

Annual Information Filing

As of December 31, 2017

BANGCHAK CORPORATION PUBLIC COMPANY LIMITED

(English Translation)

Table of Contents

	<u>Page</u>
Part 1 Company's Business	
1. Policy and Business Overview	1
2. Business Description	26
3. Risk Factors	58
4. Review of Business Assets	67
5. Legal Disputes	75
6. General Information and Other Key Information	76
Part 2 Management and Corporate Governance	
7. Securities and Shareholder Information	84
8. Management Structure	88
9. Corporate Governance	127
10. Social Responsibility	142
11. Internal Control and Risk Management	144
12. Connected Transactions	152
Part 3 Financial Status and Operational Results	
13. Essential Financial Information	166
14. Management's Discussion and Analysis	179
Certification of Information and Data Accuracy	214
Attachment	
Attachment 1 : Profiles of Directors and Executives	215
Attachment 2 : Profiles of Subsidiaries' Directors	244
Attachment 3 : Report of The Audit Committee	245
Attachment 4 : Details of Head of Internal Audit and Head of Compliance Department	248
Attachment 5 : Asset Revaluation	252



1. Policy and Business Overview

1.1 Vision, Mission, Objectives, Goals, and Business Strategies

Vision

Evolving Greenovation

To be the leading Asian Greenovative group, founded on good corporate governance, through inclusiveness and sustainability

Mission

Bangchak is committed in bringing disruptive and inclusive greenovation to delight our customers, being a trusted partner and value creator for all stakeholders, and promoting sustainable development to society.

We emphasize inclusive and sustainable business, pursue domestic and overseas expansion, embrace good corporate governance principles, and nurture a high-performance, learning culture, and happy workplace.

Objectives and goals

Bangchak is committed to its resolution of being a Thai energy firm that engages in business in parallel with its stewardship of the environment and society, while striving for a balance between value and virtue, and taking part in the quality of life improvement for Thai society.

Bangchak values sustainable growth for the organization; upgrading its management excellence in pursuit of world standards; applying Sufficiency Economy to its businesses (for non-profiteering benefits); nurturing growth and sustainability through the promotion and development of innovation and technology; paying due regard for conscientious consumption of natural resources; preparing to be a holding



company by changing its name to “Bangchak Corporation Public Company Limited”; and managing businesses to achieve its vision of Evolving Greenovation (To be the leading Asian Greenovation Group) together with its business, social, and environmental goals by 2022, as highlighted below.

1. Business goals

1.1 Refining and Oil Trading Business Group: To raise the refinery’s safety standards, to maximize its efficiency and stability through the YES-R (Yield Optimization, Energy Efficiency, Safety Excellence, and Reliability Enhancement) Phase 1-3 Project, to grow its capacity to over 130 KBD through the 3E Project (Efficiency, Energy, and Environment), and to venture into related businesses, including oil trading through BCP Trading Pte. Ltd. (BCPT), founded in Singapore. In addition, Bangchak held Bongkot Marine Service Co., Ltd., an associated company, to supply an oil floating storage unit to accommodate Bangchak’s expanded refining capacity.

1.2 Marketing Business Group: to continue to maintain the No.2 market share, to evolve a new service station format under the Greenovative Experience concept to accommodate Thai’s current lifestyles by which everyone can play a part in sustainable stewardship of the environment. Bangchak also plans to expand service stations in the cluster form with an outstanding image compatible with each locality; to develop the food store, the



convenience store, and novel product businesses to keep pace with consumers' changing behavior; to achieve maximum customers' and business partners' satisfaction; and to pursue The Most Admired Brand.

- 1.3 Green Power Business:** Through BCPG Plc, to execute the renewable power capacity expansion plan to 1,000 MW from both domestic and international installations, and to execute the investment plan for renewable power purchase through the Internet of Energy through the Blockchain technology to pursue demand side management (management for maximum power efficiency).
- 1.4 Bio Based Products Business Unit:** To keep growing the biofuel business with products like biodiesel and ethanol, to set R&D goals to build on biotechnological and form high value-added bio-based innovation, implement the process efficiency improvement project, and implement the refined glycerin project, and to pursue additional bio-based energy investment opportunities through fund mobilization on stock exchanges.
- 1.5 Natural Resources Business:** To develop the petroleum exploration and production business and the new-resource business, including lithium mining.
- 1.6 Organization, management, and innovation:** To grow competitiveness and organizational development capability, aiming at achieving the “employer of choice” distinction, achieving



HR excellence, and encouraging employee collaboration on innovation in business processes, products, or business models under the new corporate vision; to focus on executing the Group Shared Service Strategies to serve affiliates in HR, IT, procurement, and process development; to forge corporate sustainability under DJSI (Dow Jones Sustainability Indices) in economic, environmental, and social aspects with good governance to boost investors' confidence in Bangchak's attaining sustainable good returns; and to build on emerging businesses for sustainability, including innovative businesses and startups (through Bangchak Initiative and Innovation Center, BiiC) with a focus on green energy innovations and bio-based businesses.

- 1.7 Being open, transparent, and auditable:** To conduct business openly, transparently, and auditable whether in disclosure of business data under corporate governance or in compliance with SET's regulations.

2. Socio-environmental goals

- 2.1 Pursuing a low-carbon company to ease impacts on global climate change:** To set a goal of minimum carbon dioxide emission by relentlessly executing a project on efficiency improvement of energy and resource consumption and by growing investment in projects on production of assorted alternative / renewable energy to lower carbon dioxide emission.



2.2 Business conduct in parallel with the environment and society: To establish corporate sustainability by conducting business to benefit the environment and society hand in hand with business growth, through CSR after-process activities and creation of shared values between business, society, and the environment through the CSR/CSV in-process. Bangchak also set a goal to build on CSR/CSV and engage in social enterprise (SE) to create jobs, generate income, and promote cooperation in the stewardship of habitat surroundings including the formation of the Baimai Punsook Foundation, encouragement of farmers' development of produce of higher quality and value for distribution through Oamsuk Social Enterprises Co., Ltd., promotion of agricultural produce export through Bangchak Retail Co., Ltd.'s distribution channels, and purchase of produce for use as feedstock/raw materials for bio-based and innovative products of BBGI, Co., Ltd.

Business Strategies

Bangchak's 3S Strategy is designed to achieve short-term as well as long-term goals as described below:

- 1. Security:** Enhance competitiveness, forge secure returns by strategizing the refinery business and the marketing business together to procure, produce, and sell enough fuels for the needs of the business sector and the public. These are to be achieved by planning procurement and purchase of crude oil from domestic and overseas deposits for attractive refining margins and by growing



investment in energy innovations, including lithium mines, the heart of battery production, to accommodate changes in demand and future energy technology, including mobile electronic devices and electric vehicles.

- 2. Stability:** Create sustainable business value by increasing the proportion of emerging business revenue through investment in green energy and other businesses and building on products for high value-added ones. Also, focus on investment in steady-income businesses with low risk exposure to external factors in Thailand and abroad, including green power energy and bio-based products.
- 3. Sustainability:** Develop businesses for a balance between business value and socio-environmental value by taking sustainable development seriously, including development of “Greenovative Experience” service stations, and by valuing water resources—a vital production process resource—leading to a goal of water consumption reduction and by optimizing water discharge reuse.

This includes work process improvement, development of innovative products and businesses derived from R&D efforts of the Bangchak Initiative and Innovation Center (BiiC) jointly with public and private institutions, as well as investment and startup business incubation. To this end, focus is on innovative green energy businesses and bio-based businesses that benefit society and the environment. In addition, in place is a corporate performance monitoring process through social and environmental KPIs.



1.2 Transition and milestone development

2017

- **Bangchak Petroleum renamed “Bangchak Corporation” and Head Office relocated**

Bangchak Petroleum Plc. changed its name to Bangchak Corporation Public Company Limited, as approved by the 2017 Annual General Meeting of Shareholders on April 5, 2017 and registered by the Department of Business Development, Ministry of Commerce, effective from April 7. The name change was designed to shape up Bangchak's image and make clear its business regime. Its businesses encompass not only the refinery and oil product retailing, but also covers a value chain and supporting businesses which demand a high level of advanced technology and innovation. Bangchak Head Office moved to new address, 2098 M tower Building, 8th floor, Sukhumvit Road, Phra Khanong Tai, Phra Khanong, Bangkok.

- **Baimai Punsook Foundation founded**

Baimai Punsook Foundation was established in May, in order to serve as a tool to drive projects and activities for sustainable community economic development.

Refinery and Oil Trading Business Group

- **Peak monthly capacity of 121.6 KBD: an all-time high**

In March, the refinery business recorded the highest-ever average monthly production rate of 121,600 barrels per day since the commissioning of the Hydrocracking Unit. This resulted from the high gross refining margin, in line with the increase in the finished-product sales volume, and efficient refining planning and management.

- **Electricity generation and steam production commenced from GTG-3**

In August, Bangchak began to operate electricity generation and steam production from GTG-3 plant, fueled by natural gas, with a capacity of 12 MW and a steam capacity of 42 tons per hour. The operation significantly reduced both operational costs by shutting



down boilers and the greenhouse gas (GHG) emissions from the refinery.

- **Began storing crude oil on the Floating Storage Unit (FSU)**

In June, Bangchak began to store crude oil on the Floating Storage Unit in order to grow its reserve oil storage capacity.

Marketing Business Group

- **“Hi Premium Diesel S” unveiled**

In May, Bangchak launched a new premium product called “Hi Premium Diesel S”, a high-level innovation to serve the demand for high-grade diesel.

- **Marketing Business Continues with No. 2 Market Share with Higher NPS**

The Marketing Business successfully raised its market share while maintaining Bangchak’s No. 2 domestic ranking. This year Bangchak’s average market share amounted to 15.4%, reaching 15.8% in November. Bangchak achieved 77.5% in the Net Promoter Score as a result of service station rebranding for sophistication, complete with various non-oil businesses to meet customers’ needs.

- **Launched premium-grade lubricant “FURiO”**

In November, Bangchak developed the “FURiO” premium-grade lubricant that can save on fuels, prevent corrosion, and protects the engine in all modes of operation.

Green Power Business

- **Solar Power Plant Nagi in Okayama, Japan, starts commercial operation**

On March 2, 2017, the Nagi PV solar power plant in Okayama, Japan, with a 10.5-MW capacity (nameplate capacity of 14.4 MW), started COD commercial operation.



- **Three solar farms under solar cooperatives program come into contracted commercial operation**

In March, three ground-based solar farms from agricultural cooperatives programs, with a total capacity of 12 MW, were registered as Thailand's first commercial operation from cooperatives' solar farms. The total 12-MW capacity was from two plants in Phra Nakhon Si Ayutthaya, namely Bang Pa-in Solar Agricultural Cooperatives Project (5 MW), Ayutthaya Solar Agricultural Cooperatives Project (2 MW), and one in Ang Thong, namely Wiset Chaichan Agricultural Cooperatives Project (5 MW).
- **BCPG purchases total interest in CapAsia ASEAN Wind Holdings Cooperatief U.A., with 40% shares of PetroWind Energy Inc.**

In May, in order to expand its business in renewable energy in the region, BCPG wholly acquired CapAsia ASEAN Wind Holdings Cooperatief U.A., of the Netherlands, which held 40% shares in PetroWind Energy Inc., one of the major players in the wind power business in the Philippines. PetroWind owns a commercial 36-MW wind power project and a developing 14-MW project in Nabas, Visayas Island, the Philippines.
- **BCPG invests in geothermal power plant in Indonesia through acquiring 33% of issued and paid-up shares of Star Energy Group Holdings**

BCPG Pcl. entered into a shareholders' agreement with Star Energy Investments Ltd. (SEIL) for the acquisition of 280,000 (33%) issued and paid-up shares in Star Energy Group Holdings Pte. Ltd. (SEGHPL). The acquisition, valued at US \$355.69 million (Baht 11.95643 billion), entitled BCPG to an installed capacity of 181.5 MW of geothermal-based power in Indonesia. The transfer of shares was completed on July 26, 2017.
- **Subsidiary BCPG and War Veterans Organization of Thailand sign MOU on concession agreement for solar projects**

On September 29, 2017, BCPG, a subsidiary of Bangchak, signed a memorandum of understanding on concession agreement with the War Veterans Organization of Thailand for two ground-based solar



farm projects for public agencies and agricultural cooperative programs, with a total capacity of 9 MW.

- **BCPG joining hands with Sansiri to develop smart green communities**

In November, BCPG signed a memorandum of understanding with Sansiri Public Company Limited to develop smart green communities. BCPG planned to install solar energy systems in Sansiri projects whose residents can produce and use electricity from green energy by themselves. Moreover, the produced electricity can be traded internally in the projects by using Blockchain technology. The scope of cooperation also covers other properties, such as industrial plants, hotels, and department stores owned by Sansiri.

- **BCPG joining hands with Power Ledger, Australia**

In December, BCPG entered into a memorandum of understanding with Power Ledger, Australia, to use Blockchain technology as a platform for electricity trading via the internet, the first trade in the Southeast Asian region to do so.

Bio Based Products Business Unit

- **BBP Holdings Limited Established**

In March, a subsidiary BBP Holdings Limited was established with a registered capital of Baht 700 million and is wholly owned by Bangchak, to conduct the bio-based business and serve Bangchak's restructuring.

- **Amalgamation between BBP Holdings and KSLGI to form BBGI, Thailand's largest biofuel manufacturer and distributor**

In October, Bangchak amalgamated its subsidiary called BBP Holdings Co., Ltd., and KSLGI Co., Ltd., a subsidiary of Khon Kaen Sugar Industry Public Company Limited, to form BBGI Co., Ltd., the largest biofuel manufacturer and distributor in Thailand. The amalgamation enhanced BBGI's potential and business advantage, while supporting raw materials and value chain products. Bangchak holds 60% of BBGI's shares.



Natural Resources and Business Development Business

- **More new shares for more investment in LAC Acquired**
In July, BCP Innovation Pte. Ltd. (BCPI), a Bangchak subsidiary, entered into an investment agreement with Lithium Americas Corp. (LAC) for additional investment in LAC. BCPI purchased 50 million additional newly issued shares at CAD (Canadian dollars) 0.85 per share, totaling CAD 42.50 million or Baht 1.09922 billion. BCPI therefore holds 16.1% of the total shares. (Later, some shareholders exercised their rights to transfer options to ordinary shares, making BCPI's shareholding 15.86% of total shares.)
- **MOU signed with AIT on technical cooperation on R&D to enhance environment supporting startup companies**
Bangchak signed an MOU with AIT on technical cooperation on research and development to enhance an environment that supports and accelerates startup companies to the commercial scale quickly with a knowledge base and innovative technology. Under the cooperation, Bangchak Initiative and Innovation Center (BiiC) was established as a technology business incubator, specifically in green energy engineering and technology, energy management, and bio-based technology. In addition, BCP provides master, doctoral, and postdoctoral scholarships and funds for innovative research related to green engineering and technology.
- **Launch of Bangchak Initiative Innovation Center as technology business incubator**
On September 7th, 2017, Bangchak unveiled Bangchak Initiative and Innovation Center (BiiC) to create a green ecosystem that promotes a variety of innovations, emphasizing green energy and bio-based technology, for business expansion (domestic and abroad). The success of the program will support the Thailand 4.0 economy and fulfill Bangchak's aspiration of being the leading Asian Evolving Greenovation Group.

Awards of 2017

- Recognition at the SET Sustainability Awards 2017 event, hosted by the Stock Exchange of Thailand.



- **Best Sustainability Award** for the third year running, in recognition of listed companies that are outstanding in sustainable business conduct, worthy of becoming role models for other listed companies
- **Recognition among 65 listed companies called THSI (Thailand Sustainability Investment)**, also for the third year running, for engagement in sustainable business with utmost regard for society and the environment, and for its management processes for sustainability of the corporation. The recognition aids investors' decisions by those that stress quality stocks and long-term returns.
- **Asia's Best Sustainability Report - Stand-alone Award:** This ultimate award goes to Asian companies whose sustainability reports prove outstanding and show the report preparation process, reporting of performance outcomes and sustainability outcomes in all three aspects (economic, social, and environmental). At the Asia Sustainability Reporting Awards 2017 (ASRA) event, hosted by The British High Commission Singapore and CSRWorks International (Singapore), Bangchak also won acclaim for Asia's Best Materiality Report, Asia's Best Stakeholder Reporting, and Asia's Best Community Reporting.
- Recognition at the 7th Asian Excellence Recognition Awards 2017 event, hosted by Corporate Governance Asia (Hong Kong):
 - **Best Investor Relations Company** for the sixth year running, in recognition of outstanding investor relations work, based on scores and views given by magazine readers, investors, and analysts, among others.
 - **Best Environmental Responsibility** for the third year running, based on scores and views given by magazine readers, investors, and analysts, among others.
 - **Asia's Best CEO (Investor Relations)** for the second consecutive year, in recognition of the top executives of the corporation, based on scores and views given by magazine readers, investors, and analysts, among others.
- Recognition at The Asset Corporate Awards 2017 event, hosted by The Asset (Hong Kong):
 - **Platinum Award** for the fourth year running, in recognition of outstanding companies in corporate governance and socio-environmental responsibility



- **Best CEO Award** in recognition of leaders with vision and the ability to drive their corporations.
- Recognition at The 9th Annual Global CSR Summit & Awards 2017 event and The Global Good Governance Awards 2017 event (Malaysia): **Best CEO Award Platinum, Best Country CSR Excellence Award (Thailand), and Best Community Programme Award Gold**. These accolades went to top executives and corporations committed to excellence in management and responsibility to communities and society. The events were hosted by The Pinnacle Group International
- **Certificate of Leadership in Energy and Environmental Design (LEED), Platinum Level**, ranked No. 1 in Thailand for LEED for Commercial Interior (LEED CI) on the largest area. Bangchak's Head Office won two certificates: one for Bangchak Convention and Meeting Center on 2,193 square meters at the conference rooms on the 8th and 10th floors, and the other for Bangchak@Bangchak Head Office on 10,676 square meters, certified by the US Green Building Control (USGBC).
- **Most Sustainable Energy Company - Thailand** at the International Finance Magazine Awards 2017 (IFM) which recognizes individuals and organizations in international finance who made significant contributions to the industry. Bangchak received recognition for its commitment to renewable energy, exceptional innovation, performance, corporate governance and environmental responsibility, hosted by International Finance Magazine
- Recognition at the Thailand ICT Management Forum & Thailand ICT Excellence Awards 2017 event, hosted by the Ministry of Digital Economy and Society:
 - **Excellence Award (Innovation Project)** for a project on the management of service station forecourts (called Fuel Automation System), with the Point of Sale (POS) system applied with the Attendant RFID Tag and Internet EDC (IP-EDC) technology to also control the management of forecourts and service station attendants
 - **Excellence Award (Business Sustainability Project)** for a project to develop integrated purchase of tapioca (called SMART: Sustainable Management Agriculture Retail Trading System). The



- project integrates systems to keep data submission continuous, lower errors, and prevent fraud.
- **Green Industry Level 5: Green Network certificate** for the second consecutive year. Bangchak was among the 23 winners of this Level 5 recognition, the top Green Industry award in recognition of its green operations for sustainable development, its focus on continuous improvement and socio-environmental responsibility, and encouragement of business partners and allies to enter the green industry through its supply chain. Finally, the Department of Industrial Works recognized Bangchak's environmental activities conceived to promote good relations with communities and consumers.
 - **Recognition at the Thailand Labour Management Excellence Awards 2017** event, hosted by the Department of Labour Protection and Welfare, Ministry of Labour: Outstanding Model Operator (Safety, Occupational Health, and Work Environment) Award 2017, in recognition of workplaces with international-standard labor management systems.
 - **Best Sustainability Report Award 2017 (Excellence)**, organized by CSR Club, Thai Listed Companies Association, SEC, and Thaipat Institute. The award went to companies with the recognition of Bangchak's valuing of quality reporting under the GRI standard, business integrity, and due regard for stakeholders, society, and the environment.
 - **Bangchak earned an overall 'Excellent' score** for eleven consecutive years, based on the assessment outcomes of a survey on CG report of listed companies for 2017, organized by IOD.
 - **Bangchak scored an 'Excellent' 100% in all AGM criteria** for nine years under the '2017 Annual General Meeting Assessment Project', organized by the Thai Investors Association.
 - **Distinction Winner Award 2017 (Silver Trophy, Energy Business)** in recognition of corporate websites' creativity for online communication, hosted by The Academy of Interactive and Visual Arts (AIVA, USA).

2016

- The management of Bangchak had revised its corporate vision, mission, and values to ensure alignment with the new directions of



- the operation and investment, as well as the changing business environment. The new Vision, Mission and Values had been announced since May 2016.
- Annual Maintenance Turnaround were proceeded during February 8 to March 23. It was finished 1 day earlier than planned and enabling the refinery to constantly maintain its high capacity throughout the year.
 - Bangchak set up BCP Trading Pte. Ltd., a wholly owned subsidiary of Bangchak.
 - Established Bongkot Marine Service Co., Ltd., an associated company with Bangchak holding 30% shares and Prima Marine Co., Ltd., holding 70%.
 - Establishing Bangchak Retail Co., Ltd., a subsidiary, which runs a food and drink business, wholly owned by Bangchak.
 - Launching Green S Revolution products in the gasohol group.
 - Establishing Oam Suk Social Enterprise Co., Ltd., an associated company, a joint-venture company with 40% shares held by Bangchak and 60% by the Buddhist Economics Foundation.
 - Launching SPAR, a new form of supermarket in Bangchak service station on Ratchaphruek Road, operated by Bangchak's subsidiary, Bangchak Retail Co., Ltd. (BCR).
 - BCPG Co, Ltd. acquiring SunEdison Japan and Huang Ming Japan
 - On September 28th, 2016, BCPG Plc. listed and starting trading on SET, a total of 590 million shares.
 - Bangchak changed its investment from buying shares to entering a joint venture with Sima Inter Product Co., Ltd., to set up a company whose name was changed from BCP Bioethanol Co., Ltd. to Bangchak Bioethanol (Chachoengsao) Co., Ltd. With a registered



capital of Baht 500 million, the company had Bangchak holding 85% shares.

- Bangchak Biofuel Co., Ltd., inaugurating second biofuel plant which came on stream and started commercial ethanol production; hence, total installed capacity was 810,000 liters per day.
- Bangchak arranged for a capital increase in BCP Energy International Pte., Ltd. (BCPE), a subsidiary, to allow BCPE to increase its common shares in proportion to its shareholding in Nido Petroleum Limited, worth Australian \$25.94 million, for appraisal drilling in the Mid-Galoc area of the producing Galoc oil field of the Philippines.

2015

- Achieved a peak refining capacity of 126.6 KBD in June. Also, reached an average refining capacity of 118.4 KBD in August, a record rate since operating the Hydrocrack Unit.
- Bangchak developed UCO (unconverted oil) for export to SK Oil of South Korea for use as a raw material for lube base oil production. High in quality and clean, UCO contains low sulfur and nitrogen.
- Bangchak acquired a 25-MW cogeneration plant located on the compound of Bangchak Refinery from PTT Plc for a total core-asset value of Baht 1,332 million, adding efficiency to its power & steam generation system to be used for refining processes.
- Bangchak launched Green S, new technology products derived from sophisticated processes and containing outstanding properties due to new additives that synergizes two powers:
 - E20S gasohol features outstanding properties due to the S Purifier and S Modifier, which complete fuel combustion in the engine, thus providing power and environmental protection. With less combustion pollutants because of lower sulfur content (10 ppm), E20S is superior to the Euro 5 standard.
 - Hi Diesel S boosted outstanding properties due to the S Power and S Guard additives, which raises combustion efficiency, thus providing power and clean burning, protecting the engine, reducing corrosion, and responding to driving fully.



- Bangchak issued debentures worth Baht 3,000 million with 12-year and 15-year maturity to mainly expand its renewable-energy business under the strategy of renewable-energy leadership. TRIS Rating, meanwhile, upgraded Bangchak's rating from A-/Stable last year to A/Stable this year.
- PTT Plc sold all its 374,748,571 shares (27.22%) in Bangchak to VAYU1 Fund and the Social Security Office, accounting for 15.25% and 11.97% of Bangchak's paid-up capital.
- Nido Petroleum Ltd. acquired more shares in Galoc Production Co., WLL (GPC), now accounting for 55.88%. Nido Petroleum, Bangchak's subsidiary, acquired more shares in GPC, going from 22.88% to 55.88% and assuming operatorship in the Galoc oil field. This transaction was worth USD 87.4 million (Baht 2,876 million).
- Bangchak's Board of Directors approved its investment in the lithium mining business via shareholding in Western Lithium USA Corporation (a Canada-listed company), which conducts the mining business in the American continent for processing into lithium carbonate, a key raw material for battery production.
- Extraordinary Meeting No. 1/2558 approved a restructuring plan of Bangchak's renewable-energy business by transferring its common shares in subsidiaries in the renewable-energy business group to BCPG, a new company resulting from the restructuring plan for power businesses. The meeting also approved the initial public offering (IPO) of BCPG on SET.
- Bangchak sold all 1,930,500 shares (10.66% of the paid-up capital) of ASEAN Potash Chaiyaphum PCL to S Group AEC (Thailand) Co., Ltd., altogether worth Baht 202 million, since it is not a core business.
- Bangchak has adopted the Thailand Quality Award (TQA) criteria in developing its organizational capability in conjunction with business development to strive for sustainability in human resource development as well as business growth. These guidelines include effective work structural architecture supporting current and future businesses, work process efficiency improvement suitable for all situations, information system and technological modernization, and support of innovations for all employees, aiming to become a knowledge-based organization.



- With a strong commitment to the continuous development of its workforce, Bangchak has defined a clear policy on job rotation to broaden staff skills in preparation for career path development and for current job requirements and expected knowledge and competency in line with the Company vision and business goals. The Competency Base Management System has been adopted to develop human resources systematically. As for personnel development, the Company set the preparation of a successor pool and systemization of career management plans, and continuous learning through various channels. Moreover, the Company promoted innovation projects in the organization, including employee group activities and cross-functional teams, including the Cascade Project for Innovation, Community of Practice (CoP), and Kaizen activities to promote sharing of knowledge and experiences among them. The ultimate aim of all these activities and projects is to drive Bangchak toward an entity of innovation.
- To upgrade its assessment standard for personnel abilities and administration system, Bangchak applied for participation in the Best Employer Project for Thailand, which helped it detect aspects for further improvement. The exercise added assessment of other aspects besides employee engagement, namely employer brand, leadership, and high-performance culture. The first year's assessment score for Bangchak was 70 as targeted in 2015. A roadmap was prepared to constantly close the gaps in the future.
- **Efficiency improvement in work process and preparedness for different scenarios:** To assess, identify, and mitigate risks at all levels impacting business goals, an Enterprise Risk Management (ERM) system was launched. This year the Company introduced Scenario Planning for assessing changing circumstances that are likely to cause risks and have impacts on long-term organization's goals. Scenario planning is regularly presented for the review and monitoring of risk management plans at ERM (Enterprise Risk Management Committee) and PRMC (Price Risk Management Committee) meetings. Bangchak also achieved ISO 22301:2012 certification for Business Continuity Management (BCM).
- **Information system and technological modernization**
To meet the requirements of instant information and technologies to operate all work processes safely, effectively, and smoothly,

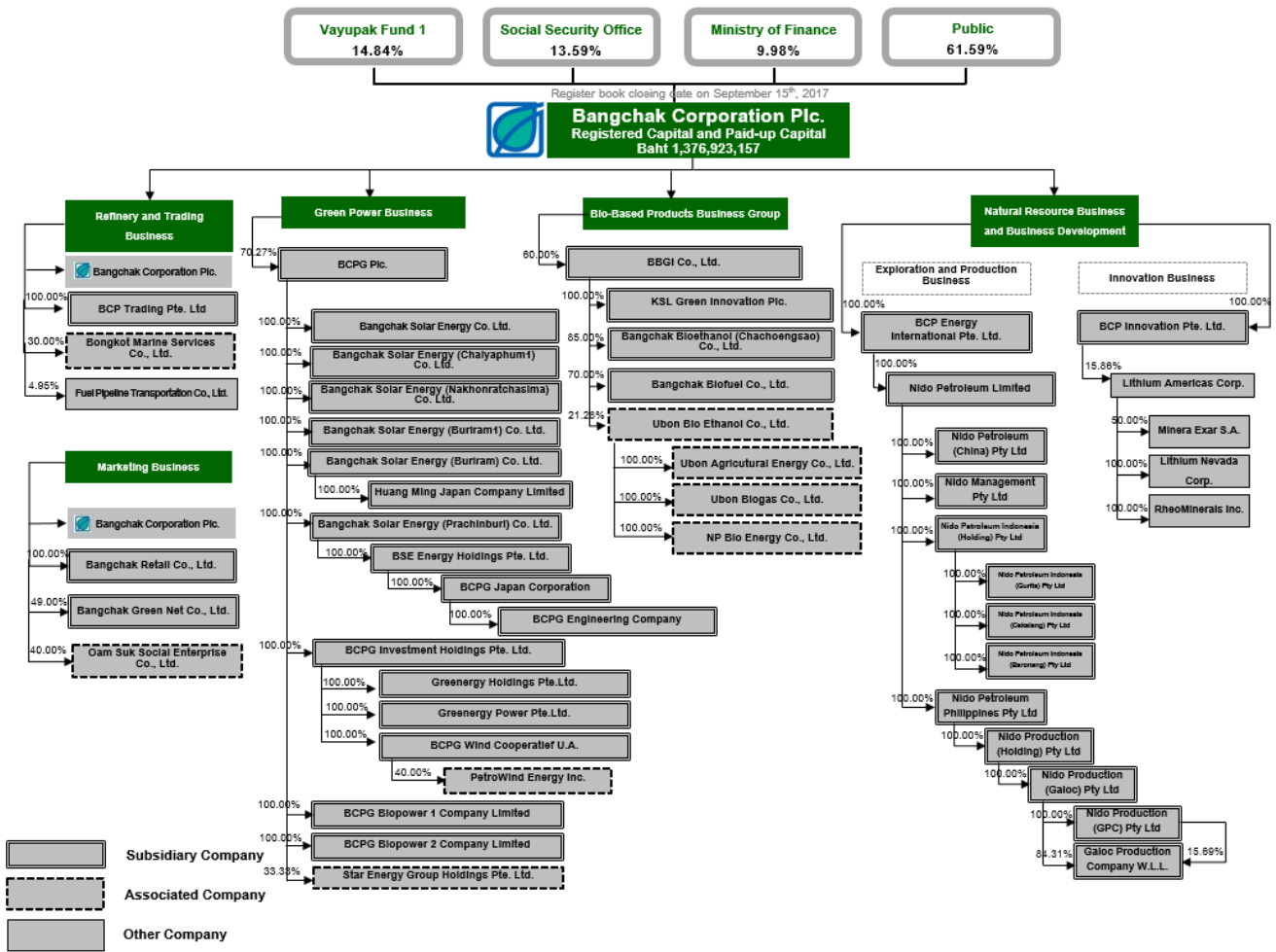


modernization of information system and technology is a prerequisite. Today's common is the perception of fast technological changes, which could manipulate strong impacts—positive and negative ones. Recognizing the value of IT systems, which lead to convenience, safety, and effectiveness, Bangchak has applied its systems of customers' opinion-sharing and data collection, and more service provision through the IT system and mobile applications. Cases in point were customers' complaint and feedback input through the SAP Call Center and the communication and direct inputting of goods and service-related data through the social media. Besides, data can find rapid applications to efficiently meet the highly dynamic needs of consumers. In addition, the Company has internationalized IT systems in support of work within the organization. For instance, it adjusted SAP SRM (Supplier Relationship Management) to link its databases to the SAP ERP system for greater efficiency. The Company also modified the BCP Knowledge Management System to accommodate modern, diverse functions to support knowledge-sharing within the organization. Consequently, knowledge can be linked and extended within the same group of companies and become increasingly efficient. In addition, the Company has internationalized IT systems in support of work within the organization. Moreover, Bangchak has installed an enterprise resource planning system through an enterprise network to provide 24/7 access to all employees under ISO 27001, a reliable system standard for network and data center. An additional system, Digital Control System (DCS), was implemented at distillation unit control rooms to ensure the utmost reliability of refining operations, under ISO/IEC 20000-1:2011 in service management system standard. The Company used SAP Enterprise Resource Planning (ERP) SAP ECC6.0, which is modern and international. Thus, the Company could access all analytical and operational data thoroughly and more efficiently. Furthermore, the Company developed Security and Safety Management system and Budgeting Management system (e-budget), in order to improve work more efficiently. The Company also planned IT Road Map for its subsidiaries.



1.3 Shareholding Structure

Equity Chart of Bangchak Petroleum Plc and Other Companies



Refinery and Oil Trading Business Group

The complex refinery of Bangchak operates with the nameplate capacity of 120,000 barrels per day. The majority of the yields are gasoline and diesel. The quality of its gasohol and diesel products meet the public sector's Euro 4 standard. Bangchak focuses on energy stability in its production processes by using electricity and steam derived from its cogeneration power plant, while replacing fuel oil with cleaner-burning natural gas. It raises the efficiency of its refining processes with the implementation of Efficiency, Energy, and Environment: 3E and Yield, Energy Efficiency, Safety and Reliability Enhancement: YES-R projects.

**BCP Trading Pte. Ltd. (BCPT)**

Incorporated in Singapore, BCPT engages in commodity trading including crude oil, petroleum products, petrochemicals, other chemical products, and other downstream businesses. The company has a registered capital of US\$1 million and is wholly owned by Bangchak.

Bongkot Marine Services Co., Ltd.

This joint venture enterprise has a registered capital of Baht 240 million, in which Bangchak holds a 30%. It engages in supplying and operating Floating Storage Unit.

Fuel Pipeline Transportation Co., Ltd. (FPT)

With a registered capital of Baht 3.66 billion, in which Bangchak holds 4.95%, FPT operates underground pipeline fuel transport. The multiproduct pipeline is laid parallel to the railway route to Don Muang International Airport Oil Depot via Chong Nonsi Oil Depot and ends at Bangchak's oil depot in Bang Pa-in, Ayutthaya, and at FPT. A pipeline connection with the system of JP-One Asset Co., Ltd., made at the Makkasan area supplies aviation fuels to Suvarnabhumi International Airport. FPT's latest move was to develop an additional fuel pipeline project, expanding its route from Amphoe Bang Pahan, Ayutthaya, to Lampang in the North. Two fuel depots in Phichit and Lampang are envisioned to accommodate this plan. The project is due for completion by 2019.

Marketing Business Group

The Marketing Business Group sells fuel products and lube fuels to consumers through Bangchak's network of 1,114 service stations nationwide, made up of 499 standard type and 615 agricultural cooperative service stations, as of December 2017. To provide convenience to customers, the stations offer supplementary (non-oil) businesses under the operation of Bangchak Retail Co., Ltd. In addition, the Marketing Business group also distributes fuel products to industrial users together with the transport sector, airlines, vessels, construction and agricultural sectors.

**Bangchak Green Net Co., Ltd. (BGN)**

Incorporated with Baht 1 million in registered capital, in which Bangchak holds 49%, BGN engages in service station administration and sales management of consumer products at Baichak and Lemon Green outlets.

Bangchak Retail Co., Ltd. (BCR)

This wholly-owned subsidiary of Bangchak has Baht 300 million in registered capital. BCR engages in the food and drinks business to accommodate steady growth in the retail business through 33 SPAR Supermarkets, 446 Inthanin Coffee and Inthanin Garden premium coffee shops, and other supplementary businesses.

Oam Suk Social Enterprise Co., Ltd.

With an initial registered capital of Baht 10 million, in which Bangchak holds 40%, Oam Suk engages in the purchase of agricultural produce and organic crops for processing, marketing, distribution, and R&D.

Green Power Business Group

Bangchak invests in the renewable-power business by holding 70.27% equity in BCPG Public Company Limited (BCPG), a listed company on the Stock Exchange of Thailand (SET). Its IPO took place on September 28, 2016. BCPG engages in investments in the power generation business from green energy sources (both domestic and overseas), such as solar, wind, and geothermal power projects.

BCPG Public Company Limited (BCPG)

Incorporated with a registered capital of Baht 10 billion to engage and invest in the domestic and overseas green power business, BCPG engages in the domestic solar farm business, totaling 139 MW in contractual capacity. It also invests in power generation from solar cells in Japan, totaling 150.5 MW in contractual capacity, a wind farm project with a total of 20 MW in equity capacity, and a geothermal power plant with 182 MW in equity capacity.



Bio Based Products Business

BBGI Co., Ltd.

BBGI was incorporated with a registered capital of Baht 2.532 billion. A merger between BBP Holdings Co., Ltd. (BBH, a Bangchak subsidiary) and KSLGI Co., Ltd. (a subsidiary of Khon Kaen Sugar Industry Pcl), BBGI enhances the capacity and strengthens the ethanol and biodiesel businesses, while diversifying risks arising from the price volatility of ethanol's main raw materials, namely cassava and molasses. Finally, BBGI is part of the enhanced future growth opportunity. Four subsidiaries make up BBGI: Bangchak Biofuel Co., Ltd., Bangchak Bioethanol (Chachoengsao) Co., Ltd., Ubon Bio Ethanol Co., Ltd., and KSL Green Innovation Plc. Bangchak has 60% equity in BBGI.

Bangchak Biofuel Co., Ltd. (BBF)

Established with Baht 281.5 million in registered capital, in which BBGI holds 70%, BBF engages in the production of biodiesel from crude palm oil, a basic raw material, with a plant located in Bang Pa-in, next to Bangchak's oil depot, in Ayutthaya.

Bangchak Bioethanol (Chachoengsao) Co., Ltd. (BBE)

BBE has a registered capital of Baht 500 million, in which BBGI holds 85%. Located in Amphoe Phanom Sarakham, Chachoengsao, it produces 99.5% ethanol from fresh cassava and cassava chips.

Ubon Bio Ethanol Co., Ltd. (UBE)

UBE was incorporated with a registered capital of Baht 2.74 billion, in which BBGI holds 21.28%, located in Amphoe Na Yia, Ubon Ratchathani. It engages in the ethanol and tapioca flour business based on fresh cassava, cassava chips, and molasses to enhance ethanol security and accommodate growth in gasohol E20 and gasohol E85 sales. UBE's subsidiary also engages in processing cassava into flour and generating power from the biogas derived from wastewater treatment from the flour and ethanol processes.

**KSL Green Innovation Plc. (KGI)**

KGI is wholly owned by BBGI with a registered capital of Baht 610 million. It engages in the production and distribution of ethanol based on molasses derived from the sugar manufacturing process. KGI's two ethanol manufacturers now operate with a total capacity of 350,000 liters per day, located in Amphoe Nam Phong, Khon Kaen, and in Amphoe Bo Phloi, Kanchanaburi. Moreover, the biogas power plant of KGI generates power from the biogas derived from wastewater treatment from the ethanol process.

Natural Resources and Business Development

BCP Energy International Pte. Ltd. was established in Singapore to engage in energy, petrochemical, and natural resources businesses and an innovation business overseas.

BCP Innovation Pte. Ltd. was founded in Singapore to engage in innovation businesses overseas by investing in Lithium Americas Corp., a listed company on the Canadian Securities Exchange, undertaking lithium mining businesses in Argentina and the US. Lithium's demand has soared since it is an essential raw material for batteries for various products.

BCP Energy International Pte. Ltd. (BCPE)

Wholly owned by Bangchak and established in Singapore with a registered capital of US\$111.4 million, BCPE engages in energy, petrochemical, and natural resources business overseas and now invested 100% through the common shares of Nido Petroleum Ltd.

BCP Innovation Pte. Ltd. (BCPI)

BCPI has a registered capital of US\$5.1 million, wholly owned by Bangchak. Incorporated in Singapore to engage in innovation business overseas, BCPI now invests 15.86% through common shares in Lithium Americas Corp.

**Nido Petroleum Limited (NIDO)**

Nido engages in the petroleum exploration and production business with an investment focus in Southeast Asia. It holds rights in producing oil fields, namely Galoc, Nido, and Matinloc in the Philippines with a current combined output of 3,500 barrels per day, along with rights in the fields under development and exploration, namely West Linapacan, in the Philippines, and rights in fields under exploration, namely SC6B, SC14D, SC54A, SC54B, SC58, and SC63 in the Philippines.

Lithium Americas Corporation (LAC)

Lithium Americas Corp. (LAC) is listed on the Toronto Stock Exchange, Canada, and on the New York Stock Exchange, USA (since January 25, 2018)., and engages in the lithium mining business to produce lithium carbonate and lithium hydroxide, which are essential raw materials for batteries for various products with robust trends, namely electric cars, energy storage systems, and mobile electronic appliances. LAC is developing two lithium mines in Argentina and the US. The Argentina project is under the development of Minera Exar S.A., where lithium carbonate production is expected in 2019 for a capacity of 25,000 tons per year, whereas the US lithium mining project is under development by Lithium Nevada Corp. In addition, an affiliated RheoMinerals Inc. (formerly Hectatone Inc.) has produced organoclay for exploration and production of petroleum with a maximum capacity of 10,000 tons per year since 2015.



2. Business Description

Bangchak Corporation Public Company Limited is a Thai energy company engaging in business alongside social and environmental stewardship. Its core business - petroleum refining - spans procurement of crude oil from domestic and overseas sources and refining it into various standard products. With a current production capacity of 120,000 barrels per day, Bangchak distributes its refined products to over 1,000 retail stations around the country. It has also spread its wings to other businesses, including oil trading, power production from green energy, bio based products, natural resources and innovation business. Bangchak's mission is to enhance national energy security, while investing in new businesses to keep the organization moving forward and ensure sustainability.

Refinery Business (with a refining capacity of 120,000 barrels per day)



Refining and Oil Trading Business Group

Bangchak's refinery is categorized as a modern complex refinery with a maximum capacity of 120,000 barrels per day. Most of its yields are premium-value gasoline and diesel. The quality of gasohol and diesel from Bangchak Refinery are certified as Euro 4 Standard-complaint by the government. Its refinery is the first in Asia that produced eco-friendly



gasohol E20 to meet the Euro 5 standard with a sulfur content of lower than 10 ppm—fivefold reduction from the Euro 4 standard. Bangchak also focuses on improving energy stability in the production process by leveraging electricity and steam derived from its cogeneration power plant, while using more environmentally friendly natural gas in place of fuel oil and enhancing the efficiency of the refining process with the Efficiency, Energy, and Environment: 3E Project and Yield, Energy Efficiency, Safety and Reliability Enhancement: YES-R Project to increase its production capacity. To increase the capacity and process operation to maximize the benefit, the following additional efforts have been made as follows:

- Improved the efficiency of managing crude oil supply, refining processes, storage, distribution and shipping tankers to enable the continuation of refinery operations. As a result, the average annual refining capacity in 2017 was 111,000 barrels per day. The average daily production was recorded at 121.64 KBD in March.
- Executed better planning and procurement process of crude oil to obtain appropriate GRMs. Effectively utilized the Roll Month agreement to reduce the costs of crude oil. As a result, the average annual refining margin was US\$ 6.38 per barrel.
- Started operating the third-generation Combined-Cycle Power Plant (GTG-3) using natural gas as fuel. It is capable of 12 megawatts (MW) of electricity and 42 tons per hour of steam in order to provide stable and continuous production within



the refinery, reduce the cost of electricity and steam, and reduce greenhouse gas (GHG) emissions.

- Continuously developed the oil trading business through BCP Trading Pte., Ltd. By focusing on the strategy of expanding out-out (overseas oil suppliers for overseas customers) transactions.
- Began storing crude oil on the Floating Storage Unit (FSU) to grow its reserve oil storage capacity and to maintain consistency of production capacity.



Marketing Business Group

This year, over 76% of refined products were sold to customers directly through Bangchak's service stations and networks. There are 1,114 Bangchak service stations in Thailand: 499 standard service stations and 615 agriculture cooperative service stations (as of December 2017). Most of the new service stations of 2017 are spacious and green stylish. **They come along with supplementary (non-oil) businesses that help increase its market share and maintain Bangchak's second place.** It also sells products to users in the industrial sector, transport



sector, airlines, shipping, construction and the agricultural sector. Bangchak service stations emphasize high-performance renewable, eco-friendly gasohol and diesel. This year, it developed and launched to market the “Hi Premium Diesel S” to meet the needs of customers who need high-quality diesel. This product features engine protection, high combustion efficiency, a longer engine life, and friendliness to the environment. In addition, service stations will be expanded to include more convenience stores, coffee shops, fresh-cooked fast food restaurants, car maintenance centers, and car wash services.

With regard to the convenience store business and coffee shop business operated by BCR Co., Ltd. (BCR) (a subsidiary of Bangchak), there are 33 SPAR, a supermarket chain from the Netherlands under the concept of SPAR Fresh & Easy Food Market. In addition, there are over 446 service stations including leading educational institutes and commercial centers where “Inthanin Coffee Shop” and “Inthanin Garden” coffee shops are located. In 2017, Bangchak opened new concept coffee shop and restaurant, named “Inthanin Bistro”, at Don Muang International Airport, and new coffee shop suitable for agricultural cooperative service stations, called “Ka-Fae-Yok-Lor by Inthanin” which serving dark roast coffee with sweet-creamy under saving prices. Other Bangchak’s convenience stores in service stations are Bai Chak and Lemon Green. Also, there are Big C Mini-s located at 165 large service stations near communities. Other non-oil businesses are also “Lemon Kitchen” fast-food restaurants and car maintenance centers under “Wash Pro”, “Green Serve”, “Green Wash”, and “Green Tyre”.



In addition, Bangchak agricultural cooperative service stations, which operated since 1990, has developed continuously to the 28th year of business alliance with community organization. Bangchak's policy is to develop cooperative service stations sustainable by creating standards of quality and service to meet Bangchak standard service stations. This could draw more members and customers to visit cooperative service stations. In 2016, Bangchak develops supporting projects for cooperative service stations. These projects are, for instance, COOP Coaching Project, or training service station management by standard service station team, or COOP Turn Pro project, which supports potential cooperatives to upgrade stations. Cooperative service stations continuously develop new business to strengthen growth for community organization, better well-being for members, align with the vision of inclusiveness and sustainability.

Bangchak recognizes social trending and lifestyle changes of modern Thais. Therefore, its service stations are developed under a Greenovative Experience model under the renewable, recycle, reuse, and reduce (4Rs) concept. These include installation of a solar roof top to produce electricity, an EV charger station for electric vehicles, an automatic bottle recycling machine for recycling polyester fiber, rain water collection for water reuse for gardening, a healthy coffee shop using biodegradable coffee cups, use of organic coffee grown with wild and non-chemical methods, and use of energy-saving materials and increase of green areas.

In addition to fuel products, Bangchak manufactures and sells special lubricating oil and products like transmission fluids, brake fluids, grease, and others under the "BCP Lubricants" brand, selling them to the



domestic market through the Bangchak service station network, retails, plants, OEM (original equipment manufacturer) market, and international markets. This year, Bangchak developed the “FURiO” premium-grade lubricant that can save on fuels, prevent corrosion, and protects the engine in all modes of operation.



Bio Based Products Business Unit

Aware of the importance of renewable energy to Thailand's energy security and the reduction of trade deficit arising from importing fuels, Bangchak has promoted ethanol and biodiesel by blending them with gasoline and diesel to produce gasohol 91 and gasohol 95, gasohol E20, gasohol E85 and Hi Diesel.

This year Bangchak has completed amalgamation between BBP Holdings Co., Ltd., a subsidiary of Bangchak and KSL GI Co., Ltd., a subsidiary of Khon Kaen Sugar Industry Public Company Limited, to form BBGI Co., Ltd., which is 60% owned by Bangchak, operates the largest biofuel production and distribution business in Thailand. The total production capacity is more than 1,710,000 liters per day, divided into 900,000 liters of ethanol and 810,000 liters of biodiesel per day. Below are four BBGI subsidiaries:

- **Bangchak Biofuel Co., Ltd. (BBF)**, is 70% owned by BBGI. BBF is a key player in the biodiesel business by using palm oil as a



main raw material. The total installed capacity is now 810,000 liters per day. BBF is currently under construction preparation for the prototype plant of high-value bio-based products derived from palm fatty acid distillates for high-quality biodiesel production. At the same time, it has begun investigating a refined glycerin project to grow its product values.

- **Bangchak Bioethanol (Chachoengsao) Co., Ltd. (BBE)**, is 85% owned by BBGI. BBE produces ethanol derived from cassava as a main raw material, with a total ethanol capacity of 150,000 liters per day. It is located in Amphoe Phanom Sarakham, Chachoengsao.

- **Ubon Bio Ethanol Co., Ltd.** is 21.28% owned by BBGI and is located in Amphoe Na Yia, Ubon Ratchathani. The ethanol production capacity is 400,000 liters per day. With raw-material options ranging from fresh cassava, cassava chips, to molasses, UBE can produce 700 tons per day of tapioca flour in addition to power generation from waste water derived from ethanol and dry tapioca flour processes.

- **KSL Green Innovation Pcl. (KGI)**, a wholly-owned subsidiary of BBGI, produces and sells ethanol derived from molasses, total capacity 350,000 liters per day.



Green Power Business

Bangchak has invested in the green power business through the operations of BCPG Pcl., a subsidiary of Bangchak to generate and distribute electricity from new types of renewable energy and clean energy. Last year BCPG had a total capacity of 585 MW both in Thailand and abroad. Of this, 394 MW is in operation, and 191 MW in progress. In Thailand, a total of 190 MW in solar farms, of which 182 MW is in operation, and 9 MW is in progress. In Japan, BCPG has a plan to install 192 MW solar farm, of which 40 MW is in operation, and 152 MW is in progress. With regard to wind energy, BCPG has a plan to install 20 MW (equity), of which 14 MW is in operation, and 6 MW is in progress. A geothermal power plant is also BCPG's interest. It has planned to install 182 MW (equity). So far, 158 MW is in operation, and 24 MW is in progress.



Natural Resources Business

Bangchak has established BCP Energy International Pte. Ltd. (BCPE) in Singapore to operate its international businesses involving energy, petrochemicals, and natural resources. It currently wholly owns



Nido petroleum Limited to focus on petroleum exploration and production primarily in Southeast Asia.

Bangchak established BCP Innovation Pte. Ltd. (BCPI) in Singapore to conduct businesses involving international innovation. In December, BCPI acquired a 15.86% interest in Lithium Americas Corporation, a listed company on the Canadian Stock Exchange. Its business is lithium mining in Argentina and the United States to support the soaring demand for lithium batteries in renewable-energy power plants for the stability of the transmission system and the production of electricity from renewable energy, the use of batteries in electric cars, including various portable electronic devices.

R&D and Innovation Business

Bangchak established **Bangchak Initiative and Innovation Center (BiiC)** to create a Green Ecosystem so that it may drive innovation by focusing on green energy and bio-based business. Research and development, management of technologies, and networking help leverage the expansion of the business (both domestic and abroad) in parallel with incubation of startup businesses under the Thailand 4.0 economy. Its ultimate goal is to join the Evolving Greenovation Group in Asia.



Revenue Structure

In 2017, revenue from sales and service as shown in the financial statements of BCP and subsidiaries totaled Baht 172,138 million, of which Baht 161,030 million was posted by the Company. Revenue from subsidiaries included Baht 32,445 million from Bangchak Green Net Co., Ltd. (with 49% shares), Baht 3,322 million from BCPG Public Company Limited and subsidiaries (with 70% shares), Baht 1,510 million from Nido Petroleum Ltd. (an indirect subsidiary with 100% shares), Baht 420 million from Bangchak Retail Co., Ltd. (with 100% shares), Baht 12,509 million from BCP Trading Pte. Ltd. (with 100% shares), and Baht 8,073 million from BBGI Co., Ltd. and subsidiaries (with 60% shares). Of the total revenue, Baht 47,171 million represented connected transactions, most of which came from sales of refined products through Bangchak Green Net Co., Ltd. The revenue structure of Bangchak and its subsidiaries during 2015-2017, divided by type of products and services, is shown below:

Product/Service	Operated by	2017		2016		2015	
		Revenue (Baht Mill.)	%	Revenue (Baht Mill.)	%	Revenue (Baht Mill.)	%
Refined products ^{1/}	BCP and subsidiary	167,296	95.3	141,257	96.8	147,797	97.3
Electricity	Subsidiary	4,316	2.5	3,084	2.1	3,010	2.0
Consumer products	Subsidiary	526	0.3	364	0.3	333	0.2
Others ^{2/}	BCP and subsidiary	3,311	1.9	1,195	0.8	733	0.5
Total		175,449	100.0	151,873	100.0	151,873	100.0

Note: 1/ The proportions of earnings from sales of refined products in the domestic in 2017, 2016 and 2015 were 90.3%, 91.5 and 89.1% respectively.

2/ Other revenues (excluding revenue from sales or services) included investment income, gain from crude and product oil price hedging contract, gain from foreign currencies forward contract, gains from foreign exchange and reverse of allowance for loss from impairment assets, share of profit of associates and joint ventures, revenue from sales promotional campaigns, land leases, service station rentals, and equipment rentals.



2.1 Products and Services Bangchak sells four product groups, namely:

1) Fuels: comprising of

1.1 LPG

LPG is a mixture of hydrocarbons, that is, propane and butane, bottled in the form of liquid in high-pressured iron cylinders. LPG is mostly used as cooking gas in households and can also be used in the industrial sector, such as for refrigerator-paint heating, tobacco heating, glass cutting, iron welding, and iron sheet cutting. Besides, it is an optional fuel for modified gasoline-engine vehicles.

1.2 Gasoline

Gasoline is for gasoline-fueled vehicles. The quality of gasoline is classified by its octane number, which indicates resistance to engine knocking. Gasohol offers benefit in many areas, for instance, reduction of air pollution, financial savings for import avoidance of MTBE (Methyl Tertiary Butyl Ether), reduction of impacts from high oil price, and shoring up of crop prices – which draw investment and employment to rural areas.

In August 2016, Bangchak unveiled its newly developed “Green S Revolution” products for new benzene engine, which first in Thailand represented innovation for direct injection gasoline engine (DIG). The new products raise combustion efficiency, enhance engine power, eases combustion pollutants, and preserve the environment.

1.3 Aviation fuels

Intended for commercial jets, Jet fuels must be clean from any contamination. They have extremely low freezing points with specified



gravities and heat values. Jet fuels produce clean combustion with its properties remaining constant throughout the operation.

1.4 High-speed diesel

High-speed diesel is for vehicles with diesel engine, such as cars, trucks, fishing trawlers, passenger boats, and tractors. Bangchak launched “Hi Diesel S” features outstanding properties which complete fuel combustion in the engine, thus providing power and environmental protection.

In May 2017, Bangchak developed and launched “Hi-Premium Diesel S”, premium grade diesel, to meet the needs of customers who need high-quality diesel. This product features engine protection, high combustion efficiency, a longer engine life, and friendliness to the environment with Euro 5 standard.

1.5 Fuel oil

Fuel oil is part of the crude with a high boiling point. It is largely used in the industrial and transport sectors. It also powers marine vessels and power generation. Produced fuel oil is low sulfur with high quality and environment friendly.

2) Lubricants: Lubricants are used to coat engine surfaces to reduce friction so as to slow down the engine’s wear and tear while helping in cooling, power transmitting, and cleaning of soot and metal dirt caused by friction. Bangchak sells three types of lubricant products:

2.1 Auto lubes

Bangchak’s auto lubes under the brand “BCP Lubricants”, comprise the GE Series for gasoline vehicles and the D3 Series for diesel vehicles,



lubricant for two-stroke engines, transmission oil, and brake fluid, and so forth. In 2017, Bangchak developed the “FURiO” premium-grade lubricant that can save on fuels, prevent corrosion, and protects the engine in all modes of operation.

2.2 Industrial lubricants

Lubricants in this category include hydraulic oil, industrial gear oil, heat transfer oil, turbine oil, air compressor oil, and cutting fluid.

2.3 Grease

Grease products comprise of multi-purpose grease, heavy-duty and heat-resistant grease, and grease for food industry.

Bangchak lubricants meet API standards, European standards, and standards set by major car manufacturers. In 2008, Bangchak was awarded ISO 9001:2008 from The United Kingdom Accreditation Service (UKAS) and Thailand's National Accreditation Council (NAC) for its integrated lubricant business (ranging from procurement, product development, and marketing), and ISO/TS 16949:2009 International Automotive Task Force (IATF) for its product development and for being the first in Thailand entrusted for producing lubricants for the automotive industry. In 2016, Bangchak successfully achieved ISO 9001:2015 recertification with additional regard for stakeholders, including suppliers, communities, and consumers, with impacts on its processes for standard quality.



3) Feedstock for refineries and petrochemical plants: comprising

3.1 Straight Run Fuel oil (Long Residue)

This is an intermediate raw material for feeding the refining process with a cracking unit.

3.2 Reformate

Reformate is petrochemical feedstock. It is extracted to produce aromatics or gasoline.

3.3 Isomerate

Isomerate is feedstock for petroleum refining processes in the production of gasoline.

4) By-product: Sulphur, which is naturally associated with oil, is considered a by-product. Sulphur can be extracted for several direct uses, such as for blending in the production of sulfuric acid, car tires, pesticides, fertilizer, bleaching, sugar, and shampoo, and for production of Sulphur compounds.

2.2 Marketing and Competition

The petroleum products industry business faces tough competition in the regional market because products trading are constraint by advantage over transportation from the refinery. Therefore, refineries are found scattered around the locations where demand exists. Whereas for the crude oil industry, the competition at the global level depends on the quality of crude oil and the field's geographical conditions.

In the refining industry, there are two main types of refinery, namely:

- Hydroskimming is Simple Refinery** with distillation processes.

The simple process separates components of crude into light oil



(gasoline), middle distillates (aviation fuel and diesel), and heavy oil (fuel oil), the proportions of which depend on the properties of crude.

- **Conversion Cracking is Complex Refinery** with a cracking unit, a process added to the distillation process. Conversion cracking turns some heavy oil into lighter products of higher value. However, this type of refinery requires some additional investment in the cracker and bears higher operating costs.

In general, yields from a Simple Refinery vary from those from a Complex Refinery, depending on the following factors:

- (1) The desired products, such as gasoline, diesel, and fuel oil
- (2) The type of crude, such as sweet crude, sour crude, light crude, and heavy crude
- (3) Some special specifications of the desired products, such as the sulphur content.

2017 Thai Economic Overview

The Bank of Thailand projected economic growth this year at 3.9%, an increase from 3.2% in 2016. The higher economic growth was better than earlier predicted due to the recovery of the export and service sectors, growing domestic consumption and private investment expansion. Economic stimulation measures implemented by the government drove the national economy to grow beyond the original plan. Certain concerns still exist, however; income concentrated to some sectors and unfairly distributed, rise of household debts, and economic policy uncertainty, as well as trade barriers with the US, are the major economic risks hindering Thai economic growth.



The headline inflation reported by the Bank of Thailand was estimated to stand at 0.7% this year, an increase from 0.2% in the previous year. The increase was driven by the rising oil price, growth in consumption demand even at a relatively low level, and negative impacts of economic restructuring. All these factors helped retard the inflationary pressure.

So, the 2018 GDP forecast is now 3.9%, relatively stable from this year. The main driving force comes from exports, seen in advanced orders placed in all industrial sectors, demand for new products especially for organic and value-added processed agricultural products, and growing tourism industry, following higher consumer confidence and tax incentive measures stimulating more local travel. Domestic consumption is set to gradually grow in response to higher consumer confidence. The economic barriers include price volatility of agricultural products and steadily high household debts. Due to healthy market supply, the 2018 headline inflation is estimated to slightly grow to 1.1% following the higher oil price.

Summary of Thai economy and inflation

	Percentage		
	2016*	2017	2018
Economic growth	3.2	3.9 (3.8)	3.9 (3.8)
Headline inflation	0.2	0.7 (0.6)	1.1 (1.2)
Core inflation	0.7	0.6 (0.6)	0.8 (0.9)

Note: * actual data
() monetary policy report, September 2017

Source: Office of the National Economic and Social Development Board, Ministry of Commerce, and Bank of Thailand

Nevertheless, other considerations affect the Thai economic projection. Uncertainty on the international trade policy with the US,



geopolitical risks among trade partners, and unexpectedly low domestic consumption resulting from uneven income distribution are the major concerns prohibiting the projected Thai economy growth.

Domestic oil business

The demand for fuels this year in Thailand grew to 118.18 million liters per day, a 2.57% increase from in 2016, in line with the growing GNP. The growth was driven by state measures on economic stimulation, expansion of the service sector and the continued public investment from 2016, leading to economic expansion beyond the original plan, especially the export and service sectors. Demand for gasoline and diesel therefore continued to grow at 3.28% and 2.69% respectively this year. The highest growth was recorded in the consumption of gasohol (3.99%), pushing the share of gasohol among the total fuels to a record high of 95%.

Domestic demand for refined products

Product	Demand (million liters/day)		
	2017	2016	Growth variation
Regular Gasoline	1.39	1.54	-9.50%
Gasohol	28.83	27.72	+3.99%
Gasoline Group	30.22	29.26	+3.28%
Jet fuel	63.73	62.06	+2.69%
Diesel Group	18.47	17.72	+4.25%
Fuel Oil	5.76	6.18	-6.83%
Total	118.18	115.22	+2.57%

Source: Department of Energy Business

On the supply side, the 2017 total crude run average stood at 1,140 KBD, a slight rise by 4.69% from the 2016. All six domestic refineries were fully on production, including Thairoil, IRPC, PTT Global



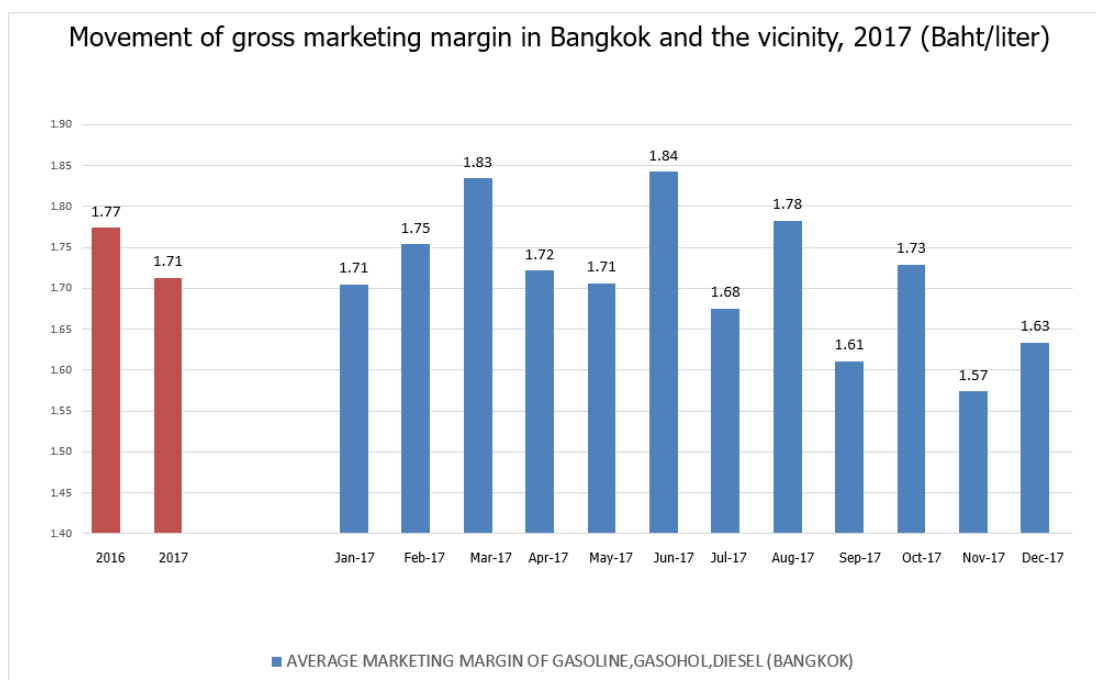
Chemical, Esso, Star Petroleum (SPRC) and Bangchak. The 2018 supply outlook is higher, since most refineries have no plan for turnaround maintenance shutdown.

Refinery	Crude run (thousand barrels per day, KBD)		
	2017	2016	Growth variation
Thaioil	351	337	+4.08%
IRPC	181	185	-2.42%
Esso	140	135	+3.62%
SPRC	166	173	-3.93%
PTT Global Chemical	191	157	+21.80%
Bangchak	111	101	+9.90%
Total	1,140	1,088	+4.69%

Source: Department of Energy Business and Bangchak Corporation Public Company Limited

Marketing Business

In the wake of the low-level oil price volatility in 2016, the price picked up at the year-end, driving traders to hike their retail prices to reflect the higher cost within the public policy framework. The 2017 gross marketing margin for Bangkok and its vicinity averaged Baht 1.71 per liter, a mild drop from 2016 of Baht 0.06 per liter. This included the dealer's margin and transport compensation. The gross marketing margin for 2018 is expected to be on a par with the 2017 level, given the fact that the domestic retail prices cannot be adjusted quickly in line with the rapid volatility of the world oil price.



Note: Gross marketing margin is inclusive of dealer's margin

Source: EPPO

The total number of service stations continues to rise. About 1,074 new service stations were added this year, making the total number stand at 27,300 at the year-end. Out of these new stations, 404 stations sold E20 gasohol and 194 stations sold E85 gasohol, leading to 3,707 stations serving gasohol E20 and 1,167 stations serving gasohol E85. Obviously, the higher demand and the number of service stations serving gasohol E20 and E85 were driven by higher number of car sales with E20- and E85-compatible engines.

Because of the higher number of service stations nationwide, retail market competition has intensified. The overall outlook is for these stations to become modernized to better serve consumers. Not only convenience has been focused, but non-oil businesses and services have been added to provide more alternatives to consumers and to improve retail business performance and competitiveness. Moreover, to



accommodate AEDP's (Alternative Energy Development Plan) renewable and alternative energy plans, more and more service stations are providing choices of renewable energy to accommodate demand from modern vehicles. Finally, many Thai retail business operators have opted to expand their businesses to neighboring countries under the AEC (ASEAN Economic Community) scheme, where demand for petroleum products consumption and economic growth are phenomenal.

Number of service stations

Unit: station

Oil trader	2017 ¹	2016	2015
PTT	1,775	1,675	1,578
Shell	508	498	491
Esso	543	542	534
Bangchak	1,114	1,075	1,072
Chevron	354	368	362
PTTRM	153	150	147
PTG	1,696	1,407	1,150
Others	21,157	20,511	20,009
Total	27,300	26,226	25,343

Source: Department of Energy Business

Remarks: ¹/ number of stations as of December 31, 2017

In 2017, sales volumes by domestic service stations averaged 2,058.4 million liters a month, a 3.7% rise from last year's 1,985.9 million liters per month. Bangchak posted 6.2% more sales through its service stations, which raised its market share through service stations from 15.1% to 15.4%, while maintaining the No. 2 domestic market share through service stations.



Sales volume of fuels through service stations for 2016 - 2017

Operator	Average Sales volume (million liters/month)			Market share (%)		
	2017	2016	Δ	2017	2016	Δ
PTT	749.4	734.0	+2.1%	36.4	37.0	-0.6
Bangchak	317.7	299.2	+6.2%	15.4	15.1	+0.4
Esso	255.7	256.6	-0.3%	12.4	12.9	-0.5
Shell	267.3	254.3	+5.1%	13.0	12.8	+0.2
Thai Oil	195.3	162.7	+20.0%	9.5	8.2	+1.3
PTTRM	104.2	111.6	-6.7%	5.1	5.6	-0.6
Caltex	95.3	97.8	-2.6%	4.6	4.9	-0.3
PTG Energy	33.7	30.7	+10.0%	1.6	1.5	+0.1
Susco Group	36.7	36.1	+1.5%	1.8	1.8	-
Others	3.2	2.9	+13.3%	0.2	0.1	-0.0
Total	2,058.4	1,985.9	+3.7%	100	100	

Source: Department of Energy Business and Bangchak Corporation PLC.

The lubricating oil sold by Article 7 traders amounted to roughly 36.2 million liters a month (according to the Department of Energy Business, December 31, 2017), an 4.8% rise. The lubricating oil market appears to continue growing mainly in line with the domestic economy and the public policy.

Product distribution and distribution channels: Bangchak products are distributed through:

1.1) Service stations – This is the usual retail channel, which is, through service stations scattered around the country. Also in this category are community service stations, intended for sale to members. All products are delivered via tanker trucks.



Bangchak's retail stations are operated in five formats, namely:

Station Format		Number (station)	Share (%)
1.	Company-Owned, Company-Operated stations (COCO): Bangchak is the investor and operates the station through Bangchak Green Net Co., Ltd. Bangchak takes control of the policy and business model. COCO stations are mostly large stations located on major roads, and, under Bangchak's direct supervision, serve as prototype stations.	205	18.4
2.	Company-Owned, Dealer-Operated stations (CODO): Bangchak is the investor and land owner, while the station management is carried out by experienced operators, who rent the stations.	51	4.6
3.	Joint Venture stations (JV): This is a joint investment between Bangchak and operators interested in running the service station business.	47	4.2
4.	Dealer-Owned, Dealer-Operated stations (DODO): The operator is the station owner, land owner, and sole investor, as well as a distribution agent.	196	17.6
5.	Co-Operative stations (CO-OP): These stations are invested by the community. In most cases, the community is the land owner and investor.	615	55.2
Total		1,114	100

Remarks: Bangchak Corporation PLC, as of December 31, 2017.

1.2) Industrial sale – This sales channel serves industrial plants and businesses with fuel demand for heating and producing products and services, such as food, textiles, paper, chemical, iron, and metal industries. Customers deal direct with the company, and deliveries are arranged by tanker trucks, except for some factories with their own piers.

1.3) B2B – This channel serves businesses with large purchase volumes like airlines, cargo/passenger, land and marine transport



companies, as well as construction companies. These customers deal direct with the company, and deliveries are carried out by pipeline (for airlines), boat, and tanker truck.

1.4) Sale to other oil companies – This is the sales channel among large and medium-sized oil traders who own oil depots. Purchased products are distributed through customers' own networks to end-customers. Deliveries are normally carried out by pipeline or customers' trucks.

1.5) Sale to refineries and petrochemical plants – This is the sale of refined products in the form of feedstock to petroleum or petrochemical production process, such as Naphtha for the aromatics unit. Deliveries are normally carried out by boat.

1.6) Export sale – Deliveries are normally carried out by marine vessel to overseas oil traders.

Types of customer – Bangchak's customers can be classified by purchasing method:

1) Outlet & End-User Customers – This group of customers are those buying Bangchak brand oil products through stations operated by the company, dealers, agriculture cooperatives or communities. Also in this group are corporate customers like factories, construction companies, airlines, cargo and passenger boats, and government agencies and state enterprises.



2) Supply Sales Customers – These customers are small and large oil traders, such as PTT, who order finished products from Bangchak for further distribution. Deliveries are made direct to customers' sites or outlets in their networks.

3) Export Customers – These customers are overseas oil traders who buy Bangchak oil to feed their production process or distribute internationally, such as Low Sulphur Waxy Residue (LSWR) sold to customers in Singapore, Malaysia, and China to fuel power generators and feed their cracking units for producing higher-value gasoline and diesel for further distribution.

Bangchak's sales volume, categorized by type of customer

Unit: thousand barrels/day

Type	2017		2016		2015	
	Volume	%	Volume	%	Volume	%
1. Outlet & End-User Customers	100.5	71.3	96.7	71.7	90.5	70.6
2. Supply Sales Customers	17.3	12.3	19.3	14.3	16.3	12.7
3. Export Customers	23.2	16.5	18.9	14.0	21.4	16.7
Total	141.0	100.0	134.9	100.0	128.2	100.0

Source: Bangchak Corporation PLC.



Sales value of Bangchak's products and services

Products	2017		2016		2015	
	million baht	%	million baht	%	million baht	%
<u>Domestic Sale</u>						
1. High-speed diesel	81,822	50.5	73,090	53.0	73,857	51.1
2. Fuel oil	1,864	1.1	1,678	1.2	1,814	1.3
3. Gasoline	45,428	28.0	39,371	28.6	41,319	28.6
4. Other products and services	16,852	10.4	13,450	9.8	13,326	9.2
Total domestic sale	145,966	90.0	127,589	92.6	130,318	90.2
<u>Export sale</u>						
1. High-speed diesel	2,846	1.8	2,107	1.5	2,652	1.8
2. Fuel oil	11,120	6.9	6,998	5.1	10,208	7.1
3. Gasoline	674	0.4	545	0.4	838	0.6
4. Other products and services	1,577	1.0	599	0.4	438	0.3
Total export sale	16,217	10.0	10,249	7.4	14,136	9.8
<u>Combined sales value</u>						
1. High-speed diesel	84,668	52.2	75,197	54.6	76,509	53.0
2. Fuel oil	12,984	8.0	8,676	6.3	12,022	8.3
3. Gasoline	46,102	28.4	39,916	29.0	42,157	29.2
4. Other products and services	18,429	11.4	14,049	10.2	13,766	9.5
Total sales value	162,183	100.0	137,838	100.0	144,454	100.0
% increase/decrease	17.66		-4.58		-17.58	

Source: Bangchak Corporation PLC.

2.3 Supplies of products and services

1) Production capacity and production volume

Bangchak's complex refinery, located on 210 Sukhumvit 64, Phra Khanong, Bangkok, boasts a refining capacity of 120,000 barrels per day and performs a 24-hour operation.

Production capacity (measured in 'barrels per day') means the refining system, piping system, and storage system that receive crude for turning into finished products at the maximum volume per day through the quality



improvement system, piping system, blending system, storage system, and product distribution system. Every 18-24 months, Bangchak shuts down the system for maintenance, which normally lasts about 30 days, to keep up or upgrade the system's performance. The shutdown schedule depends on operational and economic circumstances.

Bangchak has, over time, upgraded and expanded its refining unit. Today's operation is considered efficient with high safety standards and environment management, which exceed standards.

Bangchak's refining capacity and refining volume

Unit: thousand barrels/day

	2017	2016	2015
Nameplate capacity			
: thousand barrels per refining day	120	120	120
: thousand barrels per calendar day (A)	113.4	113.4	113.4
Output volume (by product)			
1. Diesel	56.7	53.4	59.2
2. UCO	2.6	1.2	0.8
3. Fuel oil	14.2	13.1	16.1
4. Gasoline	21.2	19.8	22.2
5. Aviation fuel, kerosene	13.1	11.1	11.7
6. LPG	2.9	2.6	2.9
7. Products for internal use and product loss during operation	0.7	0.2	0.1
Total output volume (B)	111.3	101.4	112.9
% increase of output volume	9.8	-10.2	30.5
% of capacity utilization (B/A)	98.2	89.4	99.6

Source: Bangchak Corporation PLC.

Remarks: 1/ Bangchak runs refining operation with three shifts of staff working eight hours per shift. Maintenance shutdowns are regularly scheduled to keep up or upgrade the refining process.

2/ The gasoline output excludes the amount of ethanol in the production of Gasohol.



2) Refining process

□ **Fractional Distillation** – The refining process starts from breaking up crude oil into fractions in the refining unit by heating it at 370 degrees Celsius. Then, 60% - 70% of the crude will vaporize to the top of the refining column, where it finds the lowest temperature. When that vapor cools down, it condenses into a liquid and flow onto layers of trays, depending on their boiling points, as detailed below:

1. The top layer, with the lowest temperature, is LPG.
2. The second layer is Light Virgin Naphtha (LVN).
3. The third layer is Heavy Virgin Naphtha (HVN) (both LVN and HVN will be blended with some additives to produce gasoline).
4. The fourth layer is kerosene and aviation fuel.
5. The fifth layer is diesel.
6. The remaining liquid crude stays at the bottom of the distillation column, where the temperature is the highest. The liquid is known as the “Atmospheric Residue”.

Vaporization and condensation of crude oil from one tray to another is an ongoing steady-state process in a separate pipe placed beside the distillation column. This separate part is known as a ‘straight run’. Yields from the straight run process, including diesel, contain high cetane and ignite easily, thus easing complete combustion and making engines clean. The resulting fuel oil still has some blend of light yields, making it easy to ignite, thus giving complete combustion. While the excess air can be reduced, resulting in lower fuel and maintenance costs in the long run.



- **Treating:** Treating is to make quality improvement to crude and products by removing unwanted contents, such as Sulphur. Treating units include the gas treating unit, naphtha production unit, low-sulphur diesel production unit of Euro 4 standard, and fuel oil treating unit, as well as gasoline production unit of Euro 4 standard.
- **Conversion:** Conversion is the process of changing oil molecule structures to achieve an oil product of higher quality and value. Conversion units include the gasoline production unit (isomerization, reforming) and fuel oil conversion unit.
- **Blending:** Blending is to mix at least two products together or to mix some additives into a product to achieve a product of higher quality.

Fuel oil upgrading unit: Since demand for fuel oil has been falling over time while Bangchak realizes the optimal use of resource, fuel oil produced in the straight run process is treated to achieve cleaner products of higher value, for example, fuel gas, cooking gas (LPG), light naphtha, heavy naphtha, aviation fuel, and diesel.

The above-mentioned treating method starts from moving the fuel oil from the distillation column to the vacuum distillation unit to remove Vacuum Gas Oil. The fuel oil molecules will then be broken up into fractions to produce the desired products. Here, hydrogen from the hydrogen production unit is fed in to help molecule fractioning complete. At the



bottom of the vacuum distillation column, heavy fuel oil will be further treated for sale.

Products derived from molecule fractioning, comprising fuel gas, cooking gas (LPG), light naphtha, heavy naphtha, aviation fuel, and diesel, will be sent to the product separation unit.

Fuel gas obtained from the process will be refined by removing the sulphur content. Treated fuel oil, diesel after sulphur content removal under the Euro 4 standard, aviation fuel, and cooking gas are kept in storage tanks for sale.

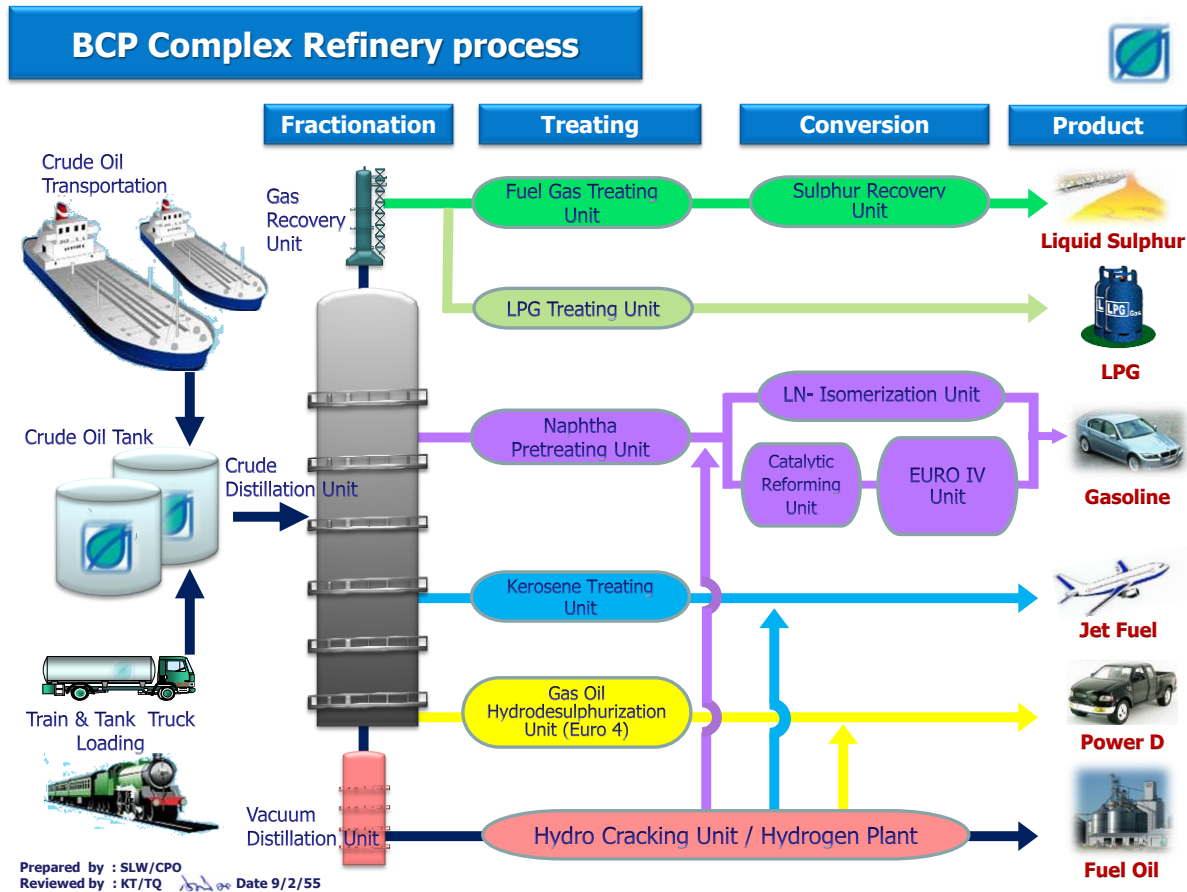
Low-sulphur diesel production unit of Euro 4 standard – This is quality improvement for diesel, using hydrogen in combination with a catalyst under specified pressure. By the Euro 4 standard, sulphur content in diesel will be reduced sevenfold to achieve a highly pure product, which will be kept in storage tanks for sale.

Light naphtha and heavy naphtha will be sent to the naphtha production unit to reduce the sulphur content by tenfold under the Euro 4 standard. The product will then be sent to the gasoline production unit (reforming) to raise the octane number before flowing further to the production unit of Euro 4 standard gasoline.

Production unit of gasoline / gasohol of Euro 4 standard – This is the quality improvement for gasoline by using hydrogen, in combination with a catalyst under specified pressure, to reduce the benzene content under the Euro 4 standard. The product will be highly pure with ten times less



sulphur content and 3.5 times less benzene. The product is kept in the storage tanks for sale.



3) Raw materials and suppliers

The main raw material of the refining business is 'crude oil', natural hydrocarbons created by compression of organic materials, that is, animals and plants, over millions of years under the earth's surface. Thailand holds its own crude sources at various places, such as the along the seams of Phitsanulok and Kamphaeng Phet provinces, in Suphan Buri province, Sukhothai, Fang district in Chiang Mai, and in the Gulf of Thailand. However, the volume of crude oil produced indigenously is not enough to satisfy the demand posed by the seven domestic refineries.



Thus, most of the crude needs to be imported. The major import sources of crude are countries in the Middle East like the UAE, Qatar, Saudi Arabia, Iran, and Dubai, as well as those in Southeast Asia, such as Malaysia, Indonesia, Brunei, the Philippines, and Australia. Crude imports from the Middle East require 15 – 20 days for transport and those from the Far East require 3-7 days. Normally, Bangchak keeps a crude stock of around 30 days in running its refinery.

Indigenous sources of crude oil (unit: thousand barrels/day)

Crude Field	Production Capacity					
	2017		2016		2015	
	Volume	%	Volume	%	Volume	%
Sirikit	25,761	18.2	26,944	16.5	29,095	19.1
Tantawan	25,037	17.7	29,830	18.3	2,247	1.5
Erawan	29,795	21.0	31,217	19.1	26,470	17.4
Nasanun/Nasanun East	1,670	1.2	2,096	1.3	1,440	0.9
Jasmine	11,843	8.4	12,997	8.0	9,175	6.0
Manora	7,054	5.0	11,029	6.8	12,900	8.5
Others	40,439	28.6	48,967	30.0	71,060	46.6
Total	141,599	100	163,080	100	152,387	100

Source: Energy Policy and Planning Office, Ministry of Energy

To achieve its goal on crude procurement security at the lowest cost and desired quality, Bangchak sources crude oil from both indigenous and overseas sources at suitable proportions, taking into consideration refining economics. Also, there are times when Bangchak orders petroleum products for sale, known as physical swaps with other producers.



In 2017, Bangchak procured indigenous crude oil from many fields in domestics, totaling 10,177 thousand barrels, which mainly from Sirikit (Phet) field, Pattani Field, Benchamas Field, and others.

This year, Bangchak imported crude 29,209 thousand barrels. There are 89.7% Crude from the Far East fields, such as Labuan and Bunga Kekwa from Malaysia; Seria Light Export Blend, and Champion from Brunei; Banyu Urib from Indonesia. There are 1.3% Crude from the Middle East Field, which is Masila from Yemen. Also, there are 10.3% Crude from other sources, such as Montara from Australia.

In addition to crude oil, Bangchak procures semi-finished products to make finished products, while some finished products are also procured for sale.

Bangchak's Cost of Feedstock

Crude Type	2017		2016		2015	
	Million Baht	%	Million Baht	%	Million Baht	%
<u><i>Cost of indigenous feedstock</i></u>						
1. Crude and semi-finished products	36,313	34.3	34,332	38.4	41,381	42.1
2. Finished products	8,402	7.9	9,945	11.1	11,387	11.6
Total	44,715	42.2	44,277	49.5	52,768	53.7
<u><i>Cost of imported feedstock</i></u>						
1. Crude and semi-finished products	53,498	50.5	39,553	44.2	45,182	45.9
2. Finished products	7,752	7.3	5,606	6.3	379	0.4
Total	61,250	57.8	45,159	50.5	45,561	46.3
<u><i>Combined costs of indigenous and imported feedstock</i></u>						
1. Crude and semi-finished products	89,811	84.8	73,885	82.6	86,563	88.0
2. Finished products	16,154	15.2	15,551	17.4	11,766	12.0
Total feedstock cost	105,969	100	89,436	100	98,329	100

Source: Bangchak Corporation PLC.



3. Risk Factors

Amid rapid changes in the current business environment, the risk management process is crucial for the formulation of plans to systematically tackle business uncertainties. Besides applying the international COSO ERM and ISO 31000 standards at the operational, business/functional group and divisional levels, Bangchak has integrated these standards into its work processes and the formulation of risk management for every investment project. By structuring its management of risks to cover all business groups, requiring them to observe a standardized risk management system, Bangchak ensures that the company and its affiliates will fully achieve their long-term and short-term goals in line with the sustainable approach for business, environmental, and social development.

This year Bangchak examined internal and external factors threatening its business operations, covering the volatility of oil prices and exchange rates, business competition, economic conditions, public policies, megatrends, data from The Global Risks Report 2017, published by the World Economic Forum, and the growth of relevant technologies and innovations, which include alternative-energy and energy storage-related technologies, and the progress of Electric Vehicle (EV) development.

Bangchak also considered the needs and expectations of its stakeholders in analyzing impacts and future trends for the formulation of its risk management plans and identification of business opportunities.



In enhancing the assessment efficiency of risk factors and their causes, while facilitating the planning of appropriate risk management approaches, Bangchak's risk-related management fall into the following elements: corporate level, investment-project level, and Business Continuity Management: BCM.

1. Corporate risk management

The first step of corporate risk management is to assess key internal and external risk factors, including future trends potentially affecting Bangchak's short-term and long-term goals. Besides covering strategic, operational, and financial risks, the assessment includes risks concerning legal compliance, employees' safety and occupational health, together with operational impacts on the environment, society and communities, which may affect Bangchak's credibility. Key risk indicators (KRIs) have also been developed to be used in the monitoring process to stay vigilant for emerging threats, while data obtained from the process are utilized for the improvement and formulation of additional risk-management plans to mitigate impacts on Bangchak's goals.

To fully achieve its business goals, Bangchak has prepared management plans for the assessed risk factors and impacts as follows:

Risks of volatility in oil and raw-material prices

In managing risks arising from the volatility of oil and raw-material prices, which affect the revenue from its petroleum and other businesses, Bangchak has implemented the following short-term and long-term plans:



- Closely monitored oil-price movements and constantly developed new tools to manage price-related risks and product spreads, with preventive measures identified by PRMC.
- Pursued business profits by procuring raw materials for biofuels from sources at reasonable prices and developed work processes to add value to products.
- Increased the proportion of Bangchak's investment in new businesses that generate steady revenue streams by expanding its investment in green power via BCPG Pcl, a subsidiary that invests in and operates power-generation and other renewable-energy businesses, both domestic and abroad.
- Established BBGI Co., Ltd., a biofuel producer and supplier, with a capacity to produce 900,000 liters of ethanol and 810,000 of biodiesel per day, totaling 1,710,000 liters per day, to strengthen Bangchak's competitiveness and business operation, diversify risks arising from the price volatility of cassava, molasses and crude palm oil, the company's key raw materials, and reinforce Bangchak's steady processing of raw materials into refined products.

Risks relating to the management of raw materials and supply chain

In ensuring an efficient operation within its supply chain and timely delivery of raw materials, machinery, equipment and services for its production and selling activities, which are crucial for its business continuity and cost control, Bangchak undertakes the following risk management measures:



- Entered into term contracts for crude oil supply from foreign and domestic sources to maintain a stable crude run.
- Procured crude oil with suitable properties for Bangchak's processes and generated high gross refining margins while adding value to its business.
- Classified high-value groups of raw-material and merchandise suppliers, including service providers, to conduct risk assessment on their adequacy, including their economic, social and environmental impacts, to ensure Bangchak's business continuity.

Risks arising from energy-related technologies and innovations

Technological changes and innovations are external factors threatening the current business. Bangchak has analyzed and assessed such risks while identifying opportunities offered by technological progress and innovations as follows:

- Increased its investment in lithium mines, with current shareholding of 15.86% of Lithium Americas Corporation's shares to expand Bangchak's natural resource and innovative energy-based businesses while keeping abreast of the future growth of battery-based alternative energy.
- Established Bangchak Initiative and Innovation Center (BiiC) with the cooperation of assorted networks and agencies to create a green ecosystem, promote and drive innovations that support major leaps



of green energy and bio-based products, leading to a dynamic breakthrough of Bangchak's businesses with an awareness of resource values.

Risks of impacts on communities and society

Focusing on sustainably cooperating with communities, society, and the environment in its business conduct, Bangchak has incessantly improved and developed its processes to operate safely without affecting communities and society through the following risk management measures:

- Consistently applied the Safety Integrity Level (SIL), Reliability-Centered Maintenance (RCM) and Risk-Based Inspection (RBI) systems throughout its processes, enabling Bangchak to plan proper maintenance and repair schedules for equipment to mitigate accident risks.
- Developed a safety system after TIS/OHSAS 18001. In place are HAZOP (Hazard and Operability Studies) assessment and PSM for safety management throughout refining processes.
- Installed an online air-quality monitoring system displaying the results on six billboards at locations adjoining the refinery: Sai Jai Thai Foundation on Sanpawuth Road, the Old Railway Road, and Sukhumvit Soi 64 sides of the refinery's front gate, Office of the Permanent Secretary's sports center, and the communities at the front and back of Wat Boonrod Thammaram, with another billboard to be installed in the Bang Krachao area on the opposite bank of



Chao Phraya River. The purpose was to provide neighboring communities with air quality data and boost wider confidence in society.

- Executed the enclosed ground flare construction project, due for completion by 2019, to ease community impacts of gas emission through the flare tower.
- Prevented river oil spills by requiring double-hull vessels for crude oil and refined-product tankers.
- Developed and constantly improved safety technology for jetty equipment, system, and tools in line with the OCIMF (Oil Company International Marine Forum) standards, including modernizing the wharf's firefighting system, devising a plan to develop Quick Release Hook vessel berthing, and installing an additional close-circuited (CC) camera system.
- Organized activities to promote knowledge, understanding, and safety awareness among these in surrounding communities, including schools, temples, and condominiums, by conducting evacuation and fire-fighting drills, installing communication systems and community alarms at all strategic locations, and inviting community representatives to observe emergency drills.

Global warming risks

Besides defining emergency response measures to mitigate potential impacts of global climate change, Bangchak focuses on contributing to the reduction of carbon dioxide emission as follows.



- Closely monitored potential impacts of climate change, including floods, with effective plans in place to manage low to high levels of impact and ensure business continuity.
- Significantly improved the refinery's energy efficiency and reduced carbon dioxide emission by utilizing the electricity and steam produced by its cogeneration power plant, fueled by natural gas instead of fuel oil, while starting the operation of a new 12-MW capacity cogeneration power plant this year.
- Integrated socio- environmental stewardship and energy conservation as part of Bangchak's corporate culture. Bangchak Refinery has won the Green Industry Level 5: Green Network Award, while Bangchak's Head Office building has been certified as LEED Platinum, the highest rating level of LEED certification for its design, which promotes the use of energy- saving and environmental conservation products.
- Developed green- energy businesses to reduce its fossil- fuel consumption and carbon dioxide emission by expanding Bangchak's renewable energy-based power generation business via BCPG Pcl, and biofuel business via BBGI Co., Ltd., a producer and supplier of biodiesel and ethanol.
- Took part in the research and development on "Environmental Management Technologies for Sustainable Development of Refinery Business" , which includes the assessment of organization's carbon footprint in line with ISO 14067 to alleviate global warming.



Water shortage risks

Water crisis will become a worldwide challenge with the world's water resources threatened by climate change, while population growth also poses a higher demand for water. Bangchak is therefore committed to minimizing water usage in its production processes.

- Effectively reduced the volume of its wastewater discharge and water usage by 3.42% this year by assigning its Refinery Water Management Taskforce to identify an approach for optimal water management to maintain process stability and define measures for water consumption reduction, reuse, and recycling with the reverse osmosis technology.
- Initiated water footprint assessment for Bangchak's gate-to-gate water management and identified appropriate measures for the reduction of wastewater discharge and water usage.
- Encouraged its affiliates to reduce water usage in their processes, starting from the reuse and recycling of water by the bio-based product business group. Bangchak has also undertaken a reservoir excavation project for additional water reserve supply on its compound.

2. Investment project risks

Besides alignment with the corporate strategic directions and returns on businesses, consideration of risk management in all investment projects is vital. In ensuring that every project will achieve its goals without affecting communities, society, and the environment, a clear and systematic analysis is required, while its risk management plan must be approved by



ERMC before submission to the Board for approval, taking into account the risk factors of each project stage and target country, including natural disaster threats.

3. Business Continuity Management (BCM)

Bangchak has acquired for five straight years ISO 22301:2012 standard certification covering its Head Office, Bangchak Refinery and Bangchak Oil Distribution Center, Central Region Business Office, and Bang Pa-in Oil Distribution Center. This certification underscores Bangchak's readiness to accommodate crises and implement its Business Continuity Plan (BCP) efficiently under international standards, while stakeholders can rest assured that Bangchak can handle emergency responses while continuing to deliver its products.

This year Bangchak improved its BCP to fully align with the relocation of the company's head office to the M Tower Building on Sukhumvit Road, while establishing and expanding the businesses of its affiliates. A crisis management exercise for marine oil spills under BCP was also undertaken jointly with Bongkot Star, a crude oil tanker owned by Bongkot Marine Services Co., Ltd., a service provider of floating storage units. The simulated scenarios were the transport of crude oil and communication among Bangchak's affiliates during crises. The drill outcomes were then used in amending emergency procedures, securing additional resources to enhance affiliates' BCM efficiency, ensuring their business continuity and sustainability during crises.



4. Review of business assets

Asset	Ownership	Book value Baht million ¹	Obligation
Refinery land	Long-term lease	341	None
Other properties	Ownership	2,271	None
Buildings	Ownership	183	None
Machinery & distillation tower equipment	Ownership	20,607	None
Power generators	Ownership	0	None
Sales and office equipment	Ownership	3,136	None
Platinum catalysts ²	Ownership	239	None
Vehicles	Ownership	134	None
Other assets ³	Ownership	24	None
Works in progress	Ownership	1,369	None
Total	-	28,304	-

Note:

- 1/ This year Bangchak set aside Baht 61 million in allowance (reversal of) for impairment of land property, machinery, and equipment, consisting of Baht 12 million in property, Baht 22 million in machinery and distillation tower equipment, and Baht 27 million in sales and office equipment.
- 2/ “Platinum catalysts”: platinum-based catalysts (found in the octane enhancement unit’s reactor), the contents of which are set by their producers.
- 3/ “Other assets”: oil palm plantations in Pathumthani and Nakhon Nayok province.



Trademarks

Trademark	Number of registered trademarks	Goods/services under trademark	Expiry ¹
<u>Copyrights</u>			
1. Bangchak leaf	11	All fuels, cold tissue paper, pure drinking water, plastic polymers, pens, pencils, notebooks, folders, asphalt, activated carbon	Aug. 30, 2019 Oct.15, 2019 Aug. 20, 2026
2. GRENA ZENITH SJ	1	Lubricant	Nov. 5, 2026
3. ISO GREEN	1	Gasoline	Jun. 10, 2024
4. GE GOLD	7	Synthetic gasoline-engine lubricant	Nov.20,2021 Dec.25, 2021 Feb. 12, 2022 Jan.13, 2023 Jan.15, 2027
5. GE PLUS	4	Gasoline-engine lubricant	Nov. 20, 2021 Dec. 25, 2021 Jan. 13, 2023 Jan. 15, 2027
6. GE SILVER	3	Semi-synthetic gasoline-engine lubricant	Dec. 25, 2021 Nov. 4, 2024 Jan. 15, 2027
7. Green Plus	1	Gasoline	Sep. 14, 2024
8. Green Plus 91	1	Gasoline	Sep. 14, 2024
9. Green Plus 95	1	Gasoline	Sep. 14, 2024
10. LOWCOST	2	All fuels	Apr. 28, 2025 Jun. 23, 2025
11. D3 GOLD	1	Synthetic diesel-engine lubricant	Oct. 9, 2023
12. D3 TURBO	1	Diesel-engine lubricant	Jan. 25, 2021
13. D3 EXTRA	1	Diesel-engine lubricant	Jan. 25, 2021
14. D3 PICK UP	1	Diesel-engine lubricant	Jan. 25, 2021
15. D3 COMMONRAIL	1	Diesel-engine lubricant	Oct. 30, 2018
16. D3 COMMONRAIL TURBO	1	Diesel-engine lubricant	Oct. 30, 2018
17. D3 Max	1	Diesel-engine lubricant	May 14, 2027
18. D3 EXTRA PLUS	1	Diesel-engine lubricant	Jan. 15, 2027
19. D3 PICK UP PLUS	1	Diesel-engine lubricant	Jan. 15, 2027
20. D3 TURBO PLUS	1	Diesel-engine lubricant	Jan. 15, 2027



Trademark	Number of registered trademarks	Goods/services under trademark	Expiry ¹
21. D3 GOLD	1	Diesel-engine lubricant	Jan. 15, 2027
22. POWER D B5	1	High-speed diesel	May 20, 2019
23. BANGCHAK POWER D	1	High-speed diesel	Jul. 10, 2018
24. SUPER POWER D B5 (EURO 4)	2	Diesel-engine lubricant Diesel	Nov. 3, 2020 May 2, 2022
25. SUPER POWER D (EURO 4)	2	Diesel-engine lubricant Diesel	Nov. 3, 2020 May 2, 2022
26. GE NGV	1	Semi-synthetic gasoline-engine lubricant	Dec. 25, 2021
27. GE PLATINUM	1	Synthetic gasoline-engine lubricant	Dec. 25, 2021
28. Bangchak Max Drive	1	Gasoline Fuel Conditioner	Dec. 25, 2026
29. Super HDX	1	Diesel Fuel Conditioner	Jan. 15, 2027

Service Marks

Service logo	Number of registered logos	Goods/service under logo	Expiry ¹
<u>Copyrights</u>			
1. Bangchak leaf	3	Goods sales management	Dec. 20, 2018
2. Bangchak colored strips, Bangchak characters, and Bangchak leaf	1	Vehicle service station	Aug. 6, 2023
3. Colored strips and Bangchak leaf	1	Vehicle service station	Aug. 6, 2023
4. Colored strips	1	Vehicle service station	Nov. 3, 2023
5. Bangchak colored strips	1	Vehicle service station	Aug. 6, 2023
6. Hornbill photo	2	Goods sales management	Oct. 10, 2026
7. GRENA CARCARE	1	Vehicle cleaning, maintenance & repair	Feb. 23, 2019
8. Gold food plate (black & white)	1	Sale of goods, foods, and drinks	Sep. 4, 2023
9. Gold food plate (colored)	1	Sale of goods, foods, and drinks	Sep. 4, 2023
10. GREEN AUTO SERVICE	1	Automotive maintenance & repair	Jul. 24, 2025
11. GREEN SERVE	1	Vehicle maintenance	Sep. 1, 2025



Service logo	Number of registered logos	Goods/service under logo	Expiry ¹
12. Green Wash	1	Vehicle cleaning & lubrication	Sep. 1, 2025
13. GREEN WASH AUTOCARE	2	Vehicle cleaning	Jul. 25, 2026
14. GREEN WASH EXPRESS	1	Vehicle cleaning	Jul. 25, 2026
15. GREEN BIKE EXPRESS	1	Motorbike maintenance	Jul. 25, 2026
16. GREEN TYRE EXPRESS	2	Tyre sale & mending	Aug. 15, 2026
17. GREEN WASH THE PREMIUM	1	Vehicle cleaning	May 20, 2019
18. Baichak	1	Food & drink sale	Mar. 15, 2021
19. Baichak Mart	2	Food & fresh coffee business management, Miscellaneous goods for consumers' convenience	Jan. 18, 2022 Apr. 1, 2023
20. Bangchak colored strips, three colors leaf	1	Vehicle service station	Sep. 24, 2023
21. BUBBLY TEA	1	Food & drink sale	Jun. 4, 2024
22. HURRICANE ICE	1	Food & drink sale	Jun. 4, 2024
23. MILK AND BREAD	1	Food & drink sale	Jun. 4, 2024
24. LOW COST	1	Vehicle service station	Apr. 28, 2025

**Trademarks and Service Marks advertised abroad**

Trademark	Number of registered trademarks	Goods/services under trademark	Expiry
1. Bangchak leaf and Chinese characters (registered in PRC (China))	1	Gasoline, diesel, and lubricants	Dec. 27, 2020
2. Bangchak leaf and BANGCHAK LUBRICANTS - Registered in Myanmar [®] - Registered in LPDR (Laos)	2	Fuel products	- Mar. 20, 2023
3. Bangchak leaf and BCP LUBRICANTS (Registered in Myanmar [®])	1	Fuel products	-
4. Bangchak leaf and BANGCHAK (Registered in Myanmar [®])	2	Fuel products, service stations	-
5. Bangchak leaf and characters (Registered in LPDR (Laos))	2	Fuel products, service stations	Mar. 20, 2023
6. Bangchak leaf and BCP LUBRICANTS (Registered in Vietnam)	1	Fuel products	Jul. 13, 2022
7. Bangchak leaf and BCP LUBRICANTS (Registered in Cambodia)	1	Fuel products	Jul. 5, 2022
8. Bangchak leaf and BCP LUBRICANTS (Registered in Lebanon)	1	Fuel products	Feb. 26, 2029
9. BAICHAK MART (Registered in Myanmar [®])	1	Miscellaneous goods for consumers' convenience	-
10. GREEN SERVE (Registered in Myanmar [®])	1	Vehicle maintenance	-
11. Bangchak leaf and BANGCHAK (Registered in Myanmar [®])	2	Fuel products & Vehicle service station	-
12. Bangchak leaf and BCP (Registered in Myanmar [®])	2	Fuel products & Vehicle service station	-



Trademark	Number of registered trademarks	Goods/services under trademark	Expiry
13. Bangchak leaf and BANGCHAK (Registered in Cambodia)	2	Fuel products & Vehicle service station	Nov. 19, 2023
14. Bangchak leaf (Registered in PRC (China))	1	Fuel products	Jan. 6, 2021
15. Bangchak leaf and BCP LUBRICANTS (Registered in Jordan)	1	Fuel products	Nov. 23, 2023
16. Bangchak leaf and BCP LUBRICANTS (Registered in Philippines [®])	1	Fuel products	Jun. 1, 2025
17. Bangchak leaf and BCP LUBRICANTS (Registered in Kenya)	1	Fuel products	Dec. 9, 2023
18. Bangchak leaf and BCP LUBRICANTS (Registered in OAPI countries [®])	1	Fuel products	Dec. 6, 2023
19. BAICHAK MART (Registered in PRC (China))	1	Miscellaneous goods for consumers' convenience	Jan. 27, 2025
20. BAICHAK MART (Registered in Vietnam)	1	Miscellaneous goods for consumers' convenience	Sep. 2, 2023
21. BAICHAK MART (Registered in LPDR (Laos))	1	Miscellaneous goods for consumers' convenience	Dec. 4, 2024
22. GREEN SERVE (Registered in LPDR (Laos))	1	Vehicle maintenance	Dec. 4, 2024
23. Bangchak leaf and BANGCHAK (Registered in PRC (China))	1	Service stations	Jan. 27, 2025
24. Bangchak leaf and BANGCHAK (Registered in LPDR (Laos))	2	Fuel products, service stations	Dec. 4, 2024
25. Bangchak leaf and BANGCHAK (Registered in Vietnam)	2	Fuel products, service stations	Sep. 29, 2023 Nov. 18, 2023



Trademark	Number of registered trademarks	Goods/services under trademark	Expiry
26. Bangchak leaf and BCP (Registered in PRC (China))	2	Fuel products	Jan. 13, 2025 Oct. 20, 2025
27. Bangchak leaf and BCP (Registered in LPDR (Laos))	2	Fuel products, service stations	Dec. 4, 2024
28. Bangchak leaf and BCP (Registered in Vietnam)	1	Fuel products, service stations	Sep.29, 2023
29. Bangchak leaf and Bangchak (Registered in Cambodia)	2	Fuel products, service stations	Oct. 1, 2023
30. Bangchak leaf and BCP (Registered in Cambodia)	2	Fuel products, Service stations	Oct. 1, 2023
31. Bangchak leaf and BCP LUBRICANTS (Registered in LPDR (Laos))	1	Fuel Products	Jan. 17, 2024
32. Bangchak leaf and BANGCHAK (Registered in PRC (China))	1	Fuel products	Jan. 27, 2025
33. BANGCHAK MART (Registered in Cambodia)	1	Miscellaneous goods for consumers' convenience	Sep. 5, 2023
34. GREEN SERVE (Registered in Cambodia)	1	Vehicle maintenance	Sep. 5, 2023
35. Bangchak leaf and BCP LUBRICANTS (Registered in PRC (China))	1	Fuel products	Aug. 13, 2025
36. Bangchak leaf and BCP LUBRICANTS (Registered in Turkmenistan)	1	Fuel products	Jun. 23, 2025



Trademarks and Service Marks under deliberation in Thailand

Trademark	Number of registered trademarks	Goods/services under trademark	Remarks
1. GE SYNTECH	1	Semi-synthetic gasoline engine lubricant	Filed Nov. 27, 2014
2. WASH PRO	1	Vehicle cleaning, maintenance & repair	Appealed Apr. 22, 2016
3. GREEN S REVOLUTION	2	Fuel products, vehicle service station	Appealed Jan. 26, 2018
4. COFE· TO GO	1	Artificial milk, coffees cocoa, teas, food & beverages	Filed Dec. 9, 2016
5. FURIO	1	Lubricants	Filed Mar. 3, 2017
6. RESPOPLEX	1	Technological service	Filed Aug. 29, 2017

Trademarks and Service Marks under deliberation abroad

Trademark	Number of registered trademarks	Goods/services under trademark	Remarks
1. Bangchak leaf and BCP LUBRICANTS, registered in Iraq	1	Fuel products	Filed on Aug. 3, 2015

Note:

- ❶ Registered trademarks and service logos are in effect 10 years from registration dates and extendable every 10 years
- ❷ In registering trademarks in Myanmar, one must submit declaration(s) of trademark ownership and place advertisement(s) to that effect in local newspapers every 2-3 years
- ❸ In registering trademarks in Philippines, one must submit Declaration of Actual Use within 3 years from filing.
- ❹ OAPI countries: Benin, Burkina Faso, Cameroon, Central African Republic, Chad, Comoros, Congo, Equatorial Guinea, Gabon, Guinea, Guinea Bissau, Ivory Coast, Mali, Mauritania, Niger, Senegal, and Togo



5. Legal disputes

Below are details as of December 31, 2017, about Bangchak's ongoing legal dispute(s) to which the company is a party; which could significantly affect its business; and which did not result from routine business conduct.

- Bangchak entered a litigation as a lead defendant with another company on grounds of breaching the appointment of lubricating oil product sales agents. The plaintiff originally filed for a financial damage of Baht 45.64 million and later filed another lawsuit on breaching the agreement and demanded an additional damage for being unable to sell the product in dispute. The second filing called for compensation of Baht 688.28 million. On March 23, 2017, the Civil Court made a ruling to dismiss both lawsuits. The plaintiff continued to the Appeals Court, where both lawsuits are being processed. Bangchak reaffirmed its compliance with all terms of the agreement.



6. General information and other key information

- Company Name : Bangchak Corporation Public Company Limited
- Head Office : 2098 M Tower Building, 8th Floor
Sukhumvit Rd., Phra Khanong Tai,
Phra Khanong, Bangkok 10260
- Nature of business : Nature of business: An oil refinery with a nameplate capacity of 120,000 barrels per day and a petroleum business covering retail and wholesale
- Registration No. : 0107536000269
- Telephone : 0 2 335 8888
- Fax : 0 2 335 8000
- Website : <http://www.bangchak.co.th>
- Company establishment: November 8, 1984
- Commercial operation : April 1, 1985
- Registered capital (as of December 31, 2017) 1,376,923,157 Baht, of which Baht 1,376,923,157 was paid up, dividing into 1,376,923,157 shares, at 1 Baht per share.
- Shareholders of BCP (as of September 15, 2017)

- Vayupak Fund 1	204 Million shares	14.84%
- Social Security Office	187 Million shares	13.59%
- Ministry of Finance	137 Million shares	9.98%
- Minor Shareholders	849 Million shares	61.59%
Total	<u>1,377 Million shares</u>	<u>100.00%</u>



□ Customers

- The public, via Bangchak service stations and those of dealers nationwide
- Industrial sector, including industrial plants
- Transport and service sectors, including airliners, ocean-going vessels, hotels, trucks, and construction work
- Agricultural sector, via agricultural cooperative service stations
- Overseas export markets.

□ Office and Terminals

- Head Office*
2098 M Tower Building, 8th Floor, Sukhumvit Road, Phra Khanong Tai, Phra Khanong, Bangkok 10260
Tel. 0-2335-8888, Fax 0-2335-8000
Email: info@bangchak.co.th
- Bangchak Refinery and Terminal
210 Soi Sukhumvit 64, Phra Khanong Tai, Phra Khanong, Bangkok 10260
Tel. 0-2335-4999 Fax 0-2335-4009
- Central Region Business Office and Bang Pa-In Terminal
99 Moo 9, Tambon Bang Krasan, Amphoe Bang Pa-in, Ayutthaya 13160
Tel. 0-3527-6999, 0-3535-0289, 0-3535-0292
Fax (Central Region Business Office) 0-3535-0290
Fax (Bang Pa-In Terminal) 0-3527-6999
- Northern Region Business Office
87/9 Yee-wan Building, 3rd Floor, Thung Hotel Road, Tambon Wat Ket, Amphoe Muang, Chiang Mai 50000
Tel. 0-5330-0484, Fax 0-5330-0485
- Northeastern Region Business Office
499 Moo 12, Mitraphab Road, Tambon Muang Kao, Amphoe Muang, Khon Kaen 40000
Tel. 0-4326-1751-52, 0-4326-1789, 0-4326-1791, Fax 0-4326-1790
- Southern Region Business Office
Room 402, 4th Floor, P.C. Tower, 91/1 Moo 1, Kanchanawithi Road, Tambon Bang Kung, Amphoe Muang, Surat Thani 84000
Tel. 0-7722-4790-2, Fax 0-7722-4793

* The Company is relocated its head office from 555/1 Energy Complex, 10th Floor, Building A, Vibhavadi Rangsit Rd., Phra Khanong Tai, Phra Khanong, Bangkok 10260, effective on February 22, 2017.



- Samut Sakhon Oil Distribution Center
100/149 Moo 1, Tambon Tha Chin, Amphoe Muang, Samut Sakhon 74000
Tel. 0-3482-0519-20
 - Si Racha Oil Distribution Center
115/14 Moo 10, Tambon Thung Sukhla, Amphoe Si Racha, Chon Buri 20230, Tel. 0-3849-3179, Fax 0-3849-3129
 - Rayong Oil Distribution Center
1, 3B Road, Tambon Map Ta Phut, Amphoe Muang, Rayong 21150, Tel. 0-3860-9389, Fax 0-3860-9413
 - Surat Thani Oil Distribution Center
104/1 Moo 2, Surat-Pak Nam Road, Tambon Bang Kung, Amphoe Muang, Surat Thani 84000
Tel. 0-7727-5056-8
 - Song Kla Oil Distribution Center
13/1 Moo 6, Tambon Sa Ting Mor, Amphoe Singha Nakorn, Song Kla 90280
Tel. 0-7433-2782, Fax 0-7433-2783
 - Suksawat Lubricant Oil Distribution Center
196 Moo 1, Suksawat Road, Tambon Pak Khlong Bang Pla Kot, Amphoe Phra Samut Chedi, Samut Prakan 10290
Tel. 0-2815-6997-8
- Subsidiaries
- BCPG Public Company Limited (BCPG)
2098 M Tower Building, 12th Floor, Sukhumvit Rd., Phra Khanong Tai, Phra Khanong, Bangkok 10260
Tel. 0-2335-8999 Fax. 0-2335-8900
Email: info@bcpgroup.com
Website: <http://www.bcpggroup.com>
 - Bangchak Green Net Co., Ltd. (BGN)
223/94 Country Complex, Building A, 19th Floor, Sanpawut Rd., Bangna, Bangna, Bangkok 10260
Tel. 0-2367-2699 Fax. 0-2745-7945
 - Bangchak Retail Co., Ltd. (BCR)
2098 M Tower Building, 17th Floor, Sukhumvit Rd., Phra



Khanong Tai, Phra Khanong, Bangkok 10260
Tel. 0-2335-4995 Fax. 0-2016-3963

- BBGI Co., Ltd. (BBGI)
2098 M Tower Building, 5th Floor, Sukhumvit Rod., Phra
Khanong Tai, Phra Khanong, Bangkok 10260
Tel. 0-2335-8899 Fax. 0-2335-8800

- Bangchak Biofuel Co., Ltd. (BBF)
28 Moo 9 (Highway No. 3048), Tambon Bang Krasan, Bang Pa-in
District, Ayudtthaya 13160
Tel. 0-3527-6500 Fax. 0-3527-6549
Website: <http://www.bangchakbiofuel.co.th>

- Bangchak Bioethanol (Chachoengsao) Co., Ltd. (BBE)
96/10-11 Moo 7, Tambon Koh Kanoon, Amphoe Panomsarakham,
Chachoengsao 24120
Tel. 0-3809-0670-2 Fax. 0-3809-0673

- Bangchak Solar Energy Co., Ltd. (BSE)
99/1 Moo (Highway No. 3048), Tambon Bang Krasan, Bang Pa-in
District, Ayudtthaya 13160
Tel. 0-3527-6000 Fax. 0-3527-6014
E-mail: info-sunny@bangchak.co.th
Website: <http://www.bangchak.co.th/sunny-bangchak/>

- Bangchak Solar Energy (Prachinburi) Co., Ltd.
99/1 Moo (Highway No. 3048), Tambon Bang Krasan, Bang Pa-in
District, Ayudtthaya 13160
Tel. 0-3527-6000 Fax. 0-3527-6014

- Bangchak Solar Energy (Chaiyaphum 1) Co., Ltd.
99/1 Moo (Highway No. 3048), Tambon Bang Krasan, Bang Pa-in
District, Ayudtthaya 13160
Tel. 0-3527-6000 Fax. 0-3527-6014



- Bangchak Solar Energy (Buriram) Co., Ltd.
99/1 Moo (Highway No. 3048), Tambon Bang Krasan, Bang Pa-in District, Ayudthaya 13160
Tel. 0-3527-6000 Fax. 0-3527-6014
- Bangchak Solar Energy (Buriram 1) Co., Ltd.
99/1 Moo (Highway No. 3048), Tambon Bang Krasan, Bang Pa-in District, Ayudthaya 13160
Tel. 0-3527-6000 Fax. 0-3527-6014
- Bangchak Solar Energy (Nakhonratchasima) Co., Ltd.
99/1 Moo (Highway No. 3048), Tambon Bang Krasan, Bang Pa-in District, Ayudthaya 13160
Tel. 0-3527-6000 Fax. 0-3527-6014
- BCP Energy International Pte. Ltd.
8 Marina Boulevard # 05-02, Marina Bay Financial Centre, Singapore 018981
- BCP Innovation Pte. Ltd.
8 Marina Boulevard # 05-02, Marina Bay Financial Centre, Singapore 018981
- BCP Trading Pte. Ltd.
160 Robinson Road #25-03, Spore Business Federation CTR, Singapore 068914
- Nido Petroleum Limited
Level 46, Tower One – International Towers Sydney, 100 Barangaroo Avenue, Barangaroo NSW 2000, Australia

Others:

- **Bangchak Initiative Innovation Center (BiIC)**
2098 M Tower Building, 5th Floor, Sukhumvit Rd., Phra Khanong Tai, Phra Khanong, Bangkok 10260
Email: biic@bangchak.co.th



- **Happiness Sharing Foundation**
2098 M Tower Building, 18th Floor, Sukhumvit Rd., Phra Khanong
Tai, Phra Khanong, Bangkok 10260
Tel.0 2335 4608, Fax.0 2016 3969



□ Information on Reference Persons

Securities Registrar	The Stock Exchange of Thailand 93 Ratchadaphisek Road, Dindaeng, Dindaeng, Bangkok 10400 Thailand Tel. 0-2009-9000 Fax. 0-2009-9991
Auditor	KPMG Phoomchai Audit Limited 48 th - 51 st Floors, Empire Tower 195 South Sathorn Road, Yannawa, Sathorn, Bangkok 10120 Thailand Tel. 0-2677-2000 Fax. 0-2677-2222
Registrar and Debenture Holders Representative	Bangkok Bank Public Company Limited 333 Silom Road, Silom, Bangrak, Bangkok 10500 Thailand Tel. 0-2230-1478 Website: www.bangkokbank.com Bank of Ayudhya Public Company Limited 1222 Rama III Road, Bang Phongphang, Yan Nawa, Bangkok 10120 Thailand Tel. 0-2296-5715 Website: www.krungsri.com
Legal Advisor	Baker & Mckenzie Ltd. 25 th Floor, Abdulrahim Place, 990 Rama IV Road, Silom, Bangrak, Bangkok 10500 Thailand Tel. 0-2636-2000 Fax. 0-2636-2111



LS Horizon Limited

14th Floor, GPF Witthayu Tower, A 93/1
Wireless Road, Lumpini, Phatumwan,
Bangkok 10330 Thailand
Tel. 0-2627-3443 Fax. 0-2627-3250

Chandler MHM Law Officers Limited

20 Bubhajit Building, 7th-9th Floor, North
Sathorn Road, Silom, Bangrak,
Bangkok 10500 Thailand
Tel. 0-2266-6485 Fax. 0-2266-6483



7. Securities and Shareholder Information

• Registered Capital and Paid-up Capital

The Company's registered capital amounted to Baht 1,376,923,157 of which Baht 1,376,923,157 was paid up. An equal number of common shares were issued at a par value of one Baht each.

• Shareholders

Top 10 Major Shareholders (as of September 15, 2017)		Number of Shares	Shareholding (%)
1.	Vayupak Fund 1	204,333,600	14.84
2.	Social Security Office	187,148,897	13.59
3.	Thai NVDR Co., Ltd.	138,066,757	10.03
4.	Ministry of Finance	137,442,767	9.98
5.	Krungsri Dividend Stock LTF	37,598,000	2.73
6.	AIA TH-EQ4-P	30,000,069	2.18
7.	STATE STREET BANK EUROPE LIMITED	25,767,176	1.87
8.	Bangkok Life Assurance PLC	23,056,200	1.67
9.	HSBC (SINGAPORE) NOMINEES PTE LTD	18,767,700	1.36
10.	NORTRUST NOMINEES LIMITED-NT0 SEC LENDING THAILAND CL AC	18,757,954	1.36
Top 10 Total		820,939,120	59.61
Grand Total		1,376,923,157	100.00

Shareholders through Thai NVDR Co., Ltd. Who owns more than 0.50% of the paid-up BCP shares

Top Major Shareholders (as of September 15, 2017)		Number of Shares	Shareholding (%)
1.	N.C.B.TRUST LIMITED-NORGES BANK 5	26,842,600	1.95
2.	BNY MELLON NOMINEES LIMITED	14,494,155	1.05
3.	STATE STREET BANK EUROPE LIMITED	10,827,955	0.79
4.	RBC INVESTOR SERVICES BANK S.A.	8,403,400	0.61
5.	STATE STREET BANK AND TRUST COMPANY	7,963,100	0.58
6.	UBS AG LONDON BRANCH	7,749,000	0.56
Total		76,280,210	5.54

Source: <http://www.set.or.th/set/companyholder.do?symbol=BCP-R>

Note: Investors can examine updated shareholders' information at Bangchak's website before the AGM



• Issuance of other securities

Debentures

Tris Ratings Co., Ltd., recommended for Bangchak's corporate and debt instrument credit 'A' ranking with a 'Stable' credit outlook.

This year Bangchak issued no debentures, whether domestic or abroad.

As of the year-end, Bangchak's posted Baht 14 billion in all outstanding debentures, as detailed below.

Debenture	Value (Baht million)	Interest rate (%/year)	Maturity (years)	Redemption Date
BCP194A	2,000	4.35	5	April 11, 2019
BCP194B	2,000	4.92	7	April 30, 2019
BCP214A	2,500	4.81	7	April 11, 2021
BCP224A	1,000	5.35	10	April 30, 2022
BCP244A	3,500	5.18	10	April 11, 2024
BCP273A	2,000	4.72	12	March 3, 2027
BCP303A	1,000	5.05	15	March 3, 2030

Dividend Policy

The Company has the policy to pay out dividend to the shareholders at the rate of not less than 30 percent of net profit after deduction of allocation of legal reserve. However, this is subject to the economic situation, the Company's cash flow and investment plans of the Company and its subsidiaries according to the necessary, appropriation and other concerning as the Board of Directors' consideration.



Dividend Payment History BCP

฿	2012	2013	2014	2015	2016	2017 (first half)
Earnings per share (Baht/share)	3.10	3.38	0.52	3.01	3.47	2.23
Annual dividend (Baht/share)	1.25	1.35	1.00	2.00	1.80	1.05
Dividend rate (%)	40	40	192	66	52	47

Subsidiaries' dividend policies (only dividend-paying ones)

- Bangchak Green Net Co., Ltd.

For a given fiscal year, the holders of preferred shares are entitled to annual dividends equivalent to the average daily interest rates for one-year fix deposits announced by Krungthai Bank Plc plus 3%. Dividends are paid in proportion to each paid-up share value when the dividends are paid out as stated in the resolution of the annual general meeting of shareholders (AGM). For a given year, if the company's profit is less than the dividends calculated for holders of preferred shares, all dividends are to be paid from such profit to holders of preferred shares only, and none is to be paid to holders of common shares. Any outstanding dividends for holders of preferred shares will be carried forward or accumulated to the following year along with those for the holders of common shares. For a given year, if the company's profit exceeds the dividends calculated for holders of preferred shares, the AGM will approve dividends for holders of common shares, case by case.



□ Bangchak Biofuel Co., Ltd.

Dividend payment must have the approval of an AGM and will be made only when the company has allocated at least 5% of its net profit in a given year as provisional capital until the provisional capital reaches 10% of the registered capital. The Board may consider interim dividend payment to shareholders but not as long as it still has cumulative losses.

□ BCPG Plc.

This company's dividend payment is no lower than 40% of its net profit according to separate financial statements after deduction of all reserved funds under its regulations and related laws. The Board of Directors' resolution on dividend payment will be raised for the approval of the shareholders at the AGM, except for interim dividend payment, which the Board authorized to approve and make a subsequent report to shareholders' meeting. Dividend payment is subject to each year's economic situation, the company's cash flow, and investment plans of Bangchak and affiliates. The Board, however, will also take into consideration other factors as seen appropriate.

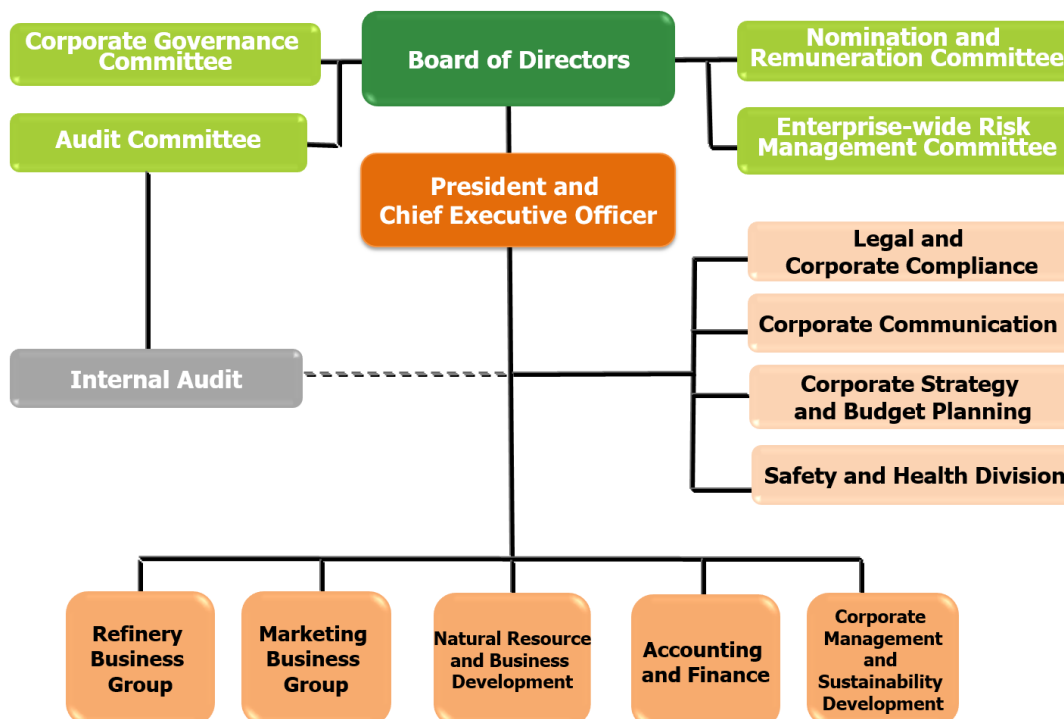
□ Bangchak Solar Energy Co., Ltd., and five other companies under project areas.

This company's dividend payment is no lower than 80% of the net profit appearing in its particular financial statements after deducting all provisions under the company's regulations and under the law, subject to the cash flow remaining after deducting the company's annual obligations and annual investment plan requirements, together with other considerations considered suitable and essential by its board of directors.



8. Management Structure

The Board of Directors and the management perform in the best interests of Bangchak and its shareholders under a clear, balanced, and accountable management structure. The Board monitors and ensures that the management implements its policies, plans and strategies, and that there is clear distinction of roles and responsibilities between the Board and the management.



Notes: The Audit Committee considers, appoints, transfers, dismisses, and undertakes the annual evaluation of the Chief Audit Executive and review the independence of Internal Audit.

1. Board of Directors There were 15 Directors (As of December 31, 2017) as follows:

	Name	Position	Appointment date
1.	Mr. Pichai Chunhavajira	- Chairman (Independent director)	April 24, 2012 (Independent director since 1 June 2017)



Name	Position	Appointment date
2. Mr. Surin Chiravisit	<ul style="list-style-type: none">- Vice Chairman (Independent Director)- Chairman of the Nomination and Remuneration Committee- Member of the Enterprise-wide Risk Management Committee	April 8, 2010
3. Mr. Suthep Wongvorazathe	<ul style="list-style-type: none">- Independent Director- Chairman of the Audit Committee- Member and Secretary of the Nomination and Remuneration Committee	October 30, 2012
4. Pol.Lt.Gen. Chaiwat Chotima	<ul style="list-style-type: none">- Independent Director- Member of the Audit Committee- Member of the Nomination and Remuneration Committee	April 9, 2014
5. Gen.Apirat Kongsompong	<ul style="list-style-type: none">- Independent Director- Member of the Nomination and Remuneration Committee	September 26, 2014
6. Adm. Sucheep Whoungmaitree	<ul style="list-style-type: none">- Independent Director- Member of the Nomination and Remuneration Committee	May 26, 2015
7. Mr. Krisada Chinavicharana	<ul style="list-style-type: none">- Independent Director- Member of the Audit Committee	November 23, 2015
8. Gen. Vitch Devahasdin	<ul style="list-style-type: none">- Independent Director- Chairman of the Corporate Governance Committee	April 5, 2016
9. Mrs. Prisana Praharnkhasuk	<ul style="list-style-type: none">- Independent Director- Member of the Audit Committee	April 5, 2016
10. Mr. Teerapong Wongsiwawilas	<ul style="list-style-type: none">- Independent Director- Member of the Corporate Governance Committee	January 26, 2017 (replacing Prof.Dr. Chai-anan Samudavanija)
11. Mr. Prasong Poontaneat	<ul style="list-style-type: none">- Director (Representative from Ministry of Finance)- Chairman of the Enterprise-wide Risk Management Committee	April 24, 2012
12. Mr. Visit Vongruamlarp	<ul style="list-style-type: none">- Director (Representative from Ministry of Finance)- Member of the Enterprise-wide Risk Management Committee	April 8, 2015
13. Mr. Jarin Chakkaphark	<ul style="list-style-type: none">- Director (Representative from Social Security Office)- Member of the Corporate Governance Committee	October 12, 2017 (replacing M.L. Puntrik Smiti)



	Name	Position	Appointment date
14.	Dr. Prasert Sinsukprasert	- Director - Member of the Enterprise-wide Risk Management Committee	April 5, 2016
15.	Mr. Chaiwat Kovavisarach	- President and Chief Executive Officer - Member and Secretary of the Corporate Governance Committee - Member and Secretary of the Enterprise-wide Risk Management Committee - Secretary to the Board of Directors	October 30, 2012
Directors whose terms were completed and resigned in 2017			
1.	Prof.Dr. Chai-anan Samudavanija	- Vice Chairman (Independent director) - Chairman of the Nomination and Remuneration Committee	April 24, 2003 (Resigned on January 26, 2017)
2.	M.L. Puntrik Smiti	- Director (Representative of Social Security Office) - Member of the Corporate Governance Committee	October 27, 2015 (Resigned on October 10, 2017)

The names and number of the authorized directors who have authority to sign on behalf of the Company are: Mr. Pichai Chunchavajira jointly with Mr. Chaiwat Kovavisarach with affixation of the Company's seal or any one of these two directors signs jointly with Mr. Surin Chiravisit or Mr. Suthep Wongvorazathe or Pol.Lt.Gen. Chaiwat Chotima or Gen.Apirat Kongsompong or Mr. Visit Vongruamlarp or Adm. Sucheep Whoungmaitree or Mrs. Prisana Praharnkhasuk, being two persons, with affixation of the Company's seal.

Board structure

- Board Diversity prevails, equipped with a series of skills matching Bangchak's business strategies, which are identified through Board Skill Matrix preparation



- The Board consists of 5-15 directors without gender discrimination. Today there are 15 of them, with one female member.
- Independent directors account for more than one-third of the Board. Today there are 10 of them, which exceeds half of the Board, thus conforming to good governance.
- **The Chairman cannot be the same person as the President and Chief Executive Officer and does not belong to any subcommittee in view of clear-cut responsibilities and duties.**

Board Skills Matrix

Name/Specific Expertise		Oil business	Retail business	Energy business	International business	Accounting and finance	Internal control	Compliance	Organizational development and innovation	Society, environment, and safety	Risk and crisis management
1.	Mr. Pichai Chunhavajira	x	x	x	x	x	x		x	x	x
2.	Mr. Surin Chiravisit	x	x	x				x	x	x	x
3.	Mr. Suthep Wongvorazathe	x	x	x	x	x	x				
4.	Pol.Lt.Gen. Chaiwat Chotima	x	x	x			x			x	x
5.	Gen. Apirat Kongsompong					x	x		x	x	x
6.	Adm. Sucheep Whoungmaitree						x		x	x	x
7.	Mr. Krisada Chinavicharana					x	x	x			x
8.	Gen. Vitch Devahasdin						x		x	x	x
9.	Mrs. Prisana Praharnkhasuk	x		x		x			x		
10.	Mr. Teerapong Wongsiwawilas						x	x	x		x
11.	Mr. Prasong Poontaneat	x	x	x		x		x	x		x
12.	Mr. Visit Vongruamlarp		x	x		x	x				x
13.	Mr. Jarin Chakkaphark						x		x	x	
14.	Dr. Prasert Sinsukprasert	x	x	x							x
15.	Mr. Chaiwat Kovavisarach	x	x	x	x	x	x		x		x
Total		8	8	9	3	8	11	4	10	7	12

Independent Directors

There is a need to ensure that independent directors are critical to good governance, looking after the interests of Bangchak and its shareholders by imposing checks and balances on Board decision-making and



commanding awareness of their duties with due regard for righteousness and free views from any party's influence. The Board therefore devised definitions and qualifications of independent directors in Section 3.1 of the corporate governance policy, with stricter shareholding requirements than those of SEC and SET, that is, 0.5% against the legal maximum of 1% of the total eligible voting shares of Bangchak, its parent company, subsidiaries, associates, major shareholder or controller, and independent directors' related parties.

Appointment and dismissal of Directors

1. Shareholder's meetings elect Directors through majority voting with one shareholder holding one vote per share held and can elect Directors individually. The candidates with the most votes are to be appointed Directors up to the number open at the meeting. If more candidates receive equal votes than the number of Directors required, the Chairman of the meeting must cast a deciding vote.
2. In every Annual General Meeting (AGM), one-third of the Directors must retire. If this number is not a multiple of three, then the number nearest to one-third. The names of the Directors to retire during the first and second year after the Company was registered are to be drawn by lots if not agreed otherwise. For subsequent years, those with the longest terms must retire. The retired Directors can be re-elected.
3. Other than the completion of term, a Director may retire for to the following reasons:
 - death



- resignation (effective from the date the Company receives the letter of resignation)
 - lack of qualifications according to the Public Company Limited Act and the Securities and Exchange Act
 - decision of the shareholders' meeting to resign according to the Public Company Limited Act
 - court order
4. In case a Director's position is vacant due to other reason than the completion of term, the Board of Directors is to elect a candidate with qualifications according to the Company's regulations in the next meeting except when the Director's term is to be completed in less than two months. At least, a three-quarter vote of the Directors present at the meeting is required. The elected Director holds the position until the completion of term of the Director they have replaced.

Policy on Director Nomination

“To nominate Directors, the Company focuses on people with knowledge, capability, experience, sound career profile, leadership, vision, morality, ethics and good attitude toward the organization, who can dedicate adequate time for the Company's benefit. Moreover, consideration was also given to Board diversity and Board skill matrix in order to nominate the directors's qualifications **by considering skills which have been missing and also appropriate qualifications in compliance with the structure of Directors and in line with the Company's business strategies. Bangchak will also use Director Pool from the Thai**



Institute of Directors (IOD) to nominate directors through transparent procedures to bolster the confidence of shareholders.”

Board Diversity

Nomination of directors takes into account diversity in several aspects, including educational background, career experience, skills, and expertise without any regard for gender, age, nationality, origin, religious belief, or other differences.

Directors' Nomination

1. Bangchak allows minor shareholders to nominate directors by submitting their names to it.
2. The Nomination and Remuneration Committee (NRC) reviews Board structure for suitability and Bangchak's strategic needs.
3. NRC defines the competency and experience for directors to be nominated by using Director Qualifications and Skill Matrix so that they may match Bangchak's goals and strategies.
4. NRC proceeds with nomination and tables qualified persons for directors in place of those whose terms expire or for additional directors, using IOD's Director Pool as part of the nomination process. NRC is also to nominate directors to its secretary.
5. NRC selects those qualified to be directors and tables their names for the Board's endorsement
6. The Board endorses the list of directors for subsequent approval by the AGM.



Terms of Directorship

Directors do not hold more than three consecutive terms, meaning that they cannot serve for more than nine years (three years in each term) to allow the Company to find other qualified Directors for the maximum benefit of the Company.

“The appropriate term for directorship is no more than three consecutive terms (from 2008 onward) except for when a director is deemed suitable to hold the position for a longer period. The Board will consider the independence and effectiveness of the director who is under consideration and defend their decision to the shareholders.”

Roles, Duties, and Responsibilities of the Board of Directors

1. Carry out duties under laws, objectives and regulations of the Company as well as resolutions of shareholders' meetings with honesty, protect the Company's benefit and have accountability to the shareholders.
2. Lead the Company in business administration by defining and reviewing its vision, objectives, main goals, and business strategies, and by pursuing helpful information, while freely expressing views.
3. **Oversee the management's translation of strategic plans into operational plans, assess the outcomes and steer affiliates by requiring their management to report their performances and other key matters for the Board's acknowledgment every month.**
4. Manage business for sustainable value, which includes sound performance, creating value with long-term perspectives, ethical and



responsible business that benefits or eases socio-environment impacts (Good Corporate Citizen), and resilience to changes.

5. Ensure that all Directors and employees are filled with duties of care and those of loyalty, and that they are engaged in transactions free of conflicts of interest.
6. Independent and non-executive Directors are prepared to express their opinions freely in formulating strategies, management, use of resources, appointment of Directors and business standard as well as to disagree with other Directors or the administration on conflicts that affect the equality of all shareholders.
7. Establish a corporate governance policy and code of conduct to guide Directors and employees, with an annual review and assessment.
8. Exemplify compliance with the corporate governance policy and code of conduct, together with the Stock Exchange of Thailand (SET)'s policy on good practices for Directors of listed companies.
9. Establish an effective and reliable accounting system, financial report, internal controls and internal audit.
10. Establish a system for risk management through appropriate and sufficient risk management guidelines and measures, with regular monitoring.
11. Establish a suitable, transparent, and fair executive recruitment system under which executive vice presidents upward must be appointed by the Board.
12. Establish a suitable executive compensation system to inspire them and benchmark them with prevailing industry practices, linking it with Key Performance Indicators (KPIs). Short-term compensation means



monthly salaries and bonuses; long-term compensation is individually decided, including Employee Stock Option Program (ESOP) and Employee Joint Investment Program (EJIP).

13. Appoint a Company Secretary under securities and exchange laws to advise the Board on essential laws and regulations, handle document preparation for Board meetings, handle key Board documents and activities, coordinate compliance with Board resolutions, and disclose the Company Secretary's qualifications and experience in the annual report and on the Company's website.
14. Regularly and fully report to the shareholders the corporate status and its outlooks (positive and negative) with adequate rationales.
15. Assess and review the performances of itself and the President and Chief Executive Officer each year for improvement.
16. Report on one's own portfolio of securities, as well as those of their spouses and children not yet of legal age, in the Company and affiliated companies to the monthly Board of Directors' meeting and must report to the Company without delay in the following cases:
 - Directors or related person with vested interests in Bangchak's or its affiliates' management
 - Hold shares or debentures in the Company or the subsidiary companies.
17. Maintain the Company's inside information obtained from their job performance and refrain from exploiting such information for personal or other parties' gains. Undertake no securities transactions at least



one month prior to announcement of financial statements and at least three days after such announcement.

- 18. Each Director cannot hold the position of Director in more than other two listed companies in the Stock Exchange of Thailand (SET), excluding Directors' current positions as of August 19, 2016, the policy-amending date.**

Roles and Responsibilities of the Chairman, leader of the Board

1. Steer, monitor, and ensure efficient performance of the Board in fulfilling the Company's objectives and main goals.
2. Ensure full participation by the Directors in advocating a corporate culture of ethics and good corporate governance.
3. Set Board meeting agenda in consultation with the President and Chief Executive Officer, with measures to ensure that essential matters are included
4. Allocate adequate time for the management to table matters and for Directors to thoroughly discuss important matters
5. Promote Directors' exercising of full discretion, their attention to all matters brought to the meetings, and corporate governance matters
6. Promote sound relations between the Board and the management. Support the management's management without interfering in day-to-day affairs.

The Board is authorized to approve various matters, including:

- Vision, short-term and long-term strategic plans
- Annual plans and budgets
- Investment and operation of key projects for Bangchak and affiliates



- Management restructuring
- Dividend policy
- Performance assessment of itself and the President and Chief Executive Officer
- Decision on the President and Chief Executive Officer's compensation
- Appointment of Directors who resign during the year and that of sub-committees
- Designation of Directors authorized to sign and bind Bangchak
- Appointment of executive vice presidents upward
- Appointment of Directors serving on Bangchak's affiliates and setting of oversight guidelines for such companies.

Board meetings

- Scheduled monthly meetings for the year are agreed in advance by the Board
- Meetings among the non- management directors and the independent directors at least twice a year**, these preceded the Board meetings. The intention is to freely discuss general issues on management or corporate governance, with subsequent notification to the President and Chief Executive Officer so that the management may take actions on such issues.
- Each Board meeting should be attended by at least three-quarters of all directors. Additionally, **at least three-fourths of all board members are needed to vote on an issue.**



- Each year, **directors should attend no less than 75% of all Board meetings.** (Directors should attend the meeting at least 9 of 12 times a year)

In 2017, **the Board held 18 meetings (six extra meetings) and one annual seminar on corporate strategies with the management to revise the corporate vision and set goals every five years** under Bangchak's vision, mission, and values, together with an assessment of business circumstances.

New Directors' Orientation

Bangchak stages lectures and company visits and prepares a directors' manual for new directors to be informed of its business nature and approaches, relevant laws and regulations, Corporate Governance Policy, and other essential information that will prove useful to their efficient performance. This year the following directors attended new directors' orientations:

- Mr. Teerapong Wongsiwawilas on February 10, 2017
- Mr. Jarin Chakkaphark on October 19, 2017

Directors' Development

Bangchak encourages its Board to undergo additional study and training to enhance their knowledge of Board roles and duties in efficient management under corporate governance. To this end, it applied for IOD memberships on behalf of all directors to benefit from related intelligence



and knowledge accrual. This year the following directors took advantage of such training and study visits:

- Lecture on Environmental Scanning and Implication to BCP and Oil Price Outlook during the seminar on the annual organizational strategies between 14-15 July 2017 to the Board.
- Visit to lithium mine project, development of Startup business, including electric vehicle and battery business between 4-12 November 2017 in the US for the Board.
- Training of Director Certification Program (246/2017) organized by IOD between 1 August – 2 October 2017 to Mr. Teerapong Wongsiwawilas.

As of today, three directors have attended IOD's Director Accreditation Program (DAP) and eleven have attended its Director Certification Program (DCP). Training details appear under "The Board".

Sub-Committees

The Board of Directors elected Sub-committees (or Committees) to facilitate the Company's business, undertaking with four sub-committees. The Committees can serve for three years in each term. Details about subcommittee charters appear in the Corporate Governance Policy, publicized on Bangchak's website.

1. Audit Committee (AC)

The Audit Committee must be made up of independent directors. At least three independent directors form the Audit Committee, and at least one of



them must be adequately knowledgeable or experienced in accounting, finance, or audit to review the credibility of financial statements.

Name	Position
1. Mr. Suthep Wongvorazathe	Chairman and Independent Director with expertise in accounting and finance
2. Mrs. Prisana Praharnkhasuk	Member and Independent Director with expertise in accounting and finance, and graduate accounting
3. Pol.Lt.Gen. Chaiwat Chotima	Member and Independent Director
4. Mr. Krisada Chinavicharana	Member and Independent Director
5. Executive Vice President, Internal Audit	Secretary

Roles and Responsibilities

- 1) To ensure accuracy and adequacy of the Company's financial reporting according to the Accounting Principles governed by laws.
- 2) To ensure that the Company has suitable and efficient internal control system and internal audit and to ensure the efficiency and adequacy of the risk management system.
- 3) To review the performance of the Company to ensure compliance with the securities and exchange law, regulations of the Stock Exchange of Thailand (SET) or laws relating to business of the Company.
- 4) To review a connected transaction or transaction that may lead to conflict of interest or acquisition and disposition of assets transaction to ensure compliance with the laws and regulations of the Stock Exchange of Thailand (SET), and that it is reasonable and brings the highest benefit to the Company.
- 5) To inspect and consider with the management on the defects that have been found out and on the responses from the management.



- 6) To empower the auditing and investigating of all related party under the authorization of the Audit Committee and also to authorize in hiring an expert so as to audit and investigate in compliance with the Company's regulations.
- 7) To prepare a report of the Audit Committee and disclose it in the annual report of the Company, and have such report signed by Chairman of the Audit Committee.
- 8) To consider, select, nominate the person who is independent to be the Company's auditor, recommend remuneration of the Company's auditor, recommend the removal of the Company's auditor and, at least once a year, attend the private meeting with an auditor without management.
- 9) To consider auditing scopes and plans of the external auditor and the Internal Audit Office so that they are contributory to each other and to reduce double operations as concerns financial auditing.
- 10) To approve the Charter, audit work plans, budget, training plans and manpower of the Internal Audit Office
- 11) To appoint, transfer, dismiss, and undertake annual evaluation of the Chief Audit Executive and review the independence of Internal Audit.
- 12) To review the efficiency and effectiveness of internal control and risk management focusing on the issue of Information Technology.
- 13) In performing the duty of the Audit Committee, if there is transaction or act which could extremely affect the Company's financial status and the Company's performance, namely
 - Transaction which lead to conflict of interest
 - Dishonest, extremely unusual or remiss Internal Control system



- Breaking the securities and exchange law, regulations of the exchange or laws relating to business of the Company,

The Audit Committee has to report any of those to the Board of Directors so as to modify and revise within prescribed time. If the Board of Directors or executives does not modify and revise within prescribed time, the Audit Committee is able to report this transaction or act to the Securities and Exchange Commission or the Stock Exchange of Thailand.

14) To perform any other act assigned by the Board of Directors with approval of the Audit Committee.

The external auditor's employment contract may be revoked if it does not perform, neglects its duties, or is engaged in malfeasance.

2. Nomination and Remuneration Committee (NRC)

The Nomination and Remuneration Committee consists of at least three persons, and more than half must be independent directors. At least one member must be knowledgeable or experienced in personnel management. The Chairman of the committee must be an independent director.

Name	Position
1. Mr. Surin Chiravisit	Chairman and Independent Director
2. Adm. Sucheep Whoungmaitree	Member and Independent Director
3. Gen. Apirat Kongsompong	Member and Independent Director



4. Pol.Lt.Gen. Chaiwat Chotima	Member and Independent Director
5. Mr. Suthep Wongvorazathe	Member and Secretary, Independent Director

Roles and Responsibilities

1. Define required qualifications for potential Directors and President and Chief Executive Officer.
2. Recommend qualified candidates for the positions of Directors and President and Chief Executive Officer to the Board of Directors.
3. Define criteria of remuneration for Directors and the President and Chief Executive Officer.
4. Submit the remuneration for Directors to the Board of Directors and then for the shareholders for approval.
5. Submit the remuneration for the President and Chief Executive Officer to the Board of Directors for approval.
6. Review and summarize the President and Chief Executive Officer's succession plan every year and report it to the Board of Directors.
7. Perform other tasks as assigned by the Board of Directors.

3. Enterprise-wide Risk Management Committee (ERMC)

The Enterprise-wide Risk Management Committee consists of at least three persons and at least one member must be knowledgeable in risk management. Qualified external parties can serve as members.

Name	Position
1. Mr. Prasong Poontaneat	Chairman and Non-Executive Director
2. Mr. Surin Chiravisit	Member and Independent Director



- | | |
|------------------------------|------------------------------------------|
| 3. Mr. Visit Vongruamlarp | Member and Non-executive Director |
| 4. Dr. Prasert Sinsukprasert | Member and Non-executive Director |
| 5. Mr. Chaiwat Kovavisarach | Member and Secretary, Executive Director |

Roles and Responsibilities

1. Set policy, strategies and objectives of the enterprise-wide risk management.
2. Develop enterprise-wide risk management system in view of continuous efficiency.
3. Promote enterprise-wide risk management at all levels of the organization.
4. Ensure that the Company has appropriate and efficient risk management.
5. The Chairman of the Enterprise-wide Risk Management Committee reports the findings to the Board of Directors' next meeting.
6. Perform other tasks as assigned by the Board of Directors.

4. Corporate Governance Committee (CGC)

The Corporate Governance Committee consists of at least three directors and at least one member must be knowledgeable in corporate governance principles in line with international standards. The Chairman of the committee must be an Independent Director.

Name	Position
1. Gen. Vitch Devahasdin	Chairman and Independent Director
2. Mr. Teerapong Wongsiwawilas	Member and Independent Director
3. Mr. Jarin Chakkaphark	Member and Independent Director



4. Mr. Chaiwat Kovavisarach Member and Secretary, Executive Director

Roles and Responsibilities

1. Recommend the implementation of corporate governance to the Board of Directors
2. Monitor the work of the Committee and the management in compliance with the principles of corporate governance.
3. Review the implementation of corporate governance by comparing it with international standards and recommend it to the Board of Directors for continual follow-ups.
4. Provide the Corporate Governance Policy to the Company's Corporate Governance Working Team.
5. Perform other tasks as assigned by the Board of Directors.

Summary of Board and Sub-committees meeting attendance

Name		Meeting attendance / total (times)								Remarks
		Board of Directors			Sub-Committees					
		Meetings	Seminars	Total	AC	NRC	ERMC	CGC		
1	Mr. Pichai Chunhavajira ¹	18/18	1/1	19/19	-	-	-	-		
2	Mr. Surin Chiravisit ²	18/18	1/1	19/19	-	5/5	5/5	-		
3	Mr. Suthep Wongvorazathe	18/18	1/1	19/19	13/13	5/5	-	-		
4	Gen. Vitch Devahasdin ³	16/18	0/1	16/19	-	2/2	-	3/3		
5	Adm. Sucheep Whouangmaitree ⁴	16/18	1/1	17/19	-	5/5	-	-		
6	Gen. Apirat Kongsompong	12/18	0/1	12/19	-	4/5	-	-		
7	Pol. Lt. Gen. Chaiwat Chotima	18/18	1/1	19/19	12/13	5/5	-	-		
8	Mr. Krisada Chinavicharana	16/18	1/1	17/19	12/13	-	-	-		
9	Mrs. Prisana Praharnkhasuk	17/18	1/1	18/19	13/13	-	-	-		
10	Mr. Teerapong Wongsiwawilas ⁵	15/16	1/1	16/17	-	-	-	3/3	Appointed on 26 Jan. 2017	
11	Mr. Jarin Chakkaphark ⁶	2/3	0/0	2/3	-	-	-	0/1	Appointed on 12 Oct. 2017	
12	Mr. Prasong Poontaneat	18/18	1/1	19/19	-	-	7/8	-		
13	Mr. Visit Vongruamlarp	17/18	1/1	18/19	-	-	7/8	-		
14	Dr. Prasert Sinsukprasert	15/18	1/1	16/19	-	-	7/8	-		
15	Mr. Chaiwat Kovavisarach	18/18	1/1	19/19	-	-	8/8	3/3		



Directors who completed their terms and resigned in 2017										
1	Prof. Dr. Chai-anan	Samudavanija	0/2	0/0	0/2	-	-	-	-	Resigned on 26 Jan. 2017
2	M.L. Puntrik	Smiti	12/14	1/1	13/15	-	-	-	2/2	Resigned 10 Oct. 2017

- Note
- 1/ Chairman did not join any Sub-committee as member.
 - 2/ Appointed as Chairman of NRC on 26 January 2017, and as Member of ERM and dismissed from Chairman of CGC on 27 April 2017
 - 3/ Appointed as Chairman of CGC and dismissed as Member of NRC on 27 April 2017
 - 4/ Appointed as Member of NRC on 26 January 2017 and dismissed as Member of CGC on 27 April 2017
 - 5/ Appointed as Member of CGC on 27 April 2017
 - 6/ Appointed as Member of CGC on 31 October 2017

Assessment of directors' performances

The Board completes business performance assessment forms at least once a year, which the Company Secretary will arrange for delivery and collection for making an executive summary or the results for presentation at a Board meeting. Directors jointly consider business performance and suggest improvements. Assessment scores are given in percent, with >85%=excellent, >75%=very good, >65%=good, >50%=fair, ≤50%=improvement needed. The assessment is summarized below:

1) Individual directors

- Self-assessment relies on topics, namely responsibility for their roles, training and self-development, and conformance to the Corporate Governance Policy. The overall summary of assessment findings showed an average score of 95.4%, regarded as excellent.
- Cross-assessment by group (3-4 unnamed directors assessing another director) relies on topics, namely responsibility for their roles



and directors' independence. The overall summary of assessment findings showed an average of 96.7%, regarded as excellent.

2) Entire Board relies on topics, namely Board Policy Structure and Qualifications of Board, Board performances, Board meetings, and self-development of Directors. The overall summary of assessment findings showed an average score of 96.7%, regarded as excellent.

3) Sub-committees rely on responsibilities and meetings; the evaluations of all Committees were as follows:

- Audit Committee, the group evaluation had the average score of 97.0%, rated excellent.
- Nomination and Remuneration Committee, the group evaluation had the average score of 94.3%, rated excellent.
- Corporate Governance Committee, the group evaluation had the average score of 97.2%, rated excellent.
- Enterprise-wide Risk Management Committee, the group evaluation had the average score of 96.0%, rated excellent.

Board Remuneration

- 1) The Board's remuneration comes in three forms: monthly (retainer) remuneration, meeting allowances, and bonus. Such remuneration, made comparable to those of the same industry, is linked to the performance of the Company and individual directors.
- 2) Directors with additional responsibilities, including subcommittee service, shall receive additional remuneration linked to the level of assigned responsibilities.



- 3) In line with good corporate governance, the Board has instituted the reporting of individual directors' remuneration and the management's remuneration – which includes disclosure of the remuneration of directors or executives, or both, if they are appointed to other positions in subsidiaries – in the Annual Report.

Policy on Director Remuneration

In setting directors' compensation, Bangchak takes into account suitability for duties, assigned responsibility, and parity with SET-listed industry and business peers of comparable sizes. Such compensation must be attractive enough to inspire quality performance to achieve Bangchak's goals and business directions under a transparent process to bolster shareholders' confidence.

Director Remuneration approved by the 2017 AGM of April 5, 2017, are as follows:

1) Monthly remuneration and meeting allowance

The Board of Directors	Monthly Remuneration (Baht/person)	Meeting Allowance (Baht/person/time) (Only for attending directors)
The Board of Directors	30,000	30,000
The Sub-Committees		
1. The Audit Committee	10,000	15,000
2. The Nomination and Remuneration Committee	-	15,000
3. Enterprise-wide Risk Management Committee	-	15,000



The Board of Directors	Monthly Remuneration (Baht/person)	Meeting Allowance (Baht/person/time) (Only for attending directors)
4. Corporate Governance Committee	-	15,000
5. Other committees that may be appointed in the future by the Board as seen fit and necessary	-	15,000

The Chairman of the Board of Directors and the Chairman of the Sub-Committees shall receive monthly remuneration and meeting allowances higher than those of members by 25 percent, whilst the Vice Chairman of the Board of Directors shall receive monthly remuneration and meeting allowances higher than those of members by 12.5 percent respectively.

2) Bonuses for Directors

0.75 percent of the net profit, but not over 3,000,000 Baht/year per director. The calculated amounts are to reflect individual periods of service. Moreover, the Chairman and Vice Chairman shall receive the bonus higher than those of members by 25 percent and 12.5 percent respectively.

3) Other Remuneration

Group health insurance

IPD+OPD treatment with annual health insurance not exceeding 50,000

Baht (excluding VAT) per one director



Directors' Other Expenses

1) Other Essential Business Expenses

- Position car for the Chairman's business convenience
- Driver for the Vice Chairman's business convenience
- Credit card for the Chairman's business use (up to 500,000 Baht/month
- Fleet card for each director's business use (up to 400 liters / month / director)

2) Others

- Annual physical check-ups
- Directors' & officers' liability insurance (limit of liability: 250 million Baht)

In 2017, the individual remuneration of Directors was as follows:

Name		Remuneration in Baht						
		BOARD	AC	NRC	ERMC	CGC	Bonus	Total
1	Mr. Pichai Chunhavajira	1,125,000	-	-	-	-	2,970,647.96	4,095,647.96
2	Mr. Surin Chiravisit	1,046,250	-	93,750	75,000	-	2,673,583.18	3,888,583.18
3	Mr. Suthep Wongvorazathe	930,000	393,750	75,000	-	-	2,376,518.37	3,775,268.37
4	Gen. Vitch Devahasdin	870,000	-	30,000	-	56,250	1,753,169.29	2,709,419.29
5	Adm. Sucheep Whoungmaitree	870,000	-	75,000	-	-	2,376,518.37	3,321,518.37
6	Gen. Apirat Kongsompong	690,000	-	60,000	-	-	2,376,518.37	3,126,518.37
7	Pol. Lt. Gen. Chotima Chaiwat	930,000	300,000	75,000	-	-	2,376,518.37	3,681,518.37
8	Mr. Krisada Chinavicharana	870,000	300,000	-	-	-	2,376,518.37	3,546,518.37
9	Mrs. Prisana Praharnkhasuk	900,000	315,000	-	-	-	1,753,169.29	2,968,169.29
10	Mr. Teerapong Wongsiwawilas ^{1/}	785,806	-	-	-	45,000	-	830,806.00
11	Mr. Jarin Chakkaphark ^{2/}	139,355	-	-	-	-	-	139,355.00
12	Mr. Prasong Poontaneat	930,000	-	-	131,250	-	2,376,518.37	3,437,768.37
13	Mr. Visit Vongruamlarp	900,000	-	-	105,000	-	2,376,518.37	3,381,518.37
14	Dr. Prasert Sinsukprasert	840,000	-	-	105,000	-	1,753,169.29	2,698,169.29
15	Mr. Chaiwat Kovavisarach	930,000	-	-	120,000	45,000	2,376,518.37	3,471,518.37
TOTAL		12,756,411	1,308,750	408,750	536,250	146,250	29,915,885.97	45,072,296.97



Name	Remuneration in Baht							
	BOARD	AC	NRC	ERMC	CGC	Bonus	Total	
Directors whose terms were completed and resigned directors in 2017								
1	Prof. Dr Chai- Samudavanija ^{3/} anan	27,218	-	-	-	-	2,673,583.18	2,700,801.18
2	M.L. Puntrik Smiti ^{4/}	638,710	-	-	-	30,000	2,376,518.37	3,045,228.37
TOTAL		665,928	-	-	-	30,000	5,050,101.55	5,746,029.55

Notes:

- 1) Appointed as Director on January 26, 2017
- 2) Appointed as Director on October 12, 2017
- 3) Resigned on January 26, 2017
- 4) Resigned on October 10, 2017 and transferred bonus to the Social Security Fund in compliance with the regulations of the Office of the Social Security Fund

Bonuses for directors whose terms were completed and who resigned in 2016 (performance in 2016 paid in 2017)

Names		Bonus (Baht)	Remarks
1.	Asst. Prof. Dr. Tamajai Anusorn	623,349.07	
2.	Mr. Arunporn Limskul	623,349.07	
3.	Dr. Vikrom Koompirochana	623,349.07	
TOTAL		1,870,047.21	

Comparison of Remuneration of Directors in 2016 and 2017

Remuneration	2016		2017	
	Directors	Baht	Directors	Baht
Monthly remuneration and meeting allowance	15	15,290,000	15	15,852,339.00
Bonus	15	30,197,982	15	36,836,034.73
TOTAL		45,487,982		52,688,373.73

Note: Bonus for 2016 performance under the resolution of the 2016 AGM, held on 5 April 2016 (0.75 percent of the net profit, but not over 3,000,000 Baht/year per director. The calculated amounts are to reflect individual periods of service. Moreover, the Chairman and Vice Chairman shall receive the bonus higher than those of members by 25 percent and 12.5 percent respectively.)



Directors' Remuneration due to Directorship of subsidiaries, associates, and other companies in 2017

Company	Name	Total remuneration in 2017 (Baht)					Net total
		Monthly remuneration	Meeting allowance	Bonus	Sub-Committee remuneration	ESOP (Capital Gain)	
BCPG	Mr. Pichai Chunhavajira	450,000.00	450,000.00	1,419,778.00	-	264,375.00	2,584,153.00
	Mr. Chaiwat Kovavisarach	405,000.00	438,750.00	405,000.00*	243,750.00	171,279.22	1,663,779.22
BBGI	Mr. Pichai Chunhavajira	75,000.00	50,000.00	-	-	-	125,000.00
	Mr. Surin Chiravisit	60,000.00	40,000.00	-	-	-	100,000.00
	Mr. Chaiwat Kovavisarach	60,000.00	40,000.00	-	-	-	100,000.00
NIDO	Mr. Chaiwat Kovavisarach	81,382.98 AUD (per annum)	-	-	-	-	2,115,957.48

Notes:

- BCPG: BCPG Public Company Limited
- BBGI: BBGI Company Limited
- NIDO: Nido Petroleum Limited
- Exchange rate AUD\$ 1 equivalent to approximately Baht 26
- Mr. Chaiwat Kovavisarach's director remuneration paid by BCPG as from October 2016, after BCPG listing on SET, is under the regulation on the appointment of a director who is the Company's representative.

2. Executive Management

The Board has set the roles and duties of the management in Bangchak's day-to-day business management in line with the company's policies, plans, goals, regulations, and rules, as well as Board resolutions, within the approved budget. To this end, they are to conform strictly with integrity and care to maintain Bangchak's and its shareholders' interests to the best of their ability under corporate governance. They are to report updates on conformance to such resolutions together with key performance outcomes to the Board at least monthly. Today the management consists of 13 persons, No. 1 through No. 8 of whom are regarded as executives under SEC's definition (As of December 2017):



Name	Position
1. Mr. Chaiwat Kovavisarach	President and Chief Executive Officer
2. Mr. Pongchai Chaichirawiwat	Chief Operation Officer & Senior Executive Vice President, Refinery Business Group
3. Mr. Somchai Tejavanija	Chief Marketing Officer & Senior Executive Vice President, Marketing Business Group
4. Mr. Yodphot Wongrukmit	Senior Executive Vice President, Corporate Management and Sustainability Development
5. Mr. Bundit Sapianchai	Senior Executive Vice President
6. Mr. Surachai Kositsareewong	Senior Executive Vice President, Accounting and Finance
7. Mr. Kiatchai Maitriwong	Senior Executive Vice President
8. Mr. Chalermchai Udomranu	Senior Executive Vice President, Refinery Business Unit
9. Mr. Pichit Wongrujiravanich	Executive Vice President, Internal Audit
10. Mr. Dhanajit Makarananda	Executive Vice President
11. Mr. Chokchai Atsawarangsalit	Executive Vice President, Marketing Business and Oil Terminal
12. Mr. Viboon Wongsakul	Executive Vice President, appointed to Bangchak Retail Company Limited
13. Mr. Pativat Tivasasit *	Executive Vice President, Refinery Manufacturing Business

* Appointed as senior executive vice president, effective from June 1, 2017.

Succession Planning and Management Development

Under the Board's policy on the President and Chief Executive Officer's nomination, as long as he or she is suitable, an external or internal person may enter the selection process under Bangchak's given circumstances. Suitable persons are selected by NRC, which defines the nomination criteria and method.



To optimize benefit in the selection of the President and Chief Executive Officer, the Board assigns the management to appoint a “Personnel Development and Administration Panel” (PDA) to oversee training and competency development of senior executives. Also, the Board has laid down additional development guidelines for rotation of duties of senior management team members to promote all-round understanding, experience, and preparedness for corporate administration. Any executive from Senior Vice President and Chief Executive Officer upward may apply for nomination as President and Chief Executive Officer if they command the required qualifications.

Procedure

1. Define management positions requiring succession planning (President and chief executive officer and all senior executive vice presidents)
2. NRC defines the required competency and experience for each position
3. NRC specifies the qualified executives to succeed each position
4. Assign the President and Chief Executive Officer to assess the performance and competency of qualified executives matching the required competencies needed so as to develop individual development plans (IDPs) to close the competency gaps
5. Assign PDA to look after the training and competency development of qualified executives
6. The President and Chief Executive Officer institutes rotation of duties of qualified executives and lets Senior Executive Vice Presidents attend Board meetings so that they may understand and



- gain experience to be prepared for corporate administration as a whole
7. The President and Chief Executive Officer periodically reports to NRC the performances and development outcomes under IDPs of qualified executives
 8. Each year, NRC revises and summarizes succession planning outcomes for the President and Chief Executive Officer and Senior Executive Vice Presidents for the Board's acknowledgment.

Nomination and Appointment of the President and Chief Executive Officer

NRC nominates and reviews the qualifications of senior executives and others under NRC-set guidelines for the Board to appoint as President and Chief Executive Officer. These include the legally required director qualifications and those required by Bangchak's regulations, together with essential skills and experience in Bangchak's best interests and alignment with Bangchak's business directions. The Board appointed Mr. Chaiwat Kovavisarach President and Chief Executive Officer, effective from January 1, 2015, on account of his knowledge of investment in new businesses abroad and his sound financial knowledge, both of which align with Bangchak's business directions.

Performance Appraisals of the President and Chief Executive Officer and Senior Executives

Bangchak measures performance outcomes as KPIs (Key Performance Indexes), including its own performance, common practices of peer listed companies of comparable sizes, roles and responsibilities, executive development, and overall economic circumstances. The



President and Chief Executive Officer must present his performance in various aspects, including the management of the refinery and marketing business units, business development, and organizational development, while discussing current management outcomes covering successes and obstacles, including the ability to expand business opportunities and competition, social and environmental policies, together with responses to public policies. NRC is to decide on the President and Chief Executive Officer's compensation, which is then forwarded to the Board for approval. The President and Chief Executive Officer earns benefits as the top management executive in addition to the compensation as a director.

Remuneration of Executives

- 1) Executives shall receive short-term remunerations, i.e. salary and bonus, and long-term ones—including Employee Stock Option Program (ESOP) and Employee Joint Investment Program (EJIP)—which the Board will consider on a case by case basis. These payments serve to motivate executives, are on par with the industry practice, and correlate to each person's Key Performance Indicators (KPIs).
- 2) Executives who serve as a director in a joint venture will be compensated according to the Company's regulations on the appointment of directors of joint ventures. As for the President and Chief Executive Officer who is tasked with additional roles and responsibilities, as a subcommittee member for instance, will be paid according to the Board's decision based on merit of that task or responsibility.



- 3) The Board has ordered a report on the remuneration of executives—including the disclosure of payments made to executives who are appointed a role in a subsidiary—to be included in the Company's annual report in compliance with the Good Governance Policy.

Remuneration for Executives as defined by the SEC (President and Chief Executive Officer & Senior Executive Vice Presidents)

Remuneration	2016		2017	
	Persons	Baht	Persons	Baht
Salary	9	48,969,437.00	8	54,032,508.00
Bonus & Retirement pay	9	39,037,293.00	8	41,185,847.00
Provident fund	9	4,214,016.00	8	4,983,264.00
Total	9	92,220,746.00	8	100,201,619.00

3. Directors and executives assigned to other companies

The Board appoints representative directors of subsidiaries, associates, and joint ventures under **the guidelines for appointment of representative directors in joint ventures**. To this end, the President and Chief Executive Officer selects fully qualified persons under such guidelines for the Board's appointment. Each subsequent change is to be reported by the President and Chief Executive Officer for the Board's acknowledgment. Today, the following directors and executives are assigned as directors of subsidiaries, associates, and joint ventures:



<u>Subsidiary Companies</u>	
1. BCPG Plc (BCPG)	21. Nido Petroleum Limited (NIDO)
2. BBGI Co., Ltd. (BBGI)	22. BCPG Wind Cooperatief U.A (BCPG Wind Cooperatief)
3. Bangchak Retail Co., Ltd. (BCR)	
4. Bangchak Green Net Co., Ltd. (BGN)	<u>Associated Companies</u>
5. Bangchak Solar Energy Co., Ltd. (BSE)	1. Bongkot Marine Services Co., Ltd.
6. Bangchak Solar Energy (Prachinburi) Co., Ltd. (BSE-PRI)	2. AomSuk Social Enterprise Co., Ltd. (AomSuk)
7. Bangchak Solar Energy (Chaiyaphum 1) Co., Ltd. (BSE-CPM1)	3. Ubon Bio Ethanol Co., Ltd. (UBE)
8. Bangchak Solar Energy (Buriram) Co., Ltd. (BSE-BRM)	4. Ubon Bio Gas Co., Ltd. (UBG)
9. Bangchak Solar Energy (Buriram 1) Co., Ltd. (BSE-BRM1)	5. Ubon Agricultural Energy Co., Ltd. (UAE)
10. Bangchak Solar Energy (Nakhon Ratchasima) Co., Ltd. (BSE-NMA)	6. NP Bio Energy Co., Ltd. (NPE)
11. BCPG Biopower 1 Co., Ltd. (BBP1)	7. Star Energy Group Holdings Pte. Ltd. (Star Energy Group)
12. BCPG Biopower 2 Co., Ltd. (BBP2)	8. PetroWind Energy Inc. (PetroWind Energy)
13. Bangchak Biofuel Co., Ltd. (BBF)	
14. Bangchak Bioethanol (Chachoengsao) Co., Ltd. (BBE-CCO)	<u>Joint Ventures</u>
15. BCP Trading Pte. Ltd. (BCPT)	1. Fuel Pipeline Transportation Co., Ltd. (FPT)
16. BCP Innovation Pte.Ltd. (BCPI)	2. Lithium Americas Corp. (LAC)
17. BSE Energy Holdings Pte. Ltd. (BSE Energy Holdings)	
18. Huang Ming Japan Company Limited (Huang Ming Japan)	<u>Others</u>
19. BCPG Japan Corporation (BCPG Japan)	1. Happiness Sharing Foundation (Foundation)
20. BCPG Engineering Company (BCPG Engineering)	

4. Company Secretary

Under the Securities and Exchange law (Articles 89/15 and 89/16), Board Meeting No. 6/2009 appointed Ms. Pakawadee Junrayapes, Senior Vice President, Corporate Compliance (appointed as Executive Vice President of Sustainability Development and Corporate Compliance, effective from January 1, 2018, as Company Secretary, effective from July 1, 2009. Her profile is as follows:

Ms. Pakawadee Junrayapes

- Age 56
- Education / Training
 - Master of Law, Ramkhamhaeng University
 - Bachelor of Law, Thammasat University



- Thai Barrister at law, The Institute of Legal Education Thai Bar Association Under The Royal Patronage
 - Certificate in Business Law, Thammasat University
 - Certificate in English for Specific Careers (Law), Sukhothai Thammathirat Open University
 - Executive Development Program (EDP 2012), Ministry of Finance
 - Company Secretary Program (CSP34/2010), Thai Institute of Directors (IOD)
 - Director Certification Program (DCP142/2010), Thai Institute of Directors (IOD)
 - Successful Formulation and Execution of Strategy (SFE16/2012), Thai Institute of Directors (IOD)
 - Anti-Corruption: The Practical Guide (ACPG2/2013) Thai Institute of Directors (IOD)
 - Thailand and the ASEAN Economic Community class 4/2013, King Prajadhipok's Institute
 - Advances for Corporate Secretaries, Class 2/2017, Thai Listed Companies Association (TLCA)
 - Certificate of Top Management (2017), Company cooperate with Thailand Management Association (TMA) and Duke Corporate Education (DUKE)
- Experience
- Bangchak Corporation Public Company Limited
- 2015-2017 : Senior Vice President, Legal and Corporate Compliance, and Company Secretary



- 2011-2015 : Vice President, the Secretary to The Board of the Directors Office, and Company Secretary
- 2009-2011 : Senior Manager, the Secretary to The Board of the Directors Office, and Company Secretary
- 2007-2009 : Senior Manager, Legal Office
- 2004-2007 : Manager, Legal Office
- 2002-2004 : Manager, Litigation Division
- 2002-2002 : Manager, Legal Office

Others

- 2006-2008 : Personal Specialist of National Legislative Assembly Member and Sub-Committee on Energy
- Other directorship positions / Other positions at present
- Other listed companies
 - None -
 - Non-listed companies
 - None -
- Shareholding in the Company: 13,000 shares or 0.000944% (As of September 15, 2017)
- Familial relationship between directors and executives: None
- Criminal records on violation of securities and futures contract laws: None



Roles and Responsibilities

- Prepare and maintain key documents, including the Board roster, meeting notices, minutes of Board meetings and shareholders' meetings, annual reports, and reports of vested interests
- Schedule Board meetings and shareholders' meetings under the law and company regulations. Coordinate conformance to the resolutions of Board and shareholders' meetings
- Advise and support the performance of directors and the management under the law and relevant regulations
- Coordinate between the Chairman and the President and Chief Executive Officer together with his management team, which includes coordination between Bangchak and its shareholders
- Encourage the directors, management, and employees to conform to corporate governance
- Perform other lawful tasks and Board-assigned tasks.

5. Personnel

On December 31, 2017, the Company had a total headcount of 1,240:

Employee	Persons
The President and Chief Executive Officer (Legal and Corporate Compliance, Corporate Communication, Corporate Strategy and Budget Planning, Internal Audit, Safety and Health Division)	78
Refinery and Trading Business Group	567
Marketing Business Group	358
Natural Resource and Business Development	18
Accounting and Finance	78
Corporate Management and Sustainability Development	141

**Significant changes in number employee for the past three years**

- None (Total employee in year 2015 were 1,129 persons, which increased slightly from 1,240 persons in year 2017)

Remuneration of employee

Bangchak's policy provides for suitable compensation to employees in line with their performance outcomes. For the short term, this compensation is the bonus, in turn linked to company performance. For the long term, this compensation means the provident fund, a form of welfare that gives employees financial guarantee.

Employee receive remuneration in the form of salary; shift, night shift, overtime, and upcountry pay; operation at the refinery; and discipline remuneration. Employees have the right to apply for membership of "Bangchak Corporation Public Company Limited Provident Fund" by choosing the accumulated at a rate of five percent or ten percent or fifteen percent of the salary and the Company will pay the same rate but not over ten percent to the Fund. In 2017 the Company paid remuneration to the personnel in the form of salary, shift, night shift, overtime, upcountry, refinery stand-by pay, discipline pay, special bonus and other welfare, with a total of 1,808.79 million Baht. The remuneration for President&CEO and Senior executive vice presidents upward is 5.54% of total remuneration of employee.



Personnel development

Bangchak focuses on continuing personnel development for greater operating capability matching corporate goals, policies, and directions—apart from international competitiveness to accommodate the growth of AEC (ASEAN Economic Community). To this end, it appointed a “Personnel Development and Administration Panel” (PDA) to endorse personnel development, define guidelines for personnel administration, define an approach for corporate culture development, and forge a sound employee attitude so that the efficiency of Bangchak’s corporate administration may be on a par with business peers and in keeping with its business status and goals. **This year a variety of training courses were staged, averaging 45.1 hours/person/year.** These include staff’s environmental capability development in courses dealing with **environmental management, a workshop on eco- efficiency assessment of the Refinery Business Group products through the application of the life-cycle assessment approach, preparation of water footprints, environmental expense accounting, and training on chemicals and chemical refilling instruments at the chemical system and chemical- refilling instruments at the physical & chemical treatment system for operators attached to the water pollutant treatment system.** (Training details are included in the Sustainability Report under the “Employee Stewardship” and “Water Pollution”)



9. Corporate Governance



1. Corporate governance and Anti-corruption

- **Policy:** Since 2003, the Board of Directors has required a written corporate governance policy, which is to be revised annually. This year, Bangchak issued Revision 14 of the policy by adding directors' roles, including the application of innovation and technology to resource allocation, matters for joint execution with the management and for sole execution, and board diversity.
- **Training and Publicity:**
 - Arranged for all employees to acknowledge and take the annual test on the Corporate Governance and Anti-Corruption Policy. They are required to pass certain criteria to ensure proper understanding. The test was done on the e-HR system and the online knowledge management system (“We Share”) (Nov.1-17, 2017)
 - A talk on corporate governance as part of the orientation for new directors. (Feb.10, 2017 and Oct.19, 2017)
 - A talk on corporate governance as part of the orientation for new employees. (Mar.23, 2017)
 - Staged the 2017 CG Day activities under the “In H.M. the Late King's Footsteps: Following Dharma Principles” theme. Discussing H.M., the late King Bhumibol's adopted 10 Dharma principles for day-to-day work was Dr.



Sumet Tantivejkul, Chaipattana Foundation Secretary-General (Dec.1, 2017)

- For the Fourth year in a row, staged a 2017 business partners' seminar, educating them about the policy formulation and measures against corruption so as to support their roles as allies of the Thai private sector on anti-corruption. (Feb.28, 2017, May.26, 2017 and Jun.9, 2017)
- Notified stakeholders on Bangchak's "No Gift" policy for the New Year and any other occasion so as to elevate good corporate governance and set a standard for conducting business with all related parties fairly.

- **Risk Assessment:** Bangchak instituted internal control, risk management, and internal audit systems for key business functions, such as procurement and accounting. Bangchak also closely monitored the progress of risk management plan on a regular basis.

Bangchak values good corporate governance and anti-corruption alike. To this end, it has enlisted in the league of the UN Global Compact (UNGC), by the United Nations, and become one of the first 22 companies to gain membership certification for CAC (Thai Private Sector Collective Action Coalition against Corruption). This year Bangchak received first recertification since 2013.



2. Committees

The Board appointed a number of committees, namely the Audit Committee, Nominating and Remuneration Committee, Corporate Governance Committee, and Enterprise-wide Risk Management Committee, to support its oversight of Bangchak. Details of these committees appear under "Management Structure".



3. Nomination and appointment of directors and the top executive

Today, Bangchak has 15 directors, 10 of whom are independent ones. Eight are SEC-defined executives, with President and Chief Executive Officer serving as the top executive. Appointment of directors and President and Chief Executive Officer must be reviewed by the Nomination and Remuneration Committee. Bangchak has made it possible for directors and shareholders to play a part in nominating qualified directors, in addition to using the Director Pool of Thai IOD. Details of the qualifications of independent directors and the nomination and appointment of directors and the President and Chief Executive Officer appear under “Management Structure”.

4. Oversight of subsidiaries, associates, and joint-venture companies

Bangchak runs its businesses through subsidiaries, associates, and joint-venture companies, as detailed under “Shareholding Structure”. The Board commands a mechanism for supervising the management and the responsibility of subsidiaries, associates, and joint-venture companies to safeguard the interests of Bangchak’s investment capital, including

- Secondment of executives by the Board to serve as directors and executives in those companies proportionate to its own shareholding. Details appear under “Management Structure”.
- Definition of an oversight approach for joint-venture companies for representative directors to uphold so that the businesses of subsidiaries, associates, and joint-venture companies may be uniform and in line with Bangchak’s policy approach and relevant legislation. Voting or actions on important matters must secure prior approval from the President and Chief Executive Officer, Board, or shareholders, depending on the case.
- Institution of a corporate governance policy and a suitable, watertight internal control system in each of the subsidiaries.
- Supervision of disclosure of these companies’ financial status and performance outcomes, as well as engagement in key transactions, must be properly done in line with Bangchak’s criteria.



5. Monitoring the Use of Inside Information

Bangchak has a policy detailing the accepted practices of director, executive and employees and forbidding the disclosure of important secret information to the public for personal or other gains, as well as policies on the buying and selling of Company shares as follows:

1. Directors and executives, as well as spouses and children under legal age, including connected persons, according to Article 59 of the Securities and Exchange Act of 1992 must notify and distribute information about shares held, as well as reporting any changes to SEC every time they buy, sell, transfer, or receive shares within three days of the change to comply with Article 59 or face punishment according to Clause 275 of the Securities and Exchange Act of 1992.
2. Notify the Directors and executives of the financial information which affects the price of shares to avoid buying or selling Company shares one month prior to the disclosure of information and three days after disclosure, as well as not disclosing information to others before it is made available to the public.

The Company also has penalties against employees who use the Company's inside information for personal gains, ranging from a warning to termination of employment.

6. Remuneration for the External Auditor

1) Audit Fee

The Company and its subsidiaries have paid audit fees as follows:

- The Company's External Auditor (Mr. Charoen Phosamritlert or Mr. Waiyawat Kosamarnchaiyakij or Mr. Natthaphong Tantichattanon) in the last year

- none -

- The Audit Company (KPMG Phoomchai Audit Ltd.), persons and businesses related to the external auditor and the Audit Company in the last year

- totaled 2,007,940 Baht -

2) Other fees

- none -



7. Compliance with corporate governance for listed companies

The Stock Exchange of Thailand (SET) established “The Principles of Good Corporate Governance for Listed Companies 2012”. The Securities and Exchange Commission (SEC) issued its “Corporate Governance for listed companies 2017”, with effect from March 2017, which contains eight major practical guidelines. This year Bangchak continued its compliance with these principles by following these five aspects.

1) Shareholders' rights

The Board of Directors has defined a policy on shareholders' rights in Section 3.3 of the corporate governance policy, as implemented below.

- A Record Date for the AGM was set so that shareholders may have enough time to review meeting notices and various data ahead of the meeting.
- Informed the shareholders about two months ahead of the meeting so that they may schedule meeting attendance, which exceeds what is required by law.
- Included the Board's opinion for each agenda item and attached the annual report and the proxy form, which contains an explanation of proxy-supporting documents together with meeting notices.
- Allowed the shareholders to submit queries needing Bangchak's explanation on certain points of the agenda for the AGM ahead of the meeting since September 1, 2017.
- Facilitated and promoted attendance by institutional investors by assigning Investor Relations staff to contact them about agenda issues and collect advance proxy forms.
- Facilitated shareholders on the meeting date:
 - Reserved adequate parking spaces and arranged shuttle buses for them at the BTS Bangna Station in case they were traveling on their own.
 - Adopted the Barcode system for registration and vote-tallying for efficiency and speed.



- Applied the shareholders' meeting software to registration and vote-tallying for efficiency and transparency.
- Supplied duty stamps for proxy assignment free of charge.
- Prepared stickers for those that had already registered for getting in and out of the meeting room without rechecking.
- Before the meeting, the company secretary clarified the method for voting and vote-tallying for each agenda item, as well as requesting a shareholders' representative to witness vote-tallying.
- During the meeting, allowed the shareholders equal rights for expressing views and posing questions, and recorded key concerns and views in the minutes.
- After the meeting:
 - Publicized the resolutions and vote tallies on each agenda item through SET's channels and Bangchak's website by the evening of the meeting date
 - Publicized the minutes through SET's channels and Bangchak's website, and delivered to the shareholders that expressed views at the meeting.

At the 2017 AGM, **Bangchak invited Mr. Visith Uevirojnangkoorn, an independent legal counselor, to serve as an independent inspector to validate the votes and ensure transparency and compliance with the law and company regulations.** This included examination of documents of shareholders or their proxies with the right to attend the meeting, quorum, stakeholders whose voting right was not exercised, and whether the voting process followed the company regulation or what was announced by the chair of the meeting, as well as collection of ballots, verification of meeting resolutions, as well as ballot casting. One person representing the shareholders witnessed vote counting at the AGM.

2) Equitable Treatment of Shareholders

The Board of Directors has defined a policy on equitable treatment of shareholders in the corporate governance policy, as implemented below.



- Publicized meeting documents on its website 33 days ahead of the meeting and delivered them to the shareholders 21 days ahead of the meeting.
- Allowed the shareholders to propose additional AGM agenda items and nominate directors from September 1 to December 31. Bangchak disclosed the criteria and methods at its website and informed the shareholders through SET's channels. The Board's policy is against adding agenda items without prior notice, particularly crucial items for which the shareholders need time to study before making a decision.
- Supported the shareholders' use of proxy forms to steer voting at the meeting (Form B) and nominated nine independent directors as proxy alternatives at the meeting.
- Used ballots on every agenda item, particularly that dealing with directors' election where individual directors were voted on. To this end, the votes equaled the number of shares held for the election of one director.
- Required that directors with vested interests should have no votes and stay outside the meeting on such agenda item, as mentioned in the corporate governance policy.
- Defined practices for employees on the maintaining of Bangchak's confidential information and avoidance of benefit-seeking for themselves by exploiting such confidential information, as mentioned in the corporate governance policy.

3) Roles of stakeholders

In the Corporate Governance Policy, the Board defined a policy for its roles toward the stakeholders. In the corporate governance system, several key groups of stakeholders are found, including customers, employees, business partners, shareholders, investors, creditors, and residents of neighboring areas, society, and the environment. Bangchak values the importance of the rights of all groups, which includes actions violating their rights and intellectual properties. Below are the policy and practices (detailed under "Sustainability Report"):



Employees

Bangchak realized that staff is a vital element for business progress. Bangchak, therefore, has in place Individual Development Plans (IDPs) to raise staff knowledge and caliber. Additionally, staff are given competitive and fair compensation, depending on the overall performance of the company, both in the short term and the long term. In this regard, an annual salary survey is carried out with other companies in the same industry. The Balanced Scorecard is used to assess individual staff performance against their respective KPIs established. Bangchak, moreover, provided staff welfare exceeding what was required by law, which included the provident fund, medical welfare, shuttle-bus service, staff relations activities, as well as an employee club with various recreational activities.

Customers and Society

The Company is dedicated to improving the quality of products and services for maximum customers' satisfaction. The policy aims to deliver quality goods which meets or exceeds the customer's demands under fair conditions. Bangchak's policy is also to deliver products of desired quality or of quality beyond customers' expectations under fair, responsible treatment of customers, and aims to give adequate, accurate and timely information about the products and services. The Company does not exaggerate or mislead the customer about the quality, quantity or other terms and conditions of the products or services. Company employees protect the customer's secrets and do not use them for personal gains.

Business Partners

- Bangchak has a Supplier Code of Conduct and a policy to select and treat business partners with fairness. Company regulations have been drawn up to govern procurement, supply and distribution of petroleum and petroleum products to ensure that business conducted with partners is managed properly and with responsibility for business partners while mutual benefit can be reaped. Additionally, Bangchak has produced a "Business Contact" manual and drawn up a "Dealer/Station Operator Policy" for distribution to business contacts and



dealers/station operators so that they may have proper understanding and strictly comply with Bangchak's corporate governance and business ethics. They will also firmly adhere to contract provisions. Whenever any condition cannot be complied with, Bangchak urgently informs the business partner(s) in advance to jointly solve problems.

- To select a business partner, Bangchak invites those who are qualified to register with it. Qualified companies are allowed to make offers to compete with others in the same business. The procurement committee then proceeds with the selection, taking into account both price and technical aspects.

Lenders

Bangchak treats lenders fairly, responsibly, and transparently and seeks to fulfill all its contractual and financial obligations especially guarantee condition, capital management and payment. It does not engage in dishonest practices and does not conceal information which may cause losses for the lender. If the Company cannot fulfill one or more of its obligations, it seeks to notify the lender so that a resolution can be agreed upon together.

Competitors

The Company conducts business with ethics, transparency, and engages in fair competition with its competitors under the guidance of fair competition. It does not seek to find information about Competitors through dishonest or inappropriate means, for example, bribing a competitor's employees. The Company does not engage in slander or discrediting its competitors.

Shareholders

The Company is determined to follow the principles of Corporate Governance and is focused on creating a business which has financial stability and sustainability to maximize the value of shares for the benefit of the shareholders.



Communities surrounding the refinery, society, and the environment

Bangchak conducts its business with adherence to environmental management standards, such as ISO 14000. The Company considers health and safety and the environment as integral part of the business, and has a written guideline on health, safety and the environment for the Directors, Executives, and employees to uphold. This includes promotion of efficient resource consumption and employee training on occupational health, safety, environmental, and energy matters under the “Develop sustainable business, while safeguarding the environment and society” corporate culture.

The Company produces “Krob Krua Bai Mai” (Leaf Family) newsletter and “Rob Rua Bangchak” (Bangchak Neighbors) magazine for distribution every other month to allow the community to know the goings-on of the Company as well as receiving interesting information, such as how to save energy, how to ensure safety in daily life, and health tips and how to protect the environment. This is another way for the Company to communicate with and take care of communities around its refinery.

Resources Usage

Resource Usage, for instance power, water, chemicals, has been used worthwhile as targeted. It is reviewed and improved continuously to enhance usage more efficiently and suitable for business size. Bangchak handles waste disposal efficiently and reuses waste to maximize the benefits.

Sanctity of intellectual properties

Bangchak declared its policy on intellectual property management this year to define clear guidelines for the prevention and sanctity of intellectual properties. Compliance with this policy is the direct responsibility of the executives, employees, affiliates, and contractors working on behalf of Bangchak.

Whistleblowing and complaint-filing channels

Bangchak’s Board of Directors has laid down measures regarding whistleblowing or concerns about any wrongdoing or misconduct that may lead to fraud involving people



in the organization, either their staff or stakeholders. Whistleblowing can also be applied to suspicious financial statements or a lack of internal control system. Bangchak has a mechanism to protect staff or whistleblowers by establishing a confidential database accessible only by authorized persons. This is to encourage cooperation from stakeholders in better protecting its interests. If a concern about wrongdoing is raised, a committee comprising members of units relevant to the issue will be set up to launch an investigation, the result of which is forwarded to the whistleblower through:

E-mails: ico@bangchak.co.th
Letters: Internal Audit
Bangchak Corporation PCL
2098 M Tower Building, 8th Floor, Sukhumvit Rd.,
Phra Khanong Tai, Phra Khanong
Bangkok 10260
Tel. 0-2335-4566.

During 2017, one case dealing with tanker transport. Bangchak strictly prevented and examined this fraud case.

Contact channels

The Board of Directors	Tel: +66 2 335 4638 Fax: +66 2 016 3982 E-mail: bcpsecretary@bangchak.co.th
Company Secretary	Tel: +66 2 335 4050 Fax: +66 2 016 3982 E-mail: pakawadee@bangchak.co.th
Investor Relations	Tel: +66 2 335 4583 Fax: +66 2 335 8000 E-mail: ir@bangchak.co.th

4) Information disclosure and transparency

The Board of Directors has defined a policy on information disclosure and transparency in the corporate governance policy, as implemented below.

- Disclosed performance outcomes, company information, and outlooks to analysts and investors (domestic and international) every quarter.



- Distributed key company data and documents, including the memorandum of association, certification, and regulations beyond the Corporate Governance policy on its website.
- Investor Relations coordinated with analysts, investors, and other parties that need financial data, performance outcomes, company status, and transactions affecting Bangchak.
- Publicized Bangchak's key information regularly through SET's channels, annual information disclosure forms, annual report, and its website in Thai and English.

5) Board responsibilities

In the corporate governance policy, the Board defined a policy for the roles, duties, and responsibilities of the Board. Details appear under "Management Structure", and below are Bangchak's actions taken this year:

- Held an annual corporate strategy seminar with the management to review the vision and set corporate goals.
- Staged a meeting of the independent directors in March and August and a meeting of the non-management directors in April and November.
- Organized a study visit on lithium mining, development of startup businesses, electric vehicles and batteries in USA to apply to Bangchak's business development.
- Developed performance assessment forms for the Board: individual (self-assessment and cross-assessment), group, and committee.
- Revise and define Bangchak's annual vision, missions, strategies, business plan goals, and budgets every year to maximize value to businesses and for shareholders' security. In addition, the Board endorses key strategies and policies, particularly financial KPIs (key performance indicators) and work plans. Endorsement of KPIs and metric-setting is done early in the year, with periodic tracking.



- Monitored management performance and ensured strategic implementation. Required that progress updates and company performance should be reported each month to Board meetings.
- Instituted an effective internal control system, internal audit, and risk management measures together with regular tracking at Board meetings.
- Instituted the Compliance unit to monitor all functions to ensure complete compliance, including preparation of legal assessment for Bangchak units' oversight of license renewals with an alert system for responsible superiors and subordinates, and legal education through channels, for instance, Outlook, intercom, and annual legal training.

The Board of Directors is determined to manage all matters in compliance with good Corporate Governance so that the Company's business run efficiently and honestly as well as responsible for all stakeholders. **The Board recognizes its duties under the new CG Code's guidelines, to apply each Principle and Sub-Principle by means that are suitable for the Company's business. Such application review takes place at least annually.** Below are the aspects not yet applied, which will in time be adapted as seen fit.

CG Code Principle	Justification or Alternative Measure
The board should comprise at least 5 directors and should not be more than 12 directors. (Guideline 3.1.2)	Bangchak values corporate governance in parallel with the recruitment of competent people to manage businesses. It recognizes the necessity and benefit of recruiting additional such directors. Today the Board consists of 15 directors.
Each director should attend not less than 75 percent of all board meetings in any whole Financial reporting year. (Guideline 3.5.5)	Bangchak instituted an electronic meeting system to facilitate directors that cannot attend meetings in person.

8. Conflicts of Interest

Under the Corporate Governance Policy, the guidelines for directors, management and employees stipulated that they must refrain from any act posing



potential conflicts of interest with the Company, i.e. any act potentially depriving the Company of its interests or its fair share of interests, including competing with the Company, incurring personal gains from private business dealing with the Company, abuse of Company information for personal gain and holding shares in the Company's business competitors.

The Company, in order to prevent potential conflicts of interest, has set the following forms:

□ **CG Commitment and Conflict of Interests Disclosure Form**

To comply with the Policy on Corporate Governance, which forbids directors, management and employees to commit any act which might deprive the Company of its interests, the Company has prepared the above-mentioned form to ensure that all employee acknowledge the CG policy and fill any acts or activities that might be in conflict with the Company's business interests and deliver it to Internal Audit through their supervisors through the e-HR system.

□ **Report of Directors and Management's Stake Form**

The Securities and Exchange Act stipulates that directors and the management are to report to the Company his/her or connected persons' stakes connected with the business operations of the Company or its subsidiaries. The Company has therefore prepared the above-mentioned form for its directors and management to fill out and report any change to the Company. The Corporate Secretary will forward a copy of the form to the Chairman and the Chairman of the Audit Committee to ensure that the directors and management perform their duties with integrity.

□ **Report on connected transactions form**

To ensure that transactions between the Company and any related parties or businesses are transparent and comply with SET's rules and regulations, the Company has defined a policy and guidelines on connected transactions and prepared the above-mentioned form for responsible employees to fill out and forward it to the Secretary to the Board with a copy to Internal Audit for acknowledgment.



9. Investor Relations

The Company realizes that its information, both financial and non-financial, affect the decision-making process for investors and stakeholders. Therefore, the management values accurate and full disclosure in a regular and timely manner, in accordance with SEC and SET regulations. The Investor Relations department acts as a center for giving out important information to investors. Bangchak allowed all information to be equally publicized, whether financial reports, performance outcomes and business outlooks, data affecting Bangchak stock prices, or quality-assured data disclosed to investors and stakeholders. Directly and indirectly, Bangchak presented its performance outcomes and company information, summarized below:

- Direct: Bangchak staged meetings between its executives and shareholders, stock analysts, investors, and employees via regular activities to present performance outcomes through analyst meetings, roadshows, conference calls, participation in conferences (domestic and abroad), participation in meetings with minor investors at the “Opportunity Day” or at “SET in the City”, hosted by SET, or company visits by shareholders to enable them to appreciate company businesses more. In addition, institutional investors (domestic and international) and stock analysts may make appointments with executives to inquire about company data through company visits.

- Indirect: Bangchak provided assorted data, performance outcomes, financial statements, and other information given to SET. Other data were presented through meeting documents, video and audio recordings, and E-Newsletters, as well as other reports submitted to SET on the Company's website www.bangchak.co.th, where interested parties can read and download this information. The Investor's Relations page contains information in Thai and English which is updated frequently.



10. Social Responsibility

Bangchak operates strictly under its founding mission to co-develop for a good quality of life with the communities where it operates and the public at the national level, with the solutions and practices in response to the needs and expectations of the communities and society. In 2017, it supported and promoted activities at the community and society levels in parallel with details as follows:

Community development surrounding Bangchak's sites

To ensure appropriate responses to the needs and expectations of the communities surrounding its sites, Bangchak classifies target communities into four groups. Most of their expectations involve safe operation, timely communication in case of emergencies, and knowledge sharing of practices during emergency, as well as their joint participation in public service activities. More than 221 activities were organized during 2017, benefiting more than 24,774 persons.

Social development at the national level

Bangchak's business growth at the national level is pursued under a scheme of social enterprise, driven with a scope of work that truly reflects the needs and expectations of farmer groups, who are stakeholders, customers and a majority of the population. With deep, thorough and caring business operations through support of education and economic development at the community level, Bangchak has opted to expand its businesses from existing operations to improve the quality of life and increase environmental awareness of the Thai society. During the previous year, Bangchak added activities with initiatives in line with the



United Nations Sustainable Development Goals (UNSDGs) with a focus on youths and farmers, and activities to raise the awareness and importance of the environment, society and economic development at the grassroots.

All these activities not only are in line with the corporate vision, but also correspond to the SDGs (Sustainability Development Goals), the corporate social responsibility standard of ISO 26000, and UN Global Compact (UNGC); hence, they can be advanced toward sustainability. Those who are interested can read and access more information in the Company's report on business development in conjunction with the environment and society under the framework of Global Reporting Initiative (GRI), posted at the corporate website at www.bangchak.co.th.



11. Internal Control and Risk Management

Relentlessly Bangchak Corporation Plc. values an effective internal control system under the internal control scope of The Committee of Sponsoring Organizations of the Treadway Commission (COSO). This year, it commissioned EY Corporate Services Ltd., to assess its internal control system before presenting its recommendations to the Board of Directors and the management for improvement of effectiveness.

Reviewing the recommendations, the Board provided its views on the adequacy and suitability of the internal control system. Below is a summary of assessment findings.

1. Control environment

The Company's organizational environment and structure favor implementation of the internal control system. This year, Bangchak made a change to the organizational structure, adding Legal and Corporate Compliance to centralize compliance with laws, regulations, and rules of assorted agencies in a clear and tangibly measured way to guide employees' work. Its business goals are deliberated by the Board in a clear and measurable way for use as concrete guidelines for employees. Employee incentives or compensation has undergone a critical analysis for sensibility. A proper organizational structure favors efficient business execution by the management. The management also consistently values business integrity and ethics. Bangchak has stressed to employees the issues of fraud risk and conflicts of interest by improving how information



on employees' conflicts of interest is given through the e-HR system for greater convenience and information timeliness.

Bangchak staged CG Day 2017 activities under the "In H.M. the Late King's Footsteps: Following Dharma Principles" theme to stimulate awareness of a sustainable corporate governance culture and organized the 2017 business partner seminar (in its fourth consecutive year) to educate and encourage business partners to join CAC in combating corruption, underscoring Bangchak's unwavering commitment to anti-corruption.

Bangchak underwent assessment before earning awards from external agencies, including Best Sustainability Awards 2017, which represented further recognition of corporate governance reports and social responsibility. Its award on the sustainability report, termed Excellence, reflected efforts to integrate business sustainability and conformance to good governance.

The Company has instituted measures for whistle-blowing and complaint-filing against violations of the law and the Code of Conduct, or behavior potentially classified as frauds or malfeasance of those inside the Company or of stakeholders, including inaccurate financial reports or deficient internal controls. The Board has also instituted protective measures for whistle-blowers for stakeholders' greater stewardship of Company benefits.



2. Risk Assessment

The Company has appointed the Enterprise-wide Risk Management Committee (ERMC) to define policies, strategies and enterprise-wide risk management goals; evolve such a management system for continual efficiency; support and actively encourage cooperation in risk management at all levels; and ensure suitable and efficient risk management. The Company took into consideration risks associated with new ventures to bolster confidence that such businesses are viable and achieve goals. It also evolved a risk management process by integrating the approaches under ISO 31000 (which accounts for company-wide risk management) to achieve operating objectives and align with international standards. In addition, this year Bangchak applied the Key Risk Indicators (KRIs) to its monitoring and surveillance processes concerning risk occurrence to modify and develop into additional risk management plans, mitigate impacts on corporate goals, and pay attention to risk management by Bangchak Group companies so that they may proceed suitably with manageable key risk control so as to jointly achieve goals.

Stringent and consistent is the Company's valuing of a sound environmental and safety management system to its neighboring communities. It appointed an Organizational Development Committee and BCM Taskforce, charged with system preparation to handle risks and potential crises; defined strategies to keep the company running even during emergencies; appointed a task force to draft business continuity management procedures to make plans comprehensive, ring-fence crises and situations, and enable Bangchak's business to proceed uninterrupted



in emergencies and mitigate potential. Bangchak is the first domestic refinery to win ISO 22301:2012 certification (business continuity management) and undergo constant surveillance surveys from the accreditor.

3. Control activities

The Company's control activities rely on Key Performance Indicators (KPIs) as a planning and control tool, with segregation of responsibilities for checks and balances. This year, for business suitability, Bangchak revised and redefined the authority and approval authority for various levels. Checks and balances were enforced by units and panels specifically appointed, including the Internal Audit, the Capital Investment Committee, and the Enterprise-wide Risk Management Committee.

Authority, responsibility and approval of expenditure are defined in writing, along with preparation of documents that favor segmentation and identification of responsible parties should things go wrong. Custodianship and stewardship of Company properties to prevent losses or abuses have been instituted. The Company transactions with long-term obligations are properly monitored for contractual compliance. Measures are in place to prevent self-gains of Company opportunities or benefits. This year, through seminars, Bangchak educated its executives, staff, and affiliates on the "SEC's Do's and Don't's for Using Inside Information and Responsibility under Thai Laws" topic to ensure common understanding of inside information, including cautionary measures and legal responsibility.



Procedures are in place to ensure that the Company observes the law and relevant regulations. Now in place is control self-assessment (CSA) at business levels, section levels, and work process levels throughout the company, as is an annual assessment of performance.

Bangchak's strict, suitable measures govern engagement in transactions with major shareholders, directors, among others, to prevent unlawful transfers of benefits; for instance, such transactions must first secure approval by disinterested parties, transaction data must be disclosed under SEC rules, and data on related parties or businesses under accounting standards must be disclosed.

Bangchak reviewed and modified its policy and requirements of IT system security under the ISO 27001 information security management standard and constantly informed its staff about pertinent risks and prevention of threats to the IT system and information system application standard.

In addition, the Company regularly monitored subsidiaries' performances and formulated their corporate governance policies along with their security, safety, occupational health, environment, and energy policies.

4. Information and communication

Bangchak developed its information system to accommodate businesses covering refinery administration, marketing, finance and accounting administration, and HR administration in line with the IT Digital Roadmap. Specifically, it relentlessly applied digital technology in business support,



including formulation of a Preventive Maintenance on Mobile Devices and Warehouse Optimization System for refinery engineers that need essential data to efficiently and safely provide equipment maintenance under the policy on the security of IT systems and standard on the use of information systems and networks. Evidence of its successes consisted of the certification of ISO/IEC 27001 and ISO/IEC 27031 concerning IT system security and certification of ISO/IEC 20000-1:2001. In place is the SAP Enterprise Resource Planning (ERP) SAP ECC 6.0, which is state-of-the-art on a par with other countries, systems. What is more, Bangchak commands plans to develop data management, data analysis, and Big Data management systems to more efficiently leverage assorted data across the corporation, whether for analytical purposes or for business applications.

Bangchak employs several communication channels within the company, including the Intranet, e-mails, and intercom, depending on the contents. In its external communication, its website is readily accessible, its menu can be viewed on mobile devices, and it can provide more efficient data. In fact, this website has won a Distinction Winner Award 2017 (Silver Trophy), presented to entities originating creative online communication.

Bangchak puts in place channels for whistleblowing or complaint-making about fraud involving people in the organization, either staff or stakeholders through telephone and e-mail. If a concern about wrongdoing is raised, a committee comprising members of units relevant to the issue will be set up to launch an investigation.



5. Monitoring and assessment

The Company commands a performance tracking system by having a committee regularly compare performance results against goals, so that factors potentially impacting performance can lead to strategic plan adjustment and goal achievement. An internal audit unit, reporting to the Audit Committee, reviews compliance with the company's formulated internal control system. In addition, the Legal and Corporate Compliance is assigned to coordinate the assessment, the execution of the internal control system, and coordination and encouragement of various units to conform to the internal control system in an efficient and continual manner.

**Head of Internal Audit**

At its meeting No. 6/2005 held on Jul. 11, 2005, the Board of Directors deemed it appropriate to appointed Mr. Pichit Wongrujiravanich as Vice President of Internal Audit. Since Mr. Pichit has over 22 years' experience in auditing with SGV-NA Thalang Office Co., Ltd. and Yontrakit Group.

The Audit Committee considers, appoints, transfers, and assesses the performance of the head of Internal Audit. Please see information of the head of Internal Audit in Attachment 4.

Head of the Compliance Department

At its meeting No. 6/2009 held on Jun. 26, 2009, the Board of Directors appointed Ms. Pakawadee Junrayapes as Company Secretary, effective from July 1, 2009. In 2017, due to the Company's management restructuring, the Company appointed Ms. Pakawadee Junrayapes as Executive Vice President, effective from January 1, 2018. Please see information of the head of Legal and Corporate Compliance in Attachment 4.



12. Connected Transactions

1.1 **Connected transactions with subsidiaries, jointly-controlled businesses, associated companies and related companies during 2016 and 2017 consisted of the following:**

1.1.1 Sale of products and services to subsidiaries, jointly-controlled businesses, associated companies and related companies

Related company	2016	2017	Relationship for the year ended 31 December 2017	
	THB (million)	THB (million)	Shareholding	Management
<u>Subsidiaries</u>				
Bangchak Green Net Co., Ltd.	28,114.99	31,443.56	- Bangchak holds 49% of the shares	- Bangchak delegates its representatives as directors
Bangchak Biofuel Co., Ltd.	-	0.03	- BBGI (Bangchak's subsidiary) holds 70% of the shares	- Bangchak delegates its representatives as directors
BCP Trading Pte. Ltd.	304.45	2,715.36	- Bangchak holds 100% of the shares	- Bangchak delegates its representatives as directors
Bangchak Bioethanol (Chachoengsao) Co., Ltd.	2.09	8.64	- BBGI (Bangchak's subsidiary) holds 85% of the shares	- Bangchak delegates its representatives as directors
<u>Associated companies</u>				
Ubon Bio Ethanol Co., Ltd.	13.94	12.64	- BBGI (Bangchak's subsidiary) holds 21.28% of the shares	- Bangchak delegates its representatives as directors
Ubon Agricultural Energy Co., Ltd.	6.87	14.98	- Ubon Bio-Ethanol Co., Ltd. (associated company) holds 100% of the shares	- Bangchak delegates its representatives as directors



1.1.2 Purchase of products and services from subsidiaries, jointly-controlled businesses, associated companies and related companies

Related company	2016 THB (million)	2017 THB (million)	Relationship for the year ended 31 December 2017	
			Shareholding	Management
<u>Subsidiaries</u>				
Bangchak Green Net Co., Ltd	0.41	0.16	- BCP holds 49% of the shares	- Bangchak delegates its representatives as directors
Bangchak Biofuel Co., Ltd.	4,982.10	4,533.86	- BBGI (Bangchak's subsidiary) holds 70% of the shares	- Bangchak delegates its representatives as directors
BCP Trading Pte. Ltd.	575.13	7,434.83	- Bangchak holds 100% of the shares	- Bangchak delegates its representatives as directors
Bangchak Bioethanol (Chachoengsao) Co., Ltd	263.13	1,057.36	- BBGI (Bangchak's subsidiary) holds 85% of the shares	- Bangchak delegates its representatives as directors
<u>Associated company</u>				
Ubon Bio Ethanol Co., Ltd.	1,373.74	1,487.59	- BBGI (Bangchak's subsidiary) holds 21.28% of the shares	- Bangchak delegates its representatives as directors
<u>Related business</u>				
Fuel Pipeline Transportation Co., Ltd	430.55	441.69	- Bangchak holds 4.95% of the shares	- Bangchak delegates its representatives as directors



1.1.3 Revenue from investment and other revenues from subsidiaries, jointly-controlled businesses, associated companies and related companies

Related company	2016	2017	Relationship for the year ended 31 December 2017	
	THB (million)	THB (million)	Shareholding	Management
<u>Subsidiaries</u>				
Bangchak Green Net Co., Ltd	11.41	68.43	- Bangchak holds 49% of the shares	- Bangchak delegates its representatives as directors
Bangchak Biofuel Co., Ltd.	128.43	115.53	- BBGI (Bangchak's subsidiary) holds 70% of the shares	- Bangchak delegates its representatives as directors
NIDO Petroleum Limited	226.82	143.89	- BCP Energy International Pte. Ltd. (Bangchak's subsidiary) holds 100% of the shares	- Bangchak delegates its representatives as directors
BCP Innovation Pte. Ltd.	0.95	-	- Bangchak holds 100% of the shares	- Bangchak delegates its representatives as directors
BCPG Plc.	929.58	884.97	- Bangchak holds 70.27% of the shares	- Bangchak delegates its representatives as directors
Bangchak Bioethanol (Chachoengsao) Co., Ltd.	0.16	9.61	- BBGI (Bangchak's subsidiary) holds 85% of the shares	- Bangchak delegates its representatives as directors
Bangchak Retail Co., Ltd.	-	12.81	- Bangchak holds 100% of the shares	- Bangchak delegates its representatives as directors
<u>Associated company</u>				
Ubon Bio Ethanol Co., Ltd.	-	21.27	- BBGI (Bangchak's subsidiary) holds 21.28% of the shares	- Bangchak delegates its representatives as directors
<u>Related business</u>				
Fuel Pipeline Transportation Co., Ltd	8.45	5.80	- Bangchak holds 4.95% of the shares	- Bangchak delegates its representatives as directors



1.2.1 Interest expenses paid to subsidiaries for loan guarantees under grant of operating rights

Related company	2016	2017	Relationship for the year ended 31 December 2017	
	THB (million)	THB (million)	Shareholding	Management
<u>Subsidiary</u>				
Bangchak Green Net Co., Ltd	0.32	-	- Bangchak holds 49% of the shares	- Bangchak delegates its representatives as directors

1.2.2 Other expenses paid to subsidiaries, jointly-controlled businesses, associated companies and related companies

Related company	2016	2017	Relationship for the year ended 31 December 2017	
	THB (million)	THB (million)	Shareholding	Management
<u>Subsidiaries</u>				
Bangchak Green Net Co., Ltd.	26.66	26.83	- Bangchak holds 49% of the shares	- Bangchak delegates its representatives as directors
BCPG Plc.	0.38	0.29	- Bangchak holds 70.27% of the shares	- Bangchak delegates its representatives as directors
Bangchak Retail Co., Ltd.	12.25	8.58	- Bangchak holds 100% of the shares	- Bangchak delegates its representatives as directors
NIDO Petroleum Limited	4.16	17.03	- BCP Energy International Pte. Ltd. (Bangchak's subsidiary) holds 100% of the shares	- Bangchak delegates its representatives as directors
BCP Trading Pte. Ltd.	-	9.06	- Bangchak holds 100% of the shares	- Bangchak delegates its representatives as directors
<u>Joint venture</u>				
Bongkot Marine Services Co., Ltd.	-	261.30	- Bangchak holds 30% of the shares	- Bangchak delegates its representatives as directors



1.2.3 Debtors, advance payments and short-term loans to related businesses

1.2.3.1 Trade debtors

Related company	2016 THB (million)	2017 THB (million)	Relationship for the year ended 31 December 2017	
			Shareholding	Management
<u>Subsidiaries</u>				
Bangchak Green Net Co., Ltd	1,094.76	1,142.19	- Bangchak holds 49% of the shares	- Bangchak delegates its representatives as directors
Bangchak Biofuel Co., Ltd.	2.49	-	- BBGI (Bangchak's subsidiary) holds 70% of the shares	- Bangchak delegates its representatives as directors
Bangchak Retail Co., Ltd	5.08	1.71	- Bangchak holds 100% of the shares	- Bangchak delegates its representatives as directors
BCP Trading Pte. Ltd.	-	558.37	- Bangchak holds 100% of the shares	- Bangchak delegates its representatives as directors
Bangchak Bioethanol (Chachoengsao) Co., Ltd	0.68	1.04	- BBGI (Bangchak's subsidiary) holds 85% of the shares	- Bangchak delegates its representatives as directors
<u>Associated companies</u>				
Ubon Bio Ethanol Co., Ltd.	1.08	1.13	- BBGI (Bangchak's subsidiary) holds 21.28% of the shares	- Bangchak delegates its representatives as directors
Ubon Agricultural Energy Co., Ltd.	0.92	0.90	- Ubon Bio-Ethanol Co., Ltd. (associated company) holds 100% of the shares	- Bangchak delegates its representatives as directors
<u>Related business</u>				
Fuel Pipeline Transportation Co., Ltd	0.33	0.33	- Bangchak holds 4.95% of the shares	- Bangchak delegates its representatives as directors



1.2.4 Debtors and loans to related businesses

1.2.4.1 Loans

Related company	2016 THB (million)	2017 THB (million)	Relationship for the year ended 31 December 2017	
			Shareholding	Management
<u>Subsidiaries</u>				
Nido Petroleum Limited	2,788.52	2,113.45	- BCP Energy International Pte. Ltd. (Bangchak's subsidiary) holds 100% of the shares	- Bangchak delegates its representatives as directors
Bangchak Retail Co., Ltd	-	90.00	- Bangchak holds 100% of the shares	- Bangchak delegates its representatives as directors
<u>Related business</u>				
Fuel Pipeline Transportation Co., Ltd	17.32	13.91	- Bangchak holds 4.95% of the shares	- Bangchak delegates its representatives as directors



1.2.4.2 Other debtors

Related company	2016 THB (million)	2017 THB (million)	Relationship for the year ended 31 December 2017	
			Shareholding	Management
<u>Subsidiaries</u>				
Bangchak Biofuel Co., Ltd.	-	0.43	- BBGI (Bangchak's subsidiary) holds 70% of the shares	- Bangchak delegates its representatives as directors
Bangchak Solar Energy Co.,Ltd.	0.39	0.39	- BCPG (Bangchak's subsidiary) holds 100% of the shares	- Bangchak delegates its representatives as directors
Bangchak Retail Co., Ltd	-	2.46	- Bangchak holds 100% of the shares	- Bangchak delegates its representatives as directors
BCPG Plc.	213.88	2.35	- Bangchak holds 70.27% of the shares	- Bangchak delegates its representatives as directors
Bangchak Bioethanol (Chachoengsao) Co., Ltd	0.03	1.48	- BBGI (Bangchak's subsidiary) holds 85% of the shares	- Bangchak delegates its representatives as directors
Nido Petroleum Limited	-	8.05	- BCP Energy International Pte. Ltd. (Bangchak's subsidiary) holds 100% of the shares	- Bangchak delegates its representatives as directors



1.2.5 Creditors of related businesses

1.2.5.1 Trader creditors

Related company	2016 THB (million)	2017 THB (million)	Relationship for the year ended 31 December 2017	
			Shareholding	Management
<u>Subsidiaries</u>				
Bangchak Green Net Co., Ltd	2.41	0.02	- Bangchak holds 49% of the shares	- Bangchak delegates its representatives as directors
Bangchak Biofuel Co., Ltd.	243.12	158.47	- BBGI (Bangchak's subsidiary) holds 70% of the shares	- Bangchak delegates its representatives as directors
BCP Trading Pte. Ltd.	306.71	384.74	- Bangchak holds 100% of the shares	- Bangchak delegates its representatives as directors
Bangchak Bioethanol (Chachoengsao) Co., Ltd	84.69	102.22	- BBGI (Bangchak's subsidiary) holds 85% of the shares	- Bangchak delegates its representatives as directors
<u>Associated company</u>				
Ubon Bio Ethanol Co., Ltd.	128.06	128.98	- BBGI (Bangchak's subsidiary) holds 21.28% of the shares	- Bangchak delegates its representatives as directors



1.2.5.2 Other creditors

Related company	2016 THB (million)	2017 THB (million)	Relationship for the year ended 31 December 2017	
			Shareholding	Management
<u>Subsidiaries</u>				
Bangchak Green Net Co., Ltd	0.56	3.92	- Bangchak holds 49% of the shares	- Bangchak delegates its representatives as directors
Bangchak Retail Co., Ltd	17.32	1.01	- Bangchak holds 100% of the shares	- Bangchak delegates its representatives as directors
BCP Trading Pte. Ltd.	-	7.93	- Bangchak holds 100% of the shares	- Bangchak delegates its representatives as directors
BCPG Plc.	0.03	0.02	- Bangchak holds 70.27% of the shares	- Bangchak delegates its representatives as directors
<u>Joint venture</u>				
Bongkot Marine Services Co., Ltd.	-	12.42	- Bangchak holds 30% of the shares	- Bangchak delegates its representatives as directors
<u>Related business</u>				
Fuel Pipeline Transportation Co., Ltd	41.02	43.38	- Bangchak holds 4.95% of the shares	- Bangchak delegates its representatives as directors



1.3 Other non-current assets

Related company	2016 THB (million)	2017 THB (million)	Relationship for the year ended 31 December 2017	
			Shareholding	Management
<u>Subsidiary</u> Nido Petroleum Limited	176.74	312.70	- BCP Energy International Pte. Ltd. (Bangchak's subsidiary) holds 100% of the shares	- Bangchak delegates its representatives as directors

1.4 Other current liabilities: These items are Bangchak's demanded guarantee payment for operating contracts with subsidiaries companies.

Related company	2016 THB (million)	2017 THB (million)	Relationship for the year ended 31 December 2017	
			Shareholding	Management
<u>Subsidiaries</u> Bangchak Green Net Co., Ltd.	29.72	-	- Bangchak holds 49% of the shares	- Bangchak delegates its representatives as directors
BCPG Plc.	6.00	6.00	- Bangchak holds 70.27% of the shares	- Bangchak delegates its representatives as directors

1.5 Other non-current liabilities: These items are Bangchak's revenue received in advance for land lease from related companies.

Related company	2016 THB (million)	2017 THB (million)	Relationship for the year ended 31 December 2017	
			Shareholding	Management
<u>Related business</u> Fuel Pipeline Transportation Co., Ltd	2.97	2.50	- Bangchak holds 4.95% of the shares	- Bangchak delegates its representatives as directors

**1. Connected transactions with Bangchak Green Net Co., Ltd.**

Bangchak Green Net managed Bangchak service stations and consumer product sales at Lemon Green and Bai Chak outlets. These connected transactions followed general business conditions, were based on market prices and followed the details stated in the operating right agreements.

2. Connected transactions with Bangchak Biofuel Co., Ltd.

Bangchak Biofuel Co., Ltd., an indirect subsidiary through BBGI Company Limited (BBGI), which holds 70% of its shares, was set up to produce and sell biodiesel. These connected transactions followed general business conditions, were based on market prices and followed details stated in the operation contracts.

3. Connected transactions with Bangchak Solar Energy Co., Ltd.

Bangchak Solar Energy Co., Ltd., an indirect subsidiary through BCPG Plc., was formed to run a 38-MW capacity solar farm, “Sunny Bangchak” Phase 1 at Amphoe Bang Pa-In, Phra Nakhon Si Ayutthaya. The service fees followed general business conditions, and followed details stated in the operating agreement.

4. Connected transactions with Bangchak Solar Energy (Prachinburi) Co., Ltd.

An indirect subsidiary company through BCPG Plc., Bangchak Solar Energy (Prachinburi) operated a power plant to produce electricity from solar cells at Amphoe Kabin Buri, Prachin Buri. The service fees followed general business conditions, and followed details stated in the operation contracts.

5. Connected transactions with Bangchak Solar Energy (Chaiyaphum 1) Co., Ltd.

An indirect subsidiary company of BCPG Plc., Bangchak Solar Energy (Chaiyaphum 1) operated a power plant to produce electricity from solar cells at Amphoe Bamnet Narong, Chaiyaphum. The service fees followed general business conditions, and followed details stated in the operation contracts.

6. Connected transactions with Bangchak Solar Energy (Buriram) Co., Ltd.

An indirect subsidiary company through BCPG Plc., Bangchak Solar Energy (Buriram) operated a power plant to produce electricity from solar cells at Amphoe Prakhon Chai, Buri Ram. The service fees followed general business conditions, and followed details stated in the operation contracts.

**7. Connected transactions with Bangchak Solar Energy (Buriram 1) Co., Ltd.**

An indirect subsidiary company through BCPG Plc., Bangchak Solar Energy (Buriram 1) operated a power plant to produce electricity from solar cells at Amphoe Nong Ki, Buri Ram. These connected transactions and service fees followed general business conditions, and followed details stated in the operation contracts.

8. Connected transactions with Bangchak Solar Energy (Nakhonratchasima) Co., Ltd.

An indirect subsidiary company through BCPG Plc., Bangchak Solar Energy (Nakhonratchasima) operated a power plant to produce electricity from solar cells at Amphoe Dan Khun Thot, Nakhon Ratchasima. The service fees followed general business conditions, and followed details stated in the operation contracts.

9. Connected transactions with BCP Energy International Pte. Ltd.

A subsidiary company in Singapore, BCP Energy International Pte. Ltd. was set up to engage in businesses relating to energy, petrochemicals, and natural resources abroad. The service fees followed general business conditions and were based on market prices.

10. Connected transactions with BCP Innovation Pte. Ltd.

A subsidiary company in Singapore, BCP Innovation Pte. Ltd. was set up to engage in innovation-related businesses. The service fees followed general business conditions and were based on market prices.

11. Connected transactions with BCP Trading Pte. Ltd.

A subsidiary company in Singapore, BCP Trading Pte. Ltd. was set up to trade commodities including crude oil, petroleum products, petrochemicals and related chemicals and to conduct other businesses that would benefit the company, including but not limited to oil hedging, chartering, storage and distribution. These connected transactions followed general business conditions and were based on market prices.

12. Connected transactions with Nido Petroleum Limited

Nido Petroleum Limited (an indirect subsidiary in Australia) was formed to run the upstream petroleum business. These connected transactions followed general business conditions and were based on market prices

**13. Connected transactions with BCPG Plc.**

A subsidiary company, BCPG Plc. was established to engage in power generation from solar cells. The service fees followed general business conditions, were based on market prices and followed details stated in the operation contracts.

14. Connected transactions with Bangchak Retail Co., Ltd.

A subsidiary company, Bangchak Retail is engaged in franchise businesses and intellectual property acquisition. The transaction and service fees followed general business conditions, were based on market prices and followed details stated in the operation contracts.

15. Connected transactions with Bangchak Bioethanol (Chachoengsao) Co., Ltd.

An indirect subsidiary company through BBGI, which holds 85% of its shares, Bangchak Bioethanol (Chachoengsao) is engaged in cassava-based ethanol production. The ethanol was used in gasohol production. The prices and service fees followed general business conditions, were based on market prices and followed details stated in the operation contracts.

16. Connected transactions with Ubon Bio Ethanol Co., Ltd.

An indirect associated company through BBGI which holds 21.28% of its shares, Ubon Bio Ethanol is engaged in cassava-based ethanol production. A portion of the ethanol was used in the production of its gasohol and the remaining was exported, mainly to China. The prices and service fees followed general business conditions, were based on market prices and followed details stated in the operation contracts.

17. Connected transactions with Ubon Agricultural Energy Co., Ltd.

Transactions with Ubon Agricultural Energy Co., Ltd., a related company through Bangchak's associated company, Ubon Bio-Ethanol Co., Ltd., which holds its shares, followed general business conditions and were based on market prices.

18. Connected transactions with Bongkot Marine Services Co., Ltd.

The Company entered into a contract for the use of Bongkot oil depot service with Bongkot Marine Services Co., Ltd., a joint venture which provides floating storage unit services. The transaction followed general business conditions, were based on market prices and followed details stated in the operation contracts.



19. Connected transactions with Fuel Pipeline Transportation Co., Ltd.

Bangchak entered into contracts with FPT to take its oil products from Bangchak Depot to its Bang Pa-in Depot and sell them to its customers in the Central, Northern and Northeastern regions under general business conditions and market prices.

These transactions were undertaken in the normal course of business, with none representing extraordinary transactions. No siphoning of interests occurred among Bangchak, subsidiary companies, connected companies and shareholders. Approvals were scrutinized by the President, who duly approved them as authorized under Bangchak's regulations.

Disclosure of connected transactions follows the rules of the Office of the Securities and Exchange Commission (SEC) and the Stock Exchange of Thailand (SET), as well as the accounting standards for the disclosure of information on connected parties and businesses, as defined by the Federation of Accounting Professions.

Policy for future connected transactions

In undertaking future connected transactions, Bangchak will continue its product and oil pipeline transport service transactions with connected companies since these represent normal business practices in the same industry. The pricing of products and services follows market practices or the details stipulated in commercial contracts, or both. However, in such cooperation, Bangchak takes into consideration its best interests. The Audit Committee and the Internal Audit Office supervise and review Bangchak's businesses to ensure its conformance to Securities and Exchange Act and SET's rules and regulations, notifications, orders and requirements. In addition, for whichever transactions involving Bangchak executives, they are not allowed to cast their votes in meetings. Major connected transactions must be reviewed and approved by the Board.



13. Essential financial information

Financial Statements

(1) Report of Certified Public Accountant

Financial Statement	Auditor	Company
2017	Mr. Natthaphong Tantichatanon Certified Public Accountants, Registration Number 8829	KPMG Phoomchai Audit Ltd
2016	Mr. Natthaphong Tantichatanon Certified Public Accountants, Registration Number 8829	KPMG Phoomchai Audit Ltd
2015	Mr. Winid Silamongkol Certified Public Accountants, Registration Number 3378	KPMG Phoomchai Audit Ltd

KPMG have audited the consolidated and separate financial statements of Bangchak Corporation Public Company Limited and its subsidiaries (the “Group”) and of Bangchak Corporation Public Company Limited (the “Company”), respectively, which comprise the consolidated and separate statements of financial position as of 31 December 2017, the consolidated and separate statements of income and 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 the Auditor’s 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 of 31 December 2017 and their financial performance and cash flows for the year then ended in accordance with Thai Financial Reporting Standards (TFRSs).



The Auditor conducted an audit in accordance with Thai Standards on Auditing (TSAs). The Auditor's responsibilities, under those standards, are further described in the Auditor's Responsibilities for the Audit of the Consolidated and Separate Financial Statements section of the report. The Auditor is 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 the audit of the consolidated and separate financial statements. The Auditor has fulfilled other ethical responsibilities in accordance with these requirements. The Auditor believes that the audit evidence that obtained is sufficient and appropriate to provide a basis for the Auditor's opinions.

Key audit matters are those matters that, in the Auditor's professional judgment, were of most significance in an audit of the consolidated and separate financial statements of the current period. These matters were addressed in the context of an audit of the consolidated and separate financial statements as a whole, and in forming the Auditor's opinion thereon, and the Auditor does not provide a separate opinion on these matters.



Business combination and acquisition of investment in associates	
Refer to Notes 3 (a), 4 and 12 to the financial statements.	
The key audit matter	How the matter was addressed in the audit
<p>During 2017, certain subsidiary has amalgamated with other company and the Group has acquired 2 investments in associates in alternative energy business in foreign countries. The Group has assessed the fair value of assets acquired and liabilities assumed and consideration transferred with resulting differences recognized as goodwill and share of profit of associates from bargain purchases, respectively.</p> <p>Due to the materiality of the transactions and the significant judgment and complexities involved in determining the fair value, the Auditor considered as the key audit matter.</p>	<p>The Auditor's procedures included the following:</p> <ul style="list-style-type: none"> - Evaluated the appropriateness of the identification of the net assets acquired at the date of acquisition including understanding on the procedures on identification of fair value on net assets acquired which was prepared by the management. - Evaluated the independence and competency of independent appraiser. - Involved KPMG valuation specialist to evaluate valuation methodology and financial parameters applied to the discount rate. - Evaluated significant assumptions underpinning the fair value valuations reference to internal and external information and mathematical accuracy. - Considered the adequacy of disclosures in accordance with Thai Financial Reporting Standard.

Impairment of oil exploration & production assets and investment in subsidiaries	
Refer to Notes 3 (b) and 11 to the financial statements.	
The key audit matter	How the matter was addressed in the audit
<p>The outlook for oil market continues to be challenging and future oil prices are still continuing to fluctuate. The recoverable amount of assets is derived from discounted cash flow projections which reflect a number of assumptions and estimates by the management. The Auditor considered as key audit matter.</p>	<p>The Auditor's procedures included the following:</p> <ul style="list-style-type: none"> - Understand the management's operation plan, process of the indicators identification and impairment testing process and tested the calculation of recoverable amount prepared by the management. - Assessed the key assumptions estimated by the management with reference to internally and externally derived sources after taking into account the historical forecasting accuracy.



	<ul style="list-style-type: none"> - Involved KPMG valuation specialist to evaluate valuation methodology and financial parameters applied to the discount rate. - Considered the adequacy of disclosures in accordance with Thai Financial Reporting Standard.
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Valuation of inventories	
Refer to Notes 3(g) and 10 to the financial statements.	
The key audit matter	How the matter was addressed in the audit
<p>Inventories are measured at the lower of cost and net realizable value. As a result of fluctuation in crude oil and oil products price which may cause the net realizable value to be lower than cost.</p>	<p>The Auditor's procedures included the following:</p> <ul style="list-style-type: none"> - Verified the appropriateness of the net realizable value calculation. - Checked the selling prices of finished goods with the reference market price and contract price. - Considered the adequacy of disclosures in accordance with Thai Financial Reporting Standard.

The Auditor draw attention to note 12 to the financial statements. The Group has hired an independent appraiser to determine the fair value of net assets within investments in associates in Indonesia; however, the reviews have not yet been completed. Therefore, value to be recognized is yet to be finally determined, allocated and is subject to potential amendment depending on the finalization of the appraisal by independent appraisers. The Auditor is not modified in respect of this matter.

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



the Auditor's report thereon. The annual report is expected to be made available to the Auditor after the date of this auditor's report.

In the Auditor's opinion on the consolidated and separate financial statements does not cover the other information and the Auditor will not express any form of assurance conclusion thereon.

In connection with an audit of the consolidated and separate financial statements, the Auditor's responsibility is to read the other information identified above when it becomes available and, in doing so, consider whether the other information is materially inconsistent with the consolidated and separate financial statements or the Auditor's knowledge obtained in the audit, or otherwise appears to be materially misstated.

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.

The Auditor's 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 the Auditor's 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, the Auditor exercises professional judgment and maintain professional skepticism throughout the audit. The Auditor 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 the Auditor's opinion. The risk of not detecting a material misstatement resulting from fraud is higher



than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control.

- Obtain an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Group's and the Company's internal control.
- Evaluate the appropriateness of accounting policies used and the reasonableness of accounting estimates and related disclosures made by management.
- Conclude on the appropriateness of management's use of the going concern basis of accounting and, based on the audit evidence obtained, whether a material uncertainty exists related to events or conditions that may cast significant doubt on the Group's and the Company's ability to continue as a going concern. If the Auditor concludes that a material uncertainty exists, the Auditor would be required to draw attention in an audit report to the related disclosures in the consolidated and separate financial statements or, if such disclosures are inadequate, to modify the Auditor's opinion. The Auditor's conclusions are based on the audit evidence obtained up to the date of an 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. The Auditor is responsible for the direction, supervision and performance of the group audit. The Auditor remain solely responsible for the Auditor's opinion.

The Auditor communicated 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 the Auditor identified during an audit.

The Auditor also provided those charged with governance with a statement that the Auditor has 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 the Auditor's independence, and where applicable, related safeguards.

From the matters communicated with those charged with governance, the Auditor determines 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. The Auditor describes these matters in the Auditor's report unless law or regulation precludes public disclosure about the matter or when, in extremely rare circumstances, The Auditor determines that a matter should not be



communicated in an audit report because the adverse consequences of doing so would reasonably be expected to outweigh the public interest benefits of such communication.

(2) Consolidated financial statements as of December 31st, 2017

Statement of financial position

(Unit: Baht Million)

	2017		2016		2015	
	Amount	%	Amount	%	Amount	%
Current assets						
Cash and cash equivalents	10,106	8.9	19,287	18.9	7,872	9.6
Current investments	220	0.2	1,719	1.7	4,519	5.5
Trade accounts receivable	7,511	6.6	6,022	5.9	5,234	6.4
Other receivables	1,340	1.2	1,191	1.2	742	0.9
Inventories	15,720	13.8	14,560	14.3	13,945	17.0
Current tax assets	52	0.0	-	-	-	-
Oil fuel fund subsidies receivable	1,341	1.2	894	0.9	825	1.0
Other current assets	-	-	477	0.5	489	0.6
Asset classified as held for sale	-	-	-	-	173	0.2
Total current assets	36,291	31.8	44,150	43.4	33,800	41.2
Non-current assets						
Investments in associate and joint ventures	14,400	12.6	840	0.8	774	0.9
Other long-term investments	4,347	3.8	739	0.7	328	0.4
Investment properties	343	0.3	360	0.4	459	0.6
Property, plant and equipment	48,049	42.1	46,462	45.6	40,044	48.9
Goodwills	1,602	1.4	-	-	-	-
Leasehold rights	2,311	2.0	1,939	1.9	1,644	2.0
Intangible assets	3,731	3.3	5,013	4.9	2,779	3.4
Deferred tax assets	1,000	0.9	547	0.5	560	0.7
Other non-current assets	2,035	1.8	1,734	1.7	1,555	1.9
Total non-current assets	77,820	68.2	57,632	56.6	48,143	58.8
Total assets	114,110	100.0	101,783	100.0	81,942	100.0
Liabilities						
Current liabilities						
Short-term loan from financial institutions	4,046	3.5	7,444	7.3	-	-
Trade accounts payable	10,016	8.8	8,766	8.6	4,994	6.1
Other payables	3,018	2.6	3,209	3.2	2,755	3.4
Current portion of long-term loans from financial institutions	2,218	1.9	1,697	1.7	1,026	1.3
Current portion of debenture	-	-	2,000	2.0	-	-
Excise tax and oil fuel fund payable	3,037	2.7	1,069	1.1	778	0.9
Income tax payable	690	0.6	493	0.5	78	0.1
Short-term provisions	-	-	502	0.5	-	-
Other current liabilities	844	0.7	896	0.9	858	1.0
Total current liabilities	23,869	20.9	26,076	25.6	10,489	12.8
Non-current liabilities						
Long-term loans from financial institutions	20,649	18.1	14,458	14.2	16,648	20.3
Debentures	13,990	12.3	13,988	13.7	15,984	19.5
Deferred tax liabilities	590	0.5	601	0.6	280	0.3
Liabilities on long-term lease	34	0.0	38	0.0	43	0.1
Employee benefit obligations	1,949	1.7	1,770	1.7	1,571	1.9
Provision for the decommissioning cost	811	0.7	870	0.9	848	1.0
Other non-current liabilities	86	0.1	75	0.1	95	0.1
Total non-current liabilities	38,109	33.4	31,798	31.2	35,470	43.3
Total liabilities	61,979	54.3	57,874	56.9	45,959	56.1
Equity						
Issued and paid-up share capital	1,377	1.2	1,377	1.4	1,377	1.7
Additional paid-in capital	13,858	12.1	12,960	12.7	11,366	13.9
Retained earnings	27,985	24.5	25,085	24.6	22,859	27.9
Warrants	19	0.0	-	-	-	-
Other components of equity	2,411	2.1	121	0.1	(121)	(0.1)
Non-controlling interests	6,482	5.7	4,366	4.3	502	0.6
Non-controlling interests	52,132	45.7	43,909	43.1	35,983	43.9
Total liabilities and equity	114,110	100.0	101,783	100.0	81,942	100.0



Statement of income

(Unit: Baht Million)

Statement of Income	2017		2016		2015	
	Amount	%	Amount	%	Amount	%
Revenue from sale of goods and rendering of services	172,138	100.0	144,705	100.0	151,140	100.0
Cost of sale of goods and rendering of services	(158,596)	(92.1)	(132,809)	(91.8)	(139,686)	(92.4)
Gross Profit	13,543	7.9	11,896	8.2	11,454	7.6
Investment income	156	0.1	191	0.1	248	0.2
Other income	1,085	0.6	337	0.2	294	0.2
Selling expenses	(4,026)	(2.3)	(3,786)	(2.6)	(3,215)	(2.1)
Administrative expenses	(3,138)	(1.8)	(2,350)	(1.6)	(1,960)	(1.3)
Exploration and evaluation expense	(48)	(0.0)	(60)	(0.0)		
Gain (loss) from crude and product oil price hedging contract	366	0.2	107	0.07	(407)	(0.3)
Gain (loss) from foreign currencies forward contract	(225)	(0.1)	39	0.03	(155)	(0.1)
Gain on foreign exchange	889	0.5	237	0.2	178	0.1
Reversal of allowance for loss (loss) from impairment of assets	(1,518)	(0.9)	37	0.0	(65)	0.0
Share of profit of associate and joint ventures	815	0.5	21	0.0	12	0.0
Gain on bargain purchase	-	0.0	227	0.2	-	0.0
Profit before finance costs and income tax expense	7,898	4.6	6,902	4.8	6,385	4.2
Finance costs	(1,452)	(0.8)	(1,484)	(1.0)	(1,615)	(1.1)
Profit before income tax expense	6,446	3.7	5,418	3.7	4,770	3.2
Income tax expense	(41)	(0.0)	(689)	(0.5)	(673)	(0.4)
Profit for the year	6,405	3.7	4,729	3.3	4,097	2.7
Profit (loss) attributable to:						
Owners of the Company	5,778	3.4	4,773	3.3	4,151	2.7
Non-controlling interests	627	0.4	(44)	0.0	(53)	0.0
Profit for the year	6,405	3.7	4,729	3.3	4,097	2.7
Earnings per share						
Basic earnings per share	4.20		3.47		3.01	



Statement of cash flows

(Unit: Baht Million)

	2017	2016	2015
Cash flows from operating activities			
Profit for the year	6,405	4,729	4,097
<i>Adjustments for</i>			
Depreciation	4,780	4,461	4,466
Amortisation	355	273	243
(Reversal of) allowance for bad and doubtful debts expense	(0.36)	(2.09)	(0.27)
Unrealised loss on foreign exchange	308	90	270
Reversal of allowance for loss on decline in value of inventories	8	(98)	(882)
(Reversal of) allowance for loss from impairment of assets	1,518	(37)	65
(Gain) loss on disposal of property, plant and equipment	(37)	(8)	75
Interest income and dividend income	(156)	(191)	(248)
Gain on disposal of other investment	35	(29)	-
Gain on bargain purchase	-	(227)	-
Provision for employee benefit	192	145	145
Deferred revenue	(7)	(5)	(2)
Provision for customer loyalty programmes	48	32	23
Share of profit of associate and joint ventures, net of income tax expense	(815)	(21)	(12)
Finance costs	1,452	1,484	1,615
Income tax expense	41	689	673
	14,031	11,286	10,526
Changes in operating assets and liabilities			
Trade accounts receivable	(1,434)	(797)	807
Other receivables	(555)	(81)	652
Inventories	(753)	(515)	1,287
Other current assets	-	-	1,412
Other non-current assets	(387)	(373)	(64)
Trade accounts payable	1,357	3,775	(1,007)
Other payables	(11)	87	(403)
Other current liabilities	1,961	354	(416)
Employee benefit obligations	(84)	(31)	(29)
Other non-current liabilities	25	(0)	(56)
Cash generated from operating activities	14,150	13,704	12,710
Income tax paid	(299)	(416)	(677)
Net cash from operating activities	13,851	13,288	12,033
Cash flows from investing activities			
Interest received	136	209	212
(Increase) decrease in current investments	1,500	2,799	(3,896)
(Increase) decrease in long-term investments	(1,140)	(168)	(165)
Net cash outflow for investment in joint ventures	(29)	(44)	-
Net cash outflow on acquisition of subsidiary	(13,347)	(963)	(2,407)
Dividend received	65	3	2
Cash inflow from disposal of other investment	78	203	-
Purchase of property, plant and equipment	(5,522)	(9,370)	(4,845)
Sale of property, plant and equipment	499	120	53
Increase in leasehold right	(564)	(451)	(390)
Proceeds from leasehold right	5	-	-
Purchase of intangible assets	(641)	(492)	(107)
Net cash from (used in) investing activities	(18,960)	(8,154)	(11,343)
Cash flows from financing activities			
Financial cost paid	(1,305)	(1,641)	(1,615)
Increase in long term loans from financial institutions	(3,937)	7,362	-
Proceeds from issuance of subsidiary's share capital	-	75	-
Payment of change in ownership interest in subsidiary without a change in control	(35)	-	-
Proceeds from long - term loans	8,868	9,611	1,122
Repayment of long - term loans	(2,069)	(12,032)	(1,356)
Proceeds from issuance of debentures	-	-	2,996
Dividend paid	(3,311)	(2,754)	(2,039)
Proceeds from exercise of share options	27	-	-
Redemption of debenture	(2,000)	-	-
Net proceeds from subsidiaries' shares issuance without change in control	-	5,771	-
Net cash from (used in) financing activities	(3,761)	6,391	(893)
Net increase (decrease) in cash and cash equivalents	(8,870)	11,524	(202)
Cash and cash equivalents as at 1 January	19,287	7,872	7,954
Effect of exchange rate changes on balances held in foreign currencies	(310)	(110)	120
Cash and cash equivalents as at 31 December	10,106	19,287	7,872



(3) Financial Ratios

Management Discussion and Analysis on Financial Ratios of 2017 and 2016 ^{1/}

Statement of income / Return Ratios		2017	2016	2015
Revenue from sale of goods and rendering of services	Million Baht	172,138	144,705	151,140
Net profit	Million Baht	6,405	4,729	4,097
Net earnings per share ^{1/}	Baht/share	4.2	3.47	3.01
Net profit / sales and service revenue	%	3.72	3.27	2.71
Rate of return on shareholders'equity ^{2/}	%	13.57	12.73	12.07
Rate of return on assets ^{3/}	%	7.32	7.51	8.04

Statement of financial position / Financial Ratios		2017	2016	2015
Total assets	Million Baht	114,110	101,783	81,942
Total liabilities	Million Baht	61,979	57,874	45,959
Shareholders'equity	Million Baht	52,132	43,909	35,983
Current Ratio	times	1.52	1.69	3.22
DSCR (Principle Interest)	times	2.50	1.80	3.73
Debt with interest payable to equity	times	0.78	0.86	0.94
Book value per share ^{4/}	Baht/share	33.15	30.93	25.77

Note: financial reports of the company and subsidiaries in 2014 were restated, due to changes of accounting policies which financial report standard of the company revised and became effective from Jan.1, 2014.

^{1/} Only profit (loss) attributable to owners of the company

^{2/} The numerator of ROE is defined as the Profit attributable to owners of the Company and have to be annualized.

^{3/} The numerator of ROA is defined as EBIT and have to be annualized.

^{4/} Only the equity of the owners of the company

Financial Ratios Calculation

Profit Margin (%)	=	Profit attributable to owners of the company / Revenue from sale of goods and rendering of services
Return on Equity (%)	=	Profit attributable to owners of the company (Yearly) / Total Equity attributable to owners of the company (Average)
Return on Assets (%)	=	EBIT (Yearly) / Total Asset (Average)
Current Ratio (times)	=	Current Asset / Current Liabilities
DSCR	=	EBITDA (Yearly) / (Paid for long-term debt + Financial cost)
Interest Bearing Debt to Equity (times)	=	(Current portion of short-term and long-term loans from financial institutions + Debentures) / Total equity attributable to



14. Management Discussion and Analysis

1. Summary of the Company and its subsidiaries' operating result for the year ended 31th December 2017.

EBITDA Structure of the Company and its subsidiaries								
	Q4/2016	Q3/2017	Q4/2017	YoY	QoQ	FY2016	FY2017	YoY
Total Revenue	40,481	39,009	46,306	14%	19%	144,705	172,138	19%
Accounting EBITDA	3,061	3,580	3,494	14%	-2%	11,363	13,663	20%
<i>Refinery Business^{1/}</i>	2,367	2,198	2,256	-5%	3%	5,756	7,596	32%
<i>Marketing Business^{2/}</i>	(3)	474	302	N/A	-36%	2,527	2,301	-9%
<i>Power Plant Business^{3/}</i>	568	781	812	43%	4%	2,559	3,088	21%
<i>Bio-Based Product Business^{4/}</i>	131	159	132	1%	-17%	326	529	62%
<i>Resource Business^{5/}</i>	71	44	16	-77%	-62%	323	286	-11%
<i>Others</i>	(0.3)	(35)	(30)	N/A	13%	99	(3)	-103%
<i>Elimination</i>	(73)	(41)	6	108%	115%	(228)	(134)	41%
Profit attributable to owners of the Company	918	1,316	1,386	51%	5%	4,773	5,778	21%
Basic earnings per share (Baht)	0.67	0.96	1.01			3.47	4.20	

Note: 1/ EBITDA from Refinery Business of the Company, BCP Trading Pte. Ltd. and Bongkot Marine Services Co., Ltd.

2/ EBITDA from Marketing Business of the Company, Bangchak Green Net Co., Ltd., Bangchak Retail Co., Ltd., and share of profit from Oam Suk Social Enterprise Co., Ltd.

3/ EBITDA from Power Plant Business of BCPG Plc. and its subsidiaries

4/ EBITDA from BBGI Co., Ltd. (Bangchak Biofuel Co., Ltd., Bangchak Bioethanol (Chachoengsao) Co., Ltd., KSL Green Innovation Plc.) and share of profit from Ubon Bioethanol Co., Ltd.

5/ EBITDA from Natural Resources business of Nido Petroleum Limited, BCP Energy International Pte. Ltd. and BCP Innovation Pte. Ltd.

Performance of Bangchak Corporation Plc. (“The Company”) and its subsidiaries in 2017 recorded total revenue from sales of goods and rendering of services at THB 172,138 million, an increase of 19% YoY, recorded EBITDA of THB 13,663 million, an increase of 20% YoY, with net profit of THB 6,405 million, an increase of 35% YoY, with net profit attributable to owners of the Company of THB 5,778 million, or earning per shares of THB 4.20.

For Q4/2017, the company and its subsidiaries recorded revenue from sales and rendering of services of THB 46,306 million, an increase of 19% QoQ, and recorded total EBITDA of THB 3,494 million, a decrease of 2% QoQ, net profit of THB 1,567 million, an increase of 5% QoQ, with net profit attributable to owners of the Company of THB 1,386 million, or earning per shares of THB 1.01.



The company and its subsidiaries performance improved, especially the **Refinery Business Group** which still maintains its average crude run at a high level. In 2017, average crude run was recorded at 111.37 KBD, and Bangchak Refinery had its record high of crude run at 121.64 KBD throughout March. Gross refinery margin increased from the widening crack spread between finished product and crude oil in every product category, and from the higher average crude oil price; resulting in an Inventory Gain of THB 834 million, exceeding 2016's. Moreover, there was an additional gain from GRM Hedging.

Marketing Business Group, recorded the increase of total sales volume, especially from throughput volume through service stations, which has the second largest market share and is constantly on the rise. However, intensifying market competition has affected the total marketing margin, and the increasing investment in Non-Oil businesses; which is in the developing phase of its infrastructure and location expansion, thus incurring high Selling, General and Administrative expense in its initial phase, resulting in the soften operation performance compared to last year.

Power Plant Business Group, performance improved due to the commencement of the Solar Co-op commercial operation in Thailand, and the Nikaho and Nagi Project in Japan. Along with further investments in Wind Power Plant Business in the Philippines, and Geothermal Power Plant Business in Indonesia, resulting in 2017's PPA capacity increasing to 332 MW from 145 MW in 2016.

Bio-based Product Business recorded better performance. Ethanol Fuel Business's performance improved from the realization of Bangchak Bioethanol (Chachoengsao) Co., Ltd.'s full year operation performance. Moreover, average selling price and sales volume of Ethanol increased, due to the rise in demand for Ethanol used domestically. As for the Biodiesel business, performance retracted slightly due to the contracting palm oil price throughout the year, affecting the average selling price of B100 products and caused an Inventory Loss of THB 224 million, higher from the previous year. Nevertheless, B100 product sales volume increased from the government's announcement of increasing B100 product blended with Diesel.

Natural Resources Business Group performance retracted due to the Exploration and Production Business's production and sales volume decreased from the previous year; according to the Natural Decline Curve, although selling price may have adjusted upward to coincide with market price. Moreover, there was an allowance for impairment losses according to accounting standard in the amount of THB 1,528 million in the consolidated financial statements, which is a record of asset impairment in the Gulita and Mid-Galoc oil fields, and the assessment of resource reserves in the Galoc field which was lower than last year.

In 2017, the company group had an organization restructure of the Bio-based Product Business Group, through the amalgamation between BPP Holding Co., Ltd., a subsidiary of the company, and KSL GI Co., Ltd., a subsidiary of Khon Kaen Sugar Industry Plc., to form BBGI Co., Ltd. As a result of the amalgamation, the Company realized KSL Green Innovation Plc.'s performance for two months (November to December 2017). Due to the amalgamation, the assessment of fair value of assets and



liabilities received from the acquisition is required according to accounting standards, resulting in the Company realizing goodwill from acquisition in the amount of THB 1,602 million in the consolidated financial statement.

On the other hand, in 2017 the company recorded a decrease in the tax expense, due to receiving tax returns in the amount of THB 897 million from the corporate income tax in 2007, 2009 and 2010, including the interest income from the tax return in the amount of THB 401 million.

Consolidated Statement of Income	Q4/2016	Q3/2017	Q4/2017	YoY	QoQ	FY2016	FY2017	YoY
							7	
Revenue from sale of goods and rendering of services	40,481	39,009	46,306	14%	19%	144,705	172,138	19%
Cost of sale of goods and rendering of services	(36,704)	(35,450)	(42,711)	16%	20%	(132,809)	(158,596)	19%
Gross Profit	3,776	3,559	3,594	-5%	1%	11,896	13,543	14%
Interest income and dividend income	54	45	12	-78%	-74%	191	156	-18%
Other income	130	238	441	240%	86%	343	1,085	216%
Selling and administrative expenses	(2,065)	(1,773)	(2,327)	13%	31%	(6,135)	(7,164)	17%
Exploration and evaluation expense	(12)	(12)	(11)	-10%	-6%	(60)	(48)	-20%
Gain (loss) from crude and product oil price hedging contract	(66)	86	46	169%	-47%	107	366	240%
Gain (loss) from foreign currency forward contracts	(32)	(259)	17	152%	106%	39	(225)	-672%
Gain (loss) on foreign exchange	(253)	299	227	190%	-24%	237	889	276%
Reversal of allowance for gain/(loss) from impairment of assets	31	(1,358)	(78)	-349%	94%	37	(1,518)	N/A
Share of profit (loss) of associate	16	420	324	N/A	-23%	21	815	N/A
Gain (loss) from purchase price negotiation	-	-	-	N/A	N/A	227	-	N/A
Profit before finance costs and income tax expense	1,578	1,244	2,244	42%	80%	6,902	7,898	14%
Finance costs	(415)	(379)	(380)	-9%	0.1%	(1,484)	(1,452)	-2%
Profit/(loss) before income tax expense	1,163	865	1,865	60%	116%	5,418	6,446	19%
Income tax (expense) credit	(167)	630	(298)	78%	147%	(689)	(41)	-94%
Profit for the period	996	1,495	1,567	57%	5%	4,729	6,405	35%
Owners of the Company	918	1,316	1,386	51%	5%	4,773	5,778	21%
Non-controlling interests	77	179	181	134%	1%	(44)	627	N/A
Earnings per share (Baht per Share)	0.67	0.96	1.01			3.47	4.20	



2017 Performance by the company and its subsidiaries recorded a Net Profit of THB 6,405 million, (+35% YoY), net profit attributable to the owners of the company in the amount of THB 5,778 million (+21, YoY), or earning per shares of THB 4.20, mainly due to the following reasons:

1. Total revenue from sales of goods and rendering of services was THB 172,138 million, increased by 19% YoY, mainly from petroleum related businesses, with respect to average selling price of finished products which increased considerably following global oil price, combined with the total sales volume of the company increased by 4% YoY. Further, revenue from the Power Plant business and Bio-based Product business increased as well.
2. Gross Profit was recorded at THB 13,543 million, increased by 14% YoY, mainly attributed to the refinery business. In 2017, Total GRM was 7.23 \$/BBL an increase of 0.70 \$/BBL when compared to 2016. The refinery business recorded an Inventory Gain of THB 834 million, an increase of THB 244 million. Gross profit for the Ethanol Fuel Business improved from increasing average selling price of Ethanol products, while the Biodiesel business recorded a decrease in gross profit from the palm oil price contraction leading to lowered average selling price of B100 and suffered an Inventory Loss of THB 224 million.
3. Other Income of THB 1,085 million, increased by THB 742 million, majorly attributed to the company receiving interest income from the corporate tax return in the amount of THB 401 million, income from construction delay compensation in the amount of THB 175 million, and compensations for damages caused by oil contamination in the amount of THB 63 million. Also, BCPG Plc. recorded a gain from bargain purchase of THB 137 million, from the settlement of deferred payments in relation to the business acquisition of the SunEdison group in Japan.
4. Selling and administrative expenses was recorded at THB 7,164 million, an increase of 17% YoY, the increment was mainly contributed from (1) depreciation from increasing investments made by the company group, (2) the company group's human resources related expenses, (3) the company's and Bangchak Retail Co., Ltd.'s logistic cost in accordance with increased sales volume, (4) lease payment for oil depot and land for service station expansion, and (5) office expenses.
5. Gains from crude and product oil price hedging contract increased by THB 258 million.
6. Losses from Foreign Exchange Forward Contract recorded at THB 225 million, mainly from BCPG's loss from Foreign Exchange Forward Contracts of THB 304 million, to hedge against exchange rate volatility for its investment in the Wind Power Plant project in the Philippines and the Geothermal Power Plant project in Indonesia. However, due to the appreciating THB, leading to loss



- suffered from the Foreign Exchange Forwards Contract. On the other hand, the company made gains from the Foreign Exchange Forward Contract in the amount of THB 79 million, mostly from the Foreign Exchange Forward Contract made to hedge against exchange rate volatility for foreign currency loan to related parties.
7. Gains on foreign exchange was recorded at THB 889 million, an increase of THB 653 million, due to the appreciating THB, resulting of the change in foreign exchange of trade account payable and foreign currency loans.
 8. Losses from impairment asset THB 1,518 million, mainly from impairment of assets in Gurita and Mid-Galoc oil field of Nido Petroleum Ltd. in the amount of THB 1,528 million.
 9. Share of profit from associated company of THB 815 million, an increase of THB 794 million, can mostly be attributed to BCPG Plc.'s investment acquisition in the Wind Power Plant project in the Philippines and the Geothermal Power Plant project in Indonesia.
 10. Tax expense was credited due to the company receiving income tax return in 2007, 2009 and 2010 in the amount of THB 897 million.

Important Events in 2017

□ March 2017

- The company established a subsidiary in accordance to the resolution of the company's board of directors, namely, BBP Holding Co., Ltd. registered in Thailand with initial registered capital of THB 700 million, in which the company holds 100% share, to conduct businesses regarding bio-based products business operation, and to support the company's restructuring.
- The solar power plant project under BCPG Plc., a subsidiary of the company, commenced commercial operation as follow: Nagi Solar Power Plant in Okayama Prefecture, Japan with PPA capacity of 10.5 MW and 1 Solar Co-op project with PPA capacity of 5 MW.

□ April 2017

- The resolution of the 2017 Annual General Meeting of Shareholders on the 5th of April, 2017 approved the change of the company's name and Memorandum of Association, including the entire company's Articles of Association in its entirety; the company's name was changed from "The Bangchak Petroleum Public Company Limited" to "**Bangchak Corporation Public Company Limited**", this name change is meant to transform the company's public image and give clarity to the company's business operations; aside from businesses in petroleum, the company has expanded into other businesses which is a



continuation of the current business, or other businesses that compliments the main business with technology or innovation.

□ **May 2017**

- The Bangchak refinery temporarily shut down the Hydrogen Production Unit and the Hydrocracking unit, ensuring maximum safety, coinciding with refining strategy and the company's new product structure; the aforementioned units were shut down for a total of 22 days from the 19th of May, 2017 to the 9th of June 2017, with other units remaining operational.
- The company unveiled the Hi Premium Diesel S product, an innovation of the premium diesel line to cater to the demand of premium diesel customers. With the creation of the Hi Premium Diesel S, Bangchak incorporated premium attributes, resulting in next level power, while being balanced eco-friendly with high level refining technology to create pure uncontaminated finished product; with Cetane level peaking at 70, performing spectacularly on level ground and slope surfaces. The Hi Active Cleansing additive keeps the fuel injector cleaner than before leading to the fossil fuel engine being fully utilized and prolonging the life of the engine. Also its EURO 5 standard lowers pollution emission with sulfur levels 5 times lower than the EURO 4 standard.
- BCPG Plc., a subsidiary of the company has acquired the shares of CapAsia ASEAN Wind Holdings Cooperatief U.A. from the Netherlands, which was a holding company holding 40% stakes in PetroWind Energy Inc., totaling of USD 26.49 Million (approximately THB 922 Million). PetroWind Energy Inc. is operating wind power plants in Nabas, the Philippines (wind power plant of 36 MW in operation, 14 MW in development, and effectively 20 MW installation capacity belongs to BCPG Plc.).

□ **June 2017**

- The Company transferred its shareholding in subsidiaries and associated company which operate bio-based products business, totaling of 3 companies, to BBP Holding Co., Ltd., in order to restructure its bio-based products business unit shareholding structure. Bangchak still hold the shares in the aforementioned companies directly and indirectly, details as follows:

Company	Old Shareholding Structure	Restructured Shareholding Structure
1. BBP Holding Co., Ltd.	Bangchak Corporation Plc. (100%)	Bangchak Corporation Public Company Limited (100%)
2. Bangchak Biofuel Co., Ltd. (BBF)	Bangchak Corporation Plc. (70%)	BBP Holding Co., Ltd. (70%)



Company	Old Shareholding Structure	Restructured Shareholding Structure
3. Bangchak Bioethanol (Chachoengsao) Co., Ltd. (BBE)	Bangchak Corporation Plc. (85%)	BBP Holding Co., Ltd. (85%)
4. Ubon Bio Ethanol Co., Ltd. (UBE)	Bangchak Corporation Plc. (21.3%)	BBP Holding Co., Ltd. (21.3%)

□ July 2017

- BCP Innovation Pte. Ltd. (BCPI), a subsidiary of the company, had made additional investment in Lithium Americas Corp. (LAC) at the amount of 50 million shares at the purchase price of CAD 0.85 per share, totaling in investment value of CAD 42.5 million (approximately THB 1,089 million). LAC is a listed company in the Toronto Stock Exchange, Canada; it operates Lithium mines in Argentina and the United States of America. Thus, BCPI holds 16.1% of LAC's shares (thereafter, some shareholders exercised their rights to convert their stock options into common stocks, thus BCPI currently holds 15.9% of LAC shares.)
- BCPG Plc., a subsidiary of the company, has invested in Star Energy Group Holding Pte. Ltd. (SEGHPL) for the amount of 280,000 shares, or 33.33% of total SEGHPL shares outstanding, a capital investment of USD 355.69 million (approximately THB 11,956 million) to enter into a joint venture for the Geothermal Power Plant project in Indonesia with production attributed to BCPG in the amount of 182 MW, comprised of operating projects capacity of 158 MW PPA, and developing projects capacity of 24 MW PPA.

□ August 2017

- The Board of Directors of Bangchak Corporation Plc. resolved to approve profit allocation from appropriated retained earnings for an interim dividend payment to the company's shareholders at THB 1.05 per share, for the total amount of THB 1,446 million, equivalent to 47% of net profit from the first six-month period of 2017, which was paid on the 26th of September, 2017.
- The company has commenced production of electricity and steam from the third co-generation power plant (GTG-3), with capacity production of 12 MW and 42 tons of steam per hour. This being a part of the 3E project (Efficiency, Energy, and Environmental Project), lowering the cost of producing electricity and steam due to it utilizing natural gas as fuel, and also goes towards lowering the amount of greenhouse gas emitted from the refinery.



- **September 2017** The Company debuted an innovation and business incubating institution known as Bangchak Initiative and Innovation Center (BiiC), its objective is to create the Green Ecosystem to promote innovation in various fields with emphasis on Green Energy and Bio-Based product businesses which can be used to further domestic and international business ventures, as well as supporting the Government's Thailand 4.0 policy; heading towards being Asia's leading Green Innovation company.
- **October 2017** Following the approval of the Board of Directors of the company to proceed with the amalgamation between BBP Holding Co., Ltd. (a subsidiary of Bangchak Corporation PCL) and KSL GI Limited Company (a subsidiary of Khon Kaen Sugar Industry PLC, KSL) the newly created company from the amalgamation is BBGI Co., Ltd., its main business is the production and selling of Bio-Based products such as Ethanol and Biodiesel. BCP will hold a 60% share in the newly formed company and KSL will have 40% ownership.

Summary of the Company and its subsidiaries' performance by Business unit

1) Refinery Business Group

Crude Oil Price Situation

(Unit: USD/BBL)

Crude Oil Price	Q4/2016	Q3/2017	Q4/2017			YoY	QoQ	FY2016	FY2017	YoY
	AVG	AVG	MAX	MIN	AVG	%	%	AVG	AVG	%
Dubai (DB)	48.25	50.43	64.36	53.73	59.31	23%	18%	41.43	53.14	28%
Dated Brent (DTD)	49.33	52.08	66.54	55.19	61.26	24%	18%	43.73	54.19	24%
DTD/DB	1.08	1.65	4.26	-0.26	1.95	80%	18%	2.30	1.05	-54%

Crude Oil Price Situation

Dubai crude oil price in 2017 when compared to 2016 on average increased by 11.71 \$/BBL in respect to policy enacted by OPEC members and Non-OPEC members led by Russia to jointly reduce crude production.

Dubai crude price in Q4/2017 on average increased by 8.88 \$/BBL when compared to Q3/2017, with respect to the OPEC and Non-OPEC countries' joint decision to extend their production reduction period by 9 months to the end of December 2018. The market received pressure from the tension in the Middle East due to the conflict between Saudi Arabia and Iran over concerns of war in Yemen, Lebanon, and sabotage on the oil pipeline in Bahrain. Also, the International Energy Agency (IEA) forecasted that the reduction of production rate between OPEC members since January 2017 to March 2018 to be 86% of the amount stated in the agreement, which is considerably high. Aside from this, the increased demand during Winter had



refineries around the world maximizing their utilization rate, especially those located in the United States; leading to crude reserves in the United States to decrease continuously.

However, crude oil price received significant pressure from the increase in production of crude oil in the United States that rose to 9.8 million barrels per day in December, leading to oil production in the United States to increase from 8.9 million barrels per day in 2016 to 9.2 million barrels per day in 2017 and to 10 million barrels per day in 2018, which will exceed previous record high at 9.6 MBD that was set in 1970.

The average spread between the Dated Brent and Dubai in 2017 decreased by 1.25 \$/BBL when compared to 2016, resulted from the pressure to limit production and export of Heavy Sour Crude by the OPEC group following their agreement to lower crude oil production.

The average spread between the Dated Brent and Dubai price in Q4/2017 increased by 0.30 \$/BBL when compared to Q3/2017, due to supply reduction from the emergency maintenance of the underwater crude pipeline in the North Sea of Europe.

Crack Spreads Situation

(Unit: USD/BBL)

Crack Spreads	Q4/2016	Q3/2017	Q4/2017			YoY	QoQ	FY2016	FY2017	YoY
	AVG	AVG	MAX	MIN	AVG	%	%	AVG	AVG	%
UNL95/DB	14.59	16.10	15.52	12.08	14.42	-1%	-10%	14.83	14.85	0.2%
IK/DB	12.27	13.13	15.08	11.97	13.27	8%	1%	11.56	12.13	5%
GO/DB	12.04	13.83	14.36	10.94	13.01	8%	-6%	10.80	12.51	16%
FO/DB	-1.63	-1.35	-1.68	-4.93	-3.03	-86%	-125%	-4.97	-2.33	53%

Crack Spreads Analysis

- The Mogas/Dubai crack spread (UNL95/DB) in 2017 was averaged at 14.85 \$/BBL, an increase of 0.02 \$/BBL compared to 2016, this is due to growing demands from China and India with respect to the increase in sales of new vehicle that resulted from the growth of middle class and economic expansion.

The Mogas/Dubai crack spread (UNL95/DB) in Q4/2017 averaged at 14.42 \$/BBL, decreased by 1.68 \$/BBL when compared to Q3/2017, due to pressure from demand in the United States that lowered after the holiday season coming to an end, and the reactivation of refineries in the United States after being affected by Hurricane Harvey. Aside from this, Mogas price was pressured by the wavering demands from the Northern hemisphere during winter, leading to Mogas reserves in the United States being on the rise throughout December.



- Jet (Kerosene)/Dubai crack spread (IK/DB) in 2017 averaged at 12.13 \$/BBL, increased by 0.57 \$/BBL when compared to 2016, with respect to increase in demand for air travel, along with high demand for Diesel that helped pushed the price of Jet (Kerosene) to increase following suit. However, pressure for Kerosene demand decreased from households in India, having started to switch to LPG for fuel during meal preparation.

Jet (Kerosene)/Dubai crack spread (IK/DB) in Q4/2017 was on average 13.27 \$/BBL an increase of 0.14 \$/BBL when compared to the previous quarter, as a result of demand for heating oil during the winter in the United States where the temperature was record cold in over 100 years.

- Gasoil/Dubai (GO/DB) crack spread in 2017 was averaged at 12.51 \$/BBL, increased by 1.71 \$/BBL compared to 2016, supported by demand in the recovering mining sector in China and Indonesia, and demand from the transportation increased, also the demands from basic infrastructure construction in India increased.

Gasoil/Dubai (GO/DB) crack spread in Q4/2017 averaged at 13.01 \$/BBL, a decrease of 0.82 \$/BBL compared to the previous quarter, with respect to the lowered diesel exports from Asia to Europe and South America, due to US refineries reactivating after having been affected by Hurricane Harvey. As well as, Diesel supplies from Asia could not be sent the west, due to high reserves level in Europe from high refining margin, leading European refineries to produce at a high rate.

- Fuel Oil/Dubai crack spread (FO/DB) in 2017 averaged at -2.33 \$/BBL, rose by 2.64 \$/BBL when compared to 2016, this is attributed to lower Fuel Oil supply from the reduction in OPEC production, especially Heavier Crude that is valued lower than Lighter Crude, and has yields high amount of Fuel Oil. Also, various refineries, especially in Russia and Asia increased utilization of cracking unit, effectively lowering Fuel Oil production, a factor that supports GRM in Asia.

Fuel Oil/Dubai crack spread (FO/DB) in Q4/2017 was on average -3.03 \$/BBL, a decline of 1.68 \$/BBL when compared to the previous quarter, the spread decreased from Pakistan's lowered import volume, due to the government's temporarily ban on using Fuel Oil as fuel for electricity production, after mounting pollution problems, aside from this, Fuel Oil price also received pressure from the increase in supply due to refineries around the world operating at high utilization rate.

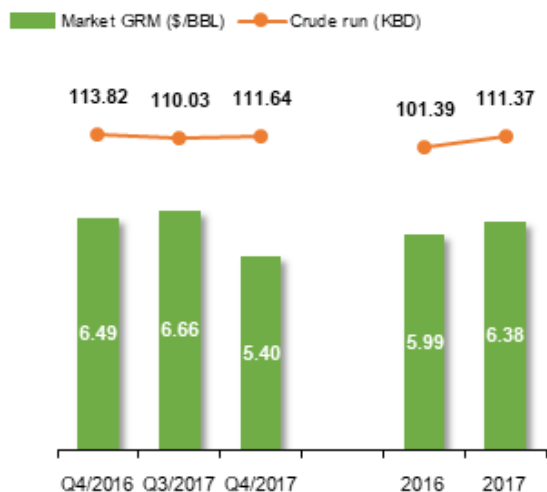


Refinery Business Group

Refinery Business Group Performance						FY2016	FY2017	YoY
	Q4/2016	Q3/2017	Q4/2017	YoY	QoQ			
Average Crude Run (KBD)	113.82	110.03	111.64	-2%	1%	101.39	111.37	10%
Utilization Rate (%)	95%	92%	93%			84%	93%	
(Unit: Million Baht)								
Market GRM	2,416	2,261	1,837	-24%	-19%	7,887	8,844	12%
GRM Hedging	(74)	68	46	-162%	-33%	112	348	212%
Inventory Gain/ (Loss) ^{1/}	907	450	1,094	21%	143%	590	834	41%
Total GRM	3,250	2,779	2,977	-8%	7%	8,588	10,026	17%
EBITDA	2,367	2,198	2,256	-5%	3%	5,756	7,596	32%
(Unit: THB/USD)								
Average FX (THB/USD)	35.57	33.55	33.11	-7%	-1%	35.47	34.11	-4%

Note: 1/ Inventory Gain/ (Loss) was included a reversal of LCM.

Market GRM and Crude Run



Total GRM

Unit: USD/BBL





Total Sales Volume in each market category of the Company								
Marketing Business	Q4/2016	Q3/2017	Q4/2017	YoY	QoQ	FY2016	FY2017	YoY
Retail	921	934	1,002	9%	7%	3,609	3,820	6%
Industrial	570	483	553	-3%	14%	2,180	2,196	1%
Total	1,492	1,417	1,555	4%	10%	5,789	6,016	4%
Wholesale Business								
Petroleum traders in accordance with section 7	258	170	173	-33%	2%	807	707	-12%
Export	247	295	336	36%	14%	934	1,121	20%
Total	505	465	509	1%	10%	1,741	1,828	5%
Total Sales Volume	1,997	1,883	2,064	3%	10%	7,530	7,844	4%

Note: Total sales volume figures excluding the swap amount between petroleum traders in accordance with section 7 and the sales volume of crude

2017 performance compared to 2016, the Refinery Business group recorded EBITDA of THB 7,596 million, an increase of THB 1,839 million, attributed to EBITDA from Bangchak refinery of THB 7,450 million, BCP Trading Pte., Ltd. of THB 37 million, shares of profit from Bongkot Marine Service Co., Ltd. of THB 4 million, and has elimination of THB 105 million, with factors affecting operations as follow:

1. The Bangchak Refinery 2017 average crude run was at 111.37 KBD or 93% utilization rate, which is higher than the average production rate of the previous year which has a Turn Around Maintenance (TAM).
2. Total gross refinery margin in 2017 was 7.23 \$/BBL, an increase of 0.70 \$/BBL from the previous year, due to Market GRM increment of 12% this year. This was a result of the increased production rate and crack spread between finished product and crude price improved, especially for Diesel which is the refinery's main product. The gasoil-dubai (GO/DB) crack spread increased more than 16% from the previous year, accompanied by commencement of the 12 MW Co-Generation Power Plant, a part of the 3E program, thus enabling the Bangchak refinery to lower its utility costs. Aside from this, the refinery recorded gain from GRM hedging in the amount of THB 348 million.
3. The refinery business in 2017 recorded an Inventory Gain of THB 834 million, increasing from the previous year due to rising average crude oil price. Average DB crude and DTD Brent increased by 11.71 \$/BBL and 10.46 \$/BBL, respectively, when compared to 2016.
4. In 2017, BCP Trading Pte., Ltd. recorded a revenue of THB 12,509 million, with transaction pertaining to buying and selling of petroleum products in the amount of 5.69 million barrels, the main product traded is the Diesel product and Base Benzene 95. Furthermore, BCP Trading Pte., Ltd. will play an integral role in



acquiring supplies, and buying and selling of crude oil and finished products for Bangchak refinery business group in the future.

Q4/2017 when compared to Q3/2017 the Refinery Business Group recorded EBITDA of THB 2,256 million, an increase of THB 58 million, attributed to the following, EBITDA from Bangchak refinery of THB 2,196 million, BCP Trading Pte., Ltd. of THB 7 million, share of profit from Bongkot Marine Service Co., Ltd. in the amount of THB 7 million, and has elimination of THB 46 million, with factors affecting operations as follow:

1. The Bangchak Refinery recorded an average crude run at 111.64 KBD which is slightly higher than Q3/2017 where the Hydrocracking Unit was a malfunction.
2. Total gross refinery margin for Q4/2017 was 8.75 \$/BBL, an increase of 0.57 \$/BBL from the previous quarter, while Market GRM in Q4/2017 was lower, as a result of the crack spread between the most finished product and crude price which narrowed, combined with crude oil cost which rose from the widened spread between DTD Brent and Dubai crude to be averaged at 1.95 \$/BBL during the quarter, while in Q3/2017 DTD/DB was averaged at 1.65 \$/BBL. However, within this quarter the refinery business recorded gains from GRM hedging in the amount of THB 46 million.
3. In Q4/2017, the refinery business recorded an Inventory Gain of THB 1,094 million, significantly increased from the previous quarter, due to the rising average crude oil price. Average DB crude and DTD Brent increased by 8.88 \$/BBL and 9.18 \$/BBL, respectively, when compared to Q3/2017.
4. Within the quarter, BCP Trading Pte., Ltd. recorded a revenue of THB 4,089 million, with transaction pertaining to buying and selling of petroleum product in the amount of 1.82 million barrels, a significant increase from the previous quarter where 0.89 million barrels was transacted.



2) Marketing Business Group

Marketing Business Group Performance

Sales Volume (Million Liter)	Q4/2016	Q3/2017	Q4/2017	YoY	QoQ	FY2016	FY2017	YoY
Retail (Service Stations)	921	934	1,002	9%	7%	3,609	3,820	6%
Industrial	570	483	553	-3%	14%	2,180	2,196	1%
Total	1,492	1,417	1,555	4%	10%	5,789	6,016	4%
Sales volume in each product category (Million Liter)								
LPG	14	23	25	80%	11%	73	77	6%
Gasoline	11	7	8	-25%	13%	42	43	3%
Gasohol	416	427	442	6%	4%	1,650	1,688	2%
Jet Fuel	225	200	209	-7%	5%	822	841	2%
Diesel	771	714	825	7%	15%	2,992	3,171	6%
Fuel Oil and Others	55	47	46	-17%	-3%	211	196	-7%
Total	1,492	1,417	1,555	4%	10%	5,789	6,016	4%
Total Marketing Margin (Baht / Liter)	0.56	0.73	0.70	26%	-5%	0.79	0.77	-2%
EBITDA (Million Baht)	(3)	474	302	N/A	-36%	2,527	2,301	-9%

Note: Marketing Margin figure was the attributable to the Company only.

2017 performance of the Marketing Business Group recorded EBITDA of THB 2,301 million, lowered by THB 226 million compared to 2016, attributed to the following: EBITDA from Bangchak marketing business of THB 2,497 million, Bangchak Green Net Co., Ltd. of THB 94 million, Bangchak Retail Co., Ltd. of THB -229 million, and has elimination of THB 62 million with factors affecting operations as follow:

1. In 2017, overall sales volume of the Marketing Business increased 227 million liters, mainly from the volume sold in the retail business which grew 6%, as the company focuses on service stations sales. The company carried out various marketing strategies, also increasing service station network to be more encompassing, and the development of Non-oil businesses synergy to increase oil product sales volume. The increase in sales volume can be attributed mostly to Diesel and Gasohol 95 product.
2. Total 2017 Marketing Margin decreased slightly from the previous year, due to higher market competition that affected the total marketing margin. This is in part due to lubricant production cost in 2017 that increased, while the company was unable to adjust lubricant selling price to coincide with the rising cost.
3. As of the end of 2017, the number of service stations totals at 1,114 branches with 62 new service stations opening; most are full size service station with modern aesthetic on the main roads and areas with potential. Improvements to the quality of previously owned service station were made to push sales volume per service station, however stations with sales volume below target were still being closed.



4. The company remains at the second rank in market share of sales through service station, and has been gaining shares consistently, the cumulative market share as of 2017 was 15.4%, an increase from 2016's 15.1%.
5. As for the Non-oil business, the company continues to develop and expand its business consistently to add variety to the Non-oil business and other services in the service station, including the convenience store business, "SPAR", and the Inthanin Coffee Shop under the management of Bangchak Retail Co., Ltd., to answer to consumers' needs for increased convenience and comfort when entering the Bangchak service station. As of the end of 2017, there are altogether 446 branches of Inthanin Coffee and 33 branches of SPAR, however, due to Bangchak Retail Co., Ltd. is in the middle of developing its infrastructure and expanding the branches of SPAR accordingly, thus incurring high selling, general and administrative expenses in the beginning, leading the Bangchak Retail Co., Ltd. to record a negative EBITDA.

Q4/2017 performance compared to Q3/2017 for the Marketing Business Group recorded EBITDA of THB 302 million, lowered by THB 172 million, attributed to the following: EBITDA from Bangchak marketing business of THB 384 million, Bangchak Green Net Co., Ltd. THB 6 million, Bangchak Retail Co., Ltd. THB -86 million, and has elimination of THB 3 million, with factors affecting operations as follow:

1. In Q4/2017, overall sales volume of the Marketing Business increased with contributions from both the industrial and retail market in tandem with increasing domestic demand from the holiday season and harvesting season amongst the agriculture customers and related businesses. The increase in sales volume can be attributed mostly to Diesel and Gasohol of which its sales increased by 15% and 4%, respectively.
2. Total Marketing Margin in Q4/2017 decreased slightly compared to the previous quarter, due to retail margin which reduced as a result of product cost increment, combined with the 1.50 THB/Liter reduction in retail price on the 26th of October, 2017 to alleviate travel cost for travelers looking to join the royal cremation ceremony of King Rama IX, and the policy to freeze retail price, during December 2017 as a gift for consumers that were traveling during the new year period.
3. The number of service stations as of the end of December 2017 totals at 1,114 branches with an increase of 21 new service stations from the previous quarter.
4. The company is still able to retain its second place in market share of sales volume through service station. In the last quarter of 2017, the market share is considerably high, shares from the period between October to December 2017 was at 16.2%, 15.8%, and 15.7%, respectively.
5. Normally, the selling, general and administrative expenses within the fourth quarter of any year would be higher, from expenses related with human



resources and market promotion expenses, including annual service station maintenance expenses, leading to the quarter's recorded EBITDA to be lower than any other quarter of the year.

3) Power Plant Business

Power Plant Business Performance	Q4/2016	Q3/2017	Q4/2017	YoY	QoQ	FY2016	FY2017	YoY
Solar Power Business – Thailand	63.02	65.38	65.72	4%	1%	254.40	265.17	4%
Phase 1-3 (118 MW)	62.66	60.69	61.02	-3%	1%	254.03	247.72	-2%
Cooperative Solar Project (12 MW)	0.36	4.69	4.70	N/A	0.1%	0.36	17.45	N/A
Solar Power Business – Japan (30 MW)	4.90	12.85	7.23	47%	-44%	19.48	41.24	112%
Total Electricity Sales (Million kWh)	67.93	78.24	72.95	7%	-7%	273.88	306.40	12%
Revenue (Million Baht)	757	854	781	3%	-9%	3,084	3,322	8%
EBITDA	568	781	812	43%	4%	2,559	3,088	21%

Performance comparison between 2017 and 2016, the Power Plant business recorded a revenue of THB 3,322 million, an increase of THB 238 million and recorded EBITDA of THB 3,088 million, an increase of THB 528 million, with the following factors affecting operations as follow:

1. Solar power plant projects in Thailand recorded an increase in electricity sales from the contribution of the Solar Co-op project (PPA 12 MW), which has continued to commence commercial operation since December 2016 to March 2017, led to the projects in Thailand having an increase in PPA capacity to 130 MW from the previous 118 MW. As for the electricity sales of phase 1 to 3 of the project in Thailand, for this year has slightly adjusted downward (-2%) from the lower average irradiation hours due to increase rainfall compared to 2016.
2. Solar power plant project in Japan recorded an increase in electricity sales from the realization of the entire year's operation of the Nikaho project (PPA 8.8 MW) which commenced operation in July 2016, and the performance of the Nagi project (PPA 10.5) which commenced in March 2017, resulting in the projects in Japan producing a combined PPA capacity of 30 MW from the previous 20 MW at the end of 2016.
3. Realized share of profit from investment in associated companies in the amount of THB 749 million, attributed to Wind Power Plant in the Philippines in the amount of THB 341 million (production net to BCPG 14.4 MW) which was comprised of gain on purchase of THB 362 million, and share of profit from operation of THB -21 million. There was also a share of profit from investment in Geothermal Power Plant in Indonesia in the amount of THB 408 million



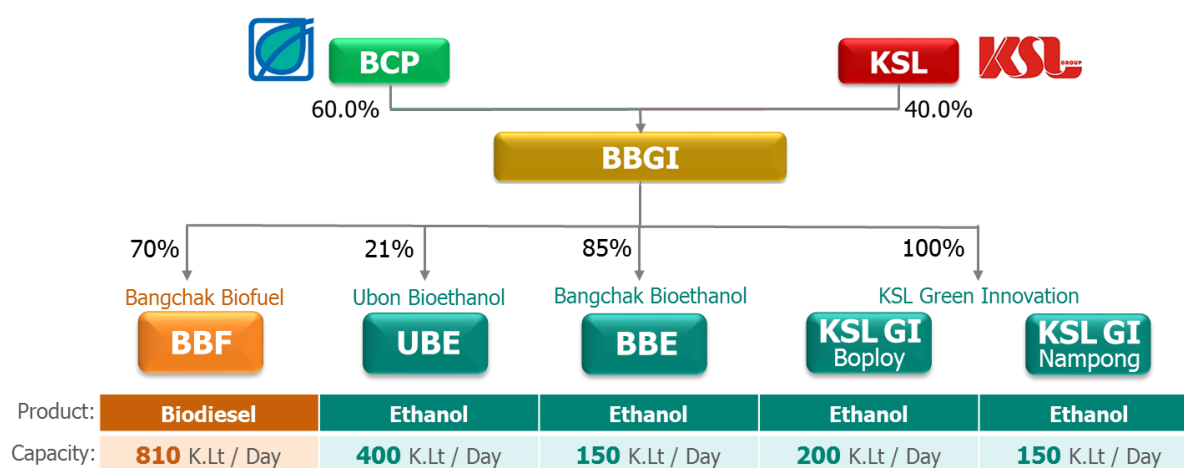
- (production net to BCPG 158 MW) which was comprised of gain on purchase of THB 296 million, and share of profit from operation of THB 113 million.
4. Recorded losses from foreign currency forward contract in the amount of THB 304 million. Due to the forward contract for foreign exchange which was made to hedge against foreign exchange rates volatility, for the investments in the Wind Power Plant in the Philippines and the Geothermal Power Plant project in Indonesia; however, the appreciating Thai Baht led to loss from the foreign currency forward contract. However, from the appreciation of Thai Baht, BCPG has also recorded gain on foreign exchange of THB 72 million, as the company has a loan from financial institutions in JPY and USD, resulting in the amount of the loan to lower from the effect of exchange rate changes on balances held in foreign currencies.

Performance comparison between Q4/2017 and Q3/2017, the Power Plant business recorded a revenue of THB 781 million, a decrease of THB 73 million, and recorded EBITDA of THB 812 million, an increase of THB 31 million, with the following factors affecting operations as follow:

1. Solar power plant projects in Thailand recorded similar electricity sales as the previous quarter, both for phase 1 to 3 and Solar Co-op project. Although average irradiation hours were lower in winter, which normally has shorter daylight hours, however, the lower temperature improved the efficiency of electricity production.
2. The solar power plant project in Japan recorded a decrease in electricity sales, which is the main reason for this quarter's decrease in revenue, due to lowered average irradiation hours in every project site, especially the Nikaho project (PPA 8.8 MW) due to the winter weather condition in Japan that has lower amount of light and was met by snowfall.
3. Share of profit from investment in the Wind Power Plant in the Philippines and Geothermal Power Plant in Indonesia was THB 301 million.

4) Bio-based Product Business Group

As of the 31st of October, 2017, the company reorganized its shareholding structure in the Bio-Based Business Group through the amalgamation between BBP Holding Co., Ltd. (a subsidiary of Bangchak Corporation Plc.) and KSL GI Co., Ltd. (a subsidiary of Khon Kaen Sugar Industry Plc.) resulting in the newly formed BBGI Co., Ltd., and has resulted in the company's current shareholding structure in the Bio-Based Product Business Group as follow:



As for the performance of the Bio-Based product business in 2017, revenue was recorded at THB 8,073 million, an increase of THB 980 million, and EBITDA was recorded at THB 529 million, an increase of THB 203 million, which included a share of profit of THB 62 million from Ubon Bio Ethanol Co., Ltd., and the effect of amalgamation resulted in operation performance from KSL Green Innovation Plc. to be realized from November 2017 onwards, which contributed EBITDA of THB 21 million.

For Q4/2017, the Bio-Based product business recorded revenue of THB 2,365 million, an EBITDA of THB 132 million, which included a share of profit from Ubon Bio Ethanol Co., Ltd. of THB 16 million.

Biodiesel Business by Bangchak Biofuel Co., Ltd.

Biodiesel Business Performance								
	Q4/2559	Q3/2017	Q4/2017	YoY	QoQ	2016	2017	YoY
Average Daily Production Rate (Thousands of liters per day)	398	689	748	88%	9%	406	670	65%
Utilization Rate (%)	49%	85%	92%			80%	83%	
B100 Sales Volume (Million liter)	39	63	72	84%	15%	215	249	16%
Revenue (Million Baht)	1,189	1,653	1,745	47%	6%	6,830	6,699	-2%
EBITDA (Million Baht)	70	68	82	17%	21%	262	260	-1%
Average Sales Price (Source: Department of Energy Business, Ministry of Energy)								
B100 (Baht / Liter)	33.58	26.39	24.79	-26%	-6%	35.11	28.80	-18%
Crude Palm Oil (CPO) (Baht / Kg.)	30.13	22.40	20.49	-32%	-9%	31.95	24.85	-22%



2017 performance compared to 2016 performance, the Biodiesel business recorded sales revenue of THB 6,699 million, lowered by THB 131 million, and recorded EBITDA of THB 260 million, lowered by THB 2 million. Factors that affected operations were as follow:

1. Within 2017, average production was 670 thousands of liters per day (+65%) from the realization of full year performance of the second Biodiesel plant which commenced commercial operation since July 2016, increasing maximum production rate to 810 thousands of liters per day from 360 thousands of liters per day.
2. B100 product sales volume increased by 34 million liters, due to the government's 2017 mandate to increase B100 product mixing portion in Diesel fuel as follow:

B100 mixing portion	7% mixing portion	5% mixing portion	3% mixing portion
2017	238 days	127 days	0 days
2016	206 days	68 days	92 days

3. Average selling price of B100 product significantly decreased from the previous year, and was mainly responsible for the Biodiesel business's lowered revenue, which follows the trend of Crude Palm Oil price that contracted. In 2017, the domestic Crude Palm Oil price was still low and has continued to drop from the beginning of the year, due to increase of oil palm with respect to weather conditions that supports increase palm yields, combined with domestic Crude Palm Oil stock remaining at an all-time high during latter part of the year, affecting the average selling price of B100 product and the cost of Crude Palm Oil.
4. Average gross margin per unit of B100 product lowered due to declining average selling price. As well as Crude Palm Oil price constantly lowering throughout the year, led to an inventory loss of THB 224 million (including an allowance for loss on decline in value of inventories (LCM) of THB 8 million.)

As for Q4/2017 performance compared to Q3/2017, the Biodiesel business recorded sales revenue of THB 1,745 million, an increase of THB 92 million, and recorded EBITDA of THB 82 million, an increase of THB 14 million due to the following factors that affected operations as follow:

1. The B100 product sales volume increased by 9 million liters and caused the average daily production rate to adjust upward, mainly due to the ordered volume for B100 product from BCP and other customers which increased



compared to the previous quarter, following the increased amount of Diesel sold domestically; a result of the holiday season combined with the start of the sugar cane milling season of the sugar mills, leading to high demand for Diesel fuel in the nation.

2. Average gross margin per unit of the B100 product adjusted upwards from the increase in production rate, lowering average cost per unit. Overall, average selling price of B100 product adjusted downward from the previous quarter from the Crude Palm Oil price crisis due to excess supplies of palm oil in the market. Thus, the Biodiesel business recorded an inventory loss of THB 84 million (including an allowance for loss on decline in value of inventories (LCM) of THB 8 million.)

Ethanol Fuel Business by Bangchak Bioethanol (Chachoengsao) Co., Ltd.

Fuel Ethanol business performance by Bangchak Bioethanol (Chachoengsao) Co., Ltd.						2016	2017	YoY
	Q4/2559	Q3/2017	Q4/2017	YoY	QoQ			
Average Daily Production Rate (Thousands of liters per day)	125	129	131	5%	2%	125	120	-4%
Utilization Rate (%)	83%	86%	88%			83%	80%	
Ethanol Sales Volume (Million liter)	11.1	11.1	12.3	11%	11%	11.1	42.7	286%
Revenue (Million Baht)	263	279	303	15%	9%	263	1,057	302%
EBITDA (Million Baht)	46	74	55	20%	-27%	42	228	439%
Average Sales Price (Source: Department of Energy Business, Ministry of Energy)								
Ethanol (Baht / Liter)	23.11	25.13	24.91	8%	-1%	23.12	24.79	7%

2017 performance compared to 2016 performance, the Ethanol Fuel business of Bangchak Bioethanol (Chachoengsao) Co., Ltd. recorded sales revenue of THB 1,057 million, increased by THB 794 million, and recorded EBITDA of THB 228 million, increased by THB 186 million. Factors that affected operations are as follows:

1. Sales volume of Ethanol fuel in 2017 increased due to realization of full year performance by the Bangchak Bioethanol (Chachoengsao) Co., Ltd.'s Ethanol plant which commenced commercial operations in September 2016.
2. Average daily production rate in 2017 decreased from the previous year due to planned annual maintenance, while in 2016 the Ethanol plant had been in operation for 4 months, thus was not subjected to maintenance.
3. Average selling price of Ethanol product in 2017 increased by 7% from the increased demand for Ethanol usage in the country following increased sales volume of Gasohol E20 and E85 from the previous year, combined with molasses price adjusted upward; it being the main ingredient for the production



of Ethanol fuel in the country, from decrease in quantity of sugar cane in the market

4. Average gross margin per unit of Ethanol product increased from the increment of average selling price of Ethanol product, as a result of cassava price; main raw ingredient of the Bangchak Bioethanol (Chachoengsao) Co., Ltd. decreased in the first 9 months of this year, from the lowered percentage of starch in harvested cassava, in tandem with China, main global importer, put downward pressure on the price of cassava chip and flour from Thailand.

As for Q4/2017 performance compared to Q3/2017, the Ethanol fuel business had sales revenue of THB 303 million, an increase of THB 24 million and recorded EBITDA of THB 55 million, a decrease of THB 20 million due to the following factor that affected operations as follow:

1. Sales volume of Ethanol product increased, mainly due to the ordered volume from BCP, main customer, increased compared to the previous quarter following the increase in the Gasohol products sold by the company.
2. Average gross margin per unit of Ethanol product adjusted downward compared to the previous quarter, partly from slight decline in average selling price of Ethanol product. While average raw material cost increased from the rise in the price of cassava during November to December 2017, a result of deficit cassava supplies in the market due to emergence of the product's harvesting season.
3. Overall in Q4/2017 the Bangchak Bioethanol (Chachoengsao) Co., Ltd. recorded an increase in selling, general and administrative expenses from the environmental improvement made to the factory, which is only one-time expense.

5) Natural Resources Business Group

As for the performance of the Natural Resources Businesses Group in 2017 recorded EBITDA of THB 286 million, mainly attributed from the Exploration and Production Business, with performance as follow:

The Exploration and Production Business by Nido Petroleum Limited

E&P Business Performance	Q4/2016	Q3/2017	Q4/2017	YoY	QoQ	FY2016	FY2017	YoY
Production Volume ^{1/} (barrels per day net to Nido)	2,631	2,156	2,045	-22%	-5%	2,860	2,231	-22%
Sales Volume (barrels net to Nido)	203,224	203,807	206,052	2%	1%	996,657	820,560	-18%
Revenue (Million Baht)	327	336	388	19%	16%	1,503	1,510	0.5%
EBITDA (Million Baht)	71	44	25	-65%	-44%	323	295	-9%

Note: 1/ production volume of Galoc oil field only



2017 performance compared to 2016, the exploration and production business had a revenue of THB 1,510 million, an increase of THB 7 million and recorded EBITDA of THB 295 million, a decrease of THB 28 million, with the following factors affecting operations as follow:

1. In 2017, the Galoc oil field production had an Uptime of 99.95% and an average production volume of 3,993 barrels per day (2,231 barrels per day net to Nido, 22% lower than the previous year from the Natural Decline Curve)
2. Total sales volume net to Nido was 820,560 barrels (Galoc 787,250 barrels and Nido & Matinloc 33,310 barrels.)
3. Sales revenue increased due to average selling price adjusted upward following Dubai crude oil price, with average Dubai price in 2017 was at 53.14 \$/BBL while in 2016 it was at 41.43 \$/BBL.
4. Allowance for impairment loss of asset was recorded according to accounting standard at USD 45.03 million (approximately THB 1,528 million) from impairment for exploration and appraisal of the Gurita area, the cessation of plans to develop crude production in the Mid-Galoc area, as the development is not commercially justifiable, and from the assessment of reserve volume of the resource in the Galoc area decreasing from the previous year.

Q4/2017 performance compared to Q3/2017, the Exploration and Production business recorded a revenue of THB 388 million, an increase of THB 53 million with recorded EBITDA of THB 25 million, decreased by THB 19 million, with the following factors affecting operations as follow:

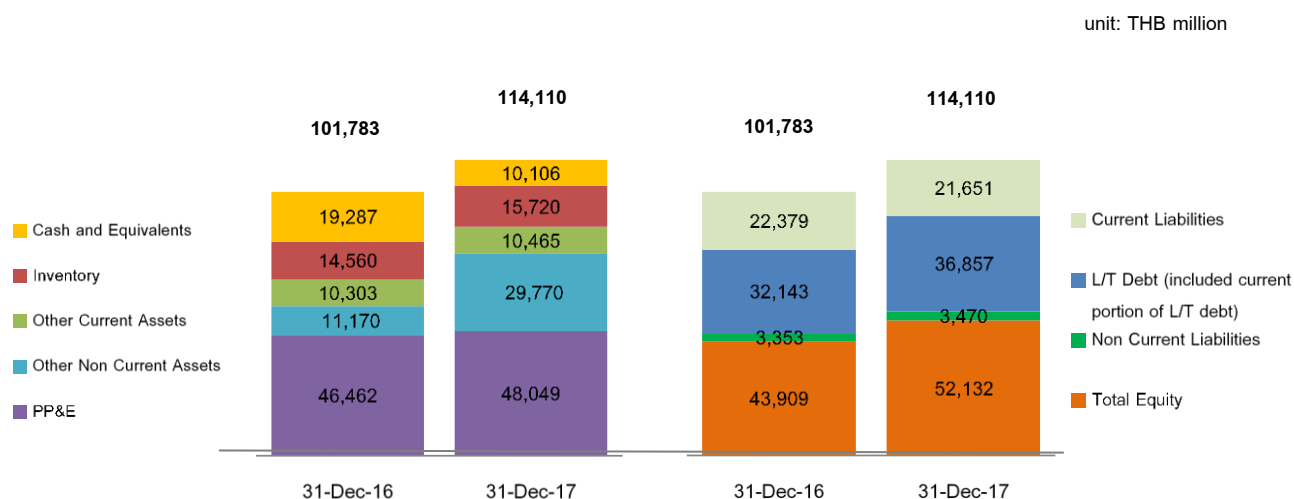
1. The Galoc oil field production had an Uptime of 100% and an average production rate of 3,659 barrels per day (2,045 barrels net to Nido.)
2. Total sales volume net to Nido was 206,052 barrels (Galoc 196,961 barrels and Nido & Matinloc 9,091 barrels.)
3. Sales Revenue was THB 388 million, an increase due to average selling price adjusted upward following Dubai crude oil price, with average Dubai price in Q4/2017 was at 59.32 \$/BBL, compare to the Dubai price of 50.49 \$/BBL in Q3/2017.
4. Impairment loss from asset was USD 1.86 million (approximately THB 63.30 million) from the assessment of reserve volume of the resource in the Galoc area decreasing from the previous year.



Statement of Financial Position

Financial Position of the Company and its subsidiaries (Consolidated)

unit: THB million



Assets

As of December 31st, 2017, the company and its subsidiaries has Total Assets in the amount of THB 114,110 million, an increase of THB 12,328 million when compared to December 31, 2016, changes in assets are as follow:

- Cash and cash equivalents decreased by THB 9,181 million. Details are stated in Analysis of the Cash Flow Statement
- Net Trade Account Receivable increased THB 1,489 million, comprised of the company's account receivables increased by THB 194 million due to the rising sales volume and average selling price in 2017, and BCP Trading Pte. Ltd. account receivables increasing by THB 1,089 million from the increase in transaction volume, and also from the increase in account receivables from KSL Green Innovation Plc. through the business amalgamation.
- Inventory increased by THB 1,160 million, mainly due to oil inventory of which average cost rose in tandem with the increasing oil price in the global market, especially finished oil products of which average cost increased significantly. The company's inventory volume of finished oil products was at 2.0 million barrels, increasing from the previous year. As for crude oil inventory, the company had stored 3.5 million barrels, which is lower than the previous year, whereas average cost adjusted upwards. Inventory value increment was also partially from BCP Trading Pte. Ltd.'s inventory growth.



- Oil Fund Subsidy Receivable increased THB 447million, mostly attributed to the increase in average rate of subsidy per kilogram for the LPG product, and the increasing length of time to receive subsidies for Gasohol E20 and E85 product.
- Investment in subsidiaries which shown in company only financial statement increased by THB 972 million, but eliminations between related parties led to investments in subsidiaries to be shown as zero in consolidated financial statement, with details as follow:
 - BPP Holding Co., Ltd. was established with a registered capital of THB 1,700 million to mainly manage the Bio-based product business and to support the restructuring of the Bio-based product business. From the mentioned restructuring, the company has sold its investment in ordinary shares of 70% in Bangchak Biofuel Co., Ltd, and 85% in Bangchak Bioethanol (Chachoengsao) Co., Ltd. to BPP Holding Co., Ltd.
 - BCP Energy International Pte. Ltd. increased its capital by the amount of THB 37 million to purchase the remaining shares of Nido Petroleum Limited from minor shareholders, to increase its shareholding in Nido to 100%. However, there was an allowance for impairment loss from asset according to accounting standards for BCP Energy International Pte. Ltd. in the amount of THB 1,293 million.
 - BCP Innovation Pte. Ltd. increased its capital by the amount of THB 1,149 million to acquire additional shares from lithium Americas Corp.'s capital increment.
- Investment in Associates and Joint Ventures increased THB 13,561 million, mostly from BCPG Plc., a subsidiary of the company, which has acquired ownership in CapAsia ASEAN Wind Holdings Cooperatief U.A, which holds a 40% stakes in PetroWind Energy Inc., a company that operates Wind Power Plants in the Philippines, and from its share acquisition of Star Energy Group Holdings Pte. Ltd., which holds a 33.33% stakes in the Star Energy Investments Ltd. (SEIL), a company that operates a Geothermal Power Plant in Indonesia, and realized share of profit from the acquired power plants.
- Other long term investment increased by THB 3,607 million, mostly from BCP Innovation Pte. Ltd., a subsidiary of the company, which increased its ownership in LAC by the amount of CAD 42.5 million or approximately THB 1,089 million. Recorded net fair value change in available-for-sale investment (LAC) in the amount of THB 2,722 million, while the company received investment return in MFC in the amount of THB 73 million.
- Property, plant and equipment net increased by THB 1,587 million, investment was made primarily in refinery machinery, sales equipment, and office equipment at THB 4,183 million, and interest expense booked as construction cost of THB 126 million. BCPG Plc.'s incremental was from the construction work on solar power plants both domestically and in Japan in the amount of THB 654



million. Assets increased from the amalgamation of BBGI Co., Ltd. in the amount of THB 1,491 million, with depreciation for the year recorded at THB 4,780 million.

- Intangible Assets decreased by THB 1,281 million, due to investment that has to do with exploration and assessment of THB 404 million, license to operate and development cost for packaged software in the amount of THB 215 million. However, intangible assets were reduced due to asset impairment for the expenses used in the exploration and production of the Gurita PSC and the Mid-Galoc oil field in the amount of THB 1,465 million, loss from foreign exchange conversion of the financial statement in the amount of THB 305 million, and amortization at THB 134 million, the remaining is the right for electricity grid connections and contracts for buying and selling electricity.
- Deferred tax asset increased by THB 454 million, mostly from the deferred income tax for the impairment loss of investment.

Liabilities

As of December 31st, 2017, the Company and its subsidiaries has Total Liabilities in the amount of THB 61,979 million, increased by THB 4,104 million, changes in liabilities were as follow:

- Short-term loan from financial institution was lowered by THB 3,398 million, mainly due to the repayment of loans in foreign currency.
- Trade Accounts Payable increased by THB 1,250 million, mainly from the increase in BCP Trading Pte., Ltd.'s Trade Account Payable by THB 1,023 million, due to higher transaction volume.
- Excise Tax and Oil fund expense payable increased by THB 1,968 million, resulting from the change in payment period from daily to monthly, which led to outstanding balance in 2017 to represent 30 days' sales value, compared to the 10 days' sales value in 2016.
- Loans from financial institutions and debentures (including current portion of long-term loans) increased by THB 4,714 million, mainly from additional loan draw down in the amount of THB 8,868 million (mainly from BCPG Plc.), and from the business amalgamation of THB 400 million, repayment of loans to financial institution in the amount of THB 2,161 million, as well as repayment for the company's debenture in the amount of THB 2,000 million, and adjustments to the effects of THB appreciation on the financial statement in the amount of THB 393 million.
- Estimate of short-term loan decreased by THB 502 million as BCPG settled deferred payments with respect to the contract business acquisition of solar power plants in Japan from the SunEdison group.



Equities

As of December 31st, 2017, the company and its subsidiaries' Total Equity was THB 52,132 million, Total Equity attributable to owners of the Company was THB 45,650 million, an increase of THB 6,107 million, mostly from the Net Profit for the period of THB 5,778 million, paid dividend of THB 2,822 million, loss from actuarial science from employees benefits program of THB 56 million. Other capital surplus reduced by THB 272 million, from the change of shareholding in BBGI Group, but recorded capital surplus increment of THB 1,170 million from amalgamation (BBGI). Warrant of rights to purchase BCPG Plc. ordinary shares increased by THB 19 million. There was also an increase in other component of equity by THB 2,290 million (result of differences in net fair value change in available-for-sale investment and loss in foreign currency conversion of its financial statement) with book value of THB 33.15.

Cash Flows Statement of the Company and its subsidiaries (Consolidated)

As for 2017, the Company and its subsidiaries had net cash received from operating activities of THB 13,851 million, net cash used in investing activities of THB 18,960 million, and net cash used in financing activities of THB 3,761 million. As a result, net cash and cash equivalents decreased by THB 8,870 million, as there was cash in the amount of THB 19,287 million as of January 1st, 2017, and the effects of exchange rate conversion on balances held in foreign currencies in the amount of THB -310 million, resulting in remaining cash as of December 31st, 2017 in the amount of THB 10,106 million, details for each activity are as follow:

Details of cash received and used are as follows:

Cash Flows (Unit: THB Million)	FY2016	FY2017
Net cash received (used in) operating activities	13,288	13,851
Net cash received (used in) investing activities	(8,155)	(18,960)
Net cash received (used in) financing activities	6,391	(3,761)
Net increase (decrease) in cash and cash equivalents	11,524	(8,870)
Cash and cash equivalents as at 1 January	7,872	19,287
Effect of exchange rate changes on balances held in foreign currencies	(109)	(310)
Cash and cash equivalents as at 31 December	19,287	10,106

1) Net cash received from operating activities of THB 13,851 million from:

- Net cash received from operating activities of THB 14,031 million, which was from Net Profit of THB 6,405 million, added back Non-Cash Expenses of THB 6,133 million, and Financial Costs and Tax expense of THB 1,493 million.



- Net Cash used in the operating assets of THB 3,130 million, decreased from cash reduction from Trade Accounts Receivable of THB 1,434 million, from Other Receivables of THB 555 million, from Inventory of THB 753 million, and from Other Current Assets of THB 387 million.
- Net Cash received from operating liabilities of THB 3,249 million, due to an increase in Trade Accounts Payable of THB 1,357 million, Other Payables decreased by THB 11 million, Other Liabilities increased by THB 1,902 million.
- During the period, Net cash paid for Corporate Income Tax was THB 299 million, Corporate Income Tax return was THB 948 million, and paid for Corporate Income Tax in cash to the Revenue Department in the amount of THB 1,247 million.

2) Net Cash used in investing activities of THB 18,960 million, mainly from

- Net cash received from interest income of THB 136 million, and dividends received from associate company, namely, Ubon Bioethanol Co., Ltd. and Fuel Pipeline Transportation Co., Ltd. in the amount of THB 65 million.
- Net cash received from the selling of investment in MFC in the amount of THB 78 million.
- Net cash paid for investment in Lithium Americas Corp. “LAC”, and investment in start-up companies in the amount of THB 1,140 million.
- Net cash paid for investment in associate companies and joint ventures in the amount of THB 13,388 million, the company increased investment in Bongkot Marine Services Co., Ltd. by THB 29 million. While BCPG Plc. invested THB 922 million in CapAsia ASEAN Wind Holdings Cooperatief U.A. which holds 40% stakes in PetroWind Energy Inc., a company that operates Wind Power Plant in the Philippines, and invested THB 11,956 million in Star Energy Group Holdings Pte. Ltd. (SEGHPL), which holds 33.33% stake in Star Energy Investments Ltd. (SEIL) that operates Geothermal Power Plant in Indonesia. Moreover, there was THB 481 million cash paid to settle deferred payments and other conditions in relation to the business acquisition of solar power plants in Japan. Such settlement released all of the Group’s obligations toward SunEdison group.
- Cash paid for investment in property, plant, and equipment in the amount of THB 5,522 million, mainly from investments in refinery machinery and equipment, marketing and office equipment of the company for THB 4,183 million, construction work in progress on Solar Power Plant for THB 836 million, investment in marketing equipment and construction work in progress for branches of Bangchak Retail Co., Ltd. of THB 187 million, and investment in Other Assets in the amount of THB 316 million.
- Net cash received from selling property, plant, and equipment THB 499 million, mostly from selling Suimei Power Plant Project in Japan by BCPG Plc.
- Net cash paid for the leasehold right of service stations of THB 559 million



- Net cash paid for the purchase of intangible assets by THB 641 million, mostly for the expense of petroleum exploration and evaluation of Nido Petroleum Ltd.

3) Net cash used in financing activities of THB 3,761 million, mainly from

- Cash paid for finance costs of THB 1,305 million.
- Dividend paid of THB 3,310 million, comprised of dividend from the company of THB 2,822 million, dividend paid to shareholders outside the group from BCPG Plc. and Bangchak Biofuel Co., Ltd. of THB 489 million.
- Short term loan decreased by THB 3,937 million, mainly from the foreign currency loan repayment from the company.
- Cash received from long term loan increment of THB 8,868 million, mainly from BCPG Plc.'s long-term loan increased by THB 8,848 million (loans received in THB 2,400 million, JPY 7,896 million, and USD 10 million).
- Cash repayment for long-term loans from financial institutions of THB 2,069 million (attributed to the company, BCPG Plc., Bangchak Biofuel Co., Ltd., and Bangchak Bioethanol (Chachoengsao) Co., Ltd)
- Cash paid for the company's debenture repayment of THB 2,000 million.
- Cash paid for ownership of remaining shares of Nido from minor shareholders of THB 35 million.
- Cash received from capital share issuance according to right offering by BCPG Plc. of THB 27 million.

Financial Ratios (Consolidated)

Profitability Ratios (%)	Q4/2016	Q3/2017	Q4/2017	FY2016	FY2017
Gross Profit Margin	9.30%	9.12%	7.76%	8.22%	7.87%
EBITDA Margin	7.56%	9.18%	7.84%	7.85%	7.94%
Net Profit Margin	2.44%	3.83%	3.38%	3.27%	3.72%
Return on Equity (ROE)	12.70%	13.09%	13.57%		
Return on Assets (ROA)	7.51%	7.09%	7.31%		

1/ Profit and Total equity attributable to owners of the Company



	31 Dec 16	30 Sep 17	31 Dec 17
Liquidity Ratios			
Current Ratio	1.69	1.61	1.52
Quick Ratio	1.10	0.85	0.80
Financial Policy Ratios			
Interest bearing Debt to Equity	0.86	0.94	0.78
Net Interest bearing Debt to Equity	0.38	0.70	0.59
	Q4/2016	Q3/2017	Q4/2017
DSCR	1.80	2.43	2.50

*DSCR Calculation is not including long term debt prepayment



Financial Ratios Calculation

□ Gross Margin	=	Gross Profit / Revenue from sale of goods and rendering of services
□ EBITDA Margin (%)	=	EBITDA / Revenue from sale of goods and rendering of services
□ Profit Margin (%)	=	Profit attributable to owners of the Company / Revenue from sale of goods and rendering of services
□ Return on Equity (%)	=	Profit attributable to owners of the Company (Yearly) / Total Equity attributable to owners of the Company (Average)
□ Return on Assets (%)	=	EBIT (Yearly) / Total Asset (Average)
□ Current Ratio (times)	=	Current Asset / Current Liabilities
□ Quick Ratio (times)	=	(Cash & Equivalents + Short term investments + Trade Account Receivable) / Current Liabilities
□ DSCR	=	EBITDA (Yearly) / (Paid for long-term debt + Finance cost)
□ Interest bearing Debt to Equity (times)	=	Interest bearing Debt / Total equity
□ Net Interest bearing Debt to Equity	=	(Interest bearing Debt – Cash and cash equivalents – Current investments) / Total equity

Note:

1/ Average Total Equity attributable to owners of the Company

- Yearly = (Total Equity attributable to owners of the Company of the year before + Total Equity attributable to owners of the Company of this year) / 2
- Quarterly = (Total Equity attributable to owners of the Company of the quarter of the year before + Total Equity attributable to owners of the Company the quarter this year) / 2

2/ Average Total Assets

- Yearly = (Total Assets of the year before + Total Assets of the Company of this year) / 2
- Quarterly = (Total Assets of the Company of the quarter of the year before + Total Assets of the Company the quarter this year) / 2

3/ The numerator of ROE is defined as the Profit attributable to owners of the Company and have to be annualized.

4/ The numerator of ROA is defined as EBIT and have to be annualized.

5/ Interest Bearing Debt defined as Short-term loans + Long-term loans (including Current portion of long-term loans) + Debentures + Finance lease liabilities (including current portion of finance lease liabilities)



Environment Management Accounting (EMA)



Having the environmental concerns and social responsibilities, the Company has prepared the environmental management accounting report since 2005, aiming to enable the benefit of its usage for other organizations as well as for the company. The environmental cost accounting helps the Company to keep track with the information which is useful for enhancing the environmental management effectiveness, and resource utilization. The Environmental Cost Accounting report covers refinery business unit, Bangchak and Bang Pa-in Oil distribution Centre.

Unit: THB Million

Environment Management Accounting : EMA	FY2016	FY2017	△
Material Costs of Product Outputs			
: Consist of crude oil, ethanol, biodiesel, chemical, energy and utilities in production	73,360	94,982	21,622
Material Costs of Non-Product Outputs			
: Consist of slop and sludge oil, waste water, chemical surplus	77.26	93.19	15.93
Waste and Emission Control Costs: Consist of maintenance cost of environmental control equipment and depreciation and other fees	314.54	279.17	(35.37)
Prevention and Other Environmental Management Costs			
: Consist of monitoring and measurement cost, environmental management system expenses	25.2	17.33	(7.87)
Total Expenses	73,777	95,372	21,595
Benefit from by-product and waste recycling	(15.61)	(12.26)	(3.35)

Total environmental cost in 2017 increased from 2016 by approximately THB 21,595 million (+29%) mainly due to Material Cost of Product Output increased by THB 21,622 million with respect to increase in Crude Oil price from the previous year by 21%. However, average production rate increased from 101.39 KBD in 2016 to 111.37 KBD in 2017. Also Material Costs of Non-Product Outputs increased by THB 15.93 million in accordance with the quantity of product that is below quality standard increased by THB 16.18 million, while Waste and Emission Control Costs decreased by THB 35.37 million (-11%), primarily from maintenance cost for environmental equipment, depreciation of environmental control equipment, and waste management that decreased by THB 12.17 million, THB 11.54 million, and THB 11 million, respectively. Aside from the aforementioned Prevention and Other Environmental Management Costs decreased by THB 7.87 million (-31%) from the decrease in



monitoring and measurement cost that lowered by THB 10 million. Benefits from by-products and waste recycling decreased by THB 3.35 Million (-21%) due to sellable residue steel and aluminum scrap decreased by THB 3.64 million, while Liquid Sulfur value increased by THB 0.46 million.

Air quality from the refinery's flue

To monitor the environment, the Company has been constantly measuring air quality emitted from the refinery's various flues, to which the amount of pollutant such as dust, nitrogen oxide, and sulfur dioxide emitted is far below the required standard set by the Thai Ministry of Industry.

Management's Perspective towards 2018 Performance

Economic Situation Perspective

The world economy in 2018 is expected to continue to expand from the economies in various countries, especially developing countries, have started to recover. The US in particular, is expected to expand their economy from their tax reform policy. However, although the overall global economy is on the road to recovery, inflation is still low, as wages in developed country did not adjust upward to coincide with lowering unemployment rate. Thus, it is expected that the policy to increase interest rate of major countries will be made gradually, in tandem with the Balance Sheet Normalization by the US Federal Reserves and the Qualitative Easing Tapering by European Central Bank.

As for Thai economy in 2018, it is expected to expand consistently from the previous year, supported by the strengthening world economy that has led to the growth of Thai exports and tourism sector, increasing government spending, and investments from multinational corporations on the Eastern Economic Corridor initiative. As for household consumption, overall has a potential for growth, as the group of first time car owners have started to finish their installment payments, also consumption by high income group continues to expand.

Oil Price Situation Perspective

The price of crude oil which has been adjusted upward to the range of 60 to 70 \$/BBL since the beginning of 2018 has increase the prospect for production of Shale Oil based petroleum product in the US for this year. However, global crude oil demand is still expanding from the recovering economy, and the extension of the agreement to lower production between OPEC members and Non-members to the end of 2018 will result in reserves around the world to adjust downward. Further, it is speculated that Saudi Arabia will still regulate their production limitation to maintain oil price before Initial Public Offering of Saudi Aramco; the world's largest oil company, by the end of 2018. Also, it is forecasted that the OPEC members will decide to gradually increase production, rather than make a sudden termination of their agreement to stabilize the

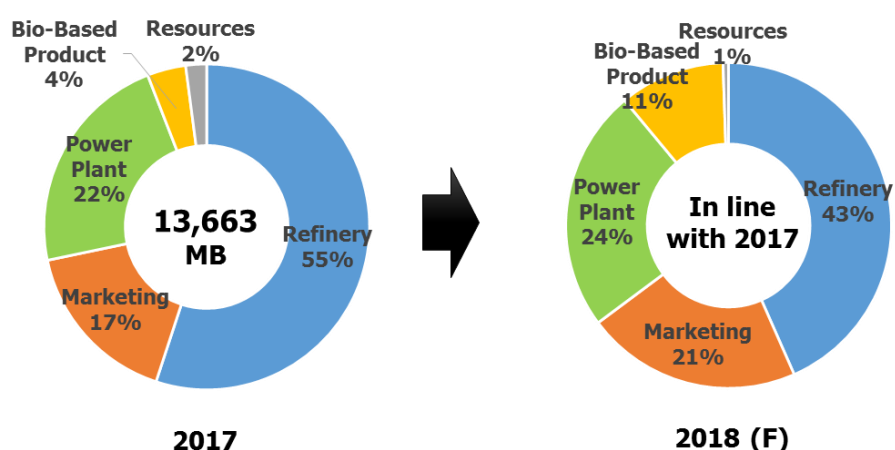


oil market. Moreover, the expanding Asia's economy outlook, and the European Central Bank preparing to implement their contractionary monetary policy within this year, are factors that would cause various currencies to appreciate against the USD, and will have positive impact on commodity prices, including oil price. BCP expects that crude oil price will adjust upward marginally to average between 55-70 \$/BBL.

The spread between DTD Brent and Dubai (DTD/DB) is expected to increase to average at 1.5-2.5 \$/BBL when the ESPO II oil pipeline begins their operation; allowing Russia to export more of their crude oil to China and Asia, replacing Asian imports of crude oil from the Middle East, aside from this, Russia will be able to lower their export of crude oil to Europe, thus resulting in higher price of Dated Brent when compared to Dubai.

As for the gross refinery margin, it is forecasted that the GRM of Dubai crude oil from Hydrocracking refinery in Singapore will be close to that of 2017's. It is expected that GRM for the first half of the year will be substantial, due to high demand levels from the freezing weather condition in various countries, and from the turnaround maintenance and emergency shutdown of various refineries. However, GRM for the latter half of the year has been anticipated to be slightly lower from lagging demand due to increasing crude price, operations of new refineries, and expansion of current production in many Asian countries.

Management perspective towards 2018 performance trends



In 2018, management expected that EBITDA performance for Bangchak Business Group's would be roughly in the same level as the previous year, due to this year, Bangchak refinery will undergo a Turnaround Maintenance in Q2/2018, which will result in the refinery to be underperforming from 2017. However, various businesses under the company's group are expected to make improvements in performance, especially the marketing business which continues to follow its strategy to increase service stations networks, combined with increasing variety in Non-oil



businesses to push retail sales volume and retain market share consistently. Also, the Bio-based product business will pursue expansion plans in preparation for its Initial Public Offering in the Stock Exchange of Thailand in late 2018.

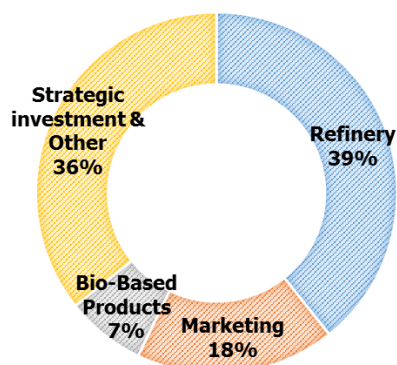
Key factors for each business are as follow:

Business	Important Estimations
Refinery Business	<ul style="list-style-type: none"><input type="checkbox"/> Plans for 2018 TAM to last approximately 45 days during Q2/2018, resulting in the expected average 2018 crude run to be at 100 - 102 KBD<input type="checkbox"/> Estimated Market GRM to be in the 6 to 7 \$/BBL range.<input type="checkbox"/> The 3E Project will commence the construction of the CCR and Debottlenecking project as planned.<input type="checkbox"/> Consistently carrying out the refinery efficiency improvement program to increase GRM.
Marketing Business	<ul style="list-style-type: none"><input type="checkbox"/> Sales volume estimated to grow approximately 5 - 7%<input type="checkbox"/> Approximate Marketing Margin is THB 0.75 – 0.80 per liter.<input type="checkbox"/> Plans to increase service stations by 80 locations in highly potential areas with emphasis on modern brand image promoting Greenovative Experience, while making improvements to existing service stations to increase convenience for the consumers.<input type="checkbox"/> Putting emphasis on Non-oil businesses to meet consumers' needs and increase the ability to compete in retail market, with plans to open 30 SPAR branches and expand 200 Inthanin Coffee branches, aside from this there are plans to expand Inthanin Coffee abroad to Cambodia and Laos PDR.
Bio-based Product Business	<ul style="list-style-type: none"><input type="checkbox"/> The Biodiesel business expects to increase sales volume, with forecast that the government will retain B100 mixing portions in Diesel product at 7% all year. Production rate is also planned to increase, with utilization rate expected at 95%.<input type="checkbox"/> The Ethanol business by Bangchak Bioethanol (Chachoengsao) Co., Ltd. and KSL Green Innovation Plc. estimates higher sales volume and plans an average production rate at full capacity.<input type="checkbox"/> Plans to further invest in value-added Bio-based product business, developing Bio-based technology to create high value Bio-based product such as Refined Glycerin in preparation for getting listed in the Stock Exchange of Thailand.
Natural Resource Business and Business Development	<ul style="list-style-type: none"><input type="checkbox"/> The E&P business expects production from Galoc field to be at 1,700 barrels per day (net to Nido).<input type="checkbox"/> Develop innovation businesses / investing in start-ups through Bangchak Initiative and Innovation Center (BIIC), focusing on innovations in engineering and clean energy technology that is environmentally friendly, energy management, and Bio-based technology.



Capital Expenditures Plan for 2018

The Bangchak Group estimates its Capital Expenditure coinciding with its 2018 budget which has been approved by the company's Board of Directors (excluded BCPG Plc.), in total THB 14,000 million, with details as follow:



Unit: THB million	Investment Estimation
Refinery	5,500
Marketing	2,500
Bio-Based Products	1,000
Strategic investment & Other	5,000
Total	14,000

Research & Development and Innovation

In 2017, the Company worked on research & development and innovation concerning enhancing biodegradation of contaminated soil, Bio-Jet Fuel Catalytic Synthesis Using Micro tube, a cleaning warmer system of solar cell in solar farm for the highest energy efficiency and product development, which total costs was approximately Baht 4.8 million.



Certification of information and data accuracy

Having carefully verified the information and data shown in this annual information display form, Bangchak certifies that they are completely accurate, factual, and not misleading or lacking in essential detail. In addition:

1. The financial statements and data summarized in the annual information display form show essentially accurate information and data about its financial standing, performance, and cash flow of Bangchak and its subsidiaries.
2. It has put in place a good information and data disclosure system to ensure that it discloses essential details about itself and its subsidiaries completely and accurately, while ensuring due compliance.
3. It has put in place a good internal control system and ensured due compliance with such system. Bangchak has provided internal control system assessment details as of December 31st, 2017, to the external auditor and the Audit Committee, including defects and key changes in the internal control system together with wrongdoing potentially affecting the preparation of the financial reports for itself and its subsidiaries.

As evidence that all documents are identical to those certified by Bangchak, the company has assigned Miss Kittima Wongsæn to put her initials on every page of the documents. Therefore, if her initials are missing on any given page, Bangchak will disown such data.

<u>Name</u>	<u>Position</u>	<u>Signature</u>
1. Mr. Pichai Chunhavajira	Chairman	(Signed) Pichai Chunhavajira _____
2. Mr. Chaiwat Kovavisarach	President and Chief Executive Officer	(Signed) Chaiwat Kovavisarach _____

<u>Authorized person</u>	<u>Position</u>	<u>Signature</u>
Miss Kittima Wongsæn	Vice President Corporate Strategy and Business Portfolio	(Signed) Kittima Wongsæn _____



Board of Directors

Mr. Surin Chiravisit

Vice Chairman (Independent Director) and Director with Authorized Signature (Started on April 8, 2010)
Chairman of the Nomination and Remuneration Committee

- Age 70
- Education / Training
 - LL.M., Chulalongkorn University
 - LL.B., Ramkhamhaeng University
 - B.Ed., Srinakharinwirot University
 - Investigation of the criminal case program, Batch#44, The Royal Thailand Police
 - Senior Administrator Program, Batch#29, Ministry of Interior
 - Senior Executive Program, Batch#21, Office of The Civil Service Commission
 - The National Defence Course, Class 40, National Defence College
 - Politics and Government in Democracy for Executives (Class 6), King Prajadhipok's Institute
 - Director Certification Program (DCP136/2010), Thai Institute of Directors (IOD)
 - How to Develop a Risk Management Plan (HRP1/2012), Thai Institute of Directors (IOD)
 - Successful Formulation and Execution of Strategy (SFE17/2013), Thai Institute of Directors (IOD)
 - Role of the Nomination and Governance Committee (RNG4/2013), Thai Institute of Directors (IOD)
 - Advanced Security Management Program (Class 5), The Association National Defence College of Thailand under the Royal Patronage of His Majesty the King.
 - Public-private social peace and order management training course, Class 2, Royal Thai Police
- Experience (5 years past experiences)
 - 2006 – Retirement : Secretary General, Social Security Office
 - 2005 : Deputy Permanent Secretary, Ministry of Labor, Office of the Permanent Secretary for Ministry of Labor
- Other directorship positions / other positions at present
 - Other listed companies
 - o Senior Consultant, Amata Corporation Public Company Limited
 - Non-listed companies
 - o Director, BBGI Co., Ltd.
 - o Director, National Reform Society
- Shareholding in the Company: None (both directly and indirectly held) (As of December 31, 2017)
- Familial relationship between directors and executives: None
- Criminal records on violation of securities and futures contract laws: None



Board of Directors

Mr. Suthep Wongvorazathe

Independent Director and Director with Authorized Signature (Started on October 30, 2012)

Chairman of The Audit Committee

- Age 69
- Education / Training
 - Master of Business Administration, University of Wisconsin, USA
 - Bachelor of Business Administration, University of Wisconsin, USA
 - Director Accreditation Program (DAP48/2005), Thai Institute of Directors (IOD)
- Experience (5 years past experiences)
 - 2003 - 2016 : Chairman of Audit Committee and Independent director, Chumporn Palm Oil Industry Public Company Limited
 - 2010 - 2011 : Chairman of the Executive Board, Export-Import Bank of Thailand
 - 2009 - 2011 : Director, Board of Investment of Thailand
- Other directorship positions / other positions at present
 - Other listed companies
 - o Chairman, Khonburi Sugar Public Company Limited
 - o Chairman, Seamico Securities Public Limited Company
 - o Chairman, M.K. Real Estate Development Public Company Limited
 - Non-listed companies
 - o Director, Asia Kangnam Company Limited
 - o Chairman of management committee, KT ZMICO Securities Company Limited
 - o Director, New Corp Company Limited
 - o Director, Buntudthong Pattana Company Limited
 - o Director, HSH-Siam Chaophraya Holdings Company Limited
 - o Director, The Mall Group Company Limited
 - o Director, The Mall Shopping Complex Company Limited
- Shareholding in the Company: None (both directly and indirectly held) (As of December 31, 2017)
- Familial relationship between directors and executives: None
- Criminal records on violation of securities and futures contract laws: None



Board of Directors

General Vitch Devahasdin

Independent Director (Started on April 5, 2016)

Chairman of the Corporate Governance Committee

- Age 67
- Education / Training
 - Bachelor of Business Administration Major Management Sripatum University
 - Chulachomklao Royal Military Academy, Class 22
 - Armed Forces Academies Preparatory School, Class 11
 - Vajiravudh College
- Experience (5 years past experiences)
 - 2014 - Present : Member, the National Legislative Assembly
 - 2010 - Present : Honorary Secretary, Royal Turf Club of Thailand under the Royal Patronage
 - : Director, Five Provinces Bordering Forest Preservation Foundation
 - 2015 : Petroleum Committee, Department of Mineral Fuels, Ministry of Energy
 - 2010 : Director, Industrial Estate Authority of Thailand
 - : Judge, Military Supreme Court
 - : Royal Guard on Special Assignments
 - : Chairman of the Advisory Board
- Other directorship positions / other positions at present
 - Other listed companies
 - None -
 - Non-listed companies
 - o Member, the National Legislative Assembly
 - o Honorary Secretary, Royal Turf Club of Thailand under the Royal Patronage
 - o Director, Five Provinces Bordering Forest Preservation Foundation
- Shareholding in the Company: None (both directly and indirectly held) (As of December 31, 2017)
- Familial relationship between directors and executives: None
- Criminal records on violation of securities and futures contract laws: None



Board of Directors

Adm. Sucheep Whoungmaitree

Independent Director and Director with Authorized Signature (Started on May 26, 2015)

- Age 60
- Education / Training
 - Naval Academy (Class 17)
 - General Line Officer School (Chief of Navy Cadet)
 - Line Officers School
 - Naval Command & Staff College
 - Naval War College
 - The National Defence College
 - Electronics Warfare Course and Military Instructor Course, USA
 - Field artillery battalion Course and Target Search programs, USA
 - Director Certification Program (DCP221/2016), Thai Institute of Directors (IOD)
- Experience (5 years past experiences)
 - 2016-Present : Commander-in-Chief, RTF Royal Thai Fleet
 - 2015 : Deputy Chief of Staff, Royal Thai Navy
 - 2014 : Commander, First Naval Area Command
 - 2013 : Commander, Patrol Squadron
 - 2011 : Academic Dean, Academic Branch Royal Thai Naval Academy
- Other directorship positions / other positions at present
 - Other listed companies
 - None -
 - Non-listed companies
 - o Commander-in-Chief, Royal Thai Fleet
 - o Member of the National Legislative Assembly
- Shareholding in the Company: None (both directly and indirectly held) (As of December 31, 2017)
- Familial relationship between directors and executives: None
- Criminal records on violation of securities and futures contract laws: None



Board of Directors

General Apirat Kongsompong

Independent Director and Director with Authorized Signature (Started on September 26, 2014)

- Age 57
- Education / Training
 - Master Degree, Master of Business Administration (MBA), Southeastern University, USA
 - Bachelor Degree, Chulachomklao Royal Military Academy, Year 1985
 - Army Command and General Staff College, Course 47, Year 2006
 - Army Command and General Staff College, Course 73, Year 1995
 - Army Aviation Cadet Course Class 25, Year 1991
 - Infantry Officer Advance Course, FT. Benning, USA, Year 1989
 - American Language Course, Lackland, USAF BASE, USA, Year 1988
- Experience (5 years past experiences)
 - 2017-Present : Assistant Commander in Chief, Royal Thai Army
 - 2016 : 1st Army Area Commander
 - 2015 : 1st Corps Commander
 - 2014 : 1st Army Area Deputy Commander
 - : Commanding General, The 1st Division, The King's Guard
 - 2013 : Commanding General, 15th Military Circle
 - 2012 : Commanding General, 11th Infantry Division
 - 2011 : Deputy Commanding General, The 1st Division, The King's Guard
- Other directorship positions / other positions at present
 - Other listed companies
 - None -
 - Non-listed companies
 - o Assistant Commander in Chief, Royal Thai Army
 - o Members for the National Legislative Assembly
 - o Chairman, the Government Lottery Office
- Shareholding in the Company: None (both directly and indirectly held) (As of December 31, 2017)
- Familial relationship between directors and executives: None
- Criminal records on violation of securities and futures contract laws: None

**Board of Directors****Pol.Lt.Gen. Chaiwat Chotima**

Independent Director and Director with Authorized Signature (Started on April 9, 2014)

- Age 65
- Education / Training
 - M.Pol.Sc, Eastern New Mexico University, USA
 - B. Pol.Sc, Thammasat University
 - Top Executive program, Capital Market Academy, Class 15
 - Advance Security Management Program (3/2011), National Defence College
 - The Joint State - Private Sector Course (19/2006), National Defence College
 - Advanced Police Administration Program, Class 17, Institute of Police Administration Development
 - Conference concerning Narcotics and launder money Control in others countries i.e. USA, UK, Canada, Germany, Australia, Japan, Hong Kong etc.
 - Director Certification Program (DCP194/2014) Thai Institute of Directors (IOD)
 - Financial Statements for Directors (FSD26/2014) Thai Institute of Directors (IOD)
 - Executive Program Class 7, Thailand Energy Academy
- Experience (5 years past experiences)
 - 2011 : Commissioner, Narcotics Suppression Bureau
 - 2010 : Inspector-General (Inspection Division 8)
- Other directorship positions / other positions at present
 - Other listed companies
- None -
 - Non-listed companies
 - Secretary General, Thailand Boxing Association
 - Director, College of Innovation, Thammasat University
 - Shareholding in the Company: None (both directly and indirectly held) (As of December 31, 2017)
- Familial relationship between directors and executives: None
- Criminal records on violation of securities and futures contract laws: None



Board of Directors

Mr. Krisada Chinavicharana

Independent Director (Started on November 23, 2015)

- Age 54
- Education / Training
 - Master of Business Administration, M.B.A., USA
 - LL.B., Chulalongkorn University
 - Diploma, National Defence College class 54
 - Director Certification Program (DCP186/2014) Thai Institute of Directors (IOD)
 - Senior Executive Development Program, Year 2010, Office of the Civil Service Commission (OCSC)
 - Civil Service Executive Program (Class 56), Office of the Civil Service Commission (OCSC)
 - Financial Instrument and Markets 2004, Harvard Business School
- Experience (5 years past experiences)
 - 2014-2017 : Director General, Fiscal Policy Office
 - 2012 : Financial Policy Advisor, Fiscal Policy Office, Ministry of Finance
 - 2009 - 2012 : Deputy Director-General, Fiscal Policy Office, Ministry of Finance
 - Board of Directors, Krungthai Bank Public Company Limited
 - Board of Directors, of Electricity Generating Authority of Thailand (EGAT)
 - Board of Directors, Aeronautical Radio of Thailand LTD,.
 - Board of Directors, Bangkok Commercial Asset Management Company Limited
 - Board of Directors, Islamic Bank of Thailand
- Other directorship positions / other positions at present
 - Other listed companies
 - None -
 - Non-listed companies
 - o Director General, The Excise Department
 - o Board Member, The Bank of Thailand
 - o Member of National Reform Steering Assembly
- Shareholding in the Company: None (both directly and indirectly held) (As of December 31, 2017)
- Familial relationship between directors and executives: None
- Criminal records on violation of securities and futures contract laws: None



Board of Directors

Mrs. Prisana Praharnkhasuk

Independent Director and Director with Authorized Signature (Started on April 5, 2016)

- Age 63
- Education / Training
 - M.B.A. Tarleton State University, USA
 - B.B.A. Chulalongkorn University
 - B.B.A. (Accounting) Krirk University
 - Certificate of Insurance, College of Insurance, London
 - Sasin Senior Executive Program (SEP13), Sasin Graduate Institute of Business Administration of Chulalongkorn University
 - Certificate of Completion CFO Certification Program, Federation of Accounting Professions under the Royal Patronage of His Majesty the King
 - Certificate of NIDA-Wharton Executive Leadership Program, Wharton University of Pennsylvania
 - Director Certification Program (DCP119/2009), Thai Institute of Directors (IOD)
 - The Board's Role in Mergers and Acquisitions (M&A/2011), Thai Institute of Directors (IOD)
 - Capital Market Academy, Class 14, Capital Market Academy
 - PTT Executive Leadership Development, GE Crotonville, USA
 - Financial and Fiscal Management Program for Senior Executive, Class 1
- Experience (5 years past experiences)
 - 2014-2015 : Executive Vice President, Finance and Accounting, Thai Oil Public Company Limited
 - 2009-2011 : Executive Vice President, Corporate Accounting, PTT Public Company Limited
- Other directorship positions / other positions at present
 - Other listed companies
 - o Director, TOA Paint (Thailand) Public Company Limited
 - Non-listed companies
 - o Director, Siam Solar Power Company Limited
 - o Member in 10th Workmen's Compensation Fund Committee
 - o Director, Thai Credit Guarantee Corporation
 - o Director, Industrial Estate Authority of Thailand
 - o Director, SIAMESE Company Limited
- Shareholding in the Company: None (both directly and indirectly held) (As of December 31, 2017)
- Familial relationship between directors and executives: None
- Criminal records on violation of securities and futures contract laws: None



Board of Directors

Mr. Teerapong Wongsiwawilas

Independent Director (Started on January 26, 2017)

- Age 53
- Education / Training
 - Bachelor of Laws, Thammasat University
 - Diploma, National Defence College, The National Defence Course, Class 57
 - Certificate, Public Law and Management, King Prajadhipok's Institute, Class 12
 - Senior Executive Program, Class 8, The Office of the Civil Service Commission
 - Director Certification Program (DCP246/2017), Thai Institute of Directors (IOD)
- Experience (5 years past experiences)
 - 2017 - Present : Secretary-General to the Cabinet
 - 2015 : Deputy Secretaries-General to the Cabinet
 - 2014 : Advisor of the Secretariat of the Cabinet
 - 2013 : Director of Bureau of Cabinet Submission Analysis
 - 2009 : Director of Bureau of Strategic Development and Special Policy Monitoring
- Other directorship positions / other positions at present
 - Other listed companies
 - None -
 - Non-listed companies
 - o Secretary-General to the Cabinet
 - o Member, Judicial Administration Commission
 - o Member, National Legislative Assembly Coordination Committee
 - o Member, Committee on Inspection of Draft Law and Subordinate Legislation for Submission to the Cabinet
 - o Qualified members, Science and Technology Development Board
- Shareholding in the Company: None (both directly and indirectly held) (As of December 31, 2017)
- Familial relationship between directors and executives: None
- Criminal records on violation of securities and futures contract laws: None



Board of Directors

Mr. Jarin Chakkaphark

Director (Started on October 12, 2017)

Chairman of The Enterprise wide Risk Management Committee

- Age 58
- Education / Training
 - Honorary Doctorates in Buddhist Studies, Mahachulalongkornrajavidyalaya University
 - Master of Public Administration, National Institute of Development Administration
 - Bachelor of Arts in Political Science (Government), Chulalongkorn University
 - Top Administrator Program (Class 38), Interior College, Prince Damrong Rajanupab Institute of Research and Development
 - Diploma, National Defence Course (Class 2007), National Defence College
 - Anti-Corruption Strategic Management Course for Senior Executive, Class 1/2010, Office of the National Anti-Corruption Commission
 - Director Certification Program (DCP176/2013), Thai Institute of Directors (IOD)
 - Rule of Law for Democracy, Class 2/2014, Office of The Constitutional Court
- Experience (5 years past experiences)
 - 2017-Present : Permanent Secretary, Ministry of Labour
 - 2015 : General Director , Department of Local Administration (DLA)
 - 2012 : Deputy Permanent Secretary, Ministry of interior
- Other directorship positions / other positions at present
 - Other listed companies
 - None -
 - Non-listed companies
 - o Permanent Secretary, Ministry of Labour
- Shareholding in the Company: None (both directly and indirectly held) (As of December 31, 2017)
- Familial relationship between directors and executives: None
- Criminal records on violation of securities and futures contract laws: None



Board of Directors

Mr. Prasong Poontaneat

Director (Started on April 24, 2012)

Chairman of The Enterprise wide Risk Management Committee

- Age 58
- Education / Training
 - Ph.D.in Public Administration, Management for Development College, Thaksin University
 - Master of Business Administration (Organization Management), Dhurakij Pundit University
 - Bachelor of Business Administration in Accounting, Rajamangala University of Technology
 - Bachelor of Laws, Sukhothai Thammathirat Open University
 - Director Certification Program (DCP76/2006), Thai Institute of Directors (IOD)
 - Top Administrator Program (Class 49), Interior College, Prince Damrong Rajanupab Institute of Research and Development
 - Senior Police Officers Course (Class 18), Police College
 - Leader Program (Class 14), Capital Market Academy, The Stock Exchange of Thailand
 - Leader Program (Class 2), Energy Academy, Thailand Energy Academy
 - Diploma, National Defence Course (Class 52/2009), National Defence College
- Experience (5 years past experiences)
 - 2014-Present : Director General, Revenue Department
 - 2011-2014 : Director General, State Enterprise Policy Office
 - 2010-2011 : Director General, Thailand Customs Department
- Other directorship positions / other positions at present
 - Other listed companies
 - o Chairman, Airports of Thailand Public Company Limited
 - Non-listed companies
 - o Director General, Revenue Department
 - o Member of university council, Mahasarakham University
 - o Qualified Member, Anti-Money Laundering Office
- Shareholding in the Company: None (both directly and indirectly held) (As of December 31, 2017)
- Familial relationship between directors and executives: None
- Criminal records on violation of securities and futures contract laws: None



Board of Directors

Mr. Visit Vongruamlarp

Director and Director with Authorized Signature (Started on April 8, 2015)

- Age 68
- Education / Training
 - Bachelor of Accounting, Thammasat University
 - Corporate Governance Program for Director and Senior Management of State Enterprises and Public Organizations (Class 1), King Prajadhipok's Institute
 - Directors Accreditation Program (DAP14/2004) Thai Institute of Directors (IOD)
 - Directors Certification Program (DCP44/2004) Thai Institute of Directors (IOD)
 - Improving the Quality of Financial Reporting (QFR1/2006) Thai Institute of Directors (IOD)
 - Executive Development Program, Canada
 - Implementation of Small and Medium Industrial Promotion Programs, Philippines
 - Project Implementation and Supervision program, Malaysia
 - Workshop on Implementation Finance, Philippines
- Experience (5 years past experiences)
 - 2008-2016 : Director and Chairman of Audit Committee, The Property Management Office, Thammasat University
 - 2014-2015 : Chairman of Audit Committee, Thammasat University Hospital
 - 2007-2015 : Director of Audit Committee, D.T.C. Industries Public Company Limited
- Other directorship positions / other positions at present
 - Other listed companies
 - Director, AIRA Factoring Public Company Limited
 - Non-listed companies
 - Director, Don Muang Tollway Public Company Limited
 - Director, The Property and Sports Management Office, Thammasat University
- Shareholding in the Company: 10,000 shares or 0.000726% directly held (As of December 31, 2017)
- Familial relationship between directors and executives: None
- Criminal records on violation of securities and futures contract laws: None



Board of Directors

Dr. Prasert Sinsukprasert

Director (Started on April 5, 2016)

- Age 51
- Education / Training
 - Bachelor of Engineering (Civil), Chulalongkorn University
 - Master of Energy Engineering ,George Washington University
 - Doctor of Philosophy (Ph.D.) in Energy Management and Policy ,University of Pennsylvania
- Experience (5 years past experiences)
 - Present : Inspector General, Office of the Permanent Secretary, Ministry of Energy
 - 2014-2017 : Deputy Director General ,Energy Policy and Planning Office, Ministry of Energy
 - 2013 : Director, International Energy Cooperation Office, Ministry of Energy
 - 2009 : Director, Planning Division, Department of Alternative Energy Development and Efficiency, Ministry of Energy
- Other directorship positions / other positions at present
 - Other listed companies
 - None -
 - Non-listed companies
 - o Inspector General, Office of the Permanent Secretary, Ministry of Energy
- Shareholding in the Company: None (both directly and indirectly held) (As of December 31, 2017)
- Familial relationship between directors and executives: None
- Criminal records on violation of securities and futures contract laws: None



Board of Directors

Mr. Chaiwat Kovavisarach

President and Chief Executive Officer

Director with Authorized Signature

(Started on October 30, 2012 and served as the President and Chief Executive Officer since January 1, 2015)

- Age 51
- Education / Training
 - M.Eng., Asian Institute of Technology (AIT)
 - M.B.A., Thammasat University
 - B.Eng. (Honor), King Mongkut's Institute of Technology Ladkrabang (KMITL)
 - Investment Banking, Kellogg Business School, Northwestern University
 - Director Certification Program (DCP168/2013), Thai Institute of Directors (IOD)
 - Role of the Nomination and Governance Committee (RNG4/2013), Thai Institute of Directors (IOD)
 - Certificate, National Defence Course (NDC 58), The National Defence College Association of Thailand
 - Certificate, Thailand Energy Academy (TEA 10)
- Experience (5 years past experiences)
 - Bangchak Corporation Public Company Limited
 - 2015 - Present : President and Chief Executive Officer
 - Others
 - 2007 - 2014 : Advisor, Avantgarde Capital Company Limited
- Other directorship positions / other positions at present
 - Other listed companies
 - o Vice Chairman, BCPG Public Company Limited
 - o Director, Lithium Americas Corp.
 - Non-listed companies
 - o Chairman, Bangchak Retail Company Limited
 - o Chairman, Happiness Sharing Foundation
 - o Director, BBGI Company Limited
 - o Director, Nido Petroleum Ltd.
 - o Director, Asia Insurance 1950 Public Company Limited
 - o Director and member, Government Pension Fund
 - o Director, Suan Kulab Witthayalai Alumnus Association Under the Royal Patronage of H.M. the King
 - o Vice President of the Activity Relationship, AIT Alumni Association (Thailand)
 - o Director, Prachabodee Social Enterprise Foundation
- Shareholding in the Company: 850,000 or 0.061732% directly held (As of December 31, 2017)
- Familial relationship between directors and executives: None
- Criminal records on violation of securities and futures contract laws: None



Executives

Mr. Chaiwat Kovavisarach

President and Chief Executive Officer
Director with Authorized Signature

(Started on October 30, 2012 and served as the President and Chief Executive Officer since January 1, 2015)

- Age 51
- Education / Training
 - M.Eng., Asian Institute of Technology (AIT)
 - M.B.A., Thammasat University
 - B.Eng. (Honor), King Mongkut's Institute of Technology Ladkrabang (KMITL)
 - Investment Banking, Kellogg Business School, Northwestern University
 - Director Certification Program (DCP168/2013), Thai Institute of Directors (IOD)
 - Role of the Nomination and Governance Committee (RNG4/2013), Thai Institute of Directors (IOD)
 - Certificate, National Defence Course (NDC 58), The National Defence College Association of Thailand
 - Certificate, Thailand Energy Academy (TEA 10)
- Experience (5 years past experiences)
 - Bangchak Corporation Public Company Limited
 - 2015 - Present : President and Chief Executive Officer
 - Others
 - 2007 - 2014 : Advisor, Avantgarde Capital Company Limited
- Other directorship positions / other positions at present
 - Other listed companies
 - o Vice Chairman, BCPG Public Company Limited
 - o Director, Lithium Americas Corp.
 - Non-listed companies
 - o Chairman, Bangchak Retail Company Limited
 - o Chairman, Happiness Sharing Foundation
 - o Director, BBGI Company Limited
 - o Director, Nido Petroleum Ltd.
 - o Director, Asia Insurance 1950 Public Company Limited
 - o Director and member, Government Pension Fund
 - o Director, Suan Kulab Witthayalai Alumnus Association Under the Royal Patronage of H.M. the King
 - o Vice President of the Activity Relationship, AIT Alumni Association (Thailand)
 - o Director, Prachabodee Social Enterprise Foundation
- Shareholding in the Company: 850,000 or 0.061732% directly held (As of December 31, 2017)
- Familial relationship between directors and executives: None
- Criminal records on violation of securities and futures contract laws: None



Executives

Mr. Pongchai Chaichirawiwat

Chief Operation Officer and Senior Executive Vice President, Refinery Business Group

- Age 57
- Education / Training
 - MBA, Thammasat University
 - Master's degree in engineering, Asian Institute of Technology (AIT), Thailand
 - Bachelor's degree in engineering, Chulalongkorn University
 - Advanced Certificate Course in Public Administration and Law for Executives (PLM.13/2014) King Prajadhipok's Institute
 - NIDA-Wharton Executive Leadership Program (7/2014), NIDA-Business School,
 - Center for Business Innovation
 - TLCA Leadership Development Program (LDP0/2013), Thai Listed Companies Association
 - Diploma, Senior Executive Program (SEP25/2012), Sasin Graduate Institute of Business Administration of Chulalongkorn University
 - Director Certification Program (DCP154/2011), Thai Institute of Directors (IOD)
 - Executive Development Program (EDP6/2010), Thai Listed Companies Association
- Experience
 - Bangchak Corporation Public Company Limited
 - 2017 : Chief Operation Officer and Senior Executive Vice President, Refinery Business Group
 - 2016 : Chief Marketing Officer and Senior Executive Vice President, Marketing Business Group
 - 2015 : Senior Executive Vice President, Marketing Business Unit
 - 2014 : Senior Executive Vice President, Marketing Business
 - 2011 : Executive Vice President, Renewable Energy Business, and Managing Director appointed to Bangchak Biofuel Company Limited
 - 2008 : Senior Vice President (Managing Director appointed to Bangchak Biofuel Company Limited)
 - Other directorship positions / Other positions at present
 - Other listed companies
 - None -
 - Non-listed companies
 - o Chairman, Bangchak Biofuel Co.,Ltd.
 - o Chairman, Bongkot Marine Services Company Limited
 - o Director, Bangchak Retail Company Limited
 - o Director, BCP Trading Pte. Ltd.
 - o Director, Fuel Pipeline Transportation Company Limited
 - Shareholding in the Company: 64,332 shares (44,332 shares; spouse 20,000 shares) or 0.004672% (As of December 31, 2017)
 - Familial relationship between directors and executives: None



Executives

Mr. Somchai Tejavanija

Chief Marketing Officer & Senior Executive Vice President, Marketing Business Group

- Age 55
- Education / Training
 - MBA, Thammasat University
 - B.ENG (Engineering), Kasetsart University
 - Energy Leadership Development for Senior Managers (Class 4), Ministry of Energy
 - Executive Development Program (Session 6), Thai Listed Companies Association
 - Director Certification Program (DCP157/2012), Thai Institute of Directors (IOD)
 - Advanced Certificate Course in Public Administration and Law for Executives, King Prajadhipok's Institute
 - Thammasat Leadership Program Class 4, Thammasat University
 - Advanced Security Management Program (ASMP6), The National Defence College Association of Thailand
 - Executive Management with Business Development and Investment (IBID3), Institute of Business and Industrial Development
 - Successful Formulation & Execution of Strategy (SFE 28/2016), Thai Institute of Directors (IOD)
- Experience
 - Bangchak Corporation Public Company Limited
 - 2017 - Present : Chief Marketing Officer and Senior Executive Vice President, Marketing Business Group
 - 2015-2016 : Senior Executive Vice President, Corporate Strategy and Business Development
 - 2013-2014 : Executive Vice President, Business Development and Strategy
 - 2011-2013 : Executive Vice President, Marketing Business, responsible for Retail Marketing, and Acting Vice President, Marketing Business Strategy and Planning
 - 2010-2011 : Senior Vice President-Marketing Business Strategy and Planning, Marketing Business
 - 2008 : Senior Vice President-Retail Marketing
- Other directorship positions / Other positions at present
 - Other listed companies
 - None -
 - Non-listed companies
 - o Director, BCP Energy International Pte. Ltd.
 - o Director, BCP Innovation Pte. Ltd
 - o Director, Bangchak Green Net Co., Ltd.
 - o Director, Bangchak Retail Co., Ltd.
- Shareholding in the Company: 28,522 shares or 0.002071% directly held (As of December 31, 2017)
- Familial relationship between directors and executives: None
- Criminal records on violation of securities and futures contract laws: None



Executives

Mr. Yodphot Wongrukmit

Senior Executive Vice President, Corporate Management and Sustainability Development

- Age 58
- Education / Training
 - MBA, MTSU, USA
 - BA (Economics) (2nd Class Honors), University of the Thai Chamber of Commerce
 - Graduate Diploma Top Executive Program in Commerce and Trade (TEPCoT) (Class 10/2017)
 - Graduate Diploma in Capital Market Academy (CMA21/2015)
 - Diploma in Leadership Succession Program (LSP2/2014), IRDP
 - Graduate Diploma National Defence College (NDC 2554)
 - NIDA-Wharton Executive Leadership Program (6/2010)
 - Graduate Diploma in Public Law and Management (9/2010), King Prajadhipok's Institute
 - JCCP "Advanced Marketing" (Japan)
 - Director Certification Program (DCP111/2008), Thai Institute of Directors (IOD)
 - Successful Formulation & Execution of Strategy (SFE13/2011), Thai Institute of Directors (IOD)
 - Anti-Corruption for Executive Program (ACEP6/2013), Thai Institute of Directors (IOD)
 - The Leadership GRID
- Experience
 - Bangchak Corporation Public Company Limited
 - 2016-present : Senior Executive Vice President, Corporate Management and Sustainability Development
 - 2013 : Senior Executive Vice President, Corporate Administration and Information Technology
 - 2012 : Senior Executive Vice President, Marketing Business
 - 2011 : Acting Senior Executive Vice President, Marketing Business
 - 2008 : Executive Vice President, Marketing Business
 - 2007 : Executive Vice President, Retail Marketing
- Other directorship positions / Other positions at present
 - Other listed companies
 - None -
 - Non-listed companies
 - o Director, Bangchak Green Net Company Limited
 - o Director, Provincial Electricity Authority
 - o Vice Chairman, Happiness Sharing Foundation
 - o Member, Products Show and Business Matching Committee, The Thai Chamber of Commerce and Board of Trade of Thailand
 - o Director, Master of Science Program in Corporate Governance (MSCG) Faculty of Commerce and Accountancy, Chulalongkorn University
- Shareholding in the Company: 44,096 shares or 0.003203% (As of December 31, 2017)
- Familial relationship between directors and executives: None
- Criminal records on violation of securities and futures contract laws: None



Executives

Mr. Bundit Sapianchai

Senior Executive Vice President

- Age 53
- Education / Training
 - Honorary Doctorate of Electrical Engineering, Rajamagala University of Technology Krungthep, Thailand
 - Master of Engineering, Asian Institute of Technology (AIT), Thailand
 - Bachelor of Engineering, King Mongkut's Institute of Technology Ladkrabang
 - Director Accredited Program (DAP28/2004), Thai Institute of Directors (IOD)
 - Director Certification Program (DCP53/2005), Thai Institute of Directors (IOD)
 - Advanced Diploma, Public Administration and Public Law (Class of 10th), King Prajadhipok's Institute
 - Diploma, The joint State-Private Sector Course, National Defence College (Class of 25th)
 - Certificate, Program for Senior Executives Class 20 (CMA 20), Capital Market Academy, Stock Exchange of Thailand
- Experience
 - Bangchak Corporation Public Company Limited
 - 2015 – present : Senior Executive Vice President
 - 2013 : Senior Executive Vice President, Renewable Energy Business
 - 2012 : Senior Executive Vice President, Business Development and Strategy
 - 1998 : Executive Vice President, Corporate Business Development
 - Others
 - 2004 – 2008 : Executive Vice President, Finance and Strategy, NFC Fertilizer Public Company Limited
 - 1997 : Business Director, Air Liquid (Thailand) Company Limited
 - 1994 : Marketing Director, PTT Petrochemical Company Limited
 - 1988 : Commercial Manager, National Petrochemical Public Company Limited
- Other directorship positions / Other positions at present
 - Other listed companies
 - o President, BCPG Public Company Limited
 - Non-listed companies
 - o Chairman, Bangchak Solar Energy Company Limited
 - o Chairman, Bangchak Solar Energy (Prachinburi) Company Limited
 - o Chairman, Bangchak Solar Energy (Chaiyaphum 1) Company Limited
 - o Chairman, Bangchak Solar Energy (Buriram) Company Limited
 - o Chairman, Bangchak Solar Energy (Buriram 1) Company Limited
 - o Chairman, Bangchak Solar Energy (Nakhonratchasima) Company Limited
 - o Director, Huang Ming Japan Company Limited
 - o Director, BCPG Wind Cooperatief U.A.
 - o Director, Star Energy Group Holdings Pte. Ltd.
 - o Director, PetroWind Energy Inc.
- Shareholding in the Company: 31,895 shares or 0.002316 % directly held (As of December 31, 2017)
- Familial relationship between directors and executives: None
- Criminal records on violation of securities and futures contract laws: None



Executives

Mr. Surachai Kositsareewong

Senior Executive Vice President, Accounting and Finance

- Age 55
- Education / Training
 - Master of Business Administration, Steton School of Economics and Business Administration Mercer University, USA
 - BA, Faculty of Commerce and Accounting, Chulalongkorn University
 - Director Certification Program (DCP152/2011), Thai Institute of Directors (IOD)
 - Director Accreditation Program (DAP49/2006), Thai Institute of Directors (IOD)
 - Audit Committee Program (ACP16/2007), Thai Institute of Directors (IOD)
 - CFO Certification Program, Federation of accounting professions
 - The Training Program on Structured Notes, Thailand Securities Institute
 - Frontiers in Infrastructure Finance Distance Learning Course, The World Bank Institute
 - Energy Training Program, AON
 - Executive Development Program (EDP), Fiscal Policy Research Institute
 - Intermediate Certificate Course in Good Governance for Middle Level Executives (#12) Public Director Institute
 - Diploma, National Defence College, The National Defence Course Class 2013
 - CEDI BABSON Entrepreneurial Leadership Program, Babson College Wellesley, Massachusetts, USA.
 - Graduate Diploma in Capital Market Academy (CMA23/2016)
- Experience
 - Bangchak Corporation Public Company Limited
 - 2015 - present : Senior Executive Vice President, Accounting and Finance
 - 2013 : Senior Executive Vice President, Accounting and Finance
 - 2012 : Acting Senior Executive Vice President, Accounting and Finance
 - 2009 : Executive Vice President, Accounting and Finance
 - Others
 - 2012-2014 : Director, MCOT Public Company Limited
 - 2012-2014 : Director, Government Saving Bank
 - 2007-2009 : Vice President (Administration) and Chief Finance Officer, Dhanarak Asset Development Company Limited
 - 2004-2007 : Independent director and audit committee member, Wyncoast Industrial Park Public Company Limited
 - 1998-2004 : Vice president, Treasury Department, Small and Medium Enterprise Development Bank of Thailand
- Other directorship positions / Other positions at present
 - Other listed companies
 - None-
 - Non-listed companies
 - o Director, Bangchak Biofuel Company Limited
 - o Director, Bangchak Bioethanol (Chachoengsao) Company Limited
 - o Director, BCP Energy International Pte. Ltd.
 - o Director, BCP Innovation Pte.Ltd.
 - o Director, BCP Trading Pte.Ltd
 - o Commissioner of the Arbitration Committee
 - o Commissioner, The Electronic Transactions Commission
- Shareholding in the Company: None (both directly and indirectly held) (As of December 31, 2017)
- Familial relationship between directors and executives: None
- Criminal records on violation of securities and futures contract laws: None



Executives

Mr. Kiatchai Maitriwong

Senior Executive Vice President

- Age 58
- Education / Training
 - MBA, Thammasat University
 - BS (Chemical engineering), Chulalongkorn University
 - Advanced Certificate Course in Public Administration and law for Executives (PLM 11), King Prajadhipok's Institute
 - Director Certification Program (DCP150/2011), IOD
 - Executive Development Program (EDP), Fiscal Policy Research Institute Foundation
 - Executive Development Program (TLCA EDP 10), Thai Listed Companies Association
 - Oil Price Risk Management, Morgan Stanley (USA)
 - Energy Leadership Development for Senior Managers Class 4, Ministry of Energy
 - Anti-Corruption for Executive Program (ACEP6/2013), Thai Institute of Directors (IOD)
 - Management Development Program 2013 Class 18, Thailand Management Association
 - Leadership Succession Program LSP Class 3, IRDP
 - Strategic CFO in Capital Markets Program Class 1, Thailand Securities Institute (TSI)
 - Advanced Management Programme AMP Class 105, INSEAD (Fontainebleau, France)
 - Advanced Security Management Program Class 7, The Association National Defence College of Thailand under the Royal Patronage of His Majesty the King
 - Executive Management with Business Development and Investment Class 4, Institute of Business and Industrial Development

- Experience

Bangchak Corporation Public Company Limited

- 2017-present : Senior Executive Vice President
- 2016 : Senior Executive Vice President, Bio Based Products Business Unit
- 2015 : Senior Executive Vice President, Renewable Energy Business Unit
- 2014 : Acting Senior Petroleum Refining Executive, Refinery Business
- 2010 : Executive Vice President, Corporate Administration and Information Technology
- 2009 : Senior Advisor
- 2008 : Advisor
- 2007 : Senior Vice President, Planning and Supply

Others

- Advisor, Thai Ethanol Manufacturing Association
- Advisor in Chemical Engineering, The Engineering Institute of Thailand under H.M. the King's Patronage
- Special instructor for refining and supply businesses, Petroleum Institute of Thailand
- Ethanol and Biodiesel Price Structure Improvement Guideline Taskforce

- Other directorship positions / Other positions at present

- Other listed companies

- None -

- Non-listed companies

- Chief Executive Officer, BBGI Company Limited
- Director, Bangchak Biofuel Company Limited
- Director, Bangchak Bioethanol (Chachoengsao) Company Limited
- Vice Chairman, Ubon Bio Ethanol Company Limited
- Vice Chairman, Ubon Agricultural Energy Company Limited
- Vice Chairman, Ubon Bio Gas Company Limited
- Vice Chairman, NP Bio Energy Company Limited
- Director, Happiness Sharing Foundation



- Shareholding in the Company: 11 shares or 0.000001% directly held
(As of December 31, 2017)
- Familial relationship between directors and executives: None
- Criminal records on violation of securities and futures contract laws: None



Executives

Mr. Chalermchai Udomranu

Senior Executive Vice President, Refinery Business Unit

- Age 56
- Education / Training
 - MBA, Thammasat University
 - B. Engineering (Electrical), Chulalongkorn University
 - Anti-Corruption for Executive Program (ACEP6/2013), Thai Institute of Directors (IOD)
 - Director Certification Program (DCP170/2013), Thai Institute of Directors (IOD)
 - Sasin Executive Program, Sasin Graduate Institute of Business Administration of Chulalongkorn University
 - Advanced Certificate Course in Public Administration and Law for Executives, King Prajadhipok's Institute
 - Leadership Succession Program (LSP 6), Institute of Research and Development for Public Enterprises (IRDP)
- Experience
 - Bangchak Corporation Public Company Limited
 - 2016-Present : Senior Executive Vice President, Refinery Business Unit
 - 2015 : Executive Vice President, Refinery Manufacturing Business
 - 2012 : Executive Vice President, Refinery Business
 - 2011 : Senior Vice President, Refinery Operation, Refinery Business
 - 2009 : Vice President, Refinery Operation, Refinery Business
 - 2005 : Vice President, Refinery Project
 - 2003 : Senior Manager, Refinery Project
 - 2001 : Senior Manager, Technical Service Division
 - 2000 : Senior Manager, Maintenance Service Division
 - 1997 : Manager, Maintenance Service Division
- Other directorship positions / Other positions at present
 - Other listed companies
 - None -
 - Non-listed companies
 - None -
- Shareholding in the Company: 1,865 shares or 0.000135% (As of December 31, 2017)
- Familial relationship between directors and executives: None
- Criminal records on violation of securities and futures contract laws: None



Executives

Mr. Pichit Wongrujiravanich

Executive Vice President, Internal Audit

- Age 57
- Education / Training
 - MS (Accounting), Thammasat University
 - BA (Accounting), Thammasat University
 - Higher Certificate in Auditing, Thammasat University
 - Certified Public Accountant, license no. 3766
 - Director Accreditation Program (DAP89/2011), Thai Institute of Directors (IOD)
 - Audit Committee Program (ACP39/2012), Thai Institute of Directors (IOD)
 - Anti-Corruption for Executive Program (ACEP5/2013), Thai Institute of Directors (IOD)
 - Executive Development Program (EDP12), Thai Listed Companies Association.
 - Director Certification Program (DCP198/2014), Thai Institute of Directors (IOD)
 - Leadership Succession Program (LSP7), Institute of Research and Development for Public Enterprises (IRDP)
- Experience
 - Bangchak Corporation Public Company Limited
 - 2015 - present : Executive Vice President, Internal Audit
 - 2011 : Senior Vice President, Internal Control Office
 - 2005 : Vice President, Internal Control Office
 - Others
 - 1992 : Assistant to Executive Director, Yontrakit Group
- Other directorship positions / Other positions at present
 - Other listed companies
 - None -
 - Non-listed companies
 - None -
- Shareholding in the Company: 11,071 shares or 0.000804% (As of September 15, 2017)
- Familial relationship between directors and executives: None
- Criminal records on violation of securities and futures contract laws: None



Executives

Mr. Dhanajit Makarananda

Executive Vice President

- Age 58
- Education / Training
 - Master of Science in Chemical Engineering, The University of Southwestern Louisiana
 - BS (Chemical technology), Chulalongkorn University
 - Energy Leadership Development for Senior Managers (Class 5), Ministry of Energy
 - Executive Development Program (EDP) 2013, Fiscal Policy Research Institute Foundation
 - Senior Executive Program (SEP) 2014, Sasin Graduate Institute of Business Administration
 - Advanced Certificate Course in Public Administration and Law for Executives 2015, King Prajadhipok's Institute
- Experience
 - Bangchak Corporation Public Company Limited
 - 2017-Present : Executive Vice President
 - 2016 : Executive Vice President, Bioenergy and Energy Crop Business
 - 2015 : Executive Vice President, Refinery Project Development
 - 2015 : Executive Vice President, Associated Company Business, Renewable Energy Business
 - 2014 : Senior Vice President, Associated Company Business, Renewable Energy Business
 - 2013 : Senior Vice President, Refinery Technique, Refinery Business
 - 2012 : Senior Vice President, Refinery Engineering, Refinery Business
 - 2011 : Vice President, Refinery Engineering, Refinery Business
 - 2009 : Vice President, Refinery Technique, Refinery Business
- Other directorship positions / Other positions at present
 - Other listed companies
 - None -
 - Non-listed companies
 - o Deputy Managing Director, Biodiesel Unit, BBGI Company Limited
 - o Managing Director, Bangchak Biofuel Company Limited
- Shareholding in the Company: None (both directly and indirectly held) (As of September 15, 2017)
- Familial relationship between directors and executives: None
- Criminal records on violation of securities and futures contract laws: None



Executives

Mr. Chokchai Atsawarangsalit

Executive Vice President, Marketing Business and Oil Terminal

- Age 49
- Education / Training
 - MBA, Kasetsart University
 - BS (Engineering), Chulalongkorn University
 - Company Secretary Program (CSP14/2005), Thai Institute of Directors (IOD)
 - Effective Minute Taking (EMT2/2006), Thai Institute of Directors (IOD)
 - Corporate Governance and Social Responsibility (CSR1/2007), Thai Institute of Directors (IOD)
 - Director Certification Program (DCP108/2008), Thai Institute of Directors (IOD)
 - Current Issue Seminar (R-CIS1/2009), Thai Institute of Directors (IOD)
 - Successful Formulation & Execution of Strategy (SFE3/2009), Thai Institute of Directors (IOD)
 - TCLA Executive Development Program (EDP), Thai Listed Companies Association
 - Energy Leadership Development for Senior Managers (Class 6), Ministry of Energy
 - Executive Development Program 2011, Minister of Finance
 - Senior Executive Program (SEP-26), The Sasin Graduate Institute of Business Administration of Chulalongkorn University
 - Certificate Course in Thai - Asean Economic Community (Class 3), King Prajadhipok's Institute
 - Diploma courses in Public Economics Management for Executives Class 13. King Prajadhipok's Institute
 - Leadership Succession Program Class 5, IRDP
 - Leading in a Disruptive World Stanford University Executive Program, SEAC
- Experience
 - Bangchak Corporation Public Company Limited
 - 2015 - Present : Executive Vice President, Marketing Business and Oil Terminal
 - 2015 : Executive Vice President, Exploration and Production, Corporate Strategy and Business Development
 - 2014 : Senior Vice President, Exploration and Production, Corporate Strategy and Business Development
 - 2012 : Senior Vice President, Business Development, Corporate Business Development
 - 2009 : Vice President, Business Development, Corporate Business Development
 - 2007 : Vice President, Company Secretariat, and Company Secretary
- Other directorship positions / Other positions at present
 - Other listed companies
 - None -
 - Non-listed companies
 - o Director, Bangchak Green Net Company Limited
 - o Director, Happiness Sharing Foundation
- Shareholding in the Company: 300 shares or 0.000021% (As of September 15, 2017)
- Familial relationship between directors and executives: None
- Criminal records on violation of securities and futures contract laws: None



Executives

Mr. Pativat Tivasasit

Executive Vice President, Refinery Manufacturing Business

- Age 56
- Education / Training
 - B.Sc.(Chemical Technology), Chulalongkorn University
- Experience
 - Bangchak Corporation Public Company Limited
 - 2017 - Present : Executive Vice President, Refinery Manufacturing Business
 - 2016 : Acting Executive Vice President, Refinery Manufacturing Business
 - 2015 : Senior Vice President, Refinery Operation
 - 2014 : Vice President, Refinery Operation
 - 2012 : Vice President, Safety Health and Environment
 - 2009 : Senior Manager, Process Division 2
 - 2006 : Senior Manager, Commissioning Project
 - Other directorship positions / Other positions at present
 - Other listed companies
 - None -
 - Non-listed companies
 - None -
 - Shareholding in the Company: None (both directly and indirectly held) (As of September 15, 2017)
 - Familial relationship between directors and executives: None
 - Criminal records on violation of securities and futures contract laws: None



Attachment 2 Profiles of subsidiaries' directors

Subsidiary		Directors	Bangchak Green Net Co., Ltd. (BGN)
1	Mr. Meechai	Veeravaidya	X
2	Mr. Somkiat	Thatrithorn	/
3	Mrs. Saruda	Changsiricharoen	/
4	Mr. Somchai	Tejavanija	/
5	Mr. Yodphot	Wongrukmit	/
6	Mr. Chokchai	Atsawarangsalit	/
7	Ms. Naree	Jiamwattanasuk	//

Note: The 4th to 7th directors are management directors of Bangchak

X = Chairman / = Director // = Managing Director

Subsidiary is a significant subsidiary company with revenues exceeding 10% of total revenues reported in the latest annual consolidated statements of income of Bangchak.



Attachment 3 Report of the Audit Committee

Report of the Audit Committee

To the Shareholders

The Board of Directors appointed the Audit Committee, headed by Mr. Suthep Wongvorazathe, with Mrs. Prisana Praharnkhasuk, Pol.Lt.Gen. Chaiwat Chotima, and Mr. Krisada Chinavicharana as members.

In 2017, the committee held 13 meetings, ten of which with senior management. When meeting with senior management, executives with vested interests stayed away from the meetings. The following captures the meeting attendances.

Name	Attendance / Total
Mr. Suthep Wongvorazathe	13 / 13
Mrs. Prisana Praharnkhasuk	13 / 13
Pol.Lt.Gen. Chaiwat Chotima	12 / 13
Mr. Krisada Chinavicharana	12 / 13

The committee also held one meeting with the Enterprise-wide Risk Management Committee.

The committee deliberated various matters, summarized below:

1. Reviewed quarterly and annual financial statements, as well as related financial reports, including adequate and timely disclosure of information, compliance with generally accepted accounting principles, accounting standards, and significant changes in accounting policies, together with connected transactions among shareholders and subsidiaries or related companies. The committee also arranged meetings with Bangchak's legal officers for an update on significant court litigation cases against Bangchak, the outcomes of which could significantly affect its businesses.
2. Reviewed to ensure that the Company
 - Had instituted a proper, transparent and efficient internal control and internal audit system by monitoring the performance of the internal control office to ensure independence and efficiency.



- Awareness of the need to raise work efficiency and lower process losses of oil
 - Support was given to Internal Audit to
 - Organize “Information System Security” training for Bangchak employees and those serving its affiliates
 - Join a project on standard certification for management system assessors of IT security management (ISO 27007) and business continuity management (ISO 22301) and counsel the management on internal control.
3. Reviewed the Company's compliance with all accounting standards in effect, laws, SET regulations and laws relevant to its business in a complete and accurate manner and in line with corporate governance principles. The committee's emphasis was that the Company would exceed such standards. This year the Audit Committee reviewed the asset acquisition process by BCPG Plc, a subsidiary, for the geothermal power generation plant project in Indonesia.
4. Selected, nominated and proposed compensation for KPMG Phoomchai Audit Ltd. as the external auditor for 2017 and staged quarterly meetings between the committee and the external auditor to discuss concerns arising from each audit and find prompt solutions to significant ones.
5. Reviewed the adequacy of Bangchak's risk management processes and undertook risk-based inspection. This year a meeting was held to share ideas with the Enterprise-wide Risk Management Committee (ERMC) to raise the efficiency and effectiveness of subsidiary governance for a uniform direction. To this end, a recommendation was to appoint a strategic planning committee to promote affiliates' business process synergy. This committee would define work plans and provide advice on how to administer and control affiliates in assorted aspects under the same standard. A focus was to be put on collaboration between the ERMC and the Audit Committee to minimize the impacts of corporate risks.



6. Actively encouraged and ensured compliance with safety standards and stewardship of the refinery surroundings and nearby communities.
7. Revised the Audit Committee Charter in line with the criteria and terms of the Office of the Securities and Exchange Committee (SEC) and SET and the Corporate Governance Policy to ensure confidence of shareholders, business partners, customers and other stakeholders that the Company's business follows such terms and the code of conduct to maintain an efficient internal control system.
8. Reviewed the policy and operating manual of the internal control office to cover the roles and responsibilities of the Audit Committee and the internal control office for use as a practical guideline.
9. Supported the upgrading of internal auditors on a par with international standards.

Having monitored the Company's performance in 2017 under the scope of authority and assigned responsibility, the Audit Committee approved the way the Company had prepared its financial statements, regarding it as accurate in significant details under generally accepted accounting principles. Connected transactions or items of potential conflicts of interest were adequately disclosed. The Company's internal controls and a risk management process are compatible with its business circumstances, with accurate and complete compliance with the law, SET regulations, and relevant laws.

(Signed) *Suthep Wongvorazathe*
(Mr. Suthep Wongvorazathe)
Chairman, Audit Committee
March 23, 2018



Attachment 4 Details of Head of Internal Audit and Head of Compliance Department

Head of Internal Audit

Mr. Pichit Wongrujiravanich

Executive Vice President, Internal Audit

- Age 57
- Education / Training
 - MS (Accounting), Thammasat University
 - BA (Accounting), Thammasat University
 - Higher Certificate in Auditing, Thammasat University
 - Certified Public Accountant, license no. 3766
 - Director Accreditation Program (DAP89/2011), Thai Institute of Directors (IOD)
 - Audit Committee Program (ACP39/2012), Thai Institute of Directors (IOD)
 - Anti-Corruption for Executive Program (ACEP5/2013), Thai Institute of Directors (IOD)
 - Executive Development Program (EDP12), Thai Listed Companies Association.
 - Director Certification Program (DCP198/2014), Thai Institute of Directors (IOD)
 - Leadership Succession Program (LSP7), Institute of Research and Development for Public Enterprises (IRDP)
- Experience
 - Bangchak Corporation Public Company Limited
 - 2015-present : Executive Vice President, Internal Audit
 - 2011 : Senior Vice President, Internal Control Office
 - 2005 : Vice President, Internal Control Office
 - Others
 - 1992 : Assistant to Executive Director, Yontrakit Group
 - Other directorship positions / Other positions at present
 - Other listed companies
 - None –
 - Non-listed companies
 - None –



- Shareholding in the Company: 11,071 shares or 0.000804% (As of September 15, 2017)
 - Familial relationship between directors and executives: None
 - Criminal records on violation of securities and futures contract laws: None



Head of Compliance Department

Ms. Pakawadee Junrayapes

Senior Vice President, Sustainability Development and Corporate Compliance and Company Secretary

- Age 56
- Education / Training
 - Master of Law, Ramkhamhaeng University
 - Bachelor of Law, Thammasat University
 - Thai Barrister at law, The Institute of Legal Education Thai Bar Association Under The Royal Patronage
 - Certificate in Business Law, Thammasat University
 - Certificate in English for Specific Careers (Law), Sukhothai Thammathirat Open University
 - Executive Development Program (EDP2012), Ministry of Finance
 - Company Secretary Program (CSP34/2010), Thai Institute of Directors (IOD)
 - Director Certification Program (DCP142/2010), Thai Institute of Directors (IOD)
 - Successful Formulation and Execution of Strategy (SFE16/2012), Thai Institute of Directors (IOD)
 - Anti-Corruption: The Practical Guide (ATCG2/2013), Thai Institute of Directors (IOD)
 - Thailand and the ASEAN Economic Community Class 4/2013, King Prajadhipok's Institute
 - Advances for Corporate Secretaries, Class 2/2017, Thai Listed Companies Association (TLCA)
 - Certificate of Top Management (2017), Company cooperate with Thailand Management Association (TMA) and Duke Corporate Education (DUKE)

□ Experience

Bangchak Corporation Public Company Limited

- 2015-2017 : Senior Vice President, Corporate Compliance, and Company Secretary
- 2011-2015 : Vice President, The Secretary to The Board of the Directors Office, and Company Secretary
- 2009-2011 : Senior Manager, The Secretary to The Board of the Directors Office, and Company Secretary



- 2007-2009 : Senior Manager, Legal Office
 - 2004-2007 : Manager, Legal Office
 - 2002-2004 : Manager, Litigation Division
 - 2002-2002 : Manager, Legal Office
- Others
- 2006-2008 : Personal Specialist of National Legislative Assembly Member and Sub-Committee on Energy
- Other directorship positions / Other positions at present
 - Other listed companies
 - None -
 - Non-listed companies
 - None -
 - Shareholding in the Company: 13,000 shares or 0.000944% (As of September 15, 2017)
 - Relationship among Family with other Directors, management, Major Shareholders or Subsidiaries: None
 - Criminal records on violation of securities and futures contract laws: None

Scope of duties

- Prepare and maintain key documents, including the Board roster, meeting notices, minutes of Board meetings and shareholders' meetings, annual reports, and reports of vested interests
- Schedule Board meetings and shareholders' meetings under the law and company regulations. Coordinate conformance to the resolutions of Board and shareholders' meetings
- Advise and support the performance of directors and the management under the law and relevant regulations
- Coordinate between the Chairman and the President and chief executive officer together with his management team, which includes coordination between Bangchak and its shareholders
- Encourage the directors, management, and employees to conform to corporate governance
- Perform other lawful tasks and Board-assigned tasks.



Attachment 5 Asset Revaluation

- None -