



Annual Information Filing

As of December 31, 2018

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	38
3. Risk Factors	73
4. Review of Business Assets	84
5. Legal Disputes	93
6. General Information and Other Key Information	94
Part 2 Management and Corporate Governance	
7. Securities and Shareholder Information	101
8. Management Structure	105
9. Corporate Governance	139
10. Social Responsibility	156
11. Internal Control and Risk Management	158
12. Connected Transactions	167
Part 3 Financial Status and Operational Results	
13. Essential Financial Information	185
14. Management's Discussion and Analysis	199
Certification of Information and Data Accuracy	230
Attachment	
Attachment 1 : Profiles of Directors and Executives	231
Attachment 2 : Profiles of Subsidiaries' Directors	264
Attachment 3 : Report of The Audit Committee	265
Attachment 4 : Details of Head of Internal Audit and Head of Compliance Department	269
Attachment 5 : Asset Revaluation	273



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 organization, 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-profitteering benefits); nurturing growth and sustainability through the promotion and development of innovation and technology; due regard for conscientious



consumption of natural resources; 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 2023, as highlighted below.

1. Business goals

1.1 Refining and Oil Trading Business Group: To raise the refinery's safety and environmental 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 133 KBD through the 3E Project (Efficiency, Energy, and Environment Improvement Project); to contract a consultant to run the Rocket Project to improve refining operation in production (Hydrocarbon Units), energy, utilities, and auxiliary units, maintenance and reliability, planning and logistics, and crude and product trading; to arrange for flexible crude mix; and to venture into related businesses, including a plan to increase its oil trading volume through BCP Trading Pte. Ltd. (BCPT), founded in Singapore, to over 300 KBD within five years.

1.2 Marketing Business Group: To uphold the No.2 market share while increasing its market share to over 20% through a new service station format under the concept of Greenovative Experience concept that aims to address modern Thai's lifestyle by which everyone takes part in environmental care in sustainable manner; to better satisfy customers through an



upgrade service standard in a bid to raise the NET Promoter Score; to develop the food store, 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 in parallel with extending its presence overseas to increase opportunities in the global market.

1.3 Green Power Business: To develop power generation from renewable energy through BCPG Plc. from both domestic and international installations using the 4i strategy below:

- **Improvement** – to develop projects with emphasis on efficient asset management and increase of asset value.
- **Investment** – to invest in businesses or to take on new investments with potential returns as expected.
- **Innovation** – to be the leader in commercial application of innovation and technology in the power generation business using Digital Energy Management.
- **Intelligence** – to run a customer-oriented business where capable personnel with specialized skills join forces to grow the business in a sustainable way.

1.4 Bio-based Products Business Unit: To keep growing the biofuel business with products like biodiesel and ethanol while aiming to establish a Bio Complex to expand its bio-based



business by making high-value bio-based products that will open up greater business opportunities; to encourage R&D on commercial development of energy crops, such as sugarcane, tapioca, oil palm, and algae; to take part in augmenting both volumes and values to agricultural products to help farmers; to use R&D for quality improvement of bio-based products; and to pursue opportunities for investment in bio-based products through fund mobilization on stock exchanges.

1.5 Natural Resources Business: To develop the petroleum exploration and production business and emerging resource businesses, including lithium mining.

- **Petroleum exploration and production** – Through the establishment of BCPR Pte.Ltd. in Singapore, Bangchak invested in petroleum deposits operated by OKEA AS in Norway. Bangchak aim to expand investment further in petroleum deposits with future potential.
- **New resources** – BCP Innovation Pte. Ltd. was established in Singapore to engage in overseas businesses involving innovation. Currently, it is 15.8% owned by Lithium Americas Corporation, a lithium mining company that is developing the Cauchari Project in Argentina. The project, in its first phase, is expected to have a capacity of 25,000 tons per year in 2020.



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 as guided by the corporate vision; to implement the Transformation Program that is in line with the corporate value of “I AM BCP”, to forge corporate sustainability under DJSI (Dow Jones Sustainability Indices) in economic, environmental, and social aspects with good governance to win investors’ confidence in Bangchak’s ability to create sustainable good returns, with a goal to be DJSI Member (Emerging Market) by 2022; to take part in the assessment process of Thailand Quality Award (TQA) to raise competitiveness to achieve sustainable outcome, which resulted in Bangchak being one of the 13 companies winning the Thailand Quality Class (TQC) Award this year; and to build on emerging businesses for sustainability, including innovative businesses, incubators and startups through Bangchak Initiative and Innovation Center (BiiC) and the four companies set up in 2018, namely BCV Bio Based Co., Ltd., BCV Energy Co., Ltd., BCV Innovation Co., Ltd, and BCV Partnership Co., Ltd, to particularly engage in innovative Green Energy businesses, such as power storage business and bio-based business.

1.7 Being open, transparent, and auditable: To conduct an open, transparently, and auditable business 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 a sustainable business that benefits the environment and society through CSR after-process activities and creation of shared values between business, society, and the environment through CSR/CSV in-process activities; to expand CSR/CSV into a social enterprise (SE) to create jobs, generate income and promote cooperation in the stewardship of habitat surroundings through, for example, establishment of Happiness Sharing Foundation, giving support to agricultural produce to achieve higher quality and high value, distributing agricultural produce through Oam Suk Social Enterprise Co., Ltd, using SPAR supermarkets as outlets, which include promotion of sugarcane plantation for the production of sugarcane juice for sale in SPAR and purchasing agricultural produce for use as a main material for production of BBGI's bio-based products.



Business Strategies

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

- 1. Security (S1)** with emphasis on upstream energy sources: Realizing that our core business is to enhance national energy security, Bangchak drew up a joint strategy for the refining business, the marketing business, the bio-based business and natural resources business together to procure, produce, and sell oil products and biofuels to satisfy the needs of both the business sector and the public, which move in line with the overall energy demand. Even though use of electric vehicles tend to be increasing, these groups of businesses still needed in response to the country's thirst for energy and are still growing.
- 2. Stability (S2):** Bangchak focuses on investment in steady-income businesses with low exposure to external risk, both in Thailand and abroad, including the green power business (BCPG), which can generate stable income while diversifying risks through management of supply chains in various businesses as preparedness for handling volatility.
- 3. Sustainability (S3):** This involves an attempt to develop businesses that relate to or that can sustainably build on the existing core business as a preparation for technological change in the future, based on innovation with socio-environmental value. BiiC was therefore set up to make investment in innovative energy businesses, such as lithium battery production to support EV cars



and expansion of bio-based products—from initial focus only on biofuels to production of higher-value products. The Company, moreover, has adopted green initiatives and implemented them in the business process, known as “In-process Greenovation”, such as promotion of the use of biocups and change of coffee-cup lid design to avoid using straws at Inthanin Coffee Shop.

In 2018, four venture capital companies were established, namely BCV Bio based Co., Ltd., BCV Energy Co., Ltd., BCV Innovation Co., Ltd, and BCV Partnership Co., Ltd., to take charge of venture capital business and to invest in domestic startups, whose operations are in line with the 10 businesses being promoted by the government.

The business and investment to achieve sustainability are framed by the 4Green (4G) strategy.

4GREEN Strategy

1. Green Business

Green Business focuses on investment in businesses that yields sustainable value, which not only increases revenue from new investments but also benefits the environment through the implementation of various Green Initiatives, expanding on existing biofuel business, which includes Bio-Based Chemical, Bio-based Material, and Value Added Bio-Product. Additionally, the Company places great importance to Green Energy Business and Energy Management through Bangchak Initiative and Innovation Center (BiiC) which results in the establishment of Startups that are able to expand on the Company's existing portfolio in the future such as low velocity consumer-scale wind turbines and the production of health sugars from starch-based plants.



2. Green Production

Green Production focuses on efficient use of resources, particularly water and energy. Carbon and Water Footprint management has been carried out, taking into account possible impacts from climate change under the Paris Agreement made in COP21, which aims to limit the global temperature rise to no more than two degrees Celsius, and severity of possible water shortage in the region. Bangchak values the environment, energy, and waste management according to ISO 14001 / ISO 50001 standards. We also raised the standard of occupational health and safety management currently practiced under the OHSAS 18001 standard to using the Process Safety Management (PSM) system. Preparation for raising the OHSAS 18001 standard to ISO 45001 standard was started in 2018 to achieve higher health and safety standards in the workplace.

3. Greenovative Experience

This strategy aims to create green experience and green innovation, dubbed as “Bangchak Greenovative Experience”, in response to Thais’ modern lifestyle, in which everybody has a share in environmental care in a sustainable manner. Greenovative Experience includes:

- **Greenovative Product** – Bangchak emphasizes development of products that not only meet customers’ demand but are also environmentally friendly. We sell oil products of Euro 5 standard (higher standard than that of the Department of Energy Business) such as Gasohol E20 and Hi Premium



Diesel S (premium diesel). This year Bangchak introduced B20 diesel for trucks in particular. Regarding the non-oil business, environmental care is also stressed, evident in the use of bio-cups and the campaign to turn away from straws at Inthanin coffee shops, and the campaign against plastic bags at SPAR, among others.

- **Greenovative Service Station** – A new format of service station has been developed with highlights on the 4Rs process (Renewable, Recycle, Reuse, and Reduce). The strategy features installation of solar rooftop, electricity bidding using Blockchain technology (a Green Community Management System, Gems) at Bangchak Srinakarin station, EV chargers, reuse of rainwater and wastewater for watering trees, use of energy-saving equipment, increase of green areas, installation of assorted equipment, such as toilets for the elderly and the disabled and installation of automatic tire inflators in a bid to become “The Most Admired Brand”. We also developed our SPAR convenience stores under the “Fresh & Easy Food Market” concept, offering freshly cooked food for health. Part of the strategy is development of community products from SMEs for sale in both domestic and overseas markets under the SPAR Awards project.
- **Greenovative Mind** – Bangchak has embraced technology and IT systems to develop our customer database and to enhance our services to ensure speed and efficiency. Point of



Sale Automation has been installed at service stations, while applications have been developed to facilitate various groups of customers. For business operators, Bangchak developed Application BCP Link, an Auto Ordering System (AOS), and for general customers, a mobile application has been developed with more privileges offered for BCP Green Miles card members.

- **Greenovative Communities** – This strategy aims to share experience with customers regarding social and environmental care and cultural preservation. This includes turning some oversupplied agricultural produce into giveaways to customers and giving encouragement for the sale of environment-friendly products.

4. Green Society

Green Society is another major strategy that Bangchak continuously deploys with the Thai society to preserve the environment and improve the quality of life, particularly with SMEs and local farmers to sustainably generate higher income and to promote the concept of community-responsible production and consumption in line with SDGs (Sustainable Development Goals) 11 and 12 under various programs as follows:

- **CSR in Process** – Bangchak joins agricultural co-op stations in running several promotional campaigns and in upgrading community stations into standard ones by providing coaching for co-ops executives. Bangchak also helps release some agricultural produce during price downturns or



oversupply, using Bangchak stations as another distribution channel.

- **CSR after Process** – Bangchak continues to support society and local communities with a focus on eight areas: education, safety, sports, quality of life, the environment, relationship, public benefit, and the economy.
- **CSR as Process** – Bangchak established Happiness Sharing Foundation with a mission to improve youth education, protect the environment, and raise living standards for Thais. The foundation establishment expands Bangchak's CSR commitment into areas that do not directly relate to our core business capabilities.
- **Expansion of the green society** – Bangchak sees a crucial need to engage suppliers to mutually drive for joint success. A Supplier Code of Conduct (SCOC) was developed to implement joint operating procedures to support mutual benefit and business growth in a sustainable way.
- **Social Enterprise (SE)** – Bangchak gives support to farmers in running an agricultural business on rice and organic plants. Oam Suk Social Enterprise Co., Ltd. was established to work on agricultural produce processing, marketing, and product distribution as well as R&D. This is what Bangchak has continuously worked with the Buddhist Economic Foundation, headed by revered monk Phra Maha Vutthichai Vajiramedhi. Under the cooperation, “Noble Wealth by Inthanin Project” was launched last year to provide skill development in the coffee business in Chiang Rai, to support



sugarcane plantation to make fresh sugarcane juice for sale in SPAR shops, and to run a community development project at the Kaen Makrut area in Uthai Thani.

1.2 Transition and milestone development

2018

Refinery and Oil Trading Business Group

- **Peak Monthly Capacity of 123 KBD: An All-Time High**

In March, the Refinery Business has achieved an average monthly output of 123 KBD since the commissioning of the hydrocracking unit. This resulted from a high gross refining margin, in line with an increase in the finished-product sales volume of the Marketing Business.

- **Bangchak Refinery's Annual Maintenance Shutdown**

Bangchak Refinery successfully completed its 45-day major turnaround under its annual refinery maintenance plan from April 30 to June 13. This resulted in an average output rate of 118.82 KBD in the third quarter of 2018, accounting for 99% of the total capacity, the highest average quarterly capacity of Bangchak Refinery.

Marketing Business Group

- **Franchising Inthanin Coffee Shop in Cambodia and Laos**

In January, Bangchak Retail Company Limited signed a contract granting master franchise rights of Inthanin Coffee Shop in Kingdom of Cambodia and Lao People's Democratic Republic to RCG Retail Co., Ltd. (Cambodia). The first Inthanin Coffee Shop was started in



Siem Reap and later expanded the flagship store in the middle of Phnom Penh in April and Peng Hout in October.

- **Launching a New Membership Card "Bangchak Green Miles" and Developing Bangchak Mobile Application**

In September, Bangchak launched a new membership card, "Bangchak Green Miles", to enable customers to accumulate points for all purchases of oil products and services in the Bangchak Group. In addition, a Bangchak mobile application was developed and now available for members' more convenience and swift service.

- **Launching the First Digital Overhead Service Station in Thailand**

In September, Bangchak introduced the first digital overhead dispenser service station in Thailand, located on Sukhumvit 62 Street in Bangkok, for customers' convenience without having to worry about the fuel tank cap position.

Green Power Business

- **Commercial Operation of Gotemba Solar Power Plant (Gotemba) in Shizuoka Prefecture, Japan**

Gotemba Solar Power Plant (Gotemba) in Shizuoka Prefecture, Japan, with a 4.0 MW capacity (4.4 MW installed capacity) and a 20-year contract, was connected to a grid and began selling electricity into the commercial system (COD) on April 16, 2018 to Tokyo Electric Power Company Holding Inc., at the feed-in-tariff rate of Yen 32 per kWh.



- **Acquiring Common Shares of Lomligor Co., Ltd.**

In June, BCPG Plc. acquired common shares of Lomligor Co., Ltd., to invest in a 9.0 MW (10.0 Mw installed capacity) wind power project situated in Amphoe Pak Phanang, Nakhon Si Thammarat. Project revenues are composed of base cost and an adder of Baht 3.50 per unit sold to the Provincial Electricity Authority (PEA) under a 25-year contract, with a total share investment and construction costs of Baht 825 million. Commercial operation of the project is expected to commence in Q2/2019.

- **Launching Commercial Operations of Two Solar Power Projects with the War Veterans Organization of Thailand**

In July, BCPG started two commercial operations of governmental solar projects with the War Veterans Organization of Thailand. The first is located at Amphoe Phra Phutthabat, Saraburi, with a contractual capacity of 5 MW, and the second is at Amphoe Tha Muang, Kanchanaburi, with a contractual production capacity of 3.94 MW, for 8.94 MW over 25 years. The fixed feed-in-tariff is Baht 4.12 per unit.

- **Commercialization of Nikaho and Nagi Assets**

In September, BCPG sold Nikaho and Nagi assets with a total capacity of 27.6 MW to an infrastructure fund in Japan. The sale provided a profit valued at Baht 795 million, subject to corporate income tax of Baht 136 million, resulting in a net corporate income after tax of Baht 658 million.



Natural Resources and Business Development Business

- **In June, establishment of BCPR Co., Ltd., for Petroleum Development and Production in Norway**

Bangchak established a new subsidiary company in Thailand, namely BCPR Co., Ltd., which in turn established a subsidiary company in Singapore, namely BCPR Pte. Ltd., to jointly invest with Seacrest Capital Group in the petroleum development and production at the Draugen and Gjøa Fields through the acquisition of OKEA AS, a company established under Norwegian law. The acquisition is up to 939 million Norwegian kroner. After the completion of the capital increase, BCPR Pte. Ltd. will hold about 49.33% of OKEA AS's total registered capital.

- **Selling Shares in Nido Production (Galoc) Pty. Ltd. with Tamarind Galoc Pte. Ltd. in July**

Bangchak entered into an agreement to sell shares of Nido Production (Galoc) Pty. Ltd., an indirect subsidiary of the group that holds Galoc oil field at 55.8% and Tamarind Galoc Pte. Ltd., worth about \$22.7 million (Baht 731 million). This sale applied only to Galoc; resources in the exploration and development of others in the Philippines were still held by another Bangchak other subsidiary.



Bangchak Initiative and Innovation Center (BiiC)

- **Launching the Green Community Energy Management System (GEMS)**

Bangchak implemented the Green Community Energy Management System (GEMS) prototype at its Srinakarin Road station in Bangkok as a pilot project to bid for electricity at the lowest possible cost with the Blockchain technology in the Smart Isolated Microgrid system for the station's buildings and shops.

- **Establishment of 4 New Subsidiaries in Thailand to Invest in Start-up Businesses**

Bangchak established four new subsidiaries in Thailand, namely BCV Bio Based Co., Ltd., BCV Energy Co., Ltd., BCV Innovation Co., Ltd. and BCV Partnership Co., Ltd., to invest in new start-up businesses related to innovation. The registered capital for these Bangchak's wholly owned companies is Baht 20 million each.

Awards of 2018

- Recognition at the SET Sustainability Awards 2018 event, hosted by SET:
 - Best Sustainability Award for the second year in a row, in recognition of listed companies that are outstanding in sustainable business conduct, worthy of becoming role models for other listed companies.
 - Recognition among 79 listed companies of THSI (Thailand Sustainability Investment) for the fourth consecutive year for engagement in sustainable business with utmost regard for society



and the environment, and for its management processes for corporate sustainability. The recognition aids investors' decisions by those that stress quality stocks and long-term returns.

- Best Investor Relations Award at the SET Awards 2018, organized by SET and the Money and Banking Magazine.
- ASEAN Corporate Governance Award - TOP50 ASEAN PLCs for the second year running, at the second ASEAN Corporate Governance Awards Ceremony 2018, organized by the Capital Market Supervisory Authorities in Asia (ASEAN Capital Markets Forum - ACMF) with major support from ADB (Asian Development Bank). The award was based on assessment of ASEAN governance by using the ASEAN CG Scorecard (ACGS) as a criterion for evaluating and ranking corporate governance of listed companies in six ASEAN countries (Indonesia, Malaysia, Philippines, Singapore, Vietnam and Thailand).
- Bangchak earned recognition with two awards at the Global Good Governance Awards 2018 (3G Awards 2018), organized by Cambridge IF Analytica, London, England, a financial advisory company in the UK:
 - 3G CSR Award 2018 as an organization with excellence in CSR
 - 3G Sustainability of Performance Award 2018 as an organization with excellent sustainability performance, including outstanding corporate governance and sustainability.
- Bangchak won three awards at the 8th Asian Excellence Recognition Awards 2018, organized by Corporate Governance Asia (Hong Kong):
 - Best Investor Relations Company Award, given to outstanding companies in investor relations, for the seventh year in a row, based



- on scores and comments from readers, magazines, investors, analysts, among others.
- Best Environmental Responsibility Award for the fourth consecutive year, based on scores and comments from readers, magazines, investors, analysts, among others.
 - Asia's Best CEO (Investor Relations) Awards given to the top executives for the third consecutive year, based on scores and comments from readers, magazines, investors, analysts, among others.
 - Bangchak won two awards at The Asset Corporate Awards 2018, organized by The Asset Magazine (Hong Kong):
 - Platinum Award for outstanding corporate governance with social and environmental responsibility, for the fifth year running.
 - Best Investor Relations Team - Highly Commended award, an award for companies that are dedicated to investor relations operation, using a data analysis system to understand investors' needs and services required.
 - Bangchak won two International Innovation Awards at the International Innovation Summit 2018, organized by Enterprise Asia:
 - Organization and Culture category for its commitment to creating innovation throughout the organization to become a sustainable regional organization that turns innovations into practice and adds value to products and services.
 - Services and Solutions category in recognition of the Green Community Energy Management System (GEMS) project, which produces green electricity for communities using AI-supported power



generation and trading system to help manage energy efficiency and cost-effectiveness, including the installation of energy storage systems with the largest lithium-ion battery in Thailand as a learning lab for the study of equipment and tools to support energy management in the future.

- Most Sustainable Renewable Energy Company – Thailand for the second year running, at the International Finance Magazine Awards 2018 (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
- The Asia Sustainability Reporting Awards (ASRA) 2018: composed of “Asia’s Best SDG Reporting” (Winner) and “Asia’s Best Stakeholder Reporting” (Highly Commended), organized by CSR Works International in Singapore, Bangchak was distinguished for its sustainability reporting, which is comprehensive and presented in an interesting way.
- Corporate Innovation Award 2018, Energy, at the Plug and Play Summer Summit, in recognition of Bangchak’s commitment to creating new innovations through collaboration with the Startup of Plug and Play Tech Center, an accelerator with an ecosystem, providing a world-class platform for consulting and supporting startup businesses in developing new products and technologies.
- Thailand ICT Excellence Award 2018, Core Process Improvement Project, in recognition of Bangchak’s Smart Plant Maintenance project, designed to improve warehouse management processes and



maintenance under the 3E strategy (Efficiency, Energy, Environment) to increase energy efficiency, reduce environmental impacts, and increase the potential to become a modern refinery. Bangchak accepted this award at Thailand ICT Management Forum & Thailand ICT Excellence Awards 2018, organized by the Thailand Business Management Association (TMA) in conjunction with the Electronic Technology Center, National Computer Software Industrial Zone of Thailand (NECTEC), and College of Innovation Thammasat University (CITU).

- IP Champion Award 2018, Trademark, at the Intellectual Property Fair, organized by the Department of Intellectual Property, Ministry of Commerce, in recognition of outstanding entrepreneurs commanding effective commercial exploitation of intellectual property, creating value for the organization.
- Thailand Corporate Excellence Award 2018 for excellent sustainable development and CSR at the Thailand Corporate Excellence Awards 2018 and SMEs Excellence Awards 2018, organized by TMA in collaboration with Sasin Graduate Institute of Business Administration of Chulalongkorn University.
- Executive of the Year 2018 –Energy, designed to honor outstanding executives for their leadership under the “Million Seeds of Virtue in Gratitude of the Land” Project, organized by the Foundation for Thai Society in collaboration with Thai Award and the Local Development Institute. These awards recognized those who had successfully led organizations and demonstrated visible dedication, creating maximum



benefit under the policy on economic, social, political, and national development.

- Sustainability Report Award 2018 – Excellence, for the second year running, and the Best Sustainable Development Goals (SDGs) Reporting 2018 award, designed to honor organizations that value preparation for quality reports under GRI standards, with business integrity and consideration of impacts on stakeholders, society, and the environment. This annual event was organized by the CSR Club of Thai Listed Companies Association, SEC, and Thaipat Institute.
- Building A Good Society Award. Bangchak was recognized among 13 leading organizations as part of the driving force in the implementation of the Pracharath – Civil State for Society policy through a sustainable business development approach to the environment and society, contributing efforts to the promotion of income generation and work of the disabled and the elderly, and various residential and environmental projects. This took place at the Summary Meeting of Cooperation for Thai Social Development, organized by the Ministry of Social Development and Human Security
- Outstanding Taxpayer Award for Fiscal Year 2017 - Property Tax, honoring outstanding taxpayers and outstanding tax collectors who valued the duty to pay accurate, complete taxes by the due date prescribed by law organized. The award was given by Bangkok Metropolitan Administration.
- Suriyadasitorn Award, 2018. Bangchak was a general-category winner among over 200 outstanding calendar contestants for its notebook-type



calendar named "Evolving Greenovation", organized by the Public Relations Association of Thailand.

- The Best Contact Center Award 2018 (Best Contact Center, Social Media, Customer Care and The Best Contact Center Admin Support Professional), which recognized Bangchak's customer service officers, at the TCCTA Contact Center Award, organized by the Thai Telephone Service Center Business Association (TCCTA).
- The Best Presenter & Excellent Oral Presentation Award for representative of Bangchak participating in the sharing of knowledge and experience through a topic entitled "The Application of Industrial-Scale Membrane Technologies for Water Recycling in Petroleum Refinery". Proactive environmental management strategies under the guidelines for industrial wastewater treatment were discussed, in which technology was applied to refining processes and the refinery's water reuse to minimize impacts on the environment, organized by Asia Pacific Institute of Science and Engineering (APISE).
- A Carbon Reduction Building Certificate, organized by the Thailand Business Council for Sustainable Development (TBCSD) and the Thai Environment Institute (TEI) Foundation, was presented to Bangchak for the third year running to recognize Bangchak as one of the four organizations that had successfully managed their office buildings through the sustainable environmental management approach. Bangchak implemented energy conservation measures and environmental management through the assessment of efficient usage of resources by measuring greenhouse gas emissions generated from its consumption of water and electricity, and waste disposal.



- ISO 27001:2013 Certificate of Information Security Management System. Bangchak was the first organization in Thailand to receive a Letter of Compliance ISO 27032:2012 Guidelines for Cybersecurity.
- An Energy-Saving Building Plaque of Honor was granted to Bangchak for passing the A level assessment of energy consumption by Bangchak Refinery, along with Buildings 1 and 4. The presentation took place at a seminar clarifying the operational results of the project on the extension of energy consumption labels for business buildings, organized by the Department of Alternative Energy Development and Efficiency together with ACSE Green Consulting Engineering Company Limited.
- The Inno-Green Station Certification for 6 Bangchak service stations which qualified for environmental standards at the Platinum level for its modern design, environmental management incorporating innovative design and technology that comes together to create energy conservation through the service station such as water management by designing the roof to collect runoff, electricity generation from renewable sources, and incorporating natural lighting. The event was organized by the Thailand Environmental Institute.
- Thailand MICE Venue Standard Certificate -2018 was granted to certify Bangchak's beautifully decorated conference room built for multi-purposes, occupying more than 400 square meters, with a modern architectural design. The presentation took place at the MICE Standard Seminar 2018, organized by the Convention and Exhibition Management Office (Public Organization) (TCEB).



- Bangchak achieved an excellent rating of its Corporate Governance Report 2018 for 12 years in a row. This annual assessment was hosted by IOD.
- Bangchak's quality assessment of its AGM, conducted by the Thai Investors Association, showed excellent rating for the 10th consecutive year.

2017

- Bangchak Petroleum renamed “Bangchak Corporation” and Head Office relocated.
- Happiness Sharing Foundation founded.
- In March, Peak monthly capacity of 121.6 KBD: an all-time high.
- Electricity generation and steam production commenced from GTG-3 in August.
- In June, began storing crude oil on the Floating Storage Unit (FSU)
- In May “Hi Premium Diesel S” unveiled
- Marketing Business Continues with No. 2 Market Share with Higher Net Promoter Scores.
- In November, launched premium-grade lubricant “FURiO”
- Solar Power Plant Nagi in Okayama, Japan, started commercial operation in March.
- Three solar farms under solar cooperatives program came into contracted commercial operation in March.
- BCPG purchased total interest in CapAsia ASEAN Wind Holdings Cooperatief U.A., with 40% shares of PetroWind Energy Inc.
- BCPG invested in geothermal power plant in Indonesia through acquiring 33% of issued and paid-up shares of Star Energy Group Holdings.
- BCPG and War Veterans Organization of Thailand signed MOU on concession agreement for solar projects in September.
- BCPG joined with Sansiri to develop smart green communities in November.
- BCPG joined with Power Ledger, Australia in December.
- BBP Holdings Limited established in March.



- Amalgamation between BBP Holdings and KSLGI to form BBGI, Thailand's largest biofuel manufacturer and distributor in October.
- More new shares for more investment in LAC Acquired
- MOU signed with AIT on technical cooperation on R&D to enhance environment supporting startup companies.
- Launch of Bangchak Initiative Innovation Center as technology business incubator in September.

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).

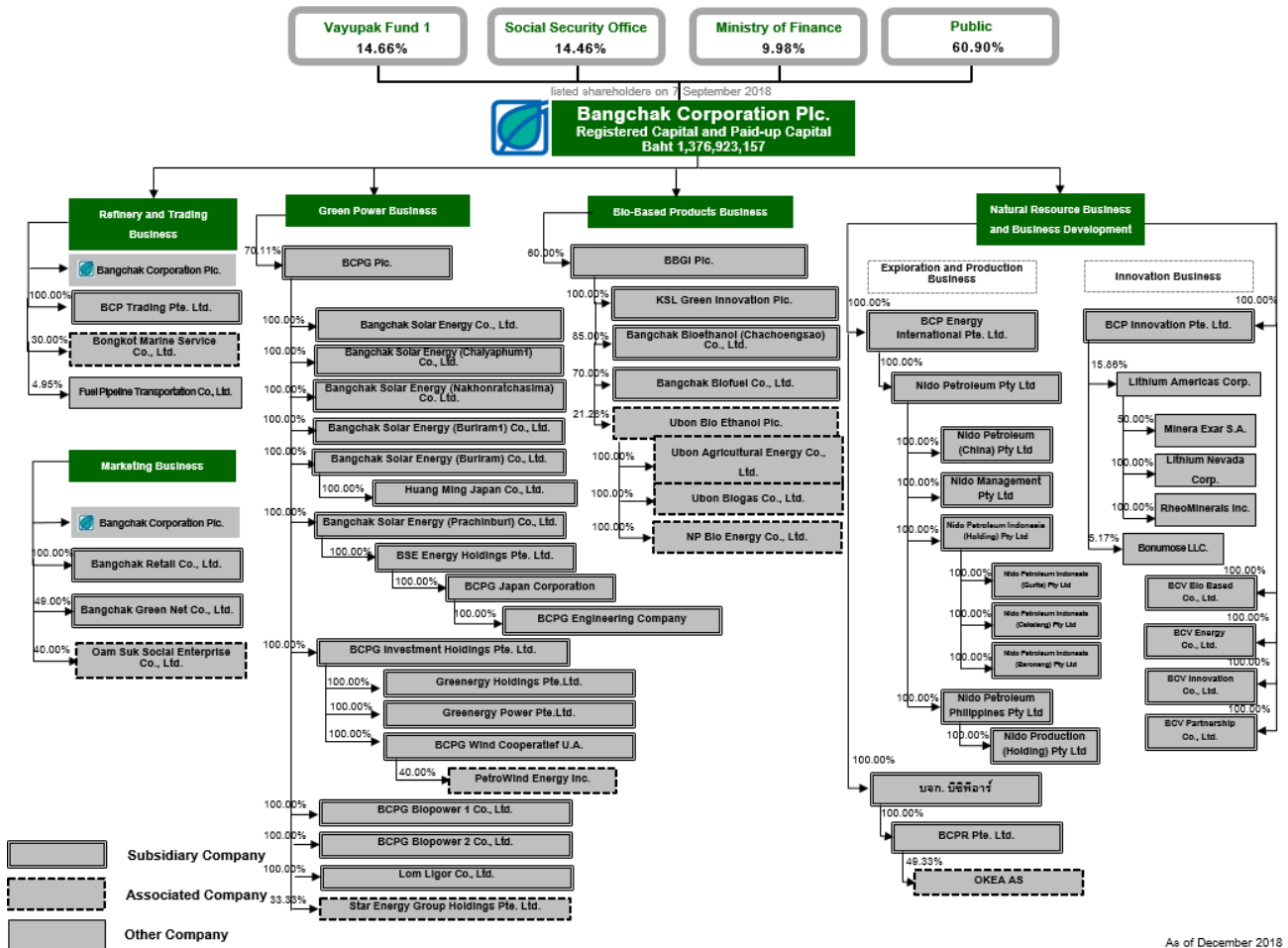


- BCPG Co, Ltd. acquiring SunEdison Japan and Huang Ming Japan
- On September 28th, 2016, BCPG Plc. listed and starting trading on SET, a total of 590 million shares.
- Bangchak changed its investment from buying shares to entering a joint venture with Sima Inter Product Co., Ltd., to set up a company 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.



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 a nameplate capacity of 120,000 barrels per day (120 KBD). The majority of the outputs are gasoline and diesel. The quality of its gasohol and diesel products meets the public sector's Euro 4 standard. Bangchak focuses on energy stability in its 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 its 3E, YES-R and Rocket Projects.

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

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

Bongkot Marine Service Co., Ltd. (BONGKOT)

This joint-venture enterprise has a registered capital of Baht 240 million, in which Bangchak holds 30%. It engages in supplying and administration of floating storage units.

Fuel Pipeline Transportation 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 from Bangchak Refinery 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 in Bangkok, supplies aviation fuels to Suvarnabhumi International Airport. FPT's oil transmission pipeline system expansion project from Amphoe Bang Pa-in to the north (Lampang) has obtained EIA approval from the Office of Natural Resources and Environmental Policy and Planning as well as the approval to construct an oil transmission pipeline system in the related agencies' areas, covering the whole project construction areas. The project's Pichit and Lampang oil depots are under



construction. It is scheduled to commence commercial operations in early 2019.

Marketing Business group

The Marketing Business Group sells fuels and lubricants to consumers through Bangchak's network of 1,175 service stations nationwide, made up of 555 standard and 620 community service stations, as of December 2018. To provide convenience to customers, the stations offer supplementary (non-oil) businesses under the operation of Bangchak Retail Co., Ltd., which also distributes products to industrial users together with the transport, airlines, vessels, construction, and agriculture 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 800 million in registered capital. BCR engages in the food and drinks business to accommodate continuous growth in the retail business. BCR has been given the Master Franchise of the SPAR supermarket brand of the Netherlands and now has 45 retail outlets under the SPAR brand, over 522 Inthanin and Inthanin Garden premium coffee shops, and other supplementary businesses. This year BCR has signed an agreement giving the right to master franchise and Inthanin coffee shops in Laos and Cambodia to RCG Retail Co., Ltd. (Cambodia).

**Oam Suk Social Enterprise Co., Ltd.**

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

Green Energy Business

Bangchak invests in the renewable-power business by holding 70.11% equity in BCPG Public Company Limited (BCPG), a SET-listed company. 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, BCPG engages and invests in the green power business (domestic and overseas). At the end of 2018, BCPG's capacities are as follows:

- 1) Domestic solar power plants with a combined contractual capacity of 138.9 MW (all plants commenced commercial operation)
- 2) Solar farm projects in Japan with a combined contractual capacity of 131.2 MW (14.7 MW commenced commercial operation)
- 3) Wind farm project in the Philippines with an equity capacity of 20 MW (14.4 MW on production)
- 4) Geothermal power project in Indonesia with an equity capacity of 181.5 MW (157.5 MW on production)



- 5) This year BCPG acquired 100% common share in Lomligor Co., Ltd., to invest in a wind farm project for power generation with a contractual capacity of 9 MW. Located in Amphoe Pak Phanang, Nakhon Si Thammarat, the facilities are under construction, with scheduled COD in mid-2019.

Bio-based products business

Well aware of the significance of renewable energy in reducing trade deficits from imported fuels, enhancing national energy security, supporting farmers and conserving the environment, Bangchak advocates the blending of ethanol and biodiesel with gasoline and diesel with diesel to form Gasohol 91 and Gasohol 95, Gasohol E20, and Gasohol E85, together with Hi Diesel. Bangchak invests in bio-based products through shareholding in BBGI Plc. (BBGI).

BBGI Plc. (BBGI)

BBGI was incorporated through a merger between BBP Holdings Co., Ltd. (BBH), a subsidiary of Bangchak, and KSL GI Co., Ltd. (KSLGI), a subsidiary of Khon Kaen Sugar Industry Plc. with a registered capital of Baht 2.532 billion, in which Bangchak holds 60%. The name was changed from BBGI Co., Ltd., to BBGI Plc. in April this year. The largest biofuel producer and distributor in Thailand, BBGI's total capacity exceeds 1,830,000 liters a day, comprising 900,000 liters a day of ethanol and 930,000 liters a day of biodiesel. The four subsidiaries of BBGI are described below:

**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 the nameplate capacity raised to 930,000 liters a day. The company is 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 with a capacity of 150,000 liters a day.

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: 200,000 liters per day from a plant in Amphoe Bo Phloi, Kanchanaburi, and the other 150,000 liters per day from a plant in Amphoe Nam Phong, Khon Kaen. Moreover, KGI's biogas power plant generates power from the biogas derived from wastewater treatment from the ethanol process.

Ubon Bio Ethanol Co., Ltd. (UBE)

UBE was incorporated with a registered capital of Baht 3.91 billion, in which BBGI holds 21.28%. Located in Amphoe Na Yia, Ubon Ratchathani, it engages in ethanol production using fresh cassava, cassava chips, and molasses as feedstock with a capacity of 400,000 liters a day. 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.

Natural resources and business development business

Bangchak founded BCPR Co., Ltd., in Thailand, BCP Energy International Pte. Ltd., and BCPR Pte. Ltd., in Singapore to engage in energy, petrochemical, and natural resources businesses, and BCP Innovation Pte. Ltd., incorporated 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 USA.

BCP Energy International Pte. Ltd. (BCPE)

Wholly owned by Bangchak and established in Singapore with a registered capital of US\$112.5 million, BCPE engages in energy, petrochemical, and natural resources businesses overseas and now invests 100% through the common shares of Nido Petroleum Pty. Ltd.

BCP Innovation Pte. Ltd. (BCPI)

BCPI has a registered capital of US\$41.8 million, wholly owned by Bangchak. Incorporated in Singapore to engage in overseas innovation businesses relating to energy, petrochemical, and natural resources, BCPI now invests 15.86% through common shares in Lithium Americas Corp.

BCPR Co., Ltd. (BCPR)

BCPR, Bangchak wholly-owned subsidiary, was incorporated in Thailand on July 12, 2018, with a registered capital of Baht 661 million (consisting



of 6.61 million shares at Baht 100 par value per share). It engages in natural resources businesses and has invested in BCPR Pte. Ltd., a company established in Singapore, for joint investment in OKEA AS, which operates petroleum development and production in Norway.

Nido Petroleum Pty. Ltd. (Nido)

Nido engages in the petroleum exploration and production business with an investment focus on Southeast Asia. It holds rights in producing oil fields, namely Nido and Matinloc, along with rights in fields under development and exploration, namely West Linapacan, and rights in fields under exploration, namely SC6B, SC14D, SC54A, SC54B, SC58, and SC63, all in the Philippines.

On July 12, 2018, BCPE, Bangchak's subsidiary, signed a share purchase agreement with Tamarind Galoc Pte. Ltd., for its entire 55.8% ownership of the Galoc oil field in the Philippines held by its indirect subsidiary, Nido Production (Galoc) Pty. Ltd., for a total value of US\$20 million (660 million baht).

Lithium Americas Corp. (LAC)

LAC, listed on the Toronto Stock Exchange, Canada, has since January 25, 2018, been on New York Stock Exchange, USA. LAC 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 vehicles, energy storage systems, and mobile electronic appliances.

LAC is developing two lithium mines in Argentina and the USA. The Argentina project is under the development of Minera Exar S.A., and



lithium carbonate production is expected in 2020 for a capacity of 25,000 tons per year, whereas the USA lithium mining project is under development by Lithium Nevada Corp. On August 2, 2018, LAC disclosed the outcome of the feasibility study of the project, which indicated the mineral reserves, estimated capital, and the production cost. In addition, an affiliated RheoMinerals Inc. (formerly Hectatone Inc.) has produced organoclay for petroleum exploration and production drilling with a maximum capacity of 10,000 tons per year since 2015.

BCPR Pte. Ltd.

BCPR Pte. Ltd., was incorporated in Singapore on July 12, 2018, with a registered capital of US\$ 18.2 million, wholly owned by Bangchak. BCPR Pte. Ltd., engages in energy, petrochemical, and natural resources businesses overseas and currently invests in OKEA AS, a company incorporated under the laws of Norway and engages in local petroleum development and production.

OKEA AS

OKEA AS, incorporated under the laws of Norway, engages in domestic petroleum development and production. BCPR Pte. Ltd., Bangchak's subsidiary, holds 49.33% of OKEA AS's share. OKEA AS holds the right in Draugen Oil Field and Gjøa Oil Field in Norway and has been the operator of Draugen Field since December 1, 2018.

Research and development and innovation business

To pursue the position of the leading Asian Greenovative group, Bangchak expands its investment in new energy innovation such as lithium, used in the manufacturing of batteries for electrical vehicles (EVs) and in bio-based products to add value to its current biofuel products. This



year Bangchak set up four more venture-capital companies to engage in 10 domestic startup businesses promoted by the government.

BCV Bio based Co., Ltd. (BCVB)

BCVB, wholly owned by Bangchak, was incorporated with a registered capital of Baht 20 million to engage in the venture capital business for funding domestic startup companies in bio-product innovation.

BCV Energy Co., Ltd. (BCVE)

BCVE, wholly owned by Bangchak, was incorporated with a registered capital of Baht 20 million to engage in the venture capital business for funding domestic startups relating to energy innovation.

BCV Innovation Co., Ltd. (BCVI)

BCVI, wholly owned by Bangchak, was incorporated with a registered capital of Baht 20 million to engage in the venture capital business for funding domestic startups relating to innovation.

BCV Partnership Co., Ltd. (BCVP)

BCVP, wholly owned by Bangchak, was incorporated with a registered capital of Baht 20 million to engage in the venture capital business for funding domestic startups relating to innovation in collaboration with the public and private sectors.



2. Business Description

Bangchak Corporation Public Company Limited is a Thai energy company that operates in tandem with socio-environmental responsibility. Its core business is petroleum refining to produce high-standard products from domestic and overseas sources. With a current production capacity of 120,000 barrels per day (120 KBD), Bangchak produces and distributes its refined products through more than 1,000 service stations nationwide. It has also expanded its businesses to oil trading, green power, bio-based products, natural resources and business development. Bangchak's ultimate goal 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 Refinery is a modern complex refinery with a nameplate capacity of 120,000 barrels per day. Most of its yields are premium-value gasoline and diesel. Gasohol and diesel from Bangchak Refinery are certified by the government as Euro 4 Standard-compliance. Its refinery is the first in Asia that produced eco-friendly gasohol E20 to meet the Euro



5 Standard with less than 10 parts per million (ppm) of sulfur or five times lower than the Euro 4 standard. Bangchak also focuses on improving energy stability in the production process by using electricity and steam derived from its cogeneration power plant, 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 pipelines, and shipping vessels to enable the continuation of refinery operations. As a result, the average annual refining capacity in 2018 was 115 KBD, excluding the annual shutdown period. The highest monthly average production was recorded in March at 123 KBD.
- Executed better crude oil planning and procurement process to obtain appropriate GRMs. Bangchak effectively utilized the Roll Month agreement to reduce the costs of crude oil. As a result, the average annual refining margin was US\$ 7.10 per barrel.
- Expanded the production and enhanced refining efficiency through such projects as debottlenecking to increase the capacity and improving the processes to increase its flexibility



in keeping with market demand, which resulted in cost-saving on fuels and power supply stability for the refining processes.

- 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. Key trading products are gasoline, crude, fuel oil, and naphtha. Bangchak also expanded its oil trading business to emerging markets such as Brunei and Qatar, while developing new trading products such as MTBE. More revenue was made from logistics management and freight trading. Good relations with partners and favorable market conditions also resulted in higher trading volumes.



Marketing Business Group

In 2018, some 78% of refined products were sold to customers directly through Bangchak's service stations networks. There are 1,175 Bangchak service stations in Thailand: 555 standard service stations and 620 agriculture cooperative service stations (as of December 2018). Most of the new service stations opened in 2018 are spacious with a modern



look. They accompany supplementary (non-oil) businesses that increase the company's market share and uphold its second place. Bangchak also sells products to users in the industrial sector, transport sector, airlines, shipping, construction and the agricultural sector. In addition to emphasizing the sale of high-performance and eco-friendly gasohol and diesel, Bangchak service stations provide value-added facilities through non-oil businesses and supplementary services, including convenience stores, coffee shops, freshly cooked fast food restaurants, car maintenance centers, and car wash services.

Bangchak is the first oil company in Thailand to introduce the member card. In 2018. It celebrated the 12th anniversary of its member card business by introducing the “Bangchak Green Mile” card and point collection for existing card members. Members can collect points from their purchases of all types of oil products as well as other products and services under the Bangchak umbrella. To make point collection fast and convenient, Bangchak Mobile Application was introduced for members to use their points for redemption in the form of e-coupons.

With regard to the convenience store business and coffee shop business operated by BCR Co., Ltd. (BCR) (a subsidiary of Bangchak), there are 45 SPAR, a supermarket chain from the Netherlands under the concept of SPAR Fresh & Easy Food Market. In addition, there are over 523 service stations including leading educational institutes and commercial centers where “Inthanin Coffee Shop” and “Inthanin Garden” coffee shops are located. Bangchak opened 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. In addition, 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 service, which comprise “Furio Care” lube oil changing, “Wash Pro” and “Green Wash” car wash, and “Tyre Care” and “Green Tyre” tire replacement services.

In addition, Bangchak agricultural cooperative service stations, which operated since 1990, has developed continuously to the 29th 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 2018, Bangchak developed 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 trends and lifestyle changes of modern Thais. Therefore, its service stations are developed under the Greenovative Experience model that features the 4Rs processes (renewable, recycle, reuse, and reduce). Projects conceived from 4Rs include the installation of a solar rooftop to generate electricity and EV



charging stations for electric vehicles. For the Inthanin coffee shop, Bangchak runs the business under the concept of “every cup of Inthanin must contribute to the world”. Some attempts have been made in this regard, such as the use of Bio Cups, the use of organic coffee beans bought from agricultural communities in the North, and the introduction of specially designed lids to reduce the use of straws. Regarding the convenience store business, it runs such campaigns as less use of plastic bags, selling processed fruits at SPAR shops, and initiating a SPAR Award project to encourage development of community products. It also helps expand SMEs to increase their sales in domestic and overseas markets. The company promotes the use of energy-saving equipment and increase of green areas. In 2018, Bangchak introduced a newly designed station fitted with digital hanging oil-dispensing machines on Sukhumvit 62 Road to offer more convenience for motorists. Meanwhile, the Srinakarin station was installed with Green Community Energy Management System (Gems), an innovation featuring the Blockchain technology to run a pilot project on electricity bidding, applicable for the Smart Isolated Microgrid. Gems will enable buildings and shops located in the premises of the service station to buy and sell electricity at a low cost while obtaining the largest possible volume of electricity.

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 launched a premium grade lubricant under the “FURiO” brand, which 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.

At the end of 2017, Bangchak has completed amalgamation of BBP Holdings Co., Ltd., a subsidiary, with KSLGI Co., Ltd., a subsidiary of Khon Kaen Sugar Industry Public Company Limited, to form BBGI Co., Ltd. The company was listed in April 2018 and became BBGI Public Company Limited, with Bangchak holding a 60% stake. The four associates and subsidiaries under BBGI have a combined capacity of over 1.83 million liters per day, comprising 900,000 liters of ethanol and 930,000 liters of biodiesel per day.

- **Bangchak Biofuel Co., Ltd. (BBF)**, located in Amphoe Bang Pa-in, Ayutthaya, produces palm oil-based biodiesel. BBF's installed capacity of 930,000 liters per day is being expanded to 1 million liters



per day. The capacity expansion is due for completion in 2019. Having raw glycerine as a by-product, BBF is experimenting the production of high-purity glycerine at a pilot production plant for use as a raw material in the production of phase change materials (PCMs). The construction of a plant to produce refined glycerine to add value to existing products with a capacity of 21,120 tons per year is planned for commercial operation in Q3/2020.

- **Bangchak Bioethanol (Chachoengsao) Co., Ltd. (BBE)**, located in Amphoe Phanom Sarakham, Chachoengsao, produces cassava-based ethanol. BBE currently has a total capacity of 150,000 liters per day.
- **KSL Green Innovation Plc. (KGI)** produces and sells molasses-based ethanol with a total capacity of 350,000 liters per day. KGI has two plants, namely 1) Nam Phong Plant – located in Amphoe Nam Phong of Khon Kaen, with a capacity of 150,000 liters per day (45 million liters per year). Currently, KGI is undergoing a plant overhaul to expand the capacity to 49.5 million liters per year, and 2) Bo Phloi Plant – located in Amphoe Bo Phloi of Kanchanaburi, with a capacity of 200,000 liters per day. KGI is running an inspection to receive the expansion in capacity to 300,000 liters per day (99 million liters per year). KGI in 2019 will have a total capacity of 148.50 million liters per year as a result.
- **Ubon Bio Ethanol Plc. (UBE)** - located in Amphoe Na Yia, Ubon Ratchathani, produces ethanol with a capacity of 400,000 liters per



day using either fresh cassava, shredded cassava, or molasses. UBE also produces tapioca starch with a capacity of 700 tons per day. Wastewater from the processes of both ethanol and tapioca starch is reused for power generation.



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. By the end of 2018, BCPG commanded a total capacity of 571.1 MW from worldwide operations. Of the total capacity, 380.2 MW is in operation, and 190.9 MW in progress. In Thailand, BPPG has a total capacity of 190.9 MW from solar farms, all of which have become operational. In Japan, BCPG also runs solar projects. However, after having sold the Nagi and Nikaho projects (with a combined capacity of 27.6 MW) to an infrastructure fund in Japan, of which the divestment process was completed on September 28, 2018, BCPG's installed capacity totaled 168.7 MW. Of this, 17.4 MW is in operation, while 151.3 MW is under development. With regard to wind energy, BCPG has an equity capacity of 20 MW, of which 14.4 MW is in operation, and 5.6 MW in progress. A geothermal power plant is also BCPG's interest. It has an



equity capacity of 181.5 MW. So far, 157.5 MW is in operation, and 24 MW is in progress. In 2018, BCPG bought shares in Lom Ligor Co., Ltd., the operator of a 10-MW wind power project. The site, located in Amphoe Pak Phanang, Nakhon Si Thammarat, is currently under development, with commercial operation expected around mid-2019.



Natural Resources Business

Bangchak had established BCPR Co., Ltd., which this latter company set up BCPR Pte. Ltd., a subsidiary in Singapore, to co-invest with the Seacrest Capital Group in Draugen and Gjøa petroleum deposits in Norway through share purchase in OKEA AS, a Norwegian company engaging in the petroleum development business in Norway. The investment was made as a joint partnership in a world-class asset with long-lasting production life. The fields produce light crude, which could be sold in good price, suitable for Bangchak's refining and production processes. The investment is considered part of risk diversification in line with the corporate strategy.

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 Pty Limited, which holds the rights for petroleum production at



Nido and Matinloc fields in the Philippines. The company also owns the rights for the exploration and development of West Linapacan field in the Philippines as well as the rights in blocks SC6B, SC14D, SC54A, SC54B, SC58, and SC63, in the Philippines, which are now in their exploration stage.

On July 12, 2018, BCPE entered into an agreement to sell shares in Nido Production (Galoc) Pty., Ltd., an indirect subsidiary, which owns the rights over the Galoc oil field, to Tamarind Galoc Pte., Ltd.

Bangchak also established BCP Innovation Pte., Ltd. (BCPI) in Singapore to conduct businesses involving international innovation. BCPI acquired common shares in Lithium Americas Corporation, a listed company on the Canadian Stock Exchange and New York Stock Exchange. Its business is lithium mining in Argentina and the United States to produce lithium carbonate and lithium hydroxide, key components for battery production in response to soaring demand for lithium batteries in renewable-energy power plants. The production also supports the stability of transmission systems and the generation of electricity from renewable energy, as well as the use of batteries in electric cars and various portable electronic devices.

R&D and Innovation Business

Bangchak established **Bangchak Initiative and Innovation Center (BiiC)** to create a Green Ecosystem to drive innovation by focusing on green energy and bio-based businesses. Research and development (R&D), together with technological and network management, help encourage business expansion (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.

In 2018, BiiC carried out the Green Community Energy Management System project (GEMS), which involves the generation of green energy at service stations. Electricity produced at a station is bought and sold through the bidding method between buildings and shops on the premises of Bangchak's Srinakarin Road service station in Samut Prakan. It is the first experimental site for this new method of power sale and purchase. The roofs of the station as well as the parking area and SPAR building are installed with solar panels to generate 249 kilowatts of electricity. The system is also fitted with an energy storage system or a 1-MW lithium-ion battery, Thailand's largest battery.

In response to the expansion of startups in Thailand, Bangchak set up four new companies, namely BCV Biobased Co., Ltd., BCV Energy Co., Ltd., BCV Innovation Co., Ltd, and BCV Partnership Co., Ltd., to conduct a venture capital business and invest in startups, focusing on the 10 government-promoted businesses. This will bring about collaboration in innovations between Bangchak and its own subsidiaries as well as other business partners.



Revenue Structure

	Operated by	% shareholding	2018		2017		2016	
			Revenue (million Baht)	%	Revenue (million Baht)	%	Revenue (million Baht)	%
Revenue from Oil refining and related businesses ^{1/}								
	Bangchak Corporation Plc.		132,764	68.4	126,862	72.4	108,643	74.5
	Bangchak Green Net Co., Ltd.	49.00	35,530	18.3	32,440	18.5	29,281	20.1
	Bangchak Retail Co., Ltd.	100.00	676	0.3	391	0.2	31	0.1
	BCP Trading Pte. Ltd.	100.00	14,965	7.7	5,130	2.9	315	0.2
	Nido Petroleum Pty. Ltd.	100.00	963	0.5	1,510	0.9	1,503	1.0
Total			184,898	95.2	166,333	94.9	139,773	95.8
Revenue from Power production								
	BCPG Group	70.12	3,320	1.7	3,323	1.9	3,084	2.1
Total			3,320	1.7	3,323	1.9	3,084	2.1
Revenue from Bio-Based Products								
	BBGI Group ^{2/}	60.00	3,807	2.0	785	0.4	-	-
	Bangchak Biofuel Co., Ltd. ^{2/}		-	-	1,697	1.0	1,848	1.3
Total			3,807	2.0	2,482	1.4	1,848	1.3
Total revenue from sales and services			192,025	98.9	172,138	98.2	144,705	99.2
Others ^{3/}	Bangchak and subsidiaries		2,146	1.1	3,069	1.8	1,195	0.8
Total			194,171	100.0	175,207	100.0	145,900	100.0

Remarks: Revenues of Bangchak and its subsidiaries are net values derived from external parties.

- ^{1/} Revenue from domestic fuel sales in 2018, 2017, and 2016 accounted for 90.5%, 90.3%, and 91.5% respectively.
- ^{2/} During 2017, the Company divested its investment in Bangchak Biofuel Co., Ltd. to BBP Holding Co., Ltd. which amalgamated with KSLGI Co., Ltd. in October 2017.
- ^{3/} Other revenues, excluding revenue from sales and services: Revenue from investment, gains from crude purchase contracts, futures of oil products and forward foreign exchange contracts, gains from foreign exchange, share of profit from investment in associates and joint ventures.



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.

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, and in 2017, its product was met new standard IATF16949:2016 International Automotive Task Force (IATF) 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.

2018 Thai Economic Overview

The Bank of Thailand projected economic growth this year at 4.2%, an increase from 3.9% in 2017 due to the recovery of the export and service sectors, growing domestic consumption and the expected public and private investment expansion from infrastructural development and projects in the EEC under the government's economic stimulation policy. The tourism sector tends to be healthy despite impacts of decreasing Chinese tourists, contributing to higher economic growth than the previous year.

The headline inflation reported by the Bank of Thailand was estimated to stand at 1.1% this year, an increase from 0.7% of the previous year. The increase was driven by the rising oil price during the first nine months. Growth in consumption demand, even at a relatively low level, and negative impacts of economic restructuring, help retard the inflationary pressure. In order to reduce the risk to financial instability, in



December, the Bank of Thailand raised its policy interest rate by 0.25% from 1.50% to 1.75% per year.

Thailand's economic situation in 2019 was expected to be less healthy than the previous year, with a growth rate of 3.5-4.5%. Risk factors include deceleration of global economic growth and finance, and high household debts. However, confidence in the tourism sector by Chinese tourists is the main driver for economic recovery. Export tends to be at a satisfactory level, despite impacts of the US-China trade barriers. Better consumer confidence and public and private investment under the EEC development plan will slow down economic deceleration. The inflation rate in 2019 is expected to be low at the range of 0.7-1.7% and tends to slowly rise from that in 2018 of 1.1%.

Summary of Thai economy and inflation			
Percent/year	2017	2018*	2019*
Economic growth	3.9	4.2	3.5-4.5
Headline inflation	0.7	1.1	0.7-1.7

Note: ** Data calculation base on the new National Accounts database posted by NESDB online via www.nesdb.go.th

Source: Office of the National Economic and Social Development Board, as at November 19, 2018.

Nevertheless, other considerations do affect the Thai economic projection. The US-China trade tariffs, geopolitical risks among trade partners, and the uncertain recovery in the tourism sector concerning the Chinese tourist market are the major concerns inhibiting the projected Thai economic growth.



Domestic oil business

Domestic demand for fuels this year (January – December 2018) grew by 3.09 million liters to 121.27 million liters per day, a 2.61% increase in line with the growing GDP. The growth was driven by state measures on economic stimulation, expansion of the service sector and continued public investment from 2017, leading to economic expansion beyond the original plan, especially in the export and service sectors. Demand for gasoline, gasohol and diesel therefore continued to grow by 3.11% and 1.47% this year. The highest growth was recorded in the consumption of gasohol (3.94%), pushing the share of gasohol among the total fuels to a record high of 96%.

Domestic demand for refined products

Product	Demand (million liters/day)		
	2018	2017	Growth variation
Regular Gasoline	1.20	1.39	-13.9%
Gasohol	29.96	28.83	+3.9%
Gasoline Group	31.16	30.22	+3.1%
Jet fuel	64.67	63.73	+1.5%
Diesel Group	19.44	18.47	+5.2%
Fuel Oil	6.01	5.76	+4.2%
Total	121.27	118.18	+2.6%

Source: Department of Energy Business

On the supply side, the 2018 total crude run average from the six domestic refineries (Thai Oil, IRPC, PTT Global Chemical, Esso, Star Petroleum (SPRC) and Bangchak) stood at 1,130 KBD, a slight rise of 3.20% from last year. The domestic crude run average in 2019 is expected to be higher, with the additional capacity of IRPC Refinery accompanying the implementation of IRPC's Polypropylene Expansion



Project (PPE) of 150 thousand tons per year (KTA) and Polypropylene Compound and Specialties Project (PPC) of 140 KTA.

Average crude run by domestic refineries

Refinery	Crude run (thousand barrels per day, KBD)		
	2018	2017	Growth variation
Thaioil	304	306	-0.49%
IRPC	207	181	+14.62%
Esso	144	140	+3.22%
Star Petroleum (SPRC)	176	166	+6.02%
PTT Global Chemical	196	191	+2.24%
Bangchak	102	111	-7.76%
Total	1,130	1,095	+3.20%

Source: Department of Energy Business Jan-Nov.2018 and Bangchak Corporation Public Company Limited

Marketing Business

In 2018, the average global oil prices was higher than the previous year with continued high volatility, from rising oil prices in the first three quarters to a drastic drop in the fourth quarter, which made the traders unable to adjust prices in time to cope with the actual costs from rapid rising prices. Moreover, the government has requested cooperation from oil companies to cap their retail diesel prices to ease the burden on consumers, affecting traders' marketing margins, which decreased from the previous year. However, declining oil prices in the fourth quarter made retail prices more competitive. The gross marketing margin for 2019 is expected to be on a par with the 2018 level. However, there are still concerns about uncertainties of the cost of oil in the world market and



internal as well as external factors such as the US-China trade disputes, interest rate hikes, BREXIT and the government policy to cap oil prices.

The total number of service stations continues to rise. About 1,038 new service stations were added this year, making the total number stand at 28,338 at the year-end, roughly 3.4% from the total. Out of these new stations, 594 stations sold E20 gasohol and 166 stations sold E85 gasohol, leading to 4,256 stations serving gasohol E20 and 1,333 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.

Competition in the oil industry in Thailand in 2019 will continue to intensify. The number of service stations, modernized with new forms of services focusing on consumers' convenience, will still increase to meet rising demand. Non-oil businesses and services have been added to provide more alternatives to consumers and improve retail business performance and competitiveness. Moreover, many Thai retail business operators have opted to expand 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	2018 ^{1/}	2017	2016
PTT	1,879	1,775	1,675
Shell	517	508	498
Esso	608	543	542
Bangchak	1,175	1,114	1,075
Chevron	357	354	368
PTTRM	156	153	150
PTG	1,883	1,696	1,407
Others	21,763	21,157	20,511
Total	28,338	27,300	26,226

Source: Department of Energy Business

Remarks: ^{1/} number of stations as of December 31, 2018

In 2018, sales volumes by domestic service stations averaged 2,114.7 million liters a month, a 2.7% rise from last year's 2,058.4 million liters per month. Bangchak posted 5.1% more sales through its service stations, which raised its market share through service stations from 15.4% to 15.8%, while maintaining the No. 2 domestic market share through service stations.

Sales volume of fuels through service stations for 2017-2018

Operator	Average Sales volume (million liters/month)			Market share (%)		
	2018	2017	Δ	2018	2017	Δ
PTT	766.4	749.4	+2.3%	36.2	36.4	-0.2
Bangchak	333.8	317.7	+5.1%	15.8	15.4	+0.4
Esso	269.0	255.7	+5.2%	12.7	12.4	+0.3
Shell	267.5	267.3	+0.1%	12.6	13.0	-0.3
Thai Oil	198.3	195.3	+1.5%	9.4	9.5	-0.1
PTTRM	103.7	104.2	-0.5%	4.9	5.1	-0.2
Caltex	91.2	95.3	-4.3%	4.3	4.6	-0.3
PTG Energy	35.6	33.7	+5.6%	1.7	1.6	+0.0
Susco Group	36.3	36.7	-1.1%	1.7	1.8	-0.1
Others	12.9	3.2	+303.1%	0.6	0.2	+0.4
Total	2,114.7	2,058.4	+2.7%	100	100	

Source: Department of Energy Business and Bangchak Corporation PLC.



The lubricating oil sold by Article 7 traders amounted to roughly 37.3 million liters a month (according to the Department of Energy Business, December 31, 2018), an 3.1% 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.	219	18.6
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	4.3
3.	Joint Venture stations (JV): This is a joint investment between Bangchak and operators interested in running the service station business.	49	4.2



Station Format		Number (station)	Share (%)
4.	Dealer-Owned, Dealer-Operated stations (DODO): The operator is the station owner, land owner, and sole investor, as well as a distribution agent.	236	20.1
5.	Co-Operative stations (CO-OP): These stations are invested by the community. In most cases, the community is the land owner and investor.	620	52.8
Total		1,175	100

Remarks: Bangchak Corporation PLC, as of December 31, 2018.

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	2018		2017		2016	
	Volume	%	Volume	%	Volume	%
1. Outlet & End-User Customers	100.2	74.2	100.5	71.3	96.7	71.7
2. Supply Sales Customers	15.0	11.1	17.3	12.3	19.3	14.3
3. Export Customers	19.9	14.7	23.2	16.5	18.9	14.0
Total	135.1	100.0	141.0	100.0	134.9	100.0

Source: Bangchak Corporation PLC.

Sales value of Bangchak's products and services

Products	2018		2017		2016	
	million baht	%	million baht	%	million baht	%
<u>Domestic Sale</u>						
1. High-speed diesel	89,409	50.7	81,822	50.5	73,090	53.0
2. Fuel oil	2,078	1.2	1,864	1.1	1,678	1.2
3. Gasoline	47,634	27.0	45,428	28.0	39,371	28.6
4. Other products and services	19,319	11.0	16,852	10.4	13,450	9.8
Total domestic sale	158,440	89.8	145,966	90.0	127,589	92.6
<u>Export sale</u>						
1. High-speed diesel	5,105	2.9	2,846	1.8	2,107	1.5
2. Fuel oil	11,376	6.4	11,120	6.9	6,998	5.1
3. Gasoline	521	0.3	674	0.4	545	0.4
4. Other products and services	937	0.5	1,577	1.0	599	0.4
Total export sale	17,939	10.2	16,217	10.0	10,249	7.4
<u>Combined sales value</u>						
1. High-speed diesel	95,514	53.6	84,668	52.2	75,197	54.6
2. Fuel oil	13,454	7.6	12,984	8.0	8,676	6.3
3. Gasoline	48,155	27.3	46,102	28.4	39,916	29.0
4. Other products and services	20,256	11.5	18,429	11.4	14,049	10.2
Total sales value	176,379	100.0	162,183	100.0	137,838	100.0
% increase/decrease	8.75		17.66		-4.58	

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

	2018	2017	2016
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	57.5	56.7	53.4
2. UCO	3.5	2.6	1.2
3. Fuel oil	9.4	14.2	13.1
4. Gasoline	22.5	21.2	19.8
5. Aviation fuel, kerosene	13.5	13.1	11.1
6. LPG	3.3	2.9	2.6
7. Products for internal use and product loss during operation	-0.3	0.7	0.2
Total output volume (B)	109.4	111.3	101.4
% increase of output volume	-1.9	9.8	-10.2
% of capacity utilization (B/A)	96.5	98.2	89.4

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.

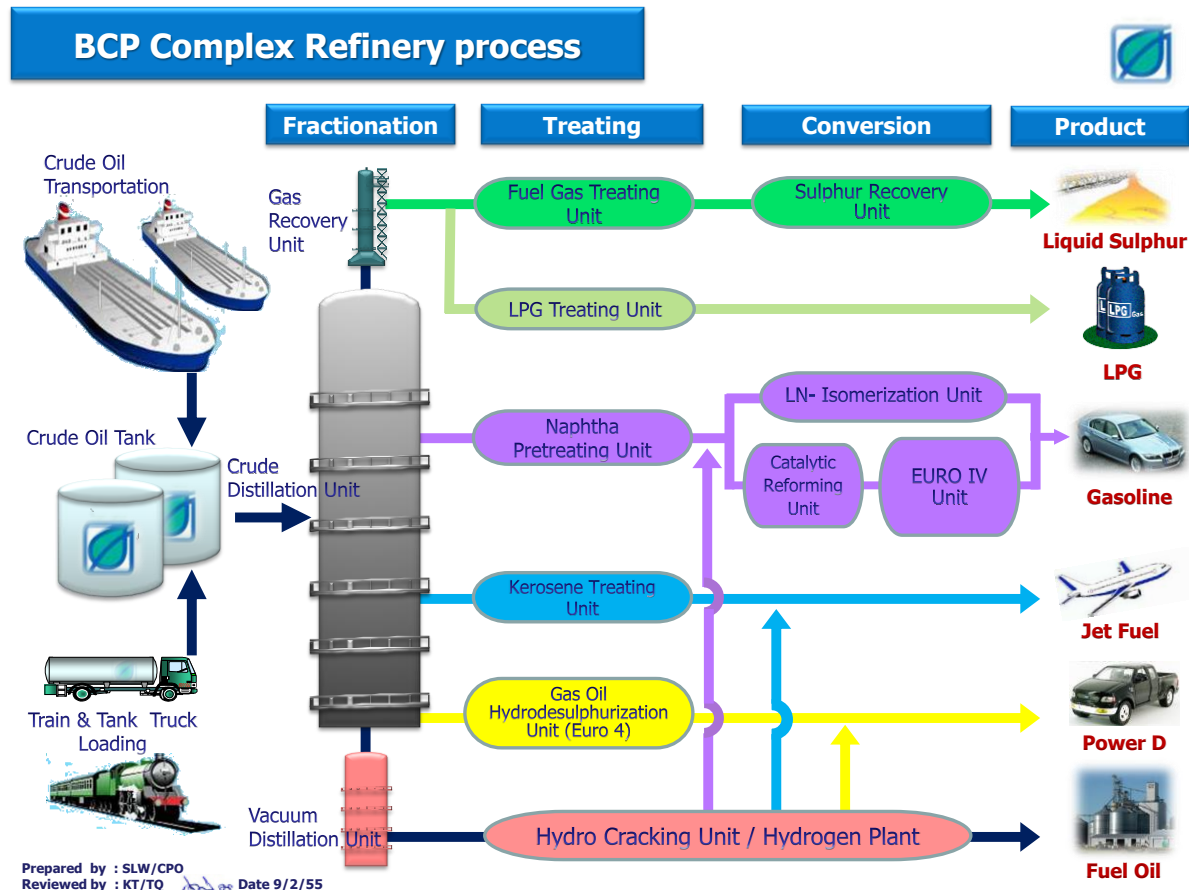
Fuel gas obtained from the process will be refined by removing the sulphur content. Treated fuel oil, diesel after sulphur content removal under the Euro 4 standard, aviation fuel, and cooking gas are kept in storage tanks for sale.



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					
	2018		2017		2016	
	Volume	%	Volume	%	Volume	%
Sirikit	27,036	20.9	25,657	18.2	26,944	16.5
Tantawan	18,790	14.5	24,543	17.4	29,830	18.3
Erawan	28,302	21.9	30,042	21.3	31,217	19.1
Nasanun/Nasanun East	1,266	1.0	1,660	1.2	2,096	1.3
Jasmine	11,653	9.0	11,855	8.4	12,997	8.0
Manora	6,397	5.0	7,171	5.1	11,029	6.8
Others	35,756	27.7	40,319	28.5	48,967	30.0
Total	129,200	100	141,247	100	163,080	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 2018, Bangchak procured indigenous crude oil from many fields in domestics, totaling 9,170 thousand barrels, which mainly from Sirikit (Phet) field, Pattani Field, Benchamas Field, and others.



This year, Bangchak imported crude 26,426 thousand barrels. There are 69.8% Crude from the Far East fields, such as Labuan and Bunga Orchid from Malaysia; Seria Light Export Blend, and Champion from Brunei; Banyu Urib from Indonesia. Also, there are 30.2% 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	2018		2017		2016	
	Million Baht	%	Million Baht	%	Million Baht	%
<i><u>Cost of indigenous feedstock</u></i>						
1. Crude and semi-finished products	34,840	27.9	36,313	34.3	34,332	38.4
2. Finished products	11,931	12.0	8,402	7.9	9,945	11.1
Total	49,771	39.9	44,715	42.2	44,277	49.5
<i><u>Cost of imported feedstock</u></i>						
1. Crude and semi-finished products	65,355	52.4	53,498	50.5	39,553	44.2
2. Finished products	9,711	7.8	7,752	7.3	5,606	6.3
Total	75,066	60.1	61,250	57.8	45,159	50.5
<i><u>Combined costs of indigenous and imported feedstock</u></i>						
1. Crude and semi-finished products	100,195	80.3	89,811	84.8	73,885	82.6
2. Finished products	24,642	19.7	16,154	15.2	15,551	17.4
Total feedstock cost	124,837	100	105,969	100	89,436	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 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.

Risk management structure

The Board, executives, and all units are involved in the management of risks. The Enterprise-wide Risk Management Committee (ERMC), appointed by the Board, assures that Bangchak has an efficient system that can appropriately manage all risks, and promotes the corporate culture of risk management to foster, among all executives and employees, awareness of potential impacts from risks. The Risk Management Subcommittee (RMC), comprising senior executives of business groups, functional groups, and divisions, monitors the performance of enterprise-wide risk management, develops risk management system covering all business groups, and appoints a Price and Finance Risk Management Committee (PRMC) to regularly oversee



and manage risks arising from the volatility of prices and exchange rates. To raise risk management efficiency and keep pace with circumstances, this year Bangchak appointed a subcommittee (Sub PRMC) to report to PRMC on performance, with effect from January 1, 2019.

Risk management outcomes

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, and the growth of relevant technologies and innovations, which include alternative-energy, energy storage-related technologies, the progress of Electric Vehicle (EV) development, biotechnology, public policies, and megatrends. 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, 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, all of which may affect Bangchak's credibility. Key risk indicators (KRIs) have



also been developed for the monitoring process to help Bangchak 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, which will review and decide risk prevention options.
- 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 Plc, a subsidiary that increasingly invests in and operates power-generation and other global renewable-energy businesses.
- Supported the stock exchange entry by 2019 of BBGI Co., Ltd., a biofuel producer and supplier, with a current capacity to produce 900,000 liters of ethanol and 930,000 liters of biodiesel per day, totaling 1,830,000



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 reinforcing 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 sales activities, which are crucial for its business continuity and cost control, Bangchak undertook the following risk management measures:

- Entered into term contracts for crude oil supply from all sources to maintain a stable crude run.
- Procured crude oil with suitable properties for Bangchak's processes while adding value to its business.
- Grouped high-value 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 technologies and innovations

Technological changes and innovations are external factors threatening the current business. Bangchak has therefore 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 15.84% of Lithium Americas Corporation's shares to expand Bangchak's natural resource and innovative energy-based businesses to accommodate future growth of battery-based alternative energy, notably in EV cars.
- 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 deep awareness of resource values.
- In place is monitoring of intelligence and assessment of system loopholes to quantify the probability of attacks. And in conjunction with the Electronic Transactions Development Agency (Public Organization), Bangchak stayed vigilant for cyber-security. In addition, Bangchak acquired tools for Security for Data Center (East-West Protection) and redesigned infrastructure security (North-South Protection) for smooth business operation.

Risks of impacts on communities and society

Focusing on sustainably cooperating with communities, society, and the environment in its business conduct, Bangchak has relentlessly 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 minimize accident risks.
- Developed a health and safety system after TIS/OHSAS 18001. In March 2018, ISO came up with a new ISO 45001 to improve occupational work hygiene and safety, replacing OHSAS 18001. Migration is to take three years from the enforcement of ISO 45001. This move will propel systematic process development in a broader context, taking into account risks, opportunities, legal requirements, and other factors. A hygiene and safety base is to be placed at the core of the corporation to form efficiency improvement in occupational health and safety. To this end, employees will play roles in both health and safety, lowering losses due to accidents or deteriorated health; contribute to better workplaces; lower costs; and lower lost workdays. Bangchak therefore started getting ready in 2018 as part of the migration to the new standard, with a plan to seek certification by the first half of 2019.
- In place are HAZOP (Hazard and Operability Studies) assessment and PSM (Process Safety Management) for safety management throughout refining processes.
- Installed an online air-quality monitoring system displaying the results on billboards at locations adjoining the refinery to provide the neighboring communities with air quality data and boost confidence among a wider society.



- Executed the enclosed ground flare construction project, due for completion by mid-2019, to ease community impacts of gas emission through the flare tower.
- Organized activities to promote knowledge, understanding, and safety awareness among those in surrounding communities, including schools, temples, and condominiums, by conducting evacuation, first aid, and fire-fighting drills, installing communication systems and community alarms at all strategic locations, and inviting community representatives to observe emergency drills.
- Prevented river oil spills by requiring double-hull vessels for crude oil and refined-product tankers.
- In place are preparedness measures concerning emergency tools and oil slick removal tools and tests of crude oil pumping tools every six months; installations of booms to trap oil slicks during oil pumping; and emergency drills for oil spills, fires on tankers, and floating storage units. This year Bangchak joined in the prevention and water pollutant removal drills on May 23-25, organized by the Marine Department, Royal Thai Navy, Pollution Control Department, and Disaster Prevention and Mitigation.
- Developed and constantly improved safety technology for jetty equipment, systems, 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.



Global warming risks

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

- Closely monitor potential impacts of climate change, including floods, with effective plans in place to manage low to high levels of impacts and ensure business continuity.
- Significantly improved the refinery's energy efficiency and reduced carbon dioxide emission by employing the electricity and steam produced by its cogeneration power plant, fueled by natural gas instead of fuel oil, while operating a new 12-MW capacity cogeneration power plant.
- Developed green-energy businesses 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 ease global warming.
- Improved energy efficiency in office buildings, evident in its LEED award (platinum level), Commercial Interior 2009, for the Head Office at M Tower; this year Bangchak was also honored with a Thailand Building Energy Efficiency: In Operation, a national award, for its Refinery Office.



Water shortage risks

Water crisis has 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.

- Reused water with the reverse osmosis technology inside the refinery. This year Bangchak lowered its water consumption by 5.51% of the total water demand. Note that this percentage was solely from the reverse osmosis recycling.
- 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. This year Bangchak developed international investment project risk management plans, including investment through subsidiaries by acquiring capital increase shares in OKEA AS (“OKEA”), which undertakes petroleum development and production in Norway, and acquisition of strategic areas to accommodate Bangchak Group's new investment expansion in the future. Taken into account are key factors and business outlooks that could affect new businesses in the short and long terms so as to minimize investment risks.



To this end, explicit, systematic project risk analysis is essential for each phase of the project:

1. Development phase
2. Construction phase
3. Operation phase (namely operational, finance and tax policy of invested countries, business, and reputation)
4. Natural disaster.

The key is to ensure sustainable success for investment projects without impacts on the surroundings, society, and communities. Project plans must also secure ERMCo's endorsement before the Board's review and approval.

3. Business Continuity Management (BCM)

Bangchak has acquired for six 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 for crises and efficient Business Continuity Plan (BCP) implementation under international standards, while stakeholders can rest assured that Bangchak can handle emergency responses while continuing to deliver its products.

This year Bangchak amended its crisis management plan and BCM plans for the entire corporation, as done every year. Also, it staged a BCM plan and emergency plans under the topic of "emergency at crude oil tanks



located at the refinery and BCM plans” based on a simulation embracing a communication drill between the management and relevant employees. The outcomes played a part in improving procedures and secure additional resources for Bangchak’s improved BCM system and the assurance of uninterrupted businesses in the face of assorted crises.



4. Review of business assets

Asset	Ownership	Book value Baht million ¹	Obligation
Refinery land	Long-term lease	319	None
Other properties	Ownership	2,322	None
Buildings	Ownership	180	None
Machinery & distillation tower equipment	Ownership	20,174	None
Power generators	Ownership	69	None
Sales and office equipment	Ownership	3,635	None
Platinum catalysts ²	Ownership	239	None
Vehicles	Ownership	127	None
Other assets ³	Ownership	23	None
Works in progress	Ownership	3,238	None
Total	-	30,326	-

Note:

- 1/ This year Bangchak set aside Baht 67 million in allowance (reversal of) for impairment of land property, machinery, and equipment, consisting of Baht 6 million in property, Baht 35 million in machinery and distillation tower equipment, and Baht 26 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. 30, 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	1	All fuels	Jun. 23, 2025
11. D3 GOLD	2	Synthetic diesel-engine lubricant	Oct. 9, 2023 Jan.15, 2027
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 TURBO PLUS COMMONRAIL	1	Semi-synthetic diesel-engine lubricant	Oct. 30, 2028
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. POWER D B5	1	High-speed diesel	May 20, 2019
22. BANGCHAK POWER D	1	High-speed diesel	Jul. 10, 2028
23. SUPER POWER D B5 (EURO 4)	2	Diesel-engine lubricant Diesel	Nov. 3, 2020 May 2, 2022
24. SUPER POWER D (EURO 4)	2	Diesel-engine lubricant Diesel	Nov. 3, 2020 May 2, 2022
25. GE NGV	1	Semi-synthetic gasoline-engine lubricant	Dec. 25, 2021
26. GE PLATINUM	1	Synthetic gasoline-engine lubricant	Dec. 25, 2021
27. Bangchak Max Drive	1	Gasoline Fuel Conditioner	Dec. 25, 2026
28. Super HDX	1	Diesel Fuel Conditioner	Jan. 15, 2027
29. FURIO	1	Lubricant	Mar. 2, 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, 2028
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. 20, 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. 24, 2023
16. Bangchak leaf and BCP LUBRICANTS (Registered in Philippines [®])	1	Fuel products	Sep. 10, 2025
17. Bangchak leaf and BCP LUBRICANTS (Registered in Kenya)	1	Fuel products	Dec. 10, 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. 3, 2023
21. BAICHAK MART (Registered in LPDR (Laos))	1	Miscellaneous goods for consumers' convenience	Dec. 5, 2024
22. GREEN SERVE (Registered in LPDR (Laos))	1	Vehicle maintenance	Dec. 5, 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. 5, 2024
25. Bangchak leaf and BANGCHAK (Registered in Vietnam)	2	Fuel products, service stations	Sep. 30, 2023 Nov. 19, 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. 5, 2024
28. Bangchak leaf and BCP (Registered in Vietnam)	1	Fuel products, service stations	Sep.30, 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
37. FURIO (Registered in Myanmar [®])	1	Fuel products	-

**Trademarks and Service Marks under deliberation in Thailand**

Trademark	Number of registered trademarks	Goods/services under trademark	Remarks
1. WASH PRO	1	Vehicle cleaning, maintenance & repair	Appealed Apr. 22, 2016
2. GREEN S REVOLUTION	2	Fuel products, vehicle service station	Appealed Jan. 26, 2018
3. RESPOPLEX	1	Technological service	Filed Aug. 29, 2017
4. FURIO F1	1	Lubricants	Filed Feb. 12, 2018
5. FURIO F2	1	Lubricants	Filed Feb. 12, 2018
6. FURIO F1 DIESEL	1	Lubricants	Filed Feb. 12, 2018
7. FURIO F2 DIESEL	1	Lubricants	Filed Feb. 12, 2018
8. HI PREMIUM DIESEL S	1	Diesel products	Filed Mar. 28, 2018
9. HI PREMIUM DIESEL S	1	Diesel products	Filed Mar. 28, 2018

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
2. FURIO (Registered in Cambodia)	1	Fuel products	Filed on Apr. 4, 2018
3. FURIO (Registered in LPDR (Laos))	1	Fuel products	Filed on Apr. 2, 2018
4. FURIO (Registered in PRC (China))	1	Fuel products	Filed on Apr. 3, 2018
5. FURIO (Registered in Vietnam)	1	Fuel products	Filed on Apr. 2, 2018
6. FURIO (Registered in the Philippines)	1	Fuel products	Filed on Apr. 4, 2018



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

Bangchak is a party to a lawsuit involving a legal dispute outside the ordinary course of business. While this lawsuit has not yet reached its final judgement, it may render a significant effect over Bangchak's business operation. Details of the case and its status as at December 31, 2018, were as follows:

- A lawsuit was filed against Bangchak as the first defendant with another company as the second defendant for breaching a distributor agreement for lubricants. The plaintiff demanded Baht 45.64 million as the amount of claim in that court case. Another case was later filed against Bangchak by the same plaintiff for breach of contract and damage resulting from its suspension of lubricant distribution, where the amount of claim was set at Baht 688.28 million. On March 23, 2017, both cases were dismissed by judgement of the Civil Court, whose decision was then appealed by the plaintiff. Then on June 6, 2018, the Court of Appeals overturned the judgement of the Civil Court in both cases and ordered that Bangchak pay a total of Baht 1.2 million to the plaintiff, in addition to court costs and lawyer's fees for the litigation in both courts for the plaintiff. Both parties have submitted their application to the Dika Court (Supreme Court) for approval to lodge dika appeals; this is still pending the Dika Court's decision. Bangchak confirms having duly complied with the terms.



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 2335 8888
- Fax : 0 2335 8000
- Website : <http://www.bangchak.co.th>
- Company establishment: November 8, 1984
- Commercial operation : April 1, 1985
- Registered capital (as of December 31, 2018) 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

- Vayupak Fund 1	202 Million shares	14.66%
- Social Security Office	199 Million shares	14.46%
- Ministry of Finance	137 Million shares	9.98%
- Minor Shareholders	839 Million shares	60.90%
Total	<u>1,377 Million shares</u>	<u>100.00%</u>



- Customers
 - The public, via Bangchak service stations and those of Bangchak distributing agents, and car care centers nationwide
 - Industrial sector, including plants and factories
 - Transport and service sectors, including airlines, ocean-going ships, hotels, trucks, and construction
 - Agricultural sector, through Bangchak community service stations
 - 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. 035 350 289, 035 350 292
Fax (Central Region Business Office) 035 350 290
Tel. (Bang Pa-In Terminal) 035 276 999
 - Northern Region Business Office
87/9 Yee-wan Building, 3rd Floor, Thung Hotel Road, Tambon Wat Ket, Amphoe Muang, Chiang Mai 50000
Tel. 053 300 484, Fax 053 300 485
 - Northeastern Region Business Office
499 Moo 12, Mitraphab Road, Tambon Muang Kao, Amphoe Muang, Khon Kaen 40000
Tel. 043 261 751-52, 043 261 789, 043 261 791, Fax 043 261 790
 - Southern Region Business Office
126/70, Moo 6, Bypass Road, Tambon Makham Tia, Amphoe Muang, Surat Thani 84000
Tel. 077 224 792, Fax 077 224 793



- Samut Sakhon Oil Distribution Center
100/149 Moo 1, Tambon Tha Chin, Amphoe Muang, Samut Sakhon 74000 Tel.034 820 519-20
- Si Racha Oil Distribution Center
115/14 Moo 10, Tambon Thung Sukhla, Amphoe Si Racha, Chon Buri 20230, Tel.038 493 179, Fax 038 493 129
- Rayong Oil Distribution Center
1, 3B Road, Tambon Map Ta Phut, Amphoe Muang, Rayong 21150, Tel.038 609 389, Fax 038 609 413
- Surat Thani Oil Distribution Center
104/1 Moo 2, Surat-Pak Nam Road, Tambon Bang Kung, Amphoe Muang, Surat Thani 84000
Tel.077 275 056-8
- Song Kla Oil Distribution Center
3/26 Moo 6, Tambon Sa Ting Mor, Amphoe Singha Nakorn, Song Kla 90280
Tel.074 332 782, Fax 074 332 783
- 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@bcpggroup.com
Website: <http://www.bcpgroup.com>
 - BBGI Public Company Limited
2098 M Tower Building, 5th Floor, Sukhumvit Rd., Phra Khanong Tai, Phra Khanong, Bangkok 10260
Tel.0 2335 8899 Fax. 0 2335 8800
Website: <http://www.bbgigroup.com>
 - Bangchak Retail Co., Ltd. (BCR)
2098 M Tower Building, 17th Floor, Sukhumvit Rd., Phra Khanong Tai, Phra Khanong, Bangkok 10260



- Tel. 0 2335 8400 Fax. 0 2016 3963
- Bangchak Green Net Co., Ltd. (BGN)
223/94 Country Complex, Building A, 19th Floor, Sanpawhut Rd.,
Bangna, Bangna, Bangkok 10260
Tel. 0 2367 2699 Fax. 0 2745 7945

 - BCPR Co., Ltd.
2098 M Tower Building, 8th Floor, Sukhumvit Rd., Phra
Khanong Tai, Phra Khanong, Bangkok 10260
Tel. 0 2335 8654

 - BCV Partnership Co., Ltd.
2098 M Tower Building, 20th Floor, Sukhumvit Rd., Phra
Khanong Tai, Phra Khanong, Bangkok 10260
Tel. 0 2335 4999 Fax. 0 2335 4572

 - BCV Bio Based Co., Ltd.
2098 M Tower Building, 20th Floor, Sukhumvit Rd., Phra
Khanong Tai, Phra Khanong, Bangkok 10260
Tel. 0 2335 4999 Fax. 0 2335 4572

 - BCV Innovation Co., Ltd.
2098 M Tower Building, 20th Floor, Sukhumvit Rd., Phra
Khanong Tai, Phra Khanong, Bangkok 10260
Tel. 0 2335 4999 Fax. 0 2335 4572

 - BCV Energy Co., Ltd.
2098 M Tower Building, 20th Floor, Sukhumvit Rd., Phra
Khanong Tai, Phra Khanong, Bangkok 10260
Tel. 0 2335 4999 Fax. 0 2335 4572

 - BCP Energy International Pte. Ltd. (BCPE)
8 Marina Boulevard # 05-02, Marina Bay Financial Centre,
Singapore 018981

 - BCP Innovation Pte. Ltd. (BCPI)
8 Marina Boulevard # 05-02, Marina Bay Financial Centre,
Singapore 018981



- BCP Trading Pte. Ltd. (BCPT)
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
- BCPR Pte. Ltd.
8 Marina Boulevard # 05-02, Marina Bay Financial Centre,
Singapore 018981

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
- **Oam Suk Social Enterprise Co., Ltd.**
2098 M Tower Building, 18th Floor, Sukhumvit Rd., Phra Khanong
Tai, Phra Khanong, Bangkok 10260
Tel.0 2335 4600, Fax.0 2016 3969



- **Information on Reference Persons**

Securities Registrar	Thailand Securities Depository Co., Ltd. 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
Debenture Registrar and Payment Agent (for BCP194A, BCP224A, BCP273A, and BCP303A)	Bangkok Bank Public Company Limited 333 Silom Road, Silom, Bangrak, Bangkok 10500 Thailand Tel. 0 2230 1478 Fax. 0 2626 4545-6 Website: www.bangkokbank.com
Debenture Registrar and Payment Agent (for BCP194B, BCP214A, and BCP244A)	Bank of Ayudhya Public Company Limited 1222 Rama III Road, Bang Phongphang, Yan Nawa, Bangkok 10120 Thailand Tel. 0 2296 5715 Fax. 0 2683 1298 Website: www.krungsri.com
Debenture Registrar and Payment Agent (for BCP208A, BCP238A, BCP258A, and BCP28DA)	Bank of Ayudhya Public Company Limited 1222 Rama III Road, Bang Phongphang, Yan Nawa, Bangkok 10120 Thailand Tel. 0 2296 5715 Fax. 0 2683 1298 Website: www.krungsri.com



Legal Counsel

Baker & Mckenzie Ltd.

25th 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 Buhajit 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 7, 2018)	Number of Shares	Shareholding (%)
1. Vayupak Fund 1	201,873,600	14.66
2. Social Security Office	199,128,697	14.46
3. Ministry of Finance.	137,442,767	9.98
4. Thai NVDR Co., Ltd.	120,439,428	8.75
5. SOUTH EAST ASIA UK (TYPE C) NOMINEES LIMITED	33,642,198	2.44
6. STATE STREET BANK EUROPE LIMITED	31,304,143	2.27
7. AIA COMPANY LIMITED -EQ4-P	30,000,069	2.18
8. Bangkok Life Assurance PLC	23,056,200	1.67
9. Krungsri Dividend Stock LTF	22,045,400	1.60
10. NORTRUST NOMINEES LIMITED-CL AC	17,313,500	1.26
Top 10 Total	816,246,002	59.28
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 7, 2018)	Number of Shares	Shareholding (%)
1. N.C.B.TRUST LIMITED-NORGES BANK 5	18,743,578	1.36
2. BNY MELLON NOMINEES LIMITED	16,931,700	1.23
3. STATE STREET BANK EUROPE LIMITED	14,549,875	1.06
4. RBC INVESTOR SERVICES BANK S.A.	8,565,400	0.62
5. STATE STREET BANK AND TRUST COMPANY	7,947,100	0.58
Total	66,737,653	4.85

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., assigned for Bangchak's corporate and debt instruments 'A' credit ranking with a 'stable' credit outlook.

In 2018, Bangchak issued domestic, name-registered, unsubordinated, and unsecured bonds with a bondholder's representative worth Baht 11 billion. As of the year-end, Bangchak posted Baht 25 billion in all outstanding debentures, as detailed below:

Debenture	Value (Baht million)	Interest rate (%/year)	Maturity (years)	Redemption Date
BCP194B	2,000	4.35	5	April 11, 2019
BCP194A	2,000	4.92	7	April 30, 2019
BCP208A	3,000	2.13	2	August 10, 2020
BCP214A	2,500	4.81	7	April 11, 2021
BCP224A	1,000	5.35	10	April 30, 2022
BCP238A	400	2.96	5	August 10, 2023
BCP244A	3,500	5.18	10	April 11, 2024
BCP258A	600	3.42	7	August 10, 2025
BCP273A	2,000	4.72	12	March 3, 2027
BCP28DA	7,000	4.04	10	December 20, 2028
BCP303A	1,000	5.05	15	March 3, 2030

Dividend policy

Bangchak Corporation Public Company Limited

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



Year	2013	2014	2015	2016	2017 (Restate)	2018 (first half)
Earnings per share (Baht/share)	3.38	0.52	3.01	3.47	4.07	1.56
Annual dividend (Baht/share)	1.35	1.00	2.00	1.80	2.15	0.85
Dividend payout ratio (%)	40	192	66	52	53	54

Subsidiaries' dividend policies (only dividend-paying ones)

- 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.

- BBGI Plc.

The Company has the policy to pay out dividend to the shareholders at the rate of not less than 40 percent of net profit after deduction of allocation of legal reserve. However, this is subject to the Company's cash flow and investment plans according to the necessary, appropriation and other concerning as the Board of Directors' consideration.

- 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

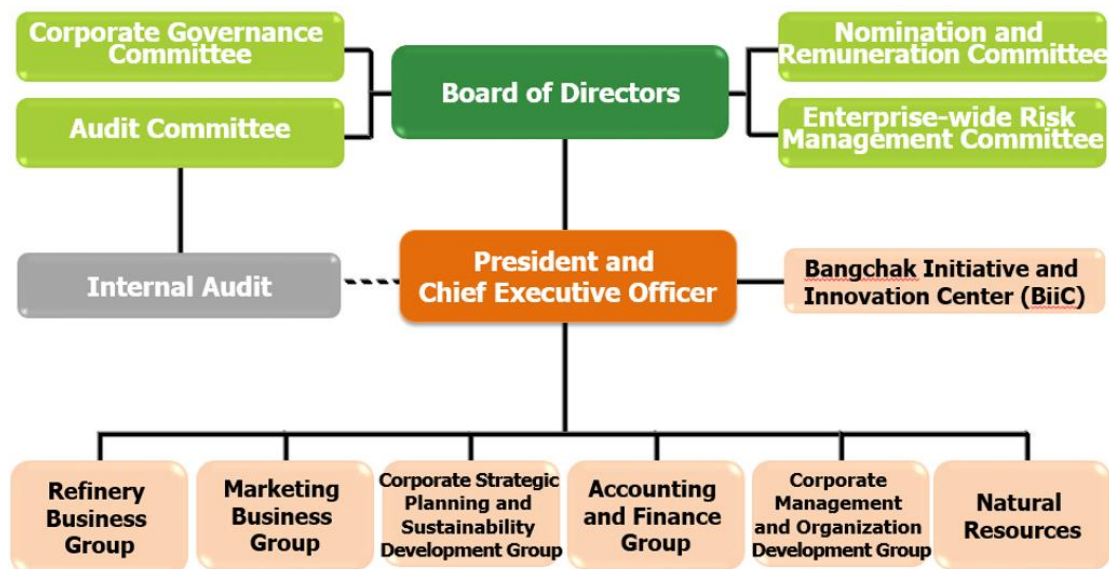


shareholders (AGM). For a given year, if the company's profit is less than the dividends calculated for holders of preferred shares, all dividends are to be paid from such profit to holders of preferred shares only, and none is to be paid to holders of common shares. Any outstanding dividends for holders 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.



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.



As of December 2018

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

1. **Board of Directors** There were 15 directors (As of 31 December 2018) as follows:

	Name	Position	Appointment date
1.	Mr. Pichai Chunhavajira	- Chairman (Independent director)	24 April 2012 (Independent director since 1 June 2017)
2.	Mr. Surin Chiravisit	- Vice Chairman (Independent director) - Chairman of the Nomination and Remuneration Committee - Member of the Enterprise-wide Risk Management Committee	8 April 2010
3.	Mr. Suthep Wongvorazathe	- Independent director - Chairman of the Audit Committee - Member and Secretary of the Nomination and Remuneration Committee	30 October 2012



	Name	Position	Appointment date
4.	Gen. Vitch Devahasdin	- Independent director - Chairman of the Corporate Governance Committee	5 April 2016
5.	Adm. Sucheep Whoungmaitree	- Independent director - Member of the Nomination and Remunration Committee	26 May 2015
6.	Pol.Lt.Gen. Chaiwat Chotima	- Independent director - Member of the Audit Committee - Member of the Nomination and Remuneration Committee	9 April 2014
7.	Lt.Gen. Thammanoon Withee	- Independent director - Member of the Nomination and Remuneration Committee	28 February 2018 Replacing Gen. Apirat Kongsompong
8.	Mrs. Prisana Praharnkhasuk	- Independent director - Member of the Audit Committee	5 April 2016
9.	Mr. Teerapong Wongsiwawilas	- Independent director - Member of the Corporate Governance Committee	26 January 2017
10.	Dr. Poramettee Vimolsiri	- Independent director - Member of the Enterprise-wide Risk Management Committttee	7 June 2018 Replacing Mr. Krisada Chinavicharana
11.	Mr. Jarin Chakkaphark	- Director (Representative of Social Security Office) - Member of the Corporate Governance Committee	12 October 2017
12.	Mr. Prasong Poontaneat	- Director (Representative of Ministry of Finance) - Chairman of the Enterprise-wide Risk Management Committee	24 April 2012
13.	Dr. Anuchit Anuchitanukul	- Director (Representative of Ministry of Finance) - Member of the Enterprise-wide Risk Management Committee	25 April 2018 Replacing Mr. Visit Vongruamlarp
14.	Dr. Prasert Sinsukprasert	- Director - Member of the Enterprise-wide Risk Management Committttee	5 April 2016
15.	Mr. Chaiwat Kovavisarach	- President and Chief Executive Officer - Member and Secretary of Corporate Governance Committee - Member and Secretary of Enterprise-wide Risk Management Committee - Secretary of the Board of directors	30 October 2012



Name	Position	Appointment date
Directors whose terms were completed and resigned directors in 2018		
1. Gen. Apirat Kongsompong	- Independent director - Member of the Nomination and Remuneration Committee	26 September 2013 (Resigned on 26 February 2018)
2. Mr. Visit Vongruamlarp	- Director (Representative of Ministry of Finance) - Member of the Enterprise-wide Risk Management Committee	8 April 2015 (Completed term on 25 April 2018)
3. Mr. Krisada Chinavicharana	- Independent director - Member of the Audit Committee	23 November 2015 (Resigned on 31 May 2018)

The names and number of the authorized directors who have authority to sign on behalf of the Company are: Mr. Pichai Chuhavajira 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 Adm. Sucheep Whoungmaitree or Mrs. Prisana Praharnkhasuk or Lt.Gen. Thammanoon Withee, 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 Sub-Committee 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	Management	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	x
3.	Mr. Suthep Wongvorazathe	x	x	x	x	x	x				x
4.	Gen. Vitch Devahasdin						x	x	x	x	x
5.	Adm. Sucheep Whoungmaitree						x	x	x	x	x
6.	Pol.Lt.Gen. Chaiwat Chotima	x	x	x			x			x	x
7.	Lt.Gen. Thammanoon Withee						x	x	x	x	x
8.	Dr.Porametee Vimolsiri			x	x	x	x		x	x	x
9.	Mrs. Prisana Praharnkhasuk	x		x		x	x		x		x
10.	Mr. Teerapong Wongsiwawilas						x	x	x		x
11.	Mr. Jarin Chakkaphark						x		x	x	x
12.	Mr. Prasong Poontaneat	x	x	x		x	x	x	x		x
13.	Dr. Anuchit Anuchitanukul		x		x	x	x		x		x
14.	Dr. Prasert Sinsukprasert	x	x	x			x				x
15.	Mr. Chaiwat Kovavisarach	x	x	x	x	x	x		x	x	x
Total		8	8	9	5	7	15	6	12	9	15

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
 - 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 strategic directions. 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.

Policy on 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

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. **Independent directors do not hold their positions for more than three consecutive terms from the date of the first appointment of their independent directorship. The Board will consider their reappointment based on reason and necessity and will consider them non-independent directors.**

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. Establish Clear Leadership Role and Responsibilities of the Board



- 2.1 The board should demonstrate a thorough understanding of its leadership role, assume its responsibilities in overseeing the company, and strengthen good governance, including:
 - (1) defining objectives;
 - (2) determining means to attain the objectives; and
 - (3) monitoring, evaluating, and reporting on performance.
- 2.2 To achieve sustainable value creation, the board should exercise its leadership role and pursue the following governance outcomes:
 - (1) competitiveness and performance with long-term perspective;
 - (2) ethical and responsible business;
 - (3) good corporate citizenship; and
 - (4) corporate resilience.
- 2.3 The board should ensure that all directors and executives perform their responsibilities in compliance with their fiduciary duties, and that the company operates in accordance with applicable law and standards.
- 2.4 The board should demonstrate a thorough understanding of the division of board and management responsibilities. The board should clearly define the roles and responsibilities of management and monitor management's proper performance of its duties.
3. Define Objectives that Promote Sustainable Value Creation
 - 3.1 The board should define objectives that promote sustainable value creation and governance outcomes as a framework for the operation of the company.
 - 3.2 The board should ensure that the company's annual and medium-term objectives, goals, strategies, and plans are consistent with the long-term objectives, while utilising innovation and technology effectively.
4. Strengthen Board Effectiveness
 - 4.1 The board should be responsible for determining and reviewing the board structure, in terms of size, composition, and the proportion of independent directors so as to ensure its leadership role in achieving the company's objectives.
 - 4.2 The board should select an appropriate person as the chairman and ensure that the board composition serves the best interest of



- the company, enabling the board to make its decisions as a result of exercising independent judgement on corporate affairs.
- 4.3 The board should ensure that the policy and procedures for the selection and nomination of directors are clear and transparent resulting in the desired composition of the board.
 - 4.4 When proposing director remuneration to the shareholders' meeting for approval, the board should consider whether the remuneration structure is appropriate for the directors' respective roles and responsibilities, linked to their individual and company performance, and provide incentives for the board to lead the company in meeting its objectives, both in the short and long term.
 - 4.5 The board should ensure that all directors are properly accountable for their duties, responsibilities and (in-) actions, and allocate sufficient time to discharge their duties and responsibilities effectively.
 - 4.6 The board should ensure that the company's governance framework and policies extend to and are accepted by subsidiaries and other businesses in which it has a significant investment as appropriate.
 - 4.7 The board should conduct a formal annual performance evaluation of the board, its committees, and each individual director. The evaluation results should be used to strengthen the effectiveness of the board.
 - 4.8 The board should ensure that the board and each individual director understand their roles and responsibilities, the nature of the business, the company's operations, relevant law and standards, and other applicable obligations. The board should support all directors in updating and refreshing their skills and knowledge necessary to carry out their roles on the board and board committees.
 - 4.9 The board should ensure that it can perform its duties effectively and have access to accurate, relevant and timely information. The board should appoint a company secretary with necessary qualifications, knowledge, skills and experience to support the board in performing its duties.
5. Ensure Effective CEO and People Management
 - 5.1 The board should ensure that a proper mechanism is in place for the nomination and development of the chief executive officer and



- key executives to ensure that they possess the knowledge, skills, experience, and characteristics necessary for the company to achieve its objectives.
- 5.2 The board should ensure that an appropriate compensation structure and performance evaluation are in place.
 - 5.3 The board should consider its responsibilities in the context of the company's shareholder structure and relationships, which may impact the management and operation of the company.
 - 5.4 The board should ensure the company has effective human resources management and development programmes to ensure that the company has adequate staffing and appropriately knowledgeable, skilled, and experienced employees and staff.
6. Nurture Innovation and Responsible Business
- 6.1 The board should prioritise and promote innovation that creates value for the company and its shareholders together with benefits for its customers, other stakeholders, society, and the environment, in support of sustainable growth of the company.
 - 6.2 The board should encourage management to adopt responsible operations, and incorporate them into the company's operations plan. This is to ensure that every department and function in the company adopts the company's objectives, goals, and strategies, applying high ethical, environmental and social standards, and contributes to the sustainable growth of the company.
 - 6.3 The board should ensure that management allocates and manages resources efficiently and effectively through out all aspects of the value chain to enable the company to meet its objectives.
 - 6.4 The board should establish a framework for governance of enterprise IT that is aligned with the company's business needs and priorities, stimulates business opportunities and performance, strengthens risk management, and supports the company's objectives.
7. Strengthen Effective Risk Management and Internal Control
- 7.1 The board should ensure that the company has effective and appropriate risk management and internal control systems that are aligned with the company's objectives, goals and strategies, and comply with applicable law and standards.



- 7.2 The board shall establish an audit committee that can act effectively and independently.
 - 7.3 The board should manage and monitor conflicts of interest that might occur between the company, management, directors, and shareholders. The board should also prevent the inappropriate use of corporate assets, information, and opportunities, including preventing inappropriate transactions with related parties.
 - 7.4 The board should establish a clear anti-corruption policy and practices (including communication and staff training), and strive to extend its anti-corruption efforts to stakeholders.
 - 7.5 The board should establish a mechanism for handling complaints and whistleblowing.
8. Ensure Disclosure and Financial Integrity
 - 8.1 The board must ensure the integrity of the company's financial reporting system and that timely and accurate disclosure of all material information regarding the company is made consistent with applicable requirements.
 - 8.2 The board should monitor the company's financial liquidity and solvency.
 - 8.3 The board should ensure that risks to the financial position of the company or financial difficulties are promptly identified, managed and mitigated, and that the company's governance framework provides for the consideration of stakeholder rights.
 - 8.4 The board should ensure sustainability reporting, as appropriate.
 - 8.5 The board should ensure the establishment of a dedicated Investor Relations function responsible for regular, effective and fair communication with shareholders and other stakeholders (such as analysts and potential investors).
 - 8.6 The board should ensure the effective use by the company of information technology in disseminating information.
 9. Ensure Engagement and Communication with Shareholders
 - 9.1 The board should ensure that shareholders have the opportunity to participate effectively in decision-making involving significant corporate matters.
 - 9.2 The board should ensure that the shareholders' meetings are held as scheduled, and conducted properly, with transparency and



efficiency, and ensure inclusive and equitable treatment of all shareholders and their ability to exercise their rights.

9.3 The board should ensure accurate, timely and complete disclosure of shareholder resolutions and preparation of the minutes of the shareholders' meetings.

10. 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
11. Report on one's own portfolio of securities, as well as those of their spouses, cohabitation partners, and minor children under legal age, including legal entities where they have more than 30% shareholding of the number of all voting rights to the monthly Board meeting and must report to the Company without delay in the following cases:
 - Directors or related person with vested interests in the Company's or its subsidiaries' management
 - Hold shares or debentures in the Company or subsidiary companies.
12. 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. This excludes the executive director or CEO in the capacity of board director for companies in the group.

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

- The Board schedules its meetings at least **once a month (every third Thursday)** and as deemed necessary. The meeting schedule and agendas are agreed in advance for the year. The invitation letters accompanied by relevant documents are sent to the directors at least seven days in advance of each meeting.
- **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 **12 of 16 times a year**)

In 2018, **the Board held 12 meetings (three extra meetings) and one annual seminar on corporate strategies with the management to review and revise the corporate vision and set goals every five years** on annual basis under Bangchak's vision, mission, and values, together with an assessment of business circumstances. The Board of Directors reviewed and resolved that the Company's Vision, mission and core value shall remain unchanged.

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:

- Lt.Gen. Thammanoon Withee on 22 March 2018
- Dr. Anuchit Anuchitanukul on 15 May 2018
- Dr. Porametee Vimolsiri on 26 June 2018

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:

- Thammasat Leadership Program on Society and the World for Senior Executives Class 2 covered current global situations, international rules and regulations, economic and political international relations, organized by Foundation for Thammasat Leadership Program and attended by Mrs. Prisana Praharnkhasuk between June 19 and October 9, 2018.



- Lecture on business strategies and planning by a lecturer from McKinsey Company for the Board during the seminar on annual organizational strategies on August 3-4, 2018.
- Board's visits on energy business, innovation, and technology to Morocco and Portugal on October 5-16, 2018, to benefit decisions on new business investment in the future.

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

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. Executive Vice President, Internal Audit	Secretary

Roles and Responsibilities

1. To ensure accuracy and adequacy of the Company's financial reporting according to Accounting Principles governed by laws.



2. To ensure that the Company has a 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 exchange 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 and on the responses from the management.
6. To empower the auditing and investigating of all related parties under the authorization of the Audit Committee and also to authorize hiring of 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 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
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 it to the Board of Directors so as to modify and revise within prescribed time. If the Audit Committee or executives does not modify and revise within the 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 review and consider the Self-Evaluation Tool for Countering Bribery of Thailand's Private Sector Collective Action Coalition Against Corruption (CAC).
15. 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 is made up 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. Pol. Lt. Gen. Chaiwat Chotima	Member and Independent Director
4. Lt.Gen. Thammanoon Withee	Member and Independent Director
5. Mr. Suthep Wongvorazathe	Member and Secretary, Independent Director



Roles and Responsibilities

1. Define qualifications needed 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 ERMC is made up of at least three members, at least one of whom must be knowledgeable in risk management. Qualified external parties can serve as members.

Name	Position
1. Mr. Prasong Poontaneat Director	Chairman and Non-executive
2. Mr. Surin Chiravisit	Member and Independent Director
3. Dr. Poramatee Vimolsiri	Member and Independent Director
4. Dr. Prasert Sinsukprasert	Member and Non-executive Director
5. Dr. Anuchit Anuchitanukul	Member and Non-executive Director
6. 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 is made up of at least three directors, and at least one of whom must be knowledgeable in corporate governance practices by international standards. An independent director must serve as Chairman of this committee.

Name	Position
1. Gen. Vitch Devahasdin	Chairman and Independent Director
2. Mr. Teerapong Wongsiwawilas	Member and Independent Director
3. Mr. Jarin Chakkaphark	Member and Non-executive 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				
		Meeting		Seminar	Total	AC	NRC	ERMC	CGC	
		Monthly	Extra							
1	Mr. Pichai Chunchavajira ^{1/}	12/12	3/3	1/1	16/16	-	-	-	-	
2	Mr. Surin Chiravisit	12/12	3/3	1/1	16/16	-	7/7	5/6	-	
3	Mr. Suthep Wongvorazathe	12/12	3/3	1/1	16/16	12/12	7/7	-	-	
4	Gen. Vitch Devahasdin	11/12	3/3	0/1	14/16	-	-	-	2/2	
5	Adm. Sucheep Whoungmaitree	12/12	3/3	1/1	16/16	-	7/7	-	-	
6	Pol.Lt.Gen. Chaiwat Chotima	12/12	3/3	1/1	16/16	11/12	7/7	-	-	
7	Lt.Gen. Thammanoon Withee ^{2/}	9/10	1/2	0/1	10/13	-	3/5	-	-	Appointed on 28 September 2018
8	Mrs. Prisana Praharnkhasuk	12/12	2/3	1/1	15/16	12/12	-	-	-	
9	Mr. Teerapong Wongsiwawilas	12/12	3/3	1/1	16/16	-	-	-	2/2	
10	Dr. Poramete Vimolsiri ^{3/}	7/7	0/1	0/1	7/9	-	-	2/3	-	Appointed on 7 June 2018
11	Mr. Jarin Chakkaphark	11/12	0/3	0/1	11/16	-	-	-	1/2	
12	Mr. Prasong Poontaneat	12/12	2/3	1/1	15/16	-	-	6/6	-	
13	Dr. Anuchit Anuchitanukul ^{4/}	8/8	2/2	1/1	11/11	-	-	4/4	-	Appointed on 25 April 2018
14	Dr. Prasert Sinsukprasert	11/12	2/3	1/1	14/16	-	-	5/6	-	
15	Mr. Chaiwat Kovavisarach	12/12	3/3	1/1	16/16	-	-	6/6	2/2	
Directors whose terms were completed and resigned directors in 2018										
1	Gen. Apirat Kongsompong	1/1	1/1	-	2/2	-	0/1	-	-	Resigned on 26 February 2018
2	Mr. Visit Vongruamlarp	4/4	1/1	-	5/5	-	-	2/2	-	Completed term on 25 April 2018
3	Mr. Krisada Chinavicharana	5/5	0/1	-	5/6	4/5	-	-	-	Resigned on 31 May 2018

Note:
^{1/} Chairman did not join any Sub-Committee as Member
^{2/} Appointed as Member of NRC on 18 May 2018
^{3/} Appointed as Member of ERMC on 7 June 2018
^{4/} Appointed as Member of ERMC on 18 May 2018

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, and ≤50% = need improvement. The assessment is summarized below:

1) Individual directors

- Self-assessment relies on three 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 95.8%, regarded as excellent.
- Cross-assessment by group (3-4 unnamed directors assessing another director) relies on two topics, namely responsibility for their roles and directors' independence. The overall summary of assessment findings showed an average of 96.8%, regarded as excellent.

2) **Entire Board** relies on topics, namely Structure and Skills, Strategic Direction and Planning, Policy, Monitoring and Supervision, Accountability, CEO and Succession, Leadership and Teamwork, and Agendas, Papers, Meetings and Minutes. The overall summary of assessment findings showed an average score of 97.5%, regarded as excellent.

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

- Audit Committee, the group evaluation had the average score of 98.0%, rated excellent.
- Nomination and Remuneration Committee, the group evaluation had the average score of 97.7%, rated excellent.
- Corporate Governance Committee, the group evaluation had the average score of 98.3%, rated excellent.
- Enterprise-wide Risk Management Committee, the group evaluation had the average score of 96.9%, 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 in proportion to such 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 2018 AGM of 25 April 2018 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
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 (credit limit 500,000 Baht)
- 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 2018, the individual remuneration of Directors was as follows:

	Name	Remuneration in Baht						Total
		BOARD	AC	NRC	ERMC	CGC	Bonus	
1	Mr. Pichai Chunhavajira	1,050,000	-	-	-	-	3,522,610.58	4,572,610.58
2	Mr. Surin Chiravisit	978,750	-	131,250	75,000	-	3,170,349.52	4,355,349.52
3	Mr. Suthep Wongvorazathe	870,000	375,000	105,000	-	-	2,818,088.46	4,168,088.46
4	Gen. Vitch Devahasdin	780,000	-	-	-	37,500	2,818,088.46	3,635,588.46
5	Adm. Sucheep Whoungmaitree	870,000	-	105,000	-	-	2,818,088.46	3,793,088.46



Name	Remuneration in Baht						
	BOARD	AC	NRC	ERMC	CGC	Bonus	Total
6 Pol.Lt.Gen. Chaiwat Chotima	840,000	285,000	105,000	-	-	2,818,088.46	4,048,088.46
7 Lt.Gen. Thammanoon Withee ^{1/}	601,071	-	45,000	-	-	-	646,071.00
8 Mrs. Prisana Praharnkhasuk	840,000	300,000	-	-	-	2,818,088.46	3,958,088.46
9 Mr. Teerapong Wongsiwawilas	840,000	-	-	-	30,000	2,625,068.70	3,495,068.70
10 Dr. Porametee Vimolsiri ^{2/}	444,000	-	-	30,000	-	-	474,000.00
11 Mr. Jarin Chakkaphark ^{3/}	690,000	-	-	-	15,000	625,384.01	1,330,384.01
12 Mr. Prasong Poontaneat	840,000	-	-	112,500	-	2,818,088.46	3,770,588.46
13 Dr. Anuchit Anuchitanukul ^{4/}	605,000	-	-	60,000	-	-	665,000.00
14 Dr. Prasert Sinsukprasert	810,000	-	-	75,000	-	2,818,088.46	3,703,088.46
15 Mr. Chaiwat Kovavisarach	870,000	-	-	90,000	30,000	2,818,088.46	3,808,088.46
Total	11,928,821	960,000	491,250	442,500	112,500	32,488,120.49	46,423,191.49
Directors whose terms were completed and resigned directors in 2018							
1 Gen. Apirat Kongsompong ^{5/}	116,786	-	-	-	-	2,818,088.46	2,934,874.46
2 Mr. Visit Vongruamlarp ^{6/}	265,000	-	-	30,000	-	2,818,088.46	3,113,088.46
3 Mr. Krisada Chinavicharana ^{7/}	299,032	109,677	-	-	-	2,818,088.46	3,226,797.46
Total	680,818	109,677	-	30,000	-	8,454,265.38	9,274,760.38

- Note:**
- 1/ Appointed as Director on 28 February 2018
 - 2/ Appointed as Director on 7 June 2018
 - 3/ Transferred bonus to the Social Security Fund in compliance with the regulations of the Office of the Social Security Fund
 - 4/ Appointed as Director on 25 April 2018
 - 5/ Resigned on 26 February 2018
 - 6/ Completed term on 25 April 2018
 - 7/ Resigned on 31 May 2018

Bonuses for directors whose terms were completed and who resigned in 2017 (performance in 2017 paid in 2018)

Names	Bonus (Baht)	Remarks
1. Prof. Dr. Chai-anan Samudavanija	217,147.25	Resigned on 5 April 2016
2. M.L. Puntrik Smiti ^{1/}	2,177,262.87	Resigned on 5 April 2016
TOTAL	2,394,410.12	

- Note:**
- 1/ Transferred bonus to the Social Security Fund in compliance with the regulations of the Office of the Social Security Fund



Comparison of Remuneration of Directors in 2017 and 2018

Remuneration	2017		2018	
	Directors	Baht	Directors	Baht
Monthly remuneration and meeting allowance	15	15,852,339.00	15	14,755,566.00
Bonus	15	36,836,034.73	15	43,336,795.99
TOTAL		52,688,373.73		58,092,361.99

Note: Bonus for 2017 performance under the resolution of the 2017 AGM, held on 5 April 2017 (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 joint ventures in 2018

Company	Name	Total remuneration in 2018 (Baht)					Net total
		Monthly remuneration	Meeting allowance	Bonus	Sub-Committee remuneration	ESOP (Capital Gain)	
BCPG	Mr. Pichai Chunhavajira	450,000	412,500	1,874,520	-	1,931,250	4,668,270
	Mr. Chaiwat Kovavisarach *	320,625	303,750	1,687,069	187,500	1,738,130	4,237,074
BBGI	Mr. Pichai Chunhavajira	450,000.00	200,000.00	-	-	-	650,000.00
	Mr. Surin Chiravisit	360,000.00	200,000.00	-	90,000.00	-	650,000.00
	Mr. Chaiwat Kovavisarach	360,000.00	200,000.00	-	57,000.00	-	617,000.00
NIDO	Mr. Chaiwat Kovavisarach	58,324.47 AUD (per annum)	-	-	-	-	1,399,787.28

Notes:

- BCPG: BCPG Public Company Limited
- BBGI: BBGI Public Company Limited
- NIDO: Nido Petroleum Pty. Ltd.
- Exchange rate AUD\$ 1 equivalent to approximately Baht 24
- * Mr. Chaiwat Kovavisarach resigned as a director of BCPG, effective from October 15, 2018, and was appointed Chairman of the Investment Committee, effective from March 25, 2016.



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 17 persons, No. 1 through No. 8 of whom are regarded as executives under SEC's definition (As of December 2018):

Name	Position
1. Mr. Chaiwat Kovavisarach	President and Chief Executive Officer
2. Mr. Pongchai Chaichirawiwat	Senior Executive Vice President, appointed to BBGI Public Company Limited
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, appointed to BCPG Public Company Limited
6. Mr. Surachai Kositsareewong	Senior Executive Vice President, Accounting and Finance
7. Mr. Kiatchai Maitriwong	Senior Executive Vice President, Corporate Strategic Planning and Sustainability Development
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, appointed to BBGI Public Company Limited
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
14. Ms. Revadee Pompatkul	Executive Vice President, appointed to BCPG Public Company Limited
15. Ms. Pakawadee Junrayapes	Executive Vice President, Sustainability Development and Corporate Compliance
16. Dr. Michael William Fischer	Executive Vice President, Natural Resources
17. Mr. Suwat Meemook	Executive Vice President, Bangchak Initiative and Innovation Center

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. The meeting of the Board of Bangchak No. 12/2561 on Thursday, September 27, 2018, approved the extension of the employment contract for Mr. Chaiwat Kovavisarach, President and Chief Executive Officer, for one more term for four years, from January 1, 2019, to December 31, 2022.

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 remuneration, i.e. salary and bonus, and long-term remuneration, including the Employee Stock Option Program (ESOP) and the Employee Joint Investment Program (EJIP), which the Board will consider on a case-by-case basis. These payments motivate executives, are on a par with industry practice, correlate to the Balanced Scorecard principles and to each person's key performance indices (KPIs), and connect compensation with performance.
- 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 Corporate Governance Policy.



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

Remuneration	2017		2018	
	Persons	Baht	Persons	Baht
Salary	8	54,032,508	8	57,797,017
Bonus & Retirement pay	8	41,185,847	8	35,037,965
Provident fund	8	4,983,264	8	5,443,224
Total	8	100,201,619	8	98,278,206

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:



X = Chairman // = Managing Director / President / Chief Executive Officer / = Director

As of December 31, 2018

Subsidiary Companies

- 1 BCPG Plc (BCPG)
- 2 BBGI Co., Ltd. (BBGI)
- 3 Bangchak Retail Co., Ltd. (BCR)
- 4 Bangchak Green Net Co., Ltd. (BGN)
- 5 Bangchak Solar Energy Co., Ltd. (BSE)
- 6 Bangchak Solar Energy (Prachinburi) Co., Ltd. (BSE-PR)
- 7 Bangchak Solar Energy (Chayaphum 1) Co., Ltd. (BSE-OPM1)
- 8 Bangchak Solar Energy (Buriram) Co., Ltd. (BSE-BRM)
- 9 Bangchak Solar Energy (Buriram 1) Co., Ltd. (BSE-BRM1)
- 10 Bangchak Solar Energy (Nakhon Ratchasima) Co., Ltd. (BSE-NMA)
- 11 BCPG Biopower 1 Co., Ltd. (BBP1)
- 12 BCPG Biopower 2 Co., Ltd. (BBP2)
- 13 Lom Ligor Co., Ltd. (Lom Ligor)
- 14 BCPG Investment Holding Pte. Ltd. (BCPG Investment)
- 15 BSE Energy Holdings Pte. Ltd. (BSE Energy Holdings)
- 16 Greenergy Holdings Pte. Ltd. (Greenergy Holdings)
- 17 Greenergy Power Pte. Ltd. (Greenergy Power)

- 18 Huang Ming Japan Company Limited (Huang Ming)
- 19 BCPG Japan Corporation (BCPG Japan)
- 20 BCPG Engineering Company (BCPG Engineering)
- 21 BCPG Wind Cooperatief U.A. (BCPG Wind)
- 22 Bangchak Biofuel Co., Ltd. (BBF)
- 23 KSL Green Innovation Plc (KGI)
- 24 14. Bangchak Bioethanol (Chachoengsao) Co., Ltd. (BBE-CCO)
- 25 BCP Trading Pte. Ltd. (BCPT)
- 26 BCP Innovation Pte.Ltd. (BCPI)
- 27 BCP Energy International Pte.Ltd. (BCPE)
- 28 Nido Petroleum Pty. Ltd. (NIDO)
- 29 BCPR Co., Ltd. (BCPR)
- 30 BCPR Pte. Ltd. (BCPR SG)
- 31 BCV Biobase Co., Ltd. (BCVB)
- 32 BCV Energy Co., Ltd. (BCVE)
- 33 BCV Innovation Co., Ltd. (BCVI)
- 34 BCV Partnership Co., Ltd. (BCVP)

Associated Companies

1. Bongkot Marine Services Co., Ltd. (Bongkot Marine)
- 2 AomSuk Social Enterprise Co., Ltd. (AomSuk)
- 3 Ubon Bio Ethanol Co., Ltd. (UBE)
- 4 Ubon Bio Gas Co., Ltd. (UBG)
- 5 Ubon Agricultural Energy Co., Ltd. (UAE)
- 6 NP Bio Energy Co., Ltd. (NPE)
- 7 Star Energy Group Holdings Pte. Ltd. (Star Energy)
- 8 PetroWind Energy Inc. (PetroWind Energy)
- 9 OKEA AS (OKEA)

Joint Ventures

- 1 Fuel Pipeline Transportation Co., Ltd. (FPT)
- 2 Lithium Americas Corp. (LAC)

Others

- 1 Happiness Sharing Foundation (Foundation)

4. Company Secretary

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

Ms. Pakawadee Junrayapes

- Age 57
- 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)
- Certificate, Public Law and Management, King Prajadhipok's Institute Class 17/2018
- Experience
 - Bangchak Corporation Public Company Limited
 - 2018 - Present: Executive Vice President, Sustainability Development and Corporate Compliance, and Company Secretary
 - 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
 - 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: 15,500 shares or 0.001126% (As of September 7, 2018)
- 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, 2018, the Company had a total headcount of 1,254:

Employee	Persons
Corporate Management and Sustainability Development	114
Accounting and Finance	78
Corporate Strategic Planning and Sustainability Development	72
Marketing Business Group	357
Refinery Trading Business Group	585
The President and Chief Executive Officer	32
BCPG Plc	4
BBGI Plc	12

Significant changes in number employee for the past three years

- None (Total employee in year 2016 were 1,196 persons, which increased slightly to 1,254 persons in year 2018)

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 2018 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 1,732.21 million Baht. **The remuneration for President&CEO and Senior executive vice presidents upward is 5.67% 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” 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.

In 2018, a variety of training courses were staged, averaging 45.88 hours/ person/ year. These included the staff’s environmental capability development in courses dealing with joint management systems, and internal monitoring under ISO 14001, OHSAS 18001, ISO 50001, and ISO 45001 (SHEE Internal Auditor), wastewater system improvement (WWTU Improvement), and joint management standards and internal assessment under ISO (New version) to enhance knowledge and understanding for operators attached to the water pollutant treatment system. (Training details are included in the Sustainability Report under Employee Stewardship, Environmental Expense Account, and Water Pollution).



9. Corporate Governance



A รับผิดชอบต่อการตัดสินใจและการกระทำ
accountability

R สำนึกต่อหน้าที่ความรับผิดชอบ
responsibility

T โปร่งใส เปิดเผยข้อมูล และตรวจสอบได้
transparency

E ปฏิบัติต่อผู้เกี่ยวข้องทุกฝ่ายอย่างเท่าเทียมกัน
equitable Treatment

V มีวิสัยทัศน์สร้างมูลค่าเพิ่มแก่กิจการระยะยาว
vision to Create Long Term Value

E มีคุณธรรมและจริยธรรม
ethics

1. Corporate Governance and Anti-Corruption

- **Policy:** Since 2003 the Board of Directors has defined a written corporate governance (CG) policy as a guideline for directors, management, and employees, which is to be revised annually. In 2017, Bangchak issued Revision 15 of this policy by conforming the directors' roles to the CG Code for listed companies, limiting directorship in other listed companies by excluding management directors in Bangchak Group, limiting the terms of independent directors to three consecutive terms, and duly reporting changes in securities holding in accordance with the Notification of SEC Sor Jor 38/2561.
- **Communication:**
 - A talk on corporate governance as part of the orientation for new directors. (Mar. 22 May 15 and Jun. 26, 2018)
 - A talk on corporate governance as part of the orientation for new employees. (Jul. 4, 2018)
 - Staged the 14th annual CG Day this year, with Emeritus Professor Dr. Kasem Wattanachai serving as speaker and sharing ideas about conscientious behavior and application of expertise in parallel with virtue for public interests. (Nov. 7, 2018)
 - Organized the “BCP CAC-SME Executive Briefing & Workshop” for business partners (involving medium-size and small SMEs) to promote their alliance and certified CAC membership; today six of Bangchak's business partners are among the ten certified CAC-SME members (Jun. 19, 2018)



- **Measures and Guidelines**

- All employees are required to pass certain criteria to ensure proper understanding. The test may be done on the e-HR system or the online knowledge management system (“We Share”) (Nov.12-30, 2018)
- Political neutrality without rendering assistance to any political party, directly or indirectly
- Donation is strictly for charity, including sponsorship for the Company’s business, which is not to be used as excuses for corruption and requires clear documented proofs in line with the Company’s regulations
- No acceptance of gifts or objects of any value on all occasions. No acceptance of and no giving of entertainment and other unnecessary and inappropriate expenses to government officials or those dealing with the Company’s business. If any is received, employees must refuse and report the incident to their superiors for acknowledgment.
- Annual notification to stakeholders on Bangchak's "No Gift" policy for the New Year and other occasions so as to elevate good corporate governance and set a standard for conducting business with all related parties fairly.

- **Internal Control, Risk Management, and Internal Audit:** In order to monitor compliance to this corporate governance policy, 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.

- **Audit**

Internal Audit formulates the annual audit plans and reports audit findings to the Audit Committee and the Board for acknowledgment.

Bangchak values good corporate governance and anti-corruption alike. To this end, it has enlisted in the league of the UN Global Compact and become one of the first 22 companies to gain membership certification for CAC (Thai Private Sector Collective Action Coalition against Corruption). In 2016, Bangchak won 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 the President&CEO serving as the top executive. Appointment of directors and the President 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 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&CEO, 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

The Company 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 their spouses, cohabitation partners, and minor children under legal age, including legal entities where they have more than 30% shareholding of the number of all voting rights of the juristic person, according to Article 258 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. 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. Audit fee

For the fiscal year 2018, the Company and its subsidiaries paid for audit fees amounting to 11.56 Million Baht to KPMG in Thailand and KPMG member firms in overseas, which the auditors worked for, and to persons



or businesses related to the auditors and audit firm. This audit fee amount excluded the remuneration paid by associates.

In this regard, KPMG in Thailand and KPMG member firms in overseas and its auditors do not have any relationships or interests involving the Company, management, or major shareholders, including their related persons.

- **Audit fees for the year 2018**

1. Fees for annual audit and quarterly review of the Company and consolidated financial statements amounted to 1.92 Million Baht to KPMG.

Audit fees of the Company	
1. Annual audit fee for the Company's financial statement	0.40 Million Baht
2. Fees for annual audit and quarterly review of the Company and consolidated financial statements	1.52 Million Baht
Total audit fees of the Company	1.92 Million Baht

2. Fees for the annual audit of subsidiaries and quarterly review of listed subsidiaries performed by KPMG Thailand and KPMG overseas in which the fees were absorbed by the subsidiaries were as follows:

Audit fees of subsidiaries	
1. Fees for annual audit of the subsidiaries' financial statements and quarterly review of listed subsidiaries on the Stock Exchange of Thailand - Number of subsidiaries - Amount	17 Companies 5.21 Million Baht
2. Fees for annual audit of the overseas subsidiaries' financial statements - Number of subsidiaries - Amount (equivalent)	38 Companies 4.43 Million Baht
Total audit fees of subsidiaries	9.64 Million Baht



- **Non-audit fee**

There was no any other fees paid to KPMG by the Company. The subsidiaries paid for auditing compliance with the conditions of the BOI Promotion Certificate amounting to 1.5 Million Baht to the audit firm and persons or businesses related to the auditors and the audit firm.

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.
- The meeting notices with information for each agenda item and the proxy form were sent to shareholders for consideration in advance.
- Allowed the shareholders to submit queries needing Bangchak's explanation on certain points of the agenda for the AGM ahead of the meeting since August 31, 2018.
- Facilitated and supported shareholders to attend the shareholders' meeting of either by themselves or through proxies.
- Facilitated shareholders on the meeting date:
 - The AGM was held at the Company's headquarters for travel convenience. Parking spaces are adequately reserved, and shuttle buses are arranged for the shareholders at the BTS Bangchak Station in case they are 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 and requests shareholders' representatives to witness vote-tallying together with the inspector.
- During the meeting
 - Conducted the meeting by the agenda items sent to the shareholders without adding or switching the agenda items
 - Allowed the shareholders equal rights for expressing views and posing questions on each agenda item 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 the Company's article of association.** 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's article of association 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 34 days ahead of the meeting and delivered them to the shareholders 30 days ahead of the meeting.
- Allowed the shareholders to propose additional AGM agenda items and nominate directors from August 31 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

- Places Individual Development Plans (IDPs) to raise staff knowledge and caliber.
- Performance assessment is based on the Balance Scorecard principles whereby all employees have Key Performance Indicators (KPIs) and will be compensated in accordance with their performance.
- Gives a competitive and fair compensation, depending on the overall performance of the company, 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. 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

- The Company is dedicated to improving the quality and reliability of products and services for maximum customer satisfaction. Its policy is to deliver quality goods and services which meet or exceed customers' demands under fair conditions. Bangchak brand service stations were ranked 1st (tie for 1st place) as measured by Net Promoter Score for the second consecutive year.
- The Company is also committed to consumers' safety by delivering standard-certified products and by giving accurate, adequate information about its products and services.

Suppliers/Contractors

- The Company has a suppliers' code of conduct and a policy to select and treat Suppliers/Contractors with equality and fairness. It 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. Bangchak also firmly adheres to contract provisions. Whenever any condition cannot be complied with, Bangchak urgently informs Suppliers/Contractors in advance to jointly solve problems.



- The Company has defined strict criteria for Suppliers/Contractors selection to bolster fair and equal procurement procedures without violation of human rights. It invites those 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, based on price and technical aspects.

Creditors

The Company treats its creditors fairly, responsibly, and transparently and seeks to fulfill all its contractual and financial obligations, especially guarantee conditions, capital management, and payment, collaterals, potential obligations and debts, as well as appropriate capital structure management to ensure creditors of its financial status and ability of repayment. If it cannot fulfill one or more of its obligations, it must notify creditors in advance so that a resolution can be mutually agreed.

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

- The Company conducts its business with adherence to environmental management standards, such as ISO 14000. The Company considers health and safety and the environment an integral part of the business, and has a written guideline on health, safety and the environment for the Directors, Executives, and employees to uphold.
- Environmental stewardship
 - Internal efforts by using LED light bulbs to save energy, promoting the use of recycled paper, using electronics system to improve



- work processes by reducing the use of paper, as well as providing knowledge and training for employees on occupational safety, health, and environment, as well as energy
- External efforts by arranging for E-Procurement for business partners in making offers in procurement and E-Complaint for customers in filing their complaints or making recommendations, to reduce the use of paper.
 - 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.

Consumption of resources

The Company continually raises the efficiency of resource (energy, water and chemical) consumption, suiting the size of the business and efficiently managing waste and use it to its full potential.

Sanctity of intellectual properties

Bangchak has its policy on intellectual property management 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, be they staff or stakeholders. Whistleblowing can also be applied to suspicious financial statements or a lax 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 Public Company
Limited 2098 M Tower Building, 8th Floor,
Sukhumvit Rd., Phra Khanong Tai, Phra
Khanong, Bangkok 10260 Tel: 0 2335 4566

During 2018, there was one complaint concerning the disbursement of expenses, which—after fact-finding—led to the conclusion that the employee in question erred in task performance, but had no dishonest intention.

Contact channels

The Board of Directors Tel: 0 2335 4638
Fax: 0 2016 3982
E-mail: bcpsecretary@bangchak.co.th

Company Secretary Tel: 0 2335 4050
Fax: 0 2016 3982
E-mail: pakawadee@bangchak.co.th

Investor Relations Tel: 0 2335 4583
Fax: 0 2335 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:

- Review the vision, objectives, key goals, and business strategies and applying innovations and technologies to key resource allocation to supplement sustainable value to the business so that Bangchak may achieve its objectives, by pursuing useful information, and by fully sharing views.
- 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.
- 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 May and October and a meeting of the non-management directors in April and November.
- Organized a study visit on energy business, innovation, and technology in Morocco and Portugal to apply to Bangchak's business development.
- Developed performance assessment forms for the Board: individual (self-assessment and cross-assessment), group, and committee.
- Revised and defined 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.
- Established 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 like Outlook, intercom, and annual law training.

The Board of Directors is determined to manage businesses in compliance with good governance so that Bangchak's businesses may become transparent, efficient, and responsible to 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.** The Company has fully complied with the Corporate Governance Code for listed companies 2017, except the following matters which 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, which has provided it with helpful comments from those directors.



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 Control through their supervisors through the e-HR.

- **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 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 of Directors Division 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.

Activity	Number (times)
Foreign Roadshow	6
Local Roadshow	3
Analyst Meetings	4
Opportunity Day (organized by the SET)	4
Company Visit	9
Conference Call	3
Answering Inquiries by E-mail/telephone	528 (twice a day in average)
E-newsletter	4
Factsheet	4
Site Visit	3
Shareholder and Minor Investors Get-together	3
Press Conference	2



- 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 2018, it supported and promoted activities at the community and society levels in parallel with details as follows:

Community development surrounding Bangchak's sites

Bangchak classifies communities around the refinery into four groups to properly respond to each group's needs and expectations. The most common needs and expectations are safe operations, prompt communication, in case of emergencies, emergency preparedness, and engaging the communities in social and community development activities. Bangchak has set community relations strategy and conducted social and community development activities covering eight areas which are education, safety, sports, quality of life, environment, relationship promotion, cultural conservation, economy, and public benefits. During 2018, over 236 activities were held, providing benefits to 28,974 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

Bangchak Corporation PCL constantly values an effective internal control system under the scope of The Committee of Sponsoring Organizations of the Treadway Commission (COSO). This year, it proceeded with system improvement at the recommendations of EY Corporate Services Ltd., which assigned by Bangchak to assess its internal control system before presenting its recommendations to the Board of Directors and the management for improvement.

Having reviewed 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 favorable environment provides for the system to proceed as aspired. Legal and Corporate Governance centralizes clear and measurable compliance with assorted laws and regulations; therefore, employees have guidance for their behavior. Amendment is made to work policies, the employee manual, work manuals, organization and taskforce structuring, all of which ease the management's tasks. Bangchak relentlessly values business integrity and ethics under the corporate governance policy and sustainable business development in parallel with society and the environment, apart from the oversight of compliance.

Bangchak values the issues of fraud risks and conflicts of interest, as evident in its requirement for employees to provide data on their conflicts



of interest via the e-HR system for their convenience and up-to-date data every year.

The 14th annual CG Day, held this year, saw Emeritus Professor Dr. Kasem Wattanachai deliver his concept on how to behave conscientiously and apply one's knowledge and virtue for the good of all this to stimulate employees' awareness, leading to a corporate culture of sustainable corporate governance. The 5th consecutive Suppliers' Seminar, also held this year, provided knowledge and supported Bangchak's suppliers (business partners) to join the alliance of the Thai private sector against corruption under CAC to stress ongoing commitment to combating corruption. This year Bangchak focused on promoting CAC-SME, an alliance project of the Thai private sector meant for medium and small SMEs. Today, out of the ten CAC-SME-certified companies, six are Bangchak's suppliers.

Bangchak underwent assessment and was acclaimed by third-party agencies this year. In Asia it earned the ASEAN Corporate Governance Award for Top 50 ASEAN PLCs for the second year in a row; this represented an exercise relying on the ASEAN CG Scorecard (ACGS) as a central criterion for assessing and ranking listed companies. Also, The Asset magazine presented a Platinum Award – Excellence in Environmental, Social and Governance at The Asset Corporate Awards 2018. On the domestic front, for the second year in a row, Bangchak garnered the Best Sustainability Award 2018, an upgrade from the award



for reports on corporate governance and social responsibility; it also accepted from SET an Excellent Sustainability Award, echoing its comprehensive integration of business sustainability in line with the corporate governance code.

2. Risk Assessment

Bangchak appointed the Enterprise-wide Risk Management Committee (ERMC) to define policies, strategies, and goals for enterprise risk management and develop a corporate risk management system for ongoing efficiency under ISO 31000, which embraces strategic, operational, finance, and corporate reputation risks, which could arise from safety and health; impacts on the environment, society, and communities; compliance with laws; and anti-corruption. Covering the corporate hierarchy, Bangchak's risk management processes consist of the operating level for achieving corporate goals, business groups, divisions, work processes, and the establishment of investment project risk management plans for every project in and outside Thailand. The outcomes are then relayed to all business groups and affiliated companies so that all may follow the standard process. To this end, the corporate risk management structure embraces all business groups and affiliated companies to ensure that Bangchak Group may together achieve short-term and long-term goals.

Bangchak identified and drew up risk management plans in parallel with the establishment of corporate strategic plans to align with COSO



Enterprise Risk Management – Integrated Framework (COSO ERM). It applied key risk indicators (KRIs) to its monitoring and surveillance processes concerning risk occurrence to modify and develop them into additional risk management plans, mitigate impacts on corporate goals, and pay special 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.

To enable Bangchak to handle unforeseen risks that could hurt business capability, including natural catastrophes, sabotage, political change, and other incidents, it appointed a Business Continuity Management Taskforce to develop a system, oversee preparedness, and revise plans to cope with risks and crises more effectively so that Bangchak's businesses may proceed uninterrupted and mitigate repercussions. To this end, it has introduced the ISO 22301:2012 system to the corporation, embracing Head Office, Bangchak Refinery, and Bangchak Oil Distribution Center, Central Region Business Office, and Bang Pa-in Oil Distribution Center since 2013 (for six consecutive years). This move certifies that Bangchak indeed commands a system to handle crises, manage business continuity on a par with international standards, and bolster confidence among stakeholders that it is capable of coping with crises, and of continuing to deliver products. The acquired ISO 22301:2012 certificate has been monitored each year by the standard certifier.



3. Control activities

Bangchak's control activities rely on KPIs for planning and exerting control. Duties and responsibilities are segregated for checks and balances, as are the revision and definition of authority levels and approval authority for each level for business suitability. Checks and balances and authority inspection are the mandates of dedicated units and committees, including Internal Audit, the Investment Committee, and ERMC.

If things go wrong, Bangchak's documents are in place for respective liability borne by divisions and responsible parties. To prevent asset losses and abuses, the company sets stewardship procedures. Monitoring of transactions binding Bangchak in the long term is in place to ensure compliance with agreed terms. Preventive measures avert employees' abuse of its business opportunities for self-interests. This year it also trained employees on "Procedure for Managing and Controlling Inside Information" for greater understanding and compliance with such procedures.

Bangchak's procedures ensure employees' compliance with applicable laws, articles of association, and key work processes. It also has developed an IT work system so as to ensure better internal control.

The company's strict and suitable measures are in place for engagement in transactions with the major shareholder, directors, among others, to



prevent benefit siphoning. For instance, such transactions must go through the approval process involving only those free of vested interests. Also, data for such transactions must be disclosed under SEC's rules along with disclosure about related parties or businesses under accounting standards.

Bangchak has appointed an ISMS Management Team in charge of oversight and management of information system security. It has also reviewed and amended policies and requirements for IT system security under ISO 27001. Finally, it has constantly informed employees about risks and prevention of IT threats, together with the standards for accessing the information system. Also, it has achieved ISO/IEC 27001:2013 certification, the Information Security Management System, and a letter of compliance with ISO/IEC 27032:2012 and guidelines for cybersecurity—the first Thai company to do so under the certification by Bureau Veritas Certification (Thailand).

Bangchak commands a monitoring system for the regular oversight of subsidiaries under its business strategies, policy scope, and guidelines.

4. Information and communication

A Digital Roadmap has been drawn up to accommodate work on refinery management, marketing, finance, accounting, and personnel administration so that Bangchak may leverage various data through analysis and for higher-efficiency operation. Innovative technologies are applied to oil refining processes, including Technology IoT (Internet of



Things), sensors installed around the refinery, execution of Big Data Analytics, data analysis for marketing planning, development of improved services for customers, and improvement of work process efficiency. Also, Bangchak investigated emerging technologies to improve work processes so that they may be convenient and concise (that is, more automated), including robotics, mobile technology, artificial intelligence, Blockchain, virtual reality, and augmented reality.

Bangchak employs several internal communication channels and processes to present synopses, depending on the contents. The key is swift and accurate information regularly passed on through diverse channels, including the Intranet, e-mails, intercom, and digital bulletin boards. In its external communication, online communication is common, and its website and Facebook are readily accessible; one can search data with mobile devices for swift and efficient application.

Bangchak has set up complaint channels as well as a whistleblowing system for employees and stakeholders, who can use phone numbers or e-mails; they are to be duly protected and enter the fact-finding process for eventual correction.

5. Monitoring and assessment

Bangchak commands a monitoring system for regular outcome comparison against targets. If incidents affect performance, steps will be taken to modify strategic plans for suitability, in line with assessment outcomes. As a result, performance will align with goals. Internal Audit, reporting to the Audit Committee, audits business proceedings under the



internal control system. Finally, the company has set up an Internal Audit Division under Corporate Sustainability, whose responsibility is to promote internal control system improvement.

**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., currently, he works as Executive Vice President of Internal Audit.

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. Connected transactions with subsidiaries, jointly-controlled businesses, associated companies and related companies during 2017 and 2018 consisted of the following:

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

Related company	2017 THB (million)	2018 THB (million)	Relationship for the year ended 31 December 2018	
			Shareholding	Management
<u>Subsidiaries</u>				
Bangchak Green Net Co., Ltd.	31,443.56	34,501.22	- Bangchak holds 49% of the shares	- Bangchak delegates its representatives as directors
Bangchak Biofuel Co., Ltd.	0.03	0.04	- BBGI (Bangchak's subsidiary) holds 70% of the shares	- Bangchak delegates its representatives as directors
BCP Trading Pte. Ltd.	2,715.36	7,752.79	- Bangchak holds 100% of the shares	- Bangchak delegates its representatives as directors
Bangchak Retail Co., Ltd.	-	9.21	- Bangchak holds 100% of the shares	- Bangchak delegates its representatives as directors
Bangchak Bioethanol (Chachoengsao) Co., Ltd.	8.64	9.04	- BBGI (Bangchak's subsidiary) holds 85% of the shares	- Bangchak delegates its representatives as directors
<u>Associated companies</u>				
Ubon Bio Ethanol Plc.	12.64	9.60	- BBGI (Bangchak's subsidiary) holds 21.28% of the shares	- Bangchak delegates its representatives as directors
Ubon Agricultural Energy Co., Ltd.	14.98	1.98	- Ubon Bio Ethanol Plc. (associated company) holds 100% of the shares	- Bangchak delegates its representatives as directors



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

Related company	2017	2018	Relationship for the year ended 31 December 2018	
	THB (million)	THB (million)	Shareholding	Management
<u>Subsidiaries</u>				
Bangchak Green Net Co., Ltd	0.16	0.18	- BCP holds 49% of the shares	- Bangchak delegates its representatives as directors
Bangchak Biofuel Co., Ltd.	4,533.86	4,019.00	- BBGI (Bangchak's subsidiary) holds 70% of the shares	- Bangchak delegates its representatives as directors
BCP Trading Pte. Ltd.	7,434.83	22,903.10	- Bangchak holds 100% of the shares	- Bangchak delegates its representatives as directors
Bangchak Bioethanol (Chachoengsao) Co., Ltd.	1,057.36	1,062.37	- BBGI (Bangchak's subsidiary) holds 85% of the shares	- Bangchak delegates its representatives as directors
KSL Green Innovation Plc.	-	906.42	- BBGI (Bangchak's subsidiary) holds 100% of the shares	- Bangchak delegates its representatives as directors
<u>Associated company</u>				
Ubon Bio Ethanol Plc.	1,487.59	1,368.04	- BBGI (Bangchak's subsidiary) holds 21.28% of the shares	- Bangchak delegates its representatives as directors
<u>Joint venture</u>				
Bongkot Marine Services Co., Ltd.	261.30	490.00	- Bangchak holds 30% of the shares	- Bangchak delegates its representatives as directors
<u>Related business</u>				
Fuel Pipeline Transportation Co., Ltd	441.69	443.28	- Bangchak holds 4.95% of the shares	- Bangchak delegates its representatives as directors



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

Related company	2017	2018	Relationship for the year ended 31 December 2018	
	THB (million)	THB (million)	Shareholding	Management
<u>Subsidiaries</u>				
Bangchak Green Net Co., Ltd	68.43	39.95	- Bangchak holds 49% of the shares	- Bangchak delegates its representatives as directors
Bangchak Biofuel Co., Ltd.	115.53	1.99	- BBGI (Bangchak's subsidiary) holds 70% of the shares	- Bangchak delegates its representatives as directors
Nido Petroleum Pty. Ltd.	143.89	126.40	- BCP Energy International Pte. Ltd. (Bangchak's subsidiary) holds 100% of the shares	- Bangchak delegates its representatives as directors
BBGI Plc.	-	48.47	- Bangchak holds 60% of the shares	- Bangchak delegates its representatives as directors
BCPG Plc.	884.97	936.38	- Bangchak holds 70.11% of the shares	- Bangchak delegates its representatives as directors
Bangchak Bioethanol (Chachoengsao) Co., Ltd.	9.61	0.63	- BBGI (Bangchak's subsidiary) holds 85% of the shares	- Bangchak delegates its representatives as directors
Bangchak Retail Co., Ltd.	12.81	22.89	- Bangchak holds 100% of the shares	- Bangchak delegates its representatives as directors
BCP Innovation Pte. Ltd.	-	2.62	- Bangchak holds 100% of the shares	- Bangchak delegates its representatives as directors
KSL Green Innovation Plc.	-	0.50	- BBGI (Bangchak's subsidiary) holds 100% of the shares	- Bangchak delegates its representatives as directors
BCPR Pte, Ltd.	-	2.88	- BCPR (Bangchak's subsidiary) holds 100% of the shares	- Bangchak delegates its representatives as directors



Related company	2017 THB (million)	2018 THB (million)	Relationship for the year ended 31 December 2018	
			Shareholding	Management
<u>Associated company</u>				
Ubon Bio Ethanol Plc.	21.27	-	- BBGI (Bangchak's subsidiary) holds 21.28% of the shares	- Bangchak delegates its representatives as directors
<u>Joint venture</u>				
Bongkot Marine Service Co., Ltd.	-	24.00	- BCP holds 30% of the shares	- Bangchak delegates its representatives as directors
<u>Related business</u>				
Fuel Pipeline Transportation Co., Ltd	5.80	4.90	- Bangchak holds 4.95% of the shares	- Bangchak delegates its representatives as directors

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

Related company	2017 THB (million)	2018 THB (million)	Relationship for the year ended 31 December 2018	
			Shareholding	Management
<u>Subsidiaries</u>				
Bangchak Green Net Co., Ltd.	26.83	23.67	- Bangchak holds 49% of the shares	- Bangchak delegates its representatives as directors
BCPG Plc.	0.29	0.25	- Bangchak holds 70.11% of the shares	- Bangchak delegates its representatives as directors
Bangchak Retail Co., Ltd.	8.58	4.62	- Bangchak holds 100% of the shares	- Bangchak delegates its representatives as directors



Related company	2017	2018	Relationship for the year ended 31 December 2018	
	THB (million)	THB (million)	Shareholding	Management
Bangchak Bioethanol (Chachoengsao) Co., Ltd.	-	0.11	- BBGI (Bangchak's subsidiary) holds 85% of the shares	- Bangchak delegates its representatives as directors
Nido Petroleum Pty. Ltd.	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	8.05	- Bangchak holds 100% of the shares	- Bangchak delegates its representatives as directors

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

1.5.1 Trade debtors

Related company	2017	2018	Relationship for the year ended 31 December 2018	
	THB (million)	THB (million)	Shareholding	Management
<u>Subsidiaries</u>				
Bangchak Green Net Co., Ltd	1,142.19	1,080.28	- Bangchak holds 49% of the shares	- Bangchak delegates its representatives as directors
Bangchak Retail Co., Ltd	1.71	3.20	- Bangchak holds 100% of the shares	- Bangchak delegates its representatives as directors
BCP Trading Pte. Ltd.	558.37	1,133.77	- Bangchak holds 100% of the shares	- Bangchak delegates its representatives as directors
Bangchak Bioethanol (Chachoengsao) Co., Ltd	1.04	0.71	- BBGI (Bangchak's subsidiary) holds 85% of the shares	- Bangchak delegates its representatives as directors



Related company	2017	2018	Relationship for the year ended 31 December 2018	
	THB (million)	THB (million)	Shareholding	Management
<u>Associated companies</u>				
Ubon Bio Ethanol Plc.	1.13	1.57	- BBGI (Bangchak's subsidiary) holds 21.28% of the shares	- Bangchak delegates its representatives as directors
Ubon Agricultural Energy Co., Ltd.	0.90	-	- Ubon Bio Ethanol Plc. (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

1.5.2 Debtors and loans to related businesses

1.5.2.1 Loans

Related company	2017	2018	Relationship for the year ended 31 December 2018	
	THB (million)	THB (million)	Shareholding	Management
<u>Subsidiaries</u>				
Nido Petroleum Pty. Ltd.	2,113.45	1,291.39	- 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	410.00	- Bangchak holds 100% of the shares	- Bangchak delegates its representatives as directors
BCP Innovation Pte. Ltd.	-	197.75	- Bangchak holds 100% of the shares	- Bangchak delegates its representatives as directors



Related company	2017 THB (million)	2018 THB (million)	Relationship for the year ended 31 December 2018	
			Shareholding	Management
BCPR Pte. Ltd.	-	3,228.48	- BCPR (Bangchak's subsidiary) holds 100% of the shares	- Bangchak delegates its representatives as directors
Related business Fuel Pipeline Transportation Co., Ltd	13.91	10.51	- Bangchak holds 4.95% of the shares	- Bangchak delegates its representatives as directors

1.5.2.2 Other debtors

Related company	2017 THB (million)	2018 THB (million)	Relationship for the year ended 31 December 2018	
			Shareholding	Management
Subsidiaries				
Bangchak Biofuel Co., Ltd.	0.43	0.74	- 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
Nido Petroleum Pty. Ltd.	8.05	10.42	- BCP Energy International Pte. Ltd. (Bangchak's subsidiary) holds 100% of the shares	- Bangchak delegates its representatives as directors
Bangchak Retail Co., Ltd	2.46	4.62	- Bangchak holds 100% of the shares	- Bangchak delegates its representatives as directors
BCPG Plc.	2.35	3.06	- Bangchak holds 70.11% of the shares	- Bangchak delegates its representatives as directors
Bangchak Bioethanol (Chachoengsao) Co., Ltd	1.48	0.01	- BBGI (Bangchak's subsidiary) holds 85% of the shares	- Bangchak delegates its representatives as directors



Related company	2017 THB (million)	2018 THB (million)	Relationship for the year ended 31 December 2018	
			Shareholding	Management
BBGI Plc.	-	5.01	- Bangchak holds 60% of the shares	- Bangchak delegates its representatives as directors
BCP Innovation Pte. Ltd.	-	2.60	- Bangchak holds 100% of the shares	- Bangchak delegates its representatives as directors
BCV Bio Based Co., Ltd.	-	0.01	- Bangchak holds 100% of the shares	- Bangchak delegates its representatives as directors
BCV Energy Co., Ltd.	-	0.01	- Bangchak holds 100% of the shares	- Bangchak delegates its representatives as directors
BCV Innovation Co., Ltd.	-	0.01	- Bangchak holds 100% of the shares	- Bangchak delegates its representatives as directors
BCV Partnership Co., Ltd.	-	0.01	- Bangchak holds 100% of the shares	- Bangchak delegates its representatives as directors

1.6 Creditors of related businesses

1.6.1 Trader creditors

Related company	2017 THB (million)	2018 THB (million)	Relationship for the year ended 31 December 2018	
			Shareholding	Management
<u>Subsidiaries</u>				
Bangchak Green Net Co., Ltd	0.02	0.02	- Bangchak holds 49% of the shares	- Bangchak delegates its representatives as directors
Bangchak Biofuel Co., Ltd.	158.47	152.06	- BBGI (Bangchak's subsidiary) holds 70% of the shares	- Bangchak delegates its representatives as directors



Related company	2017	2018	Relationship for the year ended 31 December 2018	
	THB (million)	THB (million)	Shareholding	Management
BCP Trading Pte. Ltd.	384.74	503.24	- Bangchak holds 100% of the shares	- Bangchak delegates its representatives as directors
Bangchak Bioethanol (Chachoengsao) Co., Ltd	102.22	102.51	- BBGI (Bangchak's subsidiary) holds 85% of the shares	- Bangchak delegates its representatives as directors
KSL Green Innovation Plc.	-	71.07	- BBGI (Bangchak's subsidiary) holds 100% of the shares	- Bangchak delegates its representatives as directors
<u>Associated company</u>				
Ubon Bio Ethanol Plc.	128.98	109.93	- BBGI (Bangchak's subsidiary) holds 21.28% of the shares	- Bangchak delegates its representatives as directors

1.6.2 Other creditors

Related company	2017	2018	Relationship for the year ended 31 December 2018	
	THB (million)	THB (million)	Shareholding	Management
<u>Subsidiaries</u>				
Bangchak Green Net Co., Ltd	3.92	3.33	- Bangchak holds 49% of the shares	- Bangchak delegates its representatives as directors
BCPG Plc.	0.02	0.04	- Bangchak holds 70.11% of the shares	- Bangchak delegates its representatives as directors
Bangchak Retail Co., Ltd	7.93	3.67	- Bangchak holds 100% of the shares	- Bangchak delegates its representatives as directors
BCP Trading Pte. Ltd.	1.01	1.83	- Bangchak holds 100% of the shares	- Bangchak delegates its representatives as directors



Related company	2017 THB (million)	2018 THB (million)	Relationship for the year ended 31 December 2018	
			Shareholding	Management
<u>Joint venture</u> Bongkot Marine Services Co., Ltd.	12.42	12.59	- Bangchak holds 30% of the shares	- Bangchak delegates its representatives as directors
<u>Related business</u> Fuel Pipeline Transportation Co., Ltd.	43.38	43.66	- Bangchak holds 4.95% of the shares	- Bangchak delegates its representatives as directors

1.7 Other non-current assets

Related company	2017 THB (million)	2018 THB (million)	Relationship for the year ended 31 December 2018	
			Shareholding	Management
<u>Subsidiary</u> Nido Petroleum Pty. Ltd.	312.70	321.65	- BCP Energy International Pte. Ltd. (Bangchak's subsidiary) holds 100% of the shares	- Bangchak delegates its representatives as directors
BCPR Pte, Ltd.	-	2.86	- BCPR (Bangchak's subsidiary) holds 100% of the shares	- Bangchak delegates its representatives as directors



1.8 Other current liabilities: These items are Bangchak's revenue received in advance for land lease and demanded guarantee payment for building lease.

Related company	2017 THB (million)	2018 THB (million)	Relationship for the year ended 31 December 2018	
			Shareholding	Management
Subsidiaries				
BCPG Plc.	6.00	6.00	- Bangchak holds 70.11% of the shares	- Bangchak delegates its representatives as directors

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

Related company	2017 THB (million)	2018 THB (million)	Relationship for the year ended 31 December 2018	
			Shareholding	Management
Related business				
Fuel Pipeline Transportation Co., Ltd	2.50	2.02	- 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 normal business terms, based on market prices, and conformed to details stated in the operating agreement.



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 normal business terms, based on market prices, and conformed to details stated in the operating agreement.

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. Service fees among the two followed normal business terms, based on market prices, and conformed to 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. Service fees among the two followed normal business terms, based on market prices, and conformed to details stated in the operating agreement.

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. Service fees among the two followed normal business terms, based on market prices, and conformed to details stated in the operating agreement.



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. Service fees among the two followed normal business terms, based on market prices, and conformed to details stated in the operating agreement.

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. Service fees among the two followed normal business terms, based on market prices, and conformed to details stated in the operating agreement.

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. Service fees among the two followed normal business terms, based on market prices, and conformed to details stated in the operating agreement.

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 normal business terms 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 normal business terms 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 normal business terms and were based on market prices.

12. Connected transactions with Nido Petroleum Pty. Ltd.

Nido Petroleum Pty. Ltd. (an indirect subsidiary in Australia) was formed to run the upstream petroleum business. These connected transactions followed normal business terms 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. Service fees among the two followed normal business terms, based on market prices, and conformed to details stated in the operating agreement.

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

A subsidiary company, Bangchak Retail is engaged in franchise businesses and intellectual property acquisition. Service fees among the two followed normal business terms, based on market prices, and conformed to details stated in the operating agreement.

**15. Connected transactions with BBGI Plc.**

A subsidiary company, BBGI Plc. was established to engage in bio-based product manufacturing. Service fees among the two followed normal business terms, based on market prices, and conformed to details stated in the operating agreement.

16. 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. Purchases and service fees followed normal business terms, based on market prices, and conformed to details stated in the operating agreement.

17. Connected transactions with KSL Green Innovation) Plc.

An indirect subsidiary company through BBGI, engages in ethanol production primarily from molasses (a byproduct of the sugar process). Purchases followed normal business terms and were based on market prices.

18. Connected transactions with BCPR Pte. Ltd.

A subsidiary company in Singapore, BCPR Pte. Ltd. was formed to undertake petroleum exploration and production. These connected transactions followed normal business terms and were based on market prices.

19. Connected transactions with BCV Bio Based Co., Ltd.

A subsidiary company, BCV Bio Based Co., Ltd. was established to engage in a startup business in Thailand. These connected transactions followed normal business terms and were based on market prices.



20. Connected transactions with BCV Energy Co., Ltd.

A subsidiary company, BCV Energy Co., Ltd. was established to engage in a startup business in Thailand. These connected transactions followed normal business terms and were based on market prices.

21. Connected transactions with BCV Innovation Co., Ltd.

A subsidiary company, BCV Innovation Co., Ltd. was established to engage in a startup business in Thailand. These connected transactions followed normal business terms and were based on market prices.

22. Connected transactions with BCV Partnership Co., Ltd.

A subsidiary company, BCV Partnership Co., Ltd. was established to engage in a startup business in Thailand. These connected transactions followed normal business terms and were based on market prices.

23. Connected transactions with Ubon Bio Ethanol Plc.

An indirect subsidiary company through BBGI, with 21.28% equity, engages in ethanol production from fresh cassava and cassava chips for gasohol production for domestic sale and export to China for the most part. Purchases and service fees followed normal business terms, based on market prices, and conform to details stated in the operating agreement.

24. 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 normal business terms, based on market prices, and conform to details stated in the operating agreement.

**25. 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 Plc., which holds its shares, followed normal business terms and were based on market prices.

26. 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, followed normal business terms and were based on 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), 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. The connected transaction shall be dealt on a fair and arm's length basis. However, in such cooperation, Bangchak takes into consideration its best interests. The Audit Committee and the Internal Audit 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
2018	Mr. Waiyawat Kosamarnchaiyakij Certified Public Accountants, Registration Number 6333	KPMG Phoomchai Audit Ltd
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

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 2018, 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 2018 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 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.



Fair value assessment of net assets acquired from an acquisition of investment in associate in Indonesia	
Refer to Notes 3 (a) and 4 (a) to the financial statements.	
The key audit matter	How the matter was addressed in the audit
<p>During 2018, the Group has completed the fair value assessment of net assets acquired from an acquisition of investment in associate in Indonesia which operates geothermal power plant during 2017.</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"> - Inquired management and understood on the procedures on identification of fair value on net assets acquired, which was prepared by the management. - Read the share sale and purchase agreement, evaluated the appropriateness of the identification of the net assets acquired at the date of acquisition. - Evaluated the independence and competency of independent appraiser. - Involved KPMG valuation specialist to evaluate valuation methodology and financial parameters applied to the discount rate of intangible assets - Evaluated significant assumptions underpinning the valuations reference to internal and external information and mathematical accuracy. - Considered the adequacy of disclosures in accordance with Thai Financial Reporting Standard.

Acquisition of investment in associate	
Refer to Notes 3 (a), 4 (b) and 12 to the financial statements.	
The key audit matter	How the matter was addressed in the audit
<p>In November 2018, the Group has completed the acquisition of petroleum exploration and production business in Norway. The management applied significant judgement to classify an investment as an investment in associate and has estimated the fair value of net assets acquired including</p>	<p>The Auditor's procedures included the following:</p> <ul style="list-style-type: none"> - Assessed the factors determining control including the legal documents associated with investments to determine the key terms, including but not limited to rights of the investors, terms of shareholders' agreements,



<p>consideration transferred with the differences, which recognized as goodwill included in the investment in associate as at 31 December 2018.</p> <p>As a result, the effect of classification of investment, either on acquisition or in subsequent reporting periods, can have a material effect to financial statements. This matter involves significant judgement and complexities involved in determining the fair value of net assets acquired, the Auditor considered as the key audit matter.</p>	<p>dispute resolution provisions, termination provisions, governance structures and profit-sharing arrangements.</p> <ul style="list-style-type: none">- Understood and assessed the classification of the investment by considering shareholding structure, power of control and key relevant activities.- Inquired management and understood on the procedures on identification of fair value on net assets acquired which was prepared by the management.- Read the share sale and purchase agreement and significant related agreements, evaluated the appropriateness of the identification of net assets acquired at the date of acquisition.- 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 valuations reference to internal and external information and mathematical accuracy.- Considered the adequacy of disclosures in accordance with Thai Financial Reporting Standard.
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Impairment testing of investment in associates, investment in subsidiaries, oil exploration & production assets and goodwill	
Refer to Notes 3 (b), 11, 12, 15 and 17 to the financial statements.	
The key audit matter	How the matter was addressed in the audit
<p>The Group have investment in many countries and there are risks from various external factors such as the fluctuation in economies, politics and laws. There is a risk that the operating results and the investments might be significantly less than the initial forecast and budget and might result in assets carrying value being higher than the recoverable amounts, which might represent losses from impairment.</p> <p>Due to the materiality of the transactions, the management's significant judgment and complexities involved in estimating a recoverable amount of investment in associates, investment in subsidiaries, oil exploration & production assets and goodwill from discounted cash flow method, the Auditor considered as the key audit matter.</p>	<p>The Auditor's procedures included the following:</p> <ul style="list-style-type: none"> - Understood 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. - Evaluated the appropriateness of valuation methodology and financial parameters applied to the discount rate. - Considered the adequacy of disclosures in accordance with Thai Financial Reporting Standard.

Valuation of inventories	
Refer to Notes 3(f) 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"> - Evaluated the appropriateness of inventories valuation by management. - Verified the appropriateness of the net realizable value calculation.



	<ul style="list-style-type: none"> - 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.
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The Auditor draw attention to note 4 (a) to the financial statements. The finalization of the valuation of net assets of an entity in Indonesia which the Group's acquired on 26 July 2017 was completed in July 2018. The corresponding figures presented are based on the audited financial statements as at and of the year ended 31 December 2017 after making the adjustments described in notes 4 (a). The Auditor's opinion 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 remains 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, 2018

Statement of financial position

(Unit: Baht Million)

	2018		2017		2016	
	Amount	%	Amount	%	Amount	%
Current assets						
Cash and cash equivalents	11,551	9.8	10,106	8.9	19,287	18.9
Current investments	262	0.2	220	0.2	1,719	1.7
Trade accounts receivable	6,969	5.9	7,511	6.6	6,022	5.9
Other receivables	1,643	1.4	1,340	1.2	1,191	1.2
Inventories	15,135	12.9	15,720	13.8	14,560	14.3
Current tax assets	257	0.2	52	0.0	-	-
Oil fuel fund subsidies receivable	1,781	1.5	1,341	1.2	894	0.9
Other current assets	-	-	-	-	477	0.5
Total current assets	37,596	32.0	36,291	31.9	44,150	43.4
Non-current assets						
Investments in associate and joint ventures	18,048	15.4	14,158	12.4	840	0.8
Long-term loans to related parties	199	0.2	-	-	-	-
Other long-term investments	1,815	1.5	4,347	3.8	739	0.7
Investment properties	127	0.1	343	0.3	360	0.4
Property, plant and equipment	48,877	41.6	48,049	42.2	46,462	45.6
Goodwills	1,602	1.4	1,602	1.4	-	-
Leasehold rights	2,901	2.5	2,311	2.0	1,939	1.9
Intangible assets	3,658	3.1	3,731	3.3	5,013	4.9
Deferred tax assets	827	0.7	1,000	0.9	547	0.5
Other non-current assets	1,718	1.5	2,035	1.8	1,734	1.7
Total non-current assets	79,773	68.0	77,578	68.1	57,632	56.6
Total assets	117,369	100.0	113,869	100.0	101,783	100.0
Liabilities						
Current liabilities						
Short-term loan from financial institutions	5,004	4.3	4,046	3.6	7,444	7.3
Trade accounts payable	6,680	5.7	10,016	8.8	8,766	8.6
Other payables	3,157	2.7	3,018	2.7	3,209	3.2
Current portion of long-term loans from financial institutions	2,216	1.9	2,218	1.9	1,697	1.7
Current portion of debenture	4,000	3.4	-	-	2,000	2.0
Excise tax and oil fuel fund payable	3,387	2.9	3,037	2.7	1,069	1.1
Income tax payable	121	0.1	690	0.6	493	0.5
Short-term provisions	-	-	-	-	502	0.5
Other current liabilities	939	0.8	844	0.7	896	0.9
Total current liabilities	25,504	21.7	23,869	21.0	26,076	25.6
Non-current liabilities						
Long-term loans from financial institutions	18,264	15.6	20,649	18.1	14,458	14.2
Debentures	20,980	17.9	13,990	12.3	13,988	13.7
Deferred tax liabilities	467	0.4	590	0.5	601	0.6
Liabilities on long-term lease	38	0.0	34	0.0	38	0.0
Employee benefit obligations	2,054	1.7	1,949	1.7	1,770	1.7
Provision for the decommissioning cost	355	0.3	811	0.7	870	0.9
Other non-current liabilities	170	0.1	86	0.1	75	0.1
Total non-current liabilities	42,327	36.1	38,109	33.5	31,798	31.2
Total liabilities	67,831	57.8	61,979	54.4	57,874	56.9
Equity						
Issued and paid-up share capital	1,377	1.2	1,377	1.2	1,377	1.4
Additional paid-in capital	13,888	11.8	13,858	12.2	12,960	12.7
Retained earnings	27,607	23.5	27,814	24.4	25,085	24.6
Warrants	8	0.0	19	0.0	-	-
Other components of equity	(165)	(0.1)	2,411	2.1	121	0.1
Non-controlling interests	6,823	5.8	6,410	5.6	4,366	4.3
Non-controlling interests	49,538	42.2	51,890	45.6	43,909	43.1
Total liabilities and equity	117,369	100.0	113,869	100.0	101,783	100.0



Statement of income

(Unit: Baht Million)

Statement of Income	2018		2017		2016	
	Amount	%	Amount	%	Amount	%
Revenue from sale of goods and rendering of services	192,025	100.0	172,138	100.0	144,705	100.0
Cost of sale of goods and rendering of services	(180,594)	(94.0)	(158,596)	(92.1)	(132,809)	(91.8)
Gross Profit	11,431	6.0	13,543	7.9	11,896	8.2
Investment income	55	0.0	156	0.1	191	0.1
Other income	1,260	0.7	1,085	0.6	337	0.2
Selling expenses	(4,360)	(2.3)	(4,026)	(2.3)	(3,786)	(2.6)
Administrative expenses	(3,015)	(1.6)	(3,138)	(1.8)	(2,350)	(1.6)
Exploration and evaluation expense	(45)	(0.0)	(48)	(0.0)	(60)	(0.0)
Gain (loss) from crude and product oil price hedging contract	(442)	(0.2)	366	0.2	107	0.07
Gain (loss) from foreign currencies forward contract	162	0.1	(225)	(0.1)	39	0.03
Gain on foreign exchange	415	0.2	889	0.5	237	0.2
Reversal of allowance for loss (loss) from impairment of assets	(441)	(0.2)	(1,518)	(0.9)	37	0.0
Share of profit of associate and joint ventures	254	0.1	573	0.3	21	0.0
Gain on bargain purchase	-	0.0	-	0.0	227	0.2
Profit before finance costs and income tax expense	5,273	2.7	7,656	4.4	6,902	4.8
Finance costs	(1,545)	(0.8)	(1,452)	(0.8)	(1,484)	(1.0)
Profit before income tax expense	3,728	1.9	6,204	3.6	5,418	3.7
Income tax expense	(493)	(0.3)	(41)	(0.02)	(689)	(0.5)
Profit for the year	3,235	1.7	6,163	3.6	4,729	3.3
Profit (loss) attributable to:						
Owners of the Company	2,463	1.3	5,778	3.4	4,773	3.3
Non-controlling interests	772	0.4	627	0.4	(44)	0.0
Profit for the year	3,235	1.7	6,405	3.7	4,729	3.3
Earnings per share						
Basic earnings per share	1.79		4.07		3.47	



Statement of cash flows

(Unit: Baht Million)

	2018	2017	2016
Cash flows from operating activities			
Profit for the year	3,235	6,163	4,729
<i>Adjustments for</i>			
Depreciation	4,457	4,780	4,461
Amortisation	445	355	273
(Reversal of) allowance for bad and doubtful debts expense	0.01	(0.36)	(2.09)
Unrealised loss on foreign exchange	38	308	90
Reversal of allowance for loss on decline in value of inventories	696	8	(98)
(Reversal of) allowance for loss from impairment of assets	441	1,518	(37)
(Gain) loss on disposal of property, plant and equipment	(761)	(37)	(6)
Gain on disposal of other investment	-	35	(29)
Gain on sale of investment in subsidiaries	(78)	-	-
Interest income and dividend income	(55)	(156)	(191)
Gain on bargain purchase	-	-	(227)
Provision for employee benefit	189	192	145
Deferred revenue	(7)	(7)	(5)
Provision for customer loyalty programmes	49	48	32
Share of profit of associate and joint ventures, net of income tax expense	(254)	(573)	(21)
Finance costs	1,545	1,452	1,484
Income tax expense	493	41	689
Share-based payment transactions	7	40	-
Reversal of provisions	-	(137)	-
	10,440	14,031	11,286
Changes in operating assets and liabilities			
Trade accounts receivable	514	(1,434)	(797)
Other receivables	(921)	(555)	(81)
Inventories	(400)	(753)	(515)
Other non-current assets	(394)	(387)	(373)
Trade accounts payable	(2,965)	1,357	3,775
Other payables	178	(11)	87
Other current liabilities	400	1,961	354
Employee benefit obligations	(48)	(84)	(31)
Other non-current liabilities	274	25	(0)
Cash generated from operating activities	7,080	14,150	13,704
Income tax paid	(1,130)	(299)	(416)
Net cash from operating activities	5,950	13,851	13,288
Cash flows from investing activities			
Interest received	47	136	209
(Increase) decrease in current investments	(42)	1,500	2,799
(Increase) decrease in long-term investments	(100)	(1,140)	(168)
Net cash outflow for investment in joint ventures	-	(29)	(44)
Net cash outflow on acquisition of subsidiary	(3,822)	(13,347)	(963)
Dividend received	67	65	3
Proceeds from sale of investments	731	-	-
Cash inflow from disposal of other investment	3	78	203
Purchase of property, plant and equipment	(7,705)	(5,522)	(9,370)
Sale of property, plant and equipment	3,031	499	120
Loans to related parties	(199)	-	-
Increase in leasehold right	(805)	(564)	(451)
Proceeds from leasehold right	-	5	-
Purchase of intangible assets	(304)	(641)	(492)
Net cash from (used in) investing activities	(9,100)	(18,960)	(8,154)
Cash flows from financing activities			
Financial cost paid	(1,618)	(1,305)	(1,641)
Increase in long term loans from financial institutions	982	(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	1,629	8,868	9,611
Repayment of long - term loans	(4,231)	(2,069)	(12,032)
Proceeds from issuance of debentures	11,000	-	-
Dividend paid	(3,091)	(3,311)	(2,754)
Proceeds from exercise of share options	54	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	4,725	(3,761)	6,391
Net increase (decrease) in cash and cash equivalents	1,575	(8,870)	11,524
Cash and cash equivalents as at 1 January	10,106	19,287	7,872
Effect of exchange rate changes on balances held in foreign currencies	(131)	(310)	(110)
Cash and cash equivalents as at 31 December	11,551	10,106	19,287



(3) Financial Ratios

Management Discussion and Analysis on Financial Ratios of 2018 and 2017^{1/}

Statement of income / Return Ratios		2018	2017	2016
Revenue from sale of goods and rendering of services	Million Baht	192,025	172,138	144,705
Net profit	Million Baht	3,235	6,163	4,729
Net earnings per share ^{1/}	Baht/share	1.79	4.07	3.47
Net profit / sales and service revenue	%	1.68	3.58	3.27
Rate of return on shareholders'equity ^{2/}	%	5.57	13.57	12.73
Rate of return on assets ^{3/}	%	4.56	7.32	7.51

Statement of financial position / Financial Ratios		2018	2017	2016
Total assets	Million Baht	117,369	113,869	101,783
Total liabilities	Million Baht	67,831	61,979	57,874
Shareholders'equity	Million Baht	49,538	51,890	43,909
Current Ratio	times	1.47	1.52	1.69
DSCR (Principle Interest)	times	1.77	2.47	1.80
Debt with interest payable to equity	times	0.94	0.79	0.86
Book value per share ^{4/}	Baht/share	32.76	33.15	30.93

Note: ^{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 2018.

Unit: THB Million	Q4/2017 (Restate)	Q3/2018	Q4/2018	YoY	QoQ	2017 (Restate)	2018	YoY
Total Revenue	46,306	53,461	48,781	5%	-9%	172,138	192,025	12%
Accounting EBITDA	3,616	4,161	(317)	-109%	-108%	13,421	10,201	-24%
<i>Refinery and Trading Business Group ^{1/}</i>	2,256	2,140	(1,419)	-163%	-166%	7,596	3,928	-48%
<i>Marketing Business Group ^{2/}</i>	302	468	465	54%	-1%	2,301	2,177	-5%
<i>Power Plant Business Group ^{3/}</i>	934	1,542	570	-38%	-63%	2,846	3,569	25%
<i>Bio-Based Product Business Group ^{4/}</i>	132	151	66	-50%	-56%	529	692	31%
<i>Natural Resource Business Group ^{5/}</i>	16	(81)	94	470%	216%	286	117	-59%
<i>Others ^{6/}</i>	(24)	(61)	(92)			(137)	(282)	
Profit attributable to owners of the Company	1,471	1,856	(1,546)	-205%	-183%	5,608	2,463	-56%
Basic earnings per share (Baht)	1.07	1.35	(1.12)			4.07	1.79	

Note: 1/ EBITDA from Refinery Business of the Company, BCP Trading Pte. Ltd. and share of profit associated companies

2/ EBITDA from Marketing Business of the Company, Bangchak Green Net Co.,Ltd., Bangchak Retail Co., Ltd., and share of profit associated companies

3/ EBITDA from Power Plant Business of BCPG Plc., its subsidiaries, and share of profit from associated companies

4/ EBITDA from BBGI Plc., its subsidiaries, and share of profit from associated companies

5/ EBITDA from Natural Resources business of Nido Petroleum Pty. Ltd., BCP Energy International Pte. Ltd. and BCP Innovation Pte. Ltd., and share of profit from associated companies

6/ Others items and elimination

For 2018 performance, Bangchak Corporation Plc. (the company) and its subsidiaries recorded revenue from sales and rendering of services at THB 192,025 million (+12%), and a net profit of THB 3,235 million (-48% YoY), **net profit attributable to the owners of the company of THB 2,463 million**, or **earning per shares of THB 1.79**.

For Q4/2018 performance, the company and its subsidiaries recorded revenue from sales and rendering of services at THB 48,781 million (+5% YoY, -9% QoQ), and a net loss of THB 1,475 million, (-187% YoY, -167% QoQ) **net loss attributable to the owners of the company of THB 1,546 million**, or **loss per shares of THB 1.12**. The performance for each business unit are as follow:



The company groups' 2018 performance declined significantly compared to the previous year, as the **Refinery and oil trading business group** was affected by the year round global oil price fluctuation, especially in the last quarter which oil price plunged drastically. Moreover, the refinery recorded lower crude run due to its 45 days turnaround maintenance (TAM) (from 30 April – 13 June 2018). However, average crude run for the year was in accordance with the target at 102.39 KBD (85% utilization rate), and achieved its all-time high monthly average production of 123 KBD in March. Also, after the completion of the TAM, Bangchak refinery was able to consistently maintain high levels of production throughout the year. Total GRM decreased 32%, from the reduced Market GRM, following the decline in refinery production volume due to the TAM, as well as a decrease in average Gasoline/Dubai crack spread and Fuel oil/Dubai crack spread, and the rise in crude cost following the widened average DTD/DB spread. Further, crude oil price significantly drop during the year end, led to the refinery business to record Inventory Loss of THB 1,489 million (included lower of cost or market (LCM) of THB 689 million) in 2018. However, the oil trading business by BCP Trading recorded a better performance from the higher transaction volume.

Marketing business recorded a slightly lower total marketing sales volume compared to 2017, mainly reduced from the industrial market due to intensified competition, and the refinery's TAM which resulted in the lower volume of finished oil produced. On the other hand, retail market which is the company's main distribution channel recorded sales volume growth. There were an expansion of service station locations, the number of service station as of the end of 2018 was 1,175 locations, with 74 new service stations. The company has also rebranded BCP's loyalty card, "Bangchak Green Miles" that allows members to collect points from purchase of any product. Developments were also made to the member card system in the form of a Digitized Loyalty Program coinciding with the new Bangchak Mobile Application, and has expanded the varieties of non-oil products and services to better suit consumers' need. The company's retail sales market share was at the second rank, and continues to consistently thrive with the cumulative market share of 2018 at 15.8%. Net marketing



margin was within proximity of 2017 levels, although was affected by the government's Diesel fuel price ceiling to alleviate burden of the consumers and business operators within the transportation sector during periods of crude oil upsides. However, as the end of the year approached, oil price started tumbling, increasing marketing margin.

Power plant business recorded a higher total electricity sales both from the solar power plants in Thailand and Japan. For projects in Thailand, there were commencement of commercial operation of the government solar projects in collaboration with the War Veteran Organization (WVO) and Solar rooftop project (Total installed capacity 9.69 MW). For projects in Japan, there were commencement of commercial operation of Gotemba project (installed capacity 4.4 MW), but there was also a sales of Nikaho and Nagi project (total installed capacity 27.6 MW) to the Infrastructure Fund of Japan in September 2018. This resulted in the steady amount of overall electricity generated. There were also a profit from the sales of the aforementioned assets before tax of THB 793 million. This year, power plant business group recorded share of profit from associated companies of THB 204 million, comprised of THB 39 million from Wind power plant business, and THB 164 million from geothermal power plant business in Indonesia.

Bio based product business, Biodiesel production and sales business recorded a performance improvements compared to last year. B100 product sales volume increased as the mandated B100 proportion in diesel was at 7% all year. However, performance was affected by the low crude palm oil price situation in the country, leading B100 price to decline in parallel with crude palm oil price. Gross profit from biodiesel business was higher from the growth in sales volume, as well as the capability to procure raw material and manage inventory better than last year. For **Ethanol production and sales business**, performance was also better than last year, as in 2018, KSL Green Innovation Co., Ltd.'s performance was realized for the full year, resulting in the ethanol sales volume to increase by 171% YoY. Gross profit margin of molasses based ethanol business increased from lower raw material cost, while the



gross profit margin for cassava based ethanol declined due to the higher cost of fresh cassava and cassava chips.

Natural resources business, exploration and production business recorded a decreased revenue, as there were no performance contribution from Galoc oil field in the latter half of 2018, after the company group sold its shares in Nido Production (Galoc) Pty. Ltd., which holds the rights to 55.8% of the Galoc field. The transaction was completed in Q3/2018. Furthermore, Bangchak has established new subsidiaries to joint invest with the Seacrest Capital Group in the petroleum fields Draugen Field and Gjøa Field from A/S Norske Shell, by means of subscribing new shares of OKEA AS in the amount of NOK 939 million (approximately THB 3,618 million). OKEA AS is considered as an associated company to Bangchak. This investment is in the form of a joint partnership in a World Class Asset with long continuous production life, the oil produced is highly priced light crude oil. The investment is a considerable progress made on the foundations laid by the natural resource business and coincides with the diversification strategy of the company.

Consolidated Statement of Income	Q4/2017	Q3/2018	Q4/2018	YoY	QoQ	2017	2018	YoY
	Unit: THB Million					(Restate)		
Revenue from sale of goods and rendering of services	46,306	53,461	48,781	5%	-9%	172,138	192,025	12%
Cost of sale of goods and rendering of services	(42,711)	(49,640)	(48,357)	13%	-3%	(158,596)	(180,594)	14%
Gross Profit	3,594	3,821	424	-88%	-89%	13,543	11,431	-16%
Interest income and dividend income	12	11	16	36%	51%	156	55	-65%
Other income	441	891	129	-71%	-86%	1,085	1,260	16%
Selling and administrative expenses	(2,327)	(1,782)	(2,148)	-8%	21%	(7,164)	(7,376)	3%
Exploration and evaluation expense	(11)	(8)	(15)	32%	75%	(48)	(45)	-5%
Gain (loss) from crude and product oil price hedging contract	46	(95)	(138)	N/A	N/A	366	(442)	N/A
Gain (loss) from foreign currency forward contracts	17	(28)	95	N/A	N/A	(225)	162	N/A
Gain (loss) on foreign exchange	227	230	52	N/A	N/A	889	415	N/A
(loss) from impairment of assets	(78)	(14)	(15)	N/A	N/A	(1,518)	(441)	N/A
Share of profit of associate and JV	446	118	21	-95%	-82%	573	254	-56%



Profit before finance costs and income tax expense	2,366	3,143	(1,579)	-167%	-150%	7,656	5,273	-31%
Finance costs	(380)	(401)	(405)	7%	1%	(1,452)	(1,545)	6%
Profit/(loss) before income tax expense	1,987	2,742	(1,984)	-200%	-172%	6,204	3,728	-40%
Income tax (expense) credit	(298)	(526)	509	-271%	-197%	(41)	(493)	N/A
Profit for the period	1,689	2,216	(1,475)	-187%	-167%	6,163	3,235	-48%
Owners of the Company	1,471	1,856	(1,546)			5,608	2,463	
Non-controlling interests	217	359	71			555	772	
Earnings per share (Baht per Share)	1.07	1.35	(1.12)			4.07	1.79	

Note: Restatement of financial statement 2017 due to the changes in the fair value of the interest acquired in Geothermal Power Plant project in Indonesia.

The company and its subsidiaries 2018 performance recorded net profit of THB 3,235 million, (-48% YoY), net profit attributable to the owners of the company in the amount of THB 2,463 million, or earning per shares of THB 1.79, mainly due to the following reasons:

1. Total revenue from sales of goods and rendering of services was THB 192,025 million, increased by 12% YoY, mainly from petroleum related businesses with incremental increase in average selling price of oil products. Although, company total sales volume decreased 3% YoY, primarily due to decline in industrial market sales volume due to intensified competition, and the refinery's TAM which resulted in the lower finished oil produced. Furthermore, there was an increase in transaction volume of BCP Trading, and a higher revenue realized from ethanol production and sales business (following the company amalgamation in Q4/2017).
2. Gross Profit was recorded at THB 11,431 million, decreased by 16% YoY, mainly attributable to the refinery business having gone through turnaround maintenance, combined with the higher crude oil cost stemming from widening Dated Brent / Dubai spread (DTD/DB) which increased by 58% from last year. Also, Gasoline / Dubai spread (UNL95/DB) dropped drastically during the end of the year. Total GRM was 5.61 \$/BBL. And the significant decline in crude oil price during November - December 2018, let the refinery business to record an Inventory Loss of THB 1,489 million (included lower of cost or market (LCM) of THB 689 million, meanwhile in 2017 it recorded an Inventory Gain of THB 834 million.
3. Other Income of THB 1,260 million, the majority attributed to BCPG Plc. receiving profit before tax from the sales of power plant assets to the Infrastructure Fund, Japan of THB 793 million. Insurance compensation for the damages from typhoons in Japan of THB 104 million, and recorded profit from the provision of working capital settlement following the share disposal in Nido Production (Galoc) Pty. Ltd. of THB 78 million.



4. Selling and administrative expenses was recorded at THB 7,376 million, an increase of 3% YoY, the increment were a combination of (1) depreciation and amortization from increasing investments made by the company group, (2) lease payment for oil depot and land for service station expansion, (3) marketing and promotional expenses.
5. Loss from crude and product oil price hedging contract increased by THB 442 million, due to the year round fluctuation in oil price.
6. Gains from foreign exchange forward contract recorded at THB 162 million, mainly due to the foreign currency forward contract bought in preparation for the 3E project, of which the contract price was lower than the spot price.
7. Gains on foreign exchange was recorded at THB 415 million, a decrease of THB 474 million, as THB fluctuated all year round, resulting in a gain mostly from trade account payable, loan to related parties, and loans in foreign currencies.
8. Losses from impairment of asset THB 441 million, chiefly from impairment of petroleum exploration and production assets of the Galoc oil field in the amount of THB 412 million, and the company's spare parts cost of THB 23 million.
9. Share of profit from associated companies THB 254 million, comprised of (1) Star Energy Group Holdings Pte. Ltd. THB 164 million. (2) PetroWind Energy Inc. THB 39 million. (3) Ubon Bio Ethanol Plc. THB 14 million. (4) Bongkot Marine Services Co., Ltd. THB 39 million. (5) OKEA AS THB -3 million, which was due to the unrealized loss from foreign exchange.

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

1.) Refinery and Trading Business Group

Crude Oil Price Situation

(Unit : USD/BBL)

Crude Oil Price	Q4/2017	Q3/2018	Q4/2018			YoY	QoQ	2017	2018	YoY
	AVG	AVG	MAX	MIN	AVG	%	%			
Dubai (DB)	59.31	74.22	84.41	49.50	68.30	15%	-8%	53.14	69.65	31%
Dated Brent (DTD)	61.26	75.16	86.16	50.21	68.81	12%	-8%	54.19	71.31	32%
DTD/DB	1.95	0.94	3.89	-3.41	0.52	-74%	-45%	1.05	1.66	58%

Crude Oil Price Situation

Average Dubai crude price in 2018 increased by 16.51 \$/BBL when compared to 2017, with pressure from the OPEC and Non-OPEC countries led by Russia which jointly agreed to lower production, and additionally by the effects of the new US sanctions on Iran, which obligated Iran to lower its production.



Average Dubai crude price on in Q4/2018 decreased 5.92 \$/BBL compared Q3/2018. With most of the pressure coming from the US's revoking its sanction on 8 countries i.e. Turkey, China, India, South Korea, Japan, Greece, Taiwan, and Italy, enabling them to continue to import Iranian crude; which forms 75% of total Iranian exports. This turn of events counteracts President Donald Trump's prior announcement that he wants Iranian total oil exports to be zero. Further, OPEC and its alliance have come to an agreement to lower crude production, as a way to compensate for missing supplies from Iran after the country was previously sanctioned before the US revoked the sanction of the 8 countries, thus leading to excess crude supplies in the market. In addition, the bearish US stock market stemming from trade conflicts between China and the US has also pressured the oil market down.

However, crude oil price came under pressure during December after OPEC and their alliance came to an agreement to lower production once again by 1 million barrels per day for the first half of 2019, beginning in January 2019. While Saudi Arabia has lowered their production levels prior in December 2018 by as much as 400,000 to 500,000 barrels per day.

Compared to 2017, Dated Brent and Dubai spread in 2018 increased by 0.61 \$/BBL, due to the OPEC group increasing production levels in the latter half of 2018, leading to a decrease in Dubai crude price, effectively widen the DTD Brent and Dubai spread.

Average Dated Brent and Dubai spread in Q4/2018 lowered by 0.42 \$/BBL compared to Q3/2018 with pressure from the reduced Heavy Sour Crude supplies, after Iran was sanctioned by the US.

Crack Spreads Situation

(Unit: USD/BBL)

Crack Spreads	Q4/2017	Q3/2018	Q4/2018			YoY	QoQ	2017	2018	YoY
	AVG	AVG	MAX	MIN	AVG	%	%			%
UNL95/DB	14.42	11.52	12.10	1.37	4.92	-66%	-57%	14.85	10.57	-29%
IK/DB	13.27	14.48	19.21	12.89	15.74	19%	9%	12.13	15.38	27%
GO/DB	13.01	14.34	18.16	9.76	14.98	15%	4%	12.51	14.68	17%
FO/DB	-3.03	-2.48	5.61	-3.69	1.33	144%	154%	-2.33	-2.64	-13%

Crack Spreads Analysis

- Gasoline / Dubai crack spread (UNL95/DB) in 2018 averaged at 10.57 \$/BBL, a decrease of 4.28 \$/BBL when compared to 2017, due to pressure from decreased oil demand in China. A result of their economic slowdown, and a shrink in car sales for the first time in 20 years.

Gasoline / Dubai crack spread (UNL95/DB) in Q4/2018 was 4.92 \$/BBL. When compared to Q3/2018 decreased by 6.60 \$/BBL as a result of consecutively dwindling demand during the winter and the high oil price level. Whereas the



Chinese government announced its third and fourth export quota for 2018, an addition of 1,740,000 Tons (14.45 million barrels), leading to an increase in Gasoline exports. Additionally, various other refineries were running at high utilization rate due to high GO/DB and FO/DB crack spread level, which consequently lead to high supplies of Gasoline.

- Jet (Kerosene) / Dubai crack spread (IK/DB) in 2018 averaged at 15.38 \$/BBL, an increase of 3.25 \$/BBL compared to 2017's average. A result of pressure from increase in demand for air travel. However, there is still pressure from Jet fuel (Kerosene) inventory that is higher than the previous year's level, and decreased demand for kerosene which has been substituted by the cheaper LPG.

Average Jet (Kerosene) / Dubai crack spread (IK/DB) in Q4/2018 was 15.74 \$/BBL when compared to Q3/2018 with supports from demand for heaters during the winter, which increased throughout November and December. As well as, demand from air travel that increased after the typhoons subsided. However, Jet fuel stock in Japan was at a high level, coupled with warmer than usual weather, leaving demands for Kerosene lower than expected, thus Japan Kerosene imports decreased.

- Gasoil / Dubai crack spread (GO/DB) in 2018 averaged at 14.68 \$/BBL, increased by 2.17 \$/BBL compared to 2017 supported by the mounting demand from the mining sector in Australia and the infrastructure construction sector in India. Gasoil / Dubai crack spread (GO/DB) in Q4/2018 averaged at 14.98 \$/BBL, compared to Q3/2018 increased by 0.64 \$/BBL, supported by arbitrages made from the Asian region to the European side is still feasible even with freight cost at a high level, but pressured from increased export quotas from China in the third and fourth round of 2018, in the amount of 590,000 tons (4.4 million barrels) and 1.1 million ton (8.2 million barrels), respectively. Furthermore, the temperature during the winter in Europe and the US was warmer than usual, leading Diesel demand to remain unchanged.
- Fuel Oil / Dubai crack spread (FO/DB) in 2018 was averaged at -2.64 \$/BBL, a decrease of 0.31 \$/BBL compared to 2017, with pressures from the sales of High Sulphur Fuel Oil that has been successively declining, due to the new measures imposed by the International Maritime Organization (IMO) which will be in full effect on the 1st of January, 2020, which dictates that international vessels and bunkers are to use fuel with Sulphur percentage no more than 0.5%. However, Fuel Oil received support from Fuel Oil supplies that decreased due to the reduction in OPEC production, especially Heavy Crude, and Russian exports of Fuel Oil steadily declines due to modernizations of cracking units in their refineries.

Fuel Oil / Dubai crack spread (FO/DB) in Q4/2018 averaged at 1.33 \$/BBL compared to Q3/2018, increased by 3.81 \$/BBL, aided by Iran's steady reduction of Fuel Oil



exports as a result of the US sanction. Even with the US lifting its sanction on Iran's 8 trade partners, and the volume of Heavy Crude disappearing from OPEC's production reduction in December. Therefore, Fuel Oil imports lowered by 10% from the normal imports to Singapore.

Refinery and Trading Business Group Performance

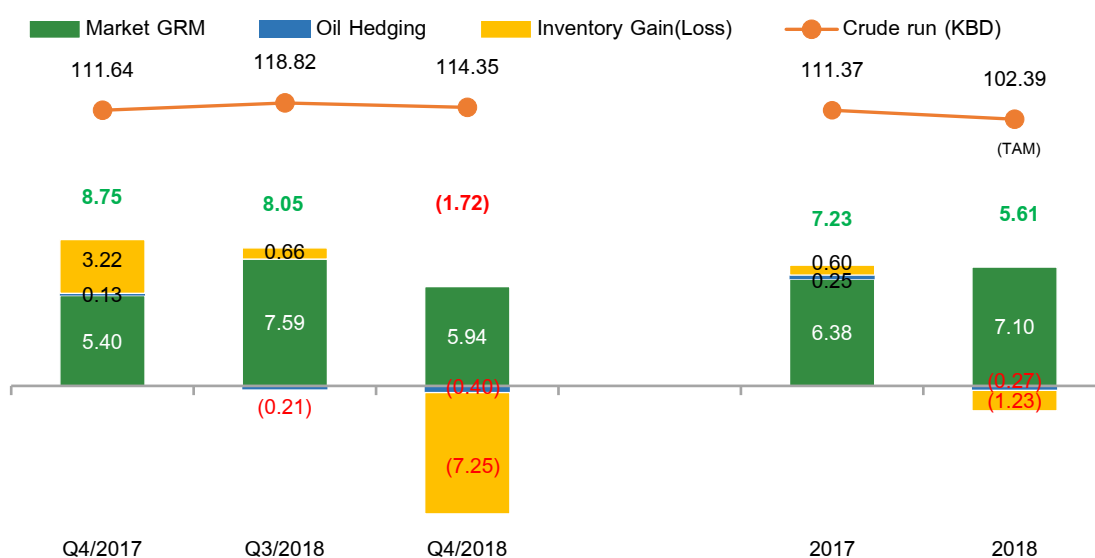
As for the 2018 performance of the refinery and trading business, it recorded EBITDA THB 3,928 million, attributed to the BCP refinery THB 3,767 million, BCP Trading CO., Ltd. THB 77 million, received share of profit from Bongkot Marine Service CO., Ltd. THB 39 million.

Refinery and Trading Business Performance	Q4/2017	Q3/2018	Q4/2018	YoY	QoQ	2017	2018	YoY
Average Crude Run (KBD)	111.64	118.82	114.35	2%	-4%	111.37	102.39	-8%
Utilization Rate (%)	93%	99%	95%			93%	85%	
Average FX (THB/USD)	33.11	33.15	32.98			34.11	32.49	
(Unit: Million Baht)								
Market GRM	1,837	2,752	2,060	12%	-25%	8,844	8,626	-2%
GRM Hedging	46	(78)	(138)	-402%	-78%	348	(328)	-194%
Inventory Gain/ (Loss) ^{1/}	1,094	241	(2,517)	-330%	N/A	834	(1,489)	-279%
Total GRM	2,977	2,916	(595)	-120%	-120%	10,026	6,809	-32%
EBITDA	2,256	2,140	(1,419)	-163%	-166%	7,596	3,928	-48%

Note: 1/ Inventory Gain/(Loss) in the table included LCM

GRM and Crude Run

Unit: \$/BBL





Total Sales Volume in each market category of the Company								
Marketing Business (Million Litre)	Q4/2017	Q3/2018	Q4/2018	YoY	QoQ	2017	2018	YoY
Retail	1,002	990	1,025	2%	3%	3,820	4,020	5%
Industrial	553	460	501	-9%	9%	2,196	1,925	-12%
Total	1,555	1,451	1,526	-2%	5%	6,016	5,945	-1%
Wholesale Business (Million Litre)								
Petroleum traders in accordance with section 7	173	178	149	-14%	-16%	706	622	-12%
Export	336	352	334	-1%	-5%	1,121	1,026	-8%
Total	509	530	483	-5%	-9%	1,827	1,648	-10%
Total Sales Volume	2,064	1,981	2,009	-3%	1%	7,843	7,593	-3%

Note: Sales volume does not include oil swaps between major oil companies and sales of crude oil products

Performance comparison between 2018 and 2017 of the refinery and trading business recorded a decrease in EBITDA of THB 3,667 million, with factors affecting operation as follow:

1. The Bangchak refinery averaged production at 102.39 KBD, or 85% utilization rate (-8% YoY), with the refinery undergoing Turnaround Maintenance (TAM) from 30 April – 13 June 2018, a total of 45 days. However, during March 2018, the refinery achieved its all-time high monthly average production of 123 KBD, and after the TAM was completed, Bangchak refinery was able to consistently maintain high levels of production throughout the year.
2. In 2018, the refinery's Total Gross Refinery Margin (Total GRM) was THB 6,809 million, a decrease of 32% in comparison to 2017 which had Total GRM of THB 10,026 million, mainly from the following reasons:
 - Market GRM decreased by THB 217 million compared to 2017 from the decline in refinery finished oil production due to the TAM. Also, there were a decline in average Gasoline/Dubai (UNL95/DB) crack spread which dropped sharply during the end of the year, and Fuel oil/Dubai (FO/DB) crack spread, decreased by 29% and 13%, respectively. While crude oil cost rose from the average Dated Brent/Dubai (DTD/DB) spread which increased by 58% from the previous year, and Thai Baht depreciated by 4.7%, compared to 2017.
 - In 2018, the refinery business recorded loss from crude and product oil price hedging contract in the amount of THB 328 million, while in 2017 there was a gain of THB 348 million, a result of the highly volatile global oil market price for the whole entire year.
 - The refinery business had an inventory loss of THB 1,489 million (including lower of cost or market (LCM) THB 689 million) from the sharp decline of crude oil price in the global market during November to December 2018, as there was an excess supplies in the market, and demand was lagged in



various countries around the world. On the contrary, in 2018 there was an inventory gain of THB 834 million.

3. Within 2018, BCP Trading Co., Ltd. earned a revenue of 37,699 million, a significant increase compared to 2017, from a rise in oil product trading transactions. This year, trading transactions volume was 15.32 million barrels. The principal products that were traded included gasoline, crude oil, fuel oil, and naphtha products. The rise in revenue can also be credited to the market expansion to new countries i.e. Brunei, Qatar. As well as, the expansion into new products i.e. Condensates, MTBE. Moreover, BCP Trading also earned extra revenue from proficient logistics management, and fostering an amicable relationship with trade partners, and market conditions that facilitated an increase in trade transactions.

Performance comparison between Q4/2018 and Q3/2018, the refinery and trading business recorded a decline in EBITDA by THB 3,559 million, with the following factors affecting performance as follow:

1. In Q4/2018, Bangchak refinery's average production rate declined by 4% from Q3/2018, due to the massive decline of Gasoline/Dubai (UNL95/DB) crack spread in this quarter. Hence, running the refinery at high utilization rate would not be economically sound, thus crude run was optimized down to a level which gave the best profitability.
2. The refinery business's Total GRM was THB -595 million, a major decline compared to Q3/2018 where Total GRM was THB 2,916 million, mainly due to the following reasons:
 - In Q4/2018, Market GRM declined by THB 692 million, compared to Q3/2018 due to UNL95/DB crack spread that sharply declined, as well as the lower average production rate.
 - Amidst this quarter, the refinery business incurred a loss from crude and product oil price hedging contract at THB 138 million, compared to a loss of THB 78 million in Q3/2018.
 - The refinery business was exposed to inventory loss in the amount of THB 2,517 million (including lower of cost or market (LCM) THB 689 million), the quarter was marred under a state of abrupt decline of oil price in the global market during November to December 2018. As of 28 December 2018, the price of Brent crude oil and Dubai crude oil was 50.21 \$/BBL and 52.85 \$/BBL, respectively. While in Q3/2018, there was an inventory gain of THB 241 million from consecutive rise in oil price throughout the quarter. As of the end of the 28 September 2018, the price of Brent crude oil and Dubai crude oil was 83.65 \$/BBL and 80.00 \$/BBL, respectively.



- In Q4/2018, BCP Trading Co., Ltd. recorded decline in revenue by 11% from Q3/2018, stemming from the downward spiral that the price of crude oil and finished product underwent during November to December, 2018.

2.) Marketing Business Group

Marketing Business Group's 2018 performance recorded an EBITDA of THB 2,177 million, mainly attributed to Bangchak marketing business in the amount of THB 2,399 million.

Marketing Business								
Sales Volume (Million Litre)	Q4/2017	Q3/2018	Q4/2018	YoY	QoQ	2017	2018	YoY
Retail (Service Stations)	1,002	990	1,025	2%	3%	3,820	4,020	5%
Industrial	553	460	501	-9%	9%	2,196	1,925	-12%
Total	1,555	1,451	1,526	-2%	5%	6,016	5,945	-1%
Sales volume in each product category (Million Litre)								
LPG	25	45	41	63%	-9%	77	163	112%
Gasoline	8	4	10	23%	131%	43	32	-26%
Gasohol	442	424	432	-2%	2%	1,688	1,672	-1%
Jet Fuel	209	209	204	-3%	-2%	841	836	-1%
Diesel	825	723	795	-4%	10%	3,171	3,056	-4%
Fuel Oil and Others	46	45	43	-6%	-4%	196	185	-5%
Total	1,555	1,451	1,526	-2%	5%	6,016	5,945	-1%
Net Marketing Margin (THB/Lt.)	0.70	0.70	0.85	23%	23%	0.77	0.78	2%
EBITDA (Million Baht)	302	468	465	54%	-1%	2,301	2,177	-5%

Note: marketing margin of Bangchak only

Performance comparison between 2018 and 2017, marketing business recorded an EBITDA reduced by THB 124 million, with the following factors affecting performance:

- Marketing Business total sales volume experienced a minor decrease (-1%, YoY), whereas the retail market sales rose by 5% YoY from the focus on retail market sales through the increase of service station locations, allowing consumers to conveniently access the company's services. Furthermore, developments were made to existing service station to improve throughput per station; producing subsequent growth in the retail market sales volume. On the other hand, the industrial market experience sales volume decline of 12% YoY from intense market competition. As well as in 2018 the Bangchak refinery had undergone a 45-day turnaround maintenance during Q2/2018, resulting in the lower finished oil volume produced during the period. Thus, the company had to manage its stock and sales through the industrial channel, as to not impede the retail market, which is the company's main sales channel.



2. Net marketing margin in 2018 was within proximity of 2017 levels. During the mid-year, various factors had pressured the retail marketing margin; i.e. continuously increased crude oil price, and the government's Diesel price ceiling to alleviate burden of the consumers and business operators within the transportation sector during periods of crude oil upsides. However, as the end of the year approached, oil price started tumbling, increasing marketing margin; since there is a lag between service station retail price adjustment and the consistent fall of finished product cost.
3. The company's retail sales market share was at the second rank, and continues to consistently thrive with the cumulative market share of 2018 at 15.6%, an increase of 15.4% from 2017, the number of service station as of the end of 2018 was 1,175 locations. The company opened 74 new service stations, most of which are standard service stations situated in areas with potential to generate higher thrupt per station. Furthermore, 2018 marked the rebrand launch of BCP's member card, "Bangchak Green Miles" that allows members to collect points from the purchase of any product, including products and services under the Bangchak group. Developments were also made to the loyalty card system in the form of a Digitized Loyalty Program coinciding with the new Bangchak Mobile Application, allowing holders of the loyalty card to exchange their collected points in the forms of E-coupons through the application, rendering access to services more convenient and swift.
4. As for Non-oil business under the care of BCR Co., Ltd.; comprising of the supermarket and convenience store SPAR, as well as the Inthanin Coffee chain. The businesses have expanded both outside and inside service stations, and have implemented market promotion continuously. As of the end of 2018, total number of Inthanin Coffee and SPAR branches were 523 and 45 locations, respectively. In 2018, BCR Co., Ltd. recorded an increase in revenue from Non-oil outlets expansion by 62% YoY. However, selling, general and administrative expenses remains high, as the combined number of SPAR stores are not sufficient to generate economy of scales. As such BCR Co., Ltd. still recorded an EBITDA in negative.

Q4/2018 performance compared to Q3/2018, the Marketing Business Group recorded a decline in EBITDA of THB 3 million with factors affecting operations as follow:

1. Marketing Business's total sales volume increased 5% , compared to the previous quarter. The increment is credited to the retail market, ascribed to the tourism season; led to a higher domestic demand for fuel. Also, the industrial market entered the harvesting season of the agricultural customer and agricultural-related business. Altogether, the aforementioned factors induced demand for Diesel and Gasohol line of product to increase by 10% and 2%, respectively. Whereas, Q3/2018 was under a low season period with middling



- usage of automobiles and minuscule tourism outings, due to the persistent rainfall which lasted throughout the quarter.
- Net marketing margin in Q4/2018 significantly rose by 23% compared to the previous quarter, as a result of the global crude price adjusting downward in this quarter. This turn of events allowed the company to govern retail service station prices that best accommodate the finished product cost. While, in Q3/2018 crude oil price was on the rise, retail price adjustment was outpaced by the rapidly rising finished product cost, and rounded out by the government's diesel price ceiling policy.
 - The company maintains its market share in terms of retail sales at the second place during the final quarter of 2018. Market share between October and December 2018 was 15.5%, and during Q4/2018 there were 26 additional new service stations commenced operation from the previous quarter.
 - As for the Non-Oil business in Q4/2018, another 44 branches of Inthanin coffee shop commenced operation and 7 more SPAR branches commenced operation from Q3/2018.
 - Selling, General and Administrative expenses are normally higher in the last quarter of the year, due to the marketing promotion expense, and the annual service station maintenance and refurbishing expenses.

3.) Power Plant Business

Power Plant Business Performance	Q4/2017	Q3/2018	Q4/2018	YoY	QoQ	2017	2018	YoY
Solar Power Business – Thailand	65.72	64.24	73.03	11%	14%	265.17	270.00	2%
Phase 1-3 (118 MW – Adder 8 THB)	61.02	57.08	64.53	6%	13%	247.72	244.90	-1%
Cooperative Solar (12 MW – FIT 5.66 THB)	4.70	4.52	4.89	4%	8%	17.45	18.84	8%
Government Solar (8.94 MW – FIT 4.12 THB) and solar rooftop (0.7 MW)	N/A	2.65	3.62	N/A	37%	N/A	6.26	N/A
Solar Power Business – Japan (14.7 MW)	7.23	13.87	3.92	-46%	-72%	41.24	41.83	1%
Total Electricity Sales (Million kWh)	72.95	78.12	76.94	5%	-1%	306.40	311.83	2%
Revenue (Million Baht)	781	830	815	4%	-2%	3,322	3,320	-0.1%
Share of profit (loss) from associated companies								
Wind Power Plant	303	21	11	-97%	-49%	341	39	-88%
Geothermal Power Plant	120	93	(8)	-107%	-109%	166	164	-1%
EBITDA	934	1,542	570	-39%	-63%	2,846	3,569	25%

Performance in 2018 compared to 2017, Power Plant Business recorded a revenue of THB 3,320 million, remained similar to the previous year, and recorded an



EBITDA of THB 3,569 million which increased by THB 724 million with the following factors affecting operations as follow:

1. The solar power plant projects in Thailand recorded total electricity sales with a marginal increase from the previous year (+ 2%). In 2018, there were commencement of commercial operation of the government solar projects in collaboration with the War Veteran Organization (WVO) (total installed capacity 8.94 MW) in late July. However, due to the slight dips in average irradiation hours from the heavier rainfall than the previous year, leading the 2018's electricity sales to underachieve in terms of volume expansion.
2. The solar power plant projects in Japan recorded minor increase in electricity sales from the previous year (+ 1%), mainly from the commencement of commercial operation of the Gotemba project (installed capacity 4.4 MW) in January 2018. On the other hand, the company sold the Nikaho and the Nagi project (total installed capacity 27.6 MW) to the Infrastructure Fund of Japan in September 2018. This resulted in the steady amount of overall electricity generated.
3. Realized share of profit from investment in associated companies in the amount of THB 204 million; a decrease from the same period of the previous year, with respect to the following factors:
 - Share of profit from the wind power plant in the Philippines in the amount of THB 39 million, comprised of profit from operation THB 73 million, and amortization in rights to electricity sales contract THB 33 million. Operating profit significantly improved upon 2017's, which realized THB 1.1 million, as the performance of the entire year was realized in 2018, whereas last year's performance realized only 7 months since acquisition. However, in 2017 the company recorded a gain on purchase in the amount of THB 362 million, on the other hand 2018 did not record such extraordinary items, thus lowering 2018's share of profit.
 - Share of profit from the geothermal power plant in Indonesia in 2018 recorded at THB 164 million, attributed to profit from operation THB 644 million, and amortization of rights to electricity sales THB 390 million, including refinance cost THB 122 million, tax provision of THB 84 million, and impact from different timing of accounting standard implementation of THB 5 million. As such, share of profit from operations significantly increased from 2017's THB 333 million, as full year share of profit was realized in its entirety, as oppose to 2017's, 5-months realized share of profit.
4. Recorded profit from the sales of the Nikaho and Nagi project assets to the Infrastructure Fund in Japan of THB 793 million. After deducting related tax from the profit in the amount of THB 134 million, the net profit from the sales of asset to the Infrastructure Fund in Japan after corporate income tax was recorded at THB 658 million.



5. The power plant business recorded a lower selling, general and administrative expenses compared to 2017 (-17%) chiefly due to a decrease in financial advisory expense which was a result of the acquisition of the wind power plant in the Philippines during Q2/2017 and the geothermal power plant in Indonesia during Q3/2017.
6. Furthermore, in 2018 the power plant business recorded an insurance compensation for the damages from typhoons in Japan of THB 104 million, and a loss from foreign exchange of THB 27 million, due to the depreciated Thai Baht, resulting in the conversion of foreign currency debt (with the majority in JPY) to THB having more value.

Performance comparison between Q4/2018 and Q3/2018, the power plant business recorded a decline in revenue in the amount of THB 14 million and recorded a decreased EBITDA of THB 972 million, with the following factor affecting operation as follow:

1. The solar power plant projects in Thailand recorded an increase in total electricity sales compared to the previous quarter, mainly due to the enter of high season following the end of an intense rainy season in Q3/2018. Moreover, there was a full quarter profit realization from the solar power plant project in collaboration with the War Veteran Organization (WVO) for the first quarter.
2. The solar power plant project in Japan recorded a decrease in electricity sales from the previous quarter (-72%) mostly attributed to the sales of asset in the Nikaho and Nagi project (total installed capacity of 27.6 MW) to the Infrastructure Fund, Japan. Additionally, the climate in Japan entered winter with fogs and mist in many areas, resulting in lowered average irradiation hours.
3. Realized share of profit from investments in associated companies THB 2.1 million, lesser than the previous quarter due to:
 - Share of profit from the wind power plant in the Philippines was THB 10.5 million, attributed to profit from operations THB 19 million and amortization of rights to electricity sales THB 8 million. Share of profit from operation lowered from THB 29 million of the previous quarter, as there was an off-season typhoon landed on the Philippines in Q3/2018, allowing the project to generate larger than usual amount of electricity.
 - Meanwhile, the investment in geothermal power plant in Indonesia recorded a share of loss at THB 8.4 million, attributed to share of profit from operation THB 180 million and amortization of rights to electricity sales THB 99 million, tax provision THB 84 million, and impact from different timing of accounting standard implementation of THB 5 million. Overall, the operating profit reduced from THB 193 million of the previous quarter, mostly stemming from the Thai Baht appreciating against the US Dollar, resulting in less Thai Baht from currency conversion.



- EBITDA substantially reduced from the previous quarter, as in Q3/2018, there was a profit from the sales of solar power plant assets to infrastructure fund in Japan in the amount of THB 793 million.
- The power plant business incurred slight increases of selling, general and administrative expenses by 2% compared to the previous quarter, due to marginal increase in personnel expenses.

4.) Bio-Based Product Business

For the Bio-Based Business performance in 2018, total EBITDA was THB 692 million, mainly attributed to the Biodiesel Production Business THB 460 million and to the Ethanol Production Business THB 298 million.

Note: BBGI Plc. is in the process of filing for its initial public offering with the The Securities and Exchange Commission.

Biodiesel Production and Sales Business

Biodiesel Business Performance	Q4/2017	Q3/2018	Q4/2018	YoY	QoQ	2017	2018	YoY
B100 Production Volume (Million Litre)	68.84	62.69	69.11	0.4%	10%	244.54	264.10	8%
B100 Sales Volume (Million Litre)	72.16	66.07	73.99	3%	12%	248.67	281.08	13%
Revenue (Million Baht)	1,745	1,460	1,401	-20%	-4%	6,699	6,186	-8%
Average Sales Price (Source: Department of Energy Business, Ministry of Energy)								
B100 (Baht / Litre)	24.79	25.18	21.85	-12%	-13%	28.80	24.16	-16%
Crude Palm Oil (CPO) (Baht / Kg.)	20.49	20.23	16.94	-17%	-16%	24.85	19.59	-21%

Performance comparison between 2018 and 2017 the biodiesel production and sales business earned THB 6,186 million in revenue, a decrease of THB 513 million, with factors that affected operations as follow:

- B100 production volume in 2018 was recorded at 264 million liters, an increase of 8% YoY coinciding with increase sales volume which was recorded at 281 million liters, an increase of 32 million liters (+13% YoY), as the government mandating the increase in proportion of B100 mixture as follow:

B100 mixing portion	5% portion of B100	7% portion of B100
Year 2017	127 days	238 days
Year 2018	0 days	365 days

- Average selling price for B100 product much decreased from the previous year, following the direction of diminishing crude palm oil price, which is the main reason for the reduction in revenue, even with the increase in sales volume. The crude palm oil price stabilized at a low level since the beginning of the year, a result of the high level of excess supplies both domestically and abroad. Later in the year, crude palm oil price decreased significantly as there was a higher



oil palm supply entering the market, resulting in the higher domestic palm oil stock to be at 430,000 tons.

- Gross profit increased from the previous year, in consequent of increased sales volume combined with the capability to procure raw material and manage inventory better than last year.

Performance compared between Q4/ 2018 and Q3/ 2018, the biodiesel production and sales business recorded a decrease in revenue of THB 59 million due to the following factors that affected operations as follow:

- Production output for B100 product of Q4/2018 increased 10% compared to the previous quarter, corresponding to the increase in B100 product sales volume that rose by 8 million liters (+12% QoQ) due to the country entering tourism and harvesting season, driving demand for diesel up.
- Average selling price of B100 product and the price of crude palm oil adjusted down from the preceding quarter, as there was a larger amount of palm oil supply entering the market, resulting in the domestic palm oil stock to be at a higher level than in the previous quarter.
- Gross profit is still affected by the movement of crude palm oil price which are still in a low level, due to the amount of excess palm oil reserves remaining at a high level.

Ethanol Production and Sales Business

Ethanol Business	Q4/2017	Q3/2018	Q4/2018	YoY	QoQ	2017	2018	YoY
Production Volume (Million Litre)								
Bangchak Bioethanol (Chachoengsao)(BBE)	12.09	11.85	12.34	2%	4%	43.66	44.57	2%
KSL Green Innovation (KGI)	7.44	30.61	13.96	88%	-54%	7.44	105.19	N/A
Ethanol Sales Volume (Million Litre)	24.64	46.48	32.31	31%	-30%	55.02	149.17	171%
Revenue (Million Baht)	620	1,156	744	20%	-36%	1,374	3,602	162%
Average Sales Price (Source: Department of Energy Business, Ministry of Energy)								
Ethanol (Baht / Litre)	24.91	23.40	23.31	-6%	-0.4%	24.79	23.70	-4%

Performance comparison between 2018 and 2017, ethanol production and sales business recorded THB 3,602 million in revenue, an increase of THB 2,227 million, with factors that affected operations as follow:

- Bangchak Bioethanol (Chachoengsao) Co., Ltd. produced 45 million liters of ethanol, a marginal increase from the previous year. KSL Green Innovation Co., Ltd. produced 105 million liters of ethanol, also a slight increase from the previous year. As a result, total ethanol product sales volume increased by 94



million liters (+171% YoY), as in 2018, KSL Green Innovation Co., Ltd.'s performance was realized for the full year, while in 2017 its performance was realized only for the final 2 months of the year.

2. Average ethanol product price declined, as domestic ethanol stock stayed at a high level. Also, ethanol price declined following the decrease in price of its raw material, molasses; the main material in domestic ethanol production. The lowered price of molasses was the result of excess sugarcane output.
3. Compared to the previous year, gross profit of ethanol product produced from cassava reduced from a significant increase in cost of fresh cassava and cassava chips. As for gross profit of ethanol product produced for molasses increased from diminishing raw material cost.

Performance compared between Q4/2018 and Q3/2018, the ethanol production and sales business recorded a decreased revenue of THB 412 million due to the following factors that affected operations as follow:

1. Bangchak Bioethanol (Chachoengsao) Co., Ltd. increased ethanol production by 4% when compared to the previous quarter. KSL Green Innovation Plc. recorded a decline in its ethanol production volume, as the Nam Pong plant underwent its planned annual maintenance between 16 September – 15 October 2018, and their Bo Ploy plant also underwent a planned annual maintenance between the 26 October – 15 December 2018, therefore total sales volume of ethanol products was lower than the previous quarter.
2. Average selling price of ethanol product in this quarter reduced from the previous quarter.
3. Gross profit of ethanol product produced from cassava improved due to the cost of fresh cassava and cassava chip receding. Meanwhile, the gross profit for ethanol product produced from molasses wind down from the increase in raw material price according to the molasses price.

5.) Natural Resources Business Group

As for the performance of the natural resources business in 2018, EBITDA was recorded at THB 117 million, chiefly from the exploration and production business with performance as follow:

The Exploration and Production Business by Nido Petroleum Limited

E&P Business Performance	Q4/2017	Q3/2018	Q4/2018	YoY	QoQ	2017	2018	YoY
Production Volume ^{1/} (barrels per day net to Nido)	2,045	1,764	0	N/A	N/A	2,231	1,859	-17%
Sales Volume (barrels net to Nido)	206,052	3,447	5,556	-97%	61%	820,560	407,964	-50%
Revenue (Million Baht)	388	16	17	-96%	6%	1,510	963	-36%
EBITDA (Million Baht)	25	194	52	112%	-73%	295	396	34%

Note: 1/ production volume of Galoc oil field only



2018 performance compared to 2017, the exploration and production business recorded revenue of THB 963 million, a decline of THB 547 million, but recorded EBITDA of THB 396 million, an increase of THB 101 million due to the following factors:

1. The Galoc field had an uptime of 99.98% and average production at 3,327 barrels per day (net to Nido 1,859 barrels per day, a decline of 17% YoY, with respect to the natural decline curve).
2. Sales revenue declined, as there was no sales volume contributed from Galoc oil field in the latter half of the year, after the company group divested its total shares held in Nido Production (Galoc) Pty. Ltd., which is an indirect subsidiary of the company group that owns 55.8% of the Galoc field and Tamarind Galoc Pte. Ltd., resulted in this year's total sales net to Nido to be 407,964 barrels (Galoc field 385,697 barrels, and Nido & Matinloc 22,267 barrels), while in 2017 total sales was 820,560 barrels (Galoc field 787,250 barrels, and Nido & Matinloc 33,310 barrels).
3. In Q2/2018, as a result of the company group's divestment of Nido Production (Galoc) Pty. to Tamarind Galoc Pte. Ltd., the company group recorded a loss from impairment of assets for exploration and production of petroleum in the amount of THB 412 million in the consolidated financial statement, and record a loss from impairment in investment in subsidiary, recorded in company only financial statement THB 271 million, respectively. The company group recorded a profit from the transaction in the amount of THB 78 million in 2018.

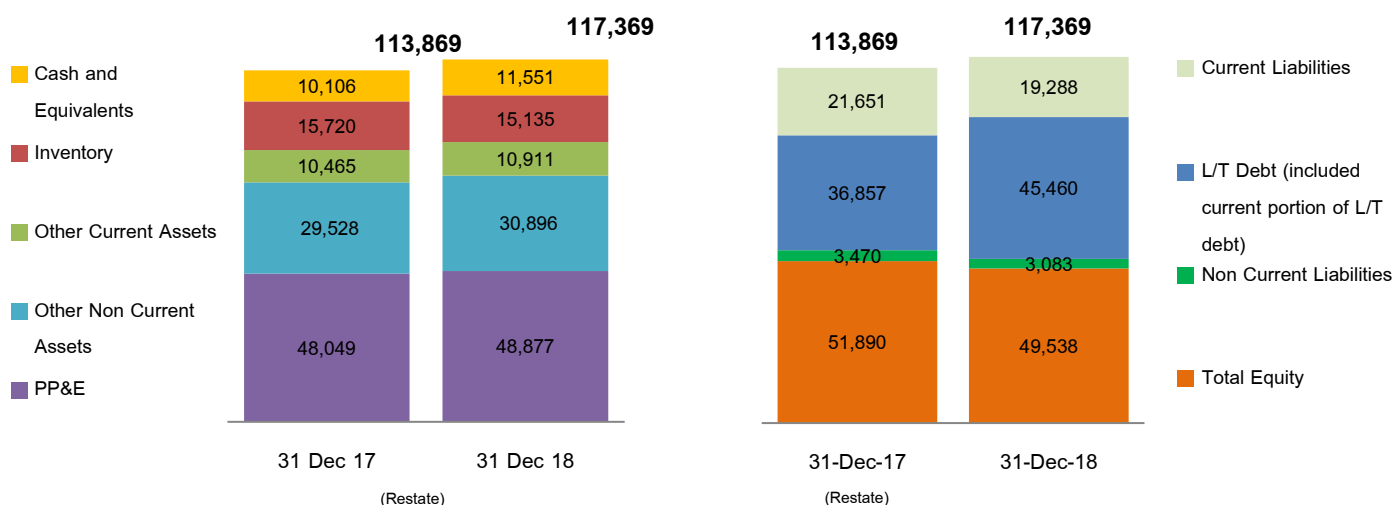
In Q3/2018, BCP established the following new subsidiaries in Thailand, BCPR Co., Ltd. with BCPR Co., Ltd. establishing its own subsidiary in Singapore, BCPR Pte. Ltd., to joint invest with Seacrest Capital Group in the Draugen Field and Gjøa Field obtained from A/S Norske Shell through subscribing new shares from OKEA AS, a company incorporated under the laws of Norway; operating the development and production of petroleum in Norway, in the proportion of 90% of the newly issued shares, which is worth in total NOK 939 million (approximately THB 3,618 million) and were ascribed OKEA shares in the amount of 49.33% of total registered capital. Additionally, as of 30 November 2018 OKEA has made payments for the rights to the Draugen Field and Gjøa Field to Shell, and was successfully transferred the full rights to the mentioned oil fields. OKEA AS is considered associated company to Bangchak. This year the company realized share of loss from its investment in the associated company of THB 3 million, mostly a result of unrealized loss on foreign exchange as a result of US Dollar loan value conversion on financial statement.



Statement of Financial Position

Financial Position of the Company and its subsidiaries (Consolidated)

Unit: THB million



Note: Restatement of financial statement 2017 due to the changes in the fair value of the interest acquired in Geothermal Power Plant project in Indonesia.

Assets

As of the 31 December 2018, the company and its subsidiaries has Total Assets in the amount of THB 117,369 million, an increase of THB 3,500 million when compared to the 31 December 2017, changes in assets are as follow:

- Cash and cash equivalents increased by THB 1,445 million. Details are stated in Analysis of the Cash Flow Statement
- Net Trade Account Receivable decreased THB 543 million, primarily from the company's trade account receivables, as the oil sales volume in December 2018 reduced, and selling price per unit of the finished oil products was lower than in December 2017.
- Inventory decreased by THB 585 million, mainly from the lower crude oil inventory of BCP Trading Pte. Ltd. and NIDO Petroleum Ltd., and from BBGI Plc.'s lower finished oil products inventory. For the company, inventory value was higher from the increment in average cost per unit, although crude oil and oil product inventory volume was lower than the previous year, recorded at 3.2 million barrels and 1.9 million barrels respectively. Moreover, the company group recorded a provision for lower of cost or market (LCM) of THB 696 million.
- Oil fund subsidy receivable increased by THB 439 million, as the waiting period for the company to receive the cash extended, and the subsidize rate for diesel products increased.



- Investments in subsidiaries which was recorded in only the company's financial statement which increased by THB 568 million. However, due to the elimination for the transaction between related parties, the amount of investment recorded in consolidated financial statement was recorded at zero, with details as follow:
 - Established a subsidiary called BCPR Co., Ltd., with registered capital of THB 1 million, and later increased its registered capital to THB 660 million in November 2018. And established an indirect subsidiary in Singapore called BCPR Pte. Ltd., to joint invest with Seacrest Capital Group, in subscribing new shares of OKEA AS, a company established under the laws of Norway.
 - BCP Innovation Pte. Ltd. increased its registered capital by THB 99 million, to invest in Bonumose LLC. and Enevate Corporation.
 - Established BCV Bio-based Co., Ltd., BCV Energy Co., Ltd., BCV Innovation Co., Ltd., and BCV Partnership Co., Ltd., each with registered capital of THB 20 million (total of THB 80 million), to invest in New Start-ups relating to innovations.
 - Impairment loss in investment in BCP Energy International Pte. Ltd. which invested in Nido Petroleum Ltd. at THB 271 million.
- Investment in associated companies and joint ventures increased by THB 3,890 million, mostly due to the investment in OKEA AS in the amount of USD 112.41 million (approximately THB 3,618 million)
- Other long term investments decreased by THB 2,531 million, primarily from the company's subsidiary, BCP Innovation Pte. Ltd, adjusted its net fair value on available-for-sale investment (LAC) of which share price reduced from CAD 11.18 as of 31 December 2017, to CAD 4.31 as of 31 December 2018.
- Property, plant and equipment net increased by THB 828 million, investment was made primarily in 1.) Refinery machinery of THB 3,782 million, 2.) Sales equipment, and office equipment at THB 1,514 million, 3.) Power plant work in progress at THB 1,481 million, 4.) Land at THB 705 million. 5.) Electricity generation equipment at THB 648 million 6.) Business acquisition in Lom Ligor of BCPG Plc. at THB 174 million. The company and its subsidiaries also sold assets by THB 2,605 million, mostly were the selling of solar power plant assets to infrastructure fund in Japan. Meanwhile, depreciation for the period recorded at THB 4,455 million, and impairment loss on petroleum exploration & production assets (Galoc) was recorded at THB 412 million.



Liabilities

As of 31 December 2018, the company and its subsidiaries has Total Liabilities in the amount of THB 67,831 million, increased by THB 5,853 million, changes in liabilities were as follow:

- Short term loans from financial institutions increased by THB 958 million, mainly from BBGI Plc., and BCPG Plc. increased by THB 819 million and THB 161 million, respectively
- Trade Accounts Payable decreased by THB 3,336 million, primarily from the volume and price of crude oil purchased lowered by THB 2,454 million. While oil trading business recorded a lower transaction volume by THB 656 million.
- Excise Tax and Oil fund expense payable increased by THB 350 million according to the higher contribution rate from the company to oil fund for Gasohol and Gasoline products.
- Loans from financial institutions decreased by THB 2,387 million, from the loan repayment by THB 4,231 million, and company's subsidiaries loan drawdown by THB 1,629 million. There was also adjustments to the effects of foreign currency conversion of financial statement in the amount of THB 187 million, and the amortized issuance cost of THB 28 million.
- Debentures increased from the bond issuance in the amount of THB 4,000 million (tenor of 2-7 years with coupon rate of 2.13 – 3.42% per annum) issued on 10 August 2018, and the amount of THB 7,000 million (tenor of 10 years with coupon rate of 4.04% per annum) issued on 20 December 2018
- Decommissioning provisions for exploration and production business declined by THB 455 million, following the share divestment in Nido Production (Galoc) Pty. Ltd. which hold the right in Galoc oil field, in Q3/2018.

Equities

As of the 31 December 2018, the company and its subsidiaries total equity was THB 49,538 million, total equity attributable to owners of the company was THB 42,715 million, a decrease of THB 2,765 million, mostly increased from the net profit for the period of THB 2,463 million, paid dividend by THB 2,685 million, and other component of equity decreased by THB 2,576 million (result of differences in net fair value change in available-for-sale investment (LAC) which reduced). Book value per share was THB 31.02.



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

As of 31 December 2018, the Company and its subsidiaries had net cash received from operating activities of THB 5,950 million, net cash used in investing activities of THB 9,100 million, net cash received from financing activities of THB 4,725 million, and decrease from the effects of exchange rate conversion on balances held in foreign currencies in the amount of THB 131 million. As a result, net cash and cash equivalents increased by THB 1,445 million, as there was cash in the amount of THB 10,106 million as of 1 January 2018, resulting in remaining cash as of 31 December 2018 in the amount of THB 11,551 million, details for each activity are as follow:

Cash Flows (Unit: Million Baht)	2017 (Restated)	2018
Net cash received (used in) operating activities	13,851	5,950
Net cash received (used in) investing activities	(18,960)	(9,100)
Net cash received (used in) financing activities	(3,761)	4,725
Effect of exchange rate changes on balances held in foreign currencies	(310)	(131)
Net increase (decrease) in cash and cash equivalents	(9,181)	1,445
Cash and cash equivalents as at 1 January	19,287	10,106
Cash and cash equivalents as at 31 December	10,106	11,551

Note: Restatement of financial statement 2017 due to the changes in the fair value of the interest acquired in Geothermal Power Plant project in Indonesia.

Details of cash received and used are as follows:

- 1) Net cash received from operational activities in the amount of THB 5,950 million are mainly attributed to:
 - Cash received from operating activities of THB 10,440 million, which was from Net Profit of THB 3,235 million, added back Non-Cash Expenses of THB 5,167 million, added back Financial Costs and Tax expense of THB 2,038 million.
 - Net cash used in operating assets and liabilities of THB 3,360 million, mainly from (1) Trade account receivable decreased by THB 514 million. (2) Inventory increased by THB 400 million. (3) Other receivables and other assets increased by THB 1,314 million. (4) Trade account payable decreased by THB 2,965 million (5) Other liabilities and other liabilities increased by THB 852 million (primarily from a decrease in excise tax and oil fund payables.)
 - Corporate Income Tax paid by THB 1,130 million.



2) Net Cash used in investing activities of THB 9,100 million, mainly from:

- Cash received from interest and dividends in the amount of THB 114 million.
- Cash paid for investment in subsidiaries and associated companies by THB 3,822 million, from share purchase in Lom Ligor Co., Ltd. to invest in wind power plant by THB 204 million, and share purchase in OKEA AS by THB 3,618 million.
- Cash received from the selling of investment of THB 731 million, from the disposal of the shares held in Nido Production (Galoc) Pty. Ltd.
- Cash received from the selling of property, plant and equipment of THB 3,031 million, mainly from the selling of BCPG Plc.'s solar power plant assets into Infrastructure Fund in Japan.
- Cash paid for investment in property, plant and equipment in the amount of THB 7,705 million, mainly attributed to investment in heavy machinery, refinery cracking units, selling and office equipment, and power plant assets.
- Cash paid for the right to lease and Intangible assets by THB 1,109 million.

3) Net Cash received from financing activities of THB 4,725 million, mainly from:

- Cash paid for financial cost in the amount of THB 1,618 million.
- Dividend paid in the amount of THB 3,091 million, attributed to the company THB 2,685 million and BCPG Plc. paid dividend for non-controlling interest in the amount of THB 406 million.
- Cash received from short term loans from financial institution increased by THB 982 million, mainly attributed to BBGI Plc.
- Cash received from bond issuance of THB 11,000 million, and cash received from long term loans from financial institution in the amount of THB 1,629 million of BCPG Plc. and BBGI Plc.
- The company and its subsidiaries repaid long term loan from financial institution of THB 4,231 million.



Financial Ratios

Financial Ratios (Consolidated)

Profitability Ratios (%)	Q4/2017	Q3/2018	Q4/2018	2017	2018
Gross Profit Margin	7.76%	7.15%	0.87%	7.87%	5.95%
EBITDA Margin	7.81%	7.78%	-0.65%	7.80%	5.31%
Net Profit Margin	3.65%	4.14%	-3.02%	3.58%	1.68%
Return on Equity ^{1/} (ROE)	13.19%	12.50%	5.59%		
Return on Assets (ROA)	7.10%	8.28%	4.56%		

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

	31-Dec-17	30-Sep-18	31-Dec-18
Liquidity Ratios			
Current Ratio	1.52	1.43	1.47
Quick Ratio	0.80	0.69	0.80
Financial Policy Ratios			
Interest bearing Debt to Equity	0.79	0.78	0.94
Net Interest bearing Debt to Equity	0.59	0.65	0.70
	Q4/2017	Q3/2018	Q4/2018
DSCR ^{2/}	2.47	2.53	1.77

2/ 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 Recievable) / Current Liabilities
▪ 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
▪ DSCR	=	EBITDA (Yearly) / (Paid for long-term debt + Finance cost)

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: Million Baht)

Environment Management Accounting : EMA	FY2017	FY2018	change
Material Costs of Product Outputs			
: Consist of crude oil, ethanol, biodiesel, chemical, energy and utilities in production	94,982	103,552	8,570
Material Costs of Non-Product Outputs			
: Consist of slop and sludge oil, waste water, chemical surplus	93.19	111.94	18.75
Waste and Emission Control Costs			
: Consist of maintenance cost of environmental control equipment and depreciation and other fees	279.17	315.48	36.31
Prevention and Other Environmental Management Costs			
: Consist of monitoring and measurement cost, environmental management system expenses	12.95	9.38	(3.57)
Total Expenses	95,367	103,989	8,621
Benefit from by-product and waste recycling	(12.26)	(15.62)	(3.36)

Total environmental cost in 2018 increased from 2017 by approximately THB 8,621 million (+9% YoY) mainly due to Material Cost of Product Output which was higher by THB 8,570 million, with respect to the global crude oil price which rose 25% from last year. In 2018, the average production rate was recorded at 102.39 KBD. Due to the refinery's turnaround annual maintenance in 2018, Material Costs of Non-Product Outputs was higher by THB 18.75 million, in accordance with the quantity of product that is below quality standard which increased by THB 18.69 million. Waste and Emission Control Costs increased by THB 36.31 million, primarily from the increment in environmental control equipment depreciation cost of THB 33.38 million, maintenance cost of environmental control equipment increased by THB 1.64 million, and waste management cost increased by THB 1.79 million. However, Prevention and Other Environmental Management Costs declined by THB 3.57 million.

Benefits from by-products and waste recycling inclined by THB 3.36 Million (+27% YoY), mostly due to amount of sellable iron and aluminum scrap which increased.



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 2019 Performance

2019 Economic Situation Perspective

The International Monetary Fund (IMF) expects the global economy to display growth, while exhibiting propensity to slow down with respect to diminishing Chinese economy expansion, the political instability of countries in the Eurozone, together with the unconcluded Brexit terms in early 2019, and the Japanese economy that shows minuscule growth from exports to the US. While some emerging market countries are experiencing currency crises which have left them with capital outflow and have tendencies to enter a state of economic recession. Also the US, although displaying high growths, but due to measures to stimulate the economy coming to the end of its run combined with the effects of the retaliations from its trade partners, US economic growth could be lower than previously expected. As well as the ASEAN countries economy, which has always seen high growth, would be effected from contracting exports as well. Therefore, expected economic expansion in 2019 was adjusted downward to 3.5%.

Thai economy in 2019 is expected to experience a slower expansion compared to the previous year, displaying growth ranging in the 3.5 to 4.5%, with risk factors from global economic slowdown, while finance and household debt that remains high; acting a restrictive factor. However, fostering confidence in the tourism industry among Chinese tourists will be another important growth-supporting factor that is recovering. Exports remain satisfactory, although affected by the trade restrictions between the US and China. Improving consumer confidence, and revived private and government sector investments under the planned EEC development project, are helping economic slowdown to further pace out. Whereas general inflation in 2019 is in a low level at 0.7 to 1.7% range, with tendency to gradually adjust upward from the 1.1% in 2018.

However, in measuring the Thai economic condition, considerations must account risk factors i.e. the trade restrictions between the US and China, geopolitical risks that may hinder Thailand's trade partners, and the resurgence of the tourism sector via Chinese tourists, which could cause Thai economic growth to not expand as expected.

Crude Oil Price and crack spread situation

The International Energy Agency (IEA) expects global crude oil demand to expand by 1.4 million barrels per day in 2019 compared to the 1.28 million barrels per day expansion in 2018. Demand in Asia would be the main contributor to the growth of global oil demand, especially in China and India, from their policy to invest in basic



infrastructure and tendency for their economy to strongly expand. Although China will be affected by their trade dispute with the US, the fundamentals in their economy and technology are still be able to drive its growth. As for oil supply in 2019, the production from the OPEC members is likely to increase by 0.8 million barrels per day, and an increase of 1.5 million barrels per day by non-OPEC countries; mostly a result of US production that is expected to expand by 1.1 million barrels per day, rose further from the US production increment during 2018 which grew less than expected by 2.3 million barrels per day, due to complications with the pipeline from the Permian fuel to ports did not have adequate capacity. However, in the latter half of 2019, a new pipeline is expected to be completed and will allow US Shale Oil production to increase. Furthermore, the developments in technological production capacity will assist in lowering US production cost, to the point where production will be possible amidst periods of bearish price. These factors may cause the global oil market approach an excess supply scenario in the latter half of the year. From assessment, it is estimated that Dubai crude oil price in 2019 will move between 55-65 \$/BBL, even though oil market in 2019 is pressured from global economic slowdown that was a result of the trade war between China and the US, the appreciating US dollar, and US oil production which is likely to increase. Whereas the bearish oil price stimulates global demand, along with help from the OPEC group and their allies working to lower production and reduce oil supply.

Dated Brent and Dubai (DTD/DB) crack spread is expected to average between 1-2 \$/BBL, to which in the first half of 2019 the spread will narrow down due to the OPEC group curbing production and the sanction placed on Iran by the US, effectively lowering the supplies of Heavy crude in the market; serving to bolster the Dubai price. However, during the latter half of 2019, the spread is expected to be widen after demand for low Sulphur crude increases as a means to produce low Sulphur fuel oil (0.5% Sulphur) to be used in ocean freighter to comply with the new International Maritime Organization (IMO) standard, which will likely result in the Brent crude price to increase following the trend.

In terms of the refining margin, it is estimated that the Dubai crude refining margin for Hydrocracking refineries in Singapore is likely to be lower than in 2018 from receding global economic growth. The International Monetary Fund (IMF) lowered their estimation of 2019 global economic growth by 0.2% from the previous estimate in October 2018, which was 3.5% growth compared to 2018. As well as, the Gasoline crack spread which has been at low levels for some time after global Gasoline stock remained at high levels. However, in the latter part of 2019, refining margin is expected to increase through demands from ocean freighters that will be using low Sulphur fuel oil in accordance with IMO standards, the production of these low Sulphur fuel oil requires a portion of Diesel product blending, which will in turn likely to increase Diesel crack spread.



Research & Development and Innovation

In 2018, the Company worked on research & development and innovation concerning commercial production astaxanthin from Algae and microalgae strain selection for bio-ethanol plant wastewater treatment and production, which total costs was approximately Baht 5.4 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, 2018, 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	Senior Vice President Corporate Strategy and Business Portfolio	(Signed) Kittima Wongsæn _____



Attachment 1 Profiles of Directors and Executives

Board of Directors

Mr. Pichai Chunhavajira

Chairman and Director with Authorized Signature (Independent Director) (Started on April 24, 2012 and independent director since June 1, 2017)

- Age 70
- Education / Training
 - MBA (Business Administration), Indiana University of Pennsylvania, USA
 - B.A. (Accounting), Thammasat University
 - Honorary Ph.D. (Accounting), Thammasat University
 - Honorary Ph.D. (Financial Management), Mahasarakham University
 - Honorary Ph.D. (Financial Management), Sripatum University
 - Public and Private Joint Program Class 13, National Defence College
 - Certified Auditor
 - Director Accreditation Program (DAP49/2006), Thai Institute of Directors (IOD)
 - Director Certification Program (DCP143/2011), Thai Institute of Directors (IOD)
 - Capital Market Academy, Class 5, Stock Exchange of Thailand
- Experience (5 years past experiences)
 - 2014 - 2017 : Member of Board, Bank of Thailand
 - 2001 - 2013 : Director, PTT Exploration and Production Public Company Limited
 - 2010 - 2012 : Chairman, Thailoil Public Company Limited
 - 2008 - 2012 : Chairman, Thailoil Ethanol Company Limited
 - 2009 - 2011 : Director, PTT Public Company Limited
 - : Director, IRPC Public Company Limited
 - 2005 - 2011 : Director, Thai Airway International Public Company Limited
 - 2000 - 2011 : Director, Thailoil Power Company Limited
 - 1998 - 2011 : Director, The Bangchak Petroleum Public Company Limited
- Other directorship positions / other positions at present
 - Other listed companies
 - o Chairman, BCPG Public Company Limited
 - Non-listed companies
 - o Chairman, BBGI Co., Ltd.
 - o President, Thailand Boxing Association
 - o Vice President, National Olympic Committee of Thailand
 - o Executive Committee Member, The International Boxing Association (AIBA)
- Shareholding in the Company: None (both directly and indirectly held) (As of December 31, 2018)
- Familial relationship between directors and executives: None
- Criminal records on violation of securities and futures contract laws: None



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 71
- Education / Training
 - Master of Laws, Chulalongkorn University
 - Bachelor of Laws, Ramkhamhaeng University
 - Bachelor of Education, 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
 - Senior Executive Program in Urban Development Management, Class 5, Institute of Metropolitan Development
- Experience (5 years past experiences)
 - Present : Director, National Reform Society
 - 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 Public Company Limited
 - o Director, National Reform Society
- Shareholding in the Company: None (both directly and indirectly held) (As of December 31, 2018)
- 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 70
- 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)
 - Present : Chairman, Seamico Securities Public Company Limited
 - : Chairman, Khonburi Sugar Public Company Limited
 - 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
- 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 Chairman of management committee, KT ZMICO Securities Company Limited
 - o Director, Asia Kangnam 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, 2018)
- Familial relationship between directors and executives: None
- Criminal records on violation of securities and futures contract laws: None



Board of Directors

Gen. Vitch Devahasdin

Independent Director (Started on April 5, 2016)

Chairman of the Corporate Governance Committee

- Age 68
- 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)
 - 2017-Present : Assistant Treasurer, National Olympic Committee of Thailand
 - 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 of the National Legislative Assembly
 - o Director, Five Provinces Bordering Forest Preservation Foundation
 - o Assistant Treasurer, National Olympic Committee of Thailand
- Shareholding in the Company: None (both directly and indirectly held) (As of December 31, 2018)
- 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 61
- 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 : Member of the National Legislative Assembly
 - 2016-2017 : Commander-in-Chief, 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 Member of the National Legislative Assembly
 - o Retired government official, Ministry of Defence
- Shareholding in the Company: None (both directly and indirectly held) (As of December 31, 2018)
- Familial relationship between directors and executives: None
- Criminal records on violation of securities and futures contract laws: None



Board of Directors

Lt.Gen. Thammanoon Withee

Independent Director and Director with Authorized Signature (Started on February 28, 2018)

- Age 57
- Education / Training
 - Bachelor of Science, Chulachomkiao Royal Military Academy, Class 33
 - Master of Public Administration Program (MPA), Burapha University
 - Air Logistics Course, Class 153
 - Battlefield Course, Class 78
 - Army Cadet Course, Infantry Corps, Class 78
 - Army Senior Course, Infantry Corps, Class 56
 - Ground Combat Aircraft (Aircraft Front Guided)
 - Military officer, Class 31
 - Army Command and General Staff College, Class 73
 - Develop Resource Management for the National Defense, Class 7
 - Certificate, National Defence Course (NDC 58), The National Defence College
- Experience (5 years past experiences)
 - 2017-Present : 1st Corps Commander
 - 2016-Present : Member of the National Legislative Assembly
 - 2016 : 1st Army Area Deputy Commander
 - 2015 : Commanding General, 9th Infantry Division
 - 2014 : Specialist, Royal Thai Army
 - 2013 : Deputy Commanding General, 2nd Infantry Division, The King's Guard
 - 2011 : Regimental Commanding Officer 12th Infantry Division, The King's Guard
 - 2010 : Director of Royal Thai Survey, School Army Region 1
 - 2008 : Deputy Regimental Commanding Officer 12th Infantry Division, The King's Guard
- Other directorship positions / other positions at present
 - Other listed companies
 - None -
 - Non-listed companies
 - o 1st Corps Commander
 - o Member of the National Legislative Assembly
- Shareholding in the Company: None (both directly and indirectly held) (As of December 31, 2018)
- 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 66
- 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
 - Capital Market Academy, Class 15, Stock Exchange of Thailand
- 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
 - o Vice President and Secretary, Thailand Boxing Association
 - Shareholding in the Company: None (both directly and indirectly held) (As of December 31, 2018)
- Familial relationship between directors and executives: None
- Criminal records on violation of securities and futures contract laws: None



Board of Directors

Dr. Poramatee Vimolsiri

Independent Director (Started on June 7, 2018)

- Age 58
- Education / Training
 - Doctor of Philosophy (Ph.D.) (Economics) Public Finance and Policy, Carleton University, Canada
 - Master in International Affairs (International Economics), Columbia University, USA
 - Bachelor in Economics, Chulalongkorn University
 - Certificate, National Defence Course (NDC), The National Defence College
 - Director Certification Program (DCP86/2007) Thai Institute of Directors (IOD)
 - Audit Committee Program (ACP42/2013) Thai Institute of Directors (IOD)
 - Executive Creative Economy Training (EXCET)
 - Chief Information Officer, Electronic Government Agency (EGA)
 - Top Executive Program in Commerce and Trade (TEPCoT), University of the Thai Chamber of Commerce
 - Successful Formulation & Execution of Strategy (SFE19/2013) Thai Institute of Directors (IOD)
 - ASEAN Executive Management Programme
 - Business Development and Industry Investment for Executive, Institute of Business and Industrial Development (IBID)
- Experience (5 years past experiences)
 - 2018-Present : Deputy Permanent Secretary, Ministry of Social Development and Human Security
 - 2015-2018 : Secretary General, Office of the National Economic and Social Development Board (NESDB)
 - 2009 - 2015 : Deputy Secretary General, Office of the National Economic and Social Development Board (NESDB)
- Other directorship positions / other positions at present
 - Other listed companies
 - None -
 - Non-listed companies
 - o Permanent Secretary, Ministry of Social Development and Human Security
 - o Chairman, The Bank of Thailand
 - o Board Member, Electricity Generating Authority of Thailand
 - o Chairman, Government Pawnshop Board
- Shareholding in the Company: None (both directly and indirectly held) (As of December 31, 2018)
- 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 64
- Education / Training
 - Master of Business Administration, Tarleton State University, USA
 - Bachelor of Business Administration (Accounting), Krirk University
 - Bachelor of Business Administration, Chulalongkorn 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&A1/2011), Thai Institute of Directors (IOD)
 - Capital Market Academy, Class 14, Stock Exchange of Thailand
 - PTT Executive Leadership Development, GE Crotonville, USA
 - Financial and Fiscal Management Program for Senior Executive, Class 1
- Experience (5 years past experiences)
 - 2017-Present: Director, Industrial Estate Authority of Thailand
 - 2015-Present: Director, 10th Workmen's Compensation Fund Committee
 - 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, 2018)
- 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 54
- 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 Qualified member, Science and Technology Development Board
 - o Member, Office of Justice Affairs
 - o Member, Public Organization and Other Government Agency
 - o Member, National Legislative Assembly Coordination Committee
 - o Member, Committee on Inspection of Draft Law and Subordinate Legislation for Submission to the Cabinet
 - o Member, the interpretation and diagnosis of legal problems in the administration of national affairs, Office of the Public Sector Development Commission (OPDC)
- Shareholding in the Company: None (both directly and indirectly held) (As of December 31, 2018)
- 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)

- Age 59
- Education / Training
 - Honorary Doctorate 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)
 - Diploma, National Defence Course (Class 2007), The National Defence Course
 - 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
 - Capital Market Academy, Class 27, Stock Exchange of Thailand
- 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, 2018)
- 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 59
- 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)
 - 2018-Present : Chairman, TMB Bank Public Company Limited
 - 2018-Present : Permanent Secretary, Ministry of Finance
 - 2014-Present : Chairman, Airports of Thailand Public Company Limited
 - 2014 : Director General, Revenue Department
 - 2011 : Director General, State Enterprise Policy Office
 - 2010 : Director General, Thailand Customs Department
- Other directorship positions / other positions at present
 - Other listed companies
 - o Chairman, Airports of Thailand Public Company Limited
 - o Chairman, TMB Bank Public Company Limited
 - Non-listed companies
 - o Permanent Secretary, Ministry of Finance
 - 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, 2018)
- Familial relationship between directors and executives: None
- Criminal records on violation of securities and futures contract laws: None



Board of Directors

Dr. Anuchit Anuchitanukul

Director (Started on April 25, 2018)

- Age 47
- Education / Training
 - Ph.D.(Computer Science), Stanford University, USA
 - MSCS (Computer Science), Stanford University, USA
 - Master of Business Administration, Chulalongkorn University
 - Bachelor of Engineering (1st Class Honors), Chulalongkorn University
 - Strategy and Innovation for Business in Asia (SIBA 2012), Massachusetts Institute of Technology (MIT), College of Management Mahidol University
 - Office of Insurance Commission (OIC) (2012), OIC Advanced Insurance Institute (OIC All)
 - Top Executive Program in Commerce and Trade (TEPCoT2011), University of the Thai Chamber of Commerce
 - TLCA Executive Development Program (EDP2009), Thai Listed Companies Association
 - Executive Program for Senior Management, Fiscal Policy Research Institution Foundation
 - Directors Certification Program (DCP93/2007), Thai Institute of Directors Association
- Experience (5 years past experiences)
 - 2018-Present : Director, The Stock Exchange of Thailand
 - 2013-Present : First Executive Vice President (Head of Process & Product Improvement and Alternative Channels Group), Kiatnakin Bank Public Company Limited
 - 2016-Present : Director, Aksorn Education Public Company Limited
 - 2010-2013 : Senior Executive Vice President, Krungthai Bank Public Company Limited
 - 2010-2013 : Director, Krungthai AXA Life Insurance Public Company Limited
 - 2008-2013 : Director, National ITMX Company Limited
 - 2008-2013 : Director, Krungthai Panich Insurance Public Company Limited
- Other directorship positions / other positions at present
 - Other listed companies
 - o First Executive Vice President (Head of Process & Product Improvement and Alternative Channels Group), Kiatnakin Bank Public Company Limited
 - Non-listed companies
 - o Director, Stock Exchange of Thailand
 - o Director, Aksorn Education Public Company Limited
 - o Director, National e-Payment Committee, Office of the Prime Minister
 - o Advisor, Identity provider (IdP) Committee, Ministry of Digital Economy and Society
 - o Qualified member, Commission policy on private participation in state affairs, State Enterprise Policy Office (SEPO)
 - o Qualified member, Committee for the Protection of Credit Information
 - o Director, A Member of the Big Data Driven Board, Ministry of Finance
 - o Director, In the Revenue Department drive the committee into digital revenue, The Revenue Department
- Shareholding in the Company: 10,000 shares or 0.000726% directly held (As of December 31, 2018)
- 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 52
- 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)
 - 2017-Present : Inspector General, Office of the Permanent Secretary, Ministry of Energy
 - 2014 : 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, 2018)
- 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 since January 1, 2015)

- Age 52
- Education / Training
 - M.Eng., Asian Institute of Technology (AIT)
 - Master of Business Administration (MBA), 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, The Bangchak Corporation Public Company Limited
 - 2007-2014 : Advisor, Avantgarde Capital Company Limited
- Other directorship positions / other positions at present
 - Other listed companies
 - o Director, Lithium Americas Corp.
 - o Chairman of the Investment Committee, BCPG Public Company Limited
 - Non-listed companies
 - o Chairman, Bangchak Retail Company Limited
 - o Chairman, Happiness Sharing Foundation
 - o Chairman, OKEA AS
 - o Director, BBGI Public 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
 - o Vice Chairman, The Federation of Thai Industries and Chairman Of the Institute of Research Development and Innovation for Industry
 - o Director, International Chamber of Commerce Thailand (ICC Thailand)
- Shareholding in the Company: 1,060,000 or 0.076983% directly held (As of December 31, 2018)
- 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

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

- Age 52
- Education / Training
 - M.Eng., Asian Institute of Technology (AIT)
 - Master of Business Administration (MBA), 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, The Bangchak Corporation Public Company Limited
 - 2007 – 2014 : Advisor, Avantgarde Capital Company Limited
- Other directorship positions / other positions at present
 - Other listed companies
 - o Director, Lithium Americas Corp.
 - o Chairman of the Investment Committee, BCPG Public Company Limited
 - Non-listed companies
 - o Chairman, Bangchak Retail Company Limited
 - o Chairman, Happiness Sharing Foundation
 - o Chairman, OKEA AS
 - o Director, BBGI Public 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
 - o Vice Chairman, The Federation of Thai Industries and Chairman Of The Institute of Research Development and Innovation for Industry
 - o Director, International Chamber of Commerce Thailand (ICC Thailand)
- Shareholding in the Company: 1,060,000 or 0.076983% directly held (As of December 31, 2018)
- Familial relationship between directors and executives: None
- Criminal records on violation of securities and futures contract laws: None



Executives

Mr. Pongchai Chaichirawiwat

Senior Executive Vice President, appointed to BBGI Public Company Limited

- Age 58
- Education / Training
 - Master of Business Administration (MBA), Thammasat University
 - M.Eng, Asian Institute of Technology (AIT), Thailand
 - Bachelor of Engineering, Chulalongkorn University
 - Leading in a Disruptive World Program (2018), South East Asia Center (SEAC), Stanford University
 - The Executive Program in Energy Literacy for a Sustainable Future TEA Class 8 (TEA Class 8/2016), Thailand Energy Academy
 - 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
 - 2018-Present : Senior Executive Vice President, appointed to BBGI 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 Chief Executive Officer, BBGI Public Company Limited
 - o Chairman, Bangchak Biofuel Company Limited
 - o Director, Ubon Bio Ethanol Public Company Limited
 - o Director, Ubon Agricultural Energy Company Limited
 - o Director, Ubon Bio Gas Company Limited
 - o Director, NP Bio Energy Company Limited
 - o Chairman, KSL Green Innovation Public Company Limited
 - o Director, Bangchak Retail Company Limited
 - o Director, Bangchak Bioethanol (Chachoengsao) Company Limited
 - Shareholding in the Company: 64,332 shares (44,332 shares; spouse 20,000 shares) or 0.004672% (As of December 31, 2018)
 - Familial relationship between directors and executives: None
 - Criminal records on violation of securities and futures contract laws: None



Executives

Mr. Somchai Tejavanija

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

- Age 56
- Education / Training
 - MBA, Thammasat University
 - B.ENG (Engineering), Kasetsart University
 - Strategy and Innovation for Business in Asia (SIBA7) Massachusetts Institute of Technology (MIT)- College of Management Mahidol University (CMMU)
 - Director Certification Program (DCP157/2012), Thai Institute of Directors (IOD)
 - Successful Formulation & Execution of Strategy (SFE 28/2016), Thai Institute of Directors (IOD)
 - Top Executive Program in Commerce and Trade (TEPCoT11), University of the Thai Chamber of Commerce
 - Executive Management with Business Development and Investment (IBID3), Institute of Business and Industrial Development
 - Advanced Security Management Program (ASMP6), The National Defence College Association of Thailand
 - Advanced Certificate Course in Public Administration and Law for Executives, King Prajadhipok's Institute
 - Thammasat Leadership Program Class 4, Thammasat University
 - Executive Development Program (Session 6), Thai Listed Companies Association
 - Energy Leadership Development for Senior Managers (Class 4), Ministry of Energy
- Experience
 - Bangchak Corporation Public Company Limited
 - 2017 - Present : Chief Marketing Officer and Senior Executive Vice President, Marketing Business Group
 - 2016 : Senior Executive Vice President, Natural Resources and Business Development
 - 2014 : Senior Executive Vice President, Corporate Strategy and Business Development
 - 2013 : Executive Vice President, Business Development and Strategy
 - 2011 : Executive Vice President, Marketing Business, responsible for Retail Marketing, and Acting Vice President, Marketing Business Strategy and Planning
 - 2010 : Senior Vice President-Marketing Business Strategy and Planning, Marketing Business
 - Other directorship positions / Other positions at present
 - Other listed companies
- None -
 - Non-listed companies
 - o Director, BCPR Pte. Ltd.
 - o Director, BCPR Company Limited
 - o Director, BCP Energy International Pte. Ltd.
 - o Director, BCP Innovation Pte. Ltd
 - o Director, Bangchak Green Net Company Limited
 - o Director, Bangchak Retail Company Limited
 - Shareholding in the Company: 28,522 shares or 0.002071% directly held (As of December 31, 2018)
 - 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 59
- Education / Training
 - Master of Business Administration (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 Director, PEA ENCOM International Company Limited
 - o Director, TOT Public Company Limited
 - o Vice Chairman, Happiness Sharing Foundation
 - o Director, Thailand Smart Center (TSC), The Thai Chamber of Commerce
- Shareholding in the Company: 44,096 shares or 0.003203% (As of December 31, 2018)
- 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, appointed to BCPG Public Company Limited

- Age 54
- 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 55
 - Certificate, Program for Senior Executives Class 20 (CMA 20), Capital Market Academy, Stock Exchange of Thailand
 - Certificate, Energy Literacy for The World Class 11 (TEA 11), Thailand Energy Academy
 - Diploma, Executive Management with Business Development and Investment (IBID 5), Institute of Business and Industrial Development
- Experience
 - Bangchak Corporation Public Company Limited
 - 2015-present : Senior Executive Vice President, appointed to BCPG Public Company Limited
 - 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 : 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, 2018)
- 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 Group

- Age 56
- 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 Group
 - 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
 - 2014-2017 : Commissioner, The Electronic Transactions Commission
 - 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, BCPR Pte. Ltd.
 - o Director, BCPR Company Limited
 - 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 Director, BCV Bio Based Co., Ltd.
 - o Director, BCV Energy Co., Ltd.
 - o Director, BCV Innovation Co., Ltd.



- Director, BCV Partnership Co., Ltd.
- Commissioner of the Arbitration Committee
- Shareholding in the Company: None (both directly and indirectly held) (As of December 31, 2018)
- 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, Corporate Strategic Planning and Sustainability Development Group

- Age 59
- Education / Training
 - Master of Business Administration (MBA), Thammasat University
 - Bachelor of Science in Chemical engineering, Chulalongkorn University
 - Director Certification Program (DCP150/2011), IOD
 - Advanced Certificate Course in Public Administration and law for Executives (PLM 11/2012), King Prajadhipok's Institute
 - Executive Development Program (EDP 6), 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 (MDP 18/2013), Thailand Management Association
 - Leadership Succession Program LSP Class 3, IRDP
 - Strategic CFO in Capital Markets Program (Class 1/2015), Thailand Securities Institute
 - Advanced Management Programme (AMP 105/2015), INSEAD (Fontainebleau, France)
 - Advanced Security Management Program (Class 7/2016), The Association National Defence College of Thailand under the Royal Patronage of His Majesty the King
 - Executive Management with Business Development and Investment (Class 4/2017), Institute of Business and Industrial Development
 - Strategic Board Masterclass (SBM 5/2018), Thai Institute of Directors
- Experience
 - Bangchak Corporation Public Company Limited
 - 2018-Present : Senior Executive Vice President, Corporate Strategic Planning and Sustainability Development Group
 - 2017 : 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
 - Others
 - Advisor, The Petroleum and Petrochemical College, Chulalongkorn University
 - 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
 - o Director, Oam Suk Social Enterprise Company Limited
 - o Director, Happiness Sharing Foundation
- Shareholding in the Company: 11 shares or 0.000001% directly held (As of December 31, 2018)
- 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 57
- Education / Training
 - Master of Business Administration (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)
 - Advanced Security Management Program (ASMP), Class9, The Association National Defence College of Thailand under the Royal Patronage of His Majesty the King
- 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
 - o Director, BCP Trading Pte. Ltd.
 - Shareholding in the Company: 1,865 shares or 0.000135% (As of December 31, 2018)
 - 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 58
- 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 7, 2018)
- 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, appointed to BBGI Public Company Limited

- Age 59
- 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, appointed to BBGI Public Company Limited
 - 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 Managing Director, Bangchak Biofuel Company Limited
 - Shareholding in the Company: None (both directly and indirectly held) (As of September 7, 2018)
 - 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 50
- 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
 - Thammasat for Society, Class 12, Thammasat Leadership Program
- 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, Fuel Pipeline Transportation Company Limited
 - o Director, Happiness Sharing Foundation
- Shareholding in the Company: 300 shares or 0.000021% (As of September 7, 2018)
- 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 57
- 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 7, 2018)
 - Familial relationship between directors and executives: None
 - Criminal records on violation of securities and futures contract laws: None



Executives

Ms. Revadee Pornpatkul

Executive Vice President, appointed to BCPG Public Company Limited

- Age 59
- Education / Training
 - MBA, Thammasat University
 - BS (Science), Chulalongkorn University
 - BA (Law), Sukhothai Thammathirat University
 - BA (Accounting), Ramkhamhaeng University
 - Director Accreditation Program (DAP99/2012)
 - Executive Development Program (EDP 12/2013)
 - Company Secretary Program (CSP71/2016)
 - Smart Disclosure Program (SDP/2016)
 - Executive Energy Management Program (EEM/2017)
 - Developing an Outward Mindset (November 2018)
- Experience
 - Bangchak Corporation Public Company Limited
 - 2018-Present : Executive Vice President, Human Resource Management, Appointed to BCPG Public Company Limited
 - 2015 : Senior Vice President, Associated Company Business
 - 2013 : Vice President, Associated Company Business, appointed to Bangchak Solar Energy Company Limited
 - 2007 : Vice President, Accounting and Taxation, Accounting and Finance
 - 2004 : Senior Manager, Accounting, and Acting Vice President, Accounting and Tax
 - 2002 : Manager, Accounting
 - Other directorship positions / Other positions at present
 - Other listed companies
 - None -
 - Non-listed companies
 - Director, Lomligor Company Limited
 - Director, BSE Energy Holdings Pte. Ltd.
 - Director, BCPG Japan Corporation
 - Director, BCPG Engineering Company
 - Director, Bangchak Solar Energy Company Limited
 - Director, Bangchak Solar Energy (Prachinburi) Company Limited
 - Director, Bangchak Solar Energy (Chaiyaphum1) Company Limited
 - Director, Bangchak Solar Energy (Buriram) Company Limited
 - Director, Bangchak Solar Energy (Buriram 1) Company Limited
 - Director, Bangchak Solar Energy (Nakhonratchasima) Company Limited
 - Director, BCPG BIOPOWER 1
 - Director, BCPG BIOPOWER 2
 - Director, Happiness Sharing Foundation
- Shareholding in the Company: 16,967 shares or 0.001232% (As of September 7, 2018)
- Familial relationship between directors and executives: None
- Criminal records on violation of securities and futures contract laws: None



Executives

Ms. Pakawadee Junrayapes

Executive Vice President, Sustainability Development and Corporate Compliance

Company Secretary

- Age 57
- 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
 - Company Secretary Program (CSP34/2010), Thai Institute of Director (IOD)
 - Director Certification Program (DCP142/2010), Thai Institute of Director (IOD)
 - Executive Development Program (EDP 2012), Ministry of Finance
 - 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)
 - Certificate, Public Law and Management, King Prajadhipok's Institute Class 17/2018
- Experience
 - Bangchak Corporation Public Company Limited
 - 2018 - Present : Executive Vice President, Sustainability Development and Corporate Compliance and Company Secretary
 - 2015 : Senior Vice President, Corporate Compliance and Company Secretary
 - 2011 : Vice President, The Secretary to The Board of the Directors Office, and Company Secretary
 - 2009 : Senior Manager, The Secretary to The Board of the Directors Office, and Company Secretary
 - 2007 : Senior 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: 15,500 shares or 0.001126% (As of September 7, 2018)
- Familial relationship between directors and executives: None
- Criminal records on violation of securities and futures contract laws: None



Executives

Dr. Michael William Fischer

Executive Vice President, Natural Resources

- Age 60
- Education / Training
 - PH.D Doctor of Philosophy, University of Wales
 - Bachelor Degree of Science, University of Leeds
- Experience
 - Bangchak Corporation Public Company Limited
 - 2018 - Present : Executive Vice President, Natural Resources Business Unit
Bangchak Corporation Public Company Limited

Others

- 2015 - Present : Managing Director & CEO, Nido Petroleum Ltd
- 2014 - 2015 : President, Africa Business Unit, Ophir Energy Ltd
- 2005-2006 : Senior Vice President, Exploration, Operations and
Projects, OMV Exploration and production GmbH
- 2004 : Asset/Exploration Manager, Woodside Energy Ltd, Perth
- Other directorship positions / Other positions at present
 - Other listed companies
 - None -
 - Non-listed companies
 - o Managing Director and Chief Executive Officer, Nido Petroleum Pty Ltd
 - o Board member, OKEA AS
- Shareholding in the Company: None (both directly and indirectly held) (As of September 7, 2018)
- Familial relationship between directors and executives: None
- Criminal records on violation of securities and futures contract laws: None



Executives

Mr. Suwat Meemook

Executive Vice President, Bangchak Initiative and Innovation Center (BiiC)

- Age 53
- Education / Training
 - Master of Business Administration, Mississippi College
 - Bachelor of Science in Civil Engineering, Chulalongkorn University
 - Director Certification Program (DCP 268/2018), Thai Institute of Directors (IOD)
 - Dale Carnegie Course, Dale Carnegie, Washington D.C., USA
- Experience
 - Bangchak Corporation Public Company Limited
 - 2018-Present : Executive Vice President, Bangchak Initiative and Innovation Center

Others

- 2015-2018 : Executive Vice President, Digital Business Development, King Power International Company Limited
- 2012-2014 : General Manager, G-Able Company Limited
- 2011 : Vice President, Bangkok Bank Public Company Limited
- 1999-2011 : Senior Finance Manager, World Wide Small Medium Business, Service and Partner, Microsoft Corporation, Washington D.C., USA
- Other directorship positions / Other positions at present
 - Other listed companies
 - None -
 - Non-listed companies
 - Director, BCV Bio Based Co., Ltd.
 - Director, BCV Energy Co., Ltd.
 - Director, BCV Innovation Co., Ltd.
 - Director, BCV Partnership Co., Ltd.
- Shareholding in the Company: None (both directly and indirectly held) (As of September 7, 2018)
- 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		Position
1. Bangchak Green Net Co., Ltd.	1.1	Mr. Meechai Veeravaidya	x
	1.2	Mr. Somkiat Thatrithorn	/
	1.3	Mrs. Saruda Changsiricharoen	/
	1.4	Mr. Somchai Tejavanija	/
	1.5	Mr. Yodphot Wongrukmit	/
	1.6	Mr. Chokchai Atsawarangsalit	/
	1.7	Mr. Seri Anupantanan	//
2. BCP Trading Pte. Ltd.	2.1	Mr. Wattana Opanon-amata	/
	2.2	Mr. Surachai Kositsareewong	/
	2.3	Mr. Chalermchai Udomranu	/
	2.4	Mr. Phichet Emwattana	/
	2.5	MR. Lim Chia Wei Roy	/

Note: The 1.4th to 1.7th and 2.1st to 2.4th directors are representative 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 Audit Committee consists of qualified directors who are independent and experienced, with Mr. Suthep Wongvorazathe serving as Chairman, with Ms. Prisana Praharnkhasuk and Pol.Lt.Gen. Chaiwat Chotima serving as members.

In 2018, the committee held 12 meetings, nine of which with the management (in the absence of those with invested interest on applicable items). The following are the meeting attendance records.

Name	Attendance / Total
Mr. Suthep Wongvorazathe	12 / 12
Mrs. Prisana Praharnkhasuk	12 / 12
Pol.Lt.Gen. Chaiwat Chotima	11 / 12
Mr. Krisada Chinavicharana	4 / 5

*Resigned from the committee, with effect from May 31, 2018

In addition, the committee held two meetings with the Enterprise-wide Risk Management Committee (ERMC).

The committee deliberated various matters, summarized below:

1. Reviewed the quarterly and annual financial statements, related financial reports, information disclosure that was adequate and timely, compliance with generally accepted accounting practices, accounting standards, and key changes in accounting policies. Also, reviewed connected transactions between shareholders and subsidiaries or related companies. The committee met Bangchak's law team to get updates on significant cases where Bangchak had



been sued in court, the outcome of which could have key repercussions on its businesses.

2. Reviewed and ensured that Bangchak

- Commanded suitable, transparent, and efficient internal control and internal audit systems by monitoring Internal Audit's performance to ensure independence and efficiency; monitored the performance and business improvement plans of Bangchak Retail Co., Ltd. (a subsidiary); and commented on the internal control weakness of KSL Green Innovation Plc (an indirect subsidiary).
- Supported
 - Internal Audit's counseling for subsidiary BBGI Co., Ltd.'s internal audit system and shared internal audit expertise with BBGI Group employees
 - Internal Audit's participation in the ISO 22301 assessment project and counseling on internal audit to the management
 - Internal Audit's assessment of the IT Roadmap Investment Project
 - Internal Audit's ongoing development of an audit-supporting program, including a payment audit program under the Gasohol Card Project, and development of the Audit Management System (AMS) for greater efficiency.

3. Reviewed Bangchak's compliance with all announced accounting standards, legal provisions, SET's requirements, and applicable



- laws in a thorough, accurate fashion under corporate governance principles, with a focus on exceeding compliance.
4. Selected, nominated, and proposed pay for KPGM Phoomchai Audit Ltd. as Bangchak's external auditor for 2018; held quarterly discussions with the external auditor about audit-related problems and timely corrective actions on key issues.
 5. Reviewed the adequacy of Bangchak's risk management processes and proceeded with audit under the existing risks. This year meetings were held with ERMC, where this committee advised that committee to
 - Develop a clear set of data on circumstances potentially affecting business, and develop an environmental management plan for approved investment projects
 - Develop a risk management plan and processes for inspection of vendor lists and credit review of BCP Trading Pte., Ltd. (a subsidiary).
 6. Urged and ensured compliance with the refinery's safety and environmental stewardship standards for the surrounding communities and society.
 7. Revised the committee's charter in line with SEC's and SET's rules and requirements as well as the corporate governance policy to ensure shareholders, business partners, customers, and other stakeholders that Bangchak's business complies with requirements and the code of conduct while upholding an efficient internal control system.



8. Reviewed Internal Audit's policy and handbook to embrace roles, duties, and responsibility of the Audit Committee and Internal Audit to guide its tasks.
9. Advocated international-standard quality for internal auditor development.

Monitoring Bangchak's performance this year under the assigned scope of duties and responsibility, the Audit Committee feels that Bangchak had prepared materially correct financial statements under the generally accepted accounting principles. Data for connected transactions or those that might produce conflicts of interest were duly disclosed. In place were an internal control system and risk management practices that were adequate and fit business circumstances. Finally, Bangchak accurately and thoroughly abided by the laws, SET's requirements, and applicable legal provisions.

(Signed) *Suthep Wongvorazathe*
(Mr. Suthep Wongvorazathe)
Chairman, Audit Committee
January 31, 2019



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 58
- 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 7, 2018)
- 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

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

- Age 57
- 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)
 - Certificate, Public Law and Management, King Prajadhipok's Institute Class 17/2018
- Experience
 - Bangchak Corporation Public Company Limited
 - 2018-Present : Executive Vice President, Sustainability Development and Corporate Compliance and Company Secretary



- 2015 : Senior Vice President, Corporate Compliance, and Company Secretary
- 2011 : Vice President, The Secretary to The Board of the Directors Office, and Company Secretary
- 2009 : Senior Manager, The Secretary to The Board of the Directors Office, and Company Secretary
- 2007 : Senior 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: 15,500 shares or 0.001126% (As of September 7, 2018)
- 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 -