35th Anniversary

Greenovate our Tomorrow

evolving Greenovation

มุ่งสู่กลุ่มบริษัทนวัตกรรมสีเขียวชั้นนำในเอเชีย ที่มีบรรษัทภิบาลที่ดี
และดำเนินธุรกิจด้วยแนวคิดแบบมีส่วนร่วมและยั่งยืน

รายงานประจำปี 2561

บริษัท บางจาก คอร์ปอเรชั่น จำกัด (มหาชน)

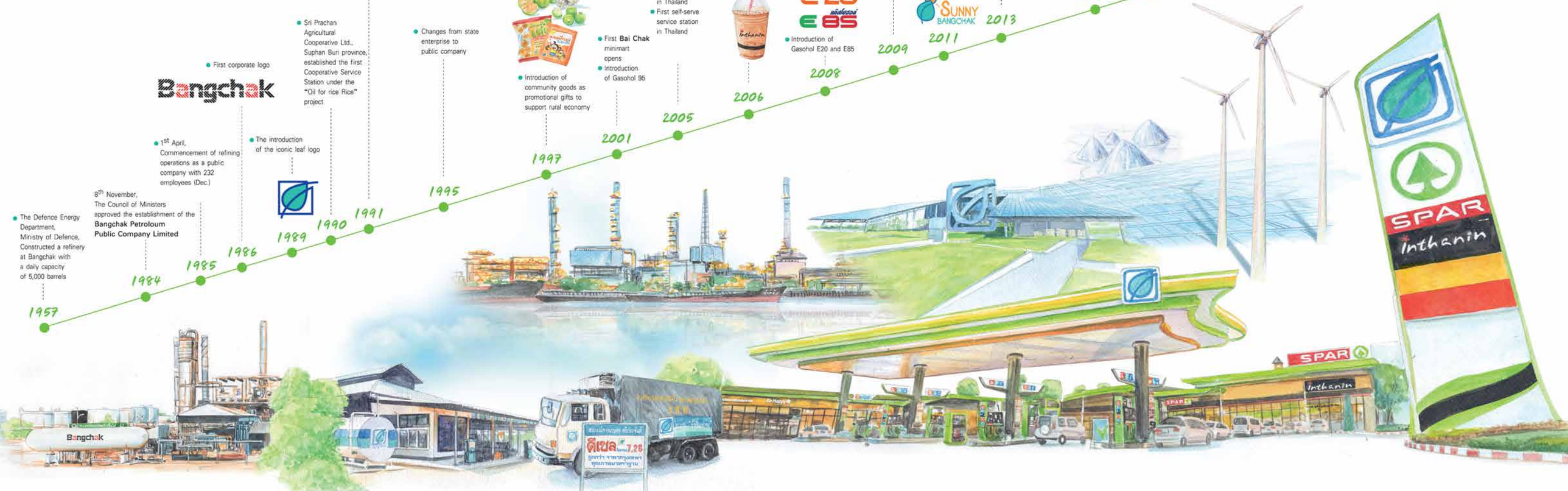
35th Anniversary

Greenovate
our Tomorrow

Greenovate our Tomorrow

35th Anniversary

- **1957** — The Defence Energy Department, Ministry of Defence, Constructed a refinery at Bangchak with a daily capacity of 5,000 barrels
- **1984** — 8th November, The Council of Ministers approved the establishment of the **Bangchak Petroloum Public Company Limited**
- **1985** — 1st April, Commencement of refining operations as a public company with 232 employees (Dec.)
- **1986** — First corporate logo
- **1989** — The introduction of the iconic leaf logo
- **1990** — Sri Prachan Agricultural Cooperative Ltd., Suphan Buri province, established the first Cooperative Service Station under the "Oil for rice Rice" project
- **1991** — Bangchak becomes the first Thai company to produce and retail unleaded gasoline and low sulfur diesel
- First Bangchak service station opens along the Chao Phraya River
- **1995** — Changes from state enterprise to public company
- **1997** — Introduction of community goods as promotional gifts to support rural economy
- **2001** — First **Bai Chak** minimart opens
- Introduction of Gasohol 95
- **2005** — First exclusive Gasohol and Biodiesel service station in Thailand
- First self-serve service station in Thailand
- **2006** — Thailand's first petro membership Bangchak Gasohol Club
- First Inthanin Coffee shop
- **2008** — Introduction of Gasohol E20 and E85
- **2009** — Bangchak becomes Complex refinery
- **2011** — Sunny Bangchak begins operation of solar farm in Bang Pa-In, Ayutthaya
- **2013** — Introduction of Thailand's Euro5 Gasohol E20
- **2014** — 30 years "Green Society"
- **2015** — Investments in upstream energy resources (E&P / Lithium)
- **2016** — Investments in Green Energy domestically and internationally
- BCPG Public Company Limited listed in the Stock Exchange of Thailand
- Launching of **Greenovative experience** Experience service station
- SPAR Fresh and & Easy Food Market
- Establishment of Oam Suk Social Enterprise Company Limited
- **2017** — Becomes **Bangchak Corporation Public Company Limited**
- Establishment of Bangchak Initiative and Innovation Center (BiiC)
- Establishment of BBGI to become the largest Thai producer and retailer of biofuels
- Head Office relocated to M Tower
- Introduction of Hi Premium Diesel
- Establishment of Happiness Sharing Foundation
- **2018** — First Thai overhead service station
- **2019**



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evolving Greenovation

Vision : To be the Leading Asian Greenovative Group, founded on Good Corporate Governance, through Inclusiveness and Sustainability

Mission : BCP commits in bringing Disruptive and Inclusive Greenovation to Delight our customers, being a trusted partner and Value Creator for all Stakeholders, and promoting Sustainable Development to Society.

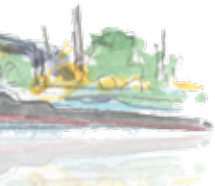
We emphasize Inclusive and Sustainable business, pursue Domestic and Overseas expansion, embrace Good Corporate Governance principles, and nurture a High-performance, Learning culture and Happy workplace.

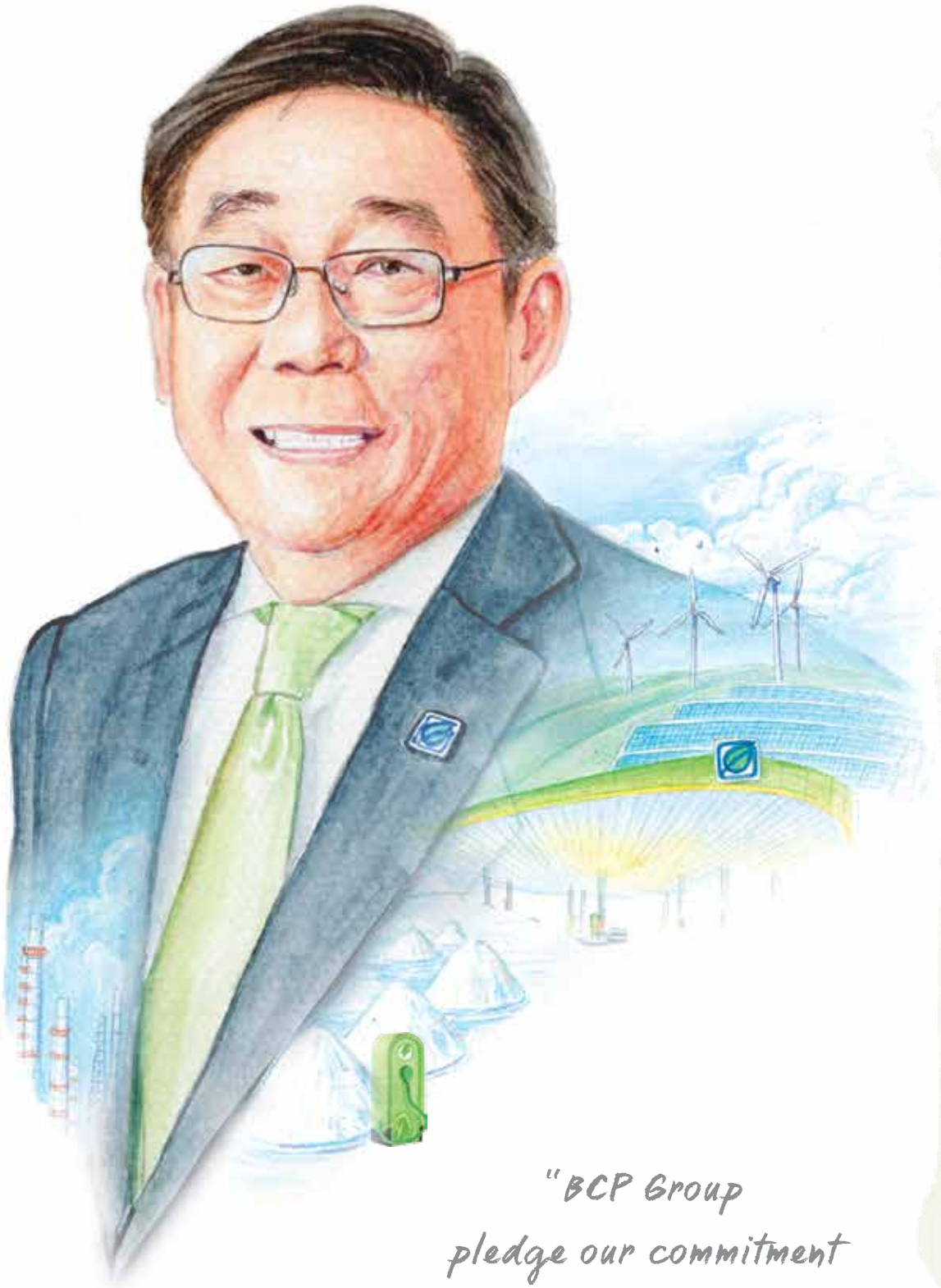
Core Values :

- **i** — **I**nnovation
- **AM** — **A**gility & **M**obility
- **B** — **B**eyond Expectation
- **C** — **C**ontinuous Development
- **P** — **P**ursuit of Sustainability

Corporate Culture : Sustainable Innovative Business Development in Harmony with the Environment and Society

Employee Culture : To be virtuous, knowledgeable, and contributive to others





"BCP Group
pledge our commitment
to being a valued organization
in Thai society"

Message from the Chairman

This year has been yet another one of pride and success for Bangchak Corporation in its more than three decades of existence, for we still value sustainable business development in parallel with environmental stewardship and participation in improving lives for Thai society in keeping with the corporate mission. At the same time, we strive to develop clean energy technological innovations, harnessing green innovations to drive each business of ours while staying committed to striking a balance between value and virtue. Out of responsibility to all stakeholders, we take most seriously the environment and safety.

This year the Company posted a net profit attributable to the owners of the Company of Baht 2.463 billion (Baht 1.79 per share). The Refinery Business posted an average annual refining capacity in 2018 was 115 KBD as planned, excluding the annual shutdown period; in March we topped the previous monthly throughput record by averaging 123 KBD. Our Marketing Business again saw Bangchak take the No. 2 market share nationwide in sales volumes through service stations, thanks to more Bangchak service stations and image revamping of major ones, the creation of the Greenovative Experience, and relentless growth of supplementary businesses for customers' maximum satisfaction.

As for other business units, strategies have been devised, business restructuring have begun so as to prepare for long-term growth and strength, and competitiveness has been enhanced with a focus on producing green technology through modern energy innovations to extend our success. Digital systems have enhanced our core business, power business, bio-based product business, and natural resources business. At the same time, we are poised to grow our core and related businesses, pursue international capital sources, and invest in startups to align with social and economic changes of the Thailand 4.0 age. Notably, we are geared up for investment in the EEC (Eastern Economic Corridor) to eventually become the leading Asian Greenovation Group, founded on good corporate governance through inclusiveness and sustainability—true to our vision.

Our group values the development of employees' potential and expertise, with emphasis on their being smart and conscientious, and strives to enhance their significance and value under the **"I AM BCP"** value. For we believe that it is important—indeed the key factor—that through outstanding competencies and career growth, we will make a great stride toward excellence.

i	AM	B	C	P
Innovation	Agility & Mobility	Beyond Expectation	Continuous Development	Pursuit of Sustainability

All BCP Group stakeholders are to be saluted for these moves and successes. I am grateful to all parties' support and encouragement for us to keep growing with great security today and in future years.

As we enter our 35th year, BCP Group, the directors, management, and all employees pledge our commitment to being a valued organization entity in Thai society that is ready to conduct businesses that are responsible to society, achieving a socio-economic-environmental balance, and executing business management with corporate governance for a bright future with even greater business successes with positive impacts on the world, society, and mankind.

Let us take pride in our contribution together.

(Signed) *Pichai Chunhavajira*
(Mr. Pichai Chunhavajira)
Chairman

Financial Highlights

Consolidated Financial Statements	2018	2017 (Restate)	2016
Statement of Income (Million Baht)			
Sales and service revenue	192,025	172,138	144,705
Gross profit (loss)	11,431	13,543	11,896
EBITDA [1/]	10,201	13,421	11,363
Profit (loss) from futures crude and product			
Profit (loss) from futures crude and product contracts	442	366	107
Profit (loss) from foreign exchange and	577	664	276
futures foreign-currency trading			
Net profit [2/]	2,463	5,608	4,773
Statement of Financial Position (Million Baht)			
Total assets	117,369	113,869	101,783
Total liabilities	67,831	61,979	57,874
Shareholders' equity	49,538	51,890	43,909
Share capital			
- Registered share capital	1,377	1,377	1,377
- Issued & fully paid-up share capital	1,377	1,377	1,377
Financial Ratios (%)			
EBITDA / sales and service revenue	5.31	7.80	7.85
Net profit / sales and service revenue	1.68	3.58	3.27
Rate of return on assets	4.56	7.10	7.51
Debt with interest payable to equity [3/]	0.94	0.79	0.86
Net IBD to Equity [3/]	0.70	0.59	0.38
Operating Outcomes (Baht per share)			
Net earnings per share [3/]	1.79	4.07	3.47
Book value per share [3/]	31.02	33.03	28.72

Remarks:

1/ EBITDA = Earnings Before Interest, Taxes, Depreciation and Amortization, gain/loss on foreign exchange, loss from impairment of assets

2/ Net profit (loss) of the owners of the parent

3/ Only the equity of the Company

Policy and Business Overview

Vision, Mission, Objectives and Goals, and Business Strategy

Vision

Evolving Greenovation

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

Mission

Bangchak is committed to bringing disruptive and inclusive Greenovation to delight our customers, being a trusted partner and value creator for all stakeholders, and promoting sustainable development of 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 of its management excellence in pursuit of world standards; application of Sufficiency Economy to its businesses (for non-profiteering benefit); nurturing of 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. To be the leading Asian Greenovation Group together with its business, social, and environmental goals by 2023, as highlighted below.

Business goals

- **Refinery and oil trading business group:** To raise the refinery's safety and environmental standards; to maximize its efficiency and stability through the YES-R Phase 1-3 Project, studies to extend TAM Cycle; 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.

- **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 that aims to address modern Thais' lifestyles through which everybody takes part in environmental care in a sustainable manner;to better satisfy customers through an upgraded 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.
- **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.
- **Bio-based product business:** 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 to make 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 produce 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.
- **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. We aim to expand our 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.
- **Organization, management, and innovation:** To grow competitiveness and organizational development capability, aiming at achieving the "employer of choice" distinction; to achieve HR excellence and to encourage 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 based on good corporate governance to win investor confidence in Bangchak's ability to create sustainable returns, with a goal to be a 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.
- **Being open, transparent, and auditable:** To conduct an open, transparent, and auditable business whether in disclosure of business data under the corporate governance principle or in compliance with SET's regulations.

Socio-environmental goals

- **A low-carbon company to ease impacts on global climate change:** To set a goal of minimum carbon dioxide emission by relentlessly executing projects 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.

- **Business conduct in parallel with the environment and society:** To grow 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 in to 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 higher value, distributing agricultural produce through Oam Suk Social Enterprise Co., Ltd., using SPAR supermarkets as outlets, which includes promotion of sugarcane plantation for the production of sugarcane juice for sale in SPAR and purchasing of agricultural produce for use as a main raw material for production of BBGI's bio-based products.

Business strategy

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, marketing, and natural resources businesses 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 more use of electric vehicles is foreseen, these groups of businesses are 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 risks, 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 reaults 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 databaseand 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 GreenMilescardmembers.
- **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 thatBangchak 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 alsohelps 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 Happyiness 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 Bangkok 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.

Shareholding Structure

Vayupak Fund 1	Social Security Office	Ministry of Finance	Public
14.66%	**14.46%**	**9.98%**	**60.90%**

listed shareholders on 7 September 2018

Bangchak Corporation Plc.

Registered Capital and Paid-up Capital (Baht) 1,376,923,157

Refinery and Trading Business

- Bangchak Corporation Plc.
- 100.00% BCP Trading Pte. Ltd.
- 30.00% Bongkot Marine Service Co., Ltd.
- 4.95% Fuel Pipeline Transportation Co., Ltd.

Marketing Business

- Bangchak Corporation Plc.
- 100.00% Bangchak Retail Co., Ltd.
- 49.00% Bangchak Green Net Co., Ltd.
- 40.00% Oam Suk Social Enterprise Co., Ltd.

Green Power Business

- 70.11% BCPG Plc.
  - 100.00% Bangchak Solar Energy Co., Ltd.
  - 100.00% Bangchak Solar Energy (Chaiyaphum1) Co., Ltd.
  - 100.00% Bangchak Solar Energy (Nakhonratchasima) Co. Ltd.
  - 100.00% Bangchak Solar Energy (Buriram1) Co., Ltd.
  - 100.00% Bangchak Solar Energy (Buriram) Co., Ltd.
    - 100.00% Huang Ming Japan Co., Ltd.
  - 100.00% Bangchak Solar Energy (Prachinburi) Co., Ltd.
    - 100.00% BSE Energy Holdings Pte. Ltd.
      - 100.00% BCPG Japan Corporation
        - 100.00% BCPG Engineering Company
  - 100.00% BCPG Investment Holding Pte Ltd
    - 100.00% Greenergy Holdings Pte Ltd
    - 100.00% Greenergy Power Pte Ltd
    - 100.00% BCPG Wind Cooperatief U.A.
      - 40.00% PetroWind Energy Inc.
  - 100.00% BCPG Biopower 1 Co., Ltd.
  - 100.00% BCPG Biopower 2 Co., Ltd.
  - 100.00% Lom Ligor Co., Ltd.
  - 33.33% Star Energy Group Holdings Pte.Ltd.

Bio-Based Products Business

- 60.00% BBGI Plc.
  - 100.00% KSL Green Innovation Plc.
  - 85.00% Bangchak Bioethanol (Chachoengsao) Co., Ltd.
  - 70.00% Bangchak Biofuel Co., Ltd.
  - 21.28% Ubon Bio Ethanol Plc.
    - 100.00% Ubon Agricutural Energy Co., Ltd.
    - 100.00% Ubon Biogas Co., Ltd.
    - 100.00% NP Bio Energy Co., Ltd.

Natural Resource Business and Business Development

Exploration and Production Business

- 100.00% BCP Energy International Pte Ltd
  - 100.00% Nido Petroleum Pty Ltd
    - 100.00% Nido Petroleum (China) Pty Ltd
    - 100.00% Nido Management Pty Ltd
    - 100.00% Nido Petroleum Indonesia (Holding) Pty Ltd
      - 100.00% Nido Petroleum Indonesia (Gurita) Pty Ltd
      - 100.00% Nido Petroleum Indonesia (Cakalang) Pty Ltd
      - 100.00% Nido Petroleum Indonesia (Baronang) Pty Ltd
    - 100.00% Nido Petroleum Philippines Pty Ltd
      - 100.00% Nido Production (Holding) Pty Ltd
- 100.00% BCPR Co., Ltd.
  - 100.00% BCPR Pte Ltd
    - 49.33% OKEA AS

Innovation Business

- BCP Innovation Pte Ltd 100.00%
  - 15.86% Lithium Americas Corp
    - 50.00% Minera Exar S.A.
    - 100.00% Lithium Nevada Corp.
    - 100.00% RheoMinerals Inc.
  - 5.17% Bonumose LLC.
- BCV Bio Based Co., Ltd. 100.00%
- BCV Energy Co., Ltd. 100.00%
- BCV Innovation Co., Ltd. 100.00%
- BCV Partnership Co., Ltd. 100.00%

- Subsidiary Company
- Associated Company
- Other Company

As of December 2018

Refinery and Oil Trading Groups

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, BCP Tengages 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 tothe 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. FPI'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 productsat 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:

- Domestic solar power plants with a combined contractual capacity of 138.9 MW (all plants commenced commercial operation)
- Solar farm projects in Japan with a combined contractual capacity of 131.2 MW (14.7 MWcommenced commercial operation)
- Wind farm project in the Philippines with an equity capacity of 20 MW (14.4 MW on production)
- Geothermal power project in Indonesia with an equity capacity of 181.5 MW (157.5 MW on production)
- This year BCPG acquired 100% common share in Lom Ligor 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 amalgamation between BBP Holdings Co., Ltd. (BBH), a subsidiary of Bangchak, and KSL GI Co., Ltd. (KSLGI), a subsidiary of KhonKaen 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 dayfrom a plant in Amphoe Nam Phong, KhonKaen. 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, UbonRatchathani, it engages in ethanol production using fresh cassava, cassava chips, and molasses as feedstock with acapacity 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 661million (consisting of 6.61 million shares at Baht 100 par value pershare). 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 RheoMineralsInc. (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 DraugenField 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.

Transition and Milestone Development

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

  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.

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

  Goeba 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 Holdings, Inc., at the feed-in-tariff rate of Yen 32 per kWh.

January

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

  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.

March

- **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 inan average output rate of 118.2 KBD in the third quarter of 2018, accounting for 99% of the total capacity, the highest average quarterly capacity of Bangchak Refinery.

- **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 (3.76 billion baht). 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.**

  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.

June

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

  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.

July

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

  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 a total of 8.94 MW over 25 years. The fixed feed-in-tariff is Baht 4.12 per unit.

- **Commercializationof Nikaho and Nagi Assets**

  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 anet corporate income after tax of Baht 658 million.

- **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 thestation's buildings and shops.

September

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

  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**

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

November

December

- **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 nancial 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

- **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).

- **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.

- **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.

- **The Asia Sustainability Reporting Awards (ASRA) 2019:** 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.

- **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.

- **Suriyasasitorn 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 Inno-Green Station Certication** 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.

- **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.

- **A Carbon Reduction Building Certicate,** 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 Certicate** 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.

- **Thailand MICE Venue Standard Certicate – 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.

Business Description

Revenue Structure

	Operatored by	% share holding	2018 Revenue (million baht)	2018 %	2017 Revenue (million baht)	2017 %	2016 Revenue (million baht)	2016 %
Revenue from Oil reningand 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	-
	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	70.11	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:

Revenue of Bangchak and subsidiaries excluding revenue with related parties.

1/ Revenue from domestic fuel sales in 2018, 2017, and 2016 accounted for 90.5%, 90.3%, and 91.5% respectively.

2/ In 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 prot from investment in associates and joint ventures.

Product and Service Features

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 international sources. With a capacity of 120,000 barrels per day (120 KBD), Bangchak produces and distributes its products through more than 1,000 service stations nationwide. It has expanded its businesses to oil trading, green power, bio-based products, and natural resources and business development. Its ultimate goal is to enhance national energy security and expand new investments so that its businesses may be sustained.

Refinery and Trading Business Group
(120 KBD capacity)

Marketing Business Group
(over 1,000 service stations)

Green-power Business

Bio-Based
Product Business

Natural Resources and
Business Development

Refinery and Trading Business Group

Bangchak Refinery is a modern complex refinery with a nameplate capacity of 120 KBD. It can produce a large volume of premium gasoline and diesel. Gasohol and diesel from Bangchak Refinery are certified by the government as Euro 4 Standard-compliant. Its refinery is the first in Asia that produces 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 process energy stability by using electricity and steam from a cogeneration power plant, using more environmentally friendly natural gas in place of fuel oil, and enhancing the efficiency of refining processes with the 3E and YES-R projects to increase its capacity. To increase the capacity and process operation for maximum benefit, the following additional efforts have been made:

- Improved the efficiency of managing crude oil supply, refinery processes, storage tanks, distribution pipelines, and shipping vesselsto 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 a better crude oil procurement plan to obtain appropriate GRM. Bangchak effectively carried out a Roll Month agreement to reduce the costs of crude, resulting in the annual refining margin average of 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 for expanding out-out (overseas oil suppliers for overseas customers) transactions. Key trading product sare 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 the refined products were sold to consumers directly through Bangchak's service station network. There were 1,175 Bangchak service stations in Thailand: 555 standard and 620 community stations (as of December 2018). Most of the new 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, transport, airline, shipping, construction, and agricultural sectors. In addition to emphasizing the sale of high-performance and eco-friendly gasohol and diesel, Bangchak stations provide value-added facilities through non-oil businesses and supplementary services, including a convenience store, coffee shop, freshly cooked fast food restaurant, car maintenance, and car wash.

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 pointsfrom 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.

The convenience store and coffee shop businesses are now managed by Bangchak Retail Co., Ltd. (BCR), one of the subsidiaries who acquired a master franchise of "SPAR", a supermarket chain from the Netherlands. There are currently 45 branches of SPAR, rendering service under the concept of SPAR Fresh & Easy Food Market. As for the coffee shop business, altogether 523 outlets of "Inthanin" and "Inthanin Garden", the premium Inthanin, have been opened. The company sellsconsumer products through three versions of the convenience store, namely Baichak, Lemon Green, and Mini Big C, the latter located at over 165 large stations near communities. Bangchak stations also house "Lemon Kitchen", offering freshly cooked fastfood, 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.

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 indomestic 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. Mean while, 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 produces and sells lubricants and specialty products such as transmission oil, brake fluid, and grease under the "BCP Lubricants" brand. These products are sold to the domestic market through its network of service stations, retail shops, industrial plants, OEM markets, and international markets.

This year the company launched a premium grade lubricant under the "FURiO" brand. The fuel-saving product was designed to protect engines against wear and tear under all conditions.

Bio-based Product Business

Aware of the importance of renewable (alternative) energy to Thailand's energy security and the need to reduce trade deficits arising from oil imports, while giving support for farmers and environmental conservation, Bangchak branched out into the ethanol and biodiesel businesses. Ithas promoted the blending of ethanol and biodiesel with gasoline and diesel to produce Gasohol 91 and 95,Gasohol E20and E85,and Hi Diesel.

At the end of 2017, Bangchak completed the 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 then 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 palmoil-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 Q2/2019. 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 glycerineto 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 expansionin 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 acapacity 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

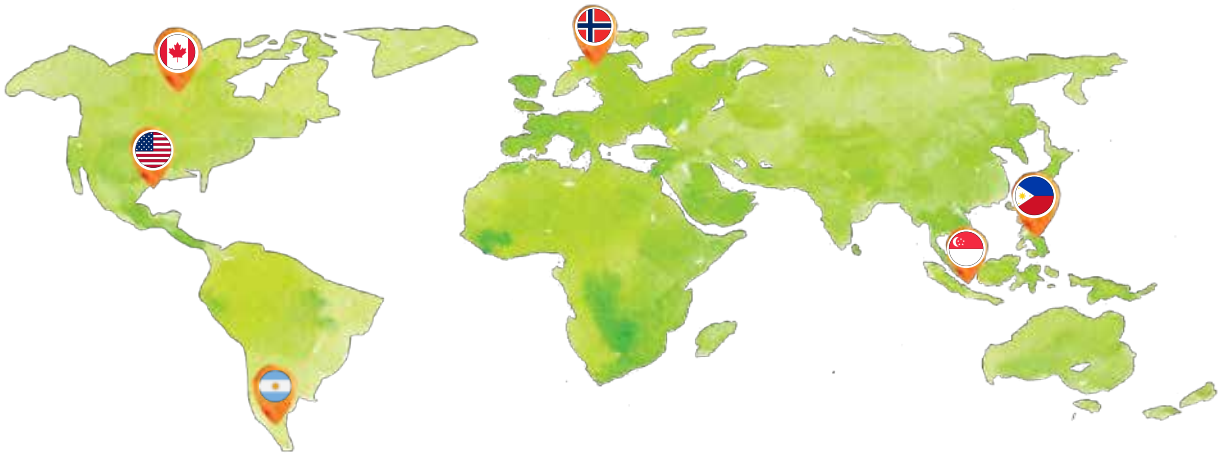
Bangchak has invested in the green power business through the operations of BCPG Plc., a subsidiary, to generate and distribute electricity from new types of renewable energy and clean energy. By the end of 2018, BCPG commanded a total capacity of 571.1 MW from world wide operations. Of the total capacity, 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 this year, 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

After Bangchak had established BCPR Co., Ltd., 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 of high price, suitable for Bangchak's refining and production processes. The investment is considered part of risk diversification in line with the corporate strategy.

Bangchak hasestablished 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 Philippinesas well as the rights in blocks SC6B, SC14D, SC54A, SC54B, SC58 and SC63, also in the Philippines, which are now in their exploration stage.



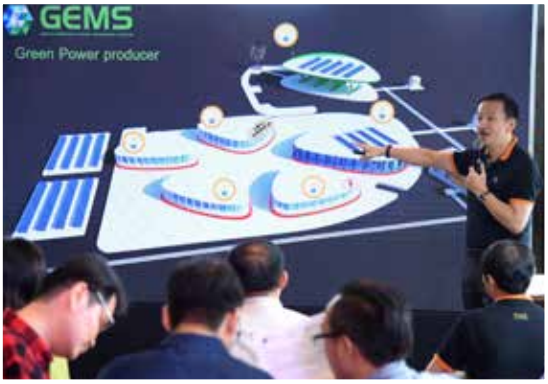
On July 12, 2018, BCPE entered into anagreement to sell shares in Nido Production (Galoc) Pty., Ltd., an indirect subsidiary, which owns the rights over the Galoc oil field, to Tamarind Galoc Pte., Ltd.

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.

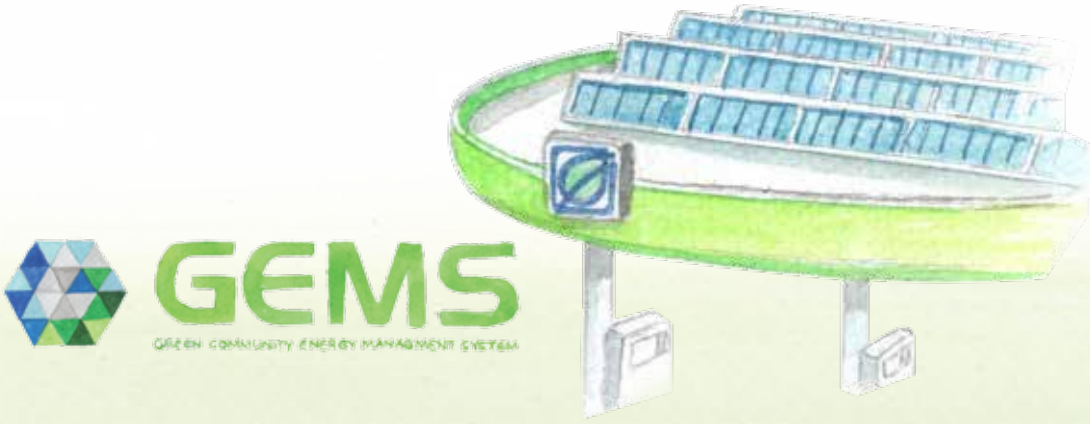
R&D and Innovation Business

Bangchak established Bangchak Initiative and Innovation Center (BiiC) to create a Green Ecosystem to drive innovation with a focus 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 the incubation of startups 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 produce data station is bought and soldthrough the bidding method between buildings and shops onthe 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 Bio Based 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.



Marketing and Competition

2018 Global Economic Overview

Global economic growth in 2018 was slightly increased to 3.7%. However, increasing risks from US-China trade disputes, economic vulnerability in certain countries, in particular in the emerging markets, continued tight global financing conditions from the Fed's interest rate hike policy which caused several countries to use the same measures, including impacts of the new enforced environmental standards for auto fuels in Germany and trade tension from the signing of the United States–Mexico–Canada Agreement (USMCA), replacing the previous North American Free Trade Agreement (NAFTA) indicated that global economic growth has reached its peak and future growth tends to stall, although the U.S. and China agreed in December this year to halt new tariffs for 90 days, which helped ease the tensions. The International Monetary Fund (IMF) outlook indicated that the 2019 global economy will still grow but tends to stall from China's decelerated economic growth, political instability of the Eurozone, including the impending withdrawal of the United Kingdom from the European Union (Brexit) in early 2019. Japan's economic growth will be moderate due to subdued imports to the U.S. while some countries in the emerging markets will be facing currency crises, causing capital outflows which can lead to economic recession. The US, despite its high economic growth, with the expiring economic stimulation measures together with impact of trade retaliation with trade partners, will result in its lower-than-expected growth. ASEAN's impressive economic growth will also be affected by the subdued exports, making the global economic forecast for 2019 decelerate to 3.5%.

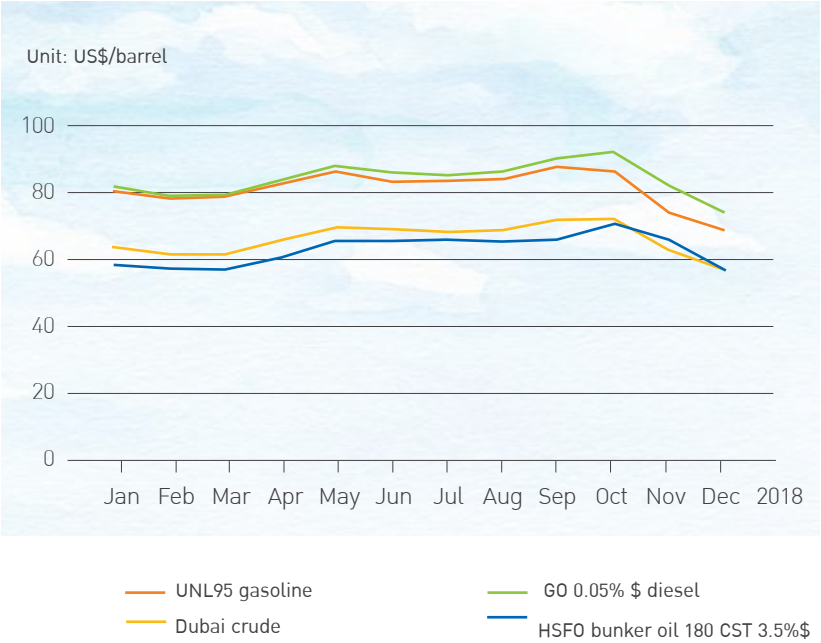
The 2019 East Asian and Pacific economy tends to slow down. The IMF forecast growth of 6.2% for China, a decrease from 6.6% of the previous yearas a result of the trade disputes with the U.S. The economy of the emerging markets in Asia including ASEAN-5 (Malaysia, Philippines, Indonesia, Singapore and Thailand) tends to be slightly down from 5.2% in 2018 to 5.1% in 2019 due to the risk from interest rise of the major economies which will cause capital outflows and weak currencies in some countries and further affect high debts, in particular Indonesia, whichis already laden with continual high current-account deficits and fiscal deficits.

2018 Crude Oil Market Overview

The average Dubai crude price this year stood at US$69.42 per barrel, an increase of US$16.28 per barrel or 30% from that of the previous year (US$53.14 per barrel). The price rose early this year, following the low global oil reserves to near the 5-yearaverage as targeted by OPEC. Oil supply continued to decline after OPEC cut its oil output in early 2017, with Saudi Arabia contributed to the biggest cut, and lower output from Venezuela due to its economic and political uncertainties, which resulted in drop is supply in the global oil market. Moreover, the United States announced its withdrawal from the Iran nuclear deal, unleashed its "toughest ever" sanctions against Iran and gave oil buyers 180 days (or by November this year) to wind down purchases of Iranian crude. After the sanctions, OPEC and its allies in mid-2018 agreed to increase its oil output of 1 million barrels a day, starting inthe second half of 2018, to compensate for the drop is oil supply from Venezuela and Iran. Despite OPEC and allies' increased oil supplies to fill the gap, oil prices have risen steadily since the third quarter from the Iran sanctions and Chinese oil refiners' record output of 12.49 barrels per day to cope with the rising demand. However, after

hitting its highest level in October, oil pricesplummeted in the fourth quarter after the U.S. gave eight nations oil waivers under Iran sanctions to buy Iranian oil for another six months after the sanctions, a reversal of its earlier announcement of its "toughest ever" sanctions. Oil imports by these nations, which accounted for about 75%, has increased the output of Saudi Arabia and its allies since mid-year and US-China trade disputes as well as the slump of U.S stock market, put pressure on oil prices from investors' concerns about global oil supply.

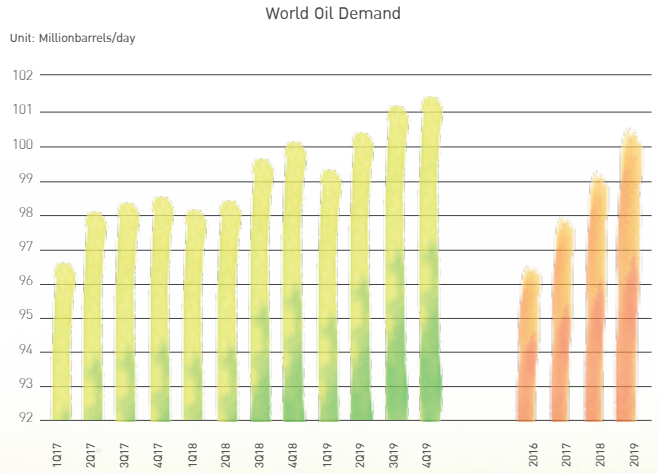
2018 World Oil Price Movement



Unit: US$/barrel

	2017	2018			YoY
Product	Average	Highest	Lowest	Average	%
Dubai crude	53.14	79.39	57.32	69.42	+30.64
UNL95 gasoline	67.99	89.55	60.02	79.95	+17.59
GO diesel	65.65	95.92	68.98	84.05	+28.03
HSFO bunker oil	50.81	78.67	57.80	66.79	+31.45

2019 Crude Oil Market Trend



Source: IEA (International Energy Agency)

The International Energy Agency (IEA) projected world oil demand to increase by 1.40 million barrels per day in 2019, as opposed to 1.28 and 1.45 million barrels per day this year and in 2017. Demand in Asia remains predominant, especially China and India, from infrastructural investment and economic expansion, contributing to rising global demand. Despite impacts from trade disputes with the US, China with its economic fundamentals and technology as the main drivers will still continue to grow.

Total crude oil production from the non-OPEC bloc tends to increase by 1.5 million barrels per day in 2019, primarily from the US, where extra production is set to rise by 1.1 million barrels per day in 2019 against 2.3 million barrels per day in 2018 due to the insufficient capacity of the pipeline from Permian oil fields to portsalong the Gulf Coast. The new pipeline, scheduled to be completed in the second half of 2019, was expected to boost its shale oil production. In addition, developed advanced production technology made it cost-effective for the US to continue its production despite low global oil prices. These factors may push the market to oversupply in the second half of 2019.

The Dubai crude price in 2019 was forecast to range US$55-65 per barrel despite the decelerated global economy from trade disputes between the US and China, stronger USD currency and the expected increase in US oil output. However, low oil pricesas well as oil output cuts by OPEC and allies to curb demand in the oil market will stimulate global demand.

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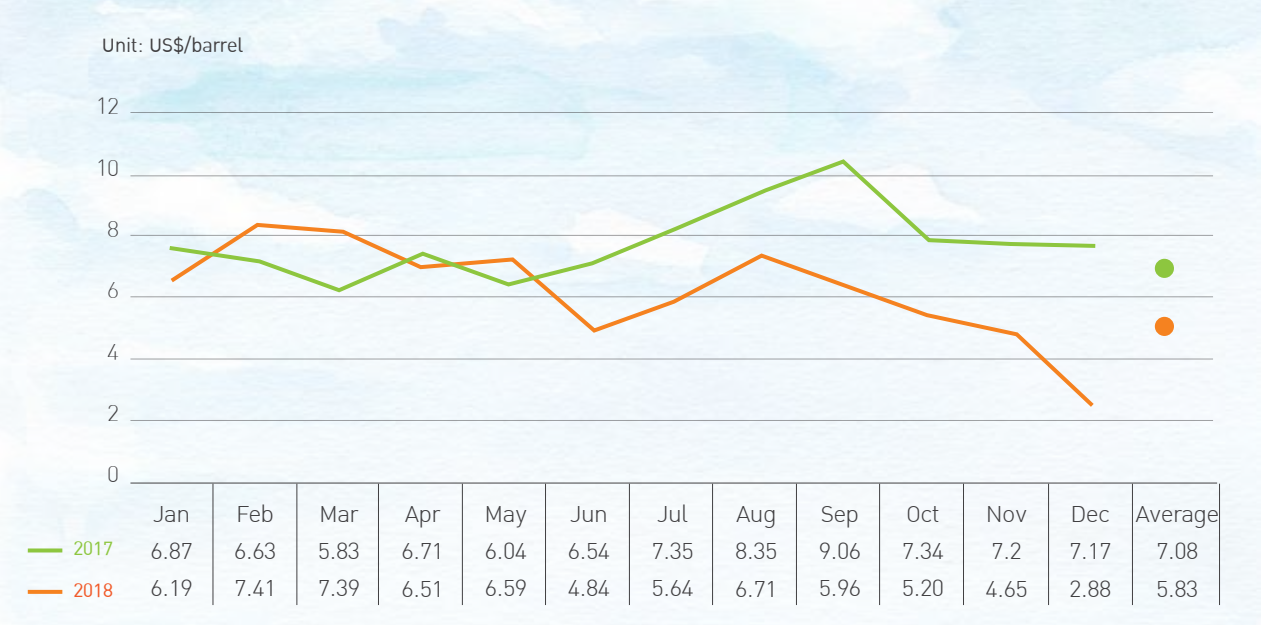
2018 Refining Margins

Dubai-based Hydrocracking (DB-HC) refining margin in Singapore, 2018 vs 2017



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Average
2017	6.87	6.63	5.83	6.71	6.04	6.54	7.35	8.35	9.06	7.34	7.2	7.17	7.08
2018	6.19	7.41	7.39	6.51	6.59	4.84	5.64	6.71	5.96	5.20	4.65	2.88	5.83

Source: Reuters

The 2018 Dubai-based hydrocracking average refining margin in Singapore was US$5.83 per barrel, a decrease from US$7.08 per barrel in 2017 due tolower margins between Dubai and gasoline despite higher margins between Dubai and refined diesel and fuel oil. Demand for refined products in Asia continued to rise while the Dubai-gasoline margin was affected by oversupply due to declining auto sales in the past six months and China's economic slowdown resulting in increased exports of gasoline from China. The Dubai-gasoline margin was driven mainly by demand growth from mining activities in Australia and construction of infrastructural work in India, including tight supply caused by the incidents of

refineries in all regions. The Dubai-fuel oil margin was driven mainly by Iran's declining fuel oil output as a result of US sanctions and decreased output from Russia, as many of its refineries were modified into quality improvement units, resulting in lower supply of fuel oil from Russia.

Unit: US$/barrel

	2017	2018			YoY
Price Spread	Average	Highest	Lowest	Average	%
UNL95 - DB	14.85	14.40	2.70	10.53	-29.09%
GO - DB	12.51	16.54	11.67	14.63	+16.95%
HSFO - DB	-2.33	4.31	-5.92	-2.63	+11.41%

2019 Refining Margins

The 2018 hydrocracking average refining margin in Singapore tends to drop marginally, as demand for refined products in Asia is likely to be lower following the global economic recession caused by ongoing US-China trade disputes, US Fed's interest rate hike, and the European monetary policy. Demand tends to rise as more refineries in China, Saudi Arabia and Malaysia come on stream. However, change in bunker fuel oil specifications to limit the sulfur content of marine fuel oil to 0.5% might help push the refining margin in the second half of 2019.

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 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 calculated are based 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 Market Competition

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 (2.94%), 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)		
	2017	2018	Growth variation
Regular Gasoline	1.39	1.20	-13.9%
Gasohol	28.83	29.96	+3.9%
Gasoline Group	30.22	31.16	+3.1%
Diesel Group	63.73	64.67	+1.5%
Jet fuel	18.47	19.44	+5.2%
Fuel Oil	5.76	6.01	+4.2%
Total	**118.18**	**121.27**	**+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 riseof 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

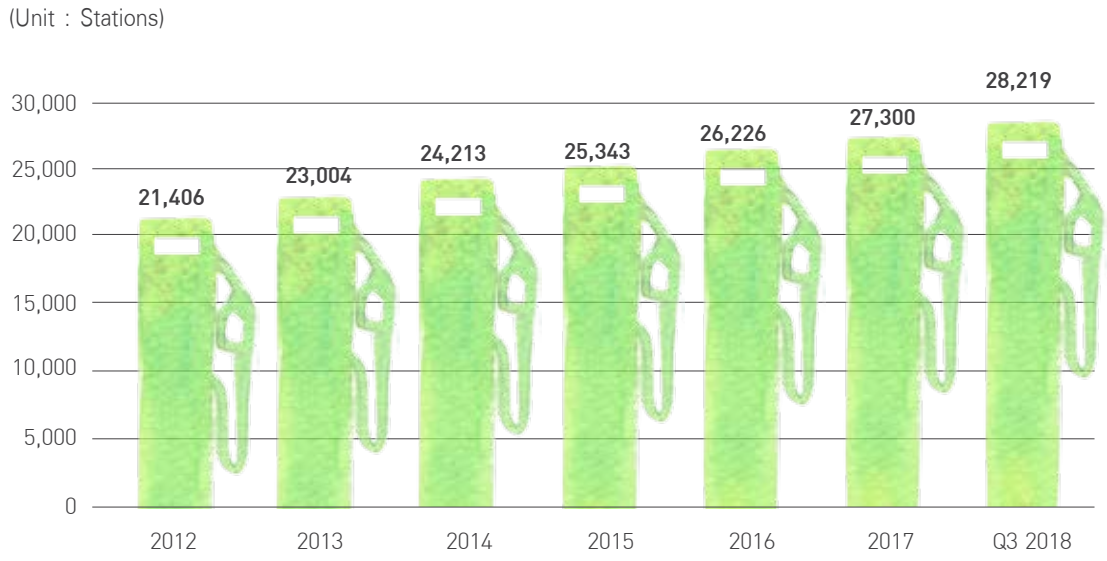
Refinery	Crude run (thousand barrels per day, KBD)		
	2017	2018	Growth variation
Thaioil	306	304	-0.49%
IRPC	181	207	14.62%
Esso	140	144	3.22%
Star Petroleum (SPRC)	166	176	6.02%
PTT Global Chemical	191	196	2.24%
Bangchak	111	102	-7.76%
Total	**1,095**	**1,130**	**3.20%**

Source: Department of Energy Business Jan.-Nov. 2018 and Bangchak Corporation Plc.

This year 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, decliningoil 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 520 new service stations were added this year, roughly 3.4% from the total, making the total number now 28,219 as at September 30, 2018. Out of these new stations, 557 stations sold E20 gasohol and 180 stations sold E85 gasohol, leading to 4,085 stations serving gasohol E20 and 1,258 stations serving gasohol E85 as at November 30, 2018. Obviously, the higher demand and the number of service stations serving gasohol E20 and E85 were driven by a higher number of car sales with E20- and E85-compatible engines.

Total Number of Service Stations in 2018



Source: Department of Energy Business, www.doeb.go.th/2017/#/article/statistic

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.

Shareholder Structure

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	33,642,198	2.44
6. STATE STREET EUROPE LIMITED	31,304,143	2.27
7. AIA COMPANY LIMITED - EQ4-P	30,000,069	2.18
8. Bangkok Life Assurance PCL	23,056,200	1.67
9. Krungsri Dividend Stock LTF	22,045,400	1.60
10. NORTRUST NOMINEES LTD-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 10 Major Shareholders (as of September 7, 2018)	Number of Shares	Shareholding (%)
1. N.C.B.TRUST LIMITED-NORGES BANK 1	18,743,578	1.36
2. BNY MELLON NOMINEES LIMITED	16,931,700	1.23
3. STATE STREET 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: https://www.set.or.th/set/companyholder.do?symbol=BCP-R&language=en&country=US

Remark: 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 bond holder'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.**

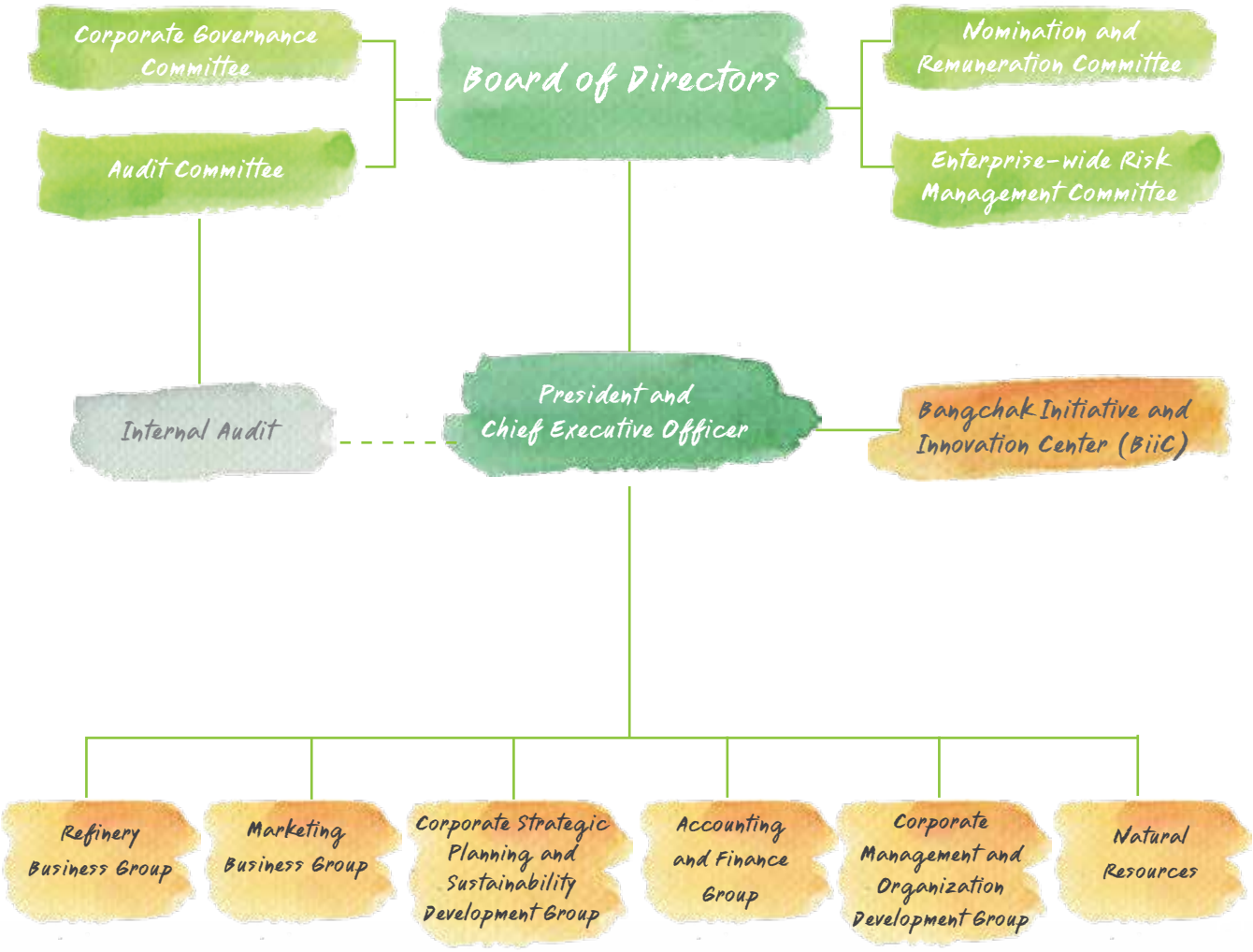
The Company has the policy to pay out dividend to the shareholders at the rate of not less than 40 percent of net profit after deduction of allocation of legal reserve. However, this is subject to the Company's cash flow and investment plans according to the necessary, appropriation and other concerning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

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
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 September 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. Porametee Vimolsiri	- Independent director - Member of the Enterprise-wide Risk Management Committtee	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

Name	Position	Appointment date
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 Committtee	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

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 Chunhavajira 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	Socity, 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 Responbilities of the Chairman, leader of the Board

- Steer, monitor, and ensure efficient performance of the Board in fulfilling the Company's objectives and main goals.
- Ensure full participation by the Directors in advocating a corporate culture of ethics and good corporate governance.
- Set Board meeting agenda in consultation with the President and Chief Executive Officer, with measures to ensure that essential matters are included
- Allocate adequate time for the management to table matters and for Directors to thoroughly discuss important matters
- Promote Directors' exercising of full discretion, their attention to all matters brought to the meetings, and corporate governance matters
- 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 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	Chairman and Non-executive Director
2. Mr. Surin Chiravisit	Member and Independent Director
3. Dr. Porametee 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 Chunhavajira [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. Porametee 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 who completed their terms and resigned 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						
	BOARD	AC	NRC	ERMC	CGC	Bonus	Total
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
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
รวม	**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
รวม	**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 2016 and 2017

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)					
		Monthly remuneration	Meeting allowance	Bonus	Sub-Committee remuneration	ESOP (Capital Gain)	Net total
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 Pornpatkul	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:

Directors and executives assigned to other companies

	Name	Subsidiary Companies																																			Associated Companies									Joint Ventures		Others
		Thailand																					Singapore								Japan			Australia	Netherlands	Thailand						Singapore	Philippines	Norway	Thailand	Cannada	Thailand
		BCPG	BBGI	BCR	BGN	BSE	BSE-PRI	BSE-CPM1	BSE-BRM	BSE-BRM1	BSE-NMA	BBP1	BBP2	Lom Ligor	BBF	BBE (CCO)	KGI	BCPR	BCVB	BCVE	BCVI	BCVP	BCPR SG	BCPT	BCPI	BCPE	BCPG Investment	BSE Energy	Greenergy Holdings	Greenergy Power	Huang Ming	BCPG Japan	BCPG Engineering	Nido	BCPG Wind	Bongkot Marine	Oam Suk	UBE	UBG	UAE	NPE	Star Energy	PetroWind	OKEA	FPT	LAC	Foundation
Directors	1. Mr. Pichai Chunhavajira	X	X	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	2. Mr. Surin Chiravisit	-	/	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Executives	3. Mr. Chaiwat Kovavisarach	-	/	X	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	/	-	-	-	-	-	-	-	-	-	/	-	/	X
	4. Mr. Pongchai Chaichirawiwat	-	//	/	-	-	-	-	-	-	-	-	-	-	X	/	/	/	-	-	-	-	/	-	-	-	-	-	-	-	-	-	-	-	-	-	-	/	/	/	/	-	-	-	-	-	-
	5. Mr. Somchai Tejavanija	-	-	/	/	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	/	/	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	6. Mr. Yodphot Wongrukmit	-	-	-	/	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	7. Mr. Bundit Sapianchai	//	-	-	-	X	X	X	X	X	X	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	/	-	-	-	/	-	-	-	-	-	-	/	/	-	-	-	-
	8. Mr. Surachai Kositsareewong	-	-	-	-	-	-	-	-	-	-	-	-	-	/	/	-	-	/	/	/	/	/	/	/	/	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	9. Mr. Kiatchai Maitriwong	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	/	-	-	-	-	-	-	-	-	-	/
	10. Mr. Chalermchai Udomranu	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	/	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	11. Mr Dhanajit Makarananda	-	-	-	-	-	-	-	-	-	-	-	-	-	//	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	12. Mr. Chokchai Atsawarangsalit	-	-	-	/	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	/	-	/
	13. Mr. Viboon Wongsakul	-	-	//	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	14. Ms. Revadee Pornpatkul	-	-	-	-	/	/	/	/	/	/	/	/	/	-	-	-	-	-	-	-	-	-	-	-	-	-	/	-	-	-	/	/	-	-	-	-	-	-	-	-	-	-	-	-	-	/
	15. Michael W. Fischer	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	/	-	-	-	-	-	-	-	-	-	/	-	-	-
	16. Mr. Suwat Meemook	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	/	/	/	/	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	17. Mr. Watcharapong Saisuk	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	/	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	18. Mr. Seri Anupantanan	-	-	-	//	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	19. Mrs. Chongprode Kochaphum	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	/
	20. Mr. Bundit Hansapaiboon	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	/	-	-	-	-	-	-	-	-	-	-	-
	21. Mr. Chumpol Samolrerk	-	-	-	-	-	-	-	-	-	-	-	-	-	-	//	/	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	22. Miss Sasamon Suputthamongkol	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	/	-	-	-	-	-	-	-	-	-	-

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

Greenovate our Tomorrow

Subsidiary Companies

1 BCPG Plc (BCPG)
2 BBGI Plc. (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-PRI)
7 Bangchak Solar Energy (Chaiyaphum 1) Co., Ltd. (BSE-CPM1)
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 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 Oam Suk Social Enterprise Co., Ltd. (Aom Suk)
3 Ubon Bio Ethanol Plc. (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. (Petro Wind 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, Senior Vice President, Corporate Compliance (appointed as Executive Vice President of Sustainability Development and Corporate Compliance, effective from January 1, 2018), as Company Secretary, effective from July 1, 2009. Her profile is as follows:

Ms. Pakawadee Junrayapes

- Age 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), Mnistry 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).

The 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 Univesity
- 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, Thaioil Public Company Limited
- 2008 - 2012 : Chairman, Thaioil 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, Thaioil Power Company Limited
- 1998 - 2011 : Director, The Bangchak Petroleum Public Company Limited

Other directorship positions / other positions at present

- Other listed companies
  - Chairman, BCPG Public Company Limited
- Non-listed companies
  - Chairman, BBGI Public Company Limited
  - President, Thailand Boxing Association
  - Vice President, National Olympic Committee of Thailand
  - 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

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
  - Senior Consultant, Amata Corporation Public Company Limited
- Non-listed companies
  - Director, BBGI Public Company Limited
  - 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

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 Limited Company
  : Chairman, Khonburi Sugar Public Company Limited
- 2015 - Present : Chairman, M.K. Real Estate Development 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
  - Chairman, Khonburi Sugar Public Company Limited
  - Chairman, Seamico Securities Public Limited Company
  - Chairman, M.K. Real Estate Development Public Company Limited
- Non-listed companies
  - Chairman of management committee, KT ZMICO Securities Company Limited
  - Director, Asia Kangnam Company Limited
  - Director, New Corp Company Limited
  - Director, Buntudthong Pattana Company Limited
  - Director, HSH-Siam Chaophraya Holdings Company Limited
  - Director, The Mall Group Company Limited
  - 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

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 of 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
  - Member of the National Legislative Assembly
  - Director, Five Provinces Bordering Forest Preservation Foundation
  - 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

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
  - Member of the National Legislative Assembly
  - 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

Lt.Gen. Thammanoon Withee

Independent Director and Director with Authorized Signature

(Started on February 28, 2018)

Age 57

Education / Training

- Bachelor of Science, Chulachomklao 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 : Regimemtal Commanding Officer 12th Infantry Division, The King's Guard
- 2010 : Director of Royal Thai Survey, School Army Region 1
- 2008 : Deputy Regimemtal Commanding Officer 12th Infantry Division, The King's Guard

Other directorship positions / other positions at present

- Other listed companies
  - None -
- Non-listed companies
  - 1st Corps Commander
  - 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

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
  - 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

Dr.Porametee Vimolsiri

Independent Director

(Started on June 7, 2018)

Age 58

Education / Training

- Doctor of Philosophy (Ph.D.) (Economics) Public Finance and Policy, Carleton University
- 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
  - Permanent Secretary, Ministry of Social Development and Human Security
  - Chairman, Bank of Thailand
  - Board Member, Electricity Generating Authority of Thailand
  - 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

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
  - Director, TOA Paint (Thailand) Public Company Limited
- Non-listed companies
  - Director, Siam Solar Power Public Company Limited
  - Director, 10th Workmen's Compensation Fund Committee
  - Director, Thai Credit Guarantee Corporation
  - Director, Industrial Estate Authority of Thailand
  - 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

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
  - Secretary-General to the Cabinet
  - Qualified member, Science and Technology Development Board
  - Member, Office of Justice Affairs
  - Member, Public Organization and Other Government Agency
  - Member, National Legislative Assembly Coordination Committee
  - Member, Committee on Inspection of Draft Law and Subordinate Legislation for Submission to the Cabinet
  - 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

Mr. Jarin Chakkaphark

Director

(Started on October12, 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 College Class 2007, The National Defence Course
- Anti-Corruption Strategic Management Corse 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
  - 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

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 of the 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
  - Chairman, Airports of Thailand Public Company Limited
  - Chairman, TMB Bank Public Company Limited
- Non-listed companies
  - Permanent Secretary, Ministry of Finance
  - Member of university council, Mahasarakham University
  - 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

Dr. Anuchit Anuchitanukul

Director

(Started on April 25, 2018)

Age 47

Education / Training

- Ph.D. (Computer Science), Stanford University, USA
- MSCS, Stanford University, USA
- Master of Business Administration, Chulalongkorn University
- Bachelor of Engineering (1st Class Honors), Chulalongkorn University
- Strategy and Innovation for Businesses 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 AII)
- 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
  - First Executive Vice President (Head of Process & Product Improvement and Alternative Channels Group), Kiatnakin Bank Public Company Limited
- Non-listed companies
  - Director, Stock Exchange of Thailand
  - Director, Aksorn Education Public Company Limited
  - Director, National e-Payment Committee, Office of the Prime Minister
  - Advisor, Identity provider (IdP) Committee, Ministry of Digital Economy and Society
  - Qualified member, Commission policy on private participation in state affairs, State Enterprise Policy Office (SEPO.)
  - Qualified member, Committee for the Protection of Credit Information
  - Director, A Member of the Big Data Driven Board, Ministry of Finance
  - Director, In the Revenue Department drive the committee into digital revenue, The Revenue Department

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

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
  - 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

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 Univesity
- 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)

- 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
  - Director, Lithium Americas Corp.
  - Chairman of the Investment Committee, BCPG Public Company Limited
- Non-listed companies
  - Chairman, Bangchak Retail Company Limited
  - Chairman, Happiness Sharing Foundation
  - Chairman, OKEA AS
  - Director, BBGI Public Company Limited
  - Director, Nido Petroleum Pty Ltd
  - Director, Asia Insurance 1950 Public Company Limited
  - Director and member, Government Pension Fund
  - Director, Suan Kulab Witthayalai Alumnus Association Under the Royal Partonage of H.M. the King
  - Vice President of the Activity Relationship, AIT Alumni Association (Thailand)
  - Director, Prachabodee Social Enterprise Foundation
  - Vice Chairman, The Federation of Thai Industries and Chairman Of The Institute of Research Development and Innovation for Industry
  - Director, International Chamber of Commerce Thailand (ICC Thailand)

Shareholding in the Company: 1,060,000 shares 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

The 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 Univesity
- 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)

- 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
  - Director, Lithium Americas Corp.
  - Chairman of the Investment Committee, BCPG Public Company Limited
- Non-listed companies
  - Chairman, Bangchak Retail Company Limited
  - Chairman, Happiness Sharing Foundation
  - Chairman, OKEA AS
  - Director, BBGI Public Company Limited
  - Director, Nido Petroleum Pty Ltd
  - Director, Asia Insurance 1950 Public Company Limited
  - Director and member, Government Pension Fund
  - Director, Suan Kulab Witthayalai Alumnus Association Under the Royal Partonage of H.M. the King
  - Vice President of the Activity Relationship, AIT Alumni Association (Thailand)
  - Director, Prachabodee Social Enterprise Foundation
  - Vice Chairman, The Federation of Thai Industries and Chairman Of The Institute of Research Development and Innovation for Industry

Shareholding in the Company: 1,060,000 shares 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

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
  - Chief Executive Officer, BBGI Public Company Limited
  - Chairman, Bangchak Biofuel Company Limited
  - Director, Ubon Bio Ethanol Public Company Limited
  - Director, Ubon Agricultural Energy Company Limited
  - Director, Ubon Bio Gas Company Limited
  - Director, NP Bio Energy Company Limited
  - Chairman, KSL Green Innovation Public Company Limited
  - Director, Bangchak Retail Company Limited
  - 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

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 (SFE28/2016), 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 (Class 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
  - Director, BCPR Pte. Ltd.
  - Director, BCPR Company Limited
  - Director, BCP Energy International Pte. Ltd.
  - Director, BCP Innovation Pte. Ltd
  - Director, Bangchak Green Net Company Limited
  - 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

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 (NDC2554)
- 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
  - Director, Bangchak Green Net Company Limited
  - Director, Provincial Electricity Authority
  - Director, PEA ENCOM International Company Limited
  - Director, TOT Public Company Limited
  - Vice Chairman, Happiness Sharing Foundation
  - Director, Thailand Smart Center (TSC), The Thai Chamber of Commerce

Shareholding in the Company: 44,096 shares or 0.003203% 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

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 10, 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
  - President, BCPG Public Company Limited
- Non-listed companies
  - Chairman, Bangchak Solar Energy Company Limited
  - Chairman, Bangchak Solar Energy (Prachinburi) Company Limited
  - Chairman, Bangchak Solar Energy (Chaiyaphum 1) Company Limited
  - Chairman, Bangchak Solar Energy (Buriram) Company Limited
  - Chairman, Bangchak Solar Energy (Buriram 1) Company Limited
  - Chairman, Bangchak Solar Energy (Nakhonratchasima) Company Limited
  - Director, Huang Ming Japan Company Limited
  - Director, BCPG Wind Cooperatief U.A.
  - Director, Star Energy Group Holdings Pte. Ltd.
  - 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

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 26
- 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

- 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
  - Director, BCPR Pte. Ltd.
  - Director, BCPR Company Limited
  - Director, Bangchak Biofuel Company Limited
  - Director, Bangchak Bioethanol (Chachoengsao) Company Limited
  - Director, BCP Energy International Pte. Ltd.
  - Director, BCP Innovation Pte.Ltd.
  - Director, BCP Trading Pte.Ltd
  - Director, BCV Bio Based Co., Ltd.
  - Director, BCV Energy Co., Ltd.
  - Director, BCV Innovation Co., Ltd.
  - Director, BCV Partnership Co., Ltd.
  - Commissioner of the Arbitration Committee
  - Commissioner, The Electronic Transactions Commission

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

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), Thai Institute of Directors
- 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 (ACEP 6/2013), Thai Institute of Directors
- Management Development Program (MDP 18/2013), Thailand Management Association
- Leadership Succession Program (LSP 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
  - Director, Oam Suk Social Enterprise Company Limited
  - 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

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 (LSP6), 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
  - Director, BCP Trading Pte. Ltd

Shareholding in the Company: 1,865 shares or 0.000135% 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

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

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
  - Managing Director, Bangchak Biofuel Company Limited

Shareholding in the Company: None (As of September 7, 2018)

Familial relationship between directors and executives: None

Criminal records on violation of securities and futures contract laws: None

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 Standford 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
  - Director, Bangchak Green Net Company Limited
  - Director, Fuel Pipeline Transportation Company Limited
  - Director, Happiness Sharing Foundation

Shareholding in the Company: 300 shares or 0.000022% (As of September 7, 2018)

Familial relationship between directors and executives: None

Criminal records on violation of securities and futures contract laws: None

Mr. Viboon Wongsakul
Executive Vice President, appointed to Bangchak Retail Company Limited

Age 51

Education / Training

- Master of Business Administrative – Marketing, University of Wisconsin-Whitewater, USA
- Bachelor of Business Administrative – Finance & Banking, Chulalongkorn University
- Leading in a Disruptive World, Stanford University, USA
- Entrepreneurial Leadership Program, Boston, Babson University, USA
- Leadership Development Program, Harvard Business School
- Strategic Marketing in Action Program, IMD Business School, Switzerland
- Senior Executive Program (SEP), Sasin Business School
- Enterprise Leadership Program, Insead University

Experience

Bangchak Corporation Public Company Limited

- 2018 - Present : Executive Vice President, appointed to Bangchak Retail Co.Ltd.
- 2015 : Executive Vice President, Retail Business and Marketing Support
- 2015 : Executive Vice President, Marketing Business

Others

- 2013 : Vice President, Retail Business Department, PTT Public Company Limited
- 2007 : Deputy Managing Director, Marketing& Retail Business Support Department, PTT Retail Management Company Limited
- 2006 : Assistant Director Dry Food Merchandise & Buying, Big-C Supercenter Public Company Limited
- 1990 : Regional Manager – Asia Pacific Non-Oil Alliances, ExxonMobil Fuels Marketing Business
  : C-Store Manager, Retail Marketing and Investment Retail Strategist, Network Planning, Capital/Opex and Feasibility, ESSO Thailand
  : International Marketing, Motorola Inc., Chicago USA

Other directorship positions / Other positions at present

- Other listed companies
  - None -
- Non-listed companies
  - Managing Director, Bangchak Retail Company Limited

Shareholding in the Company: None (As of September 7, 2018)

Familial relationship between directors and executives: None

Criminal records on violation of securities and futures contract laws: None

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 (As of September 7, 2018)

Familial relationship between directors and executives: None

Criminal records on violation of securities and futures contract laws: None

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 (DAP99/2555)
- Executive Development Program (EDP 12/2556)
- Company Secretary Program (CSP71/2016)
- Smart Disclosure Program (SDP/2559)
- Executive Energy Management Program (EEM/2017)
- Developing an Outward Mindset (November 2018)

Experience

The Bangchak Petroleum 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, Ac counting 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

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 Directors (IOD)
- Director Certification Program (DCP142/2010), Thai Institute of Directors (IOD)
- Executive Development Program (EDP 2012), Mnistry 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, 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

Dr. Michael William Fischer
Executive Vice President, Natural Resources Unit

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
  - Managing Director and Chief Executive Officer, Nido Petroleum Pty Ltd.
  - Board member, OKEA AS

Shareholding in the Company: None (As of September 7, 2018)

Familial relationship between directors and executives: None

Criminal records on violation of securities and futures contract laws: None

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 (As of September 7, 2018)

Familial relationship between directors and executives: None

Criminal records on violation of securities and futures contract laws: None

Corporate Governance

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, manangement, 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.

Accountability

Responsibility

Transparency

Equitable Treatment

Vision to Create Long Term Value

Ethics

- **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	17 Companies
- Amount	5.21 Million Baht
2. Fees for annual audit of the overseas subsidiaries' financial statements	
- Number of subsidiaries	38 Companies
- Amount (equivalent)	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.

Investors and related parties can make queries or ask for the Company's information at Ms. Supamol Eamaon, tel. 0 2335 8663 or e-mail address: ir@bangchak.co.th

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.

This year the committee met 12 times, nine of which with the management (in the absence of those with invested interests on applicable items). Below are the meeting attendance records.

Name	Attendance
Mr. Suthep Wongvorazathe	12/12
Ms. Prisana Praharnkhasuk	12/12
Pol. Lt. Gen. Chaiwat Chotima	11/12
Mr. Krisada Jeenavijarana*	4/5

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

In addition, the committee twice met with the Enterprise-wide Risk Management Committee (ERMC).

Below are the highlights of the committee's deliberations:

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

Report of the Corporate Governance Committee

To the Shareholders

The Board of Directors of Bangchak Corporation Pcl appointed the Corporate Governance Committee, chaired by General Vitch Devahasdin, with Mr. Jarin Chakkaphark, Mr. Teerapong Wongsiwawilas, and Mr. Chaiwat Kovavisarach as members.

This year the committee held two meetings to monitor compliance with good corporate governanceplans,with the following performance summary:

1. Rights of shareholders

- Publicized AGM data on Bangchak's website 34 days ahead of the AGM and sent documents to the shareholders 30 days ahead of the AGM
- Arranged enough AGM registration points for the attending shareholders for swift registration
- Allowed the shareholders to submit queries needing answers from August 31, 2018 onward.

2. Equitable treatment of shareholders

- Nominated 10 independent directors as proxy choices at the AGM
- Allowed the shareholders to nominate agenda items and directors from August 31 to December 31, 2018
- Reported the directors' and management's securities portfolios each month at Board meetings.

3. Roles of stakeholders

- Monitored the reports on complaint-making and tips through Internal Audit; this year there was one complaint concerning the disbursement of expenses, which—after fact-finding—led to the conclusionthat the employee in question erred in task performance, but had no dishonest intention.

4. Information disclosure and transparency

- Announced corporate performance, data, and outlooks to analysts and domestic and overseas investors every quarter
- Greeted shareholders during site visits this year.

5. Board responsibilities

- Enhanced skills and expertise for directors (the corporate leaders) for effectiveness, ability to pursue short-term and long-term goals, and leadership toward sustainability
- With the management, participated in Bangchak's annual corporate strategies seminar to review and revise Bangchak's vision and goals
- Held exclusive meetings of the independent directors in May and October and meetings of the non-management directors in April and November.

6. Corporate Governance Policy

- Amended the Corporate Governance Policy (Revision 15) on the directors' roles and responsibilities in keeping with the listed companies' corporate governance code; the limit to director service for other listed companies (excluding directors serving as the management of affiliates); independent directors' terms of up to three consecutive terms; and the duty of reporting portfolio changes in portfolios in keeping with SEC's announcement No. Saw Jaw 38/2561
- Arranged for all employees' acknowledgment and taking of the annual policy test through the "e-HR" online human resource administration system and the "We Share" knowledge management system

- Developed infographics to communicate the Corporate Governance Policy concerning whistleblowing or complaints to all employees via the intranet.

7. Participation in publicizing the corporate governance code

- Bangchak management served as speakers on the sharing of its corporate governance policy and experiences on various occasions; Bangchak also welcomed public and private agencies, as well as educational institutions, on their visits to its business sites, experience sharing, and study visits on Bangchak's corporate governance.

8. Publicity to promote the corporate governance culture, including:

- Corporate governance talk at directors' orientation
- Corporate governance talk at employees' orientation
- Corporate governance talk for external agencies
- 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.

9. Anti-corruption

- 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
- Stressed the "No-Gift Policy" for all occasions to elevate corporate governance and set good examples in conducting fair business with all related parties.

Thanks to Bangchak's value given to corporate governance, this year it continually garnered many awards and recognition:

- International

  "Platinum Award" for a fifth consecutive year at The Asset Corporate Awards 2018, an accolade presented by The Asset Magazine (Hong Kong) to outstanding companies for corporate governance and socio-environmental responsibility "ASEAN Corporate Governance Award (Top 50 ASEAN PLCs)" for a second year running. This contest relied on ACGS (the ASEAN CG Scorecard) as the common criterion for assessing and ranking ASEAN listed companies by ASEAN capital market regulators under the main sponsorship of the Asian Development Bank.

- National

  "Best Sustainability Award" for a second year running in the outstanding sustainability group among listed companies; the SET award recognized outstanding listed companies equipped with corporate governance, sustainable business, high prominence, and echoing comprehensively sustainable integration.

(Signed) *Vitch Devahasdin*
(Gen. Vitch Devahasdin)
Chairman,
Corporate Governance Committee
November 22, 2018

Report of the Nomination and Remuneration Committee

To the Shareholders

Bangchak Corporation's Board Meeting No. 6/2018 appointed the current Nomination and Remuneration Committee, chaired by Mr. Surin Chiravisit, with Adm. Sucheep Whoungmaitree, Police Lt. Gen. Chaiwat Chotima, and Lt. Gen. Thammanoon Withee as members. For true performance freedom, all were independent directors, and Mr. Suthep Wongvarazathe served as member and committee secretary.

This year seven meetings were held by the committee, with the following highlights.

Director and the President & CEO nomination: The committee recruited directors for nomination, replacing the retiring ones whose terms were completed and who resigned before term completion. In doing so, it took into consideration competencies, experience, sound career history, and visionary leadership. They must not only be virtuous and ethical, but also possess a good attitude toward Bangchak, and must be able to dedicate enough time for Bangchak's business. In addition, it considered Board diversity and developed a Board skills matrix to define the desired qualifications, taking into consideration needed skills and due qualifications in line with the Board composition and Board structure fitting Bangchak's business strategies. IOD's Director Pool was also reviewed. Today the Board consists of 15 directors, 10 of whom are independent and four are non-management directors. The President & CEO is a management director. Their profiles appear under "The Board".

Determination of the Board and President & CEO's compensation: Taken into consideration were suitability for assigned duties and responsibilities, linked to Bangchak's own performance outcomes, in relation to SET-listed companies of peer industries and sizes. Such compensation must serve as a sufficient incentive for them to deliver quality performance, while pursuing Bangchak's goals and business directions. Remuneration data appear under "Management Structure".

The Nomination and Remuneration Committee performed its duties with freedom and under the corporate governance code to give the nomination and compensation-setting processes transparency and bolster confidence among the shareholders and all stakeholders.

(Signed) *Surin Chiravisit*

(Mr. Surin Chiravisit)

Chairman, Nomination and Remuneration Committee

December 14, 2018

Report of the Enterprisewide Risk Management Committee

To the Shareholders

Bangchak Corporation values good corporate governance, particularly risk management, to ensure that can efficiently and duly deal with uncertainties affecting its business. The Enterprisewide Risk Management Committee (ERMC) this year performed Board-assigned duties under enterprisewide risk management criteria.

This year the Board consulted the management and the external auditor on six occasions and held two meetings with the Audit Committee, as highlighted below:

- **Oversaw and reviewed policies, and managed key risks:** These tasks encompassed strategic, operating, financial, and corporate reputation risks, all of which could stem from highly dynamic business circumstances due to internal and external factors, including those concerning safety; impacts on the environment, society, and communities; laws & compliance; and anti-corruption. This year, enterprisewide risk management involved the identification and definition of risk management plans in parallel with the definition of corporate strategic plans to align with the COSO ERM scope. The committee advocated vigilance over cyber-security threats to performance outcomes and valued risk management for Bangchak affiliates engaged in suitable business undertakings; it particularly valued the management of key corporate risk control to acceptable levels so as to jointly achieve goals.

- **Advised for new investment:** The committee provided advice and observations on the preparation of risk management plans for domestic and international investment projects, including investment made through subsidiaries that bought capital increase shares from OKEA AS, which engaged in petroleum development and production in Norway together with the procurement of new strategic areas to accommodate new business investments by Bangchak Group's affiliates. Taken into account were key factors and business outlooks that could affect short-term and long-term businesses so as to lower investment risks. Note that investment projects considered significant to Bangchak must command assorted risk management plans and secure ERMC's concurrence before being forwarded to the Board for approval so as to ensure due risk management, no environmental impact, and the ability to meet goals.

- **Supported BCM (Business Continuity Management):** ERMC monitored business continuity management tasks and advocated Bangchak's preparedness in strategies, processes, personnel, and resources in line with ISO 22301:2012. This year it held BCM Introduction and Awareness training for three groups of employees and modified business continuity plans for efficient interconnection and management under any circumstances. In undertaking the BCM

plan drill, assorted BCM plans were together leveraged to prepare the entire system for efficiency of and confidence in uninterrupted operation despite crises or swift, secure, and sustainable resumption of business.

The Enterprisewide Risk Management Committee is committed to ensuring that Bangchak commands due supervision and risk management. Thanks to the steps taken, it is confident that Bangchak indeed proceeds with efficiency and will successfully achieve enterprisewide goals.

(Signed) *Prasong Poontaneat*

(Mr. Prasong Poontaneat)

Chairman,

Enterprise-wide Risk Management Committee

December 14, 2018

Changes in the Securities Portfolios of Directors and Executives

The Company has notified all Board of Directors and Executive members of the Securities and Exchange Commission (SEC) announcement, calling on them to report their portfolios, including 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 of the juristic person, to SEC within 30 days of their appointment to the Board and the Management rank, respectively, and to do so with each change in portfolio within 3 business days.

Each month the portfolios and changes of the Board and the executives are reported to the Board at their meeting. These portfolios were as follows.

Name	Shares as of Year-end 2017	Shares as of Year-end 2018	Increase (Decrease)
Board of Directors			
1. Mr. Pichai Chunhavajira	-	-	-
2. Mr. Surin Chiravisit	-	-	-
3. Mr. Suthep Wongvorazathe	-	-	-
4. Gen. Vitch Devahasdin	-	-	-
5. Adm. Sucheep Whoungmaitree	-	-	-
6. Pol.Lt.Gen. Chaiwat Chotima	-	-	-
7. Lt.Gen. Thammanoon Withee [1/]	-	-	-
8. Mrs. Prisana Praharnkhasuk	-	-	-
9. Mr. Teerapong Wongsiwawilas	-	-	-
10. Dr. Porametee Vimolsiri [3/]	-	-	-
11. Mr. Jarin Chakkaphark	-	-	-
12. Mr. Prasong Poontaneat	-	-	-
13. Dr. Anuchit Anuchitanukul [2/]	-	-	-
14. Dr. Prasert Sinsukprasert	-	-	-
15. Mr. Chaiwat Kovavisarach	850,000	1,060,000	210,000
Executive Management			
1. Mr. Pongchai Chaichirawiwat	64,332	64,332	-
- Mr. Pongchai Chaichirawiwat	*44,332*	*44,332*	-
- Mrs. Siriwan Chaichirawiwat (Spouse)	*20,000*	*20,000*	-
2. Mr. Somchai Tejavanija	28,522	28,522	-
3. Mr. Yodphot Wongrukmit	44,096	44,096	-
4. Mr. Bundit Sapianchai	31,895	31,895	-
5. Mr. Surachai Kositsareewong	-	-	-
6. Mr. Kiatchai Maitriwong	11	11	-
7. Mr. Chalermchai Udomranu	1,865	1,865	-

Note: Directors and executives do not have any indirect shareholding (except the executive no.1).

[1/] Appointed to the Board on February 28, 2018

[2/] Appointed to the Board on April 25, 2018

[3/] Appointed to the Board on June 7, 2018

Bangchak and Sustainability

In pursuit of the successful **Evolving Greenovation** corporate vision, Bangchak remains focused on creating green innovations to develop the refinery, marketing, renewable energy, and natural resources businesses. At the same time, it remains relentlessly committed to social responsibility and the environment, driven by the 3S strategy (Security, Stability, Sustainability) for business sustainability and security.

evolving Greenovation

To be the Leading Asian Greenovative Group, founded on Good Corporate Governance, through Inclusiveness and Sustainability

• 4 Green Strategy

Besides furthering its innovation business to supplement value to the corporation, Bangchak has executed the sustainability development plan on the environment and society to strike a balance prescribed by the Sufficiency Economy philosophy, proceeding in line with the 4 Green sustainability strategies (Green Business, Green Production, Greenovative Experience, Green Society). These elements integrate SDGs with a focus on goals that are compatible with the national policy, sustainability strategies, interests, and business capability of Bangchak, as well as the nine targets of stakeholders' needs and targets.

Environment: This year Bangchak prepared its carbon footprint, registered with the Thailand Greenhouse Gas Management Organization (Public Organization) (TGO). It is also developing its water footprint as an environmental management tool for greater efficiency.

Society: Bangchak participated in the area development of Kaen Makrut in Uthai Thani to generate secure income and promote farmers' self-reliance as an agricultural learning center.

In developing its internal processes, Bangchak remains committed to becoming a high-performance organization and employs the Management for Excellence Criterion of the Office of Thailand Quality Award in improving work processes for greater perfection. In addition, Bangchak strives to align its training courses on organization change through the Transformation Program with its corporate values to prepare the corporation and the workforce for handling change with a degree of immunity so that all may be primed for the future and comprehensively meet stakeholders' needs and expectations.

For more information, please visit www.bangchak.co.th, which contains the Sustainability Report prepared under GRI Sustainability Reporting Standards (GRI Standards).

SPAR

Internal Control

Bangchak Corporation PCL constantly values a sound 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 had been assigned by Bangchak to assess the system and table 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

Bangchak'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. KasemWattanachai 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 representedan 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 Enterprisewide 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 developthem 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

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.

Risk management

Amidrapid 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. This year Bangchak amended its crisis management and business continuity management (BCM) plans, as in every previous year. Also, it staged a BCM plan and emergency plan drills under the topic of "emergency at crude oil tanks located at the refinery and BCM plans", a simulation embracing a communication drill between the management and relevant employees. The outcomes played a part in improving procedures and securing additional resources for Bangchak's improved BCM system and the assurance of uninterrupted businesses in the face of assorted crises.

Risk management structure

The Board, executives, and all units are involved in the management of risks. The Enterprisewide Risk Management Committee (ERMC), appointed by the Board, assures that Bangchak has an efficient system that can appropriately manage all risks, and promotesthe 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 enterprisewiderisk management, develops riskmanagement system covering all business groups, and appointsa 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, energystorage-related technologies, the progress of ElectricVehicle (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 enhancingthe assessment efficiency of risk factors and their causes,Bangchak's risk scope contains corporate, investment, and BCM risks.

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 processto help Bangchak stay vigilant foremerging 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 impactsas 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 monitoredoilprice 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 Plc., 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 timelydelivery 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 suitableproperties for Bangchak's processeswhile 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 riskmanagement measures:

- Consistently applied the Safety Integrity Level (SIL), Reliability-Centered Maintenance (RCM),and Risk-Based Inspection (RBI) systems throughout its processes, enabling Bangchak to planproper 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 airquality 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 testsof 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 employingthe electricity and steam produced by its cogeneration power plant, fueled by natural gas instead of fuel oil, while operating a new12-MW capacity cogeneration power plant.
- Integratedsocio-environmental stewardship and energy conservation as part of Bangchak's corporate culture. Bangchak Refinery has won the Green Industry Level 5: Green Network Award, while Bangchak's Head Office building has been certified as LEED Platinum, the highest rating level of LEED certification for its design, which promotes the use of energy-saving and environmentalconservation products.
- Developed green-energy businessesby expanding Bangchak's renewableenergy-based power generation business via BCPG Pcl, and biofuel business via BBGI Plc., 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 crisishas 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 tominimizing 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 taxpolicy 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 ERMC'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 RegionBusiness Office, and Bang Pa-in Oil Distribution Center. This certificationunderscores Bangchak's readiness for crises and efficient Business Continuity Plan (BCP) implementation under international standards, whilestakeholders can rest assured that Bangchak can handle emergency responses while continuing to deliverits 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.

Connected transactions

Connected transactions

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

1.1 Sale of products and servicestosubsidiaries, 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
Subsidiaries				
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
Associated companies				
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 servicesfrom 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
Subsidiaries				
Bangchak Green Net Co., Ltd	0.61	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.	7,434.86	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
Associated company				
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
Joint venture				
Bongkot Marine Services Co., Ltd.	261.30	490.00	- Bangchak holds 30%of the shares	- Bangchak delegates its representatives as directors
Related business				
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 revenuesfrom 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
Subsidiaries				
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 theshares	- Bangchak delegates its representatives as directors
Bangchak Bioethanol Chachoengsao) Co., Ltd.	9.61	0.63	- BBGI (Bangchak's subsidiary) holds 85%of theshares	- 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
Associated company				
Ubon Bio Ethanol Plc.	21.27	-	- BBGI (Bangchak's subsidiary) holds 21.28%of the shares	- Bangchak delegates its representatives as directors
Joint venture				
Bongkot Marine Services Co., Ltd.	-	24.00	- BCP holds 30% of the shares	- Bangchak delegates its representatives as directors
Related business				
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 expensespaid 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
Subsidiaries				
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
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 holds100%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 THB (million)	2018 THB (million)	Relationship for the year ended 31 December 2018	
			Shareholding	Management
Subsidiaries				
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 THB (million)	2018 THB (million)	Relationship for the year ended 31 December 2018	
			Shareholding	Management
Associated companies				
Ubon Bio Ethanol Plc.	1.13	1.57	- BBGI (Bangchak's subsidiary) holds 21.28%of theshares	- 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
Related business				
Fuel Pipeline Transportation Co., Ltd	0.33	0.33	- Bangchak holds 4.95%of the shares	- Bangchak delegates its representatives as directors

1.5.1 Debtors and loans to related businesses

1.5.1.1 Loans

Related company	2017 THB (million)	2018 THB (million)	Relationship for the year ended 31 December 2018	
			Shareholding	Management
Subsidiaries				
Nido Petroleum Pty. Ltd.	2,113.45	1,291.39	- BCP Energy International Pte. Ltd. (Bangchak's subsidiary) holds 100% of theshares	- 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
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 theshares	- Bangchak delegates its representatives as directors

1.5.1.2 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
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
Subsidiaries				
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
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
Associated company				
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 THB (million)	2018 THB (million)	Relationship for the year ended 31 December 2018	
			Shareholding	Management
Subsidiaries				
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
Joint venture				
Bongkot Marine Services Co., Ltd.	12.42	12.59	- Bangchak holds 30% of the shares	- Bangchak delegates its representatives as directors
Related business				
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
Subsidiary				
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 forbuilding 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 subsidiarythrough 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 a38-MW capacity solarfarm, "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 indirectsubsidiary company through BCPG Plc., Bangchak Solar Energy (Prachinburi) operated a power plant to produce electricity from solar cellsat 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.

Anindirect subsidiary company of BCPG Plc., Bangchak Solar Energy (Chaiyaphum1) 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.

Anindirect 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.

Anindirect 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. Theservice 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 andwere 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 termsand 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 termsand 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.

Asubsidiary 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 termsand 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 termsand 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.

Asubsidiary 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 servicewith 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 holdsits shares, followed normal business termsand 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 termsand 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 bedealt 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.

Financial Status and Operational Results

Management Discussion and Analysis of Business Operation

Executive Summary

Summary of the Company and its subsidiaries' operating results for the quarter ended December 31st, 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%**
Refinery and Trading Business Group 1/	2,256	2,140	(1,419)	-163%	-166%	7,596	3,928	-48%
Marketing Business Group 2/	302	468	465	54%	-1%	2,301	2,177	-5%
Power Plant Business Group 3/	934	1,542	570	-38%	-63%	2,846	3,569	25%
Bio-Based Product Business Group 4/	132	151	66	-50%	-56%	529	692	31%
Natural Resource Business Group 5/	16	(81)	94	470%	216%	286	117	-59%
Others 6/	(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.

Important Events in 2018

- **January**
  - Bangchak Retail Co,. Ltd. signed an agreement to give the master franchise license for Inthanin Coffee shops in Cambodia and Laos PDR. to RCG Retail Co., Ltd. (Cambodia); the pilot Inthanin shop was introduced in Siem Reap, afterwards the franchise was expanded to Phnom Penh flagship store in April, and Peng Hout branch in October.

- **February**
  - The company's board of directors approved the proposed initial public offering of newly issued ordinary share (the IPO) and the listing on the Stock Exchange of Thailand of BBGI Co., Ltd. The number of new ordinary shares to be issued under the IPO is limited to not exceeding 30 percent of BBGI's total issued shares post-IPO. The Securities and Exchange Commission of Thailand has approved BBGI's IPO application on the 25 August 2018, and BBGI Plc. had been permitted to offer the newly issued shares to the public on the 2 October 2018.

- **March**
  - The company announced its scheduled Annual Turnaround Maintenance duration of 45 days from the 30 April 2018 to the 13 June 2018, which was executed according to plan.
  - The Refinery Business achieved its historic high monthly production rate average of 123 KBD, due to the increase in finished products volume sold through Marketing business, and to build up finished products inventory to prepare for the 2018 Annual Turnaround.

- **April**
  - BCPG Plc. commenced commercial operation of its Gotemba Solar Power Plant at the Shizuoka Prefecture, Japan, on 16 April 2018; the plant contractual capacity is 4 MW PPA (4.4 MW installed capacity), with power purchase agreement of 20 years, and Feed-in-Tariff at 32 Yen/kWh.
  - The Annual General Shareholders' meeting approved the allocation of profit from unappropriated retained earnings as dividend for the second-half-year operations of 2017 at the rate of 1.10 THB per share, a total amount of THB 1,515 million, which was already paid on 7 May 2018.

- **June**
  - BCPG Plc. announced its acquisition of the common stock of Lomligor Co., Ltd. for their Wind Power Plant Project with a capacity of 10 MW at the Pak Panang District, Nakorn Si Thammarat Province, with the total investment including share acquisition and construction of not exceeding THB 825 million, and is expected to complete construction by April 2019.

  - The Company has established a subsidiary called BCPR Co., Ltd. in Thailand and its subsidiary in Singapore called BCPR Pte. Ltd. to joint invest with 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, a company established

under Norwegian law, which has developed and produced petroleum in Norway, in the proportion up to 90% of the increased capital of OKEA, with the total value of which is not more than NOK 939 million, the transaction was completed in Q4/2018.

- **July**
  - The company came to a resolution for its subsidiary to dispose all shares holds in Nido Production (Galoc) Pty. Lte., who owns 55.8% of the Galoc Oil Field. In addition, on 12 July 2018, the subsidiary has executed the share selling agreement with Tamarind Galoc Pte Ltd., with the total consideration of USD 19.4 million (or approximately THB 619 million). The disposal was only for the Galoc oil Field, and does not include other petroleum oil fields that are under exploration and development in the Philippines which are still held by the company's subsidiary.
  - BCPG Plc. commenced commercial operation of 2 solar power plant projects developed through cooperation with the War Veterans Organization (WVO), the power plant at Phra Phutthabat district, Saraburi province has installed capacity of 5 MW PPA, and the project at Tha Muang district, Karnchanaburi province has installed capacity of 3.94 MW PPA. The total installed capacity for both project is 8.94 MW PPA, with power purchase agreement of 25 years and Feed-in-tariff of 4.12 Baht per kWh.

- **August**
  - The company Board of Directors approved a resolution for the payment of interim dividend for the first 6 months period of 2018 to the company's shareholders at 0.85 THB per share, totaling at THB 1,170 million, which was already paid on 19 September 2018.
  - The company issued Unsubordinated and Unsecured Debentures in the Name-Registered Certificate, private placement offered to Institutional / High Net Worth Investors, in the amount of THB 4,000 million, with coupon rate of 2.13 – 3.42%, and a tenor of 2-7 years.

- **September**
  - BCPG Plc. sold assets of its two Japanese power plant projects which are the Nikaho and Nagi project (Total capacity installed 27.6 MW) to the Infrastructure Fund in Japan, receiving total proceeds in the amount of Yen 10,388 million (approximately THB 3,046 million). Aside from this, BCPG group has signed a contract with the Infrastructure Fund, to perform operation & maintenance service for the assets.
  - The company debuted its new club card, "Bangchak Green Miles" which allows members to collect points from every petroleum product purchased, along with goods and services under Bangchak brand, and developed Bangchak Mobile Application to benefit members in terms of convenience and speed.
  - The company debuted its new modern take on service stations with the first overhead digital fuel dispenser in Thailand on Sukhumvit 62 road, in order to deliver convenience to customers whom do not have to concern themselves over which side of their car the gas cap is placed.

- **November**
  - The company unveiled its prototype Green Community Energy Management System or GEMS in the Bangchak Srinakarin service station to pilot a project that bid purchase electricity with blockchain technology in a Smart Isolated Microgrid to serve buildings and retail outlets within the area to purchase low cost electricity en masse.
  - The company via its subsidiary registered under Singaporean law, BCPR Pte. Ltd., completely subscribed for newly issued shares of OKEA AS at the total investment amount of NOK 939 million or approximately THB 3,618 million. The shares allotted to the company is equal to 49% of total registered shares in OKEA. And, on 30 November 2018, OKEA paid the purchase price in respect of the petroleum fields in Norway; Draugen Field and GjØa Field, to Shell with the agreements regarding the assignment of a participating interest between Shell and OKEA, and has completely acquired all interest in such petroleum fields from Shell, OKEA will be an operator of Draugen Field from 1 December 2018 onwards.

- **December**
  - The company came to a resolution to establish new subsidiaries in Thailand to invest in new Start-ups, a total of 4 new companies as follow:
    - BCV Bio-based Co., Ltd.
    - BCV Energy Co., Ltd.
    - BCV Innovation Co., Ltd.
    - BCV Partnership Co., Ltd.

    The purpose of these companies are to invest in New Start-ups related to innovations. Each company has a registered capital of THB 20 million (together totaling THB 80 million) with the company owning 100% of the shares.
  - The company issued Unsubordinated and Unsecured Debentures in the Name-Registered Certificate, private placement offered to Institutional / High Net Worth Investors, in the amount of THB 7,000 million, with coupon rate of 4.04%, and a tenor of 10 years.

Statement of Income

Consolidated Statement of Income	Q4/2017 (Restate)	Q3/2018	Q4/2018	YoY	QoQ	2017 (Restate)	2018	YoY
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 expectated, 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.
3. 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:

1. 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 thruput 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 15.8%, 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 thruput 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.
2. 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.
3. 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.
4. 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.
5. 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.

4. 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.

5. 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:

1. 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

2. 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.

3. 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:

1. 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.
2. 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.
3. 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:

1. 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 Pty Ltd

E&P Business Performance	Q4/2017	Q3/2018	Q4/2018	YoY	QoQ	2017	2018	YoY
Production Volume1/ (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)

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 Pty. 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 Pty. 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.

Independent Auditor's Report

To the shareholders of Bangchak Corporation Public Company Limited

Opinion

I 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 at 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 my opinion, the accompanying consolidated and separate financial statements present fairly, in all material respects, the financial position of the Group and the Company, respectively, as at 31 December 2018 and their financial performance and cash flows for the year then ended in accordance with Thai Financial Reporting Standards (TFRSs).

Basis for Opinion

I conducted my audit in accordance with Thai Standards on Auditing (TSAs). My responsibilities under those standards are further described in the Auditor's Responsibilities for the Audit of the Consolidated and Separate Financial Statements section of my report. I am independent of the Group and the Company in accordance with the Code of Ethics for Professional Accountants issued by the Federation of Accounting Professions that is relevant to my audit of the consolidated and separate financial statements, and I have fulfilled my other ethical responsibilities in accordance with these requirements. I believe that the audit evidence I have obtained is sufficient and appropriate to provide a basis for my opinion.

Key Audit Matters

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

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**
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. Due to the materiality of the transactions and the significant judgment and complexities involved in determining the fair value, I considered as the key audit matter.	**My audit procedures included the following:** • 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**
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 consideration transferred with the differences which was recognized as goodwill included in the investment in associate as at 31 December 2018. 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 judgment and complexities involved in determining the fair value of net assets acquired, I considered as the key audit matter.	**My audit procedures included the following:** • 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, dispute resolution provisions, termination provisions, governance structures and profit-sharing arrangements. • 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.

Impairment testing of investment in associates, investment in subsidiaries, oil exploration & production assets and goodwill Refer to Notes 3 (l), 11, 12, 15 and 17 to the financial statements.	
The key audit matter	**How the matter was addressed in the audit**
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 the assets' carrying value being higher than the recoverable amounts, which might represent losses from impairment. 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, I considered as the key audit matter.	**My audit procedures included the following:** • 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**
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.	**My audit procedures included the following:** • Evaluated the appropriateness of inventories valuation by management. • Verified the appropriateness of the net realizable value calculation. • Checked the selling prices of finished goods with the reference market price and contract price. • Considered the adequacy of disclosures in accordance with Thai Financial Reporting Standard.

Emphasis of Matter

I 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 for the year ended 31 December 2017 after making the adjustments described in notes 4 (a). My opinion is not modified in respect of this matter.

Other Information

Management is responsible for the other information. The other information comprises the information included in the annual report, but does not include the consolidated and separate financial statements and my auditor's report thereon. The annual report is expected to be made available to me after the date of this auditor's report.

My opinion on the consolidated and separate financial statements does not cover the other information and I will not express any form of assurance conclusion thereon.

In connection with my audit of the consolidated and separate financial statements, my responsibility is to read the other information 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 my knowledge obtained in the audit, or otherwise appears to be materially misstated.

When I read the annual report, if I conclude that there is a material misstatement therein, I am required to communicate the matter to those charged with governance and request that the correction be made.

Responsibilities of Management and Those Charged with Governance for the Consolidated and Separate Financial Statements

Management is responsible for the preparation and fair presentation of the consolidated and separate financial statements in accordance with TFRSs, and for such internal control as management determines is necessary to enable the preparation of consolidated and separate financial statements that are free from material misstatement, whether due to fraud or error.

In preparing the consolidated and separate financial statements, management is responsible for assessing the Group's and the Company's ability to continue as a going concern, disclosing, as applicable, matters related to going concern and using the going concern basis of accounting unless management either intends to liquidate the Group and the Company or to cease operations, or has no realistic alternative but to do so.

Those charged with governance are responsible for overseeing the Group's and the Company's financial reporting process.

Auditor's Responsibilities for the Audit of the Consolidated and Separate Financial Statements

My objectives are to obtain reasonable assurance about whether the consolidated and separate financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditor's report that includes my opinion. Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with TSAs will always detect a material misstatement when it exists. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of these consolidated and separate financial statements.

As part of an audit in accordance with TSAs, I exercise professional judgment and maintain professional skepticism throughout the audit. I also:

- Identify and assess the risks of material misstatement of the consolidated and separate financial statements, whether due to fraud or error, design and perform audit procedures responsive to those risks, and obtain audit evidence that

is sufficient and appropriate to provide a basis for my opinion. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control.

- Obtain an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Group's and the Company's internal control.
- Evaluate the appropriateness of accounting policies used and the reasonableness of accounting estimates and related disclosures made by management.
- Conclude on the appropriateness of management's use of the going concern basis of accounting and, based on the audit evidence obtained, whether a material uncertainty exists related to events or conditions that may cast significant doubt on the Group's and the Company's ability to continue as a going concern. If I conclude that a material uncertainty exists, I am required to draw attention in my auditor's report to the related disclosures in the consolidated and separate financial statements or, if such disclosures are inadequate, to modify my opinion. My conclusions are based on the audit evidence obtained up to the date of my auditor's report. However, future events or conditions may cause the Group and the Company to cease to continue as a going concern.
- Evaluate the overall presentation, structure and content of the consolidated and separate financial statements, including the disclosures, and whether the consolidated and separate financial statements represent the underlying transactions and events in a manner that achieves fair presentation.
- Obtain sufficient appropriate audit evidence regarding the financial information of the entities or business activities within the Group to express an opinion on the consolidated financial statements. I am responsible for the direction, supervision and performance of the group audit. I remain solely responsible for my audit opinion.

I communicate with those charged with governance regarding, among other matters, the planned scope and timing of the audit and significant audit findings, including any significant deficiencies in internal control that I identify during my audit.

I also provide those charged with governance with a statement that I have complied with relevant ethical requirements regarding independence, and to communicate with them all relationships and other matters that may reasonably be thought to bear on my independence, and where applicable, related safeguards.

From the matters communicated with those charged with governance, I determine those matters that were of most significance in the audit of the consolidated and separate financial statements of the current period and are therefore the key audit matters. I describe these matters in my auditor's report unless law or regulation precludes public disclosure about the matter or when, in extremely rare circumstances, I determine that a matter should not be communicated in my report because the adverse consequences of doing so would reasonably be expected to outweigh the public interest benefits of such communication.

(Signed) *Waiyawat Kosamarnchaiyakij*

(Waiyawat Kosamarnchaiyakij)

Certied Public Accountant

Registration No. 6333

KPMG Phoomchai Audit Ltd.

Bangkok

21 February 2019

Statement of Financial Position

Bangchak Corporation Public Company Limited and its Subsidiaries

		Consolidated financial statements		Separate financial statements	
		31 December		31 December	
Assets	*Note*	2018	2017	2018	2017
			(Restated)		
			(Baht)		
Current assets					
Cash and cash equivalents	*6*	11,550,619,801	10,105,882,585	7,215,200,606	6,377,502,249
Current investments	*7*	262,038,726	219,583,478	200,000,000	200,000,000
Trade accounts receivable	*5, 8*	6,968,512,202	7,511,391,215	7,115,833,687	7,269,062,297
Other receivables	*5, 9*	1,642,717,280	1,340,258,455	720,985,758	574,033,248
Inventories	*10*	15,134,925,066	15,720,387,051	13,346,465,298	13,572,776,104
Current tax assets		256,651,102	52,122,527	241,818,203	-
Oil fuel fund subsidies receivable		1,780,595,544	1,341,318,360	1,780,595,544	1,341,318,360
Total current assets		**37,596,059,721**	**36,290,943,671**	**30,620,899,096**	**29,334,692,258**
Non-current assets					
Investments in subsidiaries	*11*	-	-	13,178,856,259	12,610,480,537
Investments in associates and joint ventures	*12*	18,047,949,575	14,158,227,728	73,000,000	73,000,000
Long-term loans to related parties	*5*	198,755,025	-	5,127,616,400	2,203,449,000
Other long-term investments	*7*	1,815,302,043	4,346,729,603	237,183,556	237,044,592
Investment properties	*13*	126,965,545	343,439,563	682,953,148	899,427,166
Property, plant and equipment	*14*	48,876,753,705	48,049,135,691	30,007,246,865	27,407,116,878
Goodwill	*15*	1,602,324,546	1,602,324,546	-	-
Leasehold rights	*16*	2,900,578,603	2,311,349,372	2,900,578,603	2,311,349,372
Intangible assets	*17*	3,658,270,853	3,731,498,371	450,756,785	376,361,817
Deferred tax assets	*18*	827,462,996	1,000,016,270	792,395,875	899,819,559
Other non-current assets	*5, 19*	1,718,195,225	2,034,880,526	1,761,576,205	1,569,485,942
Total non-current assets		**79,772,558,116**	**77,577,601,670**	**55,212,163,696**	**48,587,534,863**
Total assets		**117,368,617,837**	**113,868,545,341**	**85,833,062,792**	**77,922,227,121**

The accompanying notes are an integral part of these financial statements

Statement of Financial Position

Bangchak Corporation Public Company Limited and its Subsidiaries

		Consolidated financial statements		Separate financial statements	
		31 December		31 December	
Liabilities and equity	*Note*	2018	2017	2018	2017
			(Restated)		
			(Baht)		
Current liabilities					
Short-term loan from financial institutions	*20*	5,004,251,770	4,046,182,313	3,258,251,770	3,280,298,382
Trade accounts payable	*5, 21*	6,680,251,253	10,016,080,686	5,943,970,679	8,233,685,896
Other payables	*5, 22*	3,156,969,925	3,018,367,626	2,359,228,358	2,064,152,507
Current portion of long-term loans from financial institutions	*20*	2,215,713,897	2,218,008,789	350,153,846	325,153,846
Current portion of debenture	*20*	4,000,000,000	-	4,000,000,000	-
Excise tax and oil fuel fund payable		3,386,701,600	3,036,549,976	3,386,701,600	3,036,549,976
Income tax payable		121,162,314	690,260,109	-	673,475,442
Other current liabilities	*5*	938,559,168	843,908,987	874,246,676	843,084,803
Total current liabilities		**25,503,609,927**	**23,869,358,486**	**20,172,552,929**	**18,456,400,852**
Non-current liabilities					
Long-term loans from financial institutions	*20*	18,264,242,477	20,649,009,936	2,725,923,077	3,076,076,923
Debentures	*20*	20,980,046,802	13,990,269,214	20,980,046,802	13,990,269,214
Deferred tax liabilities	*18*	466,688,080	589,586,434	-	-
Liabilities on long-term lease		37,863,157	34,210,525	37,863,157	34,210,525
Non-current provisions for employee benefits	*23*	2,053,674,454	1,949,429,755	1,983,783,849	1,867,377,310
Provision for the decommissioning cost		355,355,345	810,724,489	-	-
Other non-current liabilities	*5*	169,583,507	85,912,750	71,980,567	14,864,190
Total non-current liabilities		**42,327,453,822**	**38,109,143,103**	**25,799,597,452**	**18,982,798,162**
Total liabilities		**67,831,063,749**	**61,978,501,589**	**45,972,150,381**	**37,439,199,014**

The accompanying notes are an integral part of these financial statements

Statement of Financial Position

Bangchak Corporation Public Company Limited and its Subsidiaries

Liabilities and equity	Note	Consolidated financial statements 31 December 2018	Consolidated financial statements 31 December 2017 (Restated)	Separate financial statements 31 December 2018	Separate financial statements 31 December 2017
		(Baht)			
Equity					
Share capital	*24*				
Authorised share capital		1,376,923,157	1,376,923,157	1,376,923,157	1,376,923,157
Issued and paid-up share capital		1,376,923,157	1,376,923,157	1,376,923,157	1,376,923,157
Share premium on ordinary shares	*25*	11,157,460,051	11,157,460,051	11,157,460,051	11,157,460,051
Capital surplus on share reduction	*25*	189,617,759	189,617,759	189,617,759	189,617,759
Other surpluses	*25*	1,370,360,559	1,340,485,277	-	-
Surplus from business combination	*25*	1,170,410,780	1,170,410,780	-	-
Warrants		8,400,091	19,146,999	-	-
Retained earnings					
Appropriated					
Legal reserve	*25*	153,164,346	153,164,346	153,164,346	153,164,346
Unappropriated		27,453,937,691	27,661,241,130	26,983,747,098	27,605,862,794
Other components of equity		(165,309,358)	2,411,095,017	-	-
Equity attributable to owners of the parent		**42,714,965,076**	**45,479,544,516**	**39,860,912,411**	**40,483,028,107**
Non-controlling interests		6,822,589,012	6,410,499,236	-	-
Total equity		**49,537,554,088**	**51,890,043,752**	**39,860,912,411**	**40,483,028,107**
Total liabilities and equity		**117,368,617,837**	**113,868,545,341**	**85,833,062,792**	**77,922,227,121**

(Pichai Chunhavajira)
Chairman

(Chaiwat Kovavisarach)
Chief Executive Officer and President

The accompanying notes are an integral part of these financial statements

Statement of Income

Bangchak Corporation Public Company Limited and its Subsidiaries

	Note	Consolidated financial statements For the year ended 31 December 2018	Consolidated financial statements For the year ended 31 December 2017 (Restated)	Separate financial statements For the year ended 31 December 2018	Separate financial statements For the year ended 31 December 2017
		(Baht)			
Revenue from sale of goods and rendering of services	5, 26, 35	192,025,318,117	172,138,240,983	175,036,170,746	161,029,770,008
Cost of sale of goods and rendering of services	5	(180,594,365,584)	(158,595,554,719)	(168,127,680,595)	(151,549,531,461)
Gross Profit		**11,430,952,533**	**13,542,686,264**	**6,908,490,151**	**9,480,238,547**
Interest income and dividend income	5, 27	55,140,379	155,533,527	1,005,929,422	1,259,316,735
Other income	5, 28	1,259,951,534	1,085,169,827	259,244,694	1,146,745,696
Selling expenses	5, 29	(4,360,312,226)	(4,025,848,209)	(3,028,580,163)	(2,921,201,192)
Administrative expenses	5, 30	(3,015,400,534)	(3,138,177,761)	(1,844,482,084)	(1,756,822,693)
Exploration and evaluation expense		(45,313,805)	(47,854,777)	-	-
Gain (loss) from crude and product oil price hedging contract		(441,941,380)	365,500,470	(328,050,706)	348,474,613
Gain (loss) from foreign currencies forward contract		161,782,598	(225,311,877)	87,191,479	78,876,301
Gain on foreign exchange		415,153,583	889,481,131	462,270,917	812,425,822
Loss from impairment of assets	11	(440,822,936)	(1,518,470,707)	(301,020,595)	(1,283,418,856)
Share of profit of associates and joint ventures	12	254,002,734	573,470,092	-	-
Profit before finance costs and income tax expense		**5,273,192,480**	**7,656,177,980**	**3,220,993,115**	**7,164,634,973**
Finance costs	33	(1,545,146,230)	(1,452,284,135)	(919,834,053)	(904,013,681)
Profit before income tax expense		**3,728,046,250**	**6,203,893,845**	**2,301,159,062**	**6,260,621,292**
Income tax expense	34	(493,350,516)	(40,883,861)	(238,346,587)	(108,954,197)
Profit for the year		**3,234,695,734**	**6,163,009,984**	**2,062,812,475**	**6,151,667,095**
Profit loss attributable to:					
Owners of the parent		2,462,881,096	5,608,134,918	2,062,812,475	6,151,667,095
Non-controlling interests		771,814,638	554,875,066	-	-
Profit for the year		**3,234,695,734**	**6,163,009,984**	**2,062,812,475**	**6,151,667,095**
Basic earnings per share	36	**1.79**	**4.07**	**1.50**	**4.47**

The accompanying notes are an integral part of these financial statements

Statement of Comprehensive Income

Bangchak Corporation Public Company Limited and its Subsidiaries

	Consolidated financial statements		Separate financial statements	
	For the year ended 31 December		For the year ended 31 December	
	2018	2017 (Restated)	2018	2017
	(Baht)			
Profit for the year	**3,234,695,734**	**6,163,009,984**	**2,062,812,475**	**6,151,667,095**
Other comprehensive income (loss)				
Items that will be reclassified subsequently to profit or loss				
Exchange differences on translating foreign operations	(13,679,665)	(421,217,474)	-	-
Gains (losses) on remeasuring avialable-for-sale investments	(2,589,609,728)	2,721,932,722	-	-
Total items that will be reclassified subsequently to profit or loss	**(2,603,289,393)**	**2,300,715,248**	**-**	**-**
Items that will not be reclassified subsequently to profit or loss				
Gain (losses) on remessurments of defined benefit plans	18,105,570	(56,663,458)	-	(58,705,810)
Share of other comprehensive income (loss) of assoicates	28,020,286	(20,005,900)	-	-
Total items that will not be reclassified subsequently to profit or loss	**46,125,856**	**(76,669,358)**	**-**	**(58,705,810)**
Other comprehensive income (loss) for the year, net of income tax	**(2,557,163,537)**	**2,224,045,890**	**-**	**(58,705,810)**
Total comprehensive income for the year	**677,532,197**	**8,387,055,874**	**2,062,812,475**	**6,092,961,285**
Total comprehensive income (loss) attributable to				
Owners of the parent	(98,779,643)	7,841,242,613	2,062,812,475	6,092,961,285
Non-controlling interests	776,311,840	545,813,261	-	-
Total comprehensive income for the year	**677,532,197**	**8,387,055,874**	**2,062,812,475**	**6,092,961,285**

(Pichai Chunhavajira)
Chairman

(Chaiwat Kovavisarach)
Chief Executive Officer and President

The accompanying notes are an integral part of these financial statements

Statement of Chages in Equity

Bangchak Corporation Public Company Limited and its Subsidiaries

		Consolidated financial statements														
								Retained earnings		Other components shareholder's equity						
	Note	Issued and paid-up share capital	Share premium on ordinary Share	Capital surplus on share reduction	Other surpluses	Surplus from business combination	Warrants	Legal reserve	Unappropriated	Translating foreign operations	Available-for-sale investments	Share of other comprehensive income (loss) of associates	Total Other components of equity	Equity attributable to owners of the parent	Non-controlling interests	Total equity
									(Baht)							
Year ended 31 December 2017																
Balance at 1 January 2017		**1,376,923,157**	**11,157,460,051**	**189,617,759**	**1,612,670,404**	**-**	**-**	**153,164,346**	**24,931,575,363**	**(128,187,792)**	**249,512,843**	**-**	**121,325,051**	**39,542,736,131**	**4,365,798,539**	**43,908,534,670**
Transactions with owners, recorded directly in equity																
Contributions by and distributions to owners of the parent																
Share options excercised		-	-	-	11,127,310	-	-	-	-	-	-	-	-	11,127,310	16,229,304	27,356,614
Share-based payment transactions		-	-	-	8,849,403	-	19,146,999	-	533,177	-	-	-	-	28,529,579	11,821,312	40,350,891
Dividends	37	-	-	-	-	-	-	-	(2,822,340,057)	-	-	-	-	(2,822,340,057)	(399,916,109)	(3,222,256,166)
Total		**-**	**-**	**-**	**19,976,713**	**-**	**19,146,999**	**-**	**(2,821,806,880)**	**-**	**-**	**-**	**-**	**(2,782,683,168)**	**(371,865,493)**	**(3,154,548,661)**
Changes in ownership interests in subsidiaries																
Changes in an ownership interests in subsidiaries without a change in control		-	-	-	(292,161,840)	1,170,410,780	-	-	-	-	-	-	-	878,248,940	1,870,752,929	2,749,001,869
Total		**-**	**-**	**-**	**(292,161,840)**	**1,170,410,780**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**878,248,940**	**1,870,752,929**	**2,749,001,869**
Total transactions with owners, recorded directly in equity		**-**	**-**	**-**	**(272,185,127)**	**1,170,410,780**	**19,146,999**	**-**	**(2,821,806,880)**	**-**	**-**	**-**	**-**	**(1,904,434,228)**	**1,498,887,436**	**(405,546,792)**
Comprehensive income (loss) for the year - Restated																
Profit - Restated	4	-	-	-	-	-	-	-	5,608,134,918	-	-	-	-	5,608,134,918	554,875,066	6,163,009,984
Other comprehensive income (loss)		-	-	-	-	-	-	-	(56,662,271)	(418,096,408)	2,721,932,722	(14,066,348)	**2,289,769,966**	2,233,107,695	(9,061,805)	2,224,045,890
Total comprehensive income (loss) for the period - Restated		**-**	**-**	**-**	**-**	**-**	**-**	**-**	**5,551,472,647**	**(418,096,408)**	**2,721,932,722**	**(14,066,348)**	**2,289,769,966**	**7,841,242,613**	**545,813,261**	**8,387,055,874**
Balance at 31 December 2017 - Restated		**1,376,923,157**	**11,157,460,051**	**189,617,759**	**1,340,485,277**	**1,170,410,780**	**19,146,999**	**153,164,346**	**27,661,241,130**	**(546,284,200)**	**2,971,445,565**	**(14,066,348)**	**2,411,095,017**	**45,479,544,516**	**6,410,499,236**	**51,890,043,752**

The accompanying notes are an integral part of these financial statements

Statement of Chages in Equity

Bangchak Corporation Public Company Limited and its Subsidiaries

		Consolidated financial statements														
								Retained earnings		Other components shareholder's equity						
	Note	Issued and paid-up share capital capital	Share premium on ordinary shares	Capital surplus on share reduction	Other surpluses	Surplus from business combination	Warrants	Legal reserve	Unappropriated	Translating foreign operations	Available-for-sale investments	Share of other comprehensive income (loss) of associates	Total other components of equity	Equity attributable to owners of the parent	Non-controlling interests	Total equity
									(Baht)							
Year ended 31 December 2018																
Balance at 1 January 2018																
- As previously reported		**1,376,923,157**	**11,157,460,051**	**189,617,759**	**1,340,485,277**	**1,170,410,780**	**19,146,999**	**153,164,346**	**27,831,345,677**	**(546,284,200)**	**2,971,445,565**	**(14,066,348)**	**2,411,095,017**	**45,649,649,063**	**6,482,326,317**	**52,131,975,380**
Effect of the fair value assessment of acquisition of investment	*4*	-	-	-	-	-	-	-	(170,104,547)	-	-	-	-	(170,104,547)	(71,827,081)	(241,931,628)
Balance at 1 January 2018 - As restated		**1,376,923,157**	**11,157,460,051**	**189,617,759**	**1,340,485,277**	**1,170,410,780**	**19,146,999**	**153,164,346**	**27,661,241,130**	**(546,284,200)**	**2,971,445,565**	**(14,066,348)**	**2,411,095,017**	**45,479,544,516**	**6,410,499,236**	**51,890,043,752**
Transactions with owners, recorded directly in equity																
Contributions by and distributions to owners of the parent																
Share options excercised		-	-	-	21,721,290	-	-	-	-	-	-	-	-	21,721,290	31,876,204	53,597,494
Share-based payment transactions		-	-	-	15,585,779	-	(10,746,908)	-	-	-	-	-	-	4,838,871	2,058,037	6,896,908
Dividends	*37*	-	-	-	-	-	-	-	(2,684,928,171)	-	-	-	-	(2,684,928,171)	(405,588,092)	(3,090,516,263)
Total		**-**	**-**	**-**	**37,307,069**	**-**	**(10,746,908)**	**-**	**(2,684,928,171)**	**-**	**-**	**-**	**-**	**(2,658,368,010)**	**(371,653,851)**	**(3,030,021,861)**
Changes in ownership interests in subsidiaries																
Changes in an ownership interests in subsidiaries without a change in control		-	-	-	(7,431,787)		-	-	-	-	-	-	-	(7,431,787)	7,431,787	-
Total		**-**	**-**	**-**	**(7,431,787)**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**(7,431,787)**	**7,431,787**	**-**
Total transactions with owners, recorded directly in equity		**-**	**-**	**-**	**29,875,282**	**-**	**(10,746,908)**	**-**	**(2,684,928,171)**	**-**	**-**	**-**	**-**	**(2,665,799,797)**	**(364,222,064)**	**(3,030,021,861)**
Comprehensive income (loss) for the year																
Profit		-	-	-	-	-	-	-	2,462,881,096	-	-	-	-	2,462,881,096	771,814,638	3,234,695,734
Other comprehensive income (loss)		-	-	-	-	-	-	-	14,743,636	(6,439,670)	(2,589,609,728)	19,645,023	(2,576,404,375)	(2,561,660,739)	4,497,202	(2,557,163,537)
Total comprehensive income (loss) for the year		**-**	**-**	**-**	**-**	**-**	**-**	**-**	**2,477,624,732**	**(6,439,670)**	**(2,589,609,728)**	**19,645,023**	**(2,576,404,375)**	**(98,779,643)**	**776,311,840**	**677,532,197**
Balance at 31 December 2018		**1,376,923,157**	**11,157,460,051**	**189,617,759**	**1,370,360,559**	**1,170,410,780**	**8,400,091**	**153,164,346**	**27,453,937,691**	**(552,723,870)**	**381,835,837**	**5,578,675**	**(165,309,358)**	**42,714,965,076**	**6,822,589,012**	**49,537,554,088**

The accompanying notes are an integral part of these financial statements

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Statement of Chages in Equity

Bangchak Corporation Public Company Limited and its Subsidiaries

		Separate financial statements					
					Retained earnings		
	Note	Issued and paid-up share capital	Share premium	Capital surplus on share reduction	Legal reserve	Unappropriated	Total equity
				(Baht)			
Year ended 31 December 2017							
Balance at 1 January 2017		**1,376,923,157**	**11,157,460,051**	**189,617,759**	**153,164,346**	**24,335,241,566**	**37,212,406,879**
Transactions with owners, recorded directly in equity							
Distributions to owners							
Dividends to owners of the Company	*37*	-	-	-	-	(2,822,340,057)	(2,822,340,057)
Total		**-**	**-**	**-**	**-**	**(2,822,340,057)**	**(2,822,340,057)**
Comprehensive income for the year							
Profit or loss		-	-	-	-	6,151,667,095	6,151,667,095
Other comprehensive income (loss)		-	-	-	-	(58,705,810)	(58,705,810)
Total comprehensive income for the year		**-**	**-**	**-**	**-**	**6,092,961,285**	**6,092,961,285**
Balance at 31 December 2017		**1,376,923,157**	**11,157,460,051**	**189,617,759**	**153,164,346**	**27,605,862,794**	**40,483,028,107**

The accompanying notes are an integral part of these financial statements

Statement of Chages in Equity

Bangchak Corporation Public Company Limited and its Subsidiaries

		Separate financial statements					
					Retained earnings		
	Note	Issued and paid-up share capital	Share premium	Capital surplus on share reduction	Legal reserve	Unappropriated	Total equity
				(Baht)			
Year ended 31 December 2018							
Balance at 1 January 2018		**1,376,923,157**	**11,157,460,051**	**189,617,759**	**153,164,346**	**27,605,862,794**	**40,483,028,107**
Transactions with owners, recorded directly in equity							
Distributions to owners							
Dividends to owners of the Company	*37*	-	-	-	-	(2,684,928,171)	(2,684,928,171)
Total		**-**	**-**	**-**	**-**	**(2,684,928,171)**	**(2,684,928,171)**
Comprehensive income for the year							
Profit or loss		-	-	-	-	2,062,812,475	2,062,812,475
Other comprehensive income		-	-	-	-	-	-
Total comprehensive income for the year		**-**	**-**	**-**	**-**	**2,062,812,475**	**2,062,812,475**
Balance at 31 December 2018		**1,376,923,157**	**11,157,460,051**	**189,617,759**	**153,164,346**	**26,983,747,098**	**39,860,912,411**

The accompanying notes are an integral part of these financial statements

Greenovate our Tomorrow

Statement of Cash Flows

Bangchak Corporation Public Company Limited and its Subsidiaries

	Consolidated financial statements		Separate financial statements	
	For the year ended 31 December		For the year ended 31 December	
	2018	2017	2018	2017
		(Restated)		
		(Baht)		
Cash flows from operating activities				
Profit for the year	3,234,695,734	6,163,009,984	2,062,812,475	6,151,667,095
Adjustments for				
Income tax expense	493,350,516	40,883,861	238,346,587	108,954,197
Finance costs	1,545,146,230	1,452,284,135	919,834,053	904,013,681
Depreciation	4,456,864,246	4,780,386,370	3,254,990,764	3,222,991,289
Amortisation	445,420,819	355,078,032	377,667,685	301,807,558
(Reversal of) Allowance for bad and doubtful debts expenses	10,618	(361,815)	387,711	(103,961)
Unrealised gain (loss) on foreign exchange	37,934,468	308,060,785	(23,907,255)	252,592,679
Losses on inventories devaluation	696,204,261	7,830,488	688,560,092	-
Loss from impairment of assets	440,822,936	1,518,470,707	301,020,595	1,283,418,856
(Gain) loss on disposal of property, plant and equipment	(760,630,886)	(37,250,562)	22,950,524	(2,052,456)
Loss on disposal of other investments	-	35,409,325	-	37,168,506
Gain on sale of investment in subsidiaries	(78,127,829)	-	-	(247,668,915)
Intersest income and dividend income	(55,140,379)	(155,533,527)	(1,005,929,422)	(1,259,316,735)
Non-current provision for employee benefit	189,199,725	191,822,492	159,280,885	164,463,767
Provision for customer loyalty programmes	48,769,481	48,474,324	48,769,481	48,474,324
Deferred revenue	(7,130,622)	(7,062,907)	(7,130,622)	(7,062,907)
Share-based payment transactions	6,896,908	40,350,890	-	-
Share of profit of associates and joint ventures, net of tax	(254,002,734)	(573,470,092)	-	-
Reversal of provisions	-	(137,121,038)	-	-
	10,440,283,492	14,031,261,452	7,037,653,553	10,959,346,978
Changes in operating assets and liabilities				
Trade accounts receivable	514,434,825	(1,434,348,405)	133,828,682	(793,476,087)
Other receivables	(920,659,553)	(554,557,434)	(493,797,351)	(262,690,298)
Inventories	(399,678,656)	(753,438,932)	(485,574,211)	(135,414,346)
Other non-current assets	(393,724,699)	(387,463,011)	(236,024,451)	(447,251,996)
Trade accounts payable	(2,965,385,746)	1,357,417,421	(2,280,216,225)	(62,141,076)
Other payables	178,096,725	(10,642,557)	315,907,010	46,616,504
Other current liabilities	400,260,238	1,961,458,316	333,216,589	1,880,441,529
Provisions for employee benefits	(47,819,526)	(84,279,171)	(42,874,346)	(79,670,272)
Other non-current liabilities	274,068,415	24,593,900	64,138,531	(24,721,737)
Net cash generated from operating activities	7,079,875,515	14,150,001,579	4,346,257,781	11,081,039,199
Income tax paid, net	(1,129,843,546)	(298,671,186)	(1,046,216,548)	(235,185,222)
Net cash from operating activities	**5,950,031,969**	**13,851,330,393**	**3,300,041,233**	**10,845,853,977**

The accompanying notes are an integral part of these financial statements

Statement of Cash Flows

Bangchak Corporation Public Company Limited and its Subsidiaries

	Consolidated financial statements		Separate financial statements	
	For the year ended 31 December		For the year ended 31 December	
	2018	2017	2018	2017
		(Restated)		
		(Baht)		
Cash flows from investing activities				
Interest received	47,004,171	135,919,650	45,781,626	118,097,502
Dividend received	66,554,800	64,557,705	940,090,052	1,226,030,306
Decrease (increase) in current investments	(42,455,248)	1,499,736,898	-	800,000,000
Payment for other investments	(100,130,745)	(1,139,795,527)	(3,164,959)	-
Proceeds from disposal of other investments	3,000,000	78,045,709	3,000,000	75,287,845
Net cash outflow from calling up of subsidiary's share capital	-	-	(840,148,380)	-
Net cash outflow from calling up of joint venture's share capital	-	(28,680,000)	-	(28,680,000)
Acquisition of subsidiaries and associates, net of cash acquired	(3,821,979,892)	(13,346,533,566)	-	(2,886,900,680)
Proceeds from sale of investments	730,728,836	-	-	1,632,947,935
Acquisition of property, plant and equipment	(7,705,262,705)	(5,522,471,897)	(5,618,951,357)	(4,147,131,960)
Proceeds from sale of property, plant and equipment	3,030,875,431	499,323,552	26,263,291	10,958,290
Loans to related parties	(198,755,025)	-	(3,823,730,644)	(90,000,000)
Proceeds from loan to related party	-	-	818,000,000	431,904,000
Payment for leasehold right	(805,116,424)	(563,902,108)	(805,116,424)	(563,902,108)
Proceeds from leasehold right	-	4,800,000	-	4,800,000
Acquisition of intangible assets	(304,046,743)	(641,418,661)	(180,435,451)	(131,749,262)
Net cash used in investing activities	**(9,099,583,544)**	**(18,960,418,245)**	**(9,438,412,246)**	**(3,548,338,132)**
Cash flows from financing activities				
Financial cost paid	(1,617,613,105)	(1,305,329,325)	(1,019,568,613)	(754,141,303)
Dividend paid	(3,090,516,263)	(3,310,745,787)	(2,684,928,171)	(2,822,340,057)
Increase (decrease) in short-term loans from financial institutions	981,714,225	(3,937,315,260)	5,720,000	(3,915,780,000)
Payment of change in ownership interest in subsidiary without a change in control	-	(34,522,552)	-	-
Proceeds from exercise of share options	53,597,494	27,356,613	-	-
Proceeds from issuance of debentures	11,000,000,000	-	11,000,000,000	-
Redemption of debenture	-	(2,000,000,000)	-	(2,000,000,000)
Proceeds from long-term loans from financial institutions	1,628,848,750	8,868,343,275	-	-
Repayment of long-term loans from financial institutions	(4,231,101,209)	(2,069,004,166)	(325,153,846)	(300,153,846)
Net cash from (used in) financing activities	**4,724,929,892**	**(3,761,217,202)**	**6,976,069,370**	**(9,792,415,206)**
Net increase (decrease) in cash and cash equivalents, before effect of exchange rates	1,575,378,317	(8,870,305,054)	837,698,357	(2,494,899,361)
Effect of exchange rate changes on cash and cash equivalents	(130,641,101)	(310,462,619)	-	-
Net increase (decrease) in cash and cash equivalents	**1,444,737,216**	**(9,180,767,673)**	**837,698,357**	**(2,494,899,361)**
Cash and cash equivalents at 1 January	10,105,882,585	19,286,650,258	6,377,502,249	8,872,401,610
Cash and cash equivalents at 31 December	**11,550,619,801**	**10,105,882,585**	**7,215,200,606**	**6,377,502,249**

(Pichai Chunhavajira)
Chairman

(Chaiwat Kovavisarach)
Chief Executive Officer and President

The accompanying notes are an integral part of these financial statements

Notes to The Financial Statements

Bangchak Corporation Public Company Limited and its Subsidiaries

For The Year Ended 31 Decenber 2018

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These notes form an integral part of the financial statements.

The financial statements issued for Thai statutory and regulatory reporting purposes are prepared in the Thai language. These English language financial statements have been prepared from the Thai language statutory financial statements, and were approved and authorized for issue by the Board of Directors on 21 February 2019.

1 General information

Bangchak Corporation Public Company Limited, the "Company" was incorporated in Thailand and listed on the Stock Exchange of Thailand which has its registered office as follows:

Head office : 2098 M Tower Building, 8th Floor, Sukhumvit Road, Phra Kanong Tai, Phra Kanong, Bangkok.

Refinery plant : 210 Moo 1, Soi Sukhumvit 64, Sukhumvit Road, Phra Kanong Tai, Phra Kanong, Bangkok.

As at 31 December 2018, major shareholders of the Company during the period were Vayupak Fund 1 and Social Security Office holding 14.66% and 14.46% of issued and paid-up capital, respectively *(31 December 2017: 14.46% and 13.60%, respectively)*.

The principal businesses of the Group are operating an oil refinery and marketing the finished products through its service stations under its company's brand. The Group's oil market includes consumers in various sectors, such as transportation, aviation, shipping, construction, industrial, agriculture and sale of oil is also made through the major and the minor oil traders, production and distribution of electricity from solar cell and investment in alternative energy business, manufacturing and distributing of biofuel product and relating products and exploration and production of petroleum.

Details of the Company's subsidiaries as of 31 December 2018 and 2017 were disclosed in note 5 and 11 to the financial statements.

2 Basis of preparation of the financial statements

(a) Statement of compliance

The financial statements are prepared in accordance with Thai Financial Reporting Standards (TFRS); guidelines promulgated by the Federation of Accounting Professions ("FAP"); and applicable rules and regulations of the Thai Securities and Exchange Commission.

The FAP has issued new and revised TFRS effective for annual accounting periods beginning on or after 1 January 2018. The initial application of these new and revised TFRS has resulted in changes in certain of the Group's accounting policies. These changes have no material effect on the financial statements.

In addition to the above new and revised TFRS, the FAP has issued a number of new and revised TFRS which are not yet effective for current periods. The Group has not early adopted these standards in preparing these financial statements. Those new and revised TFRS that are relevant to the Group's operations are disclosed in note 42.

(b) Basis of measurement

The financial statements have been prepared on the historical cost basis except as stated described in accounting policy.

(c) Functional and presentation currency

The financial statements are presented in Thai Baht, which is the Company's functional currency.

(d) Use of judgements and estimates

The preparation of financial statements in conformity with TFRS requires management to make judgements, estimates and assumptions that affect the application of accounting policies and the reported amounts of assets, liabilities, income and expenses. Actual results may differ from these estimates.

Estimates and underlying assumptions are reviewed on an ongoing basis. Revisions to accounting estimates are recognised prospectively.

Information about estimation uncertainties that have a significant risk of resulting in a material adjustments to the carrying amounts of assets and liabilities within the year ending 31 December 2018 is included in the following notes:

Note 4, 12	Acquisition of subsidiary: fair value of the consideration transferred (including contingent consideration) and fair value of the assets acquired and liabilities assumed, measured on a provisional basis
Note 11, 12, 15, 17	Impairment test: key assumption underlying recoverable amounts
Note 18	Recognition of deferred tax assets: availability of future taxable profit against with tax losses carried forward can be used
Note 23	Measurement of defined benefit obligations: key actuarial assumptions

Measurement of fair values

A number of the Group's accounting policies and disclosures require the measurement of fair values, for both financial and non-financial assets and liabilities.

When measuring the fair value of an asset or a liability, the Group uses observable market data as far as possible. Fair values are categorised into different levels in a fair value hierarchy based on the inputs used in the valuation techniques as follows:

- Level 1: quoted prices (unadjusted) in active markets for identical assets or liabilities.
- Level 2: inputs other than quoted prices included in Level 1 that are observable for the asset or liability, either directly (i.e. as prices) or indirectly (i.e. derived from prices).
- Level 3: inputs for the asset or liability that are not based on observable market data (unobservable inputs).

If the inputs used to measure the fair value of an asset or liability might be categorised in different levels of the fair value hierarchy, then the fair value measurement is categorised in its entirety in the same level of the fair value hierarchy as the lowest level input that is significant to the entire measurement.

Further information about the assumptions made in measuring fair values is included in note 38.

3 Significant accounting policies

The accounting policies set out below have been applied consistently to all periods presented in these financial statements.

(a) Basis of consolidation

The consolidated financial statements relate to the Company and its subsidiaries (together referred to as the "Group") and the Group's interests in associate and joint ventures.

Business combinations

The Group applies the acquisition method for all business combinations when control is transferred to the Group other than those with entities under common control.

The acquisition date is the date on which control is transferred to the acquirer. Judgment is applied in determining the acquisition date and determining whether control is transferred from one party to another.

Goodwill is measured as the fair value of the consideration transferred including the recognised amount of any non-controlling interest in the acquiree, less the net recognised amount (generally fair value) of the identifiable assets acquired and liabilities assumed, all measured as of the acquisition date. Any gain on bargain purchase is recognised in profit or loss immediately.

Consideration transferred includes the fair values of the assets transferred, liabilities incurred by the Group to the previous owners of the acquiree, and equity interests issued by the Group. Consideration transferred also includes the fair value of any contingent consideration and share-based payment awards of the acquiree that are replaced mandatorily in the business combination. If a business combination results in the termination of pre-existing relationships between the Group and the acquiree, then the lower of the termination amount, as contained in the agreement, and the value of the off-market element is deducted from the consideration transferred and recognised in other expenses.

A contingent liability of the acquiree is assumed in a business combination only if such a liability represents a present obligation and arises from a past event, and its fair value can be measured reliably.

Transaction costs that the Group incurs in connection with a business combination, such as legal fees, and other professional and consulting fees are expensed as incurred.

If the initial accounting for a business combination is incomplete by the end of the reporting period in which the combination occurs, the Group reports provisional amounts for the items for which the accounting is incomplete. Those provisional amounts are adjusted during the measurement period, or additional assets or liabilities are recognized, to reflect new information obtained about facts and circumstances that existed at the acquisition date that, if known, would have affected the amounts recognized at that date.

Acquisitions from entities under common control

Business combination under common control are accounted for using a method similar to the pooling of interest method. Under that method the acquirer recognizes assets and liabilities of the acquired businesses at their carrying amounts in the consolidated financial statements of the ultimate parent company at the moment of the transaction. The difference between the carrying amount of the acquired net assets and the consideration transferred is recognized as surplus or discount from business combinations under common control in shareholder's equity. The surplus or discount will be transferred to retained earnings upon divestment of the businesses acquired.

The results from operations of the acquired businesses will be included in the consolidated financial statements of the acquirer from the beginning of the comparative period or the moment the businesses came under common control, whichever date is later, until control ceases.

Subsidiaries

Subsidiaries are entities controlled by the Group. The Group controls an entity when it is exposed to, or has rights to, variable returns from its involvement with the entity and has the ability to affect those returns through its power over the entity. The financial statements of subsidiaries are included in the consolidated financial statements from the date on which control commences until the date on which control ceases.

Non-controlling interests

At the acquisition date, the Group measures any non-controlling interest at its proportionate interest in the identifiable net assets of the acquiree.

Changes in the Group's interest in a subsidiary that do not result in a loss of control are accounted for as equity transactions.

Loss of control

When the Group loses control over a subsidiary, it derecognises the assets and liabilities of the subsidiary, and any related non-controlling interests and other components of equity. Any resulting gain or loss is recognised in profit or loss. Any interest retained in the former subsidiary is measured at fair value when control is lost.

Interests in equity-accounted investees

The Group's interests in equity-accounted investees comprise interests in associates and a joint venture.

Associates are those entities in which the Group has significant influence, but not control or joint control, over the financial and operating policies. A joint venture is an arrangement in which the Group has joint control, whereby the Group has rights to the net assets of the arrangement, rather than rights to its assets and obligations for its liabilities.

Interests in associates and joint ventures are accounted for using the equity method. They are recognised initially at cost, which includes transaction costs. Subsequent to initial recognition, the consolidated financial statements include the Group's share of the profit or loss and other comprehensive income of equity–accounted investees, until the date on which significant influence or joint control ceases.

Transactions eliminated on consolidation

Intra-group balances and transactions, and any unrealised income or expenses arising from intra-group transactions, are eliminated. Unrealised gains arising from transactions with equity-accounted investees are eliminated against the investment to the extent of the Group's interest in the investee. Unrealised losses are eliminated in the same way as unrealised gains, but only to the extent that there is no evidence of impairment.

(b) Foreign currencies

Foreign currency transactions

Transactions in foreign currencies are translated to the respective functional currencies of Group entities at exchange rates at the dates of the transactions.

Monetary assets and liabilities denominated in foreign currencies are translated to the functional currency at the exchange rate at the reporting date.

Non-monetary assets and liabilities measured at cost in foreign currencies are translated to the functional currency at the exchange rates at the dates of the transactions.

Foreign currency differences are generally recognized in profit or loss. However, foreign currency differences arising from the translation of the following items are recognized in other comprehensive income:

- available-for-sale equity investments (except on impairment in which case foreign currency differences that have been recognized in other comprehensive income are reclassified to profit or loss)

Foreign operations

The assets and liabilities of foreign operations, including goodwill and fair value adjustments arising on acquisition, are translated to Thai Baht at the exchange rates at the reporting date.

The revenues and expenses of foreign are translated to Thai Baht at rates approximating the exchange rates at the dates of the transactions.

Foreign exchange differences are recognised in other comprehensive income and accumulated in the translation reserve, except to extent that the translation difference is allocated to non-controlling interest.

When a foreign operation is disposed of in its entirety or partially such that control, significant influence or joint control is lost, the cumulative amount in the translation reserve related to that foreign operation is reclassified to profit or loss as part of the gain or loss on disposal. If the Group disposes of part of its interest in a subsidiary but retains control, then the relevant proportion of the cumulative amount is reattributed to non-controlling interests. When the Group disposes of only part of an associate or joint venture while retaining significant influence or joint control, the relevant proportion of the cumulative amount is reclassified to profit or loss.

When the settlement of a monetary item receivable from or payable to a foreign operation is neither planned nor likely in the foreseeable future, exchange gains and losses arising from such a monetary item are considered to form part of a net investment in a foreign operation and are recognised in other comprehensive income, and presented in the foreign currency translation reserve in equity until disposal of the investment.

(c) Derivatives

Derivatives are used to manage exposure to foreign exchange, interest rate arising from operational, financing and investment activities. Derivatives are not used for trading purposes. However, derivatives that do not qualify for hedge accounting are accounted for as trading instruments.

(d) Hedging

Hedge of future foreign currency transactions

Gains and losses from forward exchange contracts and currency swaps used to hedge anticipated future currency transactions are deferred until the forecasted transaction occurs. Where the hedged item is a recognised asset or liability, it is translated at the contracted forward rates. Transaction fee and discounts are amortised to profit and loss on a straight-line basis over the life of the agreements.

Hedge of interest rates

Interest differentials under swap arrangements are accrued and recorded as adjustments to the interest expense relating to the hedged loans.

Hedge of oil prices

Difference between the fixed prices of contracts and the settlement prices are recognised in the statement of income in the period in which the contracts mature.

(e) Cash and cash equivalents

Cash and cash equivalents in the statements of cash flows comprise cash balances, call deposits, highly liquid short-term investments and bank overdrafts that are repayable on demand are a component of for the purpose of the statement of cash flows.

(f) Trade and other accounts receivable

Trade and other accounts receivable are stated at their invoice value less allowance for doubtful accounts.

The allowance for doubtful accounts is assessed primarily on analysis of payment histories and future expectations of customer payments. Bad debts are written off when incurred.

(f) Inventories

Inventories are measured at the lower of cost and net realisable value.

Cost is calculated using the weighted average cost principle, and comprises all costs of purchase, costs of conversion and other costs incurred in bringing the inventories to their present location and condition. In the case of manufactured inventories and work-in-progress, cost includes an appropriate share of production overheads based on normal operating capacity.

Net realisable value is the estimated selling price in the ordinary course of business less the estimated costs to complete and to make the sale.

(g) Investments

Investments in associates, subsidiaries and joint ventures

Investments in associates, subsidiaries and joint ventures in the separate financial statements of the Company are accounted for using the cost method. Investments in associates and joint ventures in the consolidated financial statements are accounted for using the equity method.

Investments in other debt and equity securities

Debt securities that the Group has the positive intent and ability to hold to maturity are classified as held-to-maturity investments. Held-to-maturity investments are stated at amortised cost, less any impairment losses. The difference between the acquisition cost and redemption value of such debt securities is amortised using the effective interest rate method over the period to maturity.

Debt securities and marketable equity securities, other than those securities held for trading or intended to be held to maturity, are classified as available-for-sale investments. Available-for-sale investments are, subsequent to initial recognition, stated at fair value, and changes therein, other than impairment losses and foreign currency differences on available-for-sale monetary items, are recognised directly in equity. Impairment losses and foreign exchange differences are recognised in profit or loss. When these investments are derecognised, the cumulative gain or loss previously recognised directly in equity is recognised in profit or loss. Where these investments are interest-bearing, interest calculated using the effective interest method is recognised in profit or loss.

Equity securities which are not marketable are stated at cost less any impairment losses.

The fair value of financial instruments classified as available-for-sale is determined as the quoted bid price at the reporting date.

Disposal of investments

On disposal of an investment, the difference between net disposal proceeds and the carrying amount together with the associated cumulative gain or loss that was reported in equity is recognised in profit or loss.

If the Group disposes of part of its holding of a particular investment, the deemed cost of the part sold is determined using the weighted average method applied to the carrying value of the total holding of the investment.

(h) Investment properties

Investment properties are properties which are held to earn rental income, for capital appreciation or for both, but not for sale in the ordinary course of business, use in the production or supply of goods or services or for administrative purposes.

Investment properties are stated at cost less accumulated depreciation and impairment losses.

Cost includes expenditure that is directly attributable to the acquisition of the investment property. The cost of self-constructed investment property includes the cost of materials and direct labour, and other costs directly attributable to bringing the investment property to a working condition for its intended use and capitalised borrowing costs.

No depreciation is provided on land.

(i) Property, plant and equipment

Recognition and measurement

Owned assets

Property, plant and equipment are stated at cost less accumulated depreciation and impairment losses.

Cost includes expenditure that is directly attributable to the acquisition of the asset. The cost of self-constructed assets includes the cost of materials and direct labour, any other costs directly attributable to bringing the assets to a working condition for their intended use, the costs of dismantling and removing the items and restoring the site on which they are located, and capitalised borrowing costs. Purchased software that is integral to the functionality of the related equipment is capitalised as part of that equipment.

When parts of an item of property, plant and equipment have different useful lives, they are accounted for as separate items (major components) of property, plant and equipment.

Gains and losses on disposal of an item of property, plant and equipment are determined by comparing the proceeds from disposal with the carrying amount of property, plant and equipment, and are recognised net within other income in profit or loss.

Subsequent costs

The cost of replacing a part of an item of property, plant and equipment is recognised in the carrying amount of the item if it is probable that the future economic benefits embodied within the part will flow to the Group, and its cost can be measured reliably. The carrying amount of the replaced part is derecognised. The costs of the day-to-day servicing of property, plant and equipment are recognised in profit or loss as incurred.

Depreciation

Depreciation is calculated based on the depreciable amount, which is the cost of an asset, or other amount substituted for cost, less its residual value.

Depreciation is charged to profit or loss on a straight-line basis over the estimated useful lives of each component of an item of property, plant and equipment. The estimated useful lives are as follows:

Buildings	10 - 50	years
Machinery, equipment refinery plants and terminal	2 - 30	years
Equipment solar plants	10 - 25	years
Marketing and office equipment	3 - 20	years
Vehicles	5 - 7	years

No depreciation is provided on freehold land, platinum catalyst and assets under construction.

Depreciation methods, useful lives and residual values are reviewed at each financial year-end and adjusted if appropriate.

Oil and Gas Properties

When the technical and commercial feasibility of an undeveloped oil or gas field has been demonstrated, the field enters its development phase. The costs of oil and gas assets are transferred from exploration and evaluation expenditure and reclassified into development phase.

The costs of oil and gas properties include past exploration and evaluation costs, pre-production development costs and the ongoing costs of continuing to develop reserves for production as well as decommission costs.

Depletion charges are calculated using a unit of production method over the life of the estimated Proved plus Probable reserves.

(j) Leasehold right

Leasehold rights are the rights obtained from the land lease contracts, which are amortised on a straight-line method over the contractual period.

Leasehold rights are presented at cost deducted by accumulated amortisation and impairment losses.

(k) Intangible assets

Goodwill

Goodwill that arises upon the acquisition of subsidiaries is included in intangible assets. The measurement of goodwill at initial recognition is described in note 3(a). Subsequent to initial recognition, goodwill is measured at cost less accumulated impairment losses. In respect of equity-accounted investees, the carrying amount of goodwill is included in the carrying amount of the investment, and an impairment loss on such an investment is not allocated to any asset, including goodwill, that forms part of the carrying amount of the equity-accounted investee.

Other intangible assets

Other intangible assets that are acquired by the Group and have finite useful lives are measured at cost less accumulated amortization and accumulated impairment losses.

Subsequent expenditure

Subsequent expenditure is capitalized only when it increases the future economic benefits embodied in the specific asset to which it relates. All other expenditure, including expenditure on internally generated goodwill and brands, is recognized after profit or loss as incurred.

Amortizations

Amortization is based on the cost of the asset, or other amount substituted for cost, less its residual value.

Amortization is recognized in profit or loss on a straight-line basis over the estimated useful lives of intangible assets, other than goodwill, from the date that they are available for use, since this most closely reflects the expected pattern of consumption of the future economic benefits embodied in the asset.

The estimated useful lives for the current and comparative years are as follows:

Right to use and cost of development of computer software	3 - 10	years
Feed-in Tariff power purchase agreement	10 - 20	years
Right to connect electrical transmission line	20 - 25	years

Amortization methods, useful lives and residual values are reviewed at each financial year-end and adjusted if appropriate.

Exploration and Evaluation Expenditure

Exploration and evaluation expenditure is stated at cost as intangible assets and is accumulated in respect of each identifiable area of interest. These costs are capitalised until the viability of the area of interest is determined.

Accumulated costs in relation to an abandoned area are written off through profit or loss in the period in which the decision to abandon the area is made.

Once an area of interest enters the development phase, exploration and evaluation expenditures are transferred to oil and gas properties.

(l) Impairment

The carrying amounts of the Group's assets are reviewed at each reporting date to determine whether there is any indication of impairment. If any such indication exists, the assets' recoverable amounts are estimated. For goodwill, the recoverable amount is estimated each year at the same time.

An impairment loss is recognised if the carrying amount of an asset exceeds its recoverable amount. The impairment loss is recognised in profit or loss unless it reverses a previous revaluation credited to equity, in which case it is charged to equity.

When a decline in the fair value of an available-for-sale financial asset has been recognised directly in equity and there is objective evidence that the value of the asset is impaired, the cumulative loss that had been recognised directly in equity is recognised in profit or loss even though the financial asset has not been derecognised. The amount of the cumulative loss that is recognised in profit or loss is the difference between the acquisition cost and current fair value, less any impairment loss on that financial asset previously recognised in profit or loss.

Calculation of recoverable amount

The recoverable amount of held-to-maturity securities carried at amortised cost is calculated as the present value of the estimated future cash flows discounted at the original effective interest rate.

The recoverable amount of available-for-sale financial assets is calculated by reference to the fair value.

The recoverable amount of a non-financial asset is the greater of the asset's value in use and fair value less costs to sell. In assessing value in use, the estimated future cash flows are discounted to their present value using a pre-tax discount rate that reflects current market assessments of the time value of money and the risks specific to the asset. For an asset that does not generate cash inflows largely independent of those from other assets, the recoverable amount is determined for the cash-generating unit to which the asset belongs.

Reversals of impairment

An impairment loss in respect of a financial asset is reversed if the subsequent increase in recoverable amount can be related objectively to an event occurring after the impairment loss was recognised in profit or loss. For financial assets carried at amortised cost and available-for-sale financial assets that are debt securities, the reversal is recognised in profit or loss. For available-for-sale financial assets that are equity securities, the reversal is recognised in other comprehensive income.

An impairment loss in respect of goodwill is not reversed. Impairment losses recognised in prior periods in respect of other non-financial assets are assessed at each reporting date for any indications that the loss has decreased or no longer exists. An impairment loss is reversed if there has been a change in the estimates used to determine the recoverable amount. An impairment loss is reversed only to the extent that the asset's carrying amount does not exceed the carrying amount that would have been determined, net of depreciation or amortisation, if no impairment loss had been recognised.

(m) Interest-bearing liabilities

Interest-bearing liabilities are recognised initially at fair value less attributable transaction charges. Subsequent to initial recognition, interest-bearing liabilities are stated at amortised cost with any difference between cost and redemption value being recognised in profit or loss over the period of the borrowings on an effective interest basis.

(n) Trade and other accounts payable

Trade and other accounts payable are stated at cost.

(o) Employee benefits

Defined contribution plans

Obligations for contributions to defined contribution plans are expensed as the related service is provided.

Defined benefit plans

The Group's net obligation in respect of defined benefit plans is calculated separately for each plan by estimating the amount of future benefit that employees have earned in the current and prior periods, discounting that amount.

The calculation of defined benefit obligations is performed every 3 years by a qualified actuary using the projected unit credit method. When the calculation results in a potential asset for the Group, the recognised asset is limited to the present value of economic benefits available in the form of any future refunds from the plan or reductions in future contributions to the plan. To calculate the present value of economic benefits, consideration is given to any application minimum funding requirements.

Remeasurements of the net defined benefit liability, actuarial gain or loss are recognized immediately in OCI. The Group determines the interest expense on the net defined benefit liability for the period by applying the discount rate used to measure the defined benefit obligation at the beginning of the annual period, taking into account any changes in the net defined benefit liability during the period as a result of contributions and benefit payments. Net interest expense and other expenses related to defined benefit plans are recognized in profit or loss.

When the benefits of a plan are changed or when a plan is curtailed, the resulting change in benefit that relates to past service or the gain or loss on curtailment is recognised immediately in profit or loss. The Group recognises gains and losses on the settlement of a defined benefit plan when the settlement occurs.

Other long-term employee benefits

The Group's net obligation in respect of long-term employee benefits is the amount of future benefit that employees have earned in return for their service in the current and prior periods. That benefit is discounted to determine its present value. Remeasurements are recognized in profit or loss in the period in which they arise.

Short-term employee benefits

Short-term employee benefits are expensed as the related service is provided. A liability is recognised for the amount expected to be paid if the Group has a present legal or constructive obligation to pay this amount as a result of past service provided by the employee and the obligation can be estimated reliably.

(p) Share-based payments

The grant-date fair value of equity–settled share-based payment awards granted to employees is generally recognised as an expense, with a corresponding increase in equity, over the vesting period of the awards. The amount recognised as an expense is adjusted to reflect the number of awards for which the related service and non-market performance conditions are expected to be met, such that the amount ultimately recognised is based on the number of awards that meet the related service and non-market performance conditions at the vesting date. For share-based payment awards with non-vesting conditions, the grant-date fair value of the share-based payment is measured to reflect such conditions and there is no true-up for differences between expected and actual outcomes.

(q) Provisions

A provision is recognised if, as a result of a past event, the Group has a present legal or constructive obligation that can be estimated reliably, and it is probable that an outflow of economic benefits will be required to settle the obligation. Provisions are determined by discounting the expected future cash flows at a pre-tax rate that reflects current market assessments of the time value of money and the risks specific to the liability. The unwinding of the discount is recognised as finance cost.

(r) Share capital

Ordinary shares

Ordinary shares are classified as equity. Incremental costs directly attributable to the issue of ordinary shares are recognised as a deduction from equity.

(s) Revenue

Revenue excludes value added taxes and other sales taxes and is arrived at after deduction of trade discounts and volume rebates.

Sale of goods and services rendered

Revenue is recognised in profit or loss when the significant risks and rewards of ownership have been transferred to the buyer. No revenue is recognised if there is continuing management involvement with the goods or there are significant uncertainties regarding recovery of the consideration due, associated costs or the probable return of goods. Service income is recognised as services are provided.

Income from sale of electricity

Income from the sale of electricity is recognised in profit or loss in accordance with delivery units supplied as stipulated in the contract. Income from the sale of electricity for some entities within Thailand is entitled to receive ADDER for a period of 10 years from the commencement of commercial sales. Thereafter, subsequent to this initial period income from sale of electricity is recognised at normal rates.

Income from operating rights

Income from operating right is recognised in accordance with the timing of the rights utilization and with conditions as stipulated in the contract.

Loyalty programmes

The Group has a customer loyalty programme whereby customers are awarded credits (Points) entitling customers to the right to purchase products from the Group at a discount or qualify for a free gift. The fair value of the consideration received or receivable in respect of the initial sale is allocated between the Points and the other components of the sale. The amount allocated to the Points is estimated by reference to the fair value of the right to purchase products at a discount or fair value of the free gift. The fair value is estimated based on the amount of the discount adjusted to take into account the expected forfeiture rate. Such amount is deferred and revenue is recognised only when the Points are redeemed and the Group has fulfilled its obligations to supply the products. The amount of revenue recognised in those circumstances is based on the number of Points that have been redeemed in exchange for discounted products, relative to the total number of Points that is expected to be redeemed. Deferred revenue is also released to profit or loss when it is no longer considered probable that the Points will be redeemed.

Investments

Revenue from investments comprises dividend and interest income from investments and bank deposits.

Dividend income

Dividend income is recognised in profit or loss on the date the Group's right to receive payments is established.

Interest income

Interest income is recognised in profit or loss as it accrues.

(t) Finance costs

Finance costs comprise interest expense on borrowings, unwinding of the discount on provisions and contingent consideration.

Borrowing costs that are not directly attributable to the acquisition, construction or production of a qualifying asset are recognised in profit or loss using the effective interest method.

(u) Lease payments

Payments made under operating leases are recognised in profit or loss on a straight line basis over the term of the lease. Lease incentives received are recognised in profit or loss as an integral part of the total lease expense, over the term of the lease.

Contingent lease payments are accounted for by revising the minimum lease payments over the remaining term of the lease when the lease adjustment is confirmed.

(v) Income tax

Income tax expense for the year comprises current and deferred tax. Current and deferred tax are recognised in profit or loss except to the extent that they relate to a business combination, or items recognised directly in equity or in other comprehensive income.

Current tax is the expected tax payable or receivable on the taxable income or loss for the year, using tax rates enacted or substantively enacted at the reporting date, and any adjustment to tax payable in respect of previous years.

Deferred tax is recognised in respect of temporary differences between the carrying amounts of assets and liabilities for financial reporting purposes and the amounts used for taxation purposes. Deferred tax is not recognised for the following temporary differences: the initial recognition of goodwill; the initial recognition of assets or liabilities in a transaction that is not a business combination and that affects neither accounting nor taxable profit or loss; and differences relating to investments in subsidiaries and jointly-controlled entities to the extent that it is probable that they will not reverse in the foreseeable future.

The measurement of deferred tax reflects the tax consequences that would follow the manner in which the Group expects, at the end of the reporting period, to recover or settle the carrying amount of its assets and liabilities.

Deferred tax is measured at the tax rates that are expected to be applied to the temporary differences when they reverse, using tax rates enacted or substantively enacted at the reporting date.

In determining the amount of current and deferred tax, the Group takes into account the impact of uncertain tax positions and whether additional taxes and interest may be due. The Group believes that its accruals for tax liabilities are adequate for all open tax years based on its assessment of many factors, including interpretations of tax law and prior experience. This assessment relies on estimates and assumptions and may involve a series of judgements about future events. New information may become available that causes the Group to change its judgement regarding the adequacy of existing tax liabilities; such changes to tax liabilities will impact tax expense in the period that such a determination is made.

Deferred tax assets and liabilities are offset if there is a legally enforceable right to offset current tax liabilities and assets, and they relate to income taxes levied by the same tax authority on the same taxable entity, or on different tax entities, but they intend to settle current tax liabilities and assets on a net basis or their tax assets and liabilities will be realised simultaneously.

A deferred tax asset is recognised to the extent that it is probable that future taxable profits will be available against which the temporary differences can be utilised. Future taxable profits are determined based on the reversal of relevant taxable temporary differences. If the amount of taxable temporary differences is insufficient to recognise a deferred tax asset in full, then future taxable profits, adjusted for reversals of existing temporary differences, are considered, based on the business plans for individual subsidiaries in the Group. Deferred tax assets are reviewed at each reporting date and reduced to the extent that it is no longer probable that the related tax benefit will be realised.

(w) Earnings per share

The Group presents basic earnings per share (EPS) data for its ordinary shares. Basic EPS is calculated by dividing the profit or loss attributable to ordinary shareholders of the Company by the weighted average number of ordinary shares outstanding during the year.

(x) Segment reporting

Segment results that are reported to the Group's president (the chief operating decision maker) include items directly attributable to a segment as well as those that can be allocated on a reasonable basis.

4 Business combination and restatement

(a) Acquisition of investment in associate and restatement in Star Energy Group Holdings Pte. Ltd.

On 26 April 2017, BCPG Public Company Limited, a subsidiary of the Company, signed the Share Purchase Agreement with Star Energy Investments Ltd. ("Seller") to acquire 280,000 shares of Star Energy Group Holdings Pte. Ltd. or approximately 33.33% of the total issued and paid-up shares to invest in geothermal power plant projects which owns operating 158 MW power plant projects and a development of 24 MW, located in Indonesia. On 26 July 2017, the Company and the Seller completed the conditions precedent in accordance with Share Purchase Agreement, the Company settled the payment of USD 356 million (approximately Baht 11,956 million) for the shares and received the share transfer of Star Energy Group Holdings Pte. Ltd. Management believes that by acquired this investment will enable the group to expand their investment in other renewable energy business in South-East Asia.

TFRS required Management to make preliminary assessment of the fair values of the assets, liabilities and contingent liabilities specified at the acquisition date. The Group hired an independent appraiser to determine the fair value of assets and liabilities acquired during the measurement period, which must not exceed one year from the acquisition date to reflect new information obtained about facts and circumstances that existed as of the acquisition date. Finalisation of the valuation of net assets of investment was completed in July 2018.

The following summarises the major classes of consideration transferred, and the fair value of net assets acquired (liabilities) assumed at the acquisition date as interest in Group of subsidiary investment:

	Recognized value as proportionate of acquisition	Adjustments	Fair value
		(in million Baht)	
Power purchase agreements and concession right	117,577	(36,596)	80,981
Property, plant and equipment	33,033	3,721	36,754
Finance lease liabilities	21,486	(4,780)	16,706
Deferred tax liabilities	(56,186)	12,259	(43,927)
Other net assets (liabilities) acquired	(49,884)	-	(49,884)
Total identifiable assets (liabilities)	**66,026**	**(25,396)**	**40,630**
Less other shareholders' interests	(53,774)	20,727	(33,047)
Net identifiable assets (liabilities)	**12,252**	**(4,669)**	**7,583**
Gain on bargain purchase (recognised in share of profit of associates in 2017)	(296)	296	-
Goodwill	-	4,373	4,373
Consideration transferred - cash	**11,956**	**-**	**11,956**

The valuation techniques used for measuring the fair value of material assets acquired are as follows.

- The fair value of power purchase agreements and concession right was determined based on income approach using Multi-period Excess Earning Method (MEEM) with operating period under power purchase agreement and related conditions. Key assumptions included forecast revenue and discount rate.
- The fair value of property plant and equipment's was determined based on market approach.

The changes in fair value adjustment of net assets (liabilities) acquired at the acquisition date is mainly from the change in fair value of power purchase agreements and concession right. At the acquisition date in Star Energy Group Holding Pte. Ltd. (SEGHPL), certain SEGHPL's subsidiary has already been granted an approval on electricity price increase since 2016 and others subsidiaries are in process of getting an approval. The management estimated the fair value based on the information received at the time. However, at the end of second quarter of 2018, the company has received additional information that the increase in electricity price process was delayed. Furthermore, TFRS allow not later than one year period of remeasurement the fair value from the acquisition date. Therefore, it was resulted to recognise the difference between the considerations paid and fair value of net identified assets and liabilities determined by an independent appraiser as the goodwill of Baht 4,373 million, included in investment in associates in the consolidated statement of financial position.

The consolidated financial statements as at 31 December 2017 included in these financial statements have been restated to reflect new information obtained about facts and circumstances that existed as of the acquisition date and the subsequently recognised adjustments as follows;

The impacts to the consolidated statement of financial position as at 31 December 2017:

	(in million Baht)
Asset	
Investment in associate decrease	(242)
Total	**(242)**
Equity	
Retained earnings decrease	(170)
Equity of the Company decrease	**(170)**
Non-controlling interests decrease	(72)
Total equity decrease	**(242)**

The impacts to the consolidated statement of income for the year ended 31 December 2017:

	(in million Baht)
Decrease in share of profit of investments in associates	(242)
Decrease in profit for the year	**(242)**
Profit attributable to	
Decrease in attributable to owners of the Company	(170)
Decrease in attributable to non-controlling interests	(72)
Decrease in profit for the year	**(242)**
Decrease in basic earnings per share *(Baht)*	**(0.12)**

The impacts to the consolidated statement of cash flows for the year ended 31 December 2017:

	(in million Baht)
Cash flows from operating activities	
Decrease in profit for the year	(242)
Adjustments for	
Decrease in share of profit of associates, net of tax	242
Net change in cash flows	**-**

(b) Acquisition of investment in associate in OKEA AS

At the Board of director meeting of the Company held on 14 June 2018, the meeting approved the Company's investment plan to establish BCPR Co., Ltd. which is a subsidiary in Thailand. BCPR Co., Ltd. established an indirect subsidiary in Singapore ("BCPR Pte. Ltd.") for the purpose of jointly invest with Seacrest Capital Group through the investment by means of subscribing new shares of OKEA AS, a company established under Norwegian law, which has developed and produced petroleum in Norway. Subsequently, On 21 November 2018, BCPR Pte. Ltd. subscribed for newly issued shares of OKEA at the total investment amount of NOK 939 million (or approximately THB 3,618 million). Calculated as 49.33% of total authorised share capital in OKEA and received the shares.

The Group holds 43% ordinary shares and also hold non-voting right ordinary shares which can be converted to ordinary shares at any time. Effectively, the Group will be holding 49.33% of total OKEA AS authorized share capital. Even if the Group is a major shareholder of the OKEA AS, however, the Group are unable to solely direct key relevant activities of OKEA AS and the Group has just completed this investment for only one month, therefore there is no past events or significant indicators indicating the Group's control over key relevant activities. The management considered the interest in OKEA in accordance with TFRS 10 and concluded the Group has significant influence but no right to control directly.

The Group hired an independent appraiser to determine the fair value of assets and liabilities acquired at that date. However, the report on the fair value of net assets acquired from acquisition of investment in associate has not yet been finalized, for which reason the net assets acquired are provisionally recognised at value based on management estimates. The result of the appraisal will be used to amend the accounting at fair value and to record the final determination of net assets acquired in the period that the report of the independent appraiser is received.

The following summarises the consideration transferred to acquire of investment, and the fair value of net assets acquired (liabilities) assumed at the acquisition date as interest in Group's investment:

	Recognized value as proportionate of to the acquisition *(in million Baht)*
Trade and other receivable	5,791
Exploration and production of petroleum assets	1,941
Long-term loan from financial institution	(4,735)
Other net assets (liabilities)	(345)
Total identifiable net assets acquired (liabilities)	**2,652**
Goodwill	966
Consideration transferred – cash	**3,618**

The fair value of exploration and production of petroleum assets was determined based on income approach. Key assumptions included forecast oil and gas price, oil reserve, production capacity and discount rate.

Acquisition-related costs

The Group incurred acquisition-related costs of Baht 44 million related to external legal fees and due diligence costs. The legal fees and due diligence costs have been included in administrative expenses in the Group's consolidated statement of comprehensive income.

5 Related parties

For the purposes of these financial statements, parties are considered to be related to the Group if the Group has the ability, directly or indirectly, to control or joint control the party or exercise significant influence over the party in making financial and operating decisions, or vice versa, or where the Group and the party are subject to common control or common significant influence. Related parties may be individuals or other entities.

Relationship with related parties were as follows:

Name of entities	Country of incorporation/ nationality	Nature of relationships
Major shareholders		
Vayupak Fund 1	Thailand	Some common directors
Social Security Office	Thailand	Some common directors
Subsidiaries or indirect subsidiaries		
Bangchak Green Net Co., Ltd.	Thailand	Representative from the Company as director
BCPG Public Company Limited	Thailand	Representative from the Company as director
BBGI Public Company Limited (Former as BBGI Company Limited)	Thailand	Representative from the Company as director
Bangchak Retail Co., Ltd.	Thailand	Representative from the Company as director
BCPR Co., Ltd.	Thailand	Representative from the Company as director
BCV Bio Based Co., Ltd.	Thailand	Representative from the Company as director
BCV Energy Co., Ltd.	Thailand	Representative from the Company as director
BCV Innovation Co., Ltd.	Thailand	Representative from the Company as director
BCV Partnership Co., Ltd.	Thailand	Representative from the Company as director
BCP Energy International Pte. Ltd.	Singapore	Representative from the Company as director
BCP Innovation Pte. Ltd.	Singapore	Representative from the Company as director
BCP Trading Pte. Ltd.	Singapore	Representative from the Company as director
BCPR Pte. Ltd.	Singapore	Representative from the Company as director
Bangchak Solar Energy Co., Ltd.	Thailand	Representative from the subsidiary as director
Bangchak Solar Energy (Prachinburi) Co., Ltd.	Thailand	Representative from the subsidiary as director
Bangchak Solar Energy (Chaiyaphum1) Co., Ltd.	Thailand	Representative from the subsidiary as director
Bangchak Solar Energy (Buriram) Co., Ltd.	Thailand	Representative from the subsidiary as director
Bangchak Solar Energy (Buriram1) Co., Ltd.	Thailand	Representative from the subsidiary as director
Bangchak Solar Energy (Nakhon Ratchasima) Co., Ltd.	Thailand	Representative from the subsidiary as director
BCPG Biopower 1 Co., Ltd.	Thailand	Representative from the subsidiary as director
BCPG Biopower 2 Co., Ltd.	Thailand	Representative from the subsidiary as director
Lomligor Co., Ltd.	Thailand	Representative from the subsidiary as director

Name of entities	Country of incorporation/ nationality	Nature of relationships
Subsidiaries or indirect subsidiaries (Continue)		
BCPG Investment Holdings Pte. Ltd.	Singapore	Representative from the subsidiary as director
BSE Energy Holdings Pte. Ltd.	Singapore	Representative from the subsidiary as director
BCPG Japan Corporation	Japan	Representative from the subsidiary as director
Greenergy Holdings Pte. Ltd.	Singapore	Representative from the subsidiary as director
Greenergy Power Pte. Ltd.	Singapore	Representative from the subsidiary as director
Tarumizu Solar Solutions Godo Kaisha	Japan	Representative from the subsidiary as director
Nakatsugawa PV Godo Kaisha	Japan	Indirect Subsidiary of the subsidiary, affiliate in TK investment
Godo Kaisha Inti	Japan	Representative from the Subsidiary as director
Takamori PV Godo Kaisha	Japan	Indirect Subsidiary of the subsidiary, affiliate in TK investment
Nojiri PV Godo Kaisha	Japan	Indirect Subsidiary of the subsidiary, affiliate in TK investment
Godo Kaisha Aten	Japan	Representative from the Subsidiary as director
Nikaho PV Godo Kaisha	Japan	Representative from the Subsidiary as director
Gotenba 2 PV Godo Kaisha	Japan	Representative from the Subsidiary as director
Godo Kaisha Horus	Japan	Representative from the Subsidiary as director
Yabuki PV Godo Kaisha	Japan	Representative from the Subsidiary as director
Komagane PV Godo Kaisha	Japan	Representative from the Subsidiary as director
Godo Kaisha Helios	Japan	Representative from the Subsidiary as director
Godo Kaisha Lugh	Japan	Representative from the Subsidiary as director
Godo Kaisha Phoenix	Japan	Representative from the Subsidiary as director
Gotenba 1 PV Godo Kaisha	Japan	Representative from the Subsidiary as director
Komagane Land Lease Godo Kaisha	Japan	Representative from the Subsidiary as director
Nagi PV Godo Kaisha	Japan	Representative from the Subsidiary as director
Godo Kaisha Natosi	Japan	Representative from the Subsidiary as director
Godo Kaisha Amaterasu	Japan	Representative from the Subsidiary as director

Name of entities	Country of incorporation/ nationality	Nature of relationships
Subsidiaries or indirect subsidiaries (Continue)		
Godo Kaisha Mithra	Japan	Representative from the Subsidiary as director
Godo Kaisha Sol	Japan	Representative from the Subsidiary as director
Godo Kaisha Saule	Japan	Representative from the Subsidiary as director
Godo Kaisha Shamash	Japan	Representative from the Subsidiary as director
Godo Kaisha Pusan	Japan	Representative from the Subsidiary as director
Godo Kaisha Apolo	Japan	Representative from the Subsidiary as director
Godo Kaisha Surya	Japan	Representative from the Subsidiary as director
Nagi Land Lease Godo Kaisha	Japan	Representative from the Subsidiary as director
Godo Kaisha Rangi	Japan	Representative from the Subsidiary as director
Godo Kaisha Dazbog	Japan	Representative from the Subsidiary as director
Godo Kaisha Narang	Japan	Representative from the Subsidiary as director
Godo Kaisha Malina	Japan	Representative from the Subsidiary as director
Godo Kaisha Legba	Japan	Representative from the Subsidiary as director
J2 Investor Godo Kaisha	Japan	Representative from the Subsidiary as director
J1 Investor Godo Kaisha	Japan	Representative from the Subsidiary as director
BCPG Engineering Company	Japan	Representative from the Subsidiary as director
Godo Kaisha Tarumi Takatoge	Japan	Indirect Subsidiary of the subsidiary, affiliate in TK investment
Huang Ming Japan Company Limited	Japan	Representative from the Subsidiary as director
BCPG Wind Cooperatief U.A.	Netherland	Representative from the Subsidiary as director
KSL Green Innovation Public Company Limited	Thailand	Representative from the Company as director
Bangchak Biofuel Co., Ltd.	Thailand	Representative from the Company as director
Bangchak Bioethanol (Chachoengsao) Co., Ltd.	Thailand	Representative from the Company as director
Nido Petroleum Pty. Ltd. Group	Australia/ British Virgin Islands/ Bahrain	Representative from the Subsidiary as director

Name of entities	Country of incorporation/ nationality	Nature of relationships
Indirect associates and joint venture		
Bongkot Marine Services Co., Ltd.	Thailand	Representative from the Company as director
Oam Suk Social Enterprise Co., Ltd.	Thailand	Representative from the Company as director
Ubon Bio Ethanol Public Company Limited (Formerly: Ubon Bio Ethanol Co., Ltd.)	Thailand	Representative from the Subsidiary as director
Ubon Agricultural Energy Co., Ltd.	Thailand	Representative from the Subsidiary as director
PetroWind Energy Inc.	Philippines	Representative from the Subsidiary as director
Star Energy Group Holdings Pte. Ltd.	Singapore	Representative from the Subsidiary as director
OKEA AS	Norway	Representative from the Company as director
Other related parties		
Fuel Pipeline Transportation Ltd.	Thailand	Representative from the Company as director
Key management personnel	Thailand	Persons having authority and responsibility for planning, directing and controlling the activities of the entity, directly or indirectly, including any director (whether executive or otherwise) of the Group.

The pricing policies for particular types of transactions are explained further below

Transactions	Pricing policies
Sale of goods	Market price/ Contractually agreed prices
Rendering of service	Contractually agreed prices
Purchase of goods/raw materials	Market price/ Contractually agreed prices
Receiving of services	Contractually agreed prices
Management service fee	Contractually agreed prices
Royalty expense	Contractually agreed prices
Interest expense	Contractually agreed rate with reference to market rate and contract rate

Significant transactions with related parties for the year ended 31 December as follows;

	Consolidated financial statements		Separate financial statements	
For the year ended 31 December	2018	2017	2018	2017
	(in million Baht)			
Subsidiaries and indirect subsidiaries				
Sales of goods	-	-	42,272	34,168
Purchases of goods	-	-	28,891	13,026
Dividend income	-	-	916	994
Other income	-	-	239	105
Interest income	-	-	28	136
Other expenses	-	-	37	62
Indirect associates and joint ventures				
Sales of goods	12	28	12	28
Purchases of goods	1,368	1,488	1,368	1,488
Dividend income	-	-	24	21
Other income	75	-	-	-
Other expenses	490	261	490	261
Key management personnel				
Key management personnel compensation				
Short-term employee benefits	314	268	148	146
Post-employment benefits and other long-term benefits	34	40	8	7
Share-based payments	1	22	-	-
Total key management personnel compensation	**349**	**330**	**156**	**153**
Other related party				
Dividend income	-	1	-	1
Other income	5	5	5	5
Interest income	5	-	-	-
Pipeline transportation expenses	443	442	443	442

Balances as at 31 December with related parties were as follows:

	Consolidated financial statements		Separate financial statements	
	2018	2017	2018	2017
	(in million Baht)			
Trade accounts receivable - related parties				
Subsidiaries and indirect subsidiaries	-	-	2,218	1,704
Direct and indirect associate	2	2	2	2
Total	**2**	**2**	**2,220**	**1,706**
Less allowance for doubtful accounts	-	-	-	-
Net	**2**	**2**	**2,220**	**1,706**
Bad and doubtful debts expense for the year	-	-	-	-

	Consolidated financial statements		Separate financial statements	
	2018	2017	2018	2017
	(in million Baht)			
Other receivables - related parties				
Subsidiaries and indirect subsidiaries	-	-	27	15
Indirect associate and joint ventures	74	43	-	-
Other related party	5	-	-	-
Total	**79**	**43**	**27**	**15**

Loans to related parties	Interest rate		Consolidated financial statements		Separate financial statements	
	2018	2017	2018	2017	2018	2017
	(% per annum)		(in million Baht)			
Long-term loans						
Subsidiaries						
Bangchak Retail Co., Ltd.	*4.2*	*4.2*	-	-	410	90
BCP Innovation Pte. Ltd.	*4.5*	-	-	-	198	-
Indirect subsidiary						
Nido Petroleum Pty. Ltd.	*0.5*	*0.5 - 7.5*	-	-	1,291	2,113
BCPR Pte. Ltd.	*0.5*	-	-	-	3,229	-
Other related party						
Lithium Americans Corp.	*8.0*	-	199	-	-	-
			199	-	5,128	2,203
Less current portion due within one year			-	-	-	-
Total loans to related parties			**199**	**-**	**5,128**	**2,203**

Movements during the year ended 31 December of loans to related parties were as follows:

	Consolidated financial statements		Separate financial statements	
	2018	2017	2018	2017
	(in million Baht)			
Long-term loans to related parties				
At 1 January	-	-	2,203	2,789
Increase	198	-	3,824	90
Decrease	-	-	(818)	(432)
Effect of change in exchange rates	1	-	(81)	(244)
Less current portion due within one year	-	-	-	-
At 31 December	**199**	**-**	**5,128**	**2,203**
Other non-current assets				
Indirect subsidiary	-	-	325	313
Other related party	10	14	10	14
Total	**10**	**14**	**335**	**327**

	Consolidated financial statements		Separate financial statements	
	2018	2017	2018	2017
	(in million Baht)			
Trade accounts payable - related parties				
Subsidiaries and indirect subsidiaries	-	-	829	646
Indirect associate	110	129	110	129
Total	**110**	**129**	**939**	**775**
Other payable - related parties				
Subsidiaries and indirect subsidiary	-	-	9	13
Joint ventures	13	13	13	13
Other related parties	43	43	43	43
Total	**56**	**56**	**65**	**69**
Other current liabilities				
Subsidiaries	-	-	6	6
Total	**-**	**-**	**6**	**6**
Other non-current liabilities				
Other related party	2	3	2	3
Total	**2**	**3**	**2**	**3**

Significant agreements with related parties

Fuel Pipeline Transportation Agreement

The Company entered into a Fuel Pipeline Transportation Agreement with a related company. The related company will provide transportation service of fuel products to Don-muang and Suvarnabhumi International Airport and transportation service for petroleum products to fuel depot at Bang-pa-in. The agreement has no specified expiry date and can be terminated by either party by giving at least 60 days written notice for termination to the other party.

Oil Terminal Rental Agreement

The Company has entered into an Oil Terminal Rental Agreement with a joint venture. The rental fee is stipulated in the agreement which will be expired in 2022.

Bio-diesel Sales and Purchase Agreement

The Company entered into a Bio-diesel Sales and Purchase Agreement with an indirect subsidiary. Such agreement has effective since April 2018 to October 2027 and will be automatically renewed unless terminated by either party as stipulated in the agreement. The Company will purchase bio-diesel oil at yearly average volumes not less than 60% of maximum bio-diesel production capacity of indirect subsidiary at the price reference to market as stipulated in the agreement.

Denature Ethanol Sales and Purchase Agreement

The Company entered into a Denatured Ethanol Sales and Purchase Agreement with a subsidiary. Such agreement has effective since April 2018 to October 2027 and will be automatically renewed unless terminated by either party as stipulated in the agreement. The Company will purchase denatured ethanol at yearly average volumes not less than 50% of denatured ethanol production per

year of the indirect subsidiary within the same Group at the price reference to market as stipulated in the agreement.

Fuel Product Sale and Purchase Agreement

The Company entered into a fuel product sale and purchase agreement with a subsidiary. The Company will purchase fuel product at quantity and price in accordance with obligation under the agreement.

Service Station Operating Right Agreement

The Company entered into Service Station Operating Right Agreement which include the right to operate related business within service station, selling and purchasing of fuel products with a subsidiary for a period of 5 years. Operating right fee and sale and purchase price are as stipulated in the agreement.

Store Operation Right Agreement

The Company entered into Store Operation Right Agreement with a subsidiary to operate retail stores within service stations under the Company's brand for a period of 5 years. Fee is as stipulated in the agreement.

Information Technology Service Agreement

The Company has entered into information technology service agreements with subsidiaries and indirect subsidiaries. The agreement term commence in August 2017 and is effective for 1 year and 5 months and will be reviewed annually. The Company is responsible for management information system, system structure, maintenance system and advisory in accordance with subsidiaries' direction. Service fees is as stipulated in the agreement.

Management Service Agreement

The Company entered into management service agreement with subsidiaries and indirect subsidiaries for general management service for a period of 1 to 3 years. The Company agreed to provide human resources to manage operation process in accordance with subsidiaries' direction. Service fees is as stipulated in the agreement.

Land Rental Agreement

The Company has entered into land rental agreement with BCPG Public Company Limited, a subsidiary for the purpose of 38 MW solar farm project at Bang Pa-In establishment and related objectives. The agreement term is for a period of 22 years effective from 1 December 2015 to 30 November 2037. The rental fee is stipulated in the same agreement.

The Company has entered into additional land rental agreement with BCPG Public Company Limited, a subsidiary for the purpose of related objectives of solar farm project. The agreement term is for a period of 21 years 2 months effective from 1 October 2016 to 30 November 2037. The rental fee is stipulated in the same agreement.

Building Space and Control Room Rental Agreement

The Company has entered into building space, control room and electricity system room rental agreement related to 38 MW solar farm project at Bang Pa-In with BCPG Public Company Limited, a subsidiary of the company. The agreement term is for a period of 3 years effective from 1 December 2015 to 30 November 2018. The rental fee is stipulated in the agreement. Subsequently, the Company has entered into the new building space, control room and electricity system room rental agreement to extend the agreement term is effective from 1 December 2018 to 31 January 2019. The rental fee is stipulated in the agreement.

Joint Development Area Agreement

The Company has entered into operating rights agreement with a subsidiary to operate a service and product distribution in service station under its subsidiary's operation for a period of not exceeding 20 years. The subsidiary agrees to pay operating right fee as stipulated in the agreement.

Lending Agreement

The Company has an unsecured lending agreement with Nido Petroleum Pty. Ltd., an indirect subsidiary of the Company for the credit facility of USD 120 million. The loan bears interest and repayment schedule as stipulated in the agreement. Subsequently, the Company has restructured a loan with the subsidiary by revision of interest rate and repayment conditions.

The Company has an unsecured lending agreement with Bangchak Retail Company Limited, a subsidiary of the Company for the credit facility of Baht 500 million. The loan bears interest and repayment schedule as stipulated in the agreement.

The Company has an unsecured lending agreement with BCP Innovation Pte. Ltd. " BCPI" , a subsidiary of the Company for the credit facility of USD 80 million. The loan bears interest and repayment schedule as stipulated in the agreement. BCPI has entered into Amended and Restated Credit and Guarantee Agreement with Lithium Americas Corp. "LAC" to grant LAC a credit facility of USD 80 million for investment in Project Cauchari-Olaroz (Phase I). Such loan bears interest and repayment schedule as stipulated in the agreement.

The Company has an unsecured lending agreement with BCPR Pte. Ltd., an indirect subsidiary of the Company for the credit facility of USD 120 million. The loan bears interest and repayment schedule as stipulated in the agreement.

Crude Oil Forward Contract

The Company has entered into a crude oil forward contract with a certain indirect subsidiary. The Company will purchase crude oil at quantity and price in accordance with obligation under the agreement.

Guarantee Agreement

BCPG Public Company Limited, a subsidiary of the Company has entered into guarantee agreement with BCPG Engineering Company, an indirect subsidiary of the Company, in accordance with solar power system operation and maintenance of power system from solar energy contract which BCPG Engineering Company has with Tarumizu Solar Solution Godo Kaisha in the event that BCPG Engineering Company causes damage to the assets within the power plant of Tarumizu Solar Solutions Godo Kaisha and is not able to compensate. The guarantee agreement is JPY 28 million per annum respectively, with a guarantee facility totalling JPY 280 million, covering the period of operation and maintenance of power system from solar energy contract. Under the conditions within

the loan agreement between Tarumizu Solar Solutions Godo Kaisha and certain financial institution, it is specified that the parent company is responsible for the guarantee of possible damage loss.

BCPG Public Company Limited, a subsidiary of the Company has signed the Amendment and Restatement and Novation Agreement (Sponsor Support Agreement) for the purpose of changing the sponsor for Bangchak Solar Energy Company Limited, an indirect subsidiary of the Company under Sponsor Support Agreement from Bangchak Corporation Public Company Limited to BCPG Public Company Limited, with a facility of Baht 700 million. Through the Sponsor Support Agreement, BCPG Public Company Limited guarantees the facility.

Lithium Purchase Agreement

BCPI and LAC have entered into Lithium Purchase Agreement. Such agreement grants BCPI the right to purchase 20 percent of all LAC right from Project Cauchari-Olaroz (Phase I) for 20 years from the commencement operation date. However, the Company has an obligations according to the agreement in case of BCPI is unable to pay the lithium purchase.

6 Cash and cash equivalents

	Consolidated financial statements		Separate financial statements	
	2018	2017	2018	2017
	(in million Baht)			
Cash on hand	102	187	-	1
Cash at banks - current accounts	1,412	1,237	265	289
Cash at banks - savings accounts	5,955	5,149	2,950	2,588
Highly liquid short-term investments	4,082	3,533	4,000	3,500
Total	**11,551**	**10,106**	**7,215**	**6,378**

As at 31 December 2018, certain indirect subsidiaries has a restricted deposits at financial institution totaling Baht 230 million *(2017: Baht 273 million)* under the long-term loan agreement with several financial institutions which required such indirect subsidiaries to obtain a permission on withdrawal of restricted deposits with the financial institution.

7 Investments

	Consolidated financial statements		Separate financial statements	
	2018	2017	2018	2017
	(in million Baht)			
Current investments				
Short-term deposits at financial institutions	262	220	200	200
	262	**220**	**200**	**200**
Other long-term investments				
Available-for-sale equity security				
Lithium Americas Corp.	1,432	4,061	-	-
Non-marketable equity securities				
Fuel Pipeline Transportation Ltd.	234	234	234	234
Others	146	49	-	-
Non-marketable equity securities - net	**1,812**	**4,344**	**234**	**234**
Debt securities held to maturity				
Government bonds	3	3	3	3
Add: Premium on investments	-	-	-	-
Debt securities held to maturity - net	**3**	**3**	**3**	**3**
Other long-term investments	**1,815**	**4,347**	**237**	**237**
Total	**2,077**	**4,567**	**437**	**437**

Movement of available-for-sale equity security during the year ended 31 December was as follows:

	Consolidated financial statements		Separate financial statements	
	2018	2017	2018	2017
	(in million Baht)			
Other long-term investments				
Available-for-sale securities				
At 1 January	4,061	429	-	-
Increase	-	1,089	-	-
Disposal	-	(1)	-	-
Valuation adjustment	(2,590)	2,722	-	-
Effect of change in exchange rate	(39)	(178)	-	-
At 31 December	**1,432**	**4,061**	**-**	**-**

8 Trade accounts receivable

	Note	Consolidated financial statements 2018	Consolidated financial statements 2017	Separate financial statements 2018	Separate financial statements 2017
		(in million Baht)			
Related parties	5	2	2	2,220	1,706
Other parties		6,980	7,529	4,909	5,583
Total		**6,982**	**7,531**	**7,129**	**7,289**
Less: allowance for doubtful accounts		(13)	(20)	(13)	(20)
Net		**6,969**	**7,511**	**7,116**	**7,269**
Bad and doubtful debts expense for the year		-	-	-	-

Aging analyses for trade accounts receivable were as follows:

	Consolidated financial statements 2018	Consolidated financial statements 2017	Separate financial statements 2018	Separate financial statements 2017
	(in million Baht)			
Related parties				
Within credit terms	2	2	2,220	1,706
Less: allowance for doubtful accounts	-	-	-	-
Net	**2**	**2**	**2,220**	**1,706**
Other parties				
Within credit terms	6,256	7,215	4,654	5,314
Overdue:				
Less than 3 months	678	282	229	246
3 - 6 months	11	5	3	-
6 - 12 months	15	7	8	3
Over 12 months	20	20	15	20
	6,980	**7,529**	**4,909**	**5,583**
Less: allowance for doubtful accounts	(13)	(20)	(13)	(20)
	6,967	**7,509**	**4,896**	**5,563**
Net	**6,969**	**7,511**	**7,116**	**7,269**

The normal credit term granted by the Group ranges from 1 days to 90 days.

9 Other receivables

	Note	Consolidated financial statements 2018	Consolidated financial statements 2017	Separate financial statements 2018	Separate financial statements 2017
		(in million Baht)			
Related parties	*5*	**79**	**43**	**27**	**15**
Other parties					
Receivable from oil hedging contracts		40	150	40	150
Receivable from forward exchange contracts		161	-	87	-
Prepaid expenses		132	117	58	61
Advance payment		223	284	-	-
Receivable from revenue department		537	308	304	97
Other accounts receivable		471	438	205	251
Total		**1,643**	**1,340**	**721**	**574**

10 Inventories

	Consolidated financial statements 2018	Consolidated financial statements 2017	Separate financial statements 2018	Separate financial statements 2017
	(in million Baht)			
Crude oil and other raw materials	8,214	8,609	7,648	7,464
Finished oil products	6,575	5,932	5,544	5,255
Materials and supplies	1,047	1,060	992	979
Consumer products	72	103	-	-
Semi - finished products	87	156	-	-
	15,995	15,860	14,184	13,698
Less: allowance for obsolete and slow moving	(149)	(125)	(149)	(125)
allowance for decline in value	(711)	(15)	(689)	-
Net	**15,135**	**15,720**	**13,346**	**13,573**
Cost of inventories which is recognized as an expense and included in cost of sale of goods *(Note 32)*				
- Cost	105,714	95,252	98,282	88,628
- Write-down to net realisable value	696	8	689	-
Total	**106,410**	**95,260**	**98,971**	**88,628**

As at 31 December 2018 and 2017, the Company's inventories included petroleum legal reserve of 389 million liters with approximated value of Baht 5,873 million and 408 million liters with approximated value of Baht 5,602 million, respectively.

11 Investments in subsidiaries

	Separate financial statements	
	2018	2017
	(in million Baht)	
At 1 January	12,610	11,639
Increase	840	2,886
Disposals	-	(622)
Impairment losses	(271)	(1,293)
At 31 December	**13,179**	**12,610**

Investments in subsidiaries as at 31 December 2018 and 2017, and dividend income from the investment for the years then ended were as follows:

	Separate financial statements											
	Ownership interest		Paid-up capital		Cost		Impairment		At cost - net		Dividend income	
	2018	2017	2018	2017	2018	2017	2018	2017	2018	2017	2018	2017
	(%)				(in million Baht)							
Subsidiaries												
Bangchak Green Net Co., Ltd.	49.00	49.00	1	1	-	-	-	-	-	-	20	49
BCPG Public Co., Ltd.	70.11	70.27	9,984	9,962	7,000	7,000	-	-	7,000	7,000	896	840
Bangchak Retail Co., Ltd.	100.00	100.00	800	800	800	800	-	-	800	800	-	-
BCP Energy International Pte. Ltd.	100.00	100.00	3,673	3,673	3,673	3,673	(2,203)	(1,932)	1,470	1,741	-	-
BCP Innovation Pte. Ltd.	100.00	100.00	1,433	1,334	1,433	1,334	-	-	1,433	1,334	-	-
BCP Trading Pte. Ltd.	100.00	100.00	35	35	35	35	-	-	35	35	-	-
BBGI Public Co., Ltd.	60.00	60.00	2,532	2,532	1,700	1,700	-	-	1,700	1,700	-	-
BCPR Co., Ltd.	100.00	-	661	-	661	-	-	-	661	-	-	-
BCV Bio Based Co., Ltd.	100.00	-	20	-	20	-	-	-	20	-	-	-
BCV Energy Co., Ltd.	100.00	-	20	-	20	-	-	-	20	-	-	-
BCV Innovation Co., Ltd.	100.00	-	20	-	20	-	-	-	20	-	-	-
BCV Partnership Co., Ltd.	100.00	-	20	-	20	-	-	-	20	-	-	-
					15,382	**14,542**	**(2,203)**	**(1,932)**	**13,179**	**12,610**	**916**	**889**
Direct subsidiary until 31 May 2017												
Bangchak Biofuel Co., Ltd.											-	105
Total											**916**	**994**

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Change in investment in subsidiaries

In July 2018, the Company established BCPR Co., Ltd., incorporated in Thailand, representing a 100% ownership with initial registered capital of Baht 1 million (divided into 10,000 shares at par value of Baht 100 per share) and established an indirect subsidiary in Singapore ("BCPR Pte. Ltd.") for the purpose of jointly invest with Seacrest Capital Group through the investment by means of subscribing new shares of OKEA AS, a company established under Norwegian law, which has developed and produced petroleum in Norway. At the Annual General Meeting of the Shareholders of BCPR Co., Ltd. held in October 2018, the shareholders approved the increase of registered share capital from Baht 1 million (divided into 10,000 shares at par value of Baht 100) to Baht 661 million (divided into 6.61 million shares at par value of Baht 100). The subsidiary has called up and received full payment of paid-up capital in November 2018.

In June 2018, at the Extraordinary Meeting of the Shareholders of BCP Innovation Pte., Ltd. held in June 2018, the shareholders approved the increase of registered share capital from USD 39 million (divided into 39 million shares at par value of USD 1 per share) to USD 42 million (divided into 42 million shares at par value of USD 1 per share). The subsidiary had called up and received full payment of paid-up capital in August 2018.

In December 2018, the Company established BCV Bio Based Co., Ltd., BCV Energy Co., Ltd., BCV Innovation Co., Ltd., and BCV Partnership Co., Ltd., incorporated in Thailand, representing a 100% ownership with each company has initial registered capital of Baht 20 million (divided into 2 million shares at par value of Baht 10 per share). These subsidiaries has called up and received full payment of paid-up capital in December 2018.

Impairment of oil exploration & production assets and investment in subsidiary

At the Board of Directors meeting of the Company held on 18 May 2018, the meeting approved Nido Petroleum Pty. Ltd., subsidiary of the Company, to dispose all shares holds in Nido Production (Galoc) Pty. Ltd. ("GALOC"), which owns 55.8% of interest in Galoc oil field. Therefore, the Company recognized an impairment loss in investment in BCP Energy International Pte. Ltd. "BCPE" due to the fact that recoverable amount of investment of BCPE in Nido Petroleum Pty. Ltd. was lower than its carrying amount from the effect divestment of GALOC.

Subsequently in July 2018, the Group has entered into share purchase agreement of GALOC with a total consideration approximately USD 22.7 million (or approximately Baht 731 million). The Group completed the disposal of its shares in Nido Production (Galoc) Pty. Ltd. on 14 August 2018 and recognized gain on divestment approximately Baht 78 million in 2018.

The recoverable amount calculated based on the estimated future cash flows are discounted to their present value. The key assumptions used in the cash flow projections include the oil prices, oil reserve, production profile, discount rates, and capital expenditure. The key assumption were estimated by the Management. The forecast oil price are based on the world market and upon past experience of the industry. Production profiles are based on a proved and probable reserve and also the long-term view of global supply and demand. The discount rate is derived from weighted average cost of capital of the Group. The capital expenditure was determined based on project management estimation and long term planning.

The Group recognized impairment loss (reversal) in consolidated statement of income for the year end 31 December 2018 and 2017 as follows;

		Consolidated financial statements		Separate financial statements	
	Note	2018	2017	2018	2017
(Reversal of) impairment losses			*(in million Baht)*		
Investment in subsidiary (BCPE)		-	-	271	1,293
Inventories	*10*	24	21	24	21
Property, plant and equipment	*14*	418	69	6	6
Intangible assets	*17*	-	1,465	-	-
Others		(1)	(37)	-	(37)
Total		**441**	**1,518**	**301**	**1,283**

The sensitivity analysis in the key assumption was estimated. The calculations were performed assuming a change to the variable being tested only. It is estimated that if the oil price assumption for all future years were to be increased by around 7.09%, this would cause the reversal of the additional allowance for impairment loss recognized during the year.

12 Investments in associate and joint ventures

		Consolidated financial statements		Separate financial statements	
For the year ended 31 December	*Note*	2018	2017 (Restated)	2018	2017
			(in million Baht)		
Indirect associates					
At 1 January -					
As previously reported		14,323	796	-	763
Adjustment	*4*	(242)	-	-	-
At 1 January - As restated		14,081	796	-	763
Increase		3,618	12,878	-	-
Decrease		-	-	-	(763)
Share of net profit of associate		215	569	-	-
Share of other comprehensive income (loss) of investment of associate		28	(20)	-	-
Dividend income		-	(64)	-	-
Effect of change in exchange rates		14	(78)	-	-
At 31 December		**17,956**	**14,081**	**-**	**-**
Joint ventures					
At 1 January		77	44	73	44
Increase		-	29	-	29
Share of net profit of joint venture		39	4	-	-
Dividend income		(24)	-	-	-
At 31 December		**92**	**77**	**73**	**73**

For the year ended 31 December	*Note*	Consolidated financial statements 2018	Consolidated financial statements 2017 (Restated)	Separate financial statements 2018	Separate financial statements 2017
		(in million Baht)			
Total					
At 1 January - As previously reported		14,400	840	73	807
Adjustment	*4*	(242)	-	-	-
At 1 January - As restated		14,158	840	73	807
Increase		3,618	12,907	-	29
Decrease		-	-	-	(763)
Share of net profit of associate and joint venture		254	573	-	-
Share of other comprehensive income (loss) of investment of associate		28	(20)	-	-
Dividend income		(24)	(64)	-	-
Effect of change in exchange rates		14	(78)	-	-
At 31 December		**18,048**	**14,158**	**73**	**73**

Investments in associates and joint ventures as at 31 December 2018 and 2017, and dividend income from those investments for the years then ended, were as follows:

	Consolidated financial statements													
	Ownership interest		Paid-up capital		Cost method		Equity method		Impairment		At equity - net		Dividend income	
	2018	2017	2018	2017	2018	2017	2018	2017 (Restated)	2018	2017	2018	2017 (Restated)	2018	2017
	(%)		*(in million Baht)*											
Indirect associates														
Ubon Bio Ethanol Plc.	21.28	21.28	2,740	2,740	763	763	808	794	-	-	808	794	-	64
PetroWind Energy Inc.	40.00	40.00	895	895	922	922	1,206	1,185	-	-	1,206	1,185	-	-
Star Energy Group Holding Pte. Ltd.	33.33	33.33	28,237	28,237	11,956	11,956	12,295	12,102	-	-	12,295	12,102	-	-
OKEA AS	49.33	-	31	-	3,618	-	3,647	-	-	-	3,647	-	-	-
					17,259	**13,641**	**17,956**	**14,081**	**-**	**-**	**17,956**	**14,081**	**-**	**64**
Joint ventures														
Bongkot Marine Services Co., Ltd.	30.00	30.00	240	240	72	72	91	76	-	-	91	76	24	-
Oam Suk Social Enterprise Co., Ltd.	40.00	40.00	3	3	1	1	1	1	-	-	1	1	-	-
					73	**73**	**92**	**77**	**-**	**-**	**92**	**77**	**24**	**-**
Total					**17,332**	**13,714**	**18,048**	**14,158**	**-**	**-**	**18,048**	**14,158**	**24**	**64**

None of the Group's equity-accounted investee is publicly listed and consequently does not have published price quotations.

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Bangchak Corporation Public Company Limited and its Subsidiaries

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	Separate financial statements											
	Ownership interest		Paid-up capital		Cost method		Impairment		At cost - net		Dividend income	
	2018	2017	2018	2017	2018	2017	2018	2017	2018	2017	2018	2017
	(%)				*(in million Baht)*							
Joint ventures												
Bongkot Marine Services Co., Ltd.	30.00	30.00	240	240	72	72	-	-	72	72	24	-
Oam Suk Social Enterprise Co., Ltd.	40.00	40.00	3	3	1	1	-	-	1	1	-	-
Total					**73**	**73**	**-**	**-**	**73**	**73**	**24**	**-**

None of the Company's equity-accounted investee is publicly listed and consequently does not have published price quotations.

Impairment testing for cash generating unit containing goodwill in investment in associate, Star Energy Group Holdings Pte. Ltd.

The recoverable amount of investment in associate, Star Energy Group Holdings Pte. Ltd., which contained goodwill, was value-in-use by discounted future cash flow from the continuing operation of power plants in Indonesia.

The key assumptions used in the estimation of the future cash flows were based on the concession agreements, power purchase agreements, estimated selling price and production unit of electricity and steam, with reference to historical data and external source such as exchange rate and inflation.

The key assumption used in the estimation of value in use are as set out below.

	Consolidated financial statements	
	2018	2017
	(%)	
Discount rate – Geothermal power plants	7.2-7.6	-

The discount rate was weighted average after-tax cost of capital by using Capital Asset Pricing Model (CAPM). Risk free rate was derived from long-term U.S. treasury bond yield. The adjustment for market risk premium to reflect risk of equity investment and country risk premium is also taking into consideration.

Revenue projection

The total revenue projections for the power plant assets was determined in accordance with the power purchase agreements, concession agreements and related announcements. The assumptions included electricity and steam selling price from thermal power plants, production unit, electricity unit, exchange rate, inflation and other related factors.

The impairment testing has been prepared by the Group's management. The estimate revenue and expenses were based on historical data, external source and other related factors which included management's estimate and long term business plan. The management have also conducted sensitivity test by increasing discount rate 0.5% – 0.6% and found no impairment for investment in associate, Star Energy Group Holdings Pte. Ltd.

The following table summarises the financial information of material as included in their own financial statements, adjusted for fair value adjustments at acquisition and differences in accounting policies. The table also reconciles the summarized financial information to the carrying amount of the Group's interest in these companies.

	OKEA AS	Star Energy Group Holdings Pte. Ltd	
	2018	2018	2017 (Restated)
		(in million Baht)	
Statement of income			
Revenue	1,303	16,939	13,978
Net profit (loss)	(599)	3,633	3,143
Other comprehensive income (loss)	-	484	(110)
Total comprehensive income for the year	**(599)**	**4,117**	**3,033**
Group's share of total comprehensive income (*)	**(3)**	**192**	**313**

(*) Group's share of total comprehensive income of OKEA AS for the year 2018 and Star Energy Group Holding Pte. Ltd. for the year 2017 were calculated from total comprehensive income since the acquisition date to end of period.

	OKEA AS	Star Energy Group Holdings Pte. Ltd	
	2018	2018	2017 (Restated)
		(in million Baht)	
As at 31 December			
Statement of financial position			
Current assets	6,242	10,960	9,784
Non-current assets	33,795	110,385	95,796
Current liabilities	(4,756)	(6,421)	(7,121)
Non-current liabilities	(29,534)	(78,840)	(76,993)
Net assets (100%)	**5,747**	**36,084**	**21,466**
Group's share of assets	2,681	7,922	7,729
Goodwill	966	4,373	4,373
Carrying amount of interest in associate	**3,647**	**12,295**	**12,102**

Immaterial in associates and joint ventures

The following is summarized financial information for the Group's interest in immaterial of associates and joint ventures based on the amounts reported in the Group's consolidated financial statements:

	2018	2017
	(in million Baht)	
Carrying amount of interests in immaterial of associates and joint ventures	2,106	2,056
Share of net profit from investment in associates and joint ventures in Consolidated financial statements:		
- Profit for the year	93	407
- Other comprehensive income	-	-
- Total comprehensive income	**93**	**407**

13 Investment property

	Consolidated financial statements		Separate financial statements	
	2018	2017	2018	2017
	(in million Baht)			
Cost				
At 1 January	343	359	899	915
Transfer to property, plant and equipment	(216)	(16)	(216)	(16)
At 31 December	**127**	**343**	**683**	**899**
Depreciation and impairment losses				
At 1 January	-	-	-	-
At 31 December	**-**	**-**	**-**	**-**
Net book value				
At 1 January	**343**	**359**	**899**	**915**
At 31 December	**127**	**343**	**683**	**899**
Fair value	**346**	**758**	**984**	**1,395**

During 2018 and 2017, the Company transferred partial of investment property to land, since the Company starting the land development for company's operation.

The fair value is appraised by an independent appraiser at market comparison value.

Notes to The Financial Statements

Bangchak Corporation Public Company Limited and its Subsidiaries

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14 Property, plant and equipment

	Consolidated financial statements										
	Land	Buildings	Machinery, equipment refinery plants and terminal	Electricity producing equipment	Exploration and production of petroleum assets	Marketing and office equipment	Platinum catalyst	Vehicles	Other assets	Construction work in progress	Total
						(in million Baht)					
Cost											
At 1 January 2017	2,260	3,015	42,209	11,576	8,456	6,258	239	334	28	5,096	79,471
Acquired through business acquisition	77	347	1,558	-	-	26	-	7	-	62	2,077
Additions	48	17	56	6	-	115	-	7	-	5,125	5,374
Transfers	936	216	3,834	1,364	-	1,459	-	60	-	(7,856)	13
Disposals	(64)	(5)	(21)	(18)	-	(176)	-	(14)	-	(3)	(301)
Effect of movement in exchange rate	(21)	(12)	-	(171)	(743)	(1)	-	-	-	(59)	(1,007)
At 31 December 2017 and 1 January 2018	**3,236**	**3,578**	**47,636**	**12,757**	**7,713**	**7,681**	**239**	**394**	**28**	**2,365**	**85,627**
Additions	489	10	96	1	1	50	-	35	-	7,459	8,141
Transfers	216	227	2,515	647	(42)	1,058	-	1	-	(4,493)	129
Disposals	-	(56)	(1,036)	(2,097)	(7,587)	(360)	-	(37)	-	-	(11,173)
Effect of movement in exchange rate	4	-	-	31	(85)	-	-	-	-	8	(42)
At 31 December 2018	**3,945**	**3,759**	**49,211**	**11,339**	**-**	**8,429**	**239**	**393**	**28**	**5,339**	**82,682**

	Consolidated financial statements										
	Land	Buildings	Machinery, equipment refinery plants and terminal	Electricity producing equipment	Exploration and production of petroleum assets	Marketing and office equipment	Platinum catalyst	Vehicles	Other assets	Construction work in progress	Total
						(in million Baht)					
Depreciation and impairment losses											
At 1 January 2017	(12)	(851)	(20,471)	(1,053)	(6,497)	(3,918)	-	(204)	(3)	-	(33,009)
Acquired through business acquisition	-	(47)	(518)	-	-	(17)	-	(3)	-	-	(585)
Depreciation charge for the year	-	(154)	(2,910)	(572)	(591)	(515)	-	(38)	(1)	-	(4,781)
Impairment losses *(Note 11)*	-	-	(6)	-	(63)	-	-	-	-	-	(69)
Disposals	-	1	12	1	-	167	-	14	-	-	195
Effect of movement in exchange rate	-	7	-	11	653	-	-	-	-	-	671
At 31 December 2017 and 1 January 2018	**(12)**	**(1,044)**	**(23,893)**	**(1,613)**	**(6,498)**	**(4,283)**	**-**	**(231)**	**(4)**	**-**	**(37,578)**
Depreciation charge for the year	-	(174)	(2,972)	(566)	(133)	(567)	-	(44)	(1)	-	(4,457)
(Reversal of) impairment losses *(Note 11)*	6	-	(13)	-	(412)	1	-	-	-	-	(418)
Transfer	-	-	(2)	-	-	3	-	-	-		1
Disposals	-	18	1,011	200	6,963	340	-	37	-	-	8,569
Effect of movement in exchange rate	-	-	-	(2)	80	-	-	-	-	-	78
At 31 December 2018	**(6)**	**(1,200)**	**(25,869)**	**(1,981)**	**-**	**(4,506)**	**-**	**(238)**	**(5)**	**-**	**(33,805)**
Net book value											
At 1 January 2017	**2,248**	**2,164**	**21,738**	**10,523**	**1,959**	**2,340**	**239**	**130**	**25**	**5,096**	**46,462**
At 31 December 2017 and 1 January 2018	**3,224**	**2,534**	**23,743**	**11,144**	**1,215**	**3,398**	**239**	**163**	**24**	**2,365**	**48,049**
At 31 December 2018	**3,939**	**2,559**	**23,342**	**9,358**	**-**	**3,923**	**239**	**155**	**23**	**5,339**	**48,877**

As at 31 December 2018, certain subsidiaries have mortgaged its land, buildings and machinery as collateral with financial institutions for credit facilities totaling Baht 13,478 million *(2017: Baht 15,627 million)*.

As at 31 December 2018, Capitalised borrowing costs relating to construction of the new factory amounted to Baht 76 million *(2017: Baht 128 million)*, with a capitalization rate of 1.85 - 4.55% *(2017: 1.45 - 5.01%) (see note 33)*.

The gross amount of the Group's fully depreciated plant and equipment that was still in use as at 31 December 2018 amounted to Baht 8,368 million *(2017: Baht 7,401 million)*.

Disposal of asset to infrastructure fund

On 28 September 2018, indirect subsidiaries of the Group, Nikaho PV Godo Kaisha and Nagi PV Godo Kaisha have already disposed two solar power plant projects in Japan, Nikaho Project and Nagi Project respectively with totalling capacity of 27.6 MW into infrastructure fund in Japan named Bangchak Solar Yield-co Godo Kaisha for the amount of JPY 10,388 million (approximately THB 3,046 million). In any way, the fund is not related to the Company both in terms of investment or management. The Group recognized gain from disposal of solar power plant projects in Japan as other income in the consolidated statement of income amount to JPY 2,710 million (approximately THB 793 million) and recorded related tax expense.

Related to the transaction, BCPG Public Company Limited, a subsidiary of the Company signed a Sponsor Support Letter in favor of the newly established fund, agreed to the contractual obligations of Nikaho PV Godo Kaisha and Nagi PV Godo under Representation & Warranties in the asset purchase agreement which certified contract fulfillment. The limit of compensation is not more than 15% of asset value or approximately of JPY 1,725 million (equivalent to THB 505 million) with term of commitment not exceeding 12 months from the effective date of the contract. As of 31 December 2018, the subsidiary has assessed that there were no breach in any conditions.

Both indirect subsidiaries of the Group used a portion of proceeds from the sale to repay debt from financial institutions in Japan totalling JPY 6,932 million (approximately THB 2,028 million).

In addition, BCPG Engineering, an indirect subsidiary of the Group has signed Operation & Maintenance Agreement with the infrastructure fund to provide operation and maintenance services for both solar power plants with 5-year contract term. Service fee is in accordance with the contract.

	Separate financial statements									
	Land	Buildings	Machinery, equipment refinery plants and terminal	Electricity producing equipment	Marketing and office equipment	Platinum catalyst	Vehicles	Other assets	Construction work in progress	Total
					(in million Baht)					
Cost										
At 1 January 2017	777	740	39,646	-	5,910	239	285	28	3,335	50,960
Additions	-	-	30	-	-	-	-	-	4,279	4,309
Transfers	951	4	3,795	-	1,416	-	59	-	(6,245)	(20)
Disposals	-	-	(9)	-	(172)	-	(6)	-	-	(187)
At 31 December 2017 and 1 January 2018	**1,728**	**744**	**43,462**	**-**	**7,154**	**239**	**338**	**28**	**1,369**	**55,062**
Additions	384	-	49	-	-	-	29	-	5,271	5,733
Transfers	216	29	2,255	72	1,006	-	-	-	(3,402)	176
Disposals	-	(16)	(1,032)	-	(352)	-	(36)	-	-	(1,436)
At 31 December 2018	**2,328**	**757**	**44,734**	**72**	**7,808**	**239**	**331**	**28**	**3,238**	**59,535**
Depreciation and impairment losses										
At 1 January 2017	(12)	(531)	(20,137)	-	(3,739)	-	(181)	(3)	-	(24,603)
Depreciation charge for the year	-	(30)	(2,718)	-	(444)	-	(30)	(1)	-	(3,223)
(Losses) reversal of impairment loss	-	-	(6)	-	-	-	-	-	-	(6)
Disposals	-	-	6	-	165	-	6	-	-	177
At 31 December 2017 and 1 January 2018	**(12)**	**(561)**	**(22,855)**	**-**	**(4,018)**	**-**	**(205)**	**(4)**	**-**	**(27,655)**
Depreciation charge for the year	-	(26)	(2,702)	(3)	(488)	-	(35)	(1)	-	(3,255)
(Losses) reversal of impairment loss	6	-	(13)	-	1	-	-	-	-	(6)
Disposals	-	10	1,010	-	332	-	36	-	-	1,388
At 31 December 2018	**(6)**	**(577)**	**(24,560)**	**(3)**	**(4,173)**	**-**	**(204)**	**(5)**	**-**	**(29,528)**

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	Separate financial statements									
	Land	Buildings	Machinery, equipment refinery plants and terminal	Electricity producing equipment	Marketing and office equipment	Platinum catalyst	Vehicles	Other assets	Construction work in progress	Total
					(in million Baht)					
Net book value										
At 1 January 2017	**765**	**209**	**19,509**	**-**	**2,171**	**239**	**104**	**25**	**3,335**	**26,357**
At 31 December 2017 and 1 January 2018	**1,716**	**183**	**20,607**	**-**	**3,136**	**239**	**133**	**24**	**1,369**	**27,407**
At 31 December 2018	**2,322**	**180**	**20,174**	**69**	**3,635**	**239**	**127**	**23**	**3,238**	**30,007**

Capitalised borrowing costs relating to construction of the new plant amounted to Baht 75 million *(2017: Baht 125 million),* with a capitalization rate of 4.12 - 4.55 *(2017: 3.96 - 5.01%) (see note 33).*

The gross amount of the Company's fully depreciated plant and equipment that was still in use as at 31 December 2018 amounted to Baht 8,135 million *(2017: Baht 7,181 million).*

15 Goodwill

	Consolidated financial statements *(in million Baht)*
Cost	
At 31 October (Acquired through business acquisition)	1,602
At 31 December 2017 and 1 January 2018	**1,602**
At 31 December 2018	**1,602**
Impairment loss	
At 31 December 2017 and 1 January 2018	**-**
At 31 December 2018	**-**
Net book value	
At 31 December 2017 and 1 January 2018	**1,602**
At 31 December 2018	**1,602**

Impairment testing for the cash generating unit containing goodwill

The recoverable amounts of goodwill from business combinations of BBGI Public Company Limited Group have been prepared by using the value in use models which was determined by discounting future cash flows for the next 5 years. The key assumptions used in the estimation of the recoverable amount included the discount rate which was a post-tax measure based on the rate of 10 year government bonds issued by the government in the relevant market and in the same currency as the cash flows, adjusted for a risk premium to reflect both the increased risk of investing in equities generally.

The discount rates of the relevant industries in which the subsidiary operates are ranged from 5% - 10%. The subsidiary's discount rate which applied in the calculation of recoverable amounts was fall within the industries' range.

The impairment test has been prepared by the management and no impairment charges are required for goodwill.

If the assumption used in the calculation on impairment tests for goodwill change, the discount rate increased by 1% per annum, there is still no impairment of goodwill.

16 Leasehold rights

	Consolidated and Separate financial statements	
	2018	2017
	(in million Baht)	
Cost		
At 1 January	4,038	3,485
Additions	805	564
Disposals	(659)	(11)
At 31 December	**4,184**	**4,038**
Amortisation and impairment losses		
At 1 January	(1,727)	(1,546)
Amortisation charge for the year	(215)	(186)
Disposals	659	5
At 31 December	**(1,283)**	**(1,727)**
Net book value		
At 1 January	**2,311**	**1,939**
At 31 December	**2,901**	**2,311**

On 27 February 2004, The Treasury Department permitted the Company to settle by instalments, the leasehold fee of Baht 552 million for an extension of the lease agreement of state-owned land on which the Company's refinery is located. The initial lease agreement, which due for expiration on 1 April 2015, will be extended for period of 18 years under the new lease agreement, which will expire on 31 March 2033. The Company has extended the amortisation period of existing leasehold rights to 31 March 2033, which corresponds to the period of the new agreement. As at 31 December 2018 and 2017, the company has no remaining liability from the leasehold rights.

17 Intangible assets

	Consolidated financial statements				
	License fee and cost of development of computer software	Exploration and evaluation expenditure	Right to connect power distribution system and right to use land	Power purchase agreement	Total
			(in million Baht)		
Cost					
At 1 January 2017	945	3,339	122	1,728	6,134
Acquired through business acquisition	28	-	-	-	28
Additions	215	404	15	-	634
Disposals	(1)	-	(18)	(19)	(38)
Effect of movements in exchange rates	(12)	(308)	(5)	(102)	(427)
At 31 December 2017 and 1 January 2018	**1,175**	**3,435**	**114**	**1,607**	**6,331**
Additions	294	8	2	-	304
Transfer	(5)	-	6	-	1
Disposals	(1)	-	(43)	(190)	(234)
Effect of movements in exchange rates	3	(25)	1	17	(4)
At 31 December 2018	**1,466**	**3,418**	**80**	**1,434**	**6,398**

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	Consolidated financial statements				
	License fee and cost of development of computer software	Exploration and evaluation expenditure	Right to connect power distribution system and right to use land	Power purchase agreement	Total
			(in million Baht)		
Amortisation and impairment losses					
At 1 January 2017	(345)	(751)	(4)	(21)	(1,121)
Acquired through business combination	(1)	-	-	-	(1)
Amortisation for the year	(100)	-	(4)	(30)	(134)
Disposals	1	-	-	-	1
Impairment losses *(Note 11)*	-	(1,465)	-	-	(1,465)
Effect of movements in exchange rates	-	119	-	2	121
At 31 December 2017 and 1 January 2018	**(445)**	**(2,097)**	**(8)**	**(49)**	**(2,599)**
Amortisation for the year	(140)	-	(4)	(29)	(173)
Disposals	1	-	4	15	20
Effect of movements in exchange rates	-	14	-	(2)	12
At 31 December 2018	**(584)**	**(2,083)**	**(8)**	**(65)**	**(2,740)**
Net book value					
At 1 January 2017	**600**	**2,588**	**118**	**1,707**	**5,013**
At 31 December 2017 and 1 January 2018	**730**	**1,338**	**106**	**1,558**	**3,732**
At 31 December 2018	**882**	**1,335**	**72**	**1,369**	**3,658**

	Separate financial statements	
	Right to use and cost of development of computer software	
	2018	2017
	(in million Baht)	
Cost		
At 1 January	789	663
Additions	181	126
Disposals	(1)	-
At 31 December	**969**	**789**
Amortisation and impairment losses		
At 1 January	(413)	(333)
Amortisation for the year	(106)	(80)
Disposals	1	-
At 31 December	**(518)**	**(413)**
Net book value		
At 1 January	**376**	**330**
At 31 December	**451**	**376**

18 Deferred tax

Deferred tax assets and liabilities as at 31 December were as follows:

	Consolidated financial statements			
	Assets		Liabilities	
	2018	2017	2018	2017
	(in million Baht)			
Total	1,063	1,227	(703)	(817)
Set off of tax	(236)	(227)	236	227
Net deferred tax assets (liabilities)	**827**	**1,000**	**(467)**	**(590)**

	Separate financial statements			
	Assets		Liabilities	
	2018	2017	2018	2017
	(in million Baht)			
Total	1,017	937	(225)	(37)
Set off of tax	(225)	(37)	225	37
Net deferred tax assets	**792**	**900**	**-**	**-**

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Movements in total deferred tax assets and liabilities during the year were as follows:

	Consolidated financial statement					
		(Charged)/Credited to:				
	At 1 January 2018	Profit/loss *(Note 34)*	Other comprehensive income	Net from disposal of assets and investment	Exchange differences	At 31 December 2018
			(in million Baht)			
Deferred tax assets						
Loss from impairment of assets	426	58	-	-	-	484
Property, plant and equipment	282	(9)	-	(181)	(2)	90
Provisions for employee benefit	382	26	-	-	-	408
Loss carry forward	94	(4)	-	(63)	-	27
Others	43	11	-	-	-	54
Total	**1,227**	**82**	**-**	**(244)**	**(2)**	**1,063**
Deferred tax liabilities						
Property, plant and equipment	(304)	(87)	-	163	(5)	(233)
Intangible assets	(418)	6	-	52	1	(359)
Leasehold rights	(1)	-	-	-	-	(1)
Provision for the decommissioning cost	(77)	-	-	76	1	-
Others	(17)	(110)	-	17	-	(110)
Total	**(817)**	**(191)**	**-**	**308**	**(3)**	**(703)**
Net	**410**	**(109)**	**-**	**64**	**(5)**	**360**

	Consolidated financial statement					
		(Charged)/Credited to:				
	At 1 January 2017	Profit/loss *(Note 34)*	Other comprehensive income	Acquired through business acquisition	Exchange differences	At 31 December 2017
			(in million Baht)			
Deferred tax assets						
Loss from impairment of assets	171	254	-	1	-	426
Property, plant and equipment	279	20	-	-	(17)	282
Provisions for employee benefit	347	20	14	1	-	382
Loss carry forward	29	67	-	-	(2)	94
Others	34	9	-	-	-	43
Total	**860**	**370**	**14**	**2**	**(19)**	**1,227**
Deferred tax liabilities						
Property, plant and equipment	(351)	93	-	(63)	17	(304)
Intangible assets	(451)	7	-	(5)	31	(418)
Leasehold rights	(1)	-	-	-	-	(1)
Provision for the decommissioning cost	(95)	10	-	-	8	(77)
Others	(16)	(1)	-	-	-	(17)
Total	**(914)**	**109**	**-**	**(68)**	**56**	**(817)**
Net	**(54)**	**479**	**14**	**(66)**	**37**	**410**

		Separate financial statements (Charged)/Credited to:		
	At 1 January 2018	Profit/loss *(Note 34)*	Other comprehensive income	At 31 December 2018
		(in million Baht)		
Deferred tax assets				
Loss from impairment of assets	425	59	-	484
Property, plant and equipment	95	(10)	-	85
Provisions for employee benefit	374	23	-	397
Others	43	8	-	51
Total	**937**	**80**	**-**	**1,017**
Deferred tax liabilities				
Property, plant and equipment	(36)	(92)	-	(128)
Inventories	-	(96)	-	(96)
Leasehold rights	(1)	-	-	(1)
Total	**(37)**	**(188)**	**-**	**(225)**
Net	**900**	**(108)**	**-**	**792**

		Separate financial statements (Charged)/Credited to:		
	At 1 January 2017	Profit/loss *(Note 34)*	Other comprehensive income	At 31 December 2017
		(in million Baht)		
Deferred tax assets				
Loss from impairment of assets	171	254	-	425
Property, plant and equipment	82	13	-	95
Provisions for employee benefit	342	17	15	374
Others	33	10	-	43
Total	**628**	**294**	**15**	**937**
Deferred tax liabilities				
Property, plant and equipment	(117)	81	-	(36)
Leasehold rights	(1)	-	-	(1)
Total	**(118)**	**81**	**-**	**(37)**
Net	**510**	**375**	**15**	**900**

19 Other non-current assets

	Consolidated financial statements		Separate financial statements	
	2018	2017	2018	2017
	(in million Baht)			
Fixed deposit for staff welfare	406	514	406	514
Investment in service stations	252	201	252	201
Deposit	611	892	538	459
Others	449	428	566	395
Total	**1,718**	**2,035**	**1,762**	**1,569**

20 Interest-bearing liabilities

	Consolidated financial statements		Separate financial statements	
	2018	2017	2018	2017
	(in million Baht)			
Current				
Short term loan from financial institutions				
secured	280	366	-	-
unsecured	4,724	3,680	3,258	3,280
	5,004	**4,046**	**3,258**	**3,280**
Current portion of long-term loans from financial institutions				
secured	1,666	1,693	-	-
unsecured	550	525	350	325
	2,216	**2,218**	**350**	**325**
Debenture				
unsecured	4,000	-	4,000	-
	4,000	**-**	**4,000**	**-**
Total current	**11,220**	**6,264**	**7,608**	**3,605**
Non - current				
Long - term loans from financial institutions				
secured	15,538	17,373	-	-
unsecured	2,726	3,276	2,726	3,076
	18,264	**20,649**	**2,726**	**3,076**
Debenture				
unsecured	20,980	13,990	20,980	13,990
	20,980	**13,990**	**20,980**	**13,990**
Total Non - current	**39,244**	**34,639**	**23,706**	**17,066**
Total	**50,464**	**40,903**	**31,314**	**20,671**

Details of the Group's loans from financial institutions as at 31 December 2018 was as follows:

Currency	Facilities *(million)*	Interest rates *(% per annum)*	Principle's repayment Terms
Short-term loans from financial institutions			
The Company			
USD	100	Fixed Interest Rate	In December 2019
Indirect subsidiary			
Baht	500	Fixed Interest Rate	Repayment as stipulated in agreement
Baht	300	Fixed Interest Rate	Repayment as stipulated in agreement
Baht	400	Fixed Interest Rate	Repayment as stipulated in agreement
Baht	300	Fixed Interest Rate	Repayment as stipulated in agreement
Baht	200	Fixed Interest Rate	Repayment as stipulated in agreement
Long-term loans from financial institutions			
The Company			
Baht	4,200	Fixed Interest Rate	Semi-annually in 26 instalments starting in March 2013
Baht	3,500	THBFIX 6M plus a margin	Semi-annually in 23 instalments starting in December 2011
Subsidiaries and Indirect subsidiaries			
Baht	2,049	Fixed Deposit 6M Rate plus a margin	Quarterly in 24 instalments starting in January 2017
Baht	400	THBFIX 6M plus a margin	Semi-annually in 13 instalments starting in August 2017
Baht	170	THBFIX 6M plus a margin	Semi-annually in 11 instalments starting in August 2018
Baht	1,000	Fixed Interest Rate	Semi-annually in 10 instalments starting in April 2015
Baht	450	THBFIX 6M plus a margin	Semi-annually in 17 instalments starting in December 2016
Baht	270	THBFIX 6M plus a margin	Semi-annually in 17 instalments starting in December 2016
Baht	750	FDR 6M plus a margin	Semi-annually in 29 instalments starting in December 2016
Baht	1,050	THBFIX 6M plus a margin	Semi-annually in 15 instalments starting in December 2017
Baht	630	THBFIX 6M plus a margin	Semi-annually in 15 instalments starting in December 2017
Baht	1,750	FDR 6M plus a margin	Semi-annually in 27 instalments starting in December 2017
Baht	2,400	THBFIX 6M plus a margin	Principle repayment at year 6 from signing date (Semi-annually interest payment)
Baht	2,740	THBFIX 6M plus a margin	Principle repayment at year 6 from signing date (Semi-annually interest payment)
JPY	4,200	JPYTIBOR 6M plus a margin	Semi-annually in 17 instalments starting in December 2016
JPY	570	JPYTIBOR 6M plus a margin	Semi-annually in 17 instalments starting in December 2016
JPY	9,800	JPYTIBOR 6M plus a margin	Semi-annually in 15 instalments starting in December 2017
JPY	1,330	JPYTIBOR 6M plus a margin	Semi-annually in 15 instalments starting in December 2017

Currency	Facilities *(million)*	Interest rates *(% per annum)*	Principle's repayment Terms
Subsidiaries and Indirect subsidiaries (Con't)			
JPY	7,896	JPYTIBOR 6M plus a margin	Principle repayment at year 6 from signing date (Semi-annually interest payment)
JPY	1,128	JPYTIBOR 6M plus a margin	Principle repayment at year 6 from signing date (Semi-annually interest payment)
USD	10	USDLIBOR 6M plus a margin	Principle repayment at year 6 from signing date (Semi-annually interest payment)
USD	40	USDLIBOR 6M plus a margin	Principle repayment at year 6 from signing date (Semi-annually interest payment)
USD	20	USDLIBOR 6M plus a margin	Principle repayment at year 6 from signing date (Semi-annually interest payment)
Baht	754	THBFIX 6M plus a margin	Semi-annually in 20 instalments starting in August 2013
Baht	754	Fixed interest rate 6 years	Semi-annually in 34 instalments starting in August 2013
USD	12	Fixed Interest Rate	Semi-annually in 34 instalments starting in August 2013
JPY	254	Fixed Interest Rate	Quarterly in 68 instalments starting in April 2015
JPY	355	Fixed Interest Rate	Quarterly in 68 instalments starting in July 2015
JPY	349	Fixed Interest Rate	Quarterly in 68 instalments starting in July 2015
JPY	2,578	Fixed Interest Rate	Quarterly in 68 instalments starting in March 2016

The loan agreements contain certain conditions such as maintaining certain financial ratios such as maintaining of certain debt to equity ratio, debt service coverage ratio and current ratio and transfer right of any agreements. These loans are secured by mortgage of the land, building, land improvement and infrastructure, machinery and 33.33% shares of issued and paid up capital of Star Energy Group Holdings Pte. Ltd.

As at 31 December 2018, the Group and the Company had unutilised credit facilities totalling Baht 15,229 million and Baht 11,895 million, respectively *(2017: Baht 13,729 million and Baht 10,495 million, respectively).*

Debentures

Detail of debentures as at 31 December 2018 and 2017 were as follows:

	Consolidated and Separate financial statements	
	2018	2017
	(in million Baht)	
Debentures	25,000	14,000
Less Unamortized deferred expenses on debentures	(20)	(10)
	24,980	**13,990**
Less Current portion due within one year	(4,000)	-
Total	**20,980**	**13,990**

The Company issued long-term debentures which are named-registered, unsubordinated, unsecured and no bond holder (except debenture no.8 to 11 have bond holder) and no early redemption with representative with a face value of Baht 1,000 each with interest is payable semi-annually. The details are as follows:

No.	Consolidated and Separate financial statements 2018	2017	Interest rate	Term	Maturity Date
	(in million Baht)		*(% per annum)*	*(Years)*	
1	2,000	2,000	4.92	7	30 April 2019
2	1,000	1,000	5.35	10	30 April 2022
3	2,000	2,000	4.35	5	11 April 2019
4	2,500	2,500	4.81	7	11 April 2021
5	3,500	3,500	5.18	10	11 April 2024
6	2,000	2,000	4.72	12	3 March 2027
7	1,000	1,000	5.05	15	3 March 2030
8	3,000	-	2.13	2	10 August 2020
9	400	-	2.96	5	10 August 2023
10	600	-	3.42	7	10 August 2025
11	7,000	-	4.04	10	20 December 2028
	25,000	**14,000**			

In connection with the terms of the rights and responsibilities of the debentures issuer, the Company, as the issuer, has to comply with certain restrictions and conditions as stipulated therein, such as maintaining certain financial ratios etc.

The periods to maturity of interest-bearing liabilities as at 31 December were as follows:

	Consolidated financial statements		Separate financial statements	
	2018	2017	2018	2017
	(in million Baht)			
Within one year	11,220	6,264	7,608	3,605
After one year but within five years	21,924	16,759	9,020	9,347
After five years	17,320	17,880	14,686	7,719
Total	**50,464**	**40,903**	**31,314**	**20,671**

Secured interest-bearing liabilities as at 31 December were secured on the following assets:

	Consolidated financial statements		Separate financial statements	
	2018	2017	2018	2017
	(in million Baht)			
Property, plant and equipment	13,478	15,600	-	-
Investment in associates	12,295	12,102	-	-
Restricted cash at bank	52	36	-	-
Total	**25,825**	**27,738**	**-**	**-**

21 Trade accounts payable

	Note	Consolidated financial statements 2018	Consolidated financial statements 2017	Separate financial statements 2018	Separate financial statements 2017
		(in million Baht)			
Related parties	5	110	129	939	775
Other parties		6,570	9,887	5,005	7,459
Total		**6,680**	**10,016**	**5,944**	**8,234**

22 Other payables

	Note	Consolidated financial statements 2018	Consolidated financial statements 2017	Separate financial statements 2018	Separate financial statements 2017
		(in million Baht)			
Related parties	5	**56**	**56**	**65**	**69**
Other parties					
Accrued expenses		946	851	654	588
Accrued interest		296	323	273	294
Payable for project construction		97	32	-	-
Liabilities from forward contract		50	9	47	9
Other accounts payable		1,712	1,747	1,320	1,104
Total		**3,157**	**3,018**	**2,359**	**2,064**

23 Non-current provisions for employee benefits

	Consolidated financial statements 2018	Consolidated financial statements 2017	Separate financial statements 2018	Separate financial statements 2017
	(in million Baht)			
Statement of financial position				
Non-current provisions for:				
Post-employment benefits	2,008	1,908	1,942	1,830
Other long-term employee benefits	46	41	42	37
Total	**2,054**	**1,949**	**1,984**	**1,867**
For the year ended 31 December				
Statement of comprehensive income:				
Recognised in profit or loss				
Post-employment benefits	182	185	154	159
Other long-term employee benefits	7	7	5	5
Total	**189**	**192**	**159**	**164**
Recognised in other comprehensive income:				
Actuarial (gain) losses recognised in the year	(19)	71	-	73
Cumulative actuarial losses recognised	422	441	450	450

Defined benefit plan

The Group and the Company operate a defined benefit plan based on the requirement of Thai Labour Protection Act B.E 2541 (1998) to provide retirement benefits to employees based on pensionable remuneration and length of service.

The defined benefit plans expose the Group to actuarial risks, such as longevity risk, currency risk, interest rate risk and market (investment) risk.

Movement in the present value of the defined benefit obligations:

	Consolidated financial statements		**Separate financial statements**	
	2018	2017	2018	2017
	(in million Baht)			
At 1 January	1,949	1,769	1,867	1,709
Include in profit or loss:				
Current service costs and interest on obligation	189	192	159	164
	189	**192**	**159**	**164**
Included in other comprehensive income				
Actuarial (gain) loss recognised in the year	(19)	71	-	73
Effect of movement in exchange rate	(4)	(3)	-	-
	(23)	**68**	**-**	**73**
Others				
Benefit paid	(48)	(84)	(42)	(79)
Acquired through business acquisition (disposal)	(13)	4	-	-
	(61)	**(80)**	**(42)**	**(79)**
At 31 December	**2,054**	**1,949**	**1,984**	**1,867**

Actuarial gains and losses recognised in other comprehensive income arising from:

	Consolidated financial statements		**Separate financial statements**	
	2018	2017	2018	2017
	(in million Baht)			
Demographic assumptions	(11)	16	-	20
Financial assumptions	-	118	-	115
Experience adjustment	(8)	(63)	-	(62)
Total	**(19)**	**71**	**-**	**73**

Actuarial assumptions

The following were the principal actuarial assumptions at the reporting date (expressed as weighted averages).

	Consolidated financial statements		Separate financial statements	
	2018	2017	2018	2017
		(%)		
Discount rate	0.32 - 3.95	0.32 - 3.95	2.57	2.57
Future salary growth	2 - 6	3 - 6	6	6
Turnover rate	0 – 64	0 - 62	1 - 8	1 - 8

Assumptions regarding future mortality have been based on published statistics and mortality tables.

At 31 December 2018, the weighted-average duration of the defined benefit obligation was 10-29 years *(2017: 6 - 31 years)*.

Sensitivity analysis

Reasonably possible changes at the reporting date to one of the relevant actuarial assumptions, holding other assumptions constant, would have affected the defined benefit obligation by the amounts shown below.

	Consolidated financial statements		Separate financial statements	
		(in million Baht)		
	Increase (1% movement)	Decrease (1% movement)	Increase (1% movement)	Decrease (1% movement)
At 31 December 2018				
Discount rate	(206)	239	(199)	232
Future salary growth	243	(213)	236	(206)
Turnover rate	(90)	102	(83)	96
At 31 December 2017				
Discount rate	(205)	238	(196)	229
Future salary growth	223	(196)	213	(187)
Turnover rate	(89)	101	(81)	94

Although the analysis does not take account of the full distribution of cash flows expected under the plan, it does provide an approximation of the sensitivity of the assumptions shown.

On 13 December 2018, the National Legislative Assembly passed a bill amending the Labor Protection Act to include a requirement that an employee who is terminated after having been employed by the same employer for an uninterrupted period of twenty years or more, receives severance payment of 400 days of wages at the most recent rate. The Group will amend its retirement plan in the period in which the amendment will have become law and is announced in the Royal Gazette. As a result of this change, the provision for retirement benefits as at that future period end as well as past service cost recognized during that period in the consolidated and the separate financial statements is estimated to increase by an amount of approximately Baht 139 million and Baht 131 million, respectively.

24 Share capital

	Par value per share (in Baht)	2018 Number	2018 Baht	2017 Number	2017 Baht
		(million shares / million Baht)			
Authorised					
At 1 January					
Ordinary shares	1	1,377	1,377	1,377	1,377
At 31 December					
Ordinary shares	1	**1,377**	**1,377**	**1,377**	**1,377**
Issued and paid-up					
At 1 January					
Ordinary shares	1	1,377	1,377	1,377	1,377
At 31 December					
Ordinary shares	1	**1,377**	**1,377**	**1,377**	**1,377**

25 Surplus and reserves

Share premium

Section 51 of the Public Companies Act B.E. 2535 (1992) requires companies to set aside share subscription monies received in excess of the par value of the shares issued to a reserve account ("share premium"). Share premium is not available for dividend distribution.

Capital surplus on registered and paid-up share reduction

On 6 July 2004, the Company registered with the Ministry of Commerce, the reduction in the Company's registered share capital from Baht 1,032,761,220 to Baht 843,143,461 and the paid-up share capital from Baht 753,040,940 to Baht 563,423,181. These changes were due to the reduction of 189,617,759 shares held by the Siam DR Co., Ltd. to be consistent with the number of "Depository Receipts of BCP's Ordinary Shares (DR)" which were issued and offered by the Siam DR Co., Ltd. The Company received consent from the Siam DR Co., Ltd. for reducing the mentioned number of shares without capital payback. The Company proceeded the share reduction to Capital on registered and paid-up share reduction account.

Other surplus

Surplus from the change in the ownership interest in subsidiaries

Change in parent's ownership interest in subsidiaries within equity comprises of effect from dilution of percentage of holding of the Company in a subsidiary and difference from changes in parent's ownership interest in subsidiaries that do not result in a loss of control.

Surplus from business combination

Surplus from business combination represents the measurement of net assets acquired and recognised at fair value from business combination.

Legal reserve

Section 116 of the Public Companies Act B.E. 2535 (1992) Section 116 requires that a company shall allocate not less than 5% of its annual net profit, less any accumulated losses brought forward (if any), to a reserve account ("legal reserve"), until this account reaches an amount not less than 10% of the registered authorised capital. The legal reserve is not available for dividend distribution.

Other components of equity

Currency translation differences

The currency translation differences account within equity comprises all foreign currency differences arising from the translation of the financial statements of foreign operations, as well as from the translation of liabilities that hedge the Company's net investment in a foreign operation.

Fair value changes in available-for-sale investments

The fair value changes in available-for-sale investments account within equity comprises the cumulative net change in the fair value of available-for-sale investments until the investments are derecognised or impaired.

26 Operating segments

The Group has six reportable segments, as described below, which are the Group's strategic divisions. The strategic divisions offer different products and services, and are managed separately because they require different technology and marketing strategies. For each of the strategic divisions, the chief operating decision maker (CODM) reviews internal management reports on at least a quarterly basis. The following summary describes the operations in each of the Group's reportable segments.

Segment 1	*Refinery and oil trading*
Segment 2	*Marketing*
Segment 3	*Electricity*
Segment 4	*Bio-based product*
Segment 5	*Natural resource*
Segment 6	*Others*

Information regarding the results of each reportable segment is included below. Performance is measured based on segment profit before tax, financial costs, depreciation and amortization, gain on foreign exchange and impairment losses on assets (Group's EBITDA), as included in the internal management reports that are reviewed by the Group's CODM. Group's EBITDA is used to measure performance as management believes that such information is the most relevant in evaluating the results of certain segments relative to other entities that operate within these industries.

Notes to The Financial Statements

Bangchak Corporation Public Company Limited and its Subsidiaries

For The Year Ended 31 Decenber 2018

	2018							
	Refinery and oil trading	Marketing	Electricity	Bio-based product	Natural resources	Others	Eliminations	Total
				(in million Baht)				
External revenue	43,411	140,524	3,320	3,807	963	-	-	192,025
Inter-segment revenue	131,404	9	-	5,981	-	-	(137,394)	-
Total revenue	**174,815**	**140,533**	**3,320**	**9,788**	**963**	**-**	**(137,394)**	**192,025**
Profit (loss) from operating segment	3,928	2,177	3,569	692	117	(268)	(14)	10,201
Depreciation and amortisation								(4,902)
Gain on foreign exchange								415
Loss from impairment of assets								(441)
Finance costs								(1,545)
Income tax expense								(493)
Profit for the year								**3,235**
Interest revenue	26	26	8	2	8	-	(15)	55
Financial costs	(633)	(197)	(521)	(103)	(52)	(64)	25	(1,545)
Depreciation and amortisation	(2,767)	(922)	(693)	(349)	(141)	(30)	-	(4,902)
Segments assets	48,360	20,251	31,550	7,332	9,876	-	-	117,369
Investments in associate and joint ventures	91	1	13,501	808	3,647	-	-	18,048
Capital expenditure	(4,393)	(2,327)	(1,499)	(623)	(8)	-	-	(8,850)

	2017 (Restated)							
	Refinery and oil trading	Marketing	Electricity	Bio-based product	Natural resources	Others	Eliminations	Total
	(in million Baht)							
External revenue	35,434	129,389	3,323	2,482	1,510	-	-	172,138
Inter-segment revenue	120,847	9	-	5,591	-	-	(126,447)	-
Total revenue	**156,281**	**129,398**	**3,323**	**8,073**	**1,510**	**-**	**(126,447)**	**172,138**
Profit (loss) from operating segment	7,596	2,301	2,846	529	286	(3)	(135)	13,420
Depreciation and amortisation								(5,135)
Gain on foreign exchange								889
Loss from impairment of assets								(1,518)
Finance costs								(1,452)
Income tax expense								(41)
Profit for the year								**6,163**
Interest revenue	52	61	41	1	-	136	(136)	155
Financial costs	(767)	(137)	(436)	(100)	(171)	-	159	(1,452)
Depreciation and amortisation	(2,764)	(826)	(702)	(245)	(594)	(4)	-	(5,135)
Segments assets	49,542	15,510	31,850	8,579	8,388	-	-	113,869
Investments in associate and joint ventures	76	1	13,288	793	-	-	-	14,158
Capital expenditure	(3,184)	(1,914)	(899)	(335)	(420)	-	-	(6,752)

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Geographical segments

In presenting information on the basis of geographical segments, segment sales are based on the entity's country of domicile. Segment non-current assets (exclude derivatives and deferred tax) are based on the geographical location of the assets.

Geographical information

	Revenue		Non-current assets	
	2018	2017	2018	2017
	(in million Baht)			
Thailand	165,453	151,790	54,159	50,105
Malaysia	4,043	5,217	-	-
Japan	451	481	4,500	5,865
Korea	4,551	3,275	-	-
Philippines	57	72	2,562	4,394
Singapore	15,162	8,398	5	-
Indonesia	-	-	12,295	12,345
Norway	-	-	3,647	-
Others	2,308	2,905	1,777	4,111
Total	**192,025**	**172,138**	**78,945**	**76,820**

Major customer

Revenues from one customer of the Group's 1 and 2 segments represents approximately Baht 17,069 million *(2017: Baht 16,011 million)* of the Group's total revenues.

27 Interest and dividend income

		Consolidated financial statements		Separate financial statements	
	Note	2018	2017	2018	2017
		(in million Baht)			
Dividend income					
Related parties	*5*	-	1	940	1,016
		-	**1**	**940**	**1,016**
Interest income					
Related parties	*5*	5	-	28	136
Other investment income		50	155	38	107
		55	**155**	**66**	**243**
Total		**55**	**156**	**1,006**	**1,259**

28 Other income

	Consolidated financial statements		Separate financial statements	
	2018	2017	2018	2017
	(in million Baht)			
Fee for land utilisation and management fee for NGV service station	39	51	35	46
Gain on sale of investments	78	-	-	248
Gain on sales of assets	793	-	-	-
Management service fee for subsidiaries	-	-	95	75
Interest income from tax refund	-	401	-	401
Penalty income from insurance	104	175	-	175
Others	246	458	129	202
Total	**1,260**	**1,085**	**259**	**1,147**

29 Selling expenses

	Consolidated financial statements		Separate financial statements	
	2018	2017	2018	2017
	(in million Baht)			
Personnel	1,158	1,107	521	537
Advertising	536	500	389	361
Depreciation and amortisation	833	716	764	673
Distribution	548	501	450	465
Rental	314	264	290	237
Others	971	938	615	648
Total	**4,360**	**4,026**	**3,029**	**2,921**

30 Administrative expenses

	Consolidated financial statements		Separate financial statements	
	2018	2017	2018	2017
	(in million Baht)			
Personnel	1,241	1,299	721	718
Advertising	178	145	177	139
Depreciation and amortisation	270	258	208	179
Professional and consultant fees	362	462	179	182
Others	964	974	559	539
Total	**3,015**	**3,138**	**1,844**	**1,757**

31 Employee benefit expenses

	Consolidated financial statements		Separate financial statements	
	2018	2017	2018	2017
	(in million Baht)			
Wages and salaries	2,313	2,138	1,198	1,111
Defined contribution plans	120	114	93	87
Pension	175	179	159	165
Others	702	846	439	546
Total	**3,310**	**3,277**	**1,889**	**1,909**

Defined contribution plans

The defined contribution plans comprise provident funds established by the Group for its employees. Membership to the funds is on a voluntary basis. Contributions are made monthly by the employees at rates ranging from 3% to 15% of their basic salaries and by the Group at rates ranging from 3% to 10% of the employees' basic salaries. The provident funds are registered with the Ministry of Finance as juristic entities and are managed by licensed Fund Manager.

32 Expenses by nature

The statements of income include an analysis of expenses by function. Expenses by nature disclosed in accordance with the requirements of various TFRS were as follows:

	Consolidated financial statements		Separate financial statements	
	2018	2017	2018	2017
	(in million Baht)			
Included in cost of sales of goods:				
Changes in inventories of finished goods and work in progress	642	530	290	656
Raw materials and consumables used	105,714	95,252	98,282	88,628
Tax expenses and oil fuel fund	26,763	28,523	26,763	28,523
Depreciation	3,701	4,079	2,599	2,621
Loss on decline in value of inventories	696	8	689	-
Included in selling expenses:				
Depreciation	580	518	511	475
Included in administrative expenses:				
Depreciation	176	184	145	127

33 Finance costs

	Note	Consolidated financial statements 2018	Consolidated financial statements 2017	Separate financial statements 2018	Separate financial statements 2017
		(in million Baht)			
Interest expense					
Financial institutions		826	796	249	303
Debentures		733	706	733	706
Total interest expense		**1,559**	**1,502**	**982**	**1,009**
Amortisation of transaction costs capitalised		58	63	11	18
Others finance costs		4	15	2	2
		1,621	**1,580**	**995**	**1,029**
Less Amount included in the cost of qualifying assets:					
- Property, plant and equipment under construction	*14*	(76)	(128)	(75)	(125)
Net		**1,545**	**1,452**	**920**	**904**

34 Income tax

	Note	Consolidated financial statements 2018	Consolidated financial statements 2017	Separate financial statements 2018	Separate financial statements 2017
		(in million Baht)			
Current tax expense					
Current year		400	1,442	153	1,406
Over provided in prior years		(16)	(922)	(23)	(922)
		384	**520**	**130**	**484**
Deferred tax expense					
Movements in temporary differences	*18*	109	(479)	108	(375)
		109	**(479)**	**108**	**(375)**
Total tax expense		**493**	**41**	**238**	**109**

	Consolidated financial statements		Separate financial statements	
	2018	2017	2018	2017
	(in million Baht)			
Reconciliation of effective tax rate				
Profit before income tax expense	**3,728**	**6,204**	**2,301**	**6,261**
Corporate income tax rate *(%)*	20.00	20.00	20.00	20.00
Income tax using the Thai corporation tax rate	746	1,241	460	1,252
Effect of difference tax rates in foreign jurisdictions	42	(193)	-	-
Income not subject to tax / Expenses that are deductible at a greater amount	(676)	(643)	(236)	(246)
Expenses not deductible / Other adjustments	295	256	37	25
Recognition of previously unrecognised tax losses	(96)	-	-	-
Current year losses for which no deferred tax assets was recognised	194	269	-	-
Over provided in prior years	(16)	(922)	(23)	(922)
Others	4	33	-	-
Total	**493**	**41**	**238**	**109**
Corporate income tax rate *(%)*	**13.22**	**0.66**	**10.34**	**1.74**

35 Promotional privileges

By virtue of the provisions of the Industrial Investment Promotion Act of B.E. 2520, the Group has been granted privileges by the Board of Investment relating to Petroleum Refinery process, production of Biodiesel and production of electricity from solar cell. The privileges granted include:

Production of electricity from solar cell

(a) Exemption from payment of import duty on machinery approved by the Board;
(b) Exemption from payment of income tax for certain operations for a period of eight years from the date on which the income is first derived from such operations.
(c) A 50% reduction in the normal income tax rate on the net profit derived from certain operations for a period of five years, commencing from the expiry date in (b) above.

Production of Biodiesel

(a) Exemption from payment of import duty on machinery approved by the Board;
(b) Exemption from payment of income tax for certain operations for a period of eight years from the date on which the income is first derived from such operations.

Production of Ethanol

(a) Exemption from payment of import duty on machinery approved by the Board;
(b) Exemption from payment of income tax for certain operations for a period of six and eight years from the date on which the income is first derived from such operations.

Production of Biogas

(a) Exemption from payment of import duty on machinery approved by the Board;
(b) Exemption from payment of income tax for certain operations for a period of six and eight years from the date on which the income is first derived from such operations.

As promoted companies, the Group must comply with certain terms and conditions prescribed in the promotional certificates.

Summary of revenue from promoted and non-promoted businesses:

	Consolidated financial statements					
	2018			2017		
	Promoted businesses	Non-promoted businesses	Total	Promoted businesses	Non-promoted businesses	Total
	(in million Baht)					
Export sales	49	57,010	57,059	99	30,718	30,817
Local sales	8,921	197,039	205,960	10,500	177,993	188,493
Eliminations	-	-	(70,994)	-	-	(47,172)
Total Revenue	**8,970**	**254,049**	**192,025**	**10,599**	**208,711**	**172,138**

The Company has no revenue from promoted business.

36 Earnings per share

Basic earnings per share

The calculation of basic earnings per share for the years ended 31 December 2018 and 2017 were based on the profit for the years attributable to ordinary shareholders of the Company and the number of ordinary shares outstanding during the years as follows:

	Consolidated financial statements		Separate financial statements	
	2018	2017 (Restated)	2018	2017
	(in million Baht / million shares)			
Profit for the period attributable to ordinary shareholders of the Company *(million Baht)*	2,463	5,608	2,063	6,152
Number of ordinary shares outstanding *(million shares)*	1,377	1,377	1,377	1,377
Earnings per share (basic) *(in Baht)*	**1.79**	**4.07**	**1.50**	**4.47**

37 Dividends

At the Board of Directors meeting of the Company held on 24 August 2018, the meeting approved the appropriation of interim dividend from retained earnings as of 30 June 2018 at Baht 0.85 per share, amounting to Baht 1,170 million. The dividend was paid to the shareholders on 19 September 2018.

At the Annual General Meeting of the Shareholders, held on 25 April 2018, the shareholders approved a full year performance of 2017 dividend payment at the rate of Baht 2.15 per share, totalling Baht 2,960 million, of which Baht 1.05 per share, totalling Baht 1,445 million was paid as an interim dividend for the first half year of 2017 on 26 September 2017. The remaining dividend was paid for the second half year of 2017 at the rate of Baht 1.10 per share, totalling Baht 1,515 million. The dividend was paid to the shareholders on 7 May 2018.

At the Board of Directors meeting of the Company held on 31 August 2017, the meeting approved the appropriation of interim dividend from retained earnings as of 30 June 2017 at Baht 1.05 per share, amounting to Baht 1,445 million. The dividend was paid to the shareholders on 26 September 2017.

At the Annual General Meeting of the Shareholders, held on 5 April 2017, the shareholders approved a full year performance of 2016 dividend payment at the rate of Baht 1.80 per share, totalling Baht 2,478 million, of which Baht 0.80 per share, totalling Baht 1,102 million was paid as an interim dividend for the first half year of 2016 on 20 September 2016. The remaining dividend was paid for the second half year of 2016 at the rate of Baht 1.00 per share, totalling Baht 1,377 million. The dividend was paid to the shareholders on 21 April 2017.

38 Financial instruments

Financial risk management policies

The Group is exposed to normal business risks from changes in market interest rates and currency exchange rates and from non-performance of contractual obligations by counterparties. The Group does not hold or issue derivative financial instruments for speculative or trading purposes.

Risk management is integral to the whole business of the Group. The Group has a system of controls in place to create an acceptable balance between the cost of risks occurring and the cost of managing the risks. The management continually monitors the Group's risk management process to ensure that an appropriate balance between risk and control is achieved.

Capital management

The Board's policy is to maintain a strong capital base so as to maintain investor, creditor and market confidence and to sustain future development of the business. The Board monitors the return on capital, which the Group defines as result from operating activities divided by total shareholders' equity, excluding non-controlling interests and also monitors the level of dividends to ordinary shareholders.

Interest rate risk

Interest rate risk is the risk that future movements in market interest rates will affect the results of the Group's operations and its cash flows because debt securities and loan interest rates are mainly floated. The Group is primarily exposed to interest rate risk from its borrowings (Note 20). The Group mitigates this risk by ensuring that the majority of its debt securities and borrowings are at fixed interest rates and uses derivative financial instruments, principally interest rate swaps, to manage exposure to fluctuations in interest rates on specific debt securities and borrowings.

The Interest rates of interest-bearing of loan to related party and financial liabilities as at 31 December and the periods in which those liabilities mature or re-price were as follows:

	Consolidated financial statements									
	2018					2017				
	Interest rate	Within 1 year	After 1 year but within 5 years	After 5 years	**Total**	Interest rate	Within 1 year	After 1 year but within 5 years	After 5 years	**Total**
	(% per annum)	*(in million Baht)*				*(% per annum)*	*(in million Baht)*			
Assets										
Non-current										
Loan to related party	8.0	-	199	-	**199**	-	-	-	-	**-**
Total		**-**	**199**	**-**	**199**		**-**	**-**	**-**	**-**
Liabilities										
Current										
Loans from Financial institutions	1.8 - 5.2	7,220	-	-	**7,220**	0.3 - 5.3	6,264	-	-	**6,264**
Debenture	4.3 - 4.9	4,000	-	-	**4,000**	-	-	-	-	**-**
Non-current										
Loans from Financial institutions	1.8 - 5.6	-	15,030	3,234	**18,264**	0.3 - 5.3	-	9,262	11,387	**20,649**
Debenture	2.1 - 5.4	-	6,894	14,086	**20,980**	4.3 - 5.3	-	7,496	6,494	**13,990**
Total		**11,220**	**21,924**	**17,320**	**50,464**		**6,264**	**16,758**	**17,881**	**40,903**

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Notes to The Financial Statements

Bangchak Corporation Public Company Limited and its Subsidiaries

For The Year Ended 31 Decenber 2018

	Separate financial statements									
	2018					2017				
	Interest rate	Within 1 year	After 1 year but within 5 years	After 5 years	**Total**	Interest rate	Within 1 year	After 1 year but within 5 years	After 5 years	**Total**
	(% per annum)	*(in million Baht)*				*(% per annum)*	*(in million Baht)*			
Assets										
Non-current										
Loans to related parties	0.5 – 4.5	-	5,128	-	**5,128**	0.5 – 7.5	-	2,203	-	**2,203**
Total		**-**	**5,128**	**-**	**5,128**		**-**	**2,203**	**-**	**2,203**
Liabilities										
Current										
Loans from Financial institutions	3.3 - 4.4	3,608	-	-	**3,608**	4.2 - 5.0	3,605	-	-	**3,605**
Debenture	4.4 - 4.9	4,000	-	-	**4,000**	-	-	-	-	**-**
Non-current										
Loans from Financial institutions	4.1 - 4.4	-	2,126	600	**2,726**	1.8 - 4.2	-	1,851	1,225	**3,076**
Debenture	2.1 - 5.4	-	6,894	14,086	**20,980**	4.3 - 5.3	-	7,496	6,494	**13,990**
Total		**7,608**	**9,020**	**14,686**	**31,314**		**3,605**	**9,347**	**7,719**	**20,671**

Foreign currency risk

The Group is exposed to foreign currency risk relating to purchases and sales which are denominated in foreign currencies. The Group primarily utilizes forward exchange contracts with maturities of less than one year to hedge such financial assets and liabilities denominated in foreign currencies. The forward exchange contracts entered into at the reporting date also relate to anticipated purchases and sales, denominated in foreign currencies, for the subsequent period.

At 31 December, the Group and the Company were exposed to foreign currency risk in respect of financial assets and liabilities denominated in the following currencies:

	Consolidated financial statements		**Separate financial statements**	
	2018	2017	2018	2017
USD		*(in million Baht)*		
Cash and cash equivalents	1,302	1,049	606	581
Trade accounts receivable and other receivables	1,719	1,807	1,422	1,269
Receivable from oil hedging contracts	6	150	-	150
Long-term loans to related parties	199	-	4,718	2,113
Trade accounts payable and other payables	(1,248)	(2,474)	(503)	(1,056)
Payable from oil hedging contracts	-	-	(6)	-
Interest-bearing liabilities	(4,356)	(3,823)	(3,258)	(3,280)
Gross statement of financial position exposure	**(2,378)**	**(3,291)**	**2,979**	**(223)**
Others				
Cash and cash equivalents	1,756	1,025	-	-
Trade accounts receivable and other receivables	195	31	-	-
Trade accounts payable and other payables	(75)	(45)	-	-
Interest-bearing liabilities	(6,563)	(9,043)	-	-
Gross statement of financial position exposure	**(4,687)**	**(8,032)**	**-**	**-**
Net currency forwards	(304)	717	(423)	717
Cross currency swap contracts	188	-	-	-
Net exposure	**(7,181)**	**(10,606)**	**2,556**	**494**

Credit risk

Credit risk is the potential financial loss resulting from the failure of a customer or counterparty to settle its financial and contractual obligations to the Group as and when they fall due.

Management has a credit policy in place and the exposure to credit risk is monitored on an ongoing basis. Credit evaluations are performed on all customers requiring credit over a certain amount. At the reporting date there were no significant concentrations of credit risk. The maximum exposure to credit risk is represented by the carrying amount of each financial asset in the balance sheet. However, due to the large number of parties comprising the Group's customer base, Management does not anticipate material losses from its debt collection.

Liquidity risk

The Group monitors its liquidity risk and maintains a level of cash and cash equivalents deemed adequate by management to finance the Group's operations and to mitigate the effects of fluctuations in cash flows.

Notes to The Financial Statements

Bangchak Corporation Public Company Limited and its Subsidiaries

For The Year Ended 31 Decenber 2018

Fair values of financial assets and liabilities

As at 31 December 2018 and 2017, fair value of financial assets and liabilities is taken to approximately the carrying value, except the following items;

	Consolidated financial statements													
	2018							2017						
	Carrying value			Fair value				Carrying value			Fair value			
	Current	Non-current	**Total**	Level 1	Level 2	Level 3	**Total**	Current	Non-current	**Total**	Level 1	Level 2	Level 3	**Total**
	(in million Baht)													
Financial assets														
Equity securities available for sale	-	1,432	**1,432**	1,432	-	-	**1,432**	-	4,061	**4,061**	4,061	-	-	**4,061**
Forward exchange contracts	161	-	**161**	-	161	-	**161**							
Cross currency and interest rate swap contracts	-	-	**-**	-	-	-	**-**	-	-	**-**	-	7	-	**7**
Interest rate swap contracts	-	-	**-**	-	5	-	**5**	-	-	**-**	-	5	-	**5**
Crude and product oil price hedging contracts	-	-	**-**	-	143	-	**143**	-	-	**-**	-	70	-	**70**
Loan to related party (fixed rate)	-	199	**199**	-	245	-	**245**	-	-	**-**	-	-	-	**-**
Financial liabilities														
Debentures	4,000	20,980	**24,980**	-	25,888	-	**25,888**	-	13,990	**13,990**	-	15,283	-	**15,283**
Long-term loans (fixed rate)	401	2,531	**2,932**	-	3,011	-	**3,011**	535	5,444	**5,979**	-	6,172	-	**6,172**
Forward exchange contracts	-	-	**-**	-	16	-	**16**	3	-	**3**	-	3	-	**3**
Cross interest rate swap contracts	-	-	**-**	-	42	-	**42**	-	-	**-**	-	44	-	**44**
Crude and product oil price hedging contracts	-	-	**-**	-	139	-	**139**	-	-	**-**	-	293	-	**293**

	Separate financial statements													
	2018							2017						
	Carrying value			Fair value				Carrying value			Fair value			
	Current	Non-current	**Total**	Level 1	Level 2	Level 3	**Total**	Current	Non-current	**Total**	Level 1	Level 2	Level 3	**Total**
	(in million Baht)													
Financial assets														
Crude and product oil price hedging contracts	-	-	**-**	-	143	-	**143**	-	-	**-**	-	70	-	**70**
Forward exchange contracts	87	-	**87**	-	76	-	**76**	-	-	**-**	-		-	**-**
Loans to related parties (fixed rate)	-	1,489	**1,489**	-	1,373	-	**1,373**	-	2,113	**2,113**	-	1,949	-	**1,949**
Financial liabilities								-	-	**-**	-	-	-	**-**
Debentures	4,000	20,980	**24,980**	-	25,888	-	**25,888**	-	13,990	**13,990**	-	15,283	-	**15,283**
Long-term loans (fixed rate)	300	1,801	**2,101**	-	2,133	-	**2,133**	300	2,101	**2,401**	-	2,456	-	**2,456**
Forward exchange contracts	-	-	**-**	-	-	-	**-**	3	-	**3**	-	3	-	**3**
Cross currency and interest rate swap contracts	-	-	**-**	-	-	-	**-**	-	-	**-**	-	26	-	**26**
Crude and product oil price hedging contracts	-	-	**-**	-	139	-	**139**	-	-	**-**	-	293	-	**293**

Level 2 fair values for simple over-the-counter derivative financial instruments are based on broker quotes. Those quotes are tested for reasonableness by discounting expected future cash flows using market interest rate for a similar instrument at the measurement date. Fair values reflect the credit risk of the instrument and include adjustments to take account of the credit risk of the Group and counterparty when appropriate.

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39 Commitments with non-related parties

	Consolidated financial statements		Separate financial statements	
	2018	2017	2018	2017
	(in million Baht)			
Capital commitment				
Construction projects	2,440	600	726	24
Total	**2,440**	**600**	**726**	**24**
Future minimum lease payments under non-cancellable operating leases				
Within one year	964	891	939	496
After one year but within five years	3,086	2,082	3,032	1,988
After five years	3,018	2,889	2,937	2,782
Total	**7,068**	**5,862**	**6,908**	**5,266**
Other commitment				
Bank guarantees	109	164	23	33
Total	**109**	**164**	**23**	**33**

The Company entered into 9 million barrels oil price hedging contracts with foreign oil traders for the periods between January 2019 and March 2019.

The Company entered into foreign currency buying forward contracts cover the period to December 2020 amounting to USD 37 million equivalents to Baht 1,110 million.

The Company entered into foreign currency selling forward contracts cover the period to December 2019 amounting to USD 50 million equivalents to Baht 1,624 million.

An indirect subsidiary of the Group has foreign currency buying forward contracts cover the period to October 2019 amounting to USD 0.5 million or equivalents to Baht 16 million.

An indirect subsidiary of the Group entered into cross currency swap contracts to buy U.S. Dollars currency of USD 12 million and sell Thai Baht currency of Baht 334 million. The contract expires in 2030. All counterparties agree to pay the interest and the notional amount in accordance with the terms and conditions specified in the contract.

An indirect subsidiary of the Group entered into interest rate swap agreements for loans from bank with a floating interest rate of 3M TIBOR+180BPS per annum, to a fixed rate of 2.94% per annum with the principal amount of JPY 2,577 million, which pays every 3 months and the contracts expire in 2022

An indirect subsidiary of the Group entered into cross currency swap contracts to buy U.S. Dollars currency of USD 50 million and sell Norwegian krone currency of NOK 409 million. The contract expires in December 2019.

40 Contingent liabilities and contingent assets

During the second quarter of 2016, the Company (the first defendant) was co-accused with another company (the second defendant) for alleged breach of a lubricant product distribution contract for a claim totalling Baht 46 million. Subsequently, the plaintiff filed additional claim against the Company for alleged breach of a contract as a result of ceasing lubricant product distribution for a claim totalling Baht 688 million. During the first quarter of 2017, the civil court ordered a dismiss on both cases. The plaintiff was re-appealed to the Appeal Court. Subsequently, during the second quarter of 2018, the Appeal Court had ordered the Company to pay the plaintiff for two claims totaling Baht 1 million. Currently, such lawsuit is in process of filing the petitions.

41 Events after the reporting period

At the Board of Directors' meeting held on 21 February 2019, the Board approved to submit for approval at the Annual General Meeting of the Shareholders, a full year 2018 dividend payment at the rate of Baht 1.35 per share, of which Baht 0.85 per share was paid as an interim dividend on 19 September 2018 as disclosed in note 37. Thus, the remaining dividend will be at the rate of Baht 0.50 per share payable to the shareholders entitled to receive dividends. This dividend is subject to the approval of the Shareholders at the Annual General Meeting to be held on 11 April 2019.

At the Board of Directors' meeting held on 20 February 2019, the Board of subsidiary approved to submit for approval at the Annual General Meeting of the Shareholders, a full year 2018 dividend payment at the rate of Baht 0.64 per share, of which Baht 0.48 per share the subsidiary was paid as an interim dividend. Thus, the remaining dividend will be at the rate of Baht 0.16 per share payable to the shareholders entitled to receive dividends. This dividend is subject to the approval of the Shareholders at the Annual General Meeting to be held on 9 April 2019.

42 Thai Financial Reporting Standards (TFRS) not yet adopted

A number of new and revised TFRS which relevant to the Group's operations are expected to have significant impact on the consolidated and separate financial statements on the date of initial application. Those TFRS become effective for annual financial reporting periods beginning on or after 1 January of the following years.

TFRS	Topic	Effective
TFRS 7*	Financial Instruments: Disclosures	2020
TFRS 9*	Financial Instruments	2020
TFRS 15	Revenue from Contracts with Customers	2019
TFRS 16	Leases	2020
TAS 32*	Financial Instruments: Presentation	2020
TFRIC 16*	Hedges of a Net Investment in a Foreign Operation	2020
TFRIC 19*	Extinguishing Financial Liabilities with Equity Instruments	2020

* TFRS - Financial instruments standards

(a) *TFRS 15 Revenue from Contracts with Customers*

TFRS 15 establishes a comprehensive framework for determining whether, how much and when revenue is recognised. Revenue should be recognised when (or as) an entity transfers control over goods or services to a customer, measured at the amount to which the entity expects to be entitled.

Management is presently considering the potential impact of adopting and initially applying TFRS 15 on the financial statements.

1) Contracts that are not the contracts with customers

The Group has considered the contract arisen from transactions involving non-monetary exchanges between entities in the same line of business to facilitate sales to customers. Such transaction does not meet the definition of contract with the customers under TFRS 15. The Group shall not recognise revenue from contracts with customers on such exchange.

2) Consideration on revenue from sales included transportation services

The Group has considered sales of goods with freight services and found that freight services are distinct service from sales of goods. Under TFRS 15, sales of goods is recognised when the control of goods is transferred to the customer. Revenue from freight services is recognised over time.

3) Sale of goods with loyalty programme.

For the loyalty programme operated by the Group, revenue is currently allocated between the loyalty programme and the products by reference to the fair value of the right to purchase products at a discount or fair value of the free gift. Under TFRS 15, consideration will be allocated between the loyalty programme and the products based on their relative stand-alone selling prices. As a consequence, a lower proportion of the consideration will be allocated to the loyalty programme, and therefore less revenue is likely to be deferred.

4) Sale of steam under minimum take or pay arrangement.

For the sale of steam under minimum take or pay arrangement of an associate in Indonesia. Under TFRS 15, revenue should be recognised upon fulfilment of the performance obligation.

The Group plans to adopt TFRS 15 using the cumulative effect method, with the effect of initially applying this standard recognised at the date of initial application (1 January 2019). As a result, the Group will not apply the requirements of TFRS 15 to the comparative period presented. Thus, if the Group were to initially adopted TFRS 15, the impacts to consolidated statement of financial position are investments in associates and retained earnings would decrease approximately Baht 54 million.

(b) TFRS - Financial instruments standards

These TFRS establish requirements related to definition, recognition, measurement, impairment and derecognition of financial assets and financial liabilities, including accounting for derivatives and hedge accounting.

Management is presently considering the potential impact of adopting and initially applying TFRS - Financial instruments standards on the consolidated and separate financial statements.

43 Reclassification of account

Certain accounts in the statement of financial position as at 31 December 2017 which are included in the 2018 financial statements for comparative purposes, have been reclassified to conform to the presentation in the 2018 financial statements.

	Separate financial statements		
	Before reclassify	Reclassify	After reclassify
		(in million Baht)	
Statement of financial position as at 31 December 2017			
Investment properties	343	556	899
Property, plant and equipment	27,963	(556)	27,407
	28,306	**-**	**28,306**

The reclassifications have been made because, in the opinion of management, the new classification is more appropriate to the Group's business.

General
and Other Key Information

Company Information

Bangchak Corporation Public Company Limited
Registration No. 0107536000269

Company Establishment and Commercial Operation

November 8, 1984 and April 1, 1985

Nature of Business:

A 120-KBD oil refinery, sales and distribution of refined products (retail and wholesale), and automotive care businesses

Customers:

- The public, through 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, oceangoing ships, hotels, trucks, and construction
- Agricultural sector through Bangchak community service stations
- Export markets

Contact

- Internal Audit
  Tel. 0 2335 4566
  Email: ico@bangchak.co.th
- Investor Relations Division
  Tel. 0 2335 4583 Fax. 0 2335 8000
  Email: ir@bangchak.co.th
- The Secretary to the Board of the Directors Division
  Tel. 0 2335 4050 Fax. 0 2016 3982
  Email: bcpsecretary@bangchak.co.th
- Company Website
  http://www.bangchak.co.th

Office and Terminals:

1. **Head Office:**

   2098 M Tower Building, 8th Floor, Sukhumvit Rd., Phra Khanong Tai, Phra Khanong, Bangkok 10260

   Tel. 0 2335 8888

   Fax. 0 2335 8000

   Email: info@bangchak.co.th

2. **Bangchak Refinery and Terminal:**

   210 Soi Sukhumvit 64, Phra Khanong Tai, Phra Khanong, Bangkok 10260

   Tel. 0 2335 4999

   Fax. 0 2335 4009

3. **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

4. **Northern Region Business Office:**

   87/9 Siri Yee-wan Building, 3rd Floor, Thung Hotel Road, Tambon Wat Ket, Amphoe Muang, Chiang Mai 50000

   Tel. 053 300 484, Fax.053 300 485

5. **Northeastern Region Business Office:**

   499 Moo 12, Mitraphab Road, Tambon Muang Kao, Amphoe Muang, KhonKaen 40000

   Tel. 043 261 751-2, 043 261 789, 043 261 791, Fax.043 261 790

6. **Southern Region Business Office:**

   126/70 Moo 6, 4th Floor, P.C. Tower, 91/1 Moo 1, Bypass Road, Tambon Makham Tia, Amphoe Muang, Surat Thani 84000

   Tel. 077 224 792, Fax.077 224 793

7. **Samut Sakhon Oil Distribution Center:**

   100/149 Moo 1, Tambon Tha Chin, Amphoe Muang, Samut Sakhon 74000

   Tel. 034 820 519-20

8. **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

9. **Rayong Oil Distribution Center:**

   1, 3B Road, Tambon Map Ta Phut, Amphoe Muang, Rayong 21150,

   Tel. 038 609 389, Fax.038 609 413

10. **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

Declaration of the Directors' Responsibility for the Financial Statements

The Board of Directors of Bangchak Corporation Plc has prepared the Company's financial statements to show its financial status and performance for 2018 under the Public Company Limited Act of 1992, the Accounting Act of 2000, the Securities and Exchange Act of 1992, and the announcement of the Capital Market Supervisory Boardconcerning the criteria, conditions, and reporting method for the disclosure of information on financial status and performance of companies that issue securities.

The Board recognizes its duties and responsibility for directing a listed company, particularly the responsibility for financial statements of the Company and its subsidiaries – including financial information that appears in the annual report of 2018. Such statements have been prepared under generally accepted accounting standards, which regularly complies with a suitableaccounting policiesand due and reasonable discretion exercisedin thepreparation of financial statements. Adequate significant information has been disclosed in the notes to these financial statements for transparent use by shareholders and investors at large.

The Board has instituted and maintained effective risk management and internal control systems to become reasonably confident of accurate, complete, and adequate accounting information to retain Company assets and prevent frauds or significant anomalies in operation.

The Audit Committee, acting on behalf of the Board, has been assigned responsibility for the quality of financial reports and internal control system, and its opinions duly appear in its own report found in this publication.

It is our view that the Company's overall internal control system is satisfactory and can reasonably ensure that the financial statements of the Company and its subsidiaries for the year ended December 31, 2018, represented true and fairness, and showed essentially accurate financial positions, performance outcomes, and cash flows under financial reporting standards.

(Signed) *Pichai Chunhavajira*
(Mr. Pichai Chunhavajira)
Chairman of the Board

(Signed) *Chaiwat Kovavisarach*
(Mr. Chaiwat Kovavisarach)
President and Chief Executive Ofcer

11. Song Kla Oil Distribution Center:

3/26 Moo 6, TambonSa Ting Mor, Amphoe Singha Nakorn, Song Kla90280

Tel. 074 332 782, Fax. 074 332 783

12. Suksawat Lubricant Oil Distribution Center:

196 Moo 1, Suksawat Road, Tambon Pak Khlong Bang PlaKot, Amphoe Phra Samut Chedi, Samut Prakan 10290

Tel. 0 2815 6997-8

Subsidiaries:

BCPG Public Company Limited

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: www.bcpggroup.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: www.bbgiggroup.com

Bangchak Retail Co., Ltd.

2098 M Tower Building, 17th Floor, Sukhumvit Road., Phra Khanong Tai, Phra Khanong, Bangkok 10260

Tel. 0 2335 8400, Fax. 0 2016 3963

Bangchak Green Net Co., Ltd.

223/94 Country Complex, Building A, 19th Floor, Sanpahwut Road., Bangna, Bangna, Bangkok 10260

Tel. 0 2367 2699, Fax. 0 2745 7945

BCPR Co., Ltd.

2098 M Tower Building, 8th Floor, Sukhumvit Road., Phra Khanong Tai, Phra Khanong, Bangkok 10260

Tel. 0 2335 8654

BCV Partnership Co., Ltd.

2098 M Tower Building, 20th Floor, Sukhumvit Road., Phra Khanong Tai, Phra Khanong, Bangkok 10260

Tel. 0 2335 4999, Fax. 0 0335 4572

BCV Bio Based Co., Ltd.

2098 M Tower Building, 20th Floor, Sukhumvit Road., Phra Khanong Tai, Phra Khanong, Bangkok 10260

Tel. 0 2335 4999, Fax. 0 0335 4572

BCV Energy Co., Ltd.

2098 M Tower Building, 20th Floor, Sukhumvit Road., Phra Khanong Tai, Phra Khanong, Bangkok 10260

Tel. 0 2335 4999, Fax. 0 0335 4572

BCV Innovation Co., Ltd.

2098 M Tower Building, 20th Floor, Sukhumvit Road., Phra Khanong Tai, Phra Khanong, Bangkok 10260

Tel. 0 2335 4999, Fax. 0 0335 4572

BCP Energy International Pte. Ltd.

8 Marina Boulevard # 05-02, Marina Bay Financial Centre, Singapore 018981

BCP Innovation Pte. Ltd.

8 Marina Boulevard # 05-02, Marina Bay Financial Centre, Singapore 018981

BCP Trading Pte. Ltd.

160 Robinson Road # 25-03, Spore Business Federation CTR, Singapore 068914

Nido Petroleum Pty. Ltd.

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 and Innovation Center (BiiC)

2098 M Tower Building, 5th Floor, Sukhumvit Road., Phra Khanong Tai, Phra Khanong, Bangkok 10260

Email: biic@bangchak.co.th

Happiness Sharing Foundation

2098 M Tower Building, 18th Floor, Sukhumvit Road., 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 Road., Phra Khanong Tai, Phra Khanong, Bangkok 10260

Tel. 0 2335 4600 Fax. 0 2016 3969

Reference Persons

Securities Registrar	**Thailand Securities Depository Co., Ltd.** 93 Ratchadaphisek Road, Din Daeng, Bangkok 10400 Tel: 0 2009 9000 Fax: 0 2009 9991
Auditor	**KPMG Phoomchai Audit Co., Ltd.** Floors 48-51, Empire Tower 195 South Sathon Road, Yannawa, Sathon Bangkok 10210 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 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, Yannawa Bangkok 10120 Tel: 0 2296 5715 Fax: 0 2683 1298 Website: www.krungsri.com
Debenture Registrar, Payment Agent, and Debenture Holders' Representative (for BCP208A, BCP238A, BCP258A, and BCP28DA)	**Bank of Ayudhya Public Company Limited** 1222 Rama III Road, Bang Phongphang, Yannawa Bangkok 10120 Tel: 0 2296 5715 Fax: 0 2683 1298 Website: www.krungsri.com
Legal Counsel	**Baker McKenzie** 25th Floor, Abdulrahim Place 990 Rama IV Road, Silom, Bangrak Bangkok 10500 Tel: 0 2636 2000 Fax: 0 2636 2111

LS HorizonLimited

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93/1 Wireless Road, Lumpini, Pathumwan Bangkok 10330

Tel: 026273443

Fax: 0 26273250

Chandler MHM Limited

Floors 7-9, Bubhajit Building

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Fax: 0 2266 6483

Others

- Investor support service
- Reporting share certicates losses
- Change of investor's information

Issuer Support Unit

Thailand Securities Depository Co., Ltd.

93 Ratchadaphisek Road, Din Daeng Bangkok 10400

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Fax: 0 2009 9991

For additional information,
please log on to www.sec.or.th or www.bangchak.co.th
for Bangchak's Annual Information Filing (56-1) and Sustainability Report

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