect of exchange rate changes on balance held in foreign currencies at end of year		(76,216,453)	29,232,619	(54,752,702)	8,360,577
Cash and cash equivalents at beginning of year		35,764,436,289	16,237,064,742	33,073,935,374	13,586,762,421
Cash and cash equivalents at end of year	5	31,120,762,001	35,764,436,289	28,239,977,434	33,073,935,374
Non-cash transaction					
Payable for purchase of property, plant and equipment		230,524,656	564,805,252	168,492,913	168,370,534
Payable for purchase of intangible assets		778,553,475	-	-	-
Payable for purchase of securities (Private funds)		304,017,736	-	304,017,736	-

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

NOTES TO THE FINANCIAL STATEMENTS

Thai Oil Public Company Limited and its Subsidiaries

Note	Contents	Note	Contents
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3	Significant accounting policies	23	Additional paid-in capital and reserves
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13	Investment properties	33	Dividends
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15	Intangible assets	35	Commitments with non-related parties
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19	Trade accounts payable	39	Thai Financial Reporting Standards (TFRS)
20	Other payables		not yet adopted

NOTES TO THE FINANCIAL STATEMENTS

Thai Oil Public Company Limited and its Subsidiaries

These notes form an integral part of the financial statements.

The financial statements issued for Thai statutory and regulatory reporting purposes are prepared in the Thai language. These English language financial statements have been prepared from the Thai language statutory financial statements, and were approved and authorized for issue by the Board of Directors on 15 February 2017.

1 General information

Thai Oil Public Company Limited, the “Company”, is incorporated in Thailand and has its registered offices and refinery plant as follows:

Head office : 555/1 Energy Complex Building A, 11th Floor, Vibhavadi Rangsit Road,
Kwang Chatuchak, Khet Chatuchak, Bangkok 10900, Thailand

Sriracha office and refinery plant : 42/1 Moo 1, Sukhumvit Road Km. 124, Tambol Tungsukla,
Amphur Sriracha, Chonburi 20230, Thailand

The Company was listed on the Stock Exchange of Thailand on 26 October 2004.

The Company is an entity in the PTT Public Company Limited (“PTT”) group of companies. PTT is incorporated in Thailand and is the major shareholder and the parent of the Company and owned 49.1% of the Company’s issued and paid-up share capital as at 31 December 2016 (31 December 2015: 49.1%).

The principal businesses of the Company are oil refining and distributions. Details of the Company’s direct and indirect subsidiaries as at 31 December 2016 and 2015 were as follows:

Name of the entity	Type of business	Country of incorporation	Ownership interest (%)	
			2016	2015
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 Marine Co., Ltd.	Providing marine transportation services for petroleum and liquid chemical products	Thailand	99.99	99.99
Thaioil Energy Services Co., Ltd.	Providing of management and general services	Thailand	99.99	99.99

NOTES TO THE FINANCIAL STATEMENTS

Thai Oil Public Company Limited and its Subsidiaries

Name of the entity	Type of business	Country of incorporation	Ownership interest (%)	
			2016	2015
Direct subsidiaries				
Thaioil Solvent Co., Ltd.	Investment in solvent and chemical businesses	Thailand	99.99	99.99
Thaioil Ethanol Co., Ltd.	Investment in ethanol business and alternative energy products	Thailand	99.99	99.99
Thaioil Power Co., Ltd.	Power and steam generation and distribution	Thailand	73.99	73.99
TOP SPP Co., Ltd.	Power and steam generation and distribution	Thailand	99.99	99.99
Indirect subsidiaries				
TOP Solvent Co., Ltd.	Distribution of solvent and chemical products	Thailand	99.99	99.99
Sak Chaisidhi Co., Ltd.	Solvent and chemical products manufacturing and distribution	Thailand	80.52	80.52
TOP Solvent (Vietnam) LLC.	Distribution of solvent and chemical products	Vietnam	100.00	100.00
Sapthip Co., Ltd.	Ethanol products manufacturing and distribution	Thailand	50.00	50.00
Thaioil Marine International Pte. Ltd.	Investment in marine transportation for crude oil and petroleum product business	Singapore	100.00	100.00
TOP Maritime Service Co., Ltd.	Providing marine transportation services for crew and utilities in Gulf of Thailand	Thailand	55.00	55.00
LABIX Co., Ltd.	Linear Alkyl Benzene manufacturing and distribution	Thailand	75.00	75.00

2 Basis of preparation of the financial statements

(a) Statement of compliance

The financial statements are prepared in accordance with Thai Financial Reporting Standards (TFRS), guidelines promulgated by the Federation of Accounting Professions ("FAP"), and applicable rules and regulations of the Thai Securities and Exchange Commission.

The FAP has issued new and revised TFRS effective for annual accounting periods beginning on or after 1 January 2016. The initial application of these new and revised TFRS has resulted in changes in certain of the Group's accounting policies. These changes have no material effect on the financial statements.

NOTES TO THE FINANCIAL STATEMENTS

Thai Oil Public Company Limited and its Subsidiaries

In addition to the above new and revised TFRS, the FAP has issued a number of other new and revised TFRS which are effective for annual financial periods beginning on or after 1 January 2017 and have not been adopted in the preparation of these financial statements. Those new and revised TFRS that are relevant to the Group's operations are disclosed in note 39.

(b) Basis of measurement

The financial statements have been prepared on the historical cost basis except for the following items.

Items	Measurement bases
Available-for-sale securities	Fair value
Employee benefit obligations	Present value of employee benefit obligations as explained in Note 21

(c) Functional and presentation currency

The financial statements are prepared and presented in Thai Baht, which is the Company's functional currency. All financial information presented in Thai Baht has been rounded in the notes to the financial statements to the nearest million unless otherwise stated.

(d) Use of judgements and estimates

The preparation of financial statements in conformity with TFRS requires management to make judgements, estimates and assumptions that affect the application of accounting policies and the reported amounts of assets, liabilities, income and expenses. Actual results may differ from these estimates.

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

Assumptions and estimation uncertainties

Information about assumption and estimation uncertainties that have a significant risk of resulting in a material adjustments to the amounts recognised in the financial statements is included in the following notes:

Note 9	Allowance for decline in value of inventories adjusted to net realisable value
Note 15	Impairment test of goodwill and customer database - key assumptions underlying recoverable amounts
Note 21	Measurement of employee benefit obligations - key actuarial assumption

NOTES TO THE FINANCIAL STATEMENTS

Thai Oil Public Company Limited and its Subsidiaries

Measurement of fair values

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

The Group has an established control framework with respect to the measurement of fair values. This includes a valuation team that has overall responsibility for overseeing all significant fair value measurements, including Level 3 fair values, and reports directly to the CFO.

The valuation team regularly reviews significant unobservable inputs and valuation adjustments. If third party information, such as broker quotes or pricing services, is used to measure fair values, then the valuation team assesses the evidence obtained from the third parties to support the conclusion that such valuations meet the requirements of TFRS, including the level in the fair value hierarchy in which such valuations should be classified.

Significant valuation issues are reported to the Group Audit Committee.

When measuring the fair value of an asset or a liability, the Group uses market observable data as far as possible. Fair values are categorised into different levels in a fair value hierarchy based on the inputs used in the valuation techniques as follows:

- Level 1 : quoted prices (unadjusted) in active markets for identical assets or liabilities.
- Level 2 : inputs other than quoted prices included within Level 1 that are observable for the asset or liability, either directly (i.e. as prices) or indirectly (i.e. derived from prices).
- Level 3 : inputs for the asset or liability that are not based on observable market data.

If the inputs used to measure the fair value of an asset or liability might be categorised in different levels of the fair value hierarchy, then the fair value measurement is categorised in its entirety in the same level of the fair value hierarchy as the lowest level input that is significant to the entire measurement.

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

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

Note 13 Investment properties

Note 34 Financial instruments

NOTES TO THE FINANCIAL STATEMENTS

Thai Oil Public Company Limited and its Subsidiaries

3 Significant accounting policies

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

(a) Basis of consolidation

The consolidated financial statements relate to the Company and its subsidiaries (together referred to as the “Group”) and the Group’s interests in associates and joint ventures.

Business combinations

The Group applies the acquisition method for all business combinations when control is transferred to the Group other than those with entities under common control.

The Group controls an entity when it is exposed to, or has rights to, variable returns from its involvement with the entity and has the ability to affect those returns through its power over the entity. The acquisition date is the date on which control is transferred to the acquirer. Judgment is applied in determining the acquisition date and determining whether control is transferred from one party to another.

Goodwill is measured as the fair value of the consideration transferred including the recognized amount of any non-controlling interest in the acquiree, less the net recognised amount (generally fair value) of the identifiable assets acquired and liabilities assumed, all measured as of the acquisition date.

Consideration transferred includes the fair values of the assets transferred, liabilities incurred by the Group to the previous owners of the acquiree, and equity interests issued by the Group. Consideration transferred also includes the fair value of any contingent consideration and share-based payment awards of the acquiree that are replaced mandatorily in the business combination. If a business combination results in the termination of pre-existing relationships between the Group and the acquiree, then the lower of the termination amount, as contained in the agreement, and the value of the off-market element is deducted from the consideration transferred and recognised in other expenses.

A contingent liability of the acquiree is assumed in a business combination only if such a liability represents a present obligation and arises from a past event, and its fair value can be measured reliably.

Transaction costs that the Group incurs in connection with a business combination, such as legal fees, and other professional and consulting fees are expensed as incurred.

NOTES TO THE FINANCIAL STATEMENTS

Thai Oil Public Company Limited and its Subsidiaries

If the initial accounting for a business combination is incomplete by the end of the reporting period in which the combination occurs, the Group reports provisional amounts for the items for which the accounting is incomplete. Those provisional amounts are adjusted during the measurement period, or additional assets or liabilities are recognized, to reflect new information obtained about facts and circumstances that existed at the acquisition date that, if known, would have affected the amounts recognized at that date.

Acquisitions from entities under common control

Business combinations of entities or businesses under common control are accounted for using a method similar to the pooling of interest method and in accordance with the Guideline issued in 2009 by the FAP.

Subsidiaries

Subsidiaries are entities controlled by the Group. The Group controls an entity when it is exposed to, or has rights to, variable returns from its involvement with the entity and has the ability to affect those returns through its power over the entity. The financial statements of subsidiaries are included in the consolidated financial statements from the date on which control commences until the date on which control ceases.

Non-controlling interests

At the acquisition date, the Group measures any non-controlling interest at its proportionate interest in the identifiable net assets of the acquiree.

Changes in the Group's interest in a subsidiary that do not result in a loss of control are accounted for as equity transactions.

Loss of control

When the Group loses control over a subsidiary, it derecognises the assets and liabilities of the subsidiary, and any related non-controlling interests and other components of equity. Any resulting gain or loss is recognised in profit or loss. Any interest retained in the former subsidiary is measured at fair value when control is lost.

Interests in equity-accounted investees

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

Associates are those entities in which the Group has significant influence, but not control or joint control, over the financial and operating policies. A joint venture is an arrangement in which the Group has joint control, whereby the Group has rights to the net assets of the arrangement, rather than rights to its assets and obligations for its liabilities.

NOTES TO THE FINANCIAL STATEMENTS

Thai Oil Public Company Limited and its Subsidiaries

Interests in associates and joint ventures are accounted for using the equity method. They are recognised initially at cost, which includes transaction costs. Subsequent to initial recognition, the consolidated financial statements include the Group's share of the profit or loss and other comprehensive income of equity-accounted investees, until the date on which significant influence or joint control ceases.

Transactions eliminated on consolidation

Intra-group balances and transactions, and any unrealised income or expenses arising from intra-group transactions, are eliminated in preparing the consolidated financial statements. Unrealised gains arising from transactions with associates and joint ventures are eliminated against the investment to the extent of the Group's interest in the investee. Unrealised losses are eliminated in the same way as unrealised gains, but only to the extent that there is no evidence of impairment.

(b) Foreign currencies

Foreign currency transactions

Transactions in foreign currencies are translated to the respective functional currencies of Group entities at exchange rates at the dates of the transactions.

Monetary assets and liabilities denominated in foreign currencies are translated to the functional currency at the exchange rate at the reporting date. Foreign exchange differences arising on translation are recognised in profit or loss.

Non-monetary assets and liabilities measured at cost in foreign currencies are translated to the functional currency at the exchange rates at the dates of the transactions.

Foreign operations

The assets and liabilities of foreign operations, including goodwill and fair value adjustments arising on acquisition, are translated to Thai Baht at the exchange rates at the reporting date.

The revenues and expenses of foreign operations are translated to Thai Baht at the average foreign exchange rates ruling during the periods.

Foreign exchange differences are recognised in other comprehensive income and accumulated in the translation reserve, except to extent that the translation difference is allocated to non-controlling interest.

NOTES TO THE FINANCIAL STATEMENTS

Thai Oil Public Company Limited and its Subsidiaries

When a foreign operation is disposed of in its entirety or partially such that control, significant influence or joint control is lost, the cumulative amount in the translation reserve related to that foreign operation is reclassified to profit or loss as part of the gain or loss on disposal. If the Group disposes of part of its interest in a subsidiary but retains control, then the relevant proportion of the cumulative amount is reattributed to non-controlling interests. When the Group disposes of only part of an associate or joint venture while retaining significant influence or joint control, the relevant proportion of the cumulative amount is reclassified to profit or loss.

When the settlement of a monetary item receivable from or payable to a foreign operation is neither planned nor likely in the foreseeable future, exchange gains and losses arising from such a monetary item are considered to form part of a net investment in a foreign operation and are recognised in other comprehensive income, and presented in the foreign currency translation reserve in equity until disposal of the investment.

(c) Derivative financial instruments

Derivative financial instruments are used to manage exposure to foreign exchange, interest rate and commodity price risks arising from operational, financing and investment activities. Derivative financial instruments are not used for trading purposes. However, derivatives that do not qualify for hedge accounting are accounted for as trading instruments.

Hedge of future foreign currency transactions

Forward foreign exchange contracts protect the Group from fluctuations in exchange rates by establishing the rates at which foreign currency assets will be realised or foreign currency liabilities will be settled. Forward foreign exchange contracts are recognised in the financial statements on inception. The premium or discount on the establishment of each agreement is amortised over the contract period.

Cross currency swap and interest rate swap contracts

Cross currency swap and interest rate swap contracts hedging future fluctuations in exchange rates and interest rates. Foreign financial assets and liabilities hedged by cross currency swap contracts are translated into the functional currency at the foreign exchange rates determined in the contracts and revalued at the reporting date at the foreign exchange rate ruling on that date. Foreign exchange differences are recognised in profit or loss. The differences under interest rate swaps are recorded as adjustments to the interest expense relating to the financial obligations in profit or loss.

Hedge of crack spread and time spread

Differences between the fixed prices of contracts and the settlement prices are recognised in the profit or loss in the period in which the contracts mature.

NOTES TO THE FINANCIAL STATEMENTS

Thai Oil Public Company Limited and its Subsidiaries

(d) Cash and cash equivalents

Cash and cash equivalents in the statements of cash flows comprise cash balances, current and savings accounts, and highly liquid short-term investments. Bank overdrafts that are repayable on demand are a component of financing activities for the purpose of the statement of cash flows.

(e) Trade and other accounts receivable

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

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

(f) Inventories

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

Cost of inventories is calculated using the weighted average cost principle, and comprises all costs of purchase, costs of conversion and other costs incurred in bringing the inventories to their present location and condition. In the case of manufactured inventories and work in progress, cost includes an appropriate share of production overheads based on normal operating capacity.

Net realisable value is the estimated selling price in the ordinary course of business less the estimated costs to complete and to make the sale.

(g) Non-current assets held for sale

Non-current assets that are expected to be recovered primarily through sale rather than through continuing use, are classified as held for sale. The assets are measured at the lower of their carrying value and fair value less cost to sell. Any impairment loss on a disposal group is first allocated to goodwill, and then to remaining assets and liabilities on a pro rata basis, except that no loss is allocated to inventories, financial assets, deferred tax assets and investment properties. Impairment losses on initial classification as held for sale and subsequent gains and losses on remeasurement are recognised in profit or loss. Gains are not recognised in excess of any cumulative impairment loss.

NOTES TO THE FINANCIAL STATEMENTS

Thai Oil Public Company Limited and its Subsidiaries

(h) Investments

Investments in subsidiaries, associates and joint ventures

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

Any changes in the equity interest in subsidiaries of the Group while control is retained are recorded in equity.

Investments in other debt and equity securities

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

Debt securities and marketable equity securities, other than those securities held for intended to be held to maturity, are classified as investments in available-for-sale securities. Investments in available-for-sale securities are, subsequent to initial recognition, stated at fair value, therein, other than impairment losses and foreign currency differences on available-for-sale monetary items, are recognised directly in equity. Impairment losses and foreign exchange differences are recognised in profit or loss. When these investments are derecognised, the cumulative gain or loss previously recognised directly in equity is recognised in profit or loss. When these investments are interest-bearing, interest calculated using the effective interest method is recognised in profit or loss.

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

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

Disposal of investments

On disposal of an investment, the difference between net disposal proceeds and the carrying amount together with the associated cumulative gain or loss that was reported in equity is recognised in profit or loss.

If the Group disposes of part of its holding of a particular investment, the deemed cost of the part sold is determined using the weighted average method applied to the carrying value of the total holding of the investment.

(i) Investment properties

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

NOTES TO THE FINANCIAL STATEMENTS

Thai Oil Public Company Limited and its Subsidiaries

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

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

(j) Property, plant and equipment

The Group's owned assets

Property, plant and equipment are stated at cost less accumulated depreciation and impairment losses.

Cost includes expenditure that is directly attributable to the acquisition of the asset. The cost of self-constructed assets includes the cost of materials and direct labour, any other costs directly attributable to bringing the assets to a working condition for their intended use, the costs of dismantling and removing the items and restoring the site on which they are located, and capitalised borrowing costs. Cost also may include transfers from other comprehensive income of any gain or loss on qualifying cash flow hedges of foreign currency purchases of property, plant and equipment. Purchased software that is integral to the functionality of the related equipment is capitalised as part of that equipment.

When parts of an item of property, plant and equipment have different useful lives, they are accounted for as separate items (major components) of property, plant and equipment.

Gains and losses on disposal of an item of property, plant and equipment are determined by comparing the proceeds from disposal with the carrying amount of property, plant and equipment, and are recognised net in profit or loss.

Reclassification to investment property

When the use of a property changes from owner-occupied to investment property, its carrying amount at the date of reclassification becomes its cost for subsequent accounting.

Subsequent costs

The cost of replacing a part of an item of property, plant and equipment is recognised in the carrying amount of the item if it is probable that the future economic benefits embodied within the part will flow to the Group, and its cost can be measured reliably. The carrying amount of the replaced part is derecognised. The costs of the day-to-day servicing of property, plant and equipment are recognised in profit or loss as incurred.

NOTES TO THE FINANCIAL STATEMENTS

Thai Oil Public Company Limited and its Subsidiaries

Depreciation

Depreciation is calculated based on the depreciable amount, which is the cost of an asset, or other amount substituted for cost, less its residual value.

Depreciation is charged to the profit or loss on a straight line basis over the estimated useful lives of each component of an item of property, plant and equipment. The estimated useful lives are as follows:

Buildings	10 - 25 years
Leasehold improvements	5 - 20 years
Refinery plant and equipment (depreciated over the remaining estimated useful life starting from 1 October 1994)	20 - 35 years
Lube base oil refinery plants and equipment	16 - 20 years
Petrochemical plants	10 - 25 years
Power plants	20 - 25 years
Transmission facilities	25 years
Machinery, equipment and plant equipment	3 - 20 years
Oil and liquid chemical tankers and crew boats	10 - 25 years
Furniture, fixtures, office equipment and others	5 - 10 years
Vehicles	5 years

No depreciation is provided on freehold land and assets under construction.

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

(k) Intangible assets

Goodwill

Goodwill that arises upon the acquisition of subsidiaries is included in intangible assets. The measurement of goodwill at initial recognition is described in note 3 (a). Subsequent to initial recognition, goodwill is measured at cost less accumulated impairment losses. In respect of equity-accounted investees, the carrying amount of goodwill is included in the carrying amount of the investment, and an impairment loss on such an investment is not allocated to any asset, including goodwill, that forms part of the carrying amount of the equity-accounted investee.

NOTES TO THE FINANCIAL STATEMENTS

Thai Oil Public Company Limited and its Subsidiaries

Customer database

Customer database is stated at cost less accumulated impairment losses.

License fee and computer software

License fee and computer software that are acquired by the Group, which have finite useful lives, are stated at cost less accumulated amortisation and accumulated impairment losses.

Subsequent expenditure

Subsequent expenditure is capitalised only when it increases the future economic benefits embodied in the specific asset to which it relates. All other expenditure, including expenditure on internally generated goodwill and brands, is recognised in profit or loss as incurred.

Amortisation

Amortisation is calculated over the cost of the asset, or other amount substituted for cost, less its residual value.

Amortisation is recognised in profit or loss on a straight-line basis over the estimated useful lives of intangible assets, other than goodwill, from the date that they are available for use.

The estimated useful lives are as follows:

License fee	10 - 25 years
Computer software	5 - 10 years

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

(I) Impairment

The carrying amounts of the Group's assets are reviewed at each reporting date to determine whether there is any indication of impairment. If any such indication exists, the assets' recoverable amounts are estimated. For goodwill and intangible assets that have indefinite useful lives or are not yet available for use, the recoverable amount is estimated each year at the same time.

An impairment loss is recognised if the carrying amount of an asset or its cash-generating unit exceeds its recoverable amount. The impairment loss is recognised in profit or loss.

NOTES TO THE FINANCIAL STATEMENTS

Thai Oil Public Company Limited and its Subsidiaries

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

Calculation of recoverable amount

The recoverable amount of the Group's investments in held-to-maturity securities carried at amortised cost is calculated as the present value of estimated future cash flows, discounted at the original effective interest rate.

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

The recoverable amount of a non-financial asset is the greater of the asset's value in use and fair value less costs to sell. In assessing value in use, the estimated future cash flows are discounted to their present value using a pre-tax discount rate that reflects current market assessments of the time value of money and the risks specific to the asset. For an asset that does not generate cash inflows largely independent of those from other assets, the recoverable amount is determined for the cash-generating unit to which the asset belongs.

Reversals of impairment

An impairment loss in respect of a financial asset is reversed if the subsequent increase in recoverable amount can be related objectively to an event occurring after the impairment loss was recognised in profit or loss. For financial assets carried at amortised cost and available-for-sale financial assets that are debt securities, the reversal is recognised in profit or loss. For available-for-sale financial assets that are equity securities, the reversal is recognised in other comprehensive income.

An impairment loss in respect of goodwill is not reversed. Impairment losses recognised in prior periods in respect of other non-financial assets are assessed at each reporting date for any indications that the loss has decreased or no longer exists. An impairment loss is reversed if there has been a change in the estimates used to determine the recoverable amount. An impairment loss is reversed only to the extent that the asset's carrying amount does not exceed the carrying amount that would have been determined, net of depreciation or amortisation, if no impairment loss had been recognised.

(m) Interest-bearing liabilities

Interest-bearing liabilities are stated at cost.

NOTES TO THE FINANCIAL STATEMENTS

Thai Oil Public Company Limited and its Subsidiaries

(n) Trade and other accounts payable

Trade and other accounts payable are stated at cost.

(o) Employee benefits

Defined contribution plans

A defined contribution plan, provident fund, is a post-employment benefit plan under which an entity pays fixed contributions into a separate entity and will have no legal or constructive obligation to pay further amounts. Obligations for contributions to defined contribution pension plans are recognised as an employee benefit expense in profit or loss in the periods during which services are rendered by employees.

Defined benefit plans

A defined benefit plan is a post-employment benefit plan other than a defined contribution plan. The Group's net obligation in respect of defined benefit plans is calculated separately for each plan by estimating the amount of future benefit that employees have earned in the current and prior periods, discounting that amount.

The calculation of defined benefit obligations is performed annually by a qualified actuary using the projected unit credit method. When the calculation results in a potential asset for the Group, the recognised asset is limited to the present value of economic benefits available in the form of any future refunds from the plan or reductions in future contributions to the plan. To calculate the present value of economic benefits, consideration is given to any application minimum funding requirements.

Remeasurements of the net defined benefit liability, actuarial gain or loss are recognized immediately in other comprehensive income. The Group determines the interest expense on the net defined benefit liability for the period by applying the discount rate used to measure the defined benefit obligation at the beginning of the annual period, taking into account any changes in the net defined benefit liability during the period as a result of contributions and benefit payments. Net interest expense and other expenses related to defined benefit plans are recognized in profit or loss.

When the benefits of a plan are changed or when a plan is curtailed, the resulting change in benefit that relates to past service or the gain or loss on curtailment is recognised immediately in profit or loss. The Group recognises gains and losses on the settlement of a defined benefit plan when the settlement occurs.

NOTES TO THE FINANCIAL STATEMENTS

Thai Oil Public Company Limited and its Subsidiaries

Other long-term employee benefits

The Group's net obligation in respect of long-term employee benefits is the amount of future benefit that employees have earned in return for their service in the current and prior periods. That benefit is discounted to determine its present value. Remeasurements are recognized in profit or loss in the period in which they arise.

Termination benefits

Termination benefits are expensed at the earlier of when the Group can no longer withdraw the offer of those benefits and when the Group recognises costs for a restructuring. If benefits are not expected to be settled wholly within 12 months of the end of the reporting period, then they are discounted.

Short-term employee benefits

Short-term employee benefits are expensed as the related service is provided. A liability is recognised for the amount expected to be paid if the Group has a present legal or constructive obligation to pay this amount as a result of past service provided by the employee and the obligation can be estimated reliably.

(p) Provisions

A provision is recognised if, as a result of a past event, the Group has a present legal or constructive obligation that can be estimated reliably, and it is probable that an outflow of economic benefits will be required to settle the obligation. Provisions are determined by discounting the expected future cash flows at a pre-tax rate that reflects current market assessments of the time value of money and the risks specific to the liability. The unwinding of the discount is recognised as a finance cost.

(q) Revenue

Revenue excludes value added taxes or other sales taxes and is arrived at after deduction of trade discounts.

Sale of goods and services rendered

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

Rental income

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

NOTES TO THE FINANCIAL STATEMENTS

Thai Oil Public Company Limited and its Subsidiaries

Interest and dividend income

Interest income is recognised in the profit or loss as it accrues. Dividend income is recognised in the profit or loss on the date the Group's right to receive payments is established which in the case of quoted securities is usually the ex-dividend date.

(r) Expenses

Leases payments

Payments made under operating leases are recognised in profit or loss on a straight line basis over the term of the lease.

Repair and maintenance expenses

Expenditure on repair and maintenance is charged to profit or loss in the period in which the expenditure is incurred. Expenditure of a capital nature is added to the cost of the related plant and equipment.

Finance costs

Interest expenses and similar costs are charged to profit or loss for the period in which they are incurred, except to the extent that they are capitalised as being directly attributable to the acquisition, construction or production of an asset which necessarily takes a substantial year of time to be prepared for its intended use or sale.

(s) Income tax

Income tax expense on the profit or loss for the year comprises current and deferred tax.

Current tax is the expected tax payable or receivable on the taxable income or loss for the year, using tax rates enacted or substantively enacted at the reporting date, and any adjustment to tax payable in respect of previous years.

Deferred tax is recognised in respect of temporary differences between the carrying amounts of assets and liabilities for financial reporting purposes and the amounts used for taxation purposes. Deferred tax is not recognised for the following temporary differences: the initial recognition of goodwill; the initial recognition of assets or liabilities in a transaction that is not a business combination and that affects neither accounting nor taxable profit or loss; and differences relating to investments in subsidiaries and jointly-controlled entities to the extent that it is probable that they will not reverse in the foreseeable future.

The measurement of deferred tax reflects the tax consequences that would follow the manner in which the Group expects, at the end of the reporting period, to recover or settle the carrying amount of its assets and liabilities.

NOTES TO THE FINANCIAL STATEMENTS

Thai Oil Public Company Limited and its Subsidiaries

Deferred tax is measured at the tax rates that are expected to be applied to the temporary differences when they reverse, using tax rates enacted or substantively enacted by the reporting date.

In determining the amount of current and deferred tax, the Group takes into account the impact of uncertain tax positions and whether additional taxes and interest may be due. The Group believes that its accruals for tax liabilities are adequate for all open tax years based on its assessment of many factors, including interpretations of tax law and prior experience. This assessment relies on estimates and assumptions and may involve a series of judgements about future events. New information may become available that causes the Group to change its judgement regarding the adequacy of existing tax liabilities; such changes to tax liabilities will impact tax expense in the period that such a determination is made.

Deferred tax assets and liabilities are offset if there is a legally enforceable right to offset current tax liabilities and assets, and they relate to income taxes levied by the same tax authority on the same taxable entity, or on different tax entities, but they intend to settle current tax liabilities and assets on a net basis or their tax assets and liabilities will be realised simultaneously.

A deferred tax asset is recognised to the extent that it is probable that future taxable profits will be available against which the temporary differences can be utilised. Deferred tax assets are reviewed at each reporting date and reduced to the extent that it is no longer probable that the related tax benefit will be realised.

(t) Earnings per share

The Group presents basic earnings per share (EPS) data for its ordinary shares. Basic EPS is calculated by dividing the profit or loss attributable to ordinary shareholders of the Company by the weighted average number of ordinary shares outstanding during the period, adjusted for own shares held.

(u) Segment Reporting

Segment results that are reported to the Group's chief operating decision maker include items directly attributable to a segment as well as those that can be allocated on a reasonable basis.

4 Related parties

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

NOTES TO THE FINANCIAL STATEMENTS

Thai Oil Public Company Limited and its Subsidiaries

Relationships with key management and other related parties were as follows:

Name of entities	Country of incorporation	Nature of relationships
PTT Public Company Limited	Thailand	Parent company
Thai Paraxylene Co., Ltd.	Thailand	Subsidiary and/or common directors
Thai Lube Base Public Company Limited	Thailand	Subsidiary and/or common directors
Thaioil Marine Co., Ltd.	Thailand	Subsidiary and/or common directors
Thaioil Energy Services Co., Ltd.	Thailand	Subsidiary and/or the Company's management as a director
Thaioil Solvent Co., Ltd.	Thailand	Subsidiary and/or common directors
Thaioil Ethanol Co., Ltd.	Thailand	Subsidiary and/or the Company's management as a director
Thaioil Power Co., Ltd.	Thailand	Subsidiary and/or common directors
TOP SPP Co., Ltd.	Thailand	Subsidiary and/or common directors
TOP Solvent Co., Ltd.	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.	Vietnam	Indirect subsidiary and/or the Company's management as a director
Sapthip Co., Ltd.	Thailand	Indirect subsidiary and/or the Company's management as a director
Thaioil Marine International Pte. Ltd.	Singapore	Indirect subsidiary and/or the Company's management as a director
TOP Maritime Service Co., Ltd.	Thailand	Indirect subsidiary and/or the Company's management as a director
LABIX Co., Ltd.	Thailand	Indirect subsidiary and/or common directors
TOP-NTL Pte. Ltd.	Singapore	Joint venture of subsidiary
TOP-NTL Shipping Trust	Singapore	Joint venture of subsidiary
TOP Nautical Star Co., Ltd.	Thailand	Joint venture of subsidiary and/or the Company's management as a director
TOP-NYK MarineOne Pte. Ltd.	Singapore	Joint venture of indirect subsidiary and/or the Company's management as a director
PTT ICT Solutions Co., Ltd.	Thailand	Associate and/or the Company's management as a director
PTT Energy Solutions Co., Ltd.	Thailand	Associate and/or the Company's management as a director

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Thai Oil Public Company Limited and its Subsidiaries

Name of entities	Country of incorporation	Nature of relationships
Global Power Synergy Public Company Limited	Thailand	Indirect associate and/or common directors
Maesod Clean Energy Co., Ltd.	Thailand	Indirect associate and/or the Company's management as a director
Ubon Bio Ethanol Co., Ltd.	Thailand	Indirect associate and/or the Company's management as a director
T.I.M. Ship Management Co., Ltd.	Thailand	Indirect associate and/or the Company's management as a director
PTT International Trading Pte. Ltd.	Singapore	Subsidiary of the parent company
PTT Exploration and Production Public Company Limited	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 Company Limited	Thailand	Subsidiary of the parent company
PTT Global Chemical Public Company Limited	Thailand	Subsidiary of the parent company and/or common directors
PTT Maintenance and Engineering Co., Ltd.	Thailand	Indirect subsidiary of the parent company
PTT Phenol Co., Ltd.	Thailand	Indirect subsidiary of the parent company
Thai ABS Co., Ltd.	Thailand	Indirect subsidiary of the parent company
Thai Tank Terminal Ltd.	Thailand	Indirect subsidiary of the parent company
Global Green Chemicals Public Company Limited*	Thailand	Indirect subsidiary of the parent company
PTT MCC Biochem Co., Ltd.	Thailand	Joint venture of the parent company and/or common directors
Star Petroleum Refining Public Company Limited**	Thailand	Associate of the parent company
Bangchak Petroleum Public Company Limited**	Thailand	Associate of the parent company
Thai Petroleum Pipeline Co., Ltd.	Thailand	Related company and/or the Company's management as a director

* Change its name from "Thai Oleochemical Co., Ltd.", effective from 18 February 2016 onwards.

** On 30 April 2015 and 2 December 2015, PTT Public Company Limited ("PTT") has divested all its shareholding in Bangchak Petroleum Public Company Limited, and some of its shareholding in Star Petroleum Refining Public Company Limited remained 5.41% of ownership, respectively.

NOTES TO THE FINANCIAL STATEMENTS

Thai Oil Public Company Limited and its Subsidiaries

The pricing policies for particular types of transactions are explained further below:

Transactions	Pricing policies
Revenue from sale of goods and rendering of 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 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

Significant transactions for the years ended 31 December 2016 and 2015 with related parties were as follows:

(in million Baht)

	Consolidated financial statements		Separate financial statements	
	2016	2015	2016	2015
Parent Company				
Revenue from sale of goods and rendering of services	131,473	131,772	127,877	126,792
Purchase of crude oil and feedstock	106,713	101,367	100,076	97,039
Purchase-sale of crude oil and feedstock for legal reserve	-	587	-	587
Other income	25	51	24	50
Other expenses	45	42	42	41
Purchase of assets	207	7	-	-
Subsidiaries				
Revenue from sale of goods and rendering of services	-	-	51,496	41,077
Purchase of crude oil and feedstock	-	-	36,570	28,083
Interest income	-	-	430	249
Dividend income	-	-	14,075	3,103
Land lease income	-	-	65	62
Other income	-	-	1,385	1,048
Interest expense	-	-	37	58
Other expenses	-	-	1,083	1,147
Purchase of assets	-	-	33	-

NOTES TO THE FINANCIAL STATEMENTS

Thai Oil Public Company Limited and its Subsidiaries

(in million Baht)

	Consolidated financial statements		Separate financial statements	
	2016	2015	2016	2015
Joint ventures				
Revenue from sale of goods and rendering of services	7	69	7	69
Other income	1	16	-	-
Other expenses	1,563	1,478	1,563	1,331
Associates				
Revenue from sale of goods and rendering of services	3	4	2	3
Purchase of crude oil and feedstock	383	472	382	439
Interest income	4	4	-	-
Dividend income	-	-	153	130
Land lease income	8	7	8	7
Other income	23	28	21	26
Other expenses	271	240	239	200
Purchase of assets	105	94	105	94
Other related parties				
Revenue from sale of goods and rendering of services	3,570	5,864	93	2,634
Purchase of crude oil and feedstock	5,786	7,438	1,471	2,267
Purchase-sale of crude oil and feedstock for legal reserve	-	768	-	768
Dividend income	247	48	247	48
Other income	7	-	7	-
Other expenses	328	204	262	204
Purchase of assets	-	4	-	-
Directors' remuneration	62	25	54	17

NOTES TO THE FINANCIAL STATEMENTS

Thai Oil Public Company Limited and its Subsidiaries

Balances as at 31 December 2016 and 2015 with related parties were as follows:

Trade accounts receivable - related parties

(in million Baht)

	Consolidated financial statements		Separate financial statements	
	2016	2015	2016	2015
Parent Company				
PTT Public Company Limited	8,095	5,719	7,884	5,242
Subsidiaries				
Thai Paraxylene Co., Ltd.	-	-	3,456	2,936
Thai Lube Base Public Company Limited	-	-	1,554	474
Thaioil Power Co., Ltd.	-	-	48	39
TOP SPP Co., Ltd.	-	-	35	37
Sak Chaisidhi Co., Ltd.	-	-	17	-
LABIX Co., Ltd.	-	-	1,025	2
Joint venture				
TOP Nautical Star Co., Ltd.	-	2	-	-
Associate				
Global Power Synergy Public Company Limited	-	3	-	3
Other related parties				
IRPC Public Company Limited	33	60	2	-
PTT Exploration and Production Public Company Limited	14	18	-	-
PTT International Trading Pte. Ltd.	-	62	-	-
PTT Global Chemical Public Company Limited	13	6	-	-
	8,155	5,870	14,021	8,733
Less allowance for doubtful accounts	-	-	-	-
Net	8,155	5,870	14,021	8,733
Bad and doubtful debts expense for the year	-	-	-	-

NOTES TO THE FINANCIAL STATEMENTS

Thai Oil Public Company Limited and its Subsidiaries

Other accounts receivable - related parties

(in million Baht)

	Consolidated financial statements		Separate financial statements	
	2016	2015	2016	2015
Parent Company				
PTT Public Company Limited	1	4	1	4
Subsidiaries				
Thai Paraxylene Co., Ltd.	-	-	43	47
Thai Lube Base Public Company Limited	-	-	53	55
Thaioil Marine Co., Ltd.	-	-	10	15
Thaioil Energy Services Co., Ltd.	-	-	8	3
Thaioil Solvent Co., Ltd.	-	-	1	11
Thaioil Ethanol Co., Ltd.	-	-	3	3
Thaioil Power Co., Ltd.	-	-	27	21
TOP SPP Co., Ltd.	-	-	85	36
TOP Solvent Co., Ltd.	-	-	4	3
Sak Chaisidhi Co., Ltd.	-	-	3	1
LABIX Co., Ltd.	-	-	33	32
Associates				
PTT Energy Solutions Co., Ltd.	1	1	1	1
Maesod Clean Energy Co., Ltd.	1	1	-	-
Global Power Synergy Public Company Limited	7	7	7	7
T.I.M. Ship Management Co., Ltd.	4	3	-	-
Other related party				
PTT Maintenance and Engineering Co., Ltd.	1	2	1	2
Total	15	18	280	241

NOTES TO THE FINANCIAL STATEMENTS

Thai Oil Public Company Limited and its Subsidiaries

Short-term loans to related parties

(in million Baht)

	Consolidated financial statements		Separate financial statements	
	2016	2015	2016	2015
Subsidiaries				
Thai Paraxylene Co., Ltd.	-	-	2,300	-
Thaioil Marine Co., Ltd.	-	-	100	-
Thaioil Solvent Co., Ltd.	-	-	1,129	1,758
Thaioil Ethanol Co., Ltd.	-	-	492	476
TOP SPP Co., Ltd.	-	-	8,563	7,175
Associate				
Maesod Clean Energy Co., Ltd.	90	90	-	-
Total	90	90	12,584	9,409

Interest rates during the years of 2016 and 2015 were charged at money market rate (MMR) but not exceeding the average minimum loan rates (MLR) of 5 financial institutions less margin.

Movements of short-term loans to related parties during the years ended 31 December 2016 and 2015 were as follows:

(in million Baht)

	Consolidated financial statements		Separate financial statements	
	2016	2015	2016	2015
At 1 January	90	90	9,409	4,013
Increases	-	-	5,724	6,142
Decreases	-	-	(2,549)	(746)
At 31 December	90	90	12,584	9,409

NOTES TO THE FINANCIAL STATEMENTS

Thai Oil Public Company Limited and its Subsidiaries

Trade accounts payable - related parties

(in million Baht)

	Consolidated financial statements		Separate financial statements	
	2016	2015	2016	2015
Parent Company				
PTT Public Company Limited	11,730	6,729	11,119	6,364
Subsidiaries				
Thai Paraxylene Co., Ltd.	-	-	2,290	1,942
Thai Lube Base Public Company Limited	-	-	245	86
Thaioil Marine Co., Ltd.	-	-	6	5
Thaioil Power Co., Ltd.	-	-	135	159
TOP SPP Co., Ltd.	-	-	392	124
Sak Chaisidhi Co., Ltd.	-	-	8	1
Sapthip Co., Ltd.	-	-	28	16
LABIX Co., Ltd.	-	-	891	-
Joint ventures				
TOP Nautical Star Co., Ltd.	-	2	-	-
TOP-NTL Pte. Ltd.	21	-	21	-
Associates				
Maesod Clean Energy Co., Ltd.	3	19	3	19
Ubon Bio Ethanol Co., Ltd.	28	14	28	14
Global Power Synergy Public Company Limited	-	3	-	-
T.I.M. Ship Management Co., Ltd.	12	2	-	-
Other related parties				
IRPC Public Company Limited	189	164	-	-
PTT Global Chemical Public Company Limited	151	289	-	-
PTT Phenol Co., Ltd.	21	11	-	-
Global Green Chemicals Public Company Limited	50	47	50	47
Total	12,205	7,280	15,216	8,777

NOTES TO THE FINANCIAL STATEMENTS

Thai Oil Public Company Limited and its Subsidiaries

Other accounts payable - related parties

(in million Baht)

	Consolidated financial statements		Separate financial statements	
	2016	2015	2016	2015
Parent Company				
PTT Public Company Limited	4	5	1	2
Subsidiaries				
Thai Lube Base Public Company Limited	-	-	-	1
Thaioil Marine Co., Ltd.	-	-	26	-
Thaioil Energy Services Co., Ltd.	-	-	66	53
Thaioil Solvent Co., Ltd.	-	-	1	-
Associates				
PTT ICT Solutions Co., Ltd.	20	72	20	72
PTT Energy Solutions Co., Ltd.	-	25	-	25
Global Power Synergy Public Company Limited	3	2	-	2
T.I.M. Ship Management Co., Ltd.	4	4	-	-
Other related parties				
PTT International Trading Pte. Ltd.	37	-	37	-
Energy Complex Co., Ltd.	1	7	1	7
IRPC Public Company Limited	8	8	8	8
Thai Tank Terminal Ltd.	1	-	-	-
Thai Petroleum Pipeline Co., Ltd.	8	2	8	2
Total	86	125	168	172

NOTES TO THE FINANCIAL STATEMENTS

Thai Oil Public Company Limited and its Subsidiaries

Short-term borrowings from related parties

(in million Baht)

	Consolidated financial statements		Separate financial statements	
	2016	2015	2016	2015
Subsidiaries				
Thai Paraxylene Co., Ltd.	-	-	68	1,820
Thai Lube Base Public Company Limited	-	-	443	3,943
Thaioil Marine Co., Ltd.	-	-	20	77
Total	-	-	531	5,840

Interest rates during the years of 2016 and 2015 were charged at money market rate (MMR) but not exceeding the average minimum loan rate (MLR) of 5 financial institutions less margin.

Movements of short-term borrowings from related parties during the years ended 31 December 2016 and 2015 were as follows:

(in million Baht)

	Consolidated financial statements		Separate financial statements	
	2016	2015	2016	2015
Parent Company				
At 1 January	-	-	-	-
Increase	800	-	800	-
Decrease	(800)	-	(800)	-
At 31 December	-	-	-	-
Subsidiary				
At 1 January	-	-	5,840	3,760
Increase	-	-	-	2,080
Decrease	-	-	(5,309)	-
At 31 December	-	-	531	5,840

NOTES TO THE FINANCIAL STATEMENTS

Thai Oil Public Company Limited and its Subsidiaries

Significant agreements with related parties

As at 31 December 2016 the Group had the following significant agreements with related parties.

Raw Materials and Oil-Products Purchases and Sales Agreements

The Company has raw materials and oil products purchase and sale agreements with a subsidiary, whereby the purchase and sale volumes and prices of raw materials and oil products are specified in the agreements. These agreements are effective on the agreement date and shall be terminated by either party giving at least 6 months notice in writing to the other party.

Oil-Products Sale and Purchase Agreements

The Company has oil products purchase and sale agreements with a subsidiary, whereby the purchase and sale volumes and prices are specified in the agreements. These agreements are effective on the agreement date and shall be terminated if either party does not comply with the terms stipulated in the agreements.

By-Product Sale and Purchase Agreement

The Company has a by-product purchase and sale agreement with a subsidiary, whereby the purchase and sale volumes and prices of the by-product are specified in the agreement. The agreement is for a period of 13 years expiring in September 2017, or until the termination by mutual consent.

Technology and Communication Service Agreement

The Company has a technology and communication service agreement with an associate, whereby the service fees are specified in the agreement. The agreement is for a period of 3 years expiring in December 2018 and is renewable for additional periods as mutual agreement until either party giving at least 180 days before contract end date notice in writing to other party.

Crack Spread Swap Agreements

The Company has crack spread swap agreements with a related company ("counterparty"). The Company or the counterparty has commitments to make payments for the differences between the fixed price and floating price for each period.

As at 31 December 2016, the Company had no oil volume under the agreements with the related company (31 December 2015: nil).

NOTES TO THE FINANCIAL STATEMENTS

Thai Oil Public Company Limited and its Subsidiaries

Product Offtake and Crude Oil Supply Agreement

The Company has a product off take and crude oil supply agreement with a related company, whereby (a) the Company will sell and the related company will purchase refined petroleum products produced by the refinery for 49.99% of 270,000 barrels per day; and (b) the related party will supply and the Company will purchase crude oil and/or feedstock for the refinery required to produce 49.99% of 270,000 barrels per day. The credit term for crude oil shall be mutually agreed.

Throughput Agreement

The Company has a throughput agreement with a related company, whereby the tariff fee is specified in the agreement. The agreement is for a period of 20 years expiring in 2014 or when a target is achieved and is renewable.

The Company has a throughput agreement with a related company, whereby the tariff fee is specified in the agreement. The agreement is for a period of 20 years from the service date and shall be renewed for periods of 5 years.

Natural Gas Supply Agreements

The Company and certain subsidiaries have natural gas supply agreements with a related company, whereby the related company agrees to supply the natural gas to the Company and the subsidiaries at quantities and prices as stipulated in the agreements. These agreements are effective for periods of 5 to 25 years expiring during 2017 and 2041.

Cost Reimbursement Agreements

A subsidiary and an associate have cost reimbursement agreements with the Company covering the reimbursement of construction costs of natural gas pipeline facilities and the use of the pipeline facilities, raw water pipeline and the use of land for the construction of a transmission line connecting the subsidiary and the associate to the Electricity Generating Authority of Thailand (EGAT). Under the terms of the agreements, the subsidiary and the associate agree to share the cost of investments with the Company on the basis and conditions stipulated in the agreements. These agreements are effective for a period of 25 years, or until the termination of the power purchase agreements entered into by the subsidiary and the associate with EGAT, whichever is sooner.

Power Purchase Agreements

Certain subsidiaries ("sellers") have power purchase agreements with the Company and certain subsidiaries for periods of 24 and 25 years expiring in 2023, 2027 and 2040, whereby the sellers will sell power energy to the Company and the subsidiaries at the agreed quantities and prices as stipulated in the agreements.

NOTES TO THE FINANCIAL STATEMENTS

Thai Oil Public Company Limited and its Subsidiaries

Steam Purchase Agreements

The Company and certain subsidiaries have entered into steam purchase agreements for periods of 20 and 25 years expiring in 2023, 2027 and 2040, whereby the agreed quantities and prices are specified in the agreements.

Services and Supplies Agreements

Certain subsidiaries and an associate have services and supplies agreements with the Company and a subsidiary, whereby the Company and a subsidiary provide the subsidiaries and the associate for the operating, repair and maintenance, management, controlling and administration, procurement, fuel transmission, waste water treatment and utilities, information technology, financial, accounting and human resource services. The subsidiaries and the associate agree to pay certain fees as stipulated in the agreements. These agreements are for periods of 5 years or 28 years or until the termination of the land lease agreement entered into by a subsidiary with the Company, whichever is sooner or until the termination of the power purchase agreement entered into by the associate with EGAT.

Land Lease Agreements

Certain subsidiaries and an associate have land lease agreements with the Company to lease/sublease certain parcels of land ending in September 2022, May 2041, and August 2043 with the rate as stipulated in the agreements, and the rate will be adjusted every 5 years.

The Company has a land lease agreement with a related company to lease certain parcels of land ending in August 2026 with the rate as stipulated in the agreements. If the Company does not giving a cancelable notice within a month before contract end date, the contract shall be renewed for additional 15 years.

Raw Materials and Petrochemical Products Purchase and Sale Agreements

An indirect subsidiary has raw materials and petrochemical products purchase and sale agreements with related companies, whereby the purchase and sale volumes and prices of raw materials and petrochemical products are specified in the agreements. These agreements are for periods of 1 year to 15 years expiring during 2017.

Technical Service Agreements

An associate has a technical service agreement with the Company to provide a consultancy technical solutions service for energy-related and petrochemical businesses, whereby the service fees are specified in the agreements. This agreement expires in December 2019.

NOTES TO THE FINANCIAL STATEMENTS

Thai Oil Public Company Limited and its Subsidiaries

Time Charter and Affreightment Agreements

A subsidiary has time charter and affreightment agreements with the Company, subsidiary and another indirect subsidiary, whereby the freight rate is specified in the agreements. These agreements are for periods of 1 year and 5 years and 8 years expiring during 2017, 2020, and 2024.

Certain joint ventures have time charter agreements with the Company, whereby the freight rate is specified in the agreements. These agreements are for periods of 10 years expiring in 2021, 2022 and 2024.

Charter of Crew Boat Agreements

An indirect subsidiary has charter of crew boat agreement with a related company, whereby the service fees are specified in the agreements. These agreements are for period of 3 and 5 years expiring in 2017 and 2018 and shall be renewed for periods of 2 years by either party giving at least 3 days before contract end date notice in writing to the other party.

Office Rental Agreements

The Company has office rental and service agreements with a related party, whereby the rental and service fees are specified in the agreements. These agreements are for the periods of 3 years expiring in November 2018 and are renewable for additional periods of 3 years.

Ethanol Products Purchase and Sale Agreements

An associate has ethanol products purchase and sale agreements with the Company, whereby the purchase and sale volumes and prices of the ethanol products are specified in the agreements. This agreement expired in December 2013. This agreement shall be automatically renewed for additional period of 1 year until either party giving at least 30 days notice in writing to the other party.

A subsidiary has an ethanol products purchase and sale agreement with a related company, whereby the purchase and sale volumes and prices of the ethanol products are specified in the agreement. The agreement is for a period of 10 years expiring in June 2021 and shall be renewed by either party giving at least 6 months before contract end date notice in writing to the other party.

Service Agreements

A subsidiary has human resource service agreements with the Company, whereby the service fees are specified in the agreements. This agreement expires in December 2017.

The Company has a human resource service agreement with an indirect subsidiary, whereby the service fees are specified in the agreement. This agreement expires in December 2017.

NOTES TO THE FINANCIAL STATEMENTS

Thai Oil Public Company Limited and its Subsidiaries

Crude Oil Storage Tank Service Agreement

A related company has a crude oil storage tank service agreement with the Company, whereby the service fees are specified in the agreement. This agreement is for a period of 2 years expiring in September 2018.

Sea berth and throughput Agreement

A related company has a sea berth and throughput agreement with the Company, whereby the tariff fee is specified in the agreement. The agreement is for a period of 20 years and is renewable for additional periods of 5 years.

Loan Agreement

The Company has uncommitted unsecured short term inter-company borrowing and lending agreements with a related company to manage liquidity. Each of the borrowing credit line and lending credit line is not exceeding Baht 2,000 million, bearing the interest rate reference by BIBOR or LIBOR, plus interest rate margin by taking into account on the short term borrowing interest rate, the return on short term investment and credit rating of the Company and the counterparty. These agreements are for a period of 1 year expiring in December 2017.

5 Cash and cash equivalents

(in million Baht)

	Consolidated financial statements		Separate financial statements	
	2016	2015	2016	2015
Cash on hand	55	10	2	9
Cash at banks - savings and current accounts	24,270	29,464	21,723	26,775
Cash at banks - savings account (Private Funds)	1,004	-	1,004	-
Cash at banks - fixed deposits (maturity period less than 3 months from the investment date)	5,791	6,290	5,511	6,290
Total	31,120	35,764	28,240	33,074

NOTES TO THE FINANCIAL STATEMENTS

Thai Oil Public Company Limited and its Subsidiaries

The currency denomination of cash and cash equivalents as at 31 December 2016 and 2015 was as follows:

(in million Baht)

	Consolidated financial statements		Separate financial statements	
	2016	2015	2016	2015
Thai Baht	14,163	13,435	11,592	11,412
United States Dollars	16,848	22,179	16,648	21,662
Other	109	150	-	-
Total	31,120	35,764	28,240	33,074

As at 31 December 2016, the Group's savings, current and fixed deposits (maturity period less than 3 months from the investment date) totalling Baht 316 million have been pledged as collateral for credit facilities as described in note 18 to the financial statements (2015: Baht 83 million).

6 Other investments

(in million Baht)

	Consolidated financial statements		Separate financial statements	
	2016	2015	2016	2015
Current investments				
Cash at bank - fixed deposits	28,953	17,364	28,497	16,750
Debt securities - available-for-sale securities (Private funds)	701	-	701	-
	29,654	17,364	29,198	16,750
Other long-term investments				
Equity securities - available-for-sale securities	147	135	147	135
Other non-marketable securities	779	779	779	779
Debt securities - available-for-sale securities (Private funds)	98	-	98	-
	1,024	914	1,024	914
Total	30,678	18,278	30,222	17,664

NOTES TO THE FINANCIAL STATEMENTS

Thai Oil Public Company Limited and its Subsidiaries

All other investments of the Group as at 31 December 2016 and 2015 were denominated entirely in Thai Baht.

Cash at bank - fixed deposits

As at 31 December 2016, the Group's fixed deposits totalling Baht 456 million have been pledged as collateral for credit facilities as described in note 18 to the financial statements (2015: Baht 614 million).

Equity securities - available-for-sale securities

In 2007 the Company entered into MFC Energy Open End Fund with certain companies so as to raise funds from financial institution investors who are interested in investing in energy or relating energy business. Later, in May 2014 the Fund was renamed to Core Flexible Fund and changed to its investment policy, which the Fund can invest in assets of other industry groups at register in the Stock Exchange. In consideration thereof, the Company has a commitment to purchase a holding in this Fund, comprising 40 million units at par value of Baht 10, amounting to Baht 400 million. During 2015, the Fund redeemed automatically from the Company for 2.50 million units or amounting to Baht 15.5 million.

As at 31 December 2016, the Company held totalling 22.5 million units or totalling Baht 225 million at fair value of Baht 147 million (2015: Baht 135 million).

Debt securities - available-for-sale securities

During the year 2016, the Company established private funds and engaged independent assets management companies. As at 31 December 2016, the value of private funds outstanding totalling Baht 1,804 million (including cash at banks - savings account as disclosed in note 5 to financial statements). Those private funds have invested in debt securities which are considered investment grade.

NOTES TO THE FINANCIAL STATEMENTS

Thai Oil Public Company Limited and its Subsidiaries

Other non-marketable securities

Type of Business	Consolidated financial statements / Separate financial statements					
	Ownership interest		Paid-up capital		Cost method	
	2016	2015	2016	2015	2016	2015
	(%)				(in million Baht)	
Related party						
Thai Petroleum Pipeline Co., Ltd.	9.19	9.19	8,479	8,479	779	779
Oil transportation by pipeline					247	247
					48	48
					779	779
					247	247
					48	48

NOTES TO THE FINANCIAL STATEMENTS

Thai Oil Public Company Limited and its Subsidiaries

7 Trade accounts receivable

(in million Baht)

	Note	Consolidated financial statements		Separate financial statements	
		2016	2015	2016	2015
Related parties	4	8,155	5,870	14,021	8,733
Other parties		11,381	8,306	6,822	5,208
		19,536	14,176	20,843	13,941
Less allowance for doubtful accounts		-	-	-	-
Total		19,536	14,176	20,843	13,941
Bad and doubtful debts expenses for the year		-	5	-	-

Aging analyses for trade accounts receivable are as follows:

(in million Baht)

	Note	Consolidated financial statements		Separate financial statements	
		2016	2015	2016	2015
Related parties					
Within credit terms		8,154	5,870	14,021	8,733
Overdue:					
Less than 3 months		1	-	-	-
		8,155	5,870	14,021	8,733
Less allowance for doubtful accounts		-	-	-	-
Net	4	8,155	5,870	14,021	8,733

NOTES TO THE FINANCIAL STATEMENTS

Thai Oil Public Company Limited and its Subsidiaries

(in million Baht)

	Consolidated financial statements		Separate financial statements	
	2016	2015	2016	2015
Other parties				
Within credit terms	11,373	8,304	6,822	5,208
Overdue:				
Less than 3 months	8	2	-	-
	11,381	8,306	6,822	5,208
Less allowance for doubtful accounts	-	-	-	-
Net	11,381	8,306	6,822	5,208
Total	19,536	14,176	20,843	13,941

The normal credit term granted by the Group ranges from 15 days to 90 days.

The currency denomination of trade accounts receivable as at 31 December 2016 and 2015 was as follows:

(in million Baht)

	Consolidated financial statements		Separate financial statements	
	2016	2015	2016	2015
Thai Baht	15,771	11,131	19,011	12,297
United States Dollars	3,517	2,859	1,832	1,644
Other	248	186	-	-
Total	19,536	14,176	20,843	13,941

NOTES TO THE FINANCIAL STATEMENTS

Thai Oil Public Company Limited and its Subsidiaries

8 Other receivables

(in million Baht)

	Consolidated financial statements		Separate financial statements	
	2016	2015	2016	2015
Prepaid expenses	523	690	405	550
Other accounts receivable	151	1,474	395	1,674
Current portion of long-term loans				
to savings co-operative of employees	40	42	40	42
Other	220	203	174	51
Total	934	2,409	1,014	2,317

9 Inventories

(in million Baht)

	Consolidated financial statements		Separate financial statements	
	2016	2015	2016	2015
Crude oil and feedstock	11,595	7,458	10,379	6,721
Materials, spare parts and supplies	1,426	1,274	1,005	951
Finished and semi-finished oil products	8,832	5,025	6,281	3,256
Goods in transit				
Crude oil	11,428	6,257	11,404	6,243
Materials, spare parts and supplies	9	23	-	-
	33,290	20,037	29,069	17,171
Less allowance for decline in value of inventories adjusted to net realisable value	101	1,154	73	1,113
Net	33,189	18,883	28,996	16,058

NOTES TO THE FINANCIAL STATEMENTS

Thai Oil Public Company Limited and its Subsidiaries

As at 31 December 2016 the Company's inventories as stated above included a legal reserve amounting to Baht 9,562 million. (2015: 6,389 million).

(in million Baht)

	Consolidated financial statements		Separate financial statements	
	2016	2015	2016	2015
Inventories recognised as an expense in 'cost of sale of goods':				
- Cost	246,805	273,802	266,559	277,220
- Reversal of write-down to net realisable value	(1,053)	(1,546)	(1,041)	(1,338)
Net	245,752	272,256	265,518	275,882

10 Investments in subsidiaries

(in million Baht)

	Separate financial statements	
	2016	2015
At 1 January	14,545	14,545
Acquisitions	-	-
At 31 December	14,545	14,545

NOTES TO THE FINANCIAL STATEMENTS

Thai Oil Public Company Limited and its Subsidiaries

Investments in subsidiaries as at 31 December 2016 and 2015, and dividend income from those investments for the years then ended were as follows:

	Separate financial statements							
	Ownership interest		Paid-up capital		Cost method		Dividend income	
	2016	2015	2016	2015	2016	2015	2016	2015
	(%)		(in million Baht)					
Subsidiaries								
Thai Paraxylene Co., Ltd.	99.99	99.99	2,572	2,572	2,161	2,161	7,974	-
Thai Lube Base Public Company Limited	99.99	99.99	1,758	1,758	1,979	1,979	5,274	2,637
Thaioil Marine Co., Ltd.	99.99	99.99	970	970	970	970	39	62
Thaioil Energy Services Co., Ltd.	99.99	99.99	40	40	40	40	60	30
Thaioil Solvent Co., Ltd.	99.99	99.99	1,250	1,250	1,250	1,250	-	-
Thaioil Ethanol Co., Ltd.	99.99	99.99	1,450	1,450	1,450	1,450	-	-
Thaioil Power Co., Ltd.	73.99	73.99	2,810	2,810	3,195	3,195	728	374
TOP SPP Co., Ltd.	99.99	99.99	3,500	3,500	3,500	3,500	-	-
Total			14,350	14,350	14,545	14,545	14,075	3,103

None of the Company's investment in subsidiaries are publicly listed and consequently do not have published price quotations.

NOTES TO THE FINANCIAL STATEMENTS

Thai Oil Public Company Limited and its Subsidiaries

11 Non-controlling interests

The following table summarises the information relating to each of the Group's subsidiaries that has a material non-controlling interest, before any intra-group eliminations:

	(in million Baht)					
	Thaioil Power Co., Ltd.		LABIX Co., Ltd.		Other individually immaterial subsidiaries	
	31 December		31 December		31 December	
	2016	2015	2016	2015	2016	2015
Non-controlling interest percentage	26.01	26.01	25	25		
Current assets	910	1,012	2,767	851		
Non-current assets	10,221	10,185	12,391	10,082		
Current liabilities	(521)	(551)	(3,267)	(713)		
Non-current liabilities	(164)	(336)	(7,455)	(5,778)		
Net assets	10,446	10,310	4,436	4,442		
Carrying amount of non-controlling interest	2,717	2,682	1,109	1,110	914	845
					4,740	4,637

NOTES TO THE FINANCIAL STATEMENTS

Thai Oil Public Company Limited and its Subsidiaries

(in million Baht)

	Thaioil Power Co., Ltd.		LABIX Co., Ltd.		Other individually immaterial subsidiaries				Total	
	31 December		31 December		31 December		31 December		31 December	
	2016	2015	2016	2015	2016	2015	2016	2015	2016	2015
Revenue from sale of goods and rendering of services	4,264	4,916	11,276	-						
Profit (loss)	1,116	944	(5)	(43)						
Other comprehensive income (loss)	4	3	-	-						
Total comprehensive income (loss)	1,120	947	(5)	(43)						
Profit (loss) allocated to non-controlling interest	290	246	(1)	(11)	76	88	76	88	365	323
Total comprehensive income (loss) allocated to non-controlling interest	291	247	(1)	(11)	76	88	76	88	366	324
Cash flows from operating activities	843	775	180	57						
Cash flows from investing activities	314	193	(2,165)	(3,700)						
Cash flows from financing activities	(1,172)	(854)	2,218	3,418						
Net increase (decrease) in cash and cash equivalents	(15)	114	233	(225)						
Dividends paid to non-controlling interest	256	131	-	-						

NOTES TO THE FINANCIAL STATEMENTS

Thai Oil Public Company Limited and its Subsidiaries

12 Investments in associates and joint ventures

(in million Baht)

	Consolidated financial statements		Separate financial statements	
	2016	2015	2016	2015
At 1 January	13,441	13,114	1,261	1,261
Share of net gain of investments - equity method	930	712	-	-
Dividend income	(507)	(423)	-	-
Currency transaction differences	(3)	39	-	-
Share of other comprehensive income of associate	5	4	-	-
Loss from the change in the ownership interests in associate	-	(5)	-	-
At 31 December	13,866	13,441	1,261	1,261

NOTES TO THE FINANCIAL STATEMENTS

Thai Oil Public Company Limited and its Subsidiaries

Investments in associates and joint ventures as at 31 December 2016 and 2015, and dividend income for the years then ended were as follows:

Consolidated financial statements												
	Ownership interest		Paid-up capital		Cost method		Equity method		Market price of listed securities		Dividend income	
	2016	2015	2016	2015	2016	2015	2016	2015	2016	2015	2016	2015
(in million Baht)												
Associates												
PTT ICT Solutions Co., Ltd.	20.00	20.00	150	150	30	30	272	218	-	-	13	13
PTT Energy Solutions Co., Ltd.	20.00	20.00	150	150	30	30	48	44	-	-	-	-
Global Power Synergy Public Company Limited	29.70	29.70	14,983	14,983	3,855	12,236	11,896	16,572	9,877	467	392	392
Maesod Clean Energy Co., Ltd.	30.00	30.00	675	675	203	203	3	42	-	-	-	-
Ubong Bio Ethanol Co., Ltd.	21.28	21.28	2,740	2,740	769	802	781	-	-	-	-	-
T. I. M. Ship Management Co., Ltd.	33.33	33.33	3	3	1	1	-	5	-	-	-	-
			18,701	18,701	4,888	13,361	12,986			480	405	405
Joint ventures												
TOP-NTL Pte. Ltd.	50.00	50.00	1	1	-	-	10	8	-	-	-	-
TOP-NTL Shipping Trust	50.00	50.00	48	48	24	24	28	14	-	-	-	-
TOP-Nautical Star Co., Ltd.	35.00	35.00	150	150	53	53	22	-	-	-	-	-
TOP-NYK MarineOne Pte. Ltd.	50.00	50.00	548	548	274	274	445	433	-	-	27	18
			747	747	351	351	505	455		27	18	18
Total			19,448	19,448	5,239	13,866	13,441			507	423	423

NOTES TO THE FINANCIAL STATEMENTS

Thai Oil Public Company Limited and its Subsidiaries

Separate financial statement										
	Ownership interest		Paid-up capital		Cost method		Market price of listed securities		Dividend income	
	2016	2015	2016	2015	2016	2015	2016	2015	2016	2015
(in million Baht)										
PTT ICT Solutions Co., Ltd.	20.00	20.00	150	150	30	30	-	-	13	13
PTT Energy Solutions Co., Ltd.	20.00	20.00	150	150	30	30	-	-	-	-
Global Power Synergy Public Company Limited	8.91	8.91	14,983	14,983	1,201	1,201	4,972	2,963	140	117
Total			15,283	15,283	1,261	1,261			153	130

NOTES TO THE FINANCIAL STATEMENTS

Thai Oil Public Company Limited and its Subsidiaries

Associates and joint ventures

The following table summarises the financial information of the associates and joint ventures as included in their own financial statements, adjusted for fair value adjustments at acquisition and differences in accounting policies. The table also reconciles the summarized financial information to the carrying amount of the Group's interest in these companies.

	(in million Baht)	
	Global Power Synergy Public Company Limited	
	2016	2015
Revenue	20,037	21,758
Net profit	2,872	1,889
Other comprehensive income	17	17
Total comprehensive income (loss)	2,889	1,906
Attributable to NCI	172	(17)
Attributable to investee's shareholders	2,717	1,923
Current assets	11,665	16,337
Non-current assets	46,363	39,548
Current liabilities	(4,195)	(4,763)
Non-current liabilities	(15,079)	(13,995)
Net assets	38,754	37,127
Attributable to NCI	1,604	1,122
Attributable to investee's shareholders	37,150	36,005
Group's interest in net assets of investee at 1 January	11,896	11,645
Total comprehensive income (loss) attributable to the Group	807	648
Dividends received during the year	(467)	(392)
Loss from the change in the ownership interests in associate	-	(5)
Group's interest in net assets of investee at end of year	12,236	11,896
Carrying amount of interest in investee at 31 December	12,236	11,896

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Thai Oil Public Company Limited and its Subsidiaries

Immaterial associates and joint ventures

The following is summarized financial information for the Group's interest in immaterial associates and joint ventures based on the amounts reported in the Group's consolidated financial statements:

(in million Baht)

	Immaterial Associates		Immaterial Joint ventures	
	2016	2015	2016	2015
Carrying amount of interests in immaterial associates and joint ventures	1,125	1,090	505	455
Group's share of:				
- Profit from continuing operations	48	55	80	15
- Other comprehensive income (loss)	-	(2)	(2)	39
- Total comprehensive income (loss)	48	53	78	54

13 Investment properties

(in million Baht)

	Note	Consolidated financial statements		Separate financial statements	
		2016	2015	2016	2015
Cost					
At 1 January		88	88	1,096	1,096
Reclassification from property, plant and equipment	14	6	-	1	-
At 31 December		94	88	1,097	1,096
Impairment losses					
At 1 January		-	-	(11)	(11)
At 31 December		-	-	(11)	(11)
Net book value					
At 1 January		88	88	1,085	1,085
At 31 December		94	88	1,086	1,085

NOTES TO THE FINANCIAL STATEMENTS

Thai Oil Public Company Limited and its Subsidiaries

Investment properties as at 31 December 2016 and 2015 were valued by a firm of independent professional valuers, at open market values on an existing use basis and income approach. The appraised value of the Group and the Company was Baht 247 million and Baht 1,730 million respectively (2015: Baht 240 million and Baht 1,726 million respectively).

Measurement of fair value

Fair value hierarchy

The fair value of investment property was determined by external, independent property valuers, having appropriate recognised professional qualifications and recent experience in the category of the property being valued. 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.

Valuation technique and significant unobservable inputs

The following table shows the valuation technique used in measuring the fair value of investment property, as well as the significant unobservable inputs used.

Valuation technique	Significant Unobservable inputs	Inter-relationship between key unobservable inputs and fair value measurement
Discounted cash flows; The valuation model considers the present value of net cash flows to be generated from the property, taking into account expected rental growth rate. The expected net cash flows are discounted using risk-adjusted discount rates. Among other factors, the discount rate estimation considers the quality of its location (prime vs secondary), tenant credit quality and lease terms.	<ul style="list-style-type: none"> Contractually agreed lease income over the remaining period. Risk-adjusted discount rates (9%) 	<p>The estimated fair value increase (decrease) if:</p> <ul style="list-style-type: none"> Expected market rental growth were higher (lower); The risk-adjusted discount rate were lower (higher).
Market approach	The adjusted quoted price and the actual selling price of comparable investment properties	The estimated fair value increase (decrease) if land price were higher (lower).

NOTES TO THE FINANCIAL STATEMENTS

Thai Oil Public Company Limited and its Subsidiaries

14 Property, plant and equipment

Consolidated financial statements														(in million Baht)
	Land	Buildings	Leasehold improve- ments	Refinery plant and equipment	Petro- chemical plants	Power plants	Trans- mission facilities	Machinery, equipment and plant equipment	Oil and liquid chemical tankers and crew boats	Furniture, fixtures, office equipment and others	Vehicles	Construction in progress	Total	
Cost														
At 1 January 2015	5,950	1,805	-	96,332	23,346	5,494	193	4,813	3,847	713	23	20,694	163,210	
Additions	77	3	-	96	-	768	-	12	6	12	-	10,070	11,044	
Transfers, net	-	118	211	4,812	121	157	-	839	452	22	-	(6,732)	-	
Disposals	-	-	-	(1,390)	(1)	-	-	-	(151)	(111)	-	(79)	(1,732)	
Translation differences on consolidation	-	1	-	-	-	-	-	7	-	-	-	-	8	
At 31 December 2015 and 1 January 2016														
1 January 2016	6,027	1,927	211	99,850	23,466	6,419	193	5,671	4,154	636	23	23,953	172,530	
Additions	173	1	-	72	45	-	-	20	231	23	-	5,476	6,041	
Transfers, net	-	46	-	2,864	11,172	10,941	-	472	158	169	-	(25,822)	-	
Reclassification to Investment Properties (Note 13)	(6)	-	-	-	-	-	-	-	-	-	-	-	(6)	
Disposals	-	(39)	-	(5)	-	-	-	(2)	-	(7)	-	(18)	(71)	
Translation differences on consolidation	-	-	-	-	-	-	-	(3)	-	-	-	-	(3)	
At 31 December 2016	6,194	1,935	211	102,781	34,683	17,360	193	6,158	4,543	821	23	3,589	178,491	

NOTES TO THE FINANCIAL STATEMENTS

Thai Oil Public Company Limited and its Subsidiaries

(in million Baht)

Consolidated financial statements												
	Land	Buildings	Leasehold improve- ments	Refinery plant and equipment	Petro- chemical plants	Power plants	Trans- mission facilities	Machinery, equipment and plant equipment	Oil and liquid chemical tankers and crew boats and others	Furniture, fixtures, office equipment and others	Construction in progress	Total
Depreciation												
At 1 January 2015	-	1,111	-	65,242	10,190	3,588	139	2,412	799	578	18	- 84,077
Depreciation charge for the year	-	75	-	4,053	1,153	210	5	286	175	56	2	- 6,015
Disposals	-	-	-	(575)	-	-	-	-	(151)	(110)	-	- (836)
Translation differences on consolidation	-	-	-	-	-	-	-	3	-	-	-	3
At 31 December 2015 and 1 January 2016												
At 31 December 2015 and 1 January 2016	-	1,186	-	68,720	11,343	3,798	144	2,701	823	524	20	- 89,259
Depreciation charge for the year	-	84	8	3,922	1,708	575	6	346	201	77	1	- 6,928
Disposals	-	(4)	-	(5)	-	-	-	(2)	-	(6)	-	- (17)
Translation differences on consolidation	-	-	-	-	-	-	-	(2)	-	-	-	(2)
At 31 December 2016	-	1,266	8	72,637	13,051	4,373	150	3,043	1,024	595	21	- 96,168
Impairment losses												
At 31 December 2015 and 1 January 2016	11	-	-	-	-	-	-	2	-	-	-	13
At 31 December 2016	11	-	-	-	-	-	-	-	-	-	-	11
Net book value												
At 1 January 2015	5,939	694	-	31,090	13,156	1,906	54	2,399	3,048	135	5	20,694 79,120
At 31 December 2015 and 1 January 2016	6,016	741	211	31,130	12,123	2,621	49	2,968	3,331	112	3	23,953 83,258
At 31 December 2016	6,183	669	203	30,144	21,632	12,987	43	3,115	3,519	226	2	3,589 82,312

NOTES TO THE FINANCIAL STATEMENTS

Thai Oil Public Company Limited and its Subsidiaries

	(in million Baht)									
	Separate financial statements									
	Land	Buildings	Refinery plant and equipment	Machinery, equipment and plant equipment	Furniture, fixtures, office equipment and others	Vehicles	Construction in progress	Total		
Cost										
At 1 January 2015	3,831	824	88,248	1,071	435	4	8,177	102,590		
Additions	-	-	96	4	6	-	978	1,084		
Transfers, net	-	4	4,809	35	3	-	(4,851)	-		
Disposals	-	-	(1,389)	-	(104)	-	-	(1,493)		
At 31 December 2015 and 1 January 2016	3,831	828	91,764	1,110	340	4	4,304	102,181		
Additions	-	-	72	13	19	-	1,966	2,070		
Transfers, net	-	16	2,747	112	140	-	(3,015)	-		
Reclassification to Investment Properties (Note 13)	(1)	-	-	-	-	-	-	(1)		
Disposals	-	-	(5)	-	(7)	-	-	(12)		
At 31 December 2016	3,830	844	94,578	1,235	492	4	3,255	104,238		

NOTES TO THE FINANCIAL STATEMENTS

Thai Oil Public Company Limited and its Subsidiaries

(in million Baht)

	Separate financial statements						Total
	Land	Buildings	Refinery plant and equipment	Machinery, equipment and plant equipment	Furniture, fixtures, office equipment and others	Construction in progress	
Depreciation							
At 1 January 2015	-	660	59,558	845	364	4	61,431
Depreciation charge for the year	-	23	3,652	56	35	-	3,766
Disposals	-	-	(575)	-	(104)	-	(679)
At 31 December 2015 and 1 January 2016	-	683	62,635	901	295	4	64,518
Depreciation charge for the year	-	23	3,514	73	49	-	3,659
Disposals	-	-	(5)	-	(6)	-	(11)
At 31 December 2016	-	706	66,144	974	338	4	68,166
Net book value							
At 1 January 2015	3,831	164	28,690	226	71	-	41,159
At 31 December 2015 and 1 January 2016	3,831	145	29,129	209	45	-	37,663
At 31 December 2016	3,830	138	28,434	261	154	-	36,072

The gross amounts of the Group's fully depreciated property, plant and equipment that were still in use as at 31 December 2016, amounted to Baht 34,453 million in the consolidated financial statements (2015: Baht 33,452 million) and amounted to Baht 32,508 million in the separate financial statements (2015: Baht 31,700 million).

Certain subsidiaries mortgaged their land, building, petrochemical plant, machines and crew boats as collateral for long-term borrowings as described in note 18 to the financial statements. The net book value of land, building, petrochemical plant, machines and crew boats as at 31 December 2016 amounted to Baht 12,224 million (2015: Baht 2,520 million).

NOTES TO THE FINANCIAL STATEMENTS

Thai Oil Public Company Limited and its Subsidiaries

15 Intangible assets

(in million Baht)

	Consolidated financial statements				
	License fee	Computer software	Customer database	Goodwill	Total
Cost					
At 1 January 2015	1,779	549	205	641	3,174
Additions	13	26	-	-	39
Translation differences on consolidation	-	-	-	26	26
At 31 December 2015 and 1 January 2016	1,792	575	205	667	3,239
Additions	1,221	184	-	-	1,405
Translation differences on consolidation	-	-	-	(12)	(12)
At 31 December 2016	3,013	759	205	655	4,632
Accumulated amortisation					
At 1 January 2015	993	229	-	-	1,222
Amortisation charge for the year	84	27	-	-	111
At 31 December 2015 and 1 January 2016	1,077	256	-	-	1,333
Amortisation charge for the year	133	60	-	-	193
At 31 December 2016	1,210	316	-	-	1,526
Net book value					
At 1 January 2015	786	320	205	641	1,952
At 31 December 2015 and 1 January 2016	715	319	205	667	1,906
At 31 December 2016	1,803	443	205	655	3,106

NOTES TO THE FINANCIAL STATEMENTS

Thai Oil Public Company Limited and its Subsidiaries

Impairment testing for carrying amount of goodwill and other intangible assets within indefinite useful life

The recoverable amount was based on its value in use, determined by discounting future cash flows to be generated from the continuing use of assets.

Five years of cash flows were included in the discounted cash flow model. A long-term growth rate into perpetuity has been determined as the lower of the nominal gross domestic product (GDP) rates for the countries in which the asset operates and the long-term compound annual Earnings Before Interest, Taxes, Depreciation, and Amortisation (EBITDA) growth rate estimated by management.

Budgeted EBITDA was based on expectations of future outcomes taking into account past experience, adjusted for anticipated revenue growth. Revenue growth was projected taking into account the average growth levels experienced over the past five years and the estimated sales volume and price growth for the next five years. It was assumed that sales prices would grow at a constant margin above forecast inflation over the next five years, in line with information obtained from external brokers who publish a statistical analysis of long-term market trends.

Based on the impairment testing by the discounted cash flow method using the estimated post-tax rates referred to weighted average cost of capital (WACC) at the rates between 8.8% - 9.3%, the recoverable amount was estimated to be higher than its carrying amount and no impairment was required to these financial statements. Management has identified that a reasonably possible change in a key assumption could cause the carrying amount to exceed the recoverable amount. The following table shows the amount by which this assumption would need to change individually for the estimated recoverable amount to be equal the carrying amount.

	(%)	
	Goodwill	Customer database
Change required for carrying amount to be equal the recoverable amount		
Discount rate increase	6.6	5.8
EBITDA growth rate decrease	20.5	7.0

NOTES TO THE FINANCIAL STATEMENTS

Thai Oil Public Company Limited and its Subsidiaries

(in million Baht)

	Separate financial statements		
	License fee	Computer software	Total
Cost			
At 1 January 2015	825	404	1,229
Additions	2	26	28
At 31 December 2015 and 1 January 2016	827	430	1,257
Additions	11	183	194
At 31 December 2016	838	613	1,451
Accumulated amortisation			
At 1 January 2015	701	108	809
Amortisation charge for the year	24	23	47
At 31 December 2015 and 1 January 2016	725	131	856
Amortisation charge for the year	25	53	78
At 31 December 2016	750	184	934
Net book value			
At 1 January 2015	124	296	420
At 31 December 2015 and 1 January 2016	102	299	401
At 31 December 2016	88	429	517

NOTES TO THE FINANCIAL STATEMENTS

Thai Oil Public Company Limited and its Subsidiaries

16 Deferred tax

Deferred tax assets and liabilities as at 31 December 2016 and 2015 were as follows:

(in million Baht)

	Consolidated financial statements			
	Assets		Liabilities	
	2016	2015	2016	2015
Total	665	820	(234)	(241)
Set off of tax	(224)	(241)	224	241
Net deferred tax assets (liabilities)	441	579	(10)	-

(in million Baht)

	Separate financial statements			
	Assets		Liabilities	
	2016	2015	2016	2015
Total	653	809	(220)	(239)
Set off of tax	(220)	(239)	220	239
Net deferred tax assets (liabilities)	433	570	-	-

NOTES TO THE FINANCIAL STATEMENTS

Thai Oil Public Company Limited and its Subsidiaries

Movements in total deferred tax assets and liabilities during the years 2016 and 2015 were as follows:

(in million Baht)

	Consolidated financial statements			
		(Charged) / credited to:		
	At 1 January 2016	Statement of income (Note 30)	Equity	At 31 December 2016
Deferred tax assets				
Employee benefits	634	24	-	658
Impairment losses on assets	2	-	-	2
Loss carry forward	179	(179)	-	-
Other	5	-	-	5
Total	820	(155)	-	665
Deferred tax liabilities				
Depreciation	(232)	21	-	(211)
Other	(9)	(14)	-	(23)
Total	(241)	7	-	(234)
Net	579	(148)	-	431

NOTES TO THE FINANCIAL STATEMENTS

Thai Oil Public Company Limited and its Subsidiaries

(in million Baht)

	Consolidated financial statements			
	At 1 January 2015	(Charged) / credited to:		At 31 December 2015
		Statement of income (Note 30)	Equity	
Deferred tax assets				
Employee benefits	556	23	55	634
Impairment losses on assets	2	-	-	2
Loss carry forward	1,179	(1,000)	-	179
Other	4	1	-	5
Total	1,741	(976)	55	820
Deferred tax liabilities				
Depreciation	(256)	24	-	(232)
Other	(5)	(4)	-	(9)
Total	(261)	20	-	(241)
Net	1,480	(956)	55	579

NOTES TO THE FINANCIAL STATEMENTS

Thai Oil Public Company Limited and its Subsidiaries

(in million Baht)

	Separate financial statements			
		(Charged) / credited to:		
	At 1 January 2016	Statement of income (Note 30)	Equity	At 31 December 2016
Deferred tax assets				
Employee benefit	628	23	-	651
Impairment losses on assets	2	-	-	2
Loss carry forward	179	(179)	-	-
Total	809	(156)	-	653
Deferred tax liabilities				
Depreciation	(233)	22	-	(211)
Other	(6)	(3)	-	(9)
Total	(239)	19	-	(220)
Net	570	(137)	-	433

NOTES TO THE FINANCIAL STATEMENTS

Thai Oil Public Company Limited and its Subsidiaries

(in million Baht)

	Separate financial statements			
		(Charged) / credited to:		
	At 1 January 2015	Statement of income (Note 30)	Equity	At 31 December 2015
Deferred tax assets				
Employee benefit	526	50	52	628
Impairment losses on assets	2	-	-	2
Loss carry forward	1,179	(1,000)	-	179
Total	1,707	(950)	52	809
Deferred tax liabilities				
Depreciation	(256)	23	-	(233)
Other	(4)	(2)	-	(6)
Total	(260)	21	-	(239)
Net	1,447	(929)	52	570

Certain subsidiaries have not recognised deferred tax asset arising from loss carry forward in the financial statements as at 31 December 2016 amounted to Baht 149 million, which expire during 2017 - 2022 (2015: Baht 288 million), because it is not probable that future taxable profit will be available against which the subsidiaries can utilise the benefits.

NOTES TO THE FINANCIAL STATEMENTS

Thai Oil Public Company Limited and its Subsidiaries

17 Other non-current assets

(in million Baht)

	Consolidated financial statements		Separate financial statements	
	2016	2015	2016	2015
Long-term loans to savings co-operative of employees	605	606	605	606
Deferred natural gas pipeline facilities, raw material pipeline and the use of land, net	73	83	59	67
Deferred land lease arrangement and registration fees, net	236	282	254	289
Other deferred charges, net	161	176	104	134
Refundable deposits and other	82	342	52	50
Total	1,157	1,489	1,074	1,146

18 Interest-bearing liabilities

(in million Baht)

		Consolidated financial statements		Separate financial statements	
	Note	2016	2015	2016	2015
Current					
Short-term borrowings					
- Secured		630	230	-	-
- Unsecured		237	183	-	-
Short-term borrowings from related companies	4	-	-	531	5,840
Current portion of long-term borrowings					
- Secured		1,400	677	-	-
- Unsecured		806	697	-	-
Unsecured debentures		4,932	-	4,932	-
		8,005	1,787	5,463	5,840

NOTES TO THE FINANCIAL STATEMENTS

Thai Oil Public Company Limited and its Subsidiaries

(in million Baht)				
	Consolidated financial statements		Separate financial statements	
	2016	2015	2016	2015
Non-current				
Long-term borrowings				
- Secured	7,396	7,013	-	-
- Unsecured	1,979	2,608	-	-
Unsecured debentures	58,921	64,098	58,921	64,098
	68,296	73,719	58,921	64,098
Total	76,301	75,506	64,384	69,938

The periods to maturity of interest-bearing liabilities as at 31 December 2016 and 2015 were as follows:

(in million Baht)				
	Consolidated financial statements		Separate financial statements	
	2016	2015	2016	2015
Within one year	8,005	1,787	5,463	5,840
After one year but within five years	12,768	14,529	6,000	7,952
After five years	55,528	59,190	52,921	56,146
Total	76,301	75,506	64,384	69,938

NOTES TO THE FINANCIAL STATEMENTS

Thai Oil Public Company Limited and its Subsidiaries

Secured interest-bearing liabilities as at 31 December 2016 and 2015 were secured on the following assets:

(in million Baht)

	Note	Consolidated financial statements		Separate financial statements	
		2016	2015	2016	2015
Cash at banks - current, savings and fixed deposits	5	316	83	-	-
Current investments in fixed deposits	6	456	614	-	-
Land, building, petrochemical plant, machines and crew boat - carrying value	14	12,224	2,520	-	-
Total		12,996	3,217	-	-

As at 31 December 2016 the Group and the Company had unutilised long-term credit facilities totalling Baht 5,383 million and Baht 5,000 million respectively (2015: Baht 14,054 million and Baht 12,251 million respectively).

The currency denomination of interest-bearing liabilities as at 31 December 2016 and 2015 was as follows:

(in million Baht)

	Consolidated financial statements		Separate financial statements	
	2016	2015	2016	2015
Thai Baht	33,417	33,620	26,031	31,340
United States Dollars	42,884	41,886	38,353	38,598
Total	76,301	75,506	64,384	69,938

NOTES TO THE FINANCIAL STATEMENTS

Thai Oil Public Company Limited and its Subsidiaries

Interest-bearing liabilities as at 31 December 2016 and 2015 were as follows:

(in million Baht)

	Consolidated financial statements		Separate financial statements	
	2016	2015	2016	2015
Short-term borrowings	867	413	-	-
Short-term borrowings from related companies	-	-	531	5,840
Long-term borrowings	11,581	10,995	-	-
Debentures	63,853	64,098	63,853	64,098
Total	76,301	75,506	64,384	69,938

Long-term borrowings

Details of principal features of the Group's long-term borrowings as at 31 December 2016 and 2015 were as follows:

(in million Baht)

	Consolidated financial statements		Separate financial statements	
	2016	2015	2016	2015

Subsidiaries :

1) Baht 600 million Loan Facility Agreement at interest MLR less a margin, payable in three-month installments commencing in November 2010	95	195	-	-
2) Baht 1,500 million Loan Facility Agreement at interest MLR less a margin, payable in semi-annual installments commencing in September 2012	787	975	-	-
3) Baht 324 million Loan Facility Agreement at interest MLR less a margin, payable in monthly installments commencing in April 2012	129	149	-	-

NOTES TO THE FINANCIAL STATEMENTS

Thai Oil Public Company Limited and its Subsidiaries

(in million Baht)				
	Consolidated financial statements		Separate financial statements	
	2016	2015	2016	2015
4) Baht 228 million Loan Facility Agreement at interest MLR less a margin, payable in monthly installments commencing in January 2013	102	120	-	-
5) Baht 365 million Loan Facility Agreement at interest MLR less a margin, payable in monthly installments commencing in June 2014	295	307	-	-
6) Baht 365 million Loan Facility Agreement at interest MLR less a margin, payable in monthly installments commencing in October 2014	307	319	-	-
7) Baht 300 million Loan Facility Agreement at interest MLR less a margin, payable in semi-annual installments commencing in September 2015	225	275	-	-
8) Baht 1,200 million Loan Facility Agreement at interest 6-month FDR plus a margin, payable in semi-annual installment June 2014	336	507	-	-
9) Baht 1,800 million Loan Facility Agreement at interest 6-month FDR plus a margin, payable in semi-annual installments commencing in June 2015	1,260	1,548	-	-
10) Baht 3,875 million Loan Facility Agreement at interest THBFIX plus a margin, payable in three-months installments commencing in June 2016	3,733	3,115	-	-
11) Baht 3,875 million Loan Facility Agreement at interest THBFIX plus a margin, payable in three-months installments commencing in June 2016	3,696	3,065	-	-
12) Baht 420 million Loan Facility Agreement at interest MLR less a margin, payable in monthly installments commencing in October 2016	416	420	-	-

NOTES TO THE FINANCIAL STATEMENTS

Thai Oil Public Company Limited and its Subsidiaries

(in million Baht)				
	Consolidated financial statements		Separate financial statements	
	2016	2015	2016	2015
13) Baht 141 million Loan Facility Agreement at interest 6-month FDR plus a margin, payable in semi-annual installment June 2017	23	-	-	-
14) Baht 217 million Loan Agreement at interest THBFIX plus a margin, payable in conditions as stipulated in the agreement.	177	-	-	-
Total	11,581	10,995	-	-

Debentures

Details of the Company's debentures as at 31 December 2016 and 2015 were as follows:

(in million Baht)				
	Consolidated financial statements		Separate financial statements	
	2016	2015	2016	2015
Debentures	64,434	64,706	64,434	64,706
Less discount on debentures	(581)	(608)	(581)	(608)
Total	63,853	64,098	63,853	64,098

As at 31 December 2016 the Group and the Company had cross currency swap contracts with the local financial institutions for hedging foreign exchange and interest rate exposure of long-term debts for Baht currency totalling Baht 6,848 million and Baht 2,500 million respectively (2015: Baht 5,590 and Baht 2,500 million respectively). All counterparties agree to pay the interest and the notional amount according to terms and conditions of the contracts.

NOTES TO THE FINANCIAL STATEMENTS

Thai Oil Public Company Limited and its Subsidiaries

19 Trade accounts payable

(in million Baht)

	Note	Consolidated financial statements		Separate financial statements	
		2016	2015	2016	2015
Related parties	4	12,205	7,280	15,216	8,777
Other parties		7,682	4,773	7,334	4,564
Total		19,887	12,053	22,550	13,341

The currency denomination of trade accounts payable as at 31 December 2016 and 2015 was as follows:

(in million Baht)

	Consolidated financial statements		Separate financial statements	
	2016	2015	2016	2015
Thai Baht	15,704	11,446	18,639	12,871
United States Dollars	4,168	595	3,911	470
Other	15	12	-	-
Total	19,887	12,053	22,550	13,341

20 Other payables

(in million Baht)

	Consolidated financial statements		Separate financial statements	
	2016	2015	2016	2015
Payable for purchase of securities (Private funds)	304	-	304	-
Accrued operating expenses	592	133	75	59
Oil Fuel Fund payable	47	87	47	87
Other payables	1,189	1,302	1,049	721
Other	1,433	1,436	1,375	1,423
Total	3,565	2,958	2,850	2,290

NOTES TO THE FINANCIAL STATEMENTS

Thai Oil Public Company Limited and its Subsidiaries

21 Employee benefit obligations

Movement in the present value of the defined benefit obligations:

(in million Baht)

	Consolidated financial statements		Separate financial statements	
	2016	2015	2016	2015
Defined benefit obligations at 1 January	3,176	2,784	2,922	2,586
Recognised in profit or loss:				
Current service costs and interest	293	277	245	249
Past service cost	-	33	-	25
Actuarial gain recognised in the year	-	(116)	-	(129)
	293	194	245	145
Recognised in other comprehensive income:				
Actuarial loss recognised in the year	-	275	-	261
	-	275	-	261
Other				
Benefit paid	(172)	(77)	(164)	(70)
	(172)	(77)	(164)	(70)
Defined benefit obligations at 31 December	3,297	3,176	3,003	2,922

NOTES TO THE FINANCIAL STATEMENTS

Thai Oil Public Company Limited and its Subsidiaries

Actuarial losses recognised in other comprehensive income arising from:

(in million Baht)

	Consolidated financial statements		Separate financial statements	
	2016	2015	2016	2015
Financial assumptions	-	(160)	-	(145)
Experience adjustment	-	(115)	-	(116)
Total	-	(275)	-	(261)

Principal actuarial assumptions as at 31 December 2016 and 2015:

Consolidated financial statements and Separate financial statements	
% per annum	
Discount rate	Interest rate of long-term Thai Government Bond
Salary increases rate	4.0-10.0
Employee turnover	0.0-1.5

Assumptions regarding future mortality have been based on published statistics and mortality tables.

At 31 December 2016, the weighted-average duration of the defined benefit obligation was 19 years (2015: 19 years).

Sensitivity analysis

Reasonably possible changes at the reporting date to one of the relevant actuarial assumptions, holding other assumptions constant, would have affected the defined benefit obligation by the amounts shown below.

(in million Baht)

Defined benefit obligation 31 December 2016	Consolidated financial statements		Separate financial statements	
	Increase	Decrease	Increase	Decrease
Discount rate (1% movement)	(259)	304	(221)	257
Salary growth (1% movement)	356	(312)	330	(291)

NOTES TO THE FINANCIAL STATEMENTS

Thai Oil Public Company Limited and its Subsidiaries

Although the analysis does not take account of the full distribution of cash flows expected under the plan, it does provide an approximation of the sensitivity of the assumptions shown.

22 Share capital

		2016		2015	
	Par value per share <i>(in Baht)</i>	Number of shares	Amount <i>(million shares / million Baht)</i>	Number of shares	Amount
Authorised					
At 1 January					
- Ordinary shares	10	2,040	20,400	2,040	20,400
At 31 December					
- Ordinary shares	10	2,040	20,400	2,040	20,400
Issued and paid-up					
At 1 January					
- Ordinary shares	10	2,040	20,400	2,040	20,400
At 31 December					
- Ordinary shares	10	2,040	20,400	2,040	20,400

23 Additional paid-in capital and reserves

Share premium

Section 51 of the Public Companies Act B.E. 2535 requires companies to set aside share subscription monies received in excess of the par value of the shares issued to a reserve account ("share premium"). Share premium is not available for dividend distribution.

NOTES TO THE FINANCIAL STATEMENTS

Thai Oil Public Company Limited and its Subsidiaries

Legal reserve

Section 116 of the Public Companies Act B.E. 2535 requires that a company shall allocate not less than 5% of its annual net profit, less any accumulated losses brought forward (if any), to a reserve account ("legal reserve"), until this account reaches an amount not less than 10% of the registered authorised capital. The legal reserve is not available for dividend distribution.

Fair value changes

The fair value changes account within equity comprises the cumulative net change in the fair value of available-for-sale financial assets until the investments are derecognised or impaired.

Currency translation differences

The currency translation differences account within equity comprises all foreign currency differences arising from the translation of the financial statements of foreign operations.

24 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.

Segment results, assets and liabilities include items directly attributable to a segment as well as those that can be allocated on a reasonable basis.

Reportable segments

The Group comprises the following main business segments:

Segment 1	:	Oil refinery
Segment 2	:	Lube base oil refinery
Segment 3	:	Petrochemical
Segment 4	:	Power generation
Segment 5	:	Marine transportation services
Segment 6	:	Solvent
Segment 7	:	Ethanol
Segment 8	:	Other

NOTES TO THE FINANCIAL STATEMENTS

Thai Oil Public Company Limited and its Subsidiaries

Information about reportable segments

	For the year ended 31 December 2016							(in million Baht)
	Oil refinery	Lube base oil refinery	Petro-chemical	Power generation	Marine transportation services	Solvent	Ethanol	
								Total
Revenue from sale of goods and rendering of services								
- External	231,814	11,123	19,414	3,327	505	7,540	1,016	- 274,739
- Inter-segment	51,479	2,413	28,970	5,804	373	90	523	(90,552) -
Cost of sale of goods and rendering of services	(265,518)	(11,870)	(44,416)	(7,308)	(745)	(6,573)	(1,298)	(247,261)
Gross profit	17,775	1,666	3,968	1,823	133	1,057	241	708 27,478
Dividend income	14,475	-	-	-	-	-	-	(14,228) 247
Net derivative gain (loss) on hedging	(244)	-	1	-	-	-	-	- (243)
Net foreign exchange gain (loss)	372	10	58	5	(3)	6	(2)	- 446
Other income	2,926	82	196	10	28	54	8	1 (2,186) 1,119
Selling expenses	(270)	(81)	(170)	-	-	(236)	(21)	- 327 (451)
Administrative expenses	(2,176)	(99)	(102)	(25)	(102)	(291)	(57)	(21) 691 (2,182)
Share of gain (loss) of associates and joint ventures	-	-	-	802	75	-	(18)	- 70 929

NOTES TO THE FINANCIAL STATEMENTS

Thai Oil Public Company Limited and its Subsidiaries

(in million Baht)

For the year ended 31 December 2016										
	Oil refinery	Lube base oil refinery	Petro-chemical	Power generation	Marine transportation services	Solvent	Ethanol	Other	Eliminations	Total
Profit before finance costs and income tax expense	32,858	1,578	3,951	2,615	131	590	151	87	(14,618)	27,343
Finance costs	(3,134)	(1)	(330)	(229)	(101)	(110)	(43)	-	487	(3,461)
Profit before income tax expense	29,724	1,577	3,621	2,386	30	480	108	87	(14,131)	23,882
Income tax expense	(1,221)	(316)	(535)	(135)	(6)	(66)	-	(16)	-	(2,295)
Profit for the year	28,503	1,261	3,086	2,251	24	414	108	71	(14,131)	21,587
Profit (loss) attributable to :										
Owners of the Company	28,503	1,261	3,087	2,251	57	376	37	71	(14,421)	21,222
Non-controlling interests	-	-	(1)	-	(33)	38	71	-	290	365
Profit for the year	28,503	1,261	3,086	2,251	24	414	108	71	(14,131)	21,587

NOTES TO THE FINANCIAL STATEMENTS

Thai Oil Public Company Limited and its Subsidiaries

	For the year ended 31 December 2015								(in million Baht)
	Oil refinery	Lube base oil refinery	Petro-chemical	Power generation	Marine transportation services	Solvent	Ethanol	Other	
Revenue from sale of goods and rendering of services									
- External	249,040	15,308	18,684	984	637	7,757	1,159	-	293,569
- Inter-segment	41,073	3,636	21,951	4,091	582	71	377	814	(72,595)
Cost of sale of goods and rendering of services	(275,882)	(16,307)	(40,200)	(4,431)	(887)	(6,960)	(1,380)	(704)	(273,819)
Gross profit	14,231	2,637	435	644	332	868	156	110	19,750
Dividend income	3,282	-	-	-	-	-	-	-	48
Net derivative gain on hedging	1,489	-	-	-	-	-	-	-	1,489
Net foreign exchange gain (loss)	(3,017)	38	220	(25)	21	9	-	-	(2,754)
Other income	2,777	115	218	8	22	30	6	-	1,498
Selling expenses	(358)	(161)	(78)	-	-	(210)	(18)	-	(452)
Administrative expenses	(2,876)	(58)	(152)	(24)	(85)	(197)	(45)	(21)	(2,755)
Share of gain of associates and joint ventures	-	-	-	642	14	-	6	-	712

NOTES TO THE FINANCIAL STATEMENTS

Thai Oil Public Company Limited and its Subsidiaries

(in million Baht)

	For the year ended 31 December 2015									
	Oil refinery	Lube base oil refinery	Petro-chemical	Power generation	Marine transportation services	Solvent	Ethanol	Other	Eliminations	Total
Profit before finance costs and income tax expense	15,528	2,571	643	1,245	304	500	105	89	(3,449)	17,536
Finance costs	(3,434)	(1)	(48)	(31)	(105)	(103)	(54)	-	341	(3,435)
Profit before income tax expense	12,094	2,570	595	1,214	199	397	51	89	(3,108)	14,101
Income tax expense	(929)	(520)	(7)	(83)	(2)	(39)	-	(17)	-	(1,597)
Profit for the year	11,165	2,050	588	1,131	197	358	51	72	(3,108)	12,504
Profit (loss) attributable to :										
Owners of the Company	11,165	2,050	599	1,131	185	312	21	72	(3,354)	12,181
Non-controlling interests	-	-	(11)	-	12	46	30	-	246	323
Profit for the year	11,165	2,050	588	1,131	197	358	51	72	(3,108)	12,504

NOTES TO THE FINANCIAL STATEMENTS

Thai Oil Public Company Limited and its Subsidiaries

	As at 31 December 2016								(in million Baht)
	Oil refinery	Lube base oil refinery	Petro-chemical	Power generation	Marine transportation services	Solvent	Ethanol	Other	
	refinery	base oil refinery	chemical	generation	services			Eliminations	Total
Trade accounts receivable	20,843	970	4,986	1,425	103	1,484	130	66	19,536
Inventories	28,996	1,956	1,474	63	51	504	172	-	33,189
Other current assets	71,295	865	1,406	1,485	194	983	132	125	63,006
Investments in subsidiaries	14,545	-	-	-	-	-	-	-	-
Investments in associates	1,260	-	-	8,524	-	-	805	-	13,361
Investments in joint ventures	-	-	-	-	505	-	-	-	505
Property, plant and equipment	36,073	2,417	22,319	13,053	3,535	2,281	1,448	-	82,312
Other non-current assets	4,133	51	1,768	80	5	1,322	1	305	5,822
Total assets	177,145	6,259	31,953	24,630	4,393	6,574	2,688	496	217,731
Trade accounts payable	22,550	1,688	4,644	661	70	734	16	-	19,887
Current portion of long-term borrowings	-	-	993	172	565	360	116	-	2,206
Current portion of debentures	4,932	-	-	-	-	-	-	-	4,932
Other current liabilities	5,530	260	3,767	8,736	260	1,226	772	63	7,121
Long-term borrowings	-	-	6,613	164	1,696	900	2	-	9,375
Debentures	58,921	-	-	-	-	-	-	-	58,921
Other non-current liabilities	3,462	-	311	12	17	56	8	296	3,692
Total liabilities	95,395	1,948	16,328	9,745	2,608	3,276	914	359	106,134

Thai Oil Public Company Limited and its Subsidiaries

As at 31 December 2015										(in million Baht)
	Lube			Marine			Other	Eliminations	Total	
	Oil refinery	base oil refinery	Petro-chemical	Power generation	transportation services	Solvent				
Trade accounts receivable	13,941	821	3,402	594	117	1,208	53	(6,074)	14,176	
Inventories	16,058	1,292	832	69	58	418	-	(26)	18,883	
Other current assets	62,335	4,546	3,130	992	508	1,220	116	(15,545)	57,430	
Investments in subsidiaries	14,545	-	-	-	-	-	-	(14,545)	-	
Investments in associates	1,260	-	-	8,286	5	-	823	2,612	12,986	
Investments in joint ventures	-	-	-	-	455	-	-	-	455	
Property, plant and equipment	37,663	2,641	22,261	12,141	3,490	2,361	-	1,197	83,258	
Other non-current assets	4,116	50	677	61	7	1,638	3	(1,839)	4,977	
Total assets	149,918	9,350	30,302	22,143	4,640	6,845	433	(34,220)	192,165	
Trade accounts payable	13,341	592	3,178	420	59	502	-	(6,057)	12,053	
Current portion of long-term borrowings	-	-	402	171	413	288	-	-	1,374	
Other current liabilities	9,161	435	431	7,362	197	1,843	51	(15,584)	4,765	
Long-term borrowings	-	-	5,778	336	2,152	1,260	-	-	9,621	
Debentures	64,098	-	-	-	-	-	-	-	64,098	
Other non-current liabilities	3,351	-	-	-	16	43	256	(427)	3,246	
Total liabilities	89,951	1,027	9,789	8,289	2,837	3,936	307	(22,068)	95,157	

NOTES TO THE FINANCIAL STATEMENTS

Thai Oil Public Company Limited and its Subsidiaries

Major customer

Revenue from one customer represents approximately Baht 131,473 million (2015: Baht 131,772 million) of the Group's revenue from sale of goods and rendering of services

Geographical segments

In presenting information on the basis of geographical segments, segment revenue is based on the geographical location of customers. Segment assets are based on the geographical location of the assets.

(in million Baht)

	Revenues		Non-current assets	
	2016	2015	2016	2015
Thailand	242,953	239,628	101,261	100,878
Other countries	31,786	53,941	740	798
Total	274,739	293,569	102,001	101,676

25 Other income

(in million Baht)

	Consolidated financial statements		Separate financial statements	
	2016	2015	2016	2015
Interest income	853	912	1,244	1,119
Land lease income	19	18	83	80
Service income	45	39	1,434	1,099
Other	202	529	165	479
Total	1,119	1,498	2,926	2,777

NOTES TO THE FINANCIAL STATEMENTS

Thai Oil Public Company Limited and its Subsidiaries

26 Administrative expenses

(in million Baht)

	Consolidated financial statements		Separate financial statements	
	2016	2015	2016	2015
Advisory and legal fees	187	213	182	211
Personnel expenses	946	816	806	665
Depreciation	75	71	36	40
Other	974	1,655	1,152	1,960
Total	2,182	2,755	2,176	2,876

27 Employee benefit expenses

(in million Baht)

	Consolidated financial statements		Separate financial statements	
	2016	2015	2016	2015
Management				
Salaries and wages	223	210	177	164
Contributions to provident fund	20	19	17	16
Retirement gratuity fund	13	10	13	10
Other	104	75	91	59
	360	314	298	249
Other employees				
Salaries and wages	2,223	2,022	1,343	1,304
Contributions to provident fund	132	127	98	97
Retirement gratuity fund	151	151	151	151
Other	433	310	348	195
	2,939	2,610	1,940	1,747
Total	3,299	2,924	2,238	1,996

NOTES TO THE FINANCIAL STATEMENTS

Thai Oil Public Company Limited and its Subsidiaries

The Group established a contributory registered provident fund to which the employees contribute monthly at rates ranging from 2% to 15% of their basic salaries and by the Group at rates ranging from 2% to 15% of the employees' basic salaries. Membership to the funds is on a voluntary basis. The provident funds are registered with the Ministry of Finance as juristic entities and are managed by licensed Fund Managers.

28 Expenses by nature

The statements of income include an analysis of expenses by function. Significant expenses by nature are detailed as follows:

(in million Baht)

	Consolidated financial statements		Separate financial statements	
	2016	2015	2016	2015
Changes in finished goods and work in progress	(3,838)	2,883	(3,073)	2,088
Purchase and raw materials used	176,919	214,211	205,901	226,473
Natural gas used	7,636	6,790	1,306	3,055
Employee benefits expense	3,299	2,924	2,238	1,996
Depreciation and amortisation	7,762	6,766	4,374	4,437
Excise tax	48,800	34,105	48,800	34,105

29 Finance costs

(in million Baht)

	Consolidated financial statements		Separate financial statements	
	2016	2015	2016	2015
Interest expense: financial institutions and other	3,529	3,719	3,086	3,382
Financial expenses	58	88	48	53
	3,587	3,807	3,134	3,435
Capitalised as cost of property				
plant and equipment under construction	(126)	(372)	-	-
Net	3,461	3,435	3,134	3,435

NOTES TO THE FINANCIAL STATEMENTS

Thai Oil Public Company Limited and its Subsidiaries

30 Income tax expense

(in million Baht)

		Consolidated financial statements		Separate financial statements	
	Note	2016	2015	2016	2015
Current tax expense					
Current year		2,141	634	1,084	-
Adjustment for prior years		6	7	-	-
Deferred tax expense					
Movements in temporary differences	16	148	956	137	929
Total		2,295	1,597	1,221	929

Reconciliation of effective tax rate

(in million Baht)

	Consolidated financial statements		Separate financial statements	
	2016	2015	2016	2015
Profit before income tax expense	23,882	14,102	29,724	12,094
Income tax using the Thai corporation tax rate	4,776	2,820	5,945	2,419
Income not subject to tax	(2,313)	(1,221)	(4,736)	(1,575)
Expenses not deductible for tax purposes	26	140	12	85
Utilisation of previously unrecognised tax losses	(200)	(149)	-	-
Under (over) provided in prior years	6	7	-	-
Total	2,295	1,597	1,221	929

NOTES TO THE FINANCIAL STATEMENTS

Thai Oil Public Company Limited and its Subsidiaries

The Group's consolidated effective tax rate in respect of continuing operations for the year ended 31 December 2016 and 2015 were 9.61% and 11.32% respectively. The effective tax rate is less than Thai corporation tax rate principally because:

- (a) a significant portion of the Company's profit was derived from promoted activities for which concessionary tax rates apply, and
- (b) unutilised tax losses brought forward from the previous year have been utilised during the year to set-off against the current year's tax charge.

Revenues, profit before finance costs and income tax expense, and income tax expense from operation in foreign countries of the Group for the year ended 31 December 2016 are as follow:

(in million Baht)

Country	Revenues ⁽¹⁾	Profit before finance costs and income tax expense	Income tax expense
Thailand	274,670	27,246	2,295
Vietnam	1,881	40	- ⁽²⁾
Singapore	-	57	- ⁽³⁾
Total	276,551	27,343	2,295

Notes:

- ⁽¹⁾ Revenues subject to tax consist of revenue from sale of goods and rendering of services, dividend income, net derivative gain on hedging, net foreign exchange gain, and other income from interest received, land lease agreement, other services rendered, etc.
- ⁽²⁾ No income tax expense due to unutilised tax losses brought forward from the previous year have been utilised during the year to set-off against the current year's tax charge.
- ⁽³⁾ No income tax expense due to tax exemption for specific businesses by the government of Singapore.

NOTES TO THE FINANCIAL STATEMENTS

Thai Oil Public Company Limited and its Subsidiaries

Income tax reduction

Revenue Code Amendment Act No. 42 B.E. 2559 dated 3 March 2016 grants a reduction of the corporate income tax rate to 20% of net taxable profit for accounting periods which begin on or after 1 January 2016.

31 Promotional privileges

By virtue of the provisions of the Industrial Investment Promotion Act of B.E. 2520, the Company and certain local subsidiaries have been granted privileges by the Board of Investment relating to oil refinery, power and steam generation, petroleum product production, chemical product production, ethanol product production, marine transportation, offshore crude oil unloading facilities and industrial zone. The privileges granted include:

- a) an exemption from payment of import duty and tax on machinery and equipment as approved by the Board of Investment,
- b) an exemption from payment of corporate income tax for promoted operations for periods of 7 to 8 years from the dates on which the income is first derived from such operations or 8 years from the date on which the income is received subsequent to when the privileges were granted, and
- c) a 50% reduction in the normal corporate income tax rate on the net profit derived from certain promotional operations for a period of five years, commencing from the expiry date in (b) above.

As promoted companies, the Company and its subsidiaries must comply with certain conditions and restrictions provided for in the promotional certificates.

NOTES TO THE FINANCIAL STATEMENTS

Thai Oil Public Company Limited and its Subsidiaries

Summary of revenue from promoted and non-promoted businesses:

(in million Baht)

	Consolidated financial statements					
	Promoted businesses	2016 Non- promoted businesses	Total	Promoted businesses	2015 Non- promoted businesses	Total
Export sales	20,026	11,922	31,948	39,192	14,912	54,104
Local sales	249,357	87,250	336,607	244,003	70,585	314,588
Elimination			(93,816)			(75,123)
Total revenues			274,739			293,569

(in million Baht)

	Separate financial statements					
	Promoted businesses	2016 Non- promoted businesses	Total	Promoted businesses	2015 Non- promoted businesses	Total
Export sales	8,204	1,953	10,157	29,526	4,586	34,112
Local sales	217,571	55,565	273,136	219,896	36,105	256,001
Total revenues			283,293			290,113

NOTES TO THE FINANCIAL STATEMENTS

Thai Oil Public Company Limited and its Subsidiaries

32 Basic earnings per share

The calculations of basic earnings per share for the years ended 31 December 2016 and 2015 were based on the profit for the years attributable to owners of the Company and the weighted average number of ordinary shares outstanding during the years as follows:

(in million Baht)

	Consolidated financial statements		Separate financial statements	
	2016	2015	2016	2015
Profit for the year attributable to owner of the Company	21,222	12,181	28,503	11,165
Weighted average number of ordinary shares outstanding during the year	2,040	2,040	2,040	2,040
Basic earnings per share (in Baht)	10.40	5.97	13.97	5.47

33 Dividends

At the meeting of the Board of the Director of the Company held on 26 August 2016, the Company's Board of Directors approved the appropriation of 2016 interim dividends at Baht 1.50 per share, totalling Baht 3,060 million. The interim dividends were paid to the Company's shareholders in September 2016.

At the annual general meeting of the shareholders of the Company held on 7 April 2016, the Company's shareholders approved the appropriation of 2015 annual dividends at Baht 2.70 per share, totalling Baht 5,508 million. After a deduction of the interim dividends of Baht 0.90 per share which were already paid to the Company's shareholders in September 2015, the remaining dividends of Baht 1.80 per share, totalling Baht 3,672 million, were already paid to the Company's shareholders in April 2016.

At the meeting of the Board of the Director of the Company held on 28 August 2015, the Company's Board of Directors approved the appropriation of 2015 interim dividends at Baht 0.90 per share, totalling Baht 1,836 million. The interim dividends were paid to the Company's shareholders in September 2015.

NOTES TO THE FINANCIAL STATEMENTS

Thai Oil Public Company Limited and its Subsidiaries

At the annual general meeting of the shareholders of the Company held on 3 April 2015, the Company's shareholders approved the appropriation of 2014 annual dividends at Baht 1.16 per share, totalling Baht 2,366 million. After a deduction of the interim dividends of Baht 0.56 per share which were already paid to the Company's shareholders in September 2014, the remaining dividends of Baht 0.60 per share, totalling Baht 1,224 million, were already paid to the Company's shareholders in April 2015.

34 Financial instruments

Financial risk management policies

The Group is exposed to normal business risks from changes in market interest rates and currency exchange rates and from non-performance of contractual obligations by counterparties. The Group does not hold or issue derivative financial instruments for speculative or trading purposes.

Risk management is integral to the whole business of the Group. The Group has a system of controls in place to create an acceptable balance between the cost of risks occurring and the cost of managing the risks. The management continually monitors the Group's risk management process to ensure that an appropriate balance between risk and control is achieved.

Capital management

The objectives of the Group's capital management are to safeguard the Group's ability to continue as a going concern in order to provide returns to the Group's shareholders and benefits to other stakeholders. The management sets strategies to support the Group's operations for more efficiency, and better performances and stronger financial status, including dividend and capital management policies to maintain the optimal capital structure and cost of capital.

Interest rate risk

Interest rate risk is the risk that future movements in market interest rates will affect the results of the Group's operations and its cash flows. Hence, the Group has hedging agreements with various investment-grade financial institutions to protect against the risk of rising interest rates.

NOTES TO THE FINANCIAL STATEMENTS

Thai Oil Public Company Limited and its Subsidiaries

The effective interest rates of loans as at 31 December 2016 and 2015 and the periods in which those assets mature were as follows:

	Consolidated financial statements			
	Effective interest rate (% per annum)	Within 1 year	After 1 year (in million Baht)	Total
2016				
Non-current				
Long-term loans to savings				
co-operative of employees	MLR less margin	40	605	645
Loans to employees	MMR less margin	-	5	5
Total		40	610	650
2015				
Non-current				
Long-term loans to savings				
co-operative of employees	MLR less margin	42	606	648
Loans to employees	MMR less margin	-	3	3
Total		42	609	651

NOTES TO THE FINANCIAL STATEMENTS

Thai Oil Public Company Limited and its Subsidiaries

	Separate financial statements			
	Effective interest rate (% per annum)	Within 1 year	After 1 year (in million Baht)	Total
2016				
Current				
Short-term loans to subsidiaries	MMR rate not exceeding the average MLR of 5 banks less margin	12,584	-	12,584
Non-current				
Long-term loans to savings co-operative of employees	MLR less margin	40	605	645
Total		12,624	605	13,229
2015				
Current				
Short-term loans to subsidiaries	MMR rate not exceeding the average MLR of 5 banks less margin	9,049	-	9,049
Non-current				
Long-term loans to savings co-operative of employees	MLR less margin	42	606	648
Total		9,091	606	9,697

The effective interest rates of borrowings from financial institutions and debentures as at 31 December 2016 and 2015 and the periods in which those liabilities mature were disclosed in note 18 to the financial statements.

NOTES TO THE FINANCIAL STATEMENTS

Thai Oil Public Company Limited and its Subsidiaries

Foreign currency risk

The Group is exposed to foreign currency risk relating to purchases of raw materials and long-term borrowings which are denominated in foreign currencies. However, the Group enters into short-term currency hedging contracts for short term foreign currency exposures when appropriate.

As at 31 December 2016 and 2015 the Group was exposed to foreign currency risk in respect of financial assets and liabilities denominated in the following currencies:

(in million Baht)

		Consolidated financial statements		Separate financial statements	
	Note	2016	2015	2016	2015
U.S. Dollars					
Cash and cash equivalents	5	16,848	22,179	16,648	21,662
Trade accounts receivable	7	3,517	2,859	1,832	1,644
Other receivables		167	1,467	160	1,467
Interest-bearing liabilities	18	(42,884)	(41,886)	(38,353)	(38,598)
Trade accounts payable	19	(4,168)	(595)	(3,911)	(470)
Other payables		(38)	(394)	(12)	(123)
		(26,558)	(16,370)	(23,636)	(14,148)
Other currencies					
Cash and cash equivalents	5	109	150	-	-
Trade accounts receivable	7	248	186	-	-
Other receivables		18	-	-	-
Trade accounts payable	19	(15)	(12)	-	-
Other payables		(41)	(29)	(32)	(28)
		319	295	(32)	(28)

NOTES TO THE FINANCIAL STATEMENTS

Thai Oil Public Company Limited and its Subsidiaries

(in million Baht)				
	Note	Consolidated financial statements		Separate financial statements
		2016	2015	2016
Gross exposure in statement of financial position		(26,239)	(16,075)	(23,668)
Currency forwards		4,786	1,404	4,002
Currency and interest rate swaps		7,463	6,240	2,932
Net exposure		(13,990)	(8,431)	(16,734)

Credit risk

Credit risk is the potential financial loss resulting from the failure of a customer or counterparty to settle its financial and contractual obligations to the Group as and when they fall due. 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 full first class collateral for the rest.

Liquidity risk

The Group monitors its liquidity risk and maintains a level of cash and cash equivalents deemed adequate by management to finance the Group's operations and to mitigate the effects of fluctuations in cash flows.

Fair values of financial assets and liabilities

The fair value of current portion of financial assets and liabilities are taken to approximate the carrying value due to the relatively short-term maturity of these financial instruments.

The fair value of long-term loans and borrowings carrying a floating rate, which is considered to be market rate, are taken to approximate their fair values.

NOTES TO THE FINANCIAL STATEMENTS

Thai Oil Public Company Limited and its Subsidiaries

Other financial assets and liabilities not stated above had the fair and carrying value as following:

(in million Baht)

	Consolidated financial statements				
	Carrying amount	Fair value			Total
		Level 1	Level 2	Level 3	
31 December 2016					
Financial assets/Financial liabilities measured at fair value					
Equity securities - available-for-sale securities	147	147	-	-	147
Debt securities - available-for-sale securities (Private funds)	799	-	799	-	799
Financial assets/Financial liabilities not measured at fair value					
Debentures	(63,853)	-	(66,500)	-	(66,500)
Forward exchange contracts	7	-	44	-	44
Crack spread swap and time spread swap	-	-	117	-	117
Cross currency and interest rate swap contracts	(615)	-	(605)	-	(605)

NOTES TO THE FINANCIAL STATEMENTS

Thai Oil Public Company Limited and its Subsidiaries

(in million Baht)					
	Consolidated financial statements				
	Carrying amount	Fair value			Total
		Level 1	Level 2	Level 3	
31 December 2015					
Financial assets/Financial liabilities measured at fair value					
Equity securities - available-for-sale securities	135	135	-	-	135
Financial assets/Financial liabilities not measured at fair value					
Debentures	(64,098)	-	(66,436)	-	(66,436)
Forward exchange contracts	89	-	101	-	101
Crack spread swap and time spread swap	-	-	(71)	-	(71)
Cross currency and interest rate swap contracts	(650)	-	(635)	-	(635)

NOTES TO THE FINANCIAL STATEMENTS

Thai Oil Public Company Limited and its Subsidiaries

(in million Baht)

	Separate financial statements				
	Carrying amount	Fair value			
		Level 1	Level 2	Level 3	Total
31 December 2016					
Financial assets/Financial liabilities measured at fair value					
Equity securities - available-for-sale securities	147	147	-	-	147
Debt securities - available-for-sale securities (Private funds)	799	-	799	-	799
Financial assets/Financial liabilities not measured at fair value					
Debentures	(63,853)	-	(66,500)	-	(66,500)
Forward exchange contracts	2	-	33	-	33
Crack spread swap and time spread swap	-	-	122	-	122
Cross currency and interest rate swap contracts	(432)	-	(422)	-	(422)

NOTES TO THE FINANCIAL STATEMENTS

Thai Oil Public Company Limited and its Subsidiaries

(in million Baht)					
	Carrying amount	Separate financial statements			Total
		Fair value			
		Level 1	Level 2	Level 3	
31 December 2015					
Financial assets/Financial liabilities measured at fair value					
Equity securities - available-for-sale securities	135	135	-	-	135
Financial assets/Financial liabilities not measured at fair value					
Debentures	(64,098)	-	(66,436)	-	(66,436)
Crack spread swap and time spread swap	-	-	(71)	-	(71)
Cross currency and interest rate swap contracts	(452)	-	(385)	-	(385)

NOTES TO THE FINANCIAL STATEMENTS

Thai Oil Public Company Limited and its Subsidiaries

Measurement of fair values

Valuation techniques

The following tables show the valuation techniques used in measuring Level 2 fair values.

Type	Valuation technique
Debt securities - available-for-sale securities (Private funds)	Thai Bond Market Association Government Bond Yield Curve as of the reporting date.
Debentures	A valuation technique incorporating observable market data which is adjusted with counterparty credit risk (excluding own credit risk) and other risks to reflect true economic value.
Forward exchange contracts/Crack spread swap and time spread swap/Cross currency and interest rate swap contracts	Market comparison technique: The fair values are based on broker quotes. Similar contracts are traded in an active market and the quotes reflect the actual transactions in similar instruments.

NOTES TO THE FINANCIAL STATEMENTS

Thai Oil Public Company Limited and its Subsidiaries

35 Commitments with non-related parties

(in million Baht)

	Consolidated financial statements		Separate financial statements	
	2016	2015	2016	2015
Capital commitments				
Project construction agreements	2,319	4,719	2,117	1,821
License agreement	-	1,240	-	-
Other agreement	69	208	-	-
Total	2,388	6,167	2,117	1,821
Non-cancellable operating lease commitments				
Within one year	229	220	210	201
After one year but within five years	963	954	923	902
After five years	307	544	160	391
Total	1,499	1,718	1,293	1,494
Other commitments				
Inventory management services agreements	248	30	-	-
Cross currency and interest rate swap contracts	7,463	6,240	2,932	2,952
Letters of guarantee issued by financial institutions	806	1,263	225	224
Crude oil purchase agreements	41,646	26,329	41,646	26,329
Total	50,163	33,862	44,803	29,505

Power Purchase Agreements

Two subsidiaries have power purchase agreements for a period of 25 years with the Electricity Generating Authority of Thailand ("EGAT") expiring in 2023 and 2041 whereby the subsidiaries will supply the electric energy to EGAT at the agreed quantity and price. As the contracted party with EGAT, the subsidiaries must comply with conditions and restrictions provided for in the agreement.

NOTES TO THE FINANCIAL STATEMENTS

Thai Oil Public Company Limited and its Subsidiaries

36 Contingent liabilities and contingent assets

As at 31 December 2016 the Company had the following contingent liabilities and contingent assets:

The Company has crack spread swap and time spread swap with foreign companies (“counterparties”). The Company has or the counterparties have commitments to make payments for the differences between the fixed price and floating price for each period.

As at 31 December 2016 the Company had oil volume under the agreements totalling 1.9 million barrels (2015: 0.5 million barrels).

37 Insurance policy

As at 31 December 2016 the Group has an All Risks and Loss of Profit Insurance Policy (“ALOP”) from a syndicate of insurers and reinsurers for a total insured value of U.S. Dollars 9,078 million (2015: U.S. Dollars 8,642 million). Such policy is renewed on an annual basis. Certain subsidiaries have assigned their rights to proceeds from insurance claims under the ALOP to the lenders under certain borrowings agreements.

38 Event after the reporting period

At the meeting of the Board of Directors of the Company held on 15 February 2017, the Company's Board of Directors approved the submission for approval at the annual general meeting of the shareholders of the Company the appropriation of 2016 annual dividends at Baht 4.50 per share, totalling Baht 9,180 million. After a deduction of the interim dividends of Baht 1.50 per share which were paid to the Company's shareholders in September 2016, the remaining dividends of Baht 3.00 per share, totalling Baht 6,120 million, are scheduled for payment on 28 April 2017. This dividend is subject to the approval of the Company's shareholders at the annual general meeting to be held on 7 April 2017.

39 Thai Financial Reporting Standards not yet adopted

A number of new and revised TFRS have been issued but are not yet effective and have not been applied in preparing these financial statements. Those new and revised TFRS become effective for annual financial periods beginning on or after 1 January 2017, are as follow;

NOTES TO THE FINANCIAL STATEMENTS

Thai Oil Public Company Limited and its Subsidiaries

TFRS	Topic
TAS 1 (revised 2016)	Presentation of Financial Statements
TAS 2 (revised 2016)	Inventories
TAS 7 (revised 2016)	Statement of Cash Flows
TAS 8 (revised 2016)	Accounting Policies, Changes in Accounting Estimates and Errors
TAS 10 (revised 2016)	Events After the Reporting Period
TAS 12 (revised 2016)	Income Taxes
TAS 16 (revised 2016)	Property, Plant and Equipment
TAS 17 (revised 2016)	Leases
TAS 18 (revised 2016)	Revenue
TAS 19 (revised 2016)	Employee Benefits
TAS 20 (revised 2016)	Accounting for Government Grants and Disclosure of Government Assistance
TAS 21 (revised 2016)	The Effects of Changes in Foreign Exchange Rates
TAS 23 (revised 2016)	Borrowing Costs
TAS 24 (revised 2016)	Related Party Disclosures
TAS 26 (revised 2016)	Accounting and Reporting by Retirement Benefit Plans
TAS 27 (revised 2016)	Separate Financial Statements
TAS 28 (revised 2016)	Investments in Associates and Joint Ventures
TAS 33 (revised 2016)	Earnings Per Share
TAS 34 (revised 2016)	Interim Financial Reporting
TAS 36 (revised 2016)	Impairment of Assets
TAS 37 (revised 2016)	Provisions, Contingent Liabilities and Contingent Assets
TAS 38 (revised 2016)	Intangible Assets
TAS 40 (revised 2016)	Investment Property
TAS 41 (revised 2016)	Agriculture
TAS 105 (revised 2016)	Accounting for Investments in Debt and Equity Securities
TAS 107 (revised 2016)	Financial Instruments: Disclosure and Presentation

NOTES TO THE FINANCIAL STATEMENTS

Thai Oil Public Company Limited and its Subsidiaries

TFRS	Topic
TFRS 3 (revised 2016)	Business Combinations
TFRS 5 (revised 2016)	Non-current Assets Held for Sale and Discontinued Operations
TFRS 8 (revised 2016)	Operating Segments
TFRS 10 (revised 2016)	Consolidated Financial Statements
TFRS 11 (revised 2016)	Joint Arrangements
TFRS 12 (revised 2016)	Disclosure of Interests in Other Entities
TFRS 13 (revised 2016)	Fair Value Measurement
TSIC 10 (revised 2016)	Government Assistance – No Specific Relation to Operating Activities
TSIC 25 (revised 2016)	Income Taxes – Changes in the Tax Status of an Enterprise or its Shareholders
TSIC 27 (revised 2016)	Evaluating the Substance of Transactions in the Legal Form of a Lease
TSIC 29 (revised 2016)	Disclosure – Service Concession Arrangements
TFRIC 1 (revised 2016)	Changes in Existing Decommissioning, Restoration and Similar Liabilities
TFRIC 4 (revised 2016)	Determining Whether an Arrangement Contains a Lease
TFRIC 5 (revised 2016)	Rights to Interests arising from Decommissioning, Restoration and Environmental Rehabilitation Funds
TFRIC 10 (revised 2016)	Interim Financial Reporting and Impairment
TFRIC 12 (revised 2016)	Service Concession Arrangements
TFRIC 14 (revised 2016)	TAS 19 (revised 2016) Employee Benefits – The Limit on a Defined Benefit Asset, Minimum Funding Requirements and their Interaction
FAP Announcement no. 5/2559	Accounting guidance for derecognition of financial assets and financial liabilities

The Group has made a preliminary assessment of the potential initial impact on the consolidated and separate financial statements of these new and revised TFRS and expects that there will be no material impact on the financial statements in the period of initial application.

AUDIT FEES

OF THE AUDITORS 2016

1. Audit Fees

The company, subsidiaries and Thailoil Group Registered Provident Fund paid for the audit fees to the auditors' company for the latest account period amounting to Baht 6,443,000 (Six million four hundred and forty-three thousand baht only).

2. Non-Audit Fees

The company and subsidiaries paid for non-audit fees for monitoring the performance compliance with the condition of the BOI Promotion Certificate and preparing The Updated Offering Memorandum of the Global Medium Term Notes Programme to the auditor's company for the latest account period amounting to Baht 4,415,000 (Four million four hundred and fifteen thousand baht only).



Professionalism

Ownership and
Commitment

Social
Responsibility

Integrity

Teamwork and
Collaboration

Initiative

Vision Focus

Excellence
Striving



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