

Annual Registration Statement / Annual Report 2020
(Form 56-1 One Report)
Bangchak Corporation Public Company Limited

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Attachment

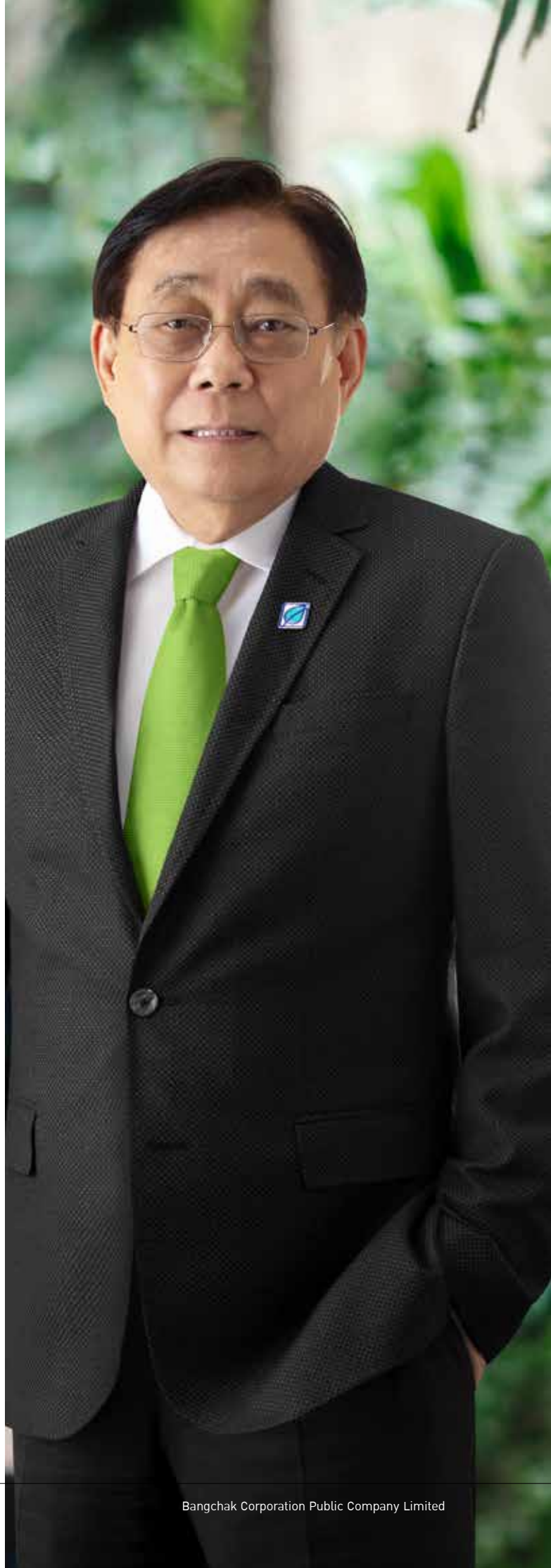
In case this Annual Registration Statement / Annual Report (Form 56-1 One Report) references information disclosed on the Company's website, the disclosed information shall be deemed to be part of Form 56-1 One Report. The Board of Directors certifies the correctness and completeness of disclosed information and annual information disclosure in Form 56-1 One Report.

Message from the Chairman

In 2020, the world faced a global crisis in the form of the COVID-19 pandemic. Bangchak Corporation Public Company Limited was one of many organizations affected by the effects of the crisis, which significantly lowered household and industrial oil consumption, coupled with global oil price volatility furthering prices down. However, Bangchak is aware pandemic realities, and expect its effects to remain for at least the next 1-2 years, and therefore it is necessary for Bangchak to evaluate its financial liquidity, conduct stress tests, revise, postpone, and/or cut its investments and expenses, and execute necessary financial and debt restructuring.

Bangchak adjusted accordingly, reducing expense budgets, postponing scheduled refinery Turnaround Maintenance, and limit short-term non-performing investments in the upcoming 2-year period. In May 2020, the Company successfully issued debentures totaling 8,000 million baht, which was well-received by investors and the general public, reflecting its investor and stakeholder confidence.

Regarding the Company's 2020 performance, Bangchak and its subsidiaries had revenues from sales and services totaling 136,450 million baht, a combined EBITDA of 4,104 million baht, and an Operating EBITDA of 8,874 million baht. The refinery was reconfigured into a Niche Products Refinery in order to develop new products for the market such as Unconverted Oil and Solvents, while its marketing business increased its number of service stations. Additionally,





its green power and bio-based businesses continued investments mirroring future demands and innovation trends, resulting in performance growth during the year, mitigating volatility from other Bangchak operations.

In terms of BCG (Bio-Economy, Circular Economy, and Green Economy) promotion, Bangchak encouraged its employee startup “Winnonie” which provides motorcycle taxis drivers in environs of Bangchak Head Office and refinery with electric motorcycles to complement public transportation services, which not only reduces fuel expenses of motorcycle taxis, but increases revenue and improves air quality.

Organization and Human Resource Management during the COVID-19 situation, Bangchak continues to uphold the welfare of its employees and society by enacting Work from Home measures, and strictly adhering to government disease control measures, encouraging online learning for employees, and supporting employee lifelong learning and agility. In terms of society, the Company provided “Happiness Barrels” in its service stations, where employees and the general public can donate dry foods and essentials, such as alcohol hand gel, to those in need. The Company also procured alcohol gel and hand sanitizers for sale at discounted prices, and masks at Inthanin shops during the initial shortage. The Company introduced Digital Payments methods to reduce contact and enforce social distancing measures.

The pandemic of the past year has been an opportunity for Bangchak Group to adapt and restructure its business to be more flexible and agile. The Board, executives, and employees continues its commitment to being an organization for the better good of Thai society, embracing innovation for future growth, stability, and sustainability.

Lastly, on behalf of Bangchak Group, I would like to express my sincere gratitude to our shareholders and stakeholders for your exemplary support in our business operations and social initiatives.

(Signed) *Pichai Chunchavajira*
(Mr. Pichai Chunchavajira)
Chairman of the board

Financial Highlights

Consolidated Financial Statements	2020	2019	2018
Statement of Income (Million Baht)			
Sales and service revenue	136,450	190,489	192,025
Gross profit (loss)	4,328	10,232	11,431
EBITDA ^{1/}	4,104	8,709	10,201
Gain (loss) from derivative	17	160	(280)
Gain (loss) from foreign exchange foreign-currency trading	732	614	415
Net profit ^{2/}	(6,967)	1,732	2,463
Statement of Financial Position (Million Baht)			
Total assets	148,323	127,788	117,369
Total liabilities	90,006	68,973	67,831
Shareholders' equity	58,316	58,815	49,538
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	3.01	4.57	5.31
Net profit / sales and service revenue	(4.23)	1.31	1.68
Rate of return on assets	(3.90)	3.47	4.56
Debt to Equity ratio: D/E ^{3/}	1.54	1.17	1.37
Net IBD to Equity ^{3/}	0.85	0.69	0.78
Operating Outcomes (Baht per share)			
Net earnings per share ^{2/}	(5.50)	1.18	1.79
Book value per share ^{3/}	26.83	30.26	31.02

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

Part 1 Business Operation and Performance

1. Bangchak Group Structure and Operation

1.1 Policy and Business Overview

1.1.1 Vision, Mission, Objectives, and Goals



Mission

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

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

Core Values



Corporate Culture

Sustainable Innovative Business
Development in Harmony
with the Environment and Society

Employee Culture

To be virtuous, knowledgeable,
and contributive to others

Objectives and goals

Bangchak Corporation Public Company Limited is committed to being a Thai energy company that conducts business in parallel with stewardship of the environment and society, while striving for balance between value and virtue, and engaging in the quality of life improvement for Thai society.

Valuing sustainable corporate growth, Bangchak strives to internationalize its management excellence while humbly applying the royal Sufficiency Economy to business management for adequate profits, nurturing of growth and sustainability by promoting and developing innovation and technology with due regard for conscientious consumption of natural resources, pursuing the leading Asian Greenovative group, founded on good corporate governance through inclusiveness and sustainability vision as well as business, social, and environmental goals by 2025. Below are the highlights.

1. Business goals

🕒 **Refining and Oil Trading Business Group:** Elevated competitiveness while improving refining efficiency to a maximum in parallel with greenhouse gas emission reduction underlined by a modern, green refinery through the Rocket Project to develop product values. Lowered energy consumption during production and transport of raw materials and products. Improved the refinery's stability by undertaking a study to lengthen the turnaround maintenance cycle from two to three years through the Energy Improvement Promotion and 3Es Project to enable continuous refining at 120 KBD by raising the gasoline yield and debottlenecking the Hydrocracker Unit for higher processing capacity.

Strived for niche refinery products by producing UCO (unconverted oil) from the Hydrocracker Unit for use as feedstock for lube base oil and paraffin wax for the candle, paper coating, and the adhesive industry. Improved the solvent process for BCP White Spirit – 3040, whose application is in the production of paint, thinner, and resin.

As for the trading side, Singapore-based BCP Trading Pte. Ltd. (BCPT) plans to add distribution volumes through the company by focusing on the strategy of expanding the proportions of out-out trading of crude oil (procuring crude oil from overseas producers for overseas sale). To this end, the trading market has been continually expanded to new business partners, including emerging countries. Plans were in place to grow to the specialty product and new models of services concerning the group in a bid to extend existing products and services.

🕒 **Marketing Business Group:** Promoted sale through retail channels. Bangchak successfully maintained its No. 2 market share this year, with a cumulative market share from January to December of 15.6%. Bangchak developed high-quality products of the gasohol group called the Gasohol S EVO Family, designed for new gasoline engines (GDI), with an additive that keeps engines clean while improving engine protection. Bangchak's goal is to grow its market share to over 18% by 2025 by stressing product quality and improved services for customers' maximum satisfaction. It aims to keep Bangchak at No. 1 of the Net Promoter Score (NPS). Customer relationship management strived to nurture brand loyalty and engagement as well as service development, while introducing digitalization to deliver the Evolving Greenovative Experience for customers. This in parallel with improvement of the service station image for a unique identity to accommodate Thais' new lifestyles where all can live their lives while staying engaged in sustainable environmental stewardship. Another goal is to develop the Inthanin Coffee business while pursuing the No. 3 brand in the coffee business, with a plan to average grow 170 branches each year.

- **Green Power Business:** The goal is to become a leader in clean-energy power business in Asia-Pacific. Bangchak plans to grow its businesses worldwide and garner investors' confidence by recapitalizing to Baht 10 billion this year for relentless growth and driving through the five strategic pillars:
 - Aggressive business growth through organic and inorganic growth, meaning acquiring brownfield businesses or greenfield businesses by focusing investment growth on domestic investment and expansion to neighboring countries with due regard for cost-effective returns and risks along with investment portfolio balance.
 - Relentless efficiency improvement of current projects through the strategy of engineering, technical, and financial improvement embracing Bangchak's own assets and Bangchak's jointly owned ones.
 - More powerful drive for the digital and innovation business to shape new income channels under the digital energy and infrastructure businesses.
 - Efficient management of capital and balance sheets together with identification of suitable capital sources and financial ratios to enable Bangchak to achieve goals.
 - Enhancement of personnel competency and restructuring in line with Bangchak's future growth businesses with plans to recruit and develop personnel that suit such future businesses.

This year BCPG Public Company Limited (BCPG) grew its renewable-energy business by investing in a hydro power project in Lao PDR with a 45-MW nameplate capacity. This was the total acquisition of Nam San 3B Power Sole Co., Ltd. (Nam San 3B). BCPG also invested in the construction and operation of a power transmission system and distribution station from Nam San 3A and 3B to Vietnam, in addition to investment in a solar farm with a total contractual capacity of 20 MW by acquiring 99.99% in RPV Energy Co., Ltd.

- **Bio-based Products Business Unit:** Relentlessly grew the capacities of biofuels, including biodiesel and ethanol. Instituted a project to improve process efficiency and operate a project to construct a glycerine refinery, regarded as Thailand's biggest business operator and distributor of biofuels that is prepared to develop high-value bio-based products. Bangchak grew its investment in the bio-based business through BBGI Plc.'s acquisition of recapitalization shares in Manus Bio Inc., a world-class, high-value bio-based business leader. BBGI joined in forming WIN Ingredients Co., Ltd., to engage in the biotechnical business.
- **Natural Resources Business:** Develop the exploration and production (E&P) business and new resource business, including lithium mining.
 - Petroleum exploration and production business: Bangchak's goal is to grow investment to grow production in high-potential fields in the future. To this end, OKEA took part in investing in the Calypso and Aurora fields in the vicinity of the Draugen and Gjøa fields, thus lowering development and production expenses due to synergy. The highly promising fields are under the exploration stage, which should ramp up to production soon.
 - New resources business: BCP Innovation Pte. Ltd. lowered its shareholding in Lithium Americas Corp., which operates two lithium mine projects in Argentina and the USA. The reduction does not affect its rights to buy lithium under the Lithium Purchase Agreement of up to 6,000 tons per year from the Cauchari-Olaroz Project.

- Organization, management, and innovation:** Bangchak strives to enhance its competitiveness and organizational management by setting goals to become an outstanding employer, foster HR excellence, and promoting employees' joint creation of innovations in business processes and new products or business models in line with the corporate vision. Bangchak's change management through its Transformation Program aligns with the "I AM BCP" corporate values. Also, it strives to foster sustainability under the Dow Jones Sustainability Indexes (DJSI), which embraces economic, environmental, and social aspects under corporate governance to ensure investors that Bangchak can yield decent, sustainable investment returns. An Innovation Continuity Task Force was set up to brainstorm employees on business extension from current businesses or identify novel business approaches to replace revenue and accommodate the transformed business landscape, bound for change after COVID-19. New business extension was seen in a bid for sustainability through a pursuit of investment in startup businesses and R&D activities with third-party agencies via Bangchak Initiative and Innovation Center (BiIC).
- Being open, transparent, and auditable:** Open, transparent, and accountable: Bangchak engages in open, transparent, and accountable business conduct, whether information disclosure of transparent conduct under corporate governance or other applicable rules.

2. Environmental and social goals

- Pursuit of minimized net emission of carbon dioxide for minimal impacts on climate change (low-carbon company):**

Bangchak set a goal of minimized net emission of carbon dioxide by implementing a project on relentless refinery efficiency and resource efficiency improvement while growing its investment in alternative and renewable energy production projects that contribute to the reduction of carbon dioxide.

- Business development hand in hand with socio-environmental development**

Bangchak fosters sustainability by engaging in businesses that benefit the environment and society in parallel with business growth. To this end, both CSR after-Process and the creation of shared values between business, society, and the environment via the CSR/CSV in-Process (Corporate Social Responsibility/Creating Shared Value in Process) are carried out. In addition, the company sets an extended goal from CSR/CSV, that is, a social enterprise to create jobs and income while promoting among community resident's environmental preservation in their respective localities. Instances are the establishment of the Bai Mai Pun Sook Foundation, promotion of farmers' quality and value development of agricultural produce for distribution via Oam Suk Social Enterprise Co., Ltd.

During the spread of COVID-19, Bangchak supported public agencies and the social sector through its various social activities of its relentless focus under the "Bangchak Group Joins Caring Efforts during COVID-19 Crisis" project embracing all stakeholders. Activities included free alcohol gel refilling at service stations, giveaways of anti-Covid bags to refinery neighbors, discounts on alcohol and hygienic masks, and preparation of "Tanks of Happiness" at service stations and various community spots for those who want to share consumer items to bring them to those who need or borrow them.



1.1.2 Business Strategies

To achieve its short-term and long-term goals, Bangchak relies on the 3S Strategy.

S1 Security



1. Security (S1)

Upstream energy represents Bangchak's core businesses leading to national energy security. Bangchak carries out this strategy jointly through its Refinery, Marketing, Natural Resource, and Bio-based Product Businesses by supplying, producing, and distributing refined products and biofuels to meet the demand of the business sector and the public-governed by the overall trend of energy demand. Though EVs command a growth outlook, today Bangchak still see these businesses as a necessity for growing national energy demand.

S2 Stability



2. Stability (S2)

Bangchak manages its portfolio for growth with an investment focus on businesses with steady revenue streams as well as steady returns and low external risks (domestic and abroad), including green power plants (via BCPG) featuring streams of income. To diversify risks, the company engages in risk management throughout its production chain covering assorted businesses in order to sustain volatility.

S3 Sustainability



3. Sustainability (S3)

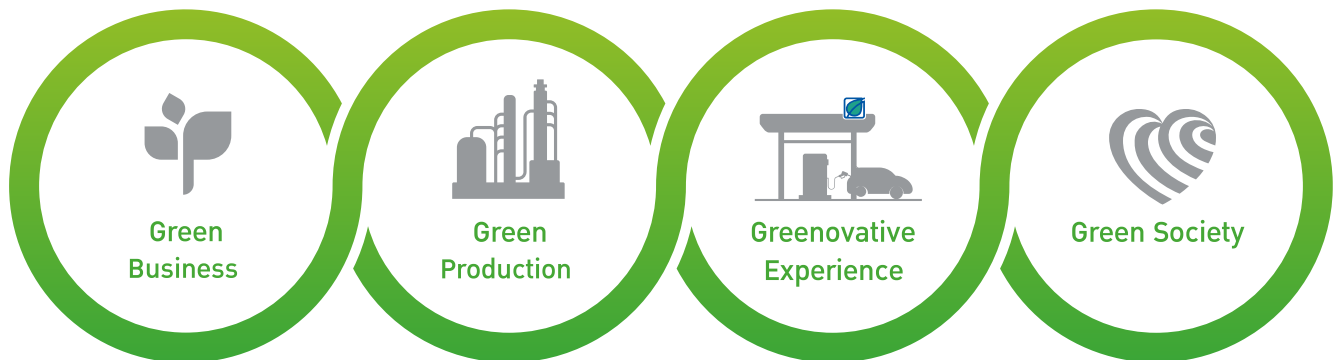
Bangchak develops related businesses that support or extend its core businesses' growth and sustainability to accommodate future technology and change, including the lithium battery business that accommodates EV car growth. Another example is the development of high-value bio-based products by Biotechnology. In addition, Bangchak leverages innovations benefiting the environment and society via BiiC, which focuses on the pursuit of startup investment and R&D activities jointly with external agencies to relentlessly grow green and bio-based product businesses worldwide.

In addition, Bangchak launched the "Winnonie" startup business through BiiC by introducing electric motorcycles (a green innovation) to motorcyclist taxis around Head Office and the refinery to try and rent them. They can change batteries.



To frame its businesses and investment for sustainability, Bangchak leverages its 4 Green (4Gs) strategies.

The 4 GREEN Strategies are made up of:



1. Green Business

Bangchak strives for investment in businesses that foster sustainable values. Besides growing revenue from new undertakings, this strategy is the green initiatives applied to businesses, including high-value bio-based products derived from agricultural produce by way of biotechnological innovation, in turn extended from former biofuel production and sales. The company also values green power businesses and energy management, among others, involving BiiC, which incubate startups that could further Bangchak's businesses in the future.

2. Green Production

Bangchak strives for output capacity rises that are friendly to the environment and safe through efficient resource consumption, particularly water and energy. It adopted the ISO 14001 and IWO 50001 management systems and the OHSAS 18001 occupational health and safety system, which is poised to turn into ISO 45001, while raising safety management through the Process Safety Management (PSM) system.

3. Greenovative Experience

Bangchak strives to create new experiences and the new-look green innovation through motorists' service patronage of its service stations, leveraging its Evolving Greenovative Experience concept that is developed to accommodate the lifestyles of Thais, where all can engage in sustainable environmental stewardship on below strategies.

o **Green Experience:** Bangchak focuses on designing green experiences that will deliver through products and services that exceed customer expectations and good for the environment when coming to Bangchak service stations, including

- **Green Products:** Bangchak focuses on developing green, high-quality products to cater to its customers. Today it produces and sells Euro 4 fuels along with two Euro 5 fuels low-sulfur diesel, namely Gasohol E20s EVO and Hi-Premium Diesel 5.
- **Innovative Service Station:** Bangchak has developed a unique design of service stations, featuring outstanding identities along with the application of its 4Rs (renewable, recycle, reuse, reduce). An instance is the installation of a solar rooftop, use of rainfall and used water for watering trees, energy-saving and green equipment, more green, lush space, and installation of amenities, including toilets designed for the elderly and the handicapped, installation of automatic tire inflators, all these to give customers comfort and maintain the No. 1 Net Promoter Score (NPS).
- **BCP Mind:** This means customer-centric service development that is speedy and efficient. Also, Bangchak has developed the BCP Road Side Assistant project to cultivate the concept of giving to service employees. That is ready to provide basic assistance for motorists who need assistance at Bangchak stations, such as jump-starting vehicles and exchange of spare tires.

o **Green Innovations:** Seeking and developing innovations that create value for customers and businesses by bringing technology and information systems to be applied to enhance the user experience, such as developing a member database system, developing a Smart Digital Payment system in a service station that avoid touching and reduce service time, developing BCP link application and Auto Ordering System (AOS) for business customers and developing a mobile application system that supports general customers to reach basic usage and increasing benefit of "Bangchak Green Mile."

o **Green Sustainability:** This notion promotes experiences where customers are part of the service to society and the environment, and uphold a good culture. Instances are the donation of surplus farm produce to customers; drive for green product sale; hiring of the handicapped. As for the non-oil business, Bangchak values business in parallel with environmental stewardship. An instance of this is the operation of Inthanin Coffee under the "Intanin Natural Cups" concept, where 100% Arabica beans are meticulously selected from only those passing selective production processes. These coffee beans are obtained from community coffee farms that value socially responsible business. Incidentally, Inthanin Coffee is the leader in coffee shop business in the use of 100% biodegradable Bio Packaging along with drinkable lids to minimize the use of straws, thus lowering plastic waste.



4. Green Society

Green Society is among Bangchak's key strategies for the stewardship of society and the environment through the Bangchak WOW (Well-Being Improvement, Oxygen Enhancement, Water Management) scope. To elaborate, cooperation is provided to public and private partners in various implementation to help develop lives, care for air quality, preserve water sources, and improve lives in Thai society, particularly during COVID-19 times. Bangchak modified these activities to suit the crisis by speedily compiling resources, cloth masks, alcohol, and public health apparatus in support of safety and hygiene tasks for hospitals, medical personnel, public agencies, the civil society, and communities. It handed out "alcohol gel for the public" through free refilling; Bangchak also extended a sharing society with its "Tanks of Happiness" that connect givers and recipients through food to help those deprived of income during this crisis. Finally, Bangchak looked after its employees by instituting a household food center through "Sufficient, Staying at Home, and Home-Grown Vegetables" activities, which were promoted to nearby communities.

"Bangchak WOW" model as the scope of collaboration with assorted partners in the public and private sectors covering Bangchak sites, Bangkok, and operating sites. The model embraces three main aspects.



Valuing green society, Bangchak relentlessly improves the quality of the air and water sources. Under the "Particulate-Reducing Fuel" project, during critical periods it produced diesel with less than 10 PPM sulfur for sale in Bangkok at the same prices despite the higher production costs; the hope is that the polluted air and the deadly particulates will drop. It was found that the proportion of the PM 2.5 in Bangkok and its perimeter comes from road transport (51%). Bangchak also took part with the Ministry of Agriculture and Cooperatives in planting some 300,000 trees to combat these particulates while contributing to extending the Circular Economy by gathering and processing plastic waste through the "Rak Pan Suk", "Tung Won Thung" projects. Under the "Kaeo Pho Kla" activity, Bangchak uses Inthanic Bio Cups to grow saplings provided by the Royal Forest Department. Finally, Bangchak modified its purchase of used vegetable oil for biodiesel production for greater efficiency.

Bangchak also launched the "Winnonie" innovative (startup) business to underline its leadership in green energy and Bangchak Group's full-fledged entry into the power business. To this end, Bangchak organized a "Battery: Revolutionary Energy for the Future" seminar to illustrate battery development for game-changing energy consumption worldwide as well as related technologies, with attendance by academicians, public agencies, and world-class startups, who also share their experiences. This is a bold step for Bangchak Group in business, investment, and growth in establishing green energy innovation in parallel with society and the environment.

For the immediate society and communities, Bangchak succeeded in maintaining the trust of surrounding communities at 84%. The goals for community relations work reflect friendliness, usefulness, and confidence in safety through the eight aspects of relationship and quality-of-life engagement activities.

As for education, our Bai Mai Pan Suk Foundation modified its "Fun Reading, Writing & Learning Project" plan. Its target group (grade 1 students) is to be promoted in literacy by leveraging an online system for application, teacher training, and classroom follow-up work, resulting in the foundation's opportunities for working nationwide, expanding work in more than 38 schools in 28 provinces, involving more than 1,100 teachers and students.

1.1.3 Transition and milestone development 2020

January

Bangchak reported the outcomes of treasury stock repurchase that from the project launch to January 15, the number was 19.238 million shares and the value of repurchase equaled Baht 505 million or 1.4% of the paid-up shares. Bangchak ended this repurchase so as to maintain liquidity.

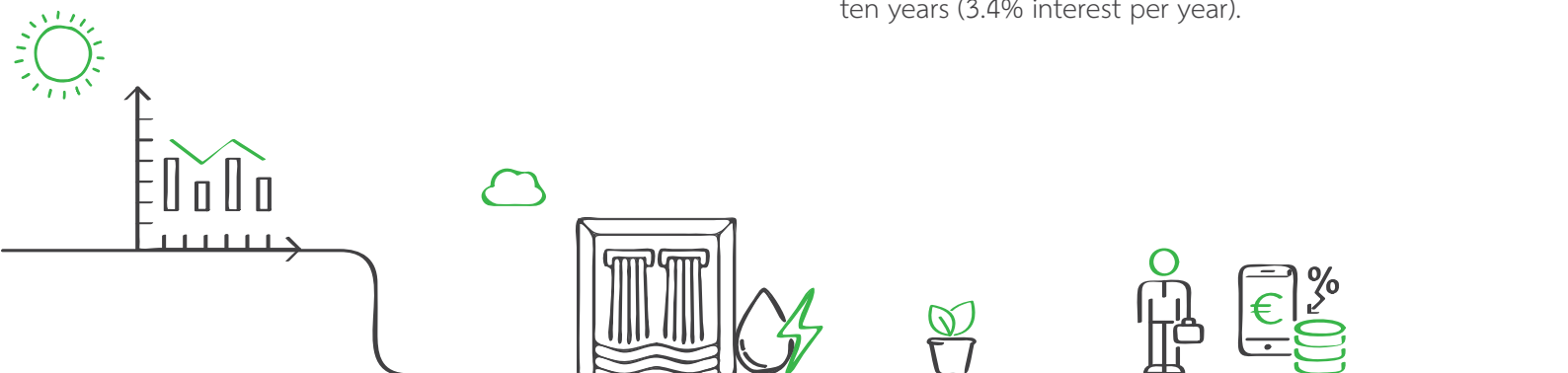
February

BCPG Indochina Co., Ltd. (BCPG Plc.'s subsidiary) invested in a hydro power plant project in Laos with a nameplate capacity of 45 MW. This was acquisition of the entire shares in Nam San 3B Power Sole Co., Ltd. (Nam San 3B) from Phongsubthavy Roads and Bridges Construction and Irrigation Sole Co., Ltd., sold for up to USD 113.2 million (about Baht 3.581 billion). It also invested up to USD 10 million (about Baht 305 million) in the construction and operation of a power transmission system and distribution stations under the Nam San 3A and 3B projects to Vietnam.



May

Bangchak issued bonds for specified buyers of the unsubordinated and unsecured type to debenture representatives for institutional investors or high-net worth investors, or both, worth Baht 8 billion. The bonds came in three tranches: two years (2.6% interest per year), seven years (3.0% interest per year), and ten years (3.4% interest per year).



June

Bangchak and Krungthai Bank Plc. developed the Bangchak Digital Payment innovation, piloting at the Sukhumvit 62 Bangchak Service Station and the Sri Nakarin Bangchak Service Station, thus becoming the first in Thailand to offer integrated fuel payment services with the QR Code through every bank's mobile application while accruing points on credit and debit cards. The outstanding amount, liters bought, and accrued points all appear on the Mobile EDC screen for customers to verify; also, station attendants have no need to walk from customers' vehicles to the payment point, an advantage of service convenience and speed, and a boost in the confidence in safety while lowering concerns about unscrupulous use of personal data and eliminating physical contacts with cash.

Bangchak set up a new wholly owned subsidiary, BBGI Utility and Power Co., Ltd. Subsidiary BBGI Plc. held Baht 50 million as registered capital in this producer and seller of bio-based energy, power, and public utilities.

Bangchak launched the S EVO Family of gasohol products, namely Gasohol 91 and 95 E20 and E85. It upgraded the E20 S EVO to premium gasoline, which sold at the same price, matching the spiraling demand for E20. It is expected to become Thailand's standard gasoline. Bangchak's S EVO Family of gasohol features the S Dual Purifier and S Turbo Modifier additives to remarkably clean injectors, giving motorists complete combustion. The end result is smooth, powerful engine running on clean energy. It is also environmentally friendly, helping to reduce carbon dioxide (CO₂) emissions.



July

Through BiiC, Bangchak launched the "Winnonie" startup as part of "The Intrapreneur" corporate innovation promotion project. The project lowers debt burdens of motorcycle taxis around Head Office and Bangchak Refinery. Studies showed that users of electric motorcycles could save around 10 times as much money as using conventional motorcycles. The startup also offers battery swapping, a first in Thailand, whereby these taxis can take their batteries in for swapping at Bangchak service stations.





Bangchak set up Win Ingredients Co., Ltd., as another subsidiary. Wholly owned by BBGI Plc. (a Bangchak subsidiary) with a registered capital of Baht 1 million, this company engages in production, sale, import, and export of all bio-based products and chemicals.

August

BSE Power Holdings (Thailand) Co., Ltd., a BCPG Plc. subsidiary, invested in solar farm projects in Thailand with a PPA capacity of 20 MW. These consisted of two 5-MW solar farm in Kanchanaburi, one in Lop Buri, and one in Prachin Buri). It was in effect 99.99% share purchase of RPV Energy Co., Ltd., from Eternity Power Plc, amounting to up to Baht 900.63 million.



October

Extraordinary General Meeting of Shareholders No. 1/2020 of BCPG Plc. approved the capital recapitalization of Baht 6,508.5 million from the former registered capital of Baht 10 billion to Baht 16,508.5 million. To this end, BCPG issued 1,301.7 million new recapitalization common shares, valued at Baht 5 per share, and allotted BCPG's new recapitalization common shares and certificates for the rights to buy BCPG's common shares to current shareholders and limited people. This recapitalization provided capital for business growth via investment, development, or acquisition of power projects, or all of these, under BCPG's investment plan, including partial repayment of loans from financial institutions resulting from previous financing of power project acquisition.

December

The Board of Directors of Bangchak approved the capital investment management approach of Bangchak Group, namely BCP Innovation Pte. Ltd., to lower its shareholding in Lithium Americas Corp. (LAC), which operated lithium mines in Argentina and the USA. The initial investment value amounted to about USD36 million, whereas the resulting value from this reduction amounted to about USD136 million. The discrepancy between the sales price and the cost of investment capital from this exercise will be directly booked as retained earnings, not through profit and loss statements. Incidentally, this exercise would not impact our rights to buy lithium under the Lithium Purchase Agreement (of up to 6,000 tons per year) from the Cauchai-Olaroz Project.



1.1.4 Awards in 2020

Management and Sustainability Awards Categories

- Superbrands 2020
- Green Brand Love Award
- Best Coffee
- First Thai refiner to achieve ISO/IEC 27001:2013 certification
- National Outstanding Operator of Occupational Safety, Health, and Environment 2020 (Gold level) for a fourth year

Environmental Awards Categories

- 3G CSR Award 2020
- Circular Economy Leadership Awards
- Royal award at Thailand Corporate Excellence Awards 2020
- An outstanding organization in environment on Thai Environment Day
- Thailand Sustainability Investment (THIS) listed companies 2020
- Sustainability Disclosure Award from Thaipat Institute



Corporate Governance Awards Categories

- ASEAN Asset Class Publicly Listed Companies
- ASEAN Top 20 Publicly Listed Companies
- Country TOP 3 Publicly Listed Companies

Innovation Awards Categories

- A Responsible Business Leadership Awards
- 3G Green Innovation Award 2020
- National Innovation Award

Other Awards Categories

- “Us” clip won first prize from a video clip contest project on “New Normal in establishments during Covid-19”
- First prize of Suriyasakiorn Award for notebook calendars
- Zero Accident Award 2020
- Asian Excellent Awards-Best Investor Relations Company (Thailand)





Royal award at Thailand Corporate Excellence Awards 2020

A royal award entitled “Thailand Corporate Excellence Awards 2020” for excellence in sustainable development, bestowed by HRH Princess Maha Chakri Sirindhorn and organized by the Thailand Management Association (TMA) in collaboration with Sasin Graduate Institute of Business Administration of Chulalongkorn University.

The award honored organizations with top scores from an opinion survey of senior executives of leading companies in Thailand.



National Innovation Award

A National Innovation Award for a major establishment with outstanding innovation at the National Innovation Award 2020 ceremony, organized by the National Innovation Agency. The award honored Thais who initiated or created work with outstanding innovation that is clearly valuable to the country. It also raised awareness and pride in Thais’ innovative potential, resulting in the image of a country of innovations.

National Outstanding Operator of Occupational Safety, Health, and Environment 2020 (Gold level) for a fourth year

The award honored operators whose labor force management systems met international standards and honors outstanding models of safety and participation in the culture of preventive safety. The ceremony was held by the Department of Labour Protection and Welfare, Ministry of Labour, at the Thailand Labour Management Excellence Award 2020.



TOP3 PLCs award from ASEAN Corporate Governance Scorecard (ACGS) 2019

- ✔ Country TOP 3 Publicly Listed Companies for the top 3 companies with the top scores in Thailand
- ✔ ASEAN Asset Class Publicly Listed Companies with a score of over 75%
- ✔ ASEAN Top 20 Publicly Listed Companies for the top 20 companies with the top scores in ASEAN.

The awards recognized Bangchak’s leadership in good governance in the region, taking into account CSR in line with national and international development goals. The ASEAN Corporate Governance Scorecard (ACGS) 2019 ceremony organized by SEC and Thai Institute of Directors (IOD) in conjunction with the ASEAN Capital Markets Forum (ACMF) and the Asian Development Bank.



A Responsible Business Leadership award and Circular Economy Leadership Awards from The award ceremony took place for the Asia Responsible Enterprise Awards 2020 (AREA 2020), staged by Enterprise Asia

- A Responsible Business Leadership award The President & CEO received a Responsible Business Leadership award as one of the first two Thai recipients. For outstanding work on application of green energy innovation that transformed Bangchak into a leading business group of energy innovation for sustainable future. The company consists of five main business units and BiiC, in line with global changes while still adhering to CSR in parallel with business operation.
- Circular Economy Leadership Awards Rak Pan Suk Project won Circular Economy Leadership, reinforcing Bangchak’s leadership push of the BCG Economy Model. Bangchak’s “Rak Pan Suk” Project lowered waste from sources by collecting used PET water bottles from customers and consumers at Bangchak service stations, recycling them into fiber, and then processing them into beneficial material such as donation of over 12,000 produced caps to cleaning personnel of roads and parks in all 50 districts of Bangkok Metropolitan Administration and, in Pattaya, to volunteers working on marine debris. The company also produced and gave away aprons and caps to the disabled working at 60+Plus Bakery & Chocolate Café under the auspices of Asia-Pacific Development Center on Disability (APCD).

Superbrands 2020

A Superbrands 2020 award. This is a testament to consumers’ confidence and trust, as well as branding excellence achieved in Thailand. Not only that such accolades are highest achievements, but they are also warmly recognized among consumers and branding, marketing, and PR specialists, as well as Superbrands’ independent judges.



Thailand Sustainability Investment (THIS) listed companies 2020

A commemorative plaque as one of the 124 listed companies honored as Thailand Sustainability Investment (THSI) listed companies 2020 at the “SET Awards 2020” ceremony and a plaque for THSI listed companies, organized by SET in collaboration with the Money & Banking Magazine.

The award recognized Bangchak as an inspiring role model for its sustainable business performance, applying environmental, social, and governance (ESG) measures to work processes, with comprehensive integration of management of emerging risks, responsibility for stakeholders, CSR, business continuity management (BCM) to ensure business continuity during crises, innovation development and use of environment-friendly resources in response to the needs of consumers, efficient use of resources with cost management as well as continual processes to take care of employees and develop their potential.

3G CSR Award 2020 and 3G Green Innovation Award 2020 at the 5th Global Good Governance (3G) Awards 2020

These awards at the 5th Global Good Governance (3G) Awards 2020, organized by Cambridge IFA (International Financial Advisory), which go to organizations committed to governance and sustainability in accordance with the goals of their strategies and with a green strategy in line with the UN Sustainable Development Goals (SDGs) as follows:

- ✔ The 3G Best CSR Award for a third consecutive year for outstanding CSR activities
- ✔ The 3G Innovation Award for the first year for excellence in environment-friendly innovation and establishing BiiC Institute to drive innovation in green energy and bio-businesses based on the BCG Model (Bio Economy, Circular Economy, Green Economy) as well as Social projects were initiated such as donation of PET bottles, T77 Project, Green Community Energy Management System (GEMS), establishment of SynBio Academy, new bio-glass cover without straw, utensils made of biodegradable plastics, and a project to use glass for nursery of seedlings.



Zero Accident Campaign 2020 and Zero Accident Award

A plaque and a commemorative certificate under a campaign project of zero accident at work in 2020 with accumulated safe hours at 1-3 million hours. The Zero Accident Award is bestowed on entities committed to preventing accidents at work, based on the concept that work accidents can be prevented by reducing statistics on occupational hazards and the absence of lost-time injury.



First Thai refiner to achieve ISO/IEC 27001:2013 certification

The Information Security Management System (ISO/IEC 27001:2013) Certificate for its system of refinery control. It became the first refiner in Thailand to win such award under the certification of SGS (Thailand) Co., Ltd.



An outstanding organization in environment on Thai Environment Day

An environmental award as an organization with outstanding environmental performance, conducting business in parallel with CSR with helpful activities and projects, awareness of safety, a focus on innovation that adds value to natural resources, development of society and preservation of the environment, leading to security and sustainability under the BCG Economy Model. The event was staged by the Department of Environmental Quality Promotion.



Best Coffee

Inthanin coffee was named Best Coffee as the most popular coffee shop of the year from GET Awards 2019 for best restaurants on the first anniversary of GET Application Thailand.

Sustainability Disclosure Award from Thaipat Institute

Bangchak won a Sustainability Disclosure Award 2020, organized by Thaipat Institute. The award recognized the need to promote and inspire organizations that publicize sustainable information, covering economic, social, environmental aspects (ESG measures). Apart from financial information, the disclosure is typically in the form of a sustainability report, beneficial to the company’s stakeholders and long-term sustainable organization development. The award also honored business organizations that address the SDGs under Goal 12.6.

First prize of Suriyasasitorn Award for notebook calendars

The first-prize Suriyasasitorn Award from over 200 entries of notebook calendars (current social and environmental encouragement category) at the award ceremony of the 40th Suriyasasitorn Award 2020, presided over the ceremony, organized by the Public Relations Society of Thailand at the Government Public Relations Department.

The award-winning notebook calendar under the “35 years, 35 good deeds of Bangchak” series was made from recycled material. The cover featured plastic fiber from recycled water bottles from the Rak Pan Suk Project, whereas the recycled Green Offset paper was eyesight-friendly, environment-friendly, and enhancing good health.

Bangchak won Best Investor Relations Company (Thailand) awards from 10th Asian Excellence Award 2020 for the ninth consecutive year based on surveys from readers and analysts provided by the Corporate Governance Asia magazine. These awarded to the company that maintains the highest standards in disclosing information with transparency and equality, effectively communicate with all stakeholders both in terms of operations and quality financial information to strengthen investors confidence and understanding of the company’s business activities.

Green Brand Love Award

The Green Brand Love Award this year honored brands that garner the confidence of about 1,300 consumers nationwide. Each recipient must conduct business that values society and the environment with optimal use of resources under the Circular Economy, and with adherence to economic, social, and environmental balances, leading to growth under sustainable development goals. The ceremony took place at a CMMU Marketing Seminar under the “Voice of Green: For Earth, for Us” theme.



“Us” clip won first prize from a video clip contest project on “New Normal in establishments during Covid-19”

A first-prize plaque along with Baht 12,000 from a video clip contest on the New Normal in establishments, industrial, business, tourism, and hotel sectors during Covid-19. Bangchak’s clip entitled “Us” won first prize for large establishments. It reflected the company’s adaptation during the spread of Covid-19, attention to its personnel’s health care, promotion of its role model with adaptation under the New Normal with a policy focus on attention, knowledge transfer, care for all those related to the company, including all stakeholders. The event was held by the Ministry of Public Health in collaboration with the Board of Trade of Thailand and the Federation of Thai Industries.



1.1.5 Fund spending objectives

Spending from the sale offer of BCP19PA in 2019

Spending	Approx. amount spent (Baht million)	Approx. spending period	Details / update of spending / reasons and measures for not spending under the objectives
1. Loan repayment from debt instrument issuance	3,000	By August 2020	To repay Bangchak Plc's bonds No. 1/2018, tranche 1, due for maturity in 2020 (BCP208A), with 2.13% interest rate, due for maturity on August 10, 2020
2. Loan repayment	400	By 2020	To repay loans to other financial institutions that have no relationship with the bond issuers as financial advisers or bond distribution managers, in the best interests of the bond issuers
3. Working capital in businesses and for business investment	2,600 - 6,600	By 2020	Spent as working capital as envisaged

Spending from the sale offer of BCP225PA, BCP275A, and BCP305A in 2020

Spending	Approx. amount spent (Baht million)	Approx. spending period	Details / update of spending / reasons and measures for not spending under the objectives
Investment, general working capital, or loan repayment, or all of these	8,000	By May 8, 2021	<ul style="list-style-type: none"> - To repay Bangchak Plc's bonds No. 1/2014, tranche 3, due for maturity in 2021 (BCP214A), with 4.81% interest rate, due for maturity on April 11, 2021, for a ceiling of Baht 2.5 billion - Spent as working capital

Note: that the terms of reference for the enforced rights and laws are to be enforced and interpreted by Thai law.

1.2 Business Description

Bangchak Corporation Public Company Limited is a Thai energy company that operates in tandem with socio-environmental responsibility. Its core business is petroleum refining to produce high-standard products from domestic and 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.



Refining and Oil trading Business Group
Capacity of 120,000 barrels per day



Marketing Business Group
More than 1,200 service stations



Green Power Business



Bio Base Products Business Unit



Natural Resources Business



Refining and Oil 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 enhance its production capability, Bangchak launched assorted projects to raise outputs and improved operation for optimal benefits amid the volatility of oil prices and doldrums of the world economy and Covid-19 outbreak. To this end, below are Bangchak's management actions.

- ✔ Instituted management by stressing caliber improvement and business opportunity development, cost reduction and expense-saving, ranging from crude oil supply sourcing, production processes, oil tanks, oil intake/offtake pipes, to oil vessels, for efficient refining. In 2020 the average daily production was 96.8 KBD. Due to the Covid-19 pandemic, the oil demand plummeted.
- ✔ Planned crude oil procurement and purchase for suitable GRMs, leveraging roll-month derivatives to lower costs, thus resulting in the year's average GRM of USD 3.16 per barrel.
- ✔ Carried out projects including the Continuous Catalyst Regeneration Unit (CCR), Debottleneck Hydrocracker Unit (HCU), and reliability improvement of the cogeneration power plant to raise the refining capacity and improve related processes for greater flexibility in line with market needs, achieve cost-saving for fuels, and achieve power security for refining processes.
- ✔ Continued to develop international oil trading through BCP Trading Pte. Ltd. (BCPT), focusing on the strategic expansion of out-out trading (procuring oil from oversea producers for sale to customers in foreign countries), whose main products are crude oil, gasoline, diesel, fuel oil, naphtha and solvent products. BCPT's markets expanded to new partner companies, including those in Taiwan, the Philippines, and Pakistan. Besides, it managed to operate business for new products in the market, including MTBE, and generated more income from the quality development of fuel oil with low sulfur (IMO bunker) and from logistics management and freight trading. With good relationship with business partners and a favorable market situation, sales increased.





Marketing Business Group

In 2020, some 73% of refined products were sold to customers directly through Bangchak's service stations networks. There are 1,233 Bangchak service stations in Thailand: 619 standard service stations and 614 agriculture cooperative service stations (as of December 2020). Most of the new service stations launched this year are spacious with a modern image, designed with a unique identity and complete with non-oil businesses and assorted service to constantly grow Bangchak's market share and maintain it at No. 2 nationwide. Sales also went to industrial and transport users, airlines, marine vessels, construction and agricultural sectors. Bangchak service stations focus on green, renewable fuels with high performance, embracing the gasohol and diesel groups. The stations also meet customers' needs with non-oil businesses and auxiliary services to attract more service station clients, including convenient stores, coffee shops, and centers for lubricant replacement and car wash.

In 2020, Bangchak developed new gasohols of the S EVO Family representing the top premium formula, especially E20S EVO Euro5, and sold them at the same prices as normal to offer the best to Thais during the Covid-19 pandemic, when people spend most carefully. The product is formulated for new-generation engines of the GDI (Gasoline Direct Injection) system and PFI (Port Fuel injection) system for full performance. Quality enhancement additives are also blended in the formula for better spark plug cleaning and engine protection.

Bangchak's subsidiary named Bangchak Retail Co., Ltd. (BCR) runs the coffee business under the "Inthanin Coffee" brand, with 673 shops (as of December 2020) located in Bangchak service stations and outside areas such as shopping malls, office buildings, government offices, hospitals, leading academic institutions, and electric train stations also the branches in Laos and Cambodia. In 2020, the COVID-19 impact forced the company to adjust itself to provide several channels for sales activities, including online sale, and increased kiosk outlets to better support online sale, which improved the sales volume continuously. In the future Inthanin plans to continually operate in the service stations where new branches are built and in leading business locations.

In addition, Bangchak service stations offer consumer goods through more than 191 convenience stores, namely Bai Chak Mart, Lemon Green, Big C mini, Family Mart and Top Daily. Services at the station include vehicle service and maintenance, including lubricant change and car washing, through FURiO Care, Wash Pro, Green Serve, Green Wash, and Tyre Care shops.





Launched in 1990 under a project called “Oil for Rice, Bangchak community service stations have moved into the 30th year of business with community entities. Bangchak’s policy envisages development for sustainability by raising these stations’ quality standards as well as service standards on a par with other standards so that these stations may drive a sustainable community economy. In 2020 Bangchak proceeded with assorted projects in support of community service stations, including the COOP Bonding, in support of service station improvement and adding to the diversity of products for sale to high-potential cooperative groups, and a project to drive sales volumes under the vision to develop business in a participatory, sustainable way.

Bangchak considers changes in society and the lifestyles of modern Thais. It therefore develops service stations under the concept of “Evolving Greenovative Experience” employing 4R processes (Renewable, Recycle, Reuse and Reduce). For example, it installed solar rooftops for electricity generation and installed EV chargers at service stations, used energy-saving materials in the construction of new service stations, and increased green and shady space in the stations. For the Inthanin Coffee business, it operates under the concept of “Inthanin, Natural Cups”, and carefully selects 100% Arabica coffee beans that are custom roasted. With environmental responsibility, Inthanin is also widely recognized as a leader in biopackaging that is 100% biodegradable to lower plastic waste from its operation.

Apart from fuel products, Bangchak produces and sells lubricants and specialty products like transmission fluids, brake fluids, grease, and others under the BCP Lubricants brand. Also, there are premium lubricants under the FURiO brand that saves on fuels, prevents engine wear, and protects engines. Bangchak sold to domestic markets via its service stations, outlets, industrial works, original equipment manufacturer (OEM) markets, as well as exported.





Green Power Business

Today Bangchak invests in the green power business via BCPG Public Company Limited (BCPG), a subsidiary formed to engage in the generation and distribution of power from renewables and new forms of clean energy in Thailand and abroad. As of year-end 2020, BCPG commanded 472 MW in total commercial capacity, made up of the following projects:

- ❑ Solar farms in Thailand, with 162.5 MW in commercial operation (including solar rooftops) In the past year, Bangchak invested in solar farm projects already in operation in Kanchanaburi, Lop Buri, and Prachin Buri, with a capacity of 20.0 MW in total.
- ❑ Solar farms in Japan, with 14.7 MW in commercial operation
- ❑ Wind power facilities in the Philippines, with 14.4 MW of equity capacity
- ❑ Geothermal power plants in Indonesia, with 157.5 MW of equity capacity
- ❑ The Lom Ligor Wind Power Project in Nakhon Si Thammarat with 8.97 MW in commercial operation

- ❑ In February 2020, BCPG expanded its renewable energy business through its investment in hydro power plants in Laos (Nam San 3B) with a capacity of 45 MW. The total capacity of Nam San 3A and 3B is 114 MW.





Bio Based Products Business Unit

Bangchak engages in bio-based product business, including ethanol and biodiesel, as it recognizes the value of renewable energy. The goal is to lower trade deficits due to fuel imports, contribute to national energy security, support farmers, and preserve the environment. It has long advocated the blending of ethanol with gasoline and biodiesel with diesel to yield gasohol 91, gasohol 95, gasohol E20, gasohol E85, and Hi-Diesel.

In late 2017 Bangchak produced merger acquisition between BBP Holding Co., Ltd. (a subsidiary) and KSL GI Co., Ltd. (a subsidiary of Khon Kaen Sugar Industry Plc.), resulting in BBGI Co., Ltd., which in turn registered transformation into BBGI Plc. in April 2018, in which Bangchak held 60% shares. BBGI engages in the production and sale of biofuels as Thailand's largest player. Its subsidiaries and associates command a total capacity of 2 million liters/day (1 million liters/day each for ethanol and biodiesel). Three BBGI subsidiaries and one associated company consist of:

- **Bangchak Biofuel Co., Ltd. (BBF):** Located in Amphoe Bang Pa-in, Phra Nakhon Si Ayutthaya, BBF engages in biodiesel production, mainly from crude palm oil with an installed capacity of 1 million liters/day, with raw glycerin as a byproduct. A project is being implemented on quality improvement for new-standard biodiesel, defined by the Department of Energy Business, for the production of B7, B10, and B20 biodiesel. A construction project has begun for the pure glycerin plant with a capacity of 80 tons/day to grow the values of BBF's products; commercial operation began in Q4/2020.
- **Bangchak Bioethanol (Chachoengsao) Co., Ltd. (BBE):** Located in Amphoe Phanom Sarakham, Chachoengsao, produces ethanol mainly from cassava, molasses, and sugar, with a capacity of 150,000 liters per day.
- **KSL Green Innovation Plc. (KGI):** Producing and selling ethanol derived from molasses as the key raw material, KGI commands a capacity of 450,000 liters/day. The Nam Phong plant, located in Amphoe Nam Phong, Khon Kaen, commands a capacity of 150,000 liters/day (around 49.5 million liters/year), which is currently being expanded by 200,000 liters/day. The other plant, located in Amphoe Bo Phloi, Kanchanaburi, holds a capacity of 300,000 liters/day (99 million liters/year). In 2019, KGI's capacity totaled 148.5 million liters/year.
- **Ubon Bio Ethanol Plc. (UBE):** Located in Amphoe Na Yia, Ubon Ratchathani, UBE engages in ethanol production with a capacity of 400,000 liters per day from fresh cassava, cassava chips, and molasses. UBE also produces tapioca starch with a capacity of 700 tons per day, while generating power from the effluents of ethanol and tapioca starch processes.



Natural Resources Business

- **Exploration and Production Business** Bangchak formed BCPR Pte. Ltd., in Singapore to invest in OKEA ASA, which holds rights in the Draugen, Gjøa, Ivar Aasen, Yme, and Grevling oil fields together with exploration rights in several other fields in Norway. The current capacity is 20 KBDO E (thousand barrels per day of oil equivalent). OKEA's investment goal is to grow the output capacity in fields of high potential. OKEA has invested in Calypso and Aurora fields, located near Draugen and Gjøa fields. Synergy resulted in cost reduction in the development phase, with the operator aiming to put them on production in the future.



- **Natural Resource Business and Business Development** Bangchak also formed BCP Innovation Pte. Ltd. in Singapore to engage in businesses related to innovation abroad. At present, the company has decreased its shareholding in Lithium Americas Corp., which operates two lithium mines in Argentina and the USA. The shareholding decrease does not affect the right to purchase lithium under the Lithium Purchase Agreement, with up to 6,000 tons per year in purchase from the Cauchari-Olaroz project.





Research and Development (R&D) and Innovation Business

Bangchak established Bangchak Initiative and Innovation Center (BiiC) to establish a Green Ecosystem to drive innovation by focusing on green energy and bio-based products to extend businesses both domestic and abroad from Research and Development (R&D), with technological and network management, and incubation of startup businesses in support of the Thailand 4.0 economy. The ultimate goal is Bangchak as a Leading Asian Greenovation Group. In 2020, Bangchak launched the “Winnonie” startup business, introducing innovative green energy electric motorcycles and renting them to motorcycle taxis on queue at Head Office as well as Bangchak Refinery, complete with battery swapping service for the first time in Thailand, further emphasizing the leadership in green energy innovator.

In the past year, Bangchak’s R&D group established a laboratory for microalgae cultivation and a prototype plant for high-value products from microalgae. In addition, it has ongoing technical cooperation and co-development projects with various research institutes and universities such as the National Nanotechnology Center (NANOTEC), Thailand Institute of Scientific Technological Research (TISTR), the Enhancement Board of Science, Research, and Innovation (TSRI), Chulalongkorn University, Asian Institute of Technology (AIT) and King Mongkut University of Technology Thonburi.

Technology and Innovation R&D Expenditure

Year	Action	Amount (Baht)
2018	Production of astaxanthin from algae and selection of algae species for wastewater treatment in bioethanol plants	5,400,000
2019	Production of astaxanthin from algae, bioplastics, bio-based oil, and wastewater treatment	9,200,000
2020	The construction of a microalgae laboratory, a biorefinery, and the pilot plant for astaxanthin	10,000,000
	Bioplastic prototype production, plant-based alternative protein products development, and gas station wastewater treatment	5,450,000

Remark: In 2020, Bangchak received Baht 2.8 million in tax privileges from NSTDA and Baht 2.3 million in research fellowship from the Thailand Research Fund.

In 2021, Bangchak received Baht 1 million in tax privileges from NSTDA.



1.2.1 Revenue Structure

Operated by	%share holding	2020		2019		2018	
		Revenue (million baht)	%	Revenue (million baht)	%	Revenue (million baht)	%
Revenue from Oil refining and related businesses ^{1/}							
Bangchak Corporation Plc.	-	84,336	61.2	118,261	61.5	132,764	68.4
Bangchak Green Net Co., Ltd.	49.00	24,470	17.8	34,300	17.8	35,530	18.3
Bangchak Retail Co., Ltd.	100.00	775	0.6	902	0.5	676	0.3
BCP Trading Pte. Ltd.	100.00	19,936	14.5	31,277	16.3	14,965	7.7
Nido Petroleum Pty. Ltd.	100.00	-	-	9	-	963	0.5
Total		129,517	94.0	184,749	96.1	184,898	95.2
Revenue from Power production							
BCPG Group	60.36	4,223	3.1	3,427	1.8	3,320	1.7
Total		4,223	3.1	3,427	1.8	3,320	1.7
Revenue from Bio-Based Products							
BBGI Group	60.00	2,710	2.0	2,313	1.2	3,807	2.0
Total		2,710	2.0	2,313	1.2	3,807	2.0
Total revenue from sales and services		136,450	99.1	190,489	99.1	192,025	98.9
Other ^{2/}	Bangchak and subsidiaries	1,281	0.9	1,674	0.9	2,146	1.1
Total		137,731	100.0	192,163	100.0	194,171	100.0

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

^{1/} Revenue from domestic fuel sales in 2020, 2019, and 2018 accounted for 81.4%, 91.4%, and 90.5% respectively.

^{2/} Other revenues, excluding revenue from sales and services: Revenue from investment, gains from derivative, gains from foreign exchange.

1.2.2 Product Data

Products and Services

Bangchak sells four product groups, namely:

1) Fuels: comprising of

1.1) LPG

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

1.2) Gasoline

Gasoline is classified by the octane number indicating anti-knock properties. Gasoline has the MTBE (Methyl Tertiary Butyl Ether) additive that raises the octane number, whereas gasohol employs ethanol for the same purpose. Gasohol consumption benefits the public in various ways, including air pollution reduction, foreign exchange saving from importing MTBE, cushioning of impacts of high oil prices, improvement of agricultural produce prices, which implies investment decentralization and rural employment. Today Bangchak has developed gasohol formulas that fit GDIs (Gasoline Direct Injection Engine) and PFIs (Port Fuel Injection), known as “Bangchak S EVO Family”.

1.3) High-speed diesel

This fuel suits high-speed diesel engines of the EURO4 standard of the Department of Energy Business for automobiles, trucks, fishing vessels, passenger boats, and tractors, among others. Bangchak has improved diesel formulas known as “Hi Diesel S”, “Hi Premium Diesel S B7”, “Hi Diesel S B7”, and “Hi Diesel S B20” as premium-grade diesel with special additives to raise combustion efficiency, add engine power, lower combustion pollution, and preserve the environment. Besides, Hi Premium Diesel S B7 contains low sulfur meeting the EURO5 standard, so it suits new European car models.

ไฮพรีเมียม ดีเซล S^{B7}

ไฮดีเซล B20

ไฮดีเซล

ไฮดีเซล B7

แก๊สโซฮอล์ E85

แก๊สโซฮอล์ E20

แก๊สโซฮอล์ 91

แก๊สโซฮอล์ 95

**แรงสุดพลังสะอาด
รู้สึกได้ตั้งแต่ครั้งแรก**

อีกขั้นของเทคโนโลยี Green S Revolution

- สะอาดขึ้น ด้วย S Dual Purifier ที่ช่วยลดของพิษในเครื่องยนต์-อากาศ มาใหม่ในรุ่นนี้ มีอิสระกับสิ่งแวดล้อม
- แรงสุดพลัง ด้วย S Turbo Modifier เครื่องยนต์ขึ้นรอบเร็วขึ้น ลดการสั่นไหวที่แรงจากท่อ
- ง่ายแก่ของไทยที่รองรับเครื่องยนต์ GDI

GREEN S REVOLUTION

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

2.1) Auto lubes

Bangchak sells “BCP Lubricants”, which include the GE SERIES for gasoline engines, D3 SERIES for diesel engines, lubes for motorcycles, transmission fluids, and brake fluids.

It also sells premium lubricants of the “FURiO” brand with Respoplex Technology, which contributes to molecules that coat engine parts, marked by power, anti-wear properties for heavy-duty engines, thus protecting engines under all conditions.



2.2) Industrial lubricants

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

2.3) Grease

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

Bangchak lubricants meet API standards, European standards, and standards set by major car manufacturers. In 2008, Bangchak was awarded ISO 9001: 2008 from The United Kingdom Accreditation Service (UKAS) and Thailand's National Accreditation Council (NAC) for its integrated lubricant business (ranging from procurement, product development, and marketing), and ISO/TS 16949: 2009 International Automotive Task Force (IATF) for its product development and for being the first in Thailand entrusted for producing lubricants for the automotive industry. In 2016, Bangchak successfully achieved ISO 9001:2015, and in 2017, its product was met new standard IATF16949:2016 International Automotive Task Force (IATF) with additional regard for stakeholders, including suppliers, communities, and consumers, with impacts on its processes for standard quality.

3) **Feedstock for refineries and petrochemical plants:** comprising of

3.1) **Straight Run Fuel oil (Long Residue)** This is an intermediate raw material for feeding the refining process with a cracking unit.

3.2) **Unconverted Oil** means heavy oil whose molecules are not cracked at HCU, thus high-quality fuel oil with low sulfur and nitrogen contents. UCO is a raw material for basic lube oil production.

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

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

4) **By-product:** comprising of

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

4.2) **Solvents** are hydrocarbon compounds derived from Bangchak's processes through a variety of processes as needed by the market. Bangchak began solvent production by the BCP White Spirit 3040 market name, with applications as a blending agent in oil-based paints and other paints, lacquer, and varnish, in cleaning greasy patches, in cleaning machinery and metallic parts, and in lowering asphalt viscosity.

1.2.3 Marketing and Competition

o 2020 Global Economic Overview

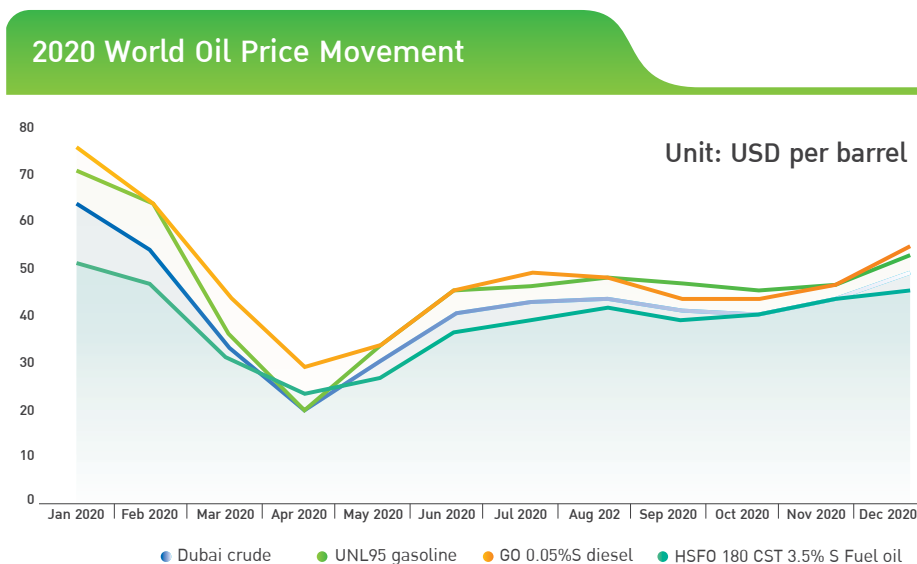
The COVID-19 pandemic has forced all the countries worldwide to lock down or ban travel in order to control and limit the epidemic of this fatal coronavirus, leading to widespread economic contraction and job loss as well as unemployment in both advanced and developing economies. The ongoing trade war between the U.S. and China exerted tremendously more pressure on international trade and private investments. The 2020 world economy contracted 4.4% from the 2.8% growth in 2019 projected by the International Monetary Fund (IMF). Central banks of industrialized nations and regional financial institutions led by the U.S. Federal Reserve Board (FED), the European Central Bank (ECB) and the Central Bank of Japan (BOJ) subsequently retained the dovish measures including an expansionary monetary policy driving the interest rate down to 0-0.25%, and likely to remain low. The IMF, however, predicted the world economy would recover in 2021 with an average growth at 5.2% driven by the discovery and dissemination of COVID-19 vaccines, economic stimulation programs and relaxing monetary policies launched by countries worldwide, as well as the expected easing tension of the U.S.-China trade war. Nevertheless, close monitoring of the COVID-19 epidemic recurrence is mandatory as the new wave could literally reactivate the lockdown, creating severe widespread private and fiscal debts, and prevalent geopolitical dilemma.

The Asia-Pacific economy in 2020, assessed by the World Bank, was projected to slow down at 0.9%, with growth affected by the COVID-19 epidemic due to the lockdowns and other controlling measures crashing the tourism, the main income industry in many countries. Natural disasters like cyclone and drought in some countries worsened the falling economy into contraction. The People's Republic of China and the Socialist Republic of Vietnam, however, are exceptional, as both countries in this region that were able to limit COVID-19 and therefore accelerated the economic recovery. The Asia-Pacific regional growth is projected at 7.4%, driven by the continuously strong economic momentum led by China.

2020 Crude Oil Market Overview

The average 2020 Dubai crude price was around USD 42.27 per barrel, a drastic drop from USD 63.51 per barrel in 2019 of 33.44%. The crude oil price was under strong pressure by COVID-19, beginning from China by crashing the oil demand in China, offsetting the rising geopolitical tension in the Middle East following the US air strike in Iraq killing General Qassem Soleimani, Iranian commander of the Quds Force, and the domestic political unrest in Libya causing disruption of oil production. The oil industry crisis worsened with the price war beginning with unsuccessful production quota agreement between the OPEC and non-OPEC bloc led by Russia, in their summit in March 2020, later escalating into the retaliation from Saudi Arabia to abolish OPEC production quota but continuously increasing the daily supply of oil in the world market. The price war and oversupply bred the global oil glut. The plunging oil demand was trampled by the widespread lockdowns and travel ban measures imposed by countries worldwide, following the epidemic of COVID-19 from China to the entire world. The combined 'double shock' effect cut the global oil demand by at least 20% and sent the oil inventory through the roof. Nevertheless, the OPEC and non-OPEC, known as the OPEC+, finally reached an agreement to cut down production to stabilize the global oil supply and level up the global crude price.

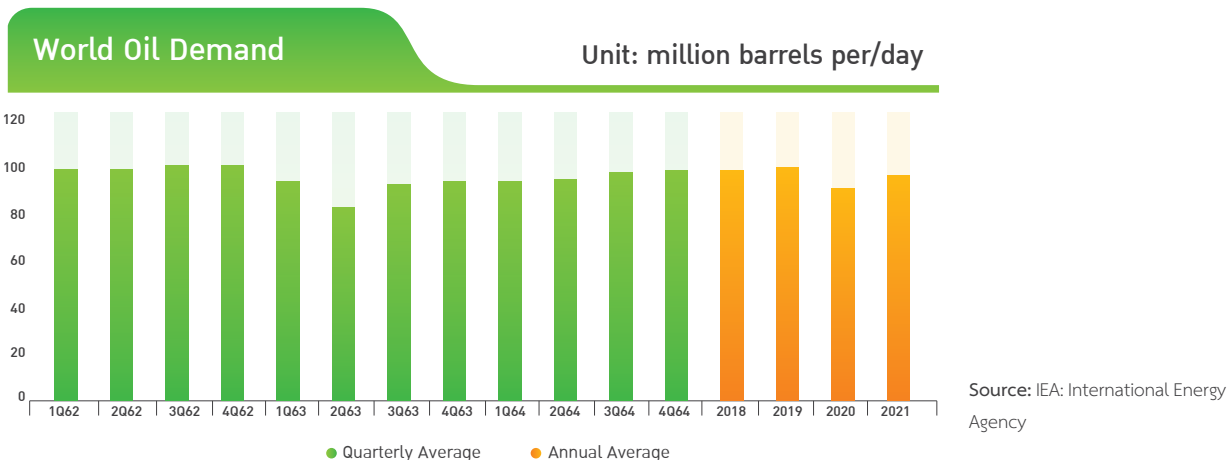
The 2020 crude oil price faced the pressure of COVID-19 and economic contraction throughout the year. Nevertheless, the world oil price climbed up in the last quarter, supported by the progress reports of successful COVID-19 vaccination testing and inoculation in various countries, thus lifting up the expectation of global economic recovery and oil demand.



Unit: USD per barrel

Item	2019		2020		YoY
	Avg	High	Low	Avg.	%
Dubai Crude Oil	63.51	69.60	13.55	42.27	-33.44%
Gasoline 95 UNL	72.58	83.34	16.12	46.70	-35.65%
Diesel GO	77.23	83.34	20.75	48.42	-37.31%
Fuel oil HSFO	58.60	57.76	16.68	39.30	-32.94%

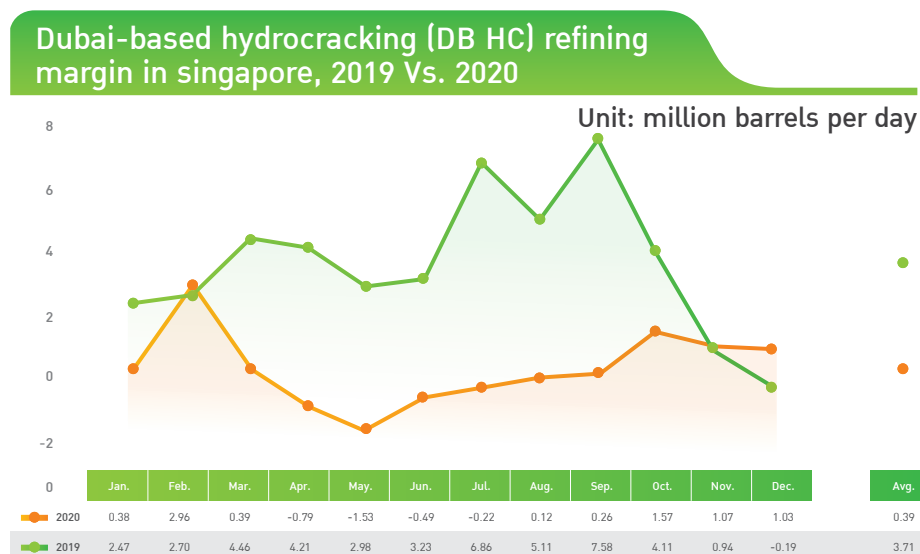
2021 Crude Oil Market Outlook



The International Energy Agency (IEA) reported a forecast of world oil demand to grow at 5.5 million barrels per day in 2021 in contrast with a contraction of 8.8 million barrels per day in 2020, even with pressure borne by the ongoing COVID-19. This demand growth projection, especially in the latter half of 2021, will be driven by economic recovery as a result of accelerated COVID-19 vaccine inoculation. The global oil supply, on the other hand, is expected to grow 1 million barrels a day, equivalent to 6.6 million barrels per day less than the 2020 supply level.

With all these forecasts of demand and supply, the 2021 Dubai crude price is projected to move within the USD 50-55 per barrel window and will still be under sluggish global demand due to uncertainty of the COVID-19 pandemic. The vaccine inoculation success, particularly in developed economies in the latter half of the year, would boost the economic activities and demand for oil. The supply is likely to also grow amid OPEC+ cooperation on production quota limits to stabilize the world oil price.

2020 Gross Refining Margin Outlook



Source: Reuters

The average 2020 GRM of hydrocracking refineries in Singapore was USD 0.39 per barrel, plummeting from USD 3.32 per barrel in 2019 due to the diving oil demand following the lockdowns and travel bans imposed by nearly all countries worldwide to control COVID-19, forcing down the gasoline-Dubai spread. The diesel-Dubai spread was also under somewhat less pressure, as the diesel demand in the European market, world's largest user, and aviation fuel

demand evaporating following cancellation of flights imposed by all airlines. The fuel oil-Dubai spread, however, was supported by the output cut measures enforced by the OPEC and the drop in fuel oil exports to Asia due to uneconomic returns, causing fuel oil arbitrage and market contraction in Asia amid higher demand for fuel oil in the Middle East and South Asia to generate higher demand for power.

Unit: USD per barrel

Price Spread	2019	2020			YoY
	Avg.	High	Low	Avg.	%
UNL95 - DB	9.07	12.23	-5.41	4.43	-51.16%
GO - DB	13.72	15.01	0.85	6.14	-55.23%
HSFO - DB	-4.91	6.52	-16.57	-2.98	-39.41%

2021 Projected Gross Refining Margin

The GRM of hydrocracking refineries in Singapore in 2021 is projected to grow from the 2020 level, following the expected higher demand for refined products and economic recovery after the COVID-19 vaccine inoculation and extrication of the pandemic in many countries. With a positive sentiment on economic recovery especially in tourism, higher demand for oil is inevitably projected.

2020 Thai Economy Overview

The 2020 Thai economy was under contraction stemming from COVID-19 and the strict preventive measures launched by the authorities in the second quarter, affecting the overall economy and increasing unemployment. From the 2.4% economic growth in 2019, the Bank of Thailand reported the Thai economy experiencing 6.6% contraction in 2020 despite several stimulus and economic measures launched by the government slowly lifting employment and economic recovery, beginning in the third quarter. Unfortunately, the new wave of COVID-19 epidemic before the year-end sapping the overall economy, particularly high-season tourism.

The 2020 general inflation rate is projected at negative 0.9%, significantly down from 0.7%, following a plunge in energy prices and downward policy interest rates from 1.25% to 1.00%, 0.75% and 0.5% announced by the Bank of Thailand under a relaxed monetary policy.

The 2021 Thai economy is projected to recover with 3.2% growth, even with a new wave of COVID-19 epidemic beginning in late 2020 over to early 2021. The negative concerns include continuous rise in household debts and stronger Thai baht currency against major trade partners affecting overseas demand for Thai goods. The positive factors are the launches of COVID-19 vaccine inoculation in many countries worldwide and the domestic inoculation plan in the first quarter, creating a sentiment of tourism revival and budgetary disbursement according to the state economic rehabilitation plan. Additional investments from state enterprises and private entities under the public-private partnership (PPP) scheme, particularly in the Eastern Economic Corridor (EEC) Development Plan, will be more pronounced. The general inflation is projected to rise to 1.0% in 2021 in line with the expected rising crude price.

Thailand's Economic Projection

% y-o-y	2019	2020*	2021*
Economic growth	2.4	-6.6	3.2
General inflation	0.7	-0.9	1.0

Source: Office of the National Economic and Social Development Council and Bank of Thailand

* Estimated data

Oil Industry Competition in Thailand

The domestic demand for fuels in 2020 (January-December) plummeted 15.30 million liters from the previous year to 109.70 million liters per day, a drop of 12.59% due to COVID-19, lockdowns and various preventive measures hurting demand for fuels in the first and second quarters. The demand for gasohol and diesel in 2020 continued to drop since 2019 by 0.96% and 2.93%, respectively. The demand for aviation jet fuel was greatly affected and severely dropped by 61.73%.

Domestic Demand for Refined Products

Product	Demand (Million liters/day)		
	2019	2020	Growth
Gasoline Group	32.30	31.99	-0.96%
Regular Gasoline	1.06	1.07	+0.68%
Gasohol	31.24	30.92	-1.02%
Diesel Group	67.40	65.43	-2.93%
Jet fuel	19.60	7.50	-61.73%
Fuel Oil	5.93	4.78	-11.20%
Total	124.69	109.70	-12.02%

Source: Department of Energy Business

The 2020 average January-December crude run capacity was 1,001 thousand barrels per day (KBD), falling by 2.32% from the average crude run capacity in 2019 due to COVID-19. This total supply was from six domestic refineries, including Thai Oil Refinery, IRPC Refinery, PTT Global Chemical Refinery, Esso Refinery, Star Petroleum Refinery, and Bangchak Refinery.

Average Crude Run by Domestic Refineries

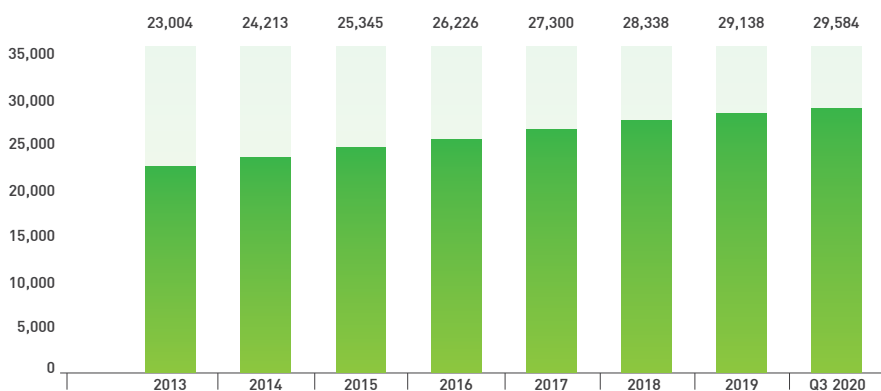
Refineries	Crude run (thousand barrels per day, KBD)		
	2019	2020	Growth
Thai Oil	286	269	-5.98%
IRPC	205	194	-5.19%
Esso	113	117	3.50%
Star Petroleum	150	158	5.43%
PTT Global Chemical	159	166	4.32%
Bangchak	112	97	-13.49%
Total	1,025	1,001	-2.32%

Source: Department of Energy Business
As of January – December 2020

Faced with the COVID-19 pandemic, certain dealers decided to halt and postpone their business expansion plans. As of September 30, 2020, the number of service stations under Article 11 edged up by 446, and those under Article 7 by 390, bringing the total number of nationwide service stations to 29,584, 1.5% up from 2019. Because of limited storage space and nozzles at each service station, dealers had to adjust their sales portfolios under the new government policy adding more grades to eight, especially for gasohol E20 and gasohol E85. In 2020, 196 service stations with gasohol E20 were added, while 233 service stations with gasohol E85 were long gone. The total number of service stations with gasohol E20 and those with gasohol E85 at the 2020 year-end stood at 4,713 and 1,295.

Number of Service Stations

(unit : station)



Source: Department of Energy Business

Fierce competition in the oil industry in Thailand is likely to continue into 2021. Despite the ongoing negative impacts on tourism and domestic oil demand due to the sluggish economy and COVID-19, new dealers, more service stations, and modernization of stations with a variety of services to better respond to customers' needs (by combining oil and non-oil businesses) will consistently drive higher competition in the market.

The total average sales through nationwide service stations during January - December 2020 was 2,237 million liters per month, down by 0.5% on a day rate basis from the 2019 level of 2,233 million liters per month (Year 2020 has 1 day more than in 2019). Sales at Bangchak service stations in 2020 dropped by 2.3%, denting its total market share from 15.9% in 2019 to 15.6% in 2020, but Bangchak still ranked second in retail market leadership.

Sales volume of fuels through service stations for 2019-2020

	Average Sales volume (million liters/month)			Market share (%)		
	2020	2019	△	2020	2019	△
PTT	853.3	805.8	5.6%	38.1	36.1	+2.0
Bangchak	348.7	355.7	-2.3%	15.6	15.9	-0.3
Esso	258.9	263.7	-2.1%	11.6	11.8	-0.2
Shell	246.5	272.1	-9.7%	11.0	12.2	-1.2
Thai Oil	214.5	223.9	-4.4%	9.6	10.0	-0.4
Caltex	93.2	92.0	+1.0%	4.2	4.1	+0.1
PTTRM	87.6	99.0	-11.8%	3.9	4.4	-0.5
IRPC	54.3	43.5	+24.3%	2.4	2.0	+0.4
PTG Energy	45.6	39.9	+13.9%	2.0	1.8	+0.2
Susco Group	34.2	36.9	-8%	1.5	1.7	-0.2
Other	0.5	0.3	+63.1%	0.0	0.0	+0.0
Total	2,237.2	2,232.8	-0.1%	100.0	100.0	

Source: Department of Energy Business and Bangchak Corporation Plc.

As of December 30, 2020, the total domestic sales of lubricating products by dealers under Article 7, was 3.34 million liters per month, 14.5% higher than last year, as reported by the Department of Energy Business. This is in contrast with the contraction of 5.8% growth in sales of general lubricants affected by COVID-19.

Product distribution and distribution channels

Bangchak products are distributed through:

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

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

Station Format	Number (station)	Share (%)
1. Company Own Company Operate (COCO): Bangchak is the investor and operates the station through Bangchak Green Net Co., Ltd. Bangchak takes control of the policy and business model. COCO stations are mostly large stations located on major roads, and, under Bangchak's direct supervision, serve as prototype stations.	223	18.1%
2. Company Own Dealer Operate (CODO): Bangchak is the investor and land owner, while the station management is carried out by experienced operators, who rent the stations.	51	4.1%
3. Joint Venture (JV): This is a joint investment between Bangchak and operators interested in running the service station business.	56	4.6%
4. Dealer Own Dealer Operate (DODO): The operator is the station owner, land owner, and sole investor, as well as a distribution agent.	289	23.4%
5. Co-Operative (CO-OP): These stations are invested by the community. In most cases, the community is the land owner and investor.	614	49.8%
Total	1,233	100%

Remarks: Bangchak Corporation Plc. as of December 31, 2020

- 2) **Industrial sale** This sales channel serves industrial plants and businesses with fuel demand for heating and producing products and services, such as food, textiles, paper, chemical, iron, and metal industries. Customers deal directly with the company, and deliveries are arranged by tanker trucks, except for some factories with their own piers.
- 3) **B2B** This channel serves businesses with large purchase volumes like airlines, cargo/passenger, land and marine transport companies, as well as construction companies. These customers deal direct with the company, and deliveries are carried out by pipeline (for airlines), boat, and tanker truck.
- 4) **Sale to other oil companies** This is the sales channel among large and medium-sized oil traders who own oil depots. Purchased products are distributed through customers' own networks to end-customers. Deliveries are normally carried out by pipeline or customers' trucks.

- 5) **Sale to refineries and petrochemical plants** This is the sale of refined products in the form of feedstock to petroleum or petrochemical production process, such as Naphtha for the aromatics unit. Deliveries are normally carried out by boat.
- 6) **Export sale** Deliveries are normally carried out by marine vessel to overseas oil traders. In some case, traders in neighboring countries directly handle truck transport from Bangchak's depots in Thailand to their facilities.

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

- 1) **Outlet & End-User Customers** This group of customers are those buying Bangchak brand oil products through stations operated by the company, dealers, cooperatives or communities. Also, in this group are corporate customers like factories, construction companies, airlines, cargo and passenger boats, and government agencies and state enterprises.
- 2) **Supply Sales Customers** These customers are small and large oil traders, who order finished products from Bangchak for further distribution. Deliveries are made direct to customers' sites or outlets in their networks.
- 3) **Export Customers** These customers are overseas oil traders who buy Bangchak oil to feed their production process or distribute internationally, such as Low Sulphur Waxy Residue (LSWR) sold to customers in Singapore, Malaysia, and China to fuel power generators and feed their cracking units for producing higher-value gasoline and diesel for further distribution.

Bangchak's sales volume, categorized by type of customer

Unit: million barrels/day

Type	2020		2019		2018	
	Volume	%	Volume	%	Volume	%
1. Outlet & End-User Customer	86.7	71.3	105.4	74.9	100.2	74.2
2. Supply Sales Customers	16.2	13.3	14.9	10.6	15.0	11.1
3. Export Customer	18.7	15.4	20.5	14.6	19.9	14.7
Total	121.6	100.0	140.8	100.0	135.1	100.0

Source: Bangchak Corporation Plc.

Sales value of Bangchak's products and services

Products	2020		2019		2018	
	million baht	%	million baht	%	million baht	%
Domestic Sale						
1. High-speed diesel	64,979	54.0	86,760	51.3	89,409	50.7
2. Fuel oil	1,661	1.4	1,529	0.9	2,078	1.2
3. Gasoline	36,324	30.2	46,248	27.3	47,634	27.0
4. Other products and services	7,290	6.1	18,413	10.9	19,319	11.0
Total domestic sale	110,254	91.7	152,950	90.4	158,440	89.8
Export sale						
1. High-speed diesel	1,956	1.6	1,991	1.2	5,105	2.9
2. Fuel oil	6,999	5.8	13,126	7.8	11,376	6.4
3. Gasoline	484	0.4	510	0.3	521	0.3
4. Other products and services	541	0.4	526	0.3	937	0.5
Total export sale	9,980	8.3	16,153	9.6	17,939	10.2
Combined sales value						
1. High-speed diesel	66,935	55.67	88,751	52.5	94,514	53.6
2. Fuel oil	8,660	7.20	14,655	8.7	13,454	7.6
3. Gasoline	36,808	30.61	46,758	27.7	48,155	27.3
4. Other products and services	7,831	6.51	18,939	11.2	20,256	11.5
Total export sale	120,234	100.0	169,103	100.0	176,379	100.0
% increase/decrease	-28.90		-4.13		8.75	

Source: Bangchak Corporation Plc.

1.2.4 Supplies of products and services

1. Production capacity and production volume

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

Production capacity (measured in 'barrels per day') means the refining system, piping system, and storage system that receive crude for turning into finished products at the maximum volume per day through the quality improvement system, piping system, blending system, storage system, and product distribution system. Every 18-24 months, Bangchak shuts down the system for maintenance, which normally lasts about 30 days, to keep up or upgrade the system's performance. The shutdown schedule depends on operational and economic circumstances.

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

Bangchak's refining capacity and refining volume		Unit: thousand barrels/day		
		2020	2019	2018
Nameplate capacity				
: thousand barrels per refining day		120	120	120
: thousand barrels per calendar day (A)		113.4	113.4	113.4
Output volume (by product)				
1.	Diesel	58.11	57.10	57.47
2.	UCO	4.56	4.42	3.48
3.	Fuel oil	8.77	12.78	9.43
4.	Gasoline	19.43	20.39	22.46
5.	Solvent	0.16	-	-
6.	Aviation fuel, kerosene	3.69	15.07	13.54
7.	LPG	2.57	2.7	3.33
8.	Products for internal use and product loss during operation	-0.10	0.13	-0.32
Total output volume (B)		97.19	112.59	109.39
% increase of output volume		-13.7	2.9	-1.91
% of capacity utilization (B/A)		85.71	99.29	96.46

Source: Bangchak Corporation Plc.

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

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

^{3/} Started to produce solvent in 2020

2. Refining process

- **Fractional Distillation:** The refining process starts from breaking up crude oil into fractions in the refining unit by heating it at 370 degrees Celsius. Then, 60% - 70% of the crude will vaporize to the top of the refining column, where it finds the lowest temperature. When that vapor cools down, it condenses into a liquid and flow onto layers of trays, depending on their boiling points, as detailed below:
 1. The top layer, with the lowest temperature, is LPG.
 2. The second layer is Light Virgin Naphtha (LVN).
 3. The third layer is Heavy Virgin Naphtha (HVN) (both LVN and HVN will be blended with some additives to produce gasoline).
 4. The fourth layer is kerosene and aviation fuel.
 5. The fifth layer is diesel.
 6. The remaining liquid crude stays at the bottom of the distillation column, where the temperature is the highest. The liquid is known as the “Atmospheric Residue”.

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

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

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

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

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

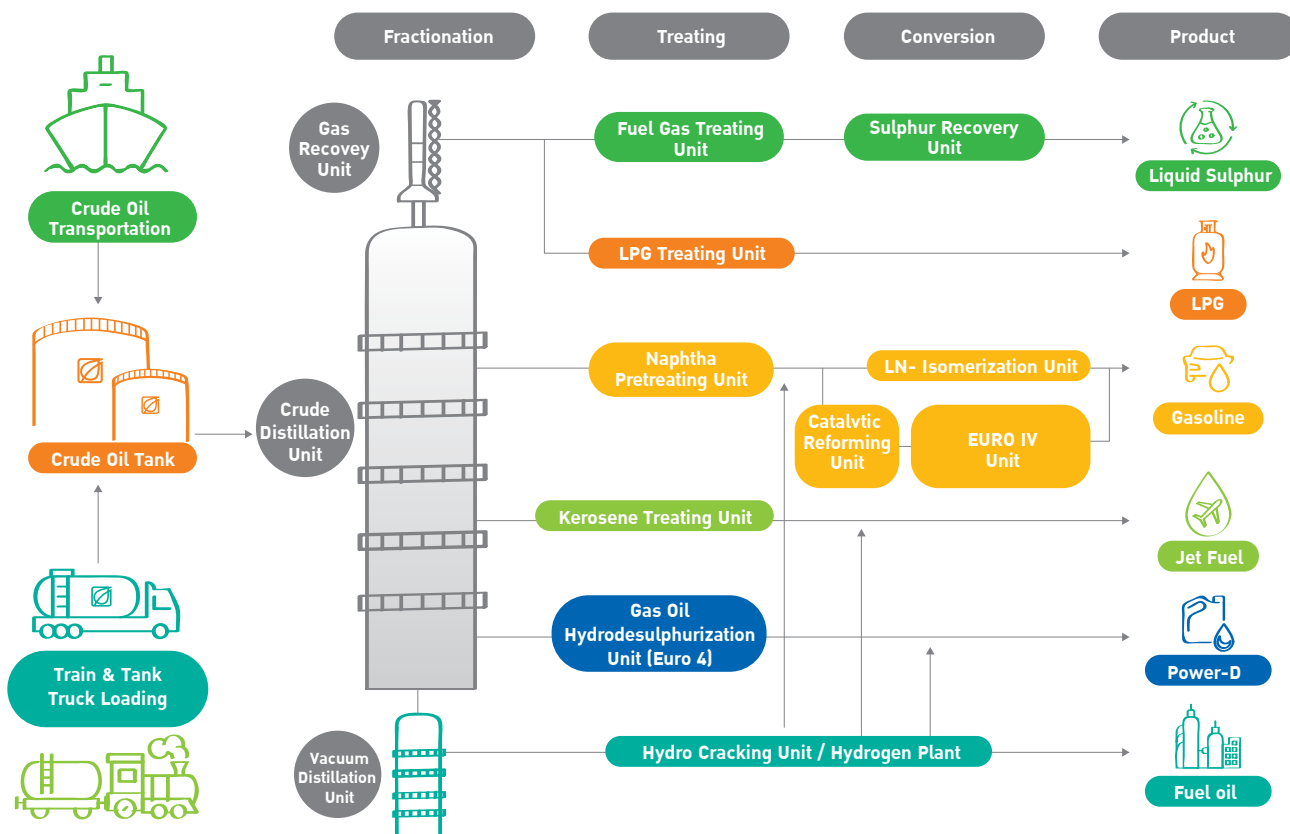
Fuel gas obtained from the process will be refined by removing the sulphur content. Treated fuel oil, diesel after sulphur content removal under the Euro 4 standard, aviation fuel, and cooking gas are kept in storage tanks for sale.

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

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

Production unit of gasoline / gasohol of Euro 4 standard This is the quality improvement for gasoline by using hydrogen, in combination with a catalyst under specified pressure, to reduce the benzene content under the Euro 4 standard. The product will be highly pure with ten times less sulphur content and 3.5 times less benzene. The product is kept in the storage tanks for sale.

BCP Complex Refinery process



3. Raw materials and suppliers

The main raw material of the refining business is ‘crude oil’, natural hydrocarbons created by compression of organic materials, that is, animals and plants, over millions of years under the earth’s surface. Thailand holds its own crude sources at various places, such as the along the seams of Phitsanulok and Kamphaeng Phet provinces, in Suphan Buri province, Sukhothai, Fang district in Chiang Mai, and in the Gulf of Thailand. However, the volume of crude oil produced indigenously is not enough to satisfy the demand posed by the seven domestic refineries. Thus, most of the crude needs to be imported. The major import sources of crude are countries in the Middle East like the UAE, Qatar, Saudi Arabia, Iran, and Dubai, as well as those in Southeast Asia, such as Malaysia, Indonesia, Brunei, the Philippines, and Australia. Crude imports from the Middle East require 15 – 20 days for transport and those from the Far East require 3-7 days. Normally, Bangchak keeps a crude stock of around 30 days in running its refinery.

Indigenous sources of crude oil		unit: thousand barrels/day				
Crude Field	2020		2019		2018	
	Volume	%	Volume	%	Volume	%
1. Sirikit	29,294	24.7	30,029	23.9	27,036	20.9
2. Tantanwan	17,698	14.9	20,718	16.5	18,790	14.5
3. Erawan	24,489	20.6	25,748	20.5	28,302	21.9
4. Nasanun/Nasanun East	489	0.4	731	0.6	1,266	1.0
5. Jasmine	10,750	9.1	10,808	8.6	11,653	9.0
6. Manora	6,016	5.1	5,342	4.2	6,397	5.0
7. Others	29,904	25.2	32,513	25.8	35,756	27.7
Total	118,640	100	125,889	100	129,200	100

Source: Energy Policy and Planning Office, Ministry of Energy

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

In 2020, Bangchak procured indigenous crude oil from many fields in domestic, totaling 8,491 thousand barrels, which mainly from Sirikit Field, Benchamas Field, Pattani Field and Sirikit (Phet) field and others.

This year, Bangchak imported crude 26,732 thousand barrels. There are 73.6% Crude from the Far East fields, such as Banyu Urib from Indonesia, Labuan, CENDOR and Bunga Kekwa from Malaysia. Also, there are 26.4% Crude from other sources, such as WTI MIDLAND from USA, Montara from Australia.

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

Bangchak's Cost of Feedstock

Crude Type	2020		2019		2018	
	Million Baht	%	Million Baht	%	Million Baht	%
Cost of indigenous feedstock						
1. Crude and semi-finished products	25,309	23.12	37,911	34.64	34,840	27.91
2. Finished products	7,321	6.69	10,174	9.30	14,931	11.96
Total	32,630	42.82	48,086	43.93	49,771	39.87
Cost of imported feedstock						
1. Crude and semi-finished products	38,899	35.54	53,876	49.22	65,355	52.35
2. Finished products	4,666	4.26	7,495	6.85	9,711	7.78
Total	43,565	57.18	61,371	56.07	75,066	60.13
Combined costs of indigenous and imported feedstock						
1. Crude and semi-finished products	64,208	84.27	91,788	83.86	100,195	80.26
2. Finished products	11,987	15.73	17,669	16.14	24,642	19.74
Total feedstock cost	76,195	100.00	109,457	100.0	124,837	100.0

Source: Bangchak Corporation Plc.

1.2.5 Review of business assets

Review of business assets

Asset	Ownership	Book value Baht million ^{1/}	Obligation
Refinery land	Long-term lease	269	None
Other properties	Ownership	2,363	None
Buildings	Ownership	186	None
Machinery & distillation tower equipment	Ownership	16,511	None
Power generators	Ownership	57	None
Sales and office equipment	Ownership	3,527	None
Platinum catalysts ^{2/}	Ownership	239	None
Vehicles	Ownership	93	None
Other assets ^{3/}	Ownership	20	None
Works in progress	Ownership	10,483	None
Total	-	33,748	-

Note: ^{1/} This year, there is Baht 94 million in allowance (reversal of) for impairment of land property, machinery, and equipment, consisting of Baht 6 million in property, Baht 61 million in machinery and distillation tower equipment, and Baht 27 million in sales and office equipment.

^{2/} "Platinum catalysts": platinum-based catalysts (found in the octane enhancement unit's reactor), the contents of which are set by their producers.

^{3/} "Other assets": oil palm plantations in Pathumthani and Nakhon Nayok province.

Trademarks

Trademark	Number of registered trademarks	Goods/services under trademark	Expiry ¹
Copyrights			
1. Bangchak leaf	11	All fuels, cold tissue paper, pure drinking water, plastic polymers, pens, pencils, notebooks, folders, asphalt, activated carbon	Aug. 30, 2029 Oct. 15, 2029 Aug. 20, 2026
2. GRENA ZENITH SJ	1	Lubricant	Nov. 5, 2026
3. ISO GREEN	1	Gasoline	Jun. 30, 2024
4. GE GOLD	7	Synthetic gasoline-engine lubricant Semi-synthetic gasoline-engine lubricant	Nov. 20, 2021 Dec. 25, 2021 Feb. 12, 2022 Jan. 13, 2023 Jan. 15, 2027
5. GE PLUS	4	Gasoline-engine lubricant	Nov. 20, 2021 Dec. 25, 2021 Jan. 13, 2023 Jan. 15, 2027

Trademarks

Trademark	Number of registered trademarks	Goods/services under trademark	Expiry ¹
6. GE SILVER	3	Semi-synthetic gasoline-engine lubricant	Dec. 25, 2021 Nov. 4, 2024 Jan. 15, 2027
7. Green Plus	1	Gasoline	Sep. 14, 2024
8. Green Plus 91	1	Gasoline	Sep. 14, 2024
9. Green Plus 95	1	Gasoline	Sep. 14, 2024
10. LOWCOST	1	All fuels	Jun. 23, 2025
11. D3 GOLD	2	Synthetic diesel-engine lubricant	Oct. 9, 2023 Jan. 15, 2027
12. D3 COMMONRAIL	1	Diesel-engine lubricant	Oct. 30, 2028
13. D3 TURBO PLUS COMMONRAIL	1	Semi-synthetic diesel-engine lubricant	Oct. 30, 2028
14. D3 Max	1	Diesel-engine lubricant	May 14, 2027
15. D3 EXTRA PLUS	1	Diesel-engine lubricant	Jan. 15, 2027
16. D3 PICK UP PLUS	1	Diesel-engine lubricant	Jan. 15, 2027
17. D3 TURBO PLUS	1	Semi-synthetic diesel-engine lubricant	Jan. 15, 2027
18. BANGCHAK POWER D	1	High-speed diesel	Jul. 10, 2028
19. SUPER POWER D B5 (EURO 4)	2	High-speed diesel	May 2, 2022
20. SUPER POWER D (EURO 4)	2	High-speed diesel	May 2, 2022
21. GE NGV	1	Semi-synthetic gasoline-engine lubricant	Dec. 25, 2021
22. GE PLATINUM	1	Synthetic gasoline-engine lubricant	Dec. 25, 2021
23. Bangchak Max Drive	1	Gasoline Fuel Conditioner	Dec. 25, 2026
24. Super HDX	1	Diesel Fuel Conditioner	Jan. 15, 2027
25. FURIO	1	Lubricant	Mar. 2, 2027
26. FURIO F2	1	Lubricant	Feb. 11, 2028
27. FURIO F2 DIESEL	1	Lubricant	Feb. 11, 2028

Service Marks

Service Logo	Number of registered logo	Goods/services under logo	Expiry ¹
Copyrights			
1. Bangchak leaf	3	Goods sales management	Dec. 20, 2028
2. Bangchak colored strips, Bangchak characters, and Bangchak leaf	1	Vehicle service station	Aug. 6, 2023
3. Colored strips and Bangchak leaf	1	Vehicle service station	Aug. 6, 2023
4. Colored strips	1	Vehicle service station	Nov. 3, 2023
5. Bangchak colored strips	1	Vehicle service station	Aug. 6, 2023
6. Hornbill photo	2	Goods sales management	Oct. 10, 2026
7. Gold food plate (black & white)	1	Sale of goods, foods, and drinks	Sep. 4, 2023
8. Gold food plate (colored)	1	Sale of goods, foods, and drinks	Sep. 4, 2023
9. GREEN AUTO SERVICE	1	Automotive maintenance & repair	Jul. 24, 2025
10. GREEN SERVE	1	Automotive maintenance & repair	Sep. 1, 2025
11. Green Wash	1	Automotive maintenance & Vehicle cleaning	Sep. 1, 2025
12. GREEN WASH AUTOCARE	2	Automotive maintenance & Vehicle cleaning	Jul. 25, 2026
13. GREEN WASH EXPRESS	1	Automotive maintenance & Vehicle cleaning	Jul. 25, 2026
14. GREEN BIKE EXPRESS	1	Automotive maintenance & Motorbike maintenance	Jul. 25, 2026
15. GREEN TYRE EXPRESS	2	Tyre sale & mending	Aug. 15, 2026
16. Baichak	1	Food & drink sale	Mar. 15, 2021
17. Baichak Mart	2	Food & fresh coffee business management, Miscellaneous goods for consumers' convenience	Jan. 18, 2022 Apr. 1, 2023
18. Bangchak colored strips, three colors leaf	1	Vehicle service station	Sep. 24, 2023
19. BUBBLY TEA	1	Food & drink sale	Jun. 4, 2024
20. HURRICANE ICE	1	Food & drink sale	Jun. 4, 2024
21. MILK AND BREAD	1	Food & drink sale	Jun. 4, 2024
22. LOW COST	1	Vehicle service station	Apr. 28, 2025
23. RESPOPLEX	1	Technology	Aug. 28, 2027

Trademarks and Service Marks advertised abroad

Trademark	Number of registered trademarks	Goods/services under trademark	Expiry
1. Bangchak leaf and Chinese characters (registered in PRC (China))	1	Gasoline, diesel, and lubricants	Dec. 27, 2020
2. Bangchak leaf and BANGCHAK LUBRICANTS - Registered in Myanmar ² - Registered in LPDR (Laos)	2	Fuel products	- Mar. 20, 2023
3. Bangchak leaf and BCP LUBRICANTS (Registered in Myanmar) ²	1	Fuel products	-
4. Bangchak leaf and BANGCHAK (Registered in Myanmar) ²	2	Fuel products, service stations	-
5. Bangchak leaf and characters (Registered in LPDR (Laos))	2	Fuel products, service stations	Mar. 20, 2023
6. Bangchak leaf and BCP LUBRICANTS (Registered in Vietnam)	1	Fuel products	Jul. 13, 2022
7. Bangchak leaf and BCP LUBRICANTS (Registered in Cambodia)	1	Fuel products	Jul. 5, 2022
8. Bangchak leaf and BCP LUBRICANTS (Registered in Lebanon)	1	Fuel products	Feb. 26, 2029
9. Bangchak leaf and BCP (Registered in Myanmar) ²	2	Fuel products & Vehicle service station	-
10. Bangchak leaf and BANGCHAK (Registered in Cambodia)	2	Fuel products & Vehicle service station	Nov. 20, 2023
11. Bangchak leaf (Registered in PRC (China))	1	Fuel products	Jan. 6, 2021
12. Bangchak leaf and BCP S LUBRICANTS (Registered in Jordan)	1	Fuel products	Nov. 24, 2023
13. Bangchak leaf and BCP LUBRICANTS (Registered in the Philippines) ³	1	Fuel products	Sep.10, 2025
14. Bangchak leaf and BCP LUBRICANTS (Registered in Kenya)	1	Fuel products	Dec. 10, 2023
15. Bangchak leaf and BCP LUBRICANTS (Registered OAPI countries) ⁴	1	Fuel products	Dec. 6, 2023

Trademarks and Service Marks advertised abroad

Trademark	Number of registered trademarks	Goods/services under trademark	Expiry
16. Bangchak leaf and BCP LUBRICANTS (Registered in Malaysia)	1	Fuel products	Jun. 10, 2025
17. BAICHAK MART (Registered in PRC (China))	1	Miscellaneous goods for consumers' convenience	Jan. 27, 2025
18. BAICHAK MART (Registered in Vietnam)	1	Miscellaneous goods for consumers' convenience	Sep. 3, 2023
19. BAICHAK MART (Registered in LPDR (Laos))	1	Miscellaneous goods for consumers' convenience	Dec. 5, 2024
20. GREEN SERVE (Registered in LPDR (Laos))	1	Vehicle maintenance	Dec. 5, 2024
21. Bangchak leaf and BANGCHAK (Registered in PRC (China))	1	Service stations	Jan. 27, 2025
22. Bangchak leaf and BANGCHAK (Registered in LPDR (Laos))	2	Fuel products, service stations	Dec. 5, 2024
23. Bangchak leaf and BANGCHAK (Registered in Vietnam)	2	Fuel products, service stations	Sep. 30, 2023 Nov. 19, 2023
24. Bangchak leaf and BCP (Registered in PRC (China))	2	Fuel products, service stations	Jan. 13, 2025 Oct. 20, 2025
25. Bangchak leaf and BCP (Registered in LPDR (Laos))	2	Fuel products, service stations	Dec. 5, 2024
26. Bangchak leaf and BCP (Registered in Vietnam)	1	Fuel products, service stations	Sep. 30, 2023
27. Bangchak leaf and Bangchak (Registered in Cambodia)	2	Fuel products, service stations	Oct. 1, 2023
28. Bangchak leaf and BCP (Registered in Cambodia)	2	Fuel products, Service stations	Oct. 1, 2023
29. Bangchak leaf and BCP LUBRICANT S(Registered in LPDR (Laos))	1	Fuel Products	Jan. 17, 2024
30. Bangchak leaf and BANGCHAK (Registered in PRC (China))	1	Fuel products	Jan. 27, 2025
31. BANGCHAK MART (Registered in Cambodia)	1	Miscellaneous goods for consumers' convenience	Sep. 5, 2023
32. GREEN SERVE (Registered in Cambodia)	1	Vehicle maintenance	Sep. 5, 2023
33. Bangchak leaf and BCP LUBRICANTS (Registered in PRC (China))	1	Fuel products	Aug. 13, 2025

Trademarks and Service Marks advertised abroad

Trademark	Number of registered trademarks	Goods/services under trademark	Expiry
34. Bangchak leaf and BCP LUBRICANTS (Registered in Turkmenistan)	1	Fuel products	Jun. 23, 2025
35. FURIO (Registered in Myanmar) ²	1	Fuel products	-
36. FURIO (Registered in the Philippines) ³	1	Fuel products	Aug. 16, 2028
37. FURIO (Registered in LPDR (Laos))	1	Fuel products	Apr. 2, 2029
38. FURIO (Registered in PRC (China))	1	Fuel products	Feb. 6, 2029
39. FURIO (Registered in Cambodia)	1	Fuel products	Apr. 4, 2028

Trademarks and Service Marks under deliberation in Thailand

Trademark	Number of registered trademarks	Goods/services under trademark	Remark
1. BCP LUBRICANTS	1	Lubricant	Filed May 3, 2019
2. MIDORI	1	Sanitizer & supplements	Filed Oct. 22, 2020

Trademarks and Service Marks under deliberation abroad

Trademark	Number of registered trademarks	Goods/services under trademark	Remark
1. Bangchak leaf and BCP LUBRICANTS, registered in Iraq	1	Fuel products	Filed on Aug. 3, 2015
2. FURIO (Registered in Vietnam)	1	Fuel products	Filed on Apr. 2, 2018
3. Bangchak leaf and BCP LUBRICANTS (Registered in Bangladesh)	1	Fuel products	Filed on Nov. 18, 2019

- Note:**
- ¹ Registered trademarks and service logos are in effect 10 years from registration dates and extendable every 10 years
 - ² In registering trademarks in Myanmar, one must submit declaration(s) of trademark ownership and place advertisement(s) to that effect in local newspapers every 2 - 3 years
 - ³ In registering trademarks in Philippines, one must submit Declaration of Actual Use within 3 years from filing.
 - ⁴ OAPI countries: Benin, Burkina Faso, Cameroon, Central African Republic, Chad, Comoros, Congo, Equatorial Guinea, Gabon, Guinea, Guinea Bissau, Ivory Coast, Mali, Mauritania, Niger, Senegal, and Togo

Patent and Petty Patent

Patent / Petty Patent	Assignee	Expiry ¹
1. Gallon design patent	Bangchak	Aug. 15, 2022
2. Gallon design patent	Bangchak	Aug. 15, 2022
3. Gallon design patent	Bangchak	Feb. 19, 2028
4. Gallon design patent	Bangchak	Feb. 19, 2028
5. Lid design patent	Bangchak	Feb. 19, 2028
6. Oil cone design patent	Bangchak	Feb. 19, 2028

- Note:**
- ¹ Product design patents are valid for 10 years from the date of application.

Policy of investment in subsidiaries and associates

Bangchak's investment policy for businesses is based on a combination of factors to support and promote its own businesses, including business growth trends, investment that adds value and is economically sound, and contribution to Bangchak's competitiveness. Investment is made through itself, subsidiaries, associates, or other companies, with the main consideration on suitability and potential of the company in question.

Bangchak has defined its affiliate governance guidelines for operations of a uniform standard and alignment with Bangchak's policy, underlined by corporate governance.

Credit Policy

Bangchak and subsidiaries have established guidelines for trade credit and formulate a credit policy and credit management to be a guideline for reviewing, monitoring and supervising those involved to take appropriate action against the Group's risks. Continual review of the trade credit policy to comply with economic conditions and market competition or when there are significant changes in related policies. To set the credit limit and the terms of payment must be consistent with the quantity and value of the products that will be purchased from the Group, debt servicing ability and consider each customer's risks through approval by the Company's authorized person.

However, in practice, the credit limit is set and setting terms of payment at the group companies considered to customers and classified by each business group as follows:

Business Group	Credit term
Oil Business	5 - 105 days
Green Power Business	30 - 60 days
Bio-based Product Business (Biodiesel/Ethanol)	15 - 30 days

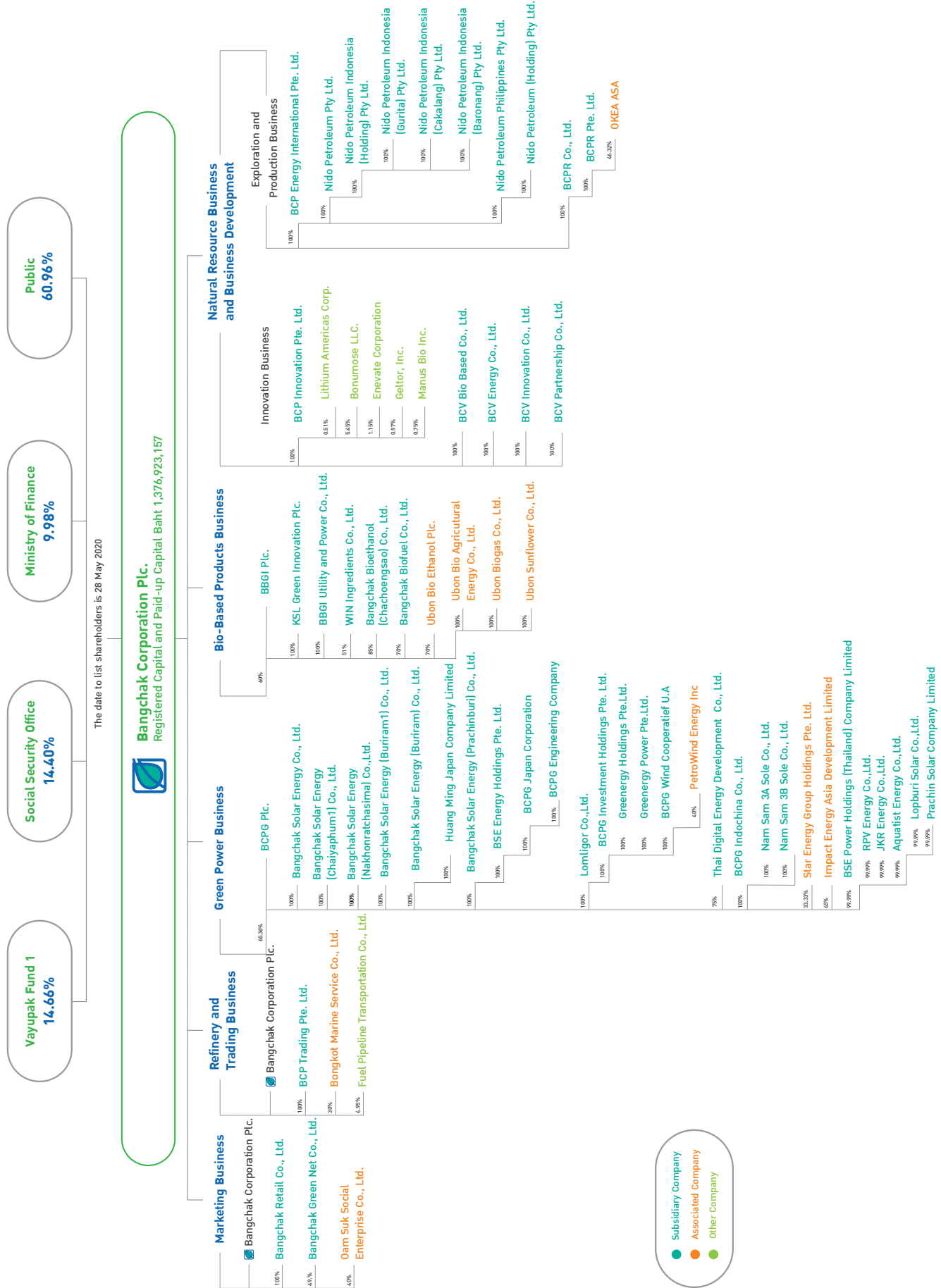
Account Receivable Turnover and Collection Period

	2020	2019
Account Receivable Turnover (AR Turnover: times)	18.33	23.76
Collection Period (days)	20	15

Definitions of Account Receivable Turnover and Collection Period

The 2020 account receivable turnover was 18.33 times, down from 23.76 of the previous years, pushing the collection period up from 15 to 20 days. The primary cause of this higher collection period was the delay in power bill payment from Electricite du Laos (EDL), the state-owned enterprise of the Lao People's Democratic Republic, to BCPG for the purchase of power from BCPG's hydropower project in Laos. The delay was, however, still within the trading credit policy of BCP Group.

1.3 Shareholding Structure



Note: The Ministry of Finance sold and transferred the Company's common shares to Vayupak Fund 1 managed by MFC Asset management Plc. and Vayupak Fund 1 managed by Krung Thai Asset management Plc. totaling 71,899,000 shares, on January 19, 2021.



Refinery and Oil Trading Business Group

The complex refinery of Bangchak operates with a nameplate capacity of 120,000 barrels per day (120 KBD). Most of the outputs are gasoline and diesel. The quality of its gasohol and diesel products meets the public sector's Euro 4 standard. It raises the efficiency of its refining processes with the implementation of its Rocket and 3E Projects with greenhouse gas emission reductions. Bangchak focuses on energy stability in its processes by using electricity and steam derived from its cogeneration power plant while replacing fuel oil.

BCP Trading Pte. Ltd. (BCPT)

Incorporated in Singapore with a registered capital of USD1 million wholly owned, BCPT engages in commodity trading including crude oil, petroleum products, petrochemicals, other chemical products, and other downstream businesses.

Bongkot Marine Service Co., Ltd. (BONGKOT)

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

Fuel Pipeline Transportation Ltd. (FPT)

With a registered capital of Baht 3.66 billion, in which Bangchak holds 4.95%, FPT operates underground pipeline fuel transport. The multiproduct pipeline is laid parallel to the railway route from Bangchak Refinery to Don Muang International Airport Oil Depot via Chong Nonsi Oil Depot and ends at Bangchak's oil depot in Bang Pa-in, Ayutthaya, and at FPT. A pipeline connection with the system of JP-One Asset Co., Ltd., made at the Makkasan area in Bangkok, supplies aviation fuels to Suvarnabhumi International Airport. FPT's oil transmission pipeline system expansion project from Amphoe Bang Pa-in to the Phichit Oil Depot and the construction of the pipeline to Lampang oil depot has been completed in 2020.



Marketing Business Group

The Marketing Business Group sells fuels and lubricants to consumers through Bangchak's network of 1,233 service stations nationwide, made up of 619 standard and 614 community service stations, as of December 2020. They also distribute products to industrial users and the transport, airlines, vessels, construction, and agriculture sectors, which provide convenience to customers. The stations offer supplementary (non-oil) businesses under the operation of Bangchak Retail Co., Ltd.

Bangchak Green Net Co., Ltd. (BGN)

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

Bangchak Retail Co., Ltd. (BCR)

This wholly owned subsidiary of Bangchak has Baht 800 million in registered capital. BCR engages in the food and drinks business to accommodate continuous growth in the retail business. BCR now has 673 Inthanin coffee shops (as of December 2020).

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 60.36% 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)

BCPG successfully recapitalized this year to Baht 16.508 billion in registered capital. It was formed to engage and invest in the green power business in and outside Thailand. At the year-end, it commanded 472 megawatts in total capacity.



Bio-based Products Business

Recognizing the significance of renewable energy in reducing trade deficits from imported fuels, thus enhancing national energy security, supporting farmers and conserving the environment, Bangchak advocates the blending of ethanol with gasoline, and biodiesel with diesel to form assorted graded of gasohol and biodiesel, including high Value bio-based products. Bangchak invests in bio-based products through shareholding in BBGI Public Company Limited (BBGI).

BBGI Public Company Limited (BBGI)

BBGI was incorporated through a merger between BBP Holdings Co., Ltd. (BBH), a subsidiary of Bangchak, and KSL GI Co., Ltd. (KSLGI), a subsidiary of Khon Kaen Sugar Industry Plc. with a registered capital of Baht 2.532 billion. It was transformed from BBGI CO., Ltd., to BBGI Plc. In April 2018, when the registered capital was increased to Baht 3.615 billion by issuing 216.6 million recapitalization shares at Baht 5 per share for public offering. Bangchak holds 60% shares in this largest biofuel producer and distributor in Thailand, which as a total capacity of 2,000,000 liters a day, comprising 1 million liters a day of ethanol and 1 million liters a day of biodiesel. The three subsidiaries of BBGI are Bangchak Biofuel, Bangchak Bioethanol – Chachoengsao, and KSL Green Innovation; the lone associated company is Ubon Bio Ethanol.

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 1,000,000 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 ethanol from fresh cassava, cassava chips, sugar, and molasses with a capacity of 150,000 liters a day.

KSL Green Innovation Public Company Limited (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 450,000 liters per day: 300,000 liters per day from a plant in Amphoe Bo Phloi, Kanchanaburi, and the other 150,000 liters per day from a plant in Amphoe Nam Phong, Khon Kaen. Moreover, KGI's biogas power plant generates power from the biogas derived from wastewater treatment from the ethanol process.

Ubon Bio Ethanol Co., Ltd. (UBE)

UBE was incorporated with a registered capital of Baht 3.91 billion, in which BBGI holds 21.28%. Located in Amphoe Na Yia, Ubon Ratchathani, it engages in ethanol production using fresh cassava, cassava chips, and molasses as feedstock with a capacity of 400,000 liters a day. UBE's subsidiary also engages in processing cassava into flour and generating power from the biogas derived from wastewater treatment from the flour and ethanol processes.

BBGI Utility and Power Co., Ltd.

Wholly owned by BBGI Plc, BBGI Utility and Power Co., Ltd. has a registered capital of Baht 50 million. It was formed to engage in the production and sale of bio-based energy, power, and public utilities.

WIN Ingredients Co., Ltd.

WIN Ingredients Co., Ltd., has a registered capital of Baht 320 million, with BBGI Plc. holding 51%. It was formed to engage in the production, sale, import, and export of all bio-based products and chemicals.



Natural Resources and Business Development Business

This business group, one of Bangchak's five core businesses, is in charge of the development of upstream petroleum businesses and battery energy storage systems, namely the petroleum exploration and production (E&P) business and the lithium mining business. Bangchak founded BCPR Co., Ltd., in Thailand, and BCPR Pte. Ltd. Together with BCP Energy International Pte. Ltd. In Singapore, to engage in the petroleum E&P business and founded BCP Innovation Pte. Ltd., in Singapore, to engage in the lithium mining business and start-up.

BCP Energy International Pte. Ltd. (BCPE)

Wholly owned by Bangchak and established in Singapore with a registered capital of USD 112.5 million, BCPE engages in foreign energy, petrochemical, and natural resources businesses and now wholly owns Nido Petroleum Pty. Ltd. Through common share purchase.

Nido Petroleum Pty. Ltd. (Nido)

Nido holds right in the West Linapacan field under development along with rights in fields under exploration, namely SC6B, SC54A and SC58, all in the Philippines.

BCP Innovation Pte. Ltd. (BCPI)

BCPI, wholly owned by Bangchak, was incorporated in Singapore with a registered capital of USD 53.3 million, to engage in the lithium mining business and related investment. Today BCPI owns 0.5% shares in Lithium Americas Corp.

Lithium Americas Corp. (LAC)

Listed on the Toronto Stock Exchange, Canada, and the New York Stock Exchange, USA, LAC engages in the lithium mining business to produce lithium carbonate an essential raw material for batteries.

LAC is developing two lithium mines in Argentina and the USA. The Argentina project is under the development of Minera Exar S.A. with a capacity of 40,000 tons per year, whereas the USA lithium mining project is under development.

BCPR Co., Ltd. (BCPR)

On July 12, 2018, Bangchak established a wholly owned BCPR Co., Ltd., in Thailand, which today has Baht 661 million in registered capital (6.61 million shares at Baht 100 per share). The objective is to engage in business operations by investing in natural resource businesses. BCPR has now invested in BCPR Pte. Ltd., founded in Singapore to invest jointly in OKEA AS, which engages in petroleum development and production in Norway.

BCPR Pte. Ltd.

BBCPR Pte. Ltd., was incorporated in Singapore on July 12, 2018, with a registered capital of USD 18.2 million as of June 30, 2019, and is wholly owned by BCPR Co., Ltd. The company engages in foreign energy, petrochemical, and natural resources businesses and currently invests in OKEA AS, which engages in local petroleum exploration, development and production in Norway.

OKEA ASA

OKEA AS, incorporated under the laws of Norway, engages in Norway's petroleum exploration, development, and production. BCPR Pte. Ltd., Bangchak's subsidiary, holds 46.32% of OKEA AS. OKEA AS holds the right in Draugen, Gjøa, Ivar Aasen, Yme, and Grevling Oil Fields, as well as the exploration rights in several other fields in Norway and has been the operator of Draugen and Grevling Field. This year it joined in the investment in Calypso and Aurora fields in the vicinity of the Draugen and Gjøa fields, which would in effect lower their development and production expenses thanks to the likely synergy of co-production. Both high-potential fields are under exploration, leading to possible production.



Refinery and Trading
Business Group



Marketing
Business Group



Green Energy
Business



Bio-based Products
Business



Natural Resources and
Business Development Business



Research and development and innovation business

To pursue the position of the leading Asian Greenovative group, Bangchak expands its investment in emerging energy innovation such as lithium, used in the manufacturing of batteries for electrical vehicles (EVs) and extending bio-based products to add value to its current biofuel products. Bangchak set up four more venture-capital companies to engage or jointly invest in 10 domestic startup businesses, or both, promoted by the government along with a Singapore-formed subsidiary.

BCV Bio based Co., Ltd. (BCVB)

BCVB, wholly owned by Bangchak, was incorporated with a registered capital of Baht 20 million (as of December 31, 2020) 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 (as of December 31, 2020) 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 (as of December 31, 2020) 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 (as of December 31, 2020) to engage in the venture capital business for funding domestic startups relating to innovation in collaboration with the public and private sectors.

List of major shareholders as detail under 1.4 Registered Capital and Paid-up Capital



1.4 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 May 28, 2020)	Number of Shares	Shareholding (%)
1. Social Security Office	198,307,697	14.40
2. Ministry of Finance	137,442,767	9.98
3. Vayupak Fund 1, managed by MFC Asset management PLC	100,936,800	7.33
4. Vayupak Fund 1, managed by Krung Thai Asset management PLC	100,936,800	7.33
5. Thai NVDR Co., Ltd.	72,584,443	5.27
6. SOUTH EAST ASIA UK (TYPE C) NOMINEES LIMITED	34,686,198	2.52
7. Mrs. Somsong Lapananrat	27,383,700	1.99
8. Bangkok Life Assurance PLC	24,154,700	1.75
9. Krungsri Dividend Stock LTF	20,425,600	1.48
10. Bualuang Long-Term Equity Fund	20,111,400	1.46
Top 10 Total	736,970,105	53.61
Grand Total	1,376,923,157	100.00

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

Top 10 Major Shareholders (as of May 28, 2020)	Number of Shares	Shareholding (%)
1. STATE STREET BANK EUROPE LIMITED	14,158,900	1.03
2. N.C.B.TRUST LIMITED-NORGES BANK 30	9,644,610	0.70
3. STATE STREET EUROPE LIMITED	7,045,936	0.51
Total	30,849,446	2.24

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

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

- The Ministry of Finance sold and transferred the Company's common shares to Vayupak Fund 1 managed by MFC Asset management Plc. and Vayupak Fund 1 managed by Krung Thai Asset management Plc., totaling 71,899,000 shares, on January 19, 2021.

1.5 Issuance of Other Securities

Debentures

On December 9, 2020, Bangchak earned “A-” credit rating for the organization and unsubordinated and unsecured debentures and subordinated bond at BBB Level, Stable Outlook by TRIS Rating Co., Ltd.

In 2020, Bangchak has issued and offered for sale of unsecured and unsubordinated domestic debentures and there are debenture holders' representatives totaling 8,000 million baht. As of May 8, 2020, Bangchak has total outstanding debentures of 36,000 million baht as detailed below.

Debenture	Value (Baht million)	Interest rate (%/year)	Maturity (years)	Redemption Date
BCP214A	2,500	4.81	7	April 11, 2021
BCP224A	1,000	5.35	10	April 30, 2022
BCP225A	3,000	2.60	2	May 8, 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
BCP275A	500	3.00	7	May 8, 2027
BCP28DA	7,000	4.04	10	December 20, 2028
BCP303A	1,000	5.05	15	March 3, 2030
BCP305A	4,500	3.40	10	May 8, 2030
BCP19PA	10,000	5.00	100	March 3, 2119

1.6 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

Years	2015	2016	2017 (Restate)	2018 (Restate)	2019	2020 (first half)
Earnings per share (Baht/share)	3.01	3.47	4.07	1.79	1.18	(5.02)
Annual dividend (Baht/share)	2.00	1.80	2.15	1.35	0.80	-
Dividend payout ratio (%)	66	52	53	75	68	-

○ Subsidiaries' Dividend Policies (only dividend-paying ones)

BCPG Public Company Limited

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 Public Company Limited

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.

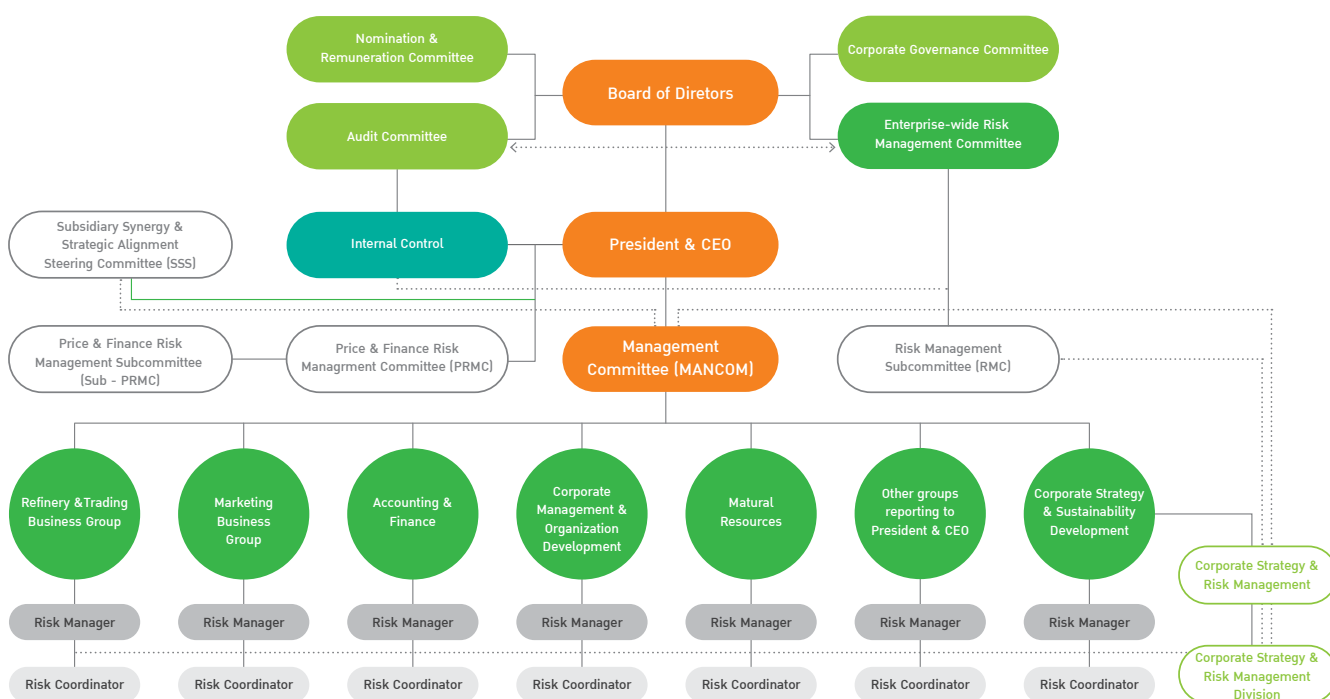
Bangchak Green Net Co., Ltd.

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.

2. Risk Management

2.1 Risk Management Policy and Plans

Bangchak has adopted an international integrated enterprise-wide risk management system based on COSO ERM and ISO 31000 for more than 16 years to define management directions and measures to prevent and minimize impacts from a variety of risks preventing it from achieving goals. The risk management system has provided not only the capability for Bangchak to operate all businesses successfully under a relentlessly changing environment but has also warranted confidence among all stakeholders. All executives and staff, as well as joint ventures, fully participate in this international risk management system aligned with the corporate strategy and planning, as well as the sustainability development policy involving environmental, social and governance (ESG), under the supervision and monitoring of an Enterprise-wide Risk Management Committee (ERMC), with reporting lines and organizational network illustrated below.



Remarks

Risk Manager - Vice President / designated person

Risk Coordinator - assigned by Senior Executive Vice President / Executive Vice President

Reporting line
 — Functional
 - - - Risk Communication

Risk Management Outcomes

In 2020, virtually countries, Thailand included, faced shrinking economies caused by COVID-19, national lockdowns to cut down on travel so as to stop the spread, in turn affecting unemployment rates and household debts, not to mention the private sector's investment confidence. In addition, the impacts of drastic crude oil price fall due to the failure to strike a deal between OPEC and allied countries harmed the economy, inflation rates, and Bangchak's performance. Still, Bangchak had mounted a plan for enterprise wide risk management for itself and its joint ventures to mitigate business impacts by way of surveillance and monitoring of overall impacts to ensure that risks stay within Bangchak's risk appetites while getting poised for future business landscape that changes rapidly and with volatility. Bangchak designed its risk management in parallel with operating strategies, grouping it into three scenario plans to sustain anticipated situations and modify accordingly in line with situation change.

In addition, for business continuity and sustainability, Bangchak reviewed trends and business factors that are expected to change and impact business (mega trends and global risks) to manage them in the medium term and long term, including competition in the business and industry, economic situation, consumers' behavior, the surroundings and climate change due to global warming, and technological and innovation growth, including alternative & renewable energy, energy storage, electric vehicle, and policies of the public sector. These studies have been integrated with primary data of stakeholders' expectations and needs for further analyses of future impacts and directions of risk management in parallel with integrated corporate strategy to strive for mutual sustainability.

2.2 Risks to Bangchak's Operations

Bangchak has grouped its risk management framework into 1. corporate risk management, 2. project investment risks, and 3. business continuity management. This framework helps formulate appropriate risk management system and assessment. Below is a progress report in these three areas.

1. Corporate Risk Management

Corporate risk management includes management of all internal and external risks incorporated with an assessment of future trends which could affect the organization in the short, medium, and long terms. The system incorporates risks in strategy, operation, finance, and reputation. The system is managed with specific key risk indicators (KRIs) to monitor and track the likelihoods and severity of all identified risks and provides treatment plans to mitigate and minimize the risks and drive operations to succeed as planned. In 2020, Bangchak assessed and managed corporate risks aligned with the corporate strategy and sustainability development involving the environment, society and governance as follows.

Economic Risks

Risks of volatile prices of oil and feedstock

The risks of volatile prices of oil and feedstock directly affect the revenue stream of Bangchak's core petroleum and petroleum-related businesses. With this in mind, Bangchak manages these risks with short-term and long-term plans as follows.

- Put in place a mechanism to track the movement of the crude oil price, spreads between crude and refined product prices, and regular development of new risk management tools for members of the subcommittee and risk management committee on prices and finance to consider and decide suitable options to manage, and report directly to the executive management committee.
- Administer crude oil and refined product stocks, lower capacity to appropriate levels in line with lower market demand, lowered operating costs by about 20%, and adjust turnaround maintenance (TAM) in line with economic situation and reduced demand.
- Diversify risks arising from price fluctuation of agricultural produce through investment in bio-based businesses operated by BBGI Plc. to upgrade business competitive edge in biofuels, biodiesel and ethanol, a steppingstone to high-value bio-based product development and value additions to the company.

Risks of managing feedstock and supply chain

Management of risks associated with supply chains and suppliers on delivery of feedstock, raw materials, machines, equipment and related services for the production and distribution is critical to uninterrupted operations, fostering confidence among all stakeholders and giving a competitive advantage for the organization. The risk management plan on feedstock and supply chains covers:

- Select crude oil from various sources at suitable periods with due regard for appropriate quality for processes that yield healthy refining margins to add business value.
- Develop long-term crude sales agreements with domestic and international suppliers to secure consistent supply for the refinery.
- Stock and procure feedstock for biofuel production from competitive sources with appropriate prices.
- Properly diversify supplier risks by classification and segmentation of suppliers, raw materials and feedstock, products, and services to ensure optimal value. Proper assessment of supplier risks affecting economic, societal, and environmental values to Bangchak is essential to ensure business continuity throughout the supply chain.
- This year Bangchak developed a plan to accommodate substitution merchandise to lower the risk of non-delivery of goods due to city lockdown measures in partner countries or other reasons.

Risks from depressed global economy and reduced demand

The devastating effects of COVID-19 on the economy and reduced consumption of certain goods due to the lockdowns and suspension of certain businesses along with reduced travel domestically and internationally prompted Bangchak to develop the following risk management plans:

- The year 2020 saw aviation fuel demand bear the brunt of COVID-19, so Bangchak trimmed its capacity and modified processes to more diesel production rather than aviation fuels to better suit the market.
- The Refinery and Trading Business Group modified Bangchak into a niche products refinery to present new, more diverse products to the market, going from a variety of fuels into production of UCO (unconverted oil) for feedstock of lube base oil and paraffin wax along with modifications for greater diversity. An instance is solvents, which are key industrial components, including paint, thinner, and resin. Bangchak still plans to sell more diverse array of products in the future.

Risks of volatility of exchange rates and interest rates

The year 2020 witnessed high volatility in the currency exchange rates. Notably the month of March saw the rates at their lowest in the region, which picked up toward the year-end. The major factor is the weakening US dollar with world economy recovery, which brings uncertainty to Bangchak's revenue, notably its petroleum businesses and international joint ventures. Still, Bangchak commands a plan to constantly deal with foreign exchange and interest rate risks as follows:

- Adopt natural hedges on transactions with international currencies on both income and expenses.
- Manage major costs of capital toward fixed and consistent interest rates.
- Closely monitor movement and trends of international monetary markets to execute proper hedging on exchange rates and interest rates decided by the Risk Management Committee on pricing and finance to ensure successful businesses as planned.

Risks of energy innovation transformation

Transformation of energy innovation is an external factor shaping Bangchak's businesses. Bangchak has therefore developed risk assessment and converted advancement of energy innovation into business opportunities as follows.

- Established a green ecosystem to drive Bangchak Group's innovations with an emphasis on green energy and bio-based products through Bangchak Initiative and Innovation Center (BiiC)
- Carved investment opportunities in businesses related to electric vehicles (EVs) and batteries of the future with a springboard in the lithium purchase agreement of up to 6,000 tons a year under the Cauchari-Olaroz Project of Lithium Americas Corp.



- Grew business to high-value bio-based product businesses through BBGI Plc. by purchasing recapitalization shares in Manus Bio Inc., a world-class biotechnological leader, and join in the investment to set up WIN Ingredients and planned to form a Syn Bio plant for multi-products, a first in Southeast Asia
- Promote the initiation of business opportunities from energy innovation through regular campaigns among staff and subsidiaries, through introduction of Design Thinking to help develop new products and services to cope with future changes. To this end, BiiC can act like a business incubator and eventually commercialize selected initiatives.

- Launched the "Winnonie" startup, an extension of green energy innovation to improve the quality of life for motorcycle taxis. To elaborate, this is a marriage between electric motorcycle technology and motorcycle taxis in the form of battery renting with swapping of expired batteries at Bangchak's service stations.

Winnonie



Find



Swap



Go

Societal Risks

Risks of impacts on communities and society

Bangchak is fully committed to operating its businesses in a friendly way with communities, the public and the environment in a sustainable way. Work processes have therefore been continuously upgraded to ensure safety and zero impact on communities and the public under the following risk management plan.

- Constantly developed a system for occupational health and safety of international standard to upgrade health and safety in the workplace while systematizing work processes with due regard for risks, opportunities, and legal requirements. Bangchak was certified with ISO 45001, ISO 14001, and ISO 50001.
- Prevented oil spills into the river by specifying double-hulled transport vessels for crude oil and refined products; implemented preparedness measures for emergency gear and oil slick equipment; tested oil-pumping pipes every six months; deployed two layers of oil-slick booms during oil-pumping periods; constantly developed personnel and improved safety technology for port/jetty equipment, systems, and instruments in line with the Oil Company International Marine Forum Institute's standard.

- Bangchak has a vessel to tackle oil slicks that are mobilized immediately without having to wait for other vessels, thus ensuring that it can collect oil slicks efficiently and rapidly. Bangchak stays ready to extend support to the public sector and the Oil Industry Environmental Safety Group Association (IESG) and other incidents upon request.
- Routinely conduct risk management with systems of Safety Integrity Level, Reliability-Centered Maintenance, and Risk-Based Inspection to ensure the efficiency of all equipment and work processes for accurate preventive maintenance programs.
- Perform hazard and operability study assessment and install the process safety management system at all procedural levels of refining processes in conjunction with leading engineering consulting firms to ensure international work standards and practices.
- Install an online air quality metering system with automatic display on all monitors in the refinery and its vicinity for the communities surrounding the facilities to get real-time air quality information, leading to higher public confidence in Bangchak's operation.



- Consistently organize community educational activities for people living near the refinery facilities, schools, temples, and condominiums to understand, learn and be fully aware of safety. The programs include sharing of knowledge and practical drills on evacuation, firefighting, and first-aid medical treatment, as well as community safety alert and warning systems. Community members have actively participated in these programs.
- In supervising businesses operated by joint ventures, Bangchak monitored and stayed vigilant over risks with impacts on individual communities to prevent them from hardship or impacts of production processes or operation, including vigilance over wastewater treatment. The ERM is charged with year-round monitoring of work in this aspect.

Environmental Risks

Risks of climate and environmental changes and measures on GHG emission control

Bangchak's focuses on reducing all impacts causing global warming by cutting down on energy consumption and carbon dioxide or greenhouse gas (GHG) emissions with the following programs.

- Through BCPG Plc. expand businesses to green power, generating power from clean renewable energy sources including solar, wind, hydro, and geothermal in domestic and international markets.
- With a commitment to continuously managing the reduction of GHGs, Bangchak won three awards in 2020 for excellent management of GHG emission reduction, presented by Thailand Greenhouse Gas Management Organization (Public Organization); an award on Carbon Footprint of Product (CFP), an award on Thailand Voluntary Emission Reduction Program (T-VER) in its third consecutive year – a voluntary program awarded to refineries capable of reducing GHGs with a 2% target – and an award on Carbon Footprint Reduction (CFR). These accolades honor extraordinary achievements as a role model for others, aimed to promote project development efficiency while protecting the ecology and project economics toward sustainability of the refining business.
- Replace fuel oil with natural gas to generate power and steam in the combined-cycle plant and deploy it as a primary energy source for the distillation units, resulting in higher energy efficiency and reduction of carbon dioxide emissions.



- Bangchak took part in easing pollution in the form of PM 2.5 particulates and smog by selling diesel containing five times less sulfur (lower than 10 ppm), as less sulfur can lower dust problems resulting from combustion along with sulfur dioxide. Such diesel were sold in Bangkok Metropolis during such critical periods.
- Remodel resource consumption with the 3Rs strategy of Reduce, Reuse and Recycle to achieve sustainable and environmentally friendly business success. This includes collection of plastic bottles from customers voluntarily to produce recycled products for society, collection of depleted plastic lubricant containers for recycling to produce polymers and eventually reproduce such containers. These programs are aimed to reduce public waste and sustain the values of resources through reuse and recycling to optimize their values to the environment, society and communities in a sustainable way.
- Lowered plastics in non-oil activities as well as plastic containers by designing lids of cold beverages that eliminates straws, in addition to continually modifying plastic containers (Bio-cups).



- Bangchak launched the “Rak Pun Sook” project with an emphasis on introducing innovations to add value to natural resources and foster sustainability under the BCG Economy model through cutting down single-use plastics by collecting PET drinking water bottles from customers and consumers for recycling and using the resulting fibers to make public-service materials. An instance is the production of caps for Bangkok Metropolitan Administration’s janitors and those serving at public parks in 50 districts, sanitation officers and volunteers in Pattaya, and volunteers of the anti-marine garbage, totaling over 12,000 caps. Also, aprons and caps were made and donated to the handicapped serving at the 60+ Plus Bakery & Chocolate Café.



- Nurture environmental and social stewardship and care as a corporate culture by iterating energy conservation and care for the environment. Examples are campaigns on banning styrofoam for food packaging for all activities in the offices, banning plastic bags in the company's canteens, cutting down on printing workloads and stop using paper for photocopying while converting communication and coordination activities to more online in the digital format, reducing the use of fuels for all individual transport between Headquarters lowering energy consumption in office buildings and minimizing risks of COVID-19 spread and the refinery by using EV (electric vehicle) buses. These buses also help reduce the volumes of dust, volatile pollutants from exhaust pipes, and carbon dioxide emissions on Sukhumvit Road.

Water Shortage Risks

Water shortage has been identified as an imminent global crisis. Global warming and a booming population are the main causes of uncertainty on available water for consumption. Bangchak has paid its full attention to water management to conserve water in production processes as follows.

- Monitored risks from climate change, such as drought, by monitoring and staying vigilant over daily water situations of the Metropolitan Waterworks Authority to assess the water shortage risk affecting refining processes, to ensure emergency water source availability, and to define proactive measures in case of risk arising from lower Chao Phraya River water levels, which may affect navigation, while ensuring minimal effects on stakeholders. Monitored flood situations and took proactive steps, for example, monitoring the levels of water in the major rivers during the rainy season, inspecting the readiness of flood prevention equipment by establishing a risk management plan in response to flood possibility and severity in order to ensure continuous business operation.
- This year Bangchak successfully reduced the water used in tap water quality improvement via the micro-filtration, reverse osmosis, and electro de-ionization systems by 137,395 cubic meters. It also reused condensate water and stripped water in its production processes, which saved 1,135,517 cubic meters. In addition, it improved mildly contaminated condense water and treated wastewater via the reverse osmosis system, resulting in 173,505 cubic meters of reused water. Thanks to these water reduction measures, Bangchak saved the equivalent of water used by 3,810 households.
- In 2020 Bangchak conducted water stress assessment through the AQUEDUCT program to find that the location of Bangchak Refinery was a medium-high (20-40%) risk area, which by definition is not a significant area for water stress.
- Promote the reduction of water consumption in all production processes with all affiliates and business units, led by the water recycling program by the Bio-based Product Business Group. Moreover, a project of drilling for groundwater was initiated for water storage and supply for the facilities.

Emerging Risk

Risks of epidemics

The COVID-19 pandemic worldwide has impacted everyone economically and personally. Lifestyles faced change to keep the virus under check. Bangchak assessed these impacts in several aspects and commanded measures to lower risks and undertook Business Continuity Management (BCM) drills.

Risks of digital technology transformation and cybersecurity

Risks of digital technology transformation and cybersecurity are external risks that have rapidly evolved, driven by strong business competition, reliance on competitive technologies, and connectivity of hardware and software through Internet technology to raise business efficiency and create good experience for customers, with due regard for the safety of the corporate IT system. Bangchak took action to cater to such technological development and change along with reviewing technological risk issues concerning current business disruption as follows:

- ✔ Establish a digital technology unit in charge of planning, monitoring, and procuring proper digital technologies for Bangchak to cope with changes in consumer behavior, work process improvement toward increasing competitive advantages, and adding value and efficiency to its services. The following additional technologies were applied in 2020.
 - The Digital Payment Project, in which digital payment is made in the Mobile EDC (electronic data capture) form to avoid physical contact at service stations by scanning the QR Code to pay through all banks' applications and PromptPay or simply touch and pay with contactless credit cards while accruing Bangchak membership points.
 - Develop personalized marketing by applying data analytics to examine individual

consumer behavior to develop tailor-made service patterns specific to each consumer and hence increase customer satisfaction.

- Introduce the Robotic Process Automation (RPA) system to increase productivity and decrease turnaround time in work processes, including business partner verification, service station maintenance planning, and sales document processing.
- ✔ Establish a dedicated cybersecurity function, tasked with planning, monitoring and tracking, testing and procuring necessary equipment and systems to counter threats from cyber-attacks. During 2020, the ERMCM approved the purchase of cybersecurity tools and systems for Bangchak's computer center and development of cybersecurity system architecture. The approval was initiated to prevent Bangchak's operations from cyber interruptions. The system provides real-time security system alerts through key risk indicators. Actions were taken to enable work systems to be secure and safe in line with international standards; established awareness and cyber-threat knowledge among employees.
- ✔ Develop a refinery cybersecurity system program to safeguard work systems from cyber-attacks or interruptions which might affect refining processes. Since 2020, Bangchak has won ISO/IEC 27001 certification (Information Security Management), covering the refinery's Distributed Control System, thus ensuring that its refining processes will continue uninterrupted despite cyber-attacks.
- ✔ Determined preventive measures for personal data protection in compliance with the Personal Information Protection Act B.E. 2562 (2019) by establishing a taskforce consisting of representatives from relevant departments to work closely with a renowned consulting firm to manage and control personal information, including establishing preventive and corrective measures in case of personal information breach or abuse that might harm Bangchak.



Risks to reputation from social media

With the transformation of the social media platform, where news and information of Bangchak's products and services are exchanged among consumers, moved to online, lightning response rates have become crucial. More importantly, online negative news and distortions could go viral, thus tarnishing Bangchak's reputation. Managing reputation risk therefore demands a dedicated team to relentlessly monitor movements of online social media. These tasks increase communication efficiency under normal circumstance and crises and reduce negative impacts. The system also calls for regular drills to ensure crisis preparedness.

Risks of managing human resources for future growth

To support additional investments for security and sustainability of income, Bangchak needs to satisfy higher demand for diversified and highly skilled human resources for each business and to maintain a proper generation gap within the organization to drive future businesses. Managing risks of human resources for future growth to align with business strategies is defined and treated with consistent programs and sessions of lessons learned and knowledge exchange among staff of Bangchak Group. These sessions hone skills, identify career advancement, and sustain business continuity as well as strengthening ties among staff workers and Bangchak. Activities in these sessions are organized and analyzed jointly by the management through the Subsidiary Synergy and Strategic Alignment Steering Committee.

2. Project Investment Risks

In addition to strategic directions and returns on investment, project investment risk management is another crucial component of business success. All investment projects must therefore be reviewed for risk management with risk treatment at various stages as follows.

- 🕒 Development Phase Risk
- 🕒 Construction Phase Risk
- 🕒 Operation phase risk including risks concerning operation, finance, taxation imposed by the tax policy of the country of investment, business, and reputation
- 🕒 Natural disaster risk.

To this end, investment projects regarded as significant to Bangchak must secure from ERM endorsement of risk management plans to ensure proper risk management without undue impacts on communities and the environment as well as corporate goal achievement. This year, ERM approved and monitored updates of the risk management plans of investment projects to raise Bangchak's production efficiency. The same goes for BCPG Plc's investment projects to grow capacities for solar and wind power plants.

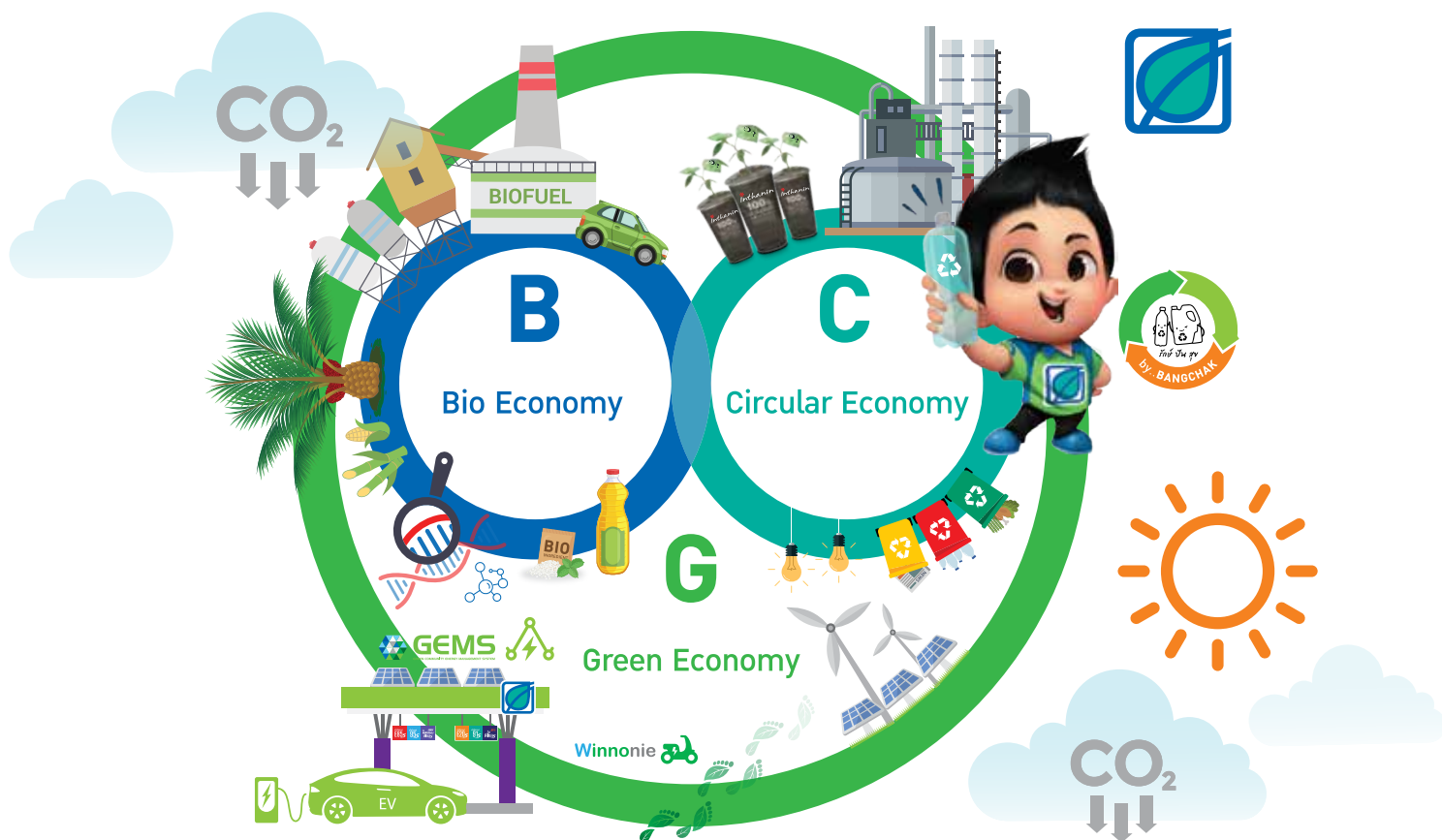
3. Business Continuity Management (BCM)

To ensure the ability to continue its businesses even during crises, Bangchak has developed and installed a Business Continuity Management (BCM) system. Bangchak won the ISO 22301: 2012 BCM award covering Headquarters, Bangchak refinery and Bangchak Oil Distribution Center, Central Region Business Office and Bang Pa-in Oil Distribution Center for the seventh consecutive year since 2013. The award is a guarantee of its preparedness to continue its businesses with maximum efficiency under international standards even during crises, and high confidence for all stakeholders on the ability of Bangchak to fully operate during crises and constantly deliver products to its clients.

In 2020, the world faced the COVID-19 pandemic, which caused widespread impacts. To grapple with this, Bangchak conducted emergency drills for various possible situations and duly modified its crisis management plan and the enterprise wide business continuity management plans to keep up with current circumstances. It also modified epidemic control measures and physical distancing as required by the public sector. In addition, Bangchak assessed the prevailing circumstances and came up with guidelines of the following aspects.

- **Safety** Bangchak advocated compliance with BCM, which covered epidemic crisis, with particular value given to the safety of employees, customers, and related parties. To this end, it staged drills and prepared the IT system for working from home. Hand-washing alcohols were handed out to employees and the public at Bangchak service stations while gel alcohol was in shortage. Implemented was office cleaning, physical distancing, and office hour staggering as guided by Bangchak's incident command. Meetings were held to roll out plans in a systematic way, as was regular communication with employees and their related parties.
- **Marketing** Bangchak modified its marketing plans in view of the changing demand, notably that for diesel and aviation fuels, directly affected by the national lockdown to check the spread. Bangchak came up with sales promotion measures through assorted loyalty programs as well as cooperation with business partners to handle the pandemic, which could cut the number of Inthanin Coffee customers, by focusing on more sales through delivery channels.
- **Finance** Bangchak stayed prepared by lowering expenses and investment by about 20% and successfully issued bonds worth Baht 8 billion as well as winning financial institutions' support in the form of long-term loans worth a total of Baht 6 billion.
- **Business continuity** In view of the assessed impacts of COVID-19, Bangchak adjusted its production and marketing plans in addition to lowering its expenses and investment to fit circumstances. Finally, it appointed an Innovation Continuity Workforce to brainstorm the workforce on extension to new businesses to sustain business change.

Bangchak aims to develop and conduct business in projects that are in line with the economic model for sustainable development under BCG Model. The strategy is in line with the government's economic development concept, which consists of 3 main parts:



B Bio Economy

Bio Economy introduces agricultural products that are the raw materials or the national cash crop into the modern production system. This includes bio-products business, or Biofuel, one of Bangchak's five businesses.

C Circular Economy

Circular Economy emphasizes the value of raw materials, resources and products that need to be maintained as long as possible. This is what we called “3R concept: Reduce Reuse Recycle”

G Green Economy

Green Economy creates well-being and quality of life based on sustainable development and takes into account the ecological relationship and economic along with taking care of the environment, reducing pollution and managing natural resources. Green Economy is in Bangchak’s DNA since the start of business.

3. Driving a Sustainable Business

3.1 Sustainability Policy and Targets

Bangchak's Sustainability Policy that integrated international Sustainability guidelines, criteria and standards such as United Nation Global Compact (UNGC), Dow Jones Sustainability Indexes: DJSI, Thailand Quality Awards (TQA), International Organization for Standardization (ISO) as well as stakeholders' expectation to Company's vision, direction and business strategy. The policy is a framework that demonstrates Bangchak's sustainability commitments along the business value chain.

In 2020, Bangchak revised its Sustainability Policy to cover current and future sustainability issues by assessing issues, emerging risks, and global sustainability trends from Bangchak Group's businesses in Thailand and international. Eight aspects covered under the Sustainability policy includes:

1. Corporate governance
2. Fair business operating practices
3. Human rights and employment for sustainable economy
4. Management of energy, climate, water and waste
5. Responsible production & service together with the promotion of sustainable society
6. Investment in businesses that generate returns, focusing on innovative and sustainable businesses
7. Comprehensive assessments of sustainability for new businesses
8. Participation in community and social development by supporting education and the promotion of social innovation

In addition, Bangchak has “**4 Green Sustainability Strategy**” that align with Sustainability Policy and support the Sustainable Development Goals (SDGs).

- 🍀 **Green Business:** focus on responsible and sustainable investment and value added to business by bringing green technology and innovation to existing and new business operation to help grow the company with the aim to be a leading green innovation technology company in Asia.
- 🍀 **Green Production:** enhance Environmental Management and Process Safety for energy and water efficiency through ISO 14001, ISO 50001, ISO 45001 and Process Safety Management (PSM).
- 🍀 **Greenovative Experience:** create innovative, sustainable, and green experiences at service stations, in products and services in respond to the new lifestyles that engage everyone to take part in protecting the environment.
- 🍀 **Green Society:** develop social and environment projects to improve quality of life by focusing on helping small and medium enterprises and farmers through multi-faceted projects.

Bangchak defined sustainability KPIs in 2020 such as Net Promoter Score (NPS), % of Corporate Governance and Economic Market Share, Net Greenhouse Gas Emission for environmental targets and Employee Engagement, Community Engagement and DuPont Assessment Score for social targets based on the 4 Green Sustainability Strategy and Sustainability Policy.

In addition, the Company integrated Sustainable Development Goals (SDGs) into business operation and focused on contributing to the achievement of SDGs based on business capability and global sustainability trends. In 2020, the Company reviewed its 2025 contribution to SDGs as follows: SDG 7 (Affordable and Clean Energy) SDG 8 (Decent Work and Economic Growth) SDG 9 (Industry, Innovation and Infrastructure) SDG 12 (Responsible Consumption and Production) SDG 13 (Climate Action) and SDG 16 (Peace, Justice and Strong Institutions). Furthermore, the Company defined strategy and action plans and track progress in each SDGs.

To demonstrate reduction impacts from climate change, the Company sets a KPI to become carbon neutral by 2030 and plans to use GHG Emission Reduction and Carbon Offset programs as strategic reduction programs.



3.2 Stakeholder Impact Management Throughout the Value Chain

3.2.1 Business Value Chain

To align with **Evolution Greenovation** vision, Bangchak place high emphasis on stakeholder engagement and sustainable value chain management from upstream such as crude oil and raw material supply, crude oil and raw material transportation in production process to downstream processes such as refinery, product development, procurement, transportation and product distribution and services. The objectives are to response stakeholders' needs and expectations, to create a balance between business value and build trust from all stakeholders.

3.2.2 Stakeholders Analysis

Bangchak conducted business value chain analysis in 2020, from the analysis the Company categorized stakeholders based on sustainability impacts and business impacts. There are 10 stakeholder groups as follows: creditors/financial institute, customers, employees, suppliers/contractors, business partners, communities, government, shareholders, media and business competitors.

Bangchak continually engages and responds to all group of stakeholders to listen to and fulfill stakeholders' needs and expectations. Stakeholder engagement results were considered with business plan/strategy that was considered from global sustainability trends, SDGs and internal business factors to develop corporate materiality topics.

2020 Materiality topics were as followings;

Governance & Economic Topics	Environmental Topics	Social Topics
1. Green innovation business investment	1. Climate change adaptation and mitigation	1. Occupational Health and Safety
2. Product & service quality	2. Waste management	2. Job security & competency development
3. Digitalization	3. Air pollution management	3. Community relation
4. Corporate directions & progress disclosure	4. Eco-efficiency	4. Human rights
5. Supply Chain Management	5. Oil spill management	
6. Liquidity aids for suppliers and business partners	6. Water management	
7. Cybersecurity	7. Circular economy	

3.3 Environment Management

3.3.1 Environmental Guideline and Policy

Energy management, climate change, water, waste, green and responsible products and services and sustainability assessment for new business operation are included in the Sustainability Policy. In addition, the Company has **Safety, Security, Occupational Health, Environment and Energy Policy (SHEE Policy)** that focus on natural resources and energy conservation, efficient waste management, green products development, designing and procurement. SHEE Policy serves as Environment Policy for the Company to enhance operational excellent and aligned with Sustainable Policy.

The Company develops sustainability targets aligned with Green Production Strategy and SDG 6, 7, 11 and 13. The details are as follow:

Energy Consumption

As a company in industry with high energy intensity in the form of heat, electricity, and steam, Bangchak ensures that its management of energy efficiency is integral to its performance. The Company's energy efficiency management is aligned with ISO 50001. The Company defined short, medium, and long-term targets and plans to improve energy efficiency for refinery. Short term plan is to set an energy consumption target and update existing systems. Medium plan is to enhance production to be more efficiency and effectiveness. In addition, the Company has plan to significantly reduce its energy consumption through the EII Improvement project.

Furthermore, the Company defined Energy Intensity Index (EII) as standard KPI for benchmarking. Oil demanding in 2020 significantly dropped due to COVID-19 pandemic resulting in reduced production levels. Therefore, the EII target was set higher than the previous year at 111.5.

Climate Change

The Company places great importance to the prevention and reduction of greenhouse gas emission from business operation that will cause climate change impact to the environment. In 2020, the Company defined net carbon dioxide emission as corporate KPI and CEO KPI to demonstrate our intention to response climate change and SDG13. The Company also defined Carbon Neutral Company as a long-term KPI in 2030 which will be achieved through GHG Emission Reduction and Carbon Offsets projects.

In 2020, Bangchak sets GHGs emission reduction target for scope 1 at below 893,110 tons of carbon dioxide equivalent and scope 2 at below 4,603 tons of carbon dioxide equivalent for our refinery business.

Water Management

Energy business consumed lots of water; therefore, the Company realizes the importance of water resources and works to reduce water risk and impact from using water resources in business activities and operations. The Company is also concerned about impact of wastewater discharge to environment and society. As a result, Bangchak defined water reduction targets at 15% (2015 as a baseline) to control water intake in production process to below 0.06 cubic meters per million barrels of oil production equivalent.

Oil and Chemical Spills Prevention and Management

Bangchak considers safety and environment impacts in every business process. and ensure that there are no oil and chemical spills from marine crude oil transportation from large to small vessel, refinery, and crude oil transportation to depo and customers. The Company also aims to prevent incident; therefore, we set zero significant oil and chemical spills (defined as more than 100 Barrels/incident) in 2020.

Air Pollution Management

The Company considers impacts from air pollution to employee, contractor, communities and environment. In addition to strictly complying with air pollution related laws and regulations, Bangchak sets zero air pollution complaints and emission target for venting air emissions from stack.

Waste and Unused Material Management

To align with SHHE Policy focusing on efficient use of resources and optimal use of waste, the Company set zero waste to landfill and waste managed by 3Rs, which increases each year, as 2020 KPIs for waste management.

For long-term goals, the Company set target of zero waste sent to incineration without energy recovery (excluding recycling or reused or incineration for energy recovery) and waste generation intensity reduction of 2.5% from business as usual within 2025 compared with base year 2015 as target for 2025.



3.3.2 Environmental Performance

In 2020, Bangchak sets out to achieve environment targets and disclose environment performances that were verified by third party (Lloyd's Register International (Thailand) Company Limited). Verification process is aligned with GRI Sustainability Reporting Standards (GRI Standards) and Oil & Gas Sector Supplement (OGSS) especially energy consumption and greenhouse gas emission (scope 1 & 2) data. Scope of data covers the Company and subsidiaries. Level of assurance has improved from "Limited Level of Assurance" to "Reasonable Level of Assurance." All environmental performance is disclosed in Integrated Sustainability Report 2020.

Energy Consumption

Bangchak has been in compliance with ISO 50001 for energy management system since 2014. In 2020, the Company implemented Continuous Catalytic Regeneration Unit (CCRU) which is energy efficiency management, resulting in the decrease of energy consumption. In addition, the Company incorporated latest technology, AI, with people development to increase business performance. In 2020, energy efficiency programs included:

- Project to stop using Air Fin at diesel quality improvement unit 3
- Project to stop using air blower at waste management unit
- Project to reduce stream pressure by 20 bar from sulfur reduction 2500/2600 to TGTU
- Project to bypass heat exchange to recover heat
- Project to improve amine flow efficiency and reduce acid gas pressure for stream reduction at sulfur reduction from fuel gas unit
- Project to reduce medium stream pressure at naphtha separation at refinery unit 2

The completions of the energy management and energy efficiency projects in 2020 resulted in Energy Consumption Index at (EII) of 102.0, which is better than the 2020 target equivalent to energy consumption at 5.68% FOEB.

Climate Change

Refinery business release a significant amount of greenhouse gas; therefore, Bangchak works to continually reduce its GHG emission. In 2020, Bangchak started up the Continuous Catalytic Regeneration Unit which is more efficient than Reforming Unit 3. The Company also managed energy and implemented energy efficiency projects for GHGs emission reduction such as project to stop using air compressor at removing sulfur unit and project to stop the kiln no.4 at Reforming no.2 unit. In addition, the Company studied and assessed carbon dioxide emission through the Life Cycle Assessment (LCA) of products and certified carbon label from Thailand Greenhouse Gas Management Organization (scope limited to Bangchak Refinery).

Scope 1 and 2 GHGs emission were calculated based on Intergovernmental Panel on Climate Change (IPCC) 2006 and verified by third party (Lloyd's Register International (Thailand) Company Limited). Verification process is aligned with GRI Sustainability Reporting Standards (GRI Standards) and Oil & Gas Sector Supplement (OGSS) especially energy consumption and greenhouse gas emission (scope 1 & 2) data. Level of assurance is Reasonable Level of Assurance.

Water Management

Bangchak conducted an analysis of water risk and water stress using international water risk assessment tools. In addition, the Company managed water risk through water footprint of 6 products categories to reduce tap water for production process, monitoring and surveillance of drought and flood situation, and monitoring water level in Chao Phraya River. The Company manages water consumption in business process through 3Rs (Reduce, Reuse & Recycle) to reduce water consumption in production process. The Company also implemented projects to reduce tap water consumption in 2020 to prevent business impacts and maximize water efficient. Projects conducted in 2020 include:

- Project to increase water capacity at RO recycle unit from treated waste water
- Project to improve tube air fin cleaning by soda blasting technology
- Project to reduce rinse time of activated carbon after back wash
- Project to reduce CIP cycle from time base to condition base
- Project to reduce water condensate from sealing safety valve system
- Project to reduce stream stripping at Refinery unit

In 2020, Bangchak's fresh water intake for used in production process was 0.065 cubic meters per thousand barrels of oil equivalent which is slightly higher than target. Due to COVID-19 situation, international suppliers could not service the gas turbine generator so the Company had to run stream turbine generator, resulting in higher water consumption than target. However, the Company reduced 36.6% of tap water consumption compared to water demand per production process or 1.45 million cubic meters as a result of water management through 3Rs (Reduce, Reuse & Recycle).

Oil and Chemical Spills Prevention and Management

Bangchak manages environment and safety risks and impacts of oil and chemical spills from the business operations such as selecting oil tanker ships with strict inspection system and evaluation of oil tankers based on standard used in the oil industry, installing oil tanks and pipelines following international standard, establishing prevention and emergency plans in case of oil spills and conduct an annual emergency drill, inspecting the readiness of emergency equipment, oil removal equipment, and developing related person and training on work procedures to workers.

To enhance confidence in safety operations and environmental care for the communities in the Chao Phraya River Basin, the Company commission oil skimmer boat called " Sri Thararak 8." The oil skimmer boat is stationed at the port of the refinery and can store up to 10,000 liters of oil stains. The boat is equipped with side collecting boom and belt skimmer that can automatic remove oil stain. In an event of an emergency, Bangchak will also be ready to assist the Oil Industry Environmental Safety Group Association (IESG), where it is a member, and any other emergencies as requested. In 2020, there was no significant oil and chemical spills.

Air Pollution Management

The Company controls air pollution emission from source by using clean fuel for all production process and aligns work process with ISO 14001. The Company received ISO 14001 international certification for the 23rd consecutive year. In addition, the Company revised air pollution target to be more strict. The Company also tracks and monitors air quality through online measurement at vent, around operation and near refinery based on proactive environment policy. Air quality measurement was also verified by third

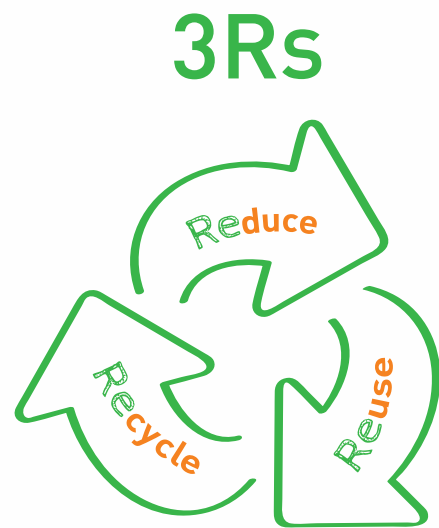
party. Leakage of Volatile Organic Compounds (VOCs) from equipment are monitored daily. In addition, VOCs was measured by infrared camera to improve controlling equipment of all raw material storage and products.

In 2020, the Company achieved zero grievance of air pollution and air quality assessment conducted by third party was at 100% compliance.

Non-hazardous Material and Waste Management

The Company implemented stringent waste management practices to comply with waste-related regulations and using 3Rs management principles which are reduce, reuse, and recycle, following local and international guidelines of waste management to reduce environmental impacts from waste disposal. The Company focuses on minimizing waste to landfill. In 2020, the Company collaborated with Thailand National Metal and Materials Technology Center to co-develop environmental management system for petroleum refinery business project following circular economy theory to maximize waste value.

In 2020, the Company achieved zero waste to landfill target and by using 3Rs waste management principles, the Company were able to make the use of 99.9% of the total waste generated.



3.4 Sustainability Management - Social Dimensions

3.4.1 Policies and Guidelines

Bangchak's social and human rights policies and guidelines are in compliance and in accordance with the Sufficiency Philosophies and international sustainability standards including UN Global Compact, UN Sustainability Development Goals (UN SDGs), Dow Jones Sustainability Indexes (DJSI). The Company has put in place policies and operational practices for managing social and environmental impacts both in terms of impacts mitigation and remediation processes. Existing policies cover human rights, safety security occupational health environment and energy, corporate governance, corruption prevention and anti-corruption, employees customers suppliers and business partners treatments. In addition, the Company has also conducted stakeholder engagement activities such as surveys and used the results to improve operations in order to better response to stakeholders' expectations. Bangchak uses DJSI's assessment as guidance for our operation as follows:

1. Human Right The Company aligns with the implementation of UN Global Compact, the Universal Declaration of Human Rights (UDHR), the United Nations Guiding Principles on Business and Human Rights (UNGP) in fulfilling its business responsibility to comply with human rights, including equal employment opportunities without limitation on genders (male, female and LGBTQ) and people with disability, and collective bargaining where a representative of the employees can consult with top executives to ensure that decisions are made with employees' views in order to prevent any impact to operations.

The Company reviewed all human rights risks using a checklist and review of human rights impact assessment in accordance with the Human Rights Due Diligence (HRDD) process which covers stakeholder groups that may be impacted by the Company's operations including employees, contractors, surrounding communities, customers, suppliers, and temporary workers as well as vulnerable groups such as women, children, and disabled persons). It covered refinery and oil trading business, marketing business, partners and joint venture companies.

2. Safety and Occupational Health Safety and occupational health are one of the most important responsibilities of our business. All of Bangchak's management, employees, suppliers, and subcontractors are responsible for their own personal safety as well as fellow employees and surrounding communities by strictly following safety standards such as ISO 45001 and Process Safety Management (PSM) at all times. In addition, the Company conducts risk assessment and risk mitigation activities for operators to ensure that all operators are conducting work in a safe manner and everyone goes home safely everyday.

3. Taking Care of and Developing our Employees Bangchak strives to be "The Best Employer" for our employees. Under this framework, the Company has set expectations for all levels of employees to help drive our Company's values "i AM BCP" in order to be responsive to the dynamic changes in global economic, environment, and social issues as well as disruption from innovation and technologies. The Company conducts Employee Engagement Survey annually and uses the results to continually improve our performances.

4. Responsibility to our Customers There are three main customer groups: customers who come through our service stations (end users), industrial customers, and wholesale customers. In addition, the Company extends our customer management practices to our business partners who are service stations franchisees and COOP. The tenet's of Bangchak's customer service is "Customer Centric." The Company uses Net Promoter Score (NPS) to continually assess our performance and improve our customer service.

5. Community and Society Development Improving livelihood and strengthen communities have always been one of Bangchak's core principles since the foundation of the company. Bangchak provides supports to the local communities as well as develops business models that have positive impacts to the wider society. In addition, the Company has implemented the BCG Economic Model which includes Bio Economy, Circular Economy, and Green Economy into business development and corporate social responsibility activities in order to support the UN Sustainable Development Goals (UN SDGs) 13: Climate Action, Goal 12: Responsible Consumption and Production, Goal 8: Decent Work and Economic Growth to improve livelihood of people in the surrounding communities and Thai farmers.

Business operation and activity frame work in COVID-19 pandemic situation

In 2020, every country encountered the severe COVID-19 pandemic which had adverse impacts on human health and the economy. Because of this, Bangchak has extended its business activities to look after employees, customers, communities, and other stakeholders to be safe from the COVID-19 impacts.

The Company has operated its business activities to prevent and mitigate impacts during pre-COVID-19 pandemic, post- COVID-19 pandemic, and the recovery period from the COVID-19. In addition, Bangchak has adopted the Culture of Health for Business Practice (COHBP) for its operations during the post-COVID-19 situation. The Company's practices in the COVID-19 situation are as the followings:

Operations

- Rescheduled Total Productive Maintenance (TAM) from Q2/2020 to 2021. TAM activities require international experts and many contractors which increases the risk of COVID-19 transmission. In addition, lower production in 2020 allows the Company to extend the life of crackers, reformers, and equipment which help reduce cost and improve cash flow.
- Established Innovation Continuity Task Force to crowdsource ideas from employees on business improvement or new businesses in order to generate additional revenue and support changing business landscape after the COVID-19 crisis.
- Developed and deployed digital payment system for service stations to reduce the handling of cash as well as improve customers' experience through faster and more convenient service.
- Added a new revenue source by producing alcohol gel from our ethanol plants.
- Developed Bangchak's gasohol product, E20 EVO, to replace E20 gasohol in service stations throughout the country. Due to our marketing efforts the sale of refined fuels after the government's lockdown measures were relaxed steadily improved.

Employees

- Epidemic - Crisis Management Plan is part of the Bangchak's Business Continuity Management (BCM). The Company places great importance in the safety and health of our employees, customers, and all stakeholders. Meetings are held on a regular basis and plans are updated in response to the on-going crisis where any updates and new information are communicated to employees and stakeholders.

- Employees with pre-existing conditions and employees who are expecting can request to work from home.
- Shifts are staggered to increase social distancing where special accommodation on start and end shift are provided for employees who use public transportation.
- Promote the use of teleconference and VDO conference.
- Shift workers hours were modified to accommodate the government’s curfew. Entry into the Control Room was strictly limited to essential personnel. The Company also provided company’s car for door-to-door transportation from their homes to the Control Room. In addition, onsite living quarters were prepared in case of wide-spread outbreak.
- Distributed alcohol gel and medical masks to all employees. In addition, alcohol gels are provided throughout the office and operational areas.
- Tighten restrictions in offices for employees, contractors, and visitors to increase social distancing and prevent the spread of COVID-19.
- Provide strict hygiene measures at all contact points in all service stations, such as requiring all service station personnel to wear masks at all times. Inquiring and observing symptoms by measuring employees’ body temperature regularly. Provide alcohol hand sanitizer for cashier and throughout service station area to increase the confidence of customers in using the service.
- Organize activities for employees to sew cloth masks and sold alcohol gel to employees at low prices.
- Provided vegetables seeds and seedling to employees so that they can grow vegetables at home to reduce food costs under “Por Pakk Pak” project.
- Provided telemedical services to employees to reduce transmission risks from visiting hospitals.
- Increased communication channels between employees and management to better management operations, budget, personnel, and other measures that could directly impact employees’ earning. In addition, management meet with employee’s representative and union on sensitive topics to ensure that messages related to job security issues are properly communicated.

Suppliers and Sub-contractors

- Bangchak ensured payments to suppliers and contractors are made on-time in accordance with all contracts even during work-from-home periods.

Supporting Local Businesses

- Bangchak bought RD. 43 rice from Thung Wat Sing Agricultural Cooperative in Chainat province. The rice was distributed to communities through “Tanks of Happiness” project.
- Bangchak bought jasmine rice from Klong Lung Agricultural Cooperative in Pathum Thani province and to be sold at low prices to employees during the crisis.

Procurement of Masks and Alcohol Sanitizer

- Sell sanitizing alcohol gel at low prices and act as a retail distributor for medical masks through our service stations and Inthanin Coffee shops.

Giving Back and Corporate Social Activities

- Setup “Tanks of Happiness” in our Service Stations, partnered areas, and multiple sites in communities to ease the suffering during the crisis. Employees and the public are encouraged to share food and necessity items to people in needs. In addition, Bangchak also contributed rice from Thung Wat Sing Agricultural Cooperative in Chainat province to the project.

- Donated sanitizing alcohol gel and bottled drinking water to government agencies for distribution to communities around the refinery.
- Donated 17,000 Bangchak Cares, COVID-19 care bags to the communities surrounding the refinery. The contents within each bag include 2 cloth masks, sanitizing alcohol gel, vitamin C, and a sticker with emergency contact number.
- Donated 3,500 medical masks to the People's Republic of China by way of the Chinese Embassy in Bangkok.
- Promote local products by increasing shelf space for local products in our Service Stations.
- Maintain business expansion of Inthanin Coffee and other partnered stores and expanding job creations as planned.
- Create a marketplace via Line to expand sales channel for sellers who are in communities surrounding the refinery.

Communities and Society

- Provided consultation and recommendation to Khun Jeaw Cleaning Service, a business offering cleaning services in condominiums, to improve service quality and operational process to adjust to the new normal.
- Support 39 schools in 31 provinces that are struggling with illiteracy by conducting online training to teachers during half-term break, provide teaching equipment, and monitor progress and provide continual support throughout the school year.



Targets and Strategies

Targets	Strategies
<p>Safety and Occupational Health</p> <ul style="list-style-type: none"> • Zero cases of occupational health • Zero oil and chemical spill cases that result in significant impact to the environment 	<ul style="list-style-type: none"> • Process Safety Management (PSM) • Encourage engagement, consultation, and communication with occupational health personnel
<p>Taking Care of and Developing our Employees</p> <ul style="list-style-type: none"> • Employee Engagement Score: 60% 	<ul style="list-style-type: none"> • Talent management and career advancement • Maintain engagement between management and employees through regular communication and activities
<p>Responsibility to our Customers</p> <ul style="list-style-type: none"> • Maintain Net Promoter Score (NPS Score) #1 ranking 	<ul style="list-style-type: none"> • Greenovative Experience
<p>Community and Society Development Surrounding Communities</p> <ul style="list-style-type: none"> • Community Engagement Score greater than 85% • No widespread complaints from the communities 	<ul style="list-style-type: none"> • Develop activities that provide benefits throughout the communities • Prompt response to complaints
<p>Community and Society Development Society : Supporting SDGs</p> <p>SDG 13: Climate Action</p> <ul style="list-style-type: none"> • Encourage consumers to be part of reduce carbon emission by using Bangchak fuels 	<ul style="list-style-type: none"> • Created “Your Tree,” a mobile application that encourage consumers to use cleaner fuel to reduce emission from combustion process which is like planting a tree to capture carbon
<p>SDG 12: Responsible Consumption and Production</p> <ul style="list-style-type: none"> • Encourage consumers to reduce waste <ul style="list-style-type: none"> - Use at least 5 million bioplastic cups per year - Promote the use of personal cups (except during COVID-19) - Recycle at least 300,000 PET bottles • Buy used cooking oil to recycle and blend into biodiesel 	<ul style="list-style-type: none"> • Use Circular Economy framework and bioplastics innovation to develop waste reduction projects at Service Stations and Inthanin Coffee shops
<p>SDG 8: Decent Work and Economic Growth</p> <ul style="list-style-type: none"> • Support farmers and communities around the refinery to generate supplemental income 	<ul style="list-style-type: none"> • Capability building for COOP service stations • Career development and job training to stay at home mothers

3.4.2 2020 Social Dimension Performance

Human Rights:

1. Human Rights Due Diligence (HRDD): The Company conducted HRDD in accordance with the National Human Rights Commission of Thailand's guideline which covers 8 main risk areas including construction and expansion of business operations, employees and contractors, surrounding communities, customers and consumers, business partners, foreign labors, and temporary workers.

Findings from the HRDD indicates that, although residual risks related to safety and occupational during COVID-19 and personal information protection have not resulted in any human rights violations, Bangchak will continue to improve on the risk management process to mitigate the probability and impacts of these risks as follows:

- **Personal Information Protection:** Implemented policies, guidelines, mechanisms or regulatory measures along with improving work processes. To ensure full compliance with the Personal Information Protection Act 2019, Bangchak has established Policy for Managing Work Process, conducted training and seminars to educate and raise awareness to employees so that they are equipped to ensure compliant with the law. In addition, Bangchak conducted workshops to analyze key operations to develop guideline and improve processes focusing on efficacy and risk reductions at control points. Development of technology to help with internal control and compliant has been an on-going effort. Since 2018, Bangchak has established the cybersecurity division to be responsible for cybersecurity management based on the International Standards for Cybersecurity Management ISO/IES 27001: 2013, ISO / IES 27032: 2012 and NIST Cyber Security Framework.
- **Occupational health:** Bangchak has expanded our human rights management to cover emerging epidemics in response to the COVID-19 crisis. The Company provides necessary protective equipment such as masks, sanitizing alcohol gel, and working hours adjustment for employees, contractors, communities, customers, citizens as well as government agencies (For more details please refer to Operations and Business Activities during the COVID 19).
- **Safety:** Bangchak operates in accordance with ISO 45001 and in accordance with the laws on safety, occupational health and work environment. The Company provides knowledge, training, and drills to ensure the highest standard of safety. Protective equipment and best-in-class technology are employed to mitigate risk. In addition, risk-based physical checkups are conducted annually as well as daily baseline health checks. In 2020, Bangchak conducted evacuation drills and training sessions to 6 schools and 11 condominium around the refinery.
- **Collective Bargaining:** Bangchak ensures open communication between management and employees in regards to negotiation of employees' benefits through Bangchak's Labor Union where meeting are held quarterly in accordance with regulations. Currently over half of Bangchak's employees are members of the Union. The Union meets with management regularly and have 13 committee members who act as employees' representatives to work with management to improve employees benefits and response to employees' expectations. In 2020, Bangchak offered an early retirement package to employees, increased payment to level 8 and 9 shift workers, and modified the requirements for former employees to become Bangchak's suppliers. The company has not had any significant labor disputes in the past 3 years.

- **Suppliers and Contractors:** Bangchak employs Supplier Code of Conduct (SCOC) to manage and mitigate risks related to suppliers' and contractor's human rights, safety, occupational health, and environmental performance.
- **Complaints and Disputes:** There were no significant cases of complaints and disputes including labor disputes, human right violations, breach of regulations, and negative impacts to the community and society for the past 3 years.

Safety and Occupational Health

In 2020, the Occupational Safety and Working Environment Committee where at least 50% of committee members consisted of employee representatives. All employee representatives are selected from employees at the operating level and by function. The Committee meets monthly to receive information from employee representatives, inform members of work progress, and implement COVID-19 prevention measures such as screening, protective equipment, and social distancing in line with OSHA 3990-03 2020: The Occupational Safety and Health Administration

The safety performance: In 2020, the safety performance for both employees and contractors improved significantly. Loss-time Injury Frequency Rate (LTIFR), Injury Severity Rate (ISR), Total Recordable Injury Rate (TRIR) and High-Consequence Work-Related Injuries rate for both employees and contractors have improved. For the accidents that occurred, the Company has investigated the cause and took lessons learned to improve the work process and control operations to prevent recurrence and establish timeline for short-term and long-term improvement plans. In addition, Bangchak promote personal safety activities to foster a sustainable safety culture.

	2018		2019		2020	
	Male	Female	Male	Female	Male	Female
Loss-Time Injury Frequency Rate (LTIFR)						
Employees	0.55	0	0	0	0	0
Contractors	0.71	0	0.42	0	0.34	0
Injury Severity Rate (ISR)						
Employees	7.75	0	0	0	0	0
Contractors	9.18	0	1.27	0	1.34	0
Total Recordable Injury Rate (TRIR)						
Employees	1.66	0	0	0	0.60	0
Contractors	1.41	0	1.06	0	0.34	0.54
High-consequence Work-related Injuries Rate*						
Employees	N/A	N/A	0	0	0	0
Contractors	N/A	N/A	0	0	0	0

*High-consequence work-related injuries rate because of work accidents and not be allowed to go back to work for 6 months.

Oil or chemical spills: In 2020, there were no significant oil or chemical spills into the environment including marine transportation of crude oil using large tankers and smaller ships, in refining processes, transportation to oil terminal in Samut Sakorn and Surat Thani as well as transportation to customers. Bangchak continues to put in place the strictest measures to reduce both environment and safety risks that may arise from oil and chemical spills through effective management which include:

Oil or Chemical Spills	2017	2012	2019	2020
Number of Significant Oil and Chemical Spills (More than 100 Barrels)	0	0	0	0

- Ensure that personnel have the latest knowledge and information by regularly conducting training and operational practices with relevant government agencies and other companies in the oil industry.
- Ensure that safety technology, equipment, systems, and tools meet the Oil Company International Marine Forum’s standards. This includes upgrading fire extinguisher system at port and installing new CCTV cameras.
- Identify potential risks that may result in Loss of Primary Containment (LOPC) and develop prevention and control measures for each area. Performance effectiveness of the prevention and control measures are continually monitored to prevent any reoccurrence.
- Commissioned an oil spill clean-up ship, “Sri Thararak 8,” which is equipped with side collecting boom and belt skimmer enabling it to clean up oil spill without any assistance from other ships (the operation usually requires 3 ships). On-board features include fire extinguisher system to increase safety and a meeting room so that personnel can better respond to the emergency. The Sritaruk 8 will be stationed at Bangchak’s port, its presence will increase environmental and safety assurance around Chao Phaya bay area. In an event of an emergency, Bangchak will also be ready to assist the Oil Industry Environmental Safety Group Association (IESG), where it is a member, and any other emergencies as requested.

Taking Care of and Developing our Employees

The company set a strategic plan on employee stewardship and followed up the employee issues on a regular basis through the Management Development Sub Committee (Sub MDC) of each business group. The company usually gathered employee feedback from the Employee Engagement Survey and screened various issues for discussion before passing them to the Management Development Committee (MDC) for consideration and approval for further improvement and development. Such the monitoring also helps the company to handle employee stewardship in each business group and working group in a closer manner and more effective. The samples are such as the issues of work force planning that well synchronized with the business growth plan, learning and development, job rotation for development, and the promotion of learning for business development.

The company has a modern "Smart ME" system ready for digital transformation. It has already extended the "Smart ME" system from Phase 1.1 (HCM, Onboarding, Performance Management, Absence and Integration) to Phase 1.2 (Recruiting, Succession & Career and Competency) to increase efficiency in the recruitment process, succession planning, personnel selection and manpower planning, especially for the key positions.

The company has data analytics and an executive dashboard that enable the executives to consider proper employee care to be in line with the business direction quickly. This is an important strategy to drive the company’s effectiveness in terms of agility.

Bangchak's employee management consists of four areas: 1. Planning and Recruitment 2. Employee Development 3. Employee Engagement and 4 . Employee Retention.

- 1. Planning and Recruitment:** Bangchak employee planning and recruitment plans are developed to support the Company's 3-year strategic plan. In 2020, there were 1,230 employees with only 30 new employees whose positions could not be filled internally. Due to the COVID-19 crisis, Bangchak emphasized internal recruitment where internal rotation rate in 2020 was 10.11%. Bangchak uses social media including Facebook, LINE official account, and TikTok for recruitment. The BCP Talent Internship Program, a program providing internship opportunities to university students, facilitate the application process through Smart Me system using Introduce yourself channel. In addition, the program developed Onboarding Bangchak Lifestyle Handbook to introduce the interns of the surrounding environment such as apartments, hospitals, and local attractions.
- 2. Employee Development:** In order to align the Individual Development Plan (IDP) with Career Path Development, Bangchak has set Y2020-Y2025 as follows:

Goals Y2020-Y2025	Indicators	Strategy
<ul style="list-style-type: none"> • Increasing people capability according to the competency standards and continuously manage career progress 	<p>Competency gap attained from the Competency Assessment</p>	<ul style="list-style-type: none"> • Career Development Guideline • IDP: Individual Development Plan Competency Gap
<ul style="list-style-type: none"> • Having succession plan for the management/executive positions, critical positions and positions in new business 	<p>Number of employees with high potential (Talent) under development plan in each year</p>	<ul style="list-style-type: none"> • Succession Plan: Developing the skilled experts and successors by their career path/plan • Talent Development: Developing Program/curriculum for employees with high potential
<ul style="list-style-type: none"> • Developing basic courses for employees at each level (Mandatory Program) as well as building leadership in the organization. 	<p>Number of employees passed Mandatory Program</p>	<ul style="list-style-type: none"> • Mandatory Program Model: Developing program/curriculum for employee of each level to match with the business growth and leadership development directions of the organization • Technology course/program to keep up with the changing world, focusing on agile learning and design thinking
<ul style="list-style-type: none"> • Developing learning systems through modern technology, easy to access and meet the needs of employees 	<p>Number of employees learning through the library system and the e-Learning system</p>	<ul style="list-style-type: none"> • Technology & Innovation: Developing application for human resource management systems

2020 Targets and Performance

Targets	Performance
<ul style="list-style-type: none"> • Increase competency according to Competency and manage career path. • Talent & Succession Plan: Develop succession plan critical positions and position in new business • Mandatory Program: Develop core competency curriculum for each employee level which must include leadership skills • Employ technology to develop new learning system that are user-friendly and meets employees' needs 	<ul style="list-style-type: none"> • Prepare a career development guideline by competency assessment to create an individual development plan (IDP). • Talent Development: Develop IDPs for high potential employees, including a mentoring program. • Establish Sustainable Growth Project to develop pipeline of executive in critical positions that required specialized knowledge. • 98.6% of all employees complete required training course based on core competency according to his/her level. • 100% of targeted employees completed e-learning

Employee Development Programs consists of:

- Leadership Development: Develop management of all levels to have Leadership DNA (5 gives: give time, give opportunities, give direction, give value, and give as example) to foster company culture and ensure good performance.
- Career Development Guideline: To increase competency on position and manage career path.
- Talent Development & Succession Plan: Bangchak will consider performance along with potential, strategic ability, and leadership.
- Mandatory Program Model: To match with the business growth and leadership development directions of the organization.
- Teaching agile and design thinking to employees at all levels to ready employees for a disruptive world. Conducting workshops to improve efficiency, reduce cost, and add value so that employees can implement what they learn into improving and innovating businesses.

3. Employee Engagement In 2020, despite the impact from COVID-19, employee engagement score was 63% exceeding the target of 62% and improved from 2019 result at 62% with a response rate of 97%.

Implementation of Employees' Suggestions One of the main activities from the employee engagement survey is to implement feedbacks and suggestions in three areas: talent management, career progression, and communication. Generation Y and Z represent 55% of Bangchak's total employees and they are spread throughout the organization at all levels and functions. The Company maintains engagement between management and employees through the following activities:

- Teatime between top management and employees to exchange ideas and perspectives in an informal setting.
- Town Hall where the President & CEO and executive vice president communicate business directions and update internal movements and relevant information to employees. During the first half of 2020, the Town Hall was conducted via live streaming where employees can listen in from their computers. In the second half of the year the Town Hall was conducted in person but with social distancing measures in place. Executives also conduct regular communication with employees via other channels such as audio, short articles, and video clips.
- The monthly message from the President & CEO called "A Few Words with PS" is a one page A4 written informally by the President & CEO. It is delivered to employees to express care, to inform operational progresses of the Company, and to make good understanding about situations, particularly situations which are related to the Company and employees.
- Podcasts are another communication method which the Company has developed for disseminating sound records of the President & CEO and executives for employees through an online platform in order to talk about their stories or topics which have been categorized clearly.
- CEO Box where any employees can submit feedbacks or suggestions directly to the CEO.
- Giving Recognition via Thank you card and Congrats day where top management congratulate employees with outstanding performance and give directions and expectations of the Company.
- Relationship building activities between top management and employees through employee clubs activities such as planting trees around the refinery, sports competition, employee birthday parties, etc.

Taking care of employees during COVID-19 crisis Bangchak implemented measures to prevent the spread of COVID-19 virus including temperature screening prior to entering the area, placing sanitizing alcohol throughout, encouraging employees to protect themselves by always wearing masks and washing hands often, and allowed employees to work from home in order to reduce risks. Updates are regularly communicated and surveys of employees who traveled to high risk area are conducted to prevent against the spread of the virus at Bangchak.

4. Employee Retention Bangchak's 2020 target for employee retention was to keep the company's turnover rate to below industry benchmark and lower than 4%. In 2020, the turnover rate was 3.18% a decrease from 5.36% in 2019.

Employee performance evaluation model (Percentage of employees)	Employee turnover rate Target : Not more than 4 %			Promotion rate (Percentage of employees)		
	2018	2019	2020	2018	2019	2020
KPI + behavior = 94.54%						
KPI + behavior + 360 degrees = 5.46%	3.55	5.36	3.16	13.92	15.20	9.79

The proportion of remuneration per employee (female to male)

General Manager and ups	Management level	Operation Employees
0.8921 : 1	0.9842 : 1	1 : 0.9877

In addition, a survey on the turnover of employees who resigned in under 2 years showed that retention for new joiners has improved due to benefits changes and adjustment of working styles to better-suited employees from different age group.

Key activities included performance assessment and compensation, special promotion based on high potential and fast track, which consider past performance as well as growth potential, strategic thinking, leadership abilities, and passing of all the mandatory courses. In addition, Bangchak plans for employees' development to be in line with employees' career paths.

Appropriate employee compensation management of each level is another important part for engagement and becoming a high-performance organization in accordance with the best employer guidelines. Each year, the company will conduct a survey of compensation and welfare benchmark between the petroleum industry and the related industry, including the surrounding environment in order to review and improve the compensation criteria. There is an ongoing review and development of compensation scheme and criteria so the company can manage compensation in consistent with the trend of needs from the new generation employees. However, there is no discrimination on gender in determining remuneration and promotion of employee.

Responsibility to Customers

2020 Performance Bangchack was able to maintain the number one ranking in Net Promoter Score (NPS). Key operations implemented to respond to COVID-19 crisis are as follows:

Taking care of our customers and business partners during the COVID-19 outbreak: Bangchak has adjusted our marketing strategy in response to the crisis by:

1. Develop a Call Center system to support all communication channels from consumers. Operators can handle calls from consumers, service station operators (for ordering fuel shipment) as well as Inthanin Coffee shop customers. Call Center employees were able to work from home.

2. System development to response to the new normal including upgrade where members can provide telephone number to collect points instead of handing over the physical membership card (reduce contacts), QR CODE payment and use of wireless credit card machines to be able to serve customers at their cars.
3. Modify promotions And special privileges including
 - 3.1 Extended reward points expiration to 31 December 2021.
 - 3.2 Flash sale and special sale promotions for redeeming membership points for various rewards.
 - 3.3 Redeem membership points for COVID-19 insurance policy and accidental insurance.
 - 3.4 Facebook and Line Official games.
 - 3.5 Promotional products such as Vaseline hand soap bar, herbal toothpaste tablet, and discount coupons for Inthanin Coffee.
 - 3.6 Customers can order Inthanin Coffee through various platforms such as Grab, Lineman, and Foodpanda to reduce risks as well as enjoy special discounts
 - 3.7 Masks and sanitizing alcohol gels sales:
 - March 2020: Inthanin started selling medical masks.
 - March 2020: Provided free sanitizing alcohol gel at service stations
 - April 2020: Round 1 of sanitizing alcohol spray sale at service stations
 - May 2020: Round 2 of sanitizing alcohol spray sale at service stations
 - Currently, Inthanin coffee shops sell alcohol gels.



Development of two-way communication between customers and Bangchak	Development of relationship management and improvement technology	Customer relationship management for both new and existing customers
<p>Consumers</p> <ul style="list-style-type: none"> Continuously develop for 3rd year on customer contact channels both by phone and other online media : <ul style="list-style-type: none"> Call Center 1651 Facebook Website Email Line Official Line@ Live Chat Bangchak Mobile Application Net Listening Software, a system to search for information when customers mention the name of the organization through social media <p>Service Stations and Inthanin Coffee Operators</p> <ul style="list-style-type: none"> Continuous improvement on fuel sale system through Call Center resulted in no major disruptions to order flow during the crisis. Service Stations partners were able to order fuel 24/7 through various channels including Web ordering, Mobile Application, IVR system, Line, and Call Center. Call Center personnel were able to work from home during the crisis Automatic voice recording and database management for all orders Improved procurement system for Inthanin Coffee resulted in no significant impact to operations 	<p>Consumers</p> <ul style="list-style-type: none"> Expanded Point of Sale Automation to service stations outside greater Bangkok areas for the 3rd year in a row Bangchak Mobile Application which display customer's CO₂ saving from using Bangchak fuel in the form of a digital tree Analyzed customer data by segmentation according to behavior and sale volume and use the insights to invite selected customers to refuel with special privileges Developed a push notification system to create personalized marketing, offering the right benefits to different customers such as birthday promotions and special privileges when refueling on the day of price increases <p>System development to response to the new normal</p> <ul style="list-style-type: none"> Members can provide telephone number to collect points instead of handing over the physical membership card (reduce contacts) QR CODE payment Wireless credit card machines <p>Service Stations and Inthanin Coffee Operators</p> <ul style="list-style-type: none"> Instituted call forwarding system for Call Center which allowed Call Center personnel to work from home during the crisis 	<p>Consumers</p> <p>Customers continue to receive membership privileges which include:</p> <ul style="list-style-type: none"> New members receive bonus points for joining Four new membership card designs depicting four regions in Thailand Sixteen charities/nonprofit organizations where members can donate points or cash via Bangchak Mobile Application Member receive points equal to the difference in price on the days where fuel prices increase Customers who incurred damages from using service stations were compensated <p>Privileges for the new normal</p> <ul style="list-style-type: none"> Extended reward points expiration to 31 December 2021 Flash sale and special sale promotions for redeeming membership points for various rewards Redeem 1,000 points for COVID-19 insurance policy Redeem only 1 point for COVID-19 insurance policy during the New Year Holiday Facebook and Line Official games Promotional products such as Vaseline hand soap bar, herbal toothpaste tablet, and discount coupons for Inthanin Coffee

Development of two-way communication between customers and Bangchak	Development of relationship management and improvement technology	Customer relationship management for both new and existing customers
<ul style="list-style-type: none"> Developed Line Group for operators to establish two-way communication <p>Feedback</p> <ul style="list-style-type: none"> Conducted Focus Group for Service Station Operators to update market situations, seek inputs, and co-develop solutions. Document praises from customers to reward outstanding employees 	<ul style="list-style-type: none"> Upgraded E-Training system for operators and employees to be able to access e-training anytime and anywhere Improved E-Report system to facilitate decision making by allowing operators and MR to access critical information in a timely basis <p>Industrial Customers</p> <ul style="list-style-type: none"> Encouraged the use of E-Tax invoice system to improve customers' ability to access data via online system Improve and expand oil terminal to increase coverage and improve delivery time Lubricants information and selection guidelines are provided on www.bangchaklubricants.com 	<ul style="list-style-type: none"> Customers can order Inthanin Coffee through various platforms such as Grab, Lineman, and Foodpanda to reduce risks as well as enjoy special discounts March 2020: Inthanin started selling medical masks and currently selling sanitizing alcohol March 2020: Provided free sanitizing alcohol gel at service stations April 2020: Round 1 of sanitizing alcohol gel sale at service stations May 2020: Round 2 of sanitizing alcohol gel sale at service stations <p>Service Stations Operators</p> <ul style="list-style-type: none"> Improved high quality products such as B10s and modified the formula for GSH S EVO Family to response to customers' expectations Use more online communication channel to improve the effectiveness of communication with customers Developed Bonding Program to support Service Station Operators' investments to improve level of service, increase the number of products, and renovate service stations Expand online sales channels to support Inthanin Coffee shops including promotional activities with delivery platforms and new TO GO menu items Continue offering new beverages and bakery selections to customers

Development of two-way communication between customers and Bangchak	Development of relationship management and improvement technology	Customer relationship management for both new and existing customers
		<p>Industrial Customers</p> <ul style="list-style-type: none"> • Capability building by providing knowledge related to product specifications, emergency drills, after sales services, and equipment handling and maintenance • Provide Total Solution Service, in addition to product sales, through equipment maintenance and warranties • Monthly meeting with key customers to develop marketing tools and expand networks

Community and Society Development The company has actively driven this mission in two levels as follows:

1. Taking care of Bangchak’s neighbors
2. Supporting the Society

1. Taking care of Bangchak’s neighbors Participation in community activities around our operations are broken down into four sub-groups to better respond to the needs / expectations of each group. The majority of the expectations are **1) conducting business with safety 2) advance communication of any work plans 3) prompt communication during any emergency 4) multiple communication channels 5) continual communities activities, which include 6) members of the communities’ participation in activities that benefit the community and society.** Bangchak’s community relation strategy comprises of eight areas: safety, education, sports, quality of life, environment, community relations and culture preservations, economic improvement, and corporate social responsibility. In 2020, more than 140 activities were organized and more than 71,083 beneficiaries from the activities.

2020 Performance

- Zero complaints from the communities
- Community engagement score was 84.4% (assessment conducted by a third-party)

2020 key operations to respond to Bangchak's neighbors expectations

Safety: Emergency Evacuation Drills

Every year Bangchak organized emergency evacuation drills for various potential incidents and conducted training and seminars to educate teachers, students, and school personnel to be able to use fire extinguishers. In 2020, Bangchak conducted evacuation drills and training sessions to 6 schools and 11 condominium around the refinery in Phra Kanong and Bang Na districts.

Communication: There are various communication channels available for communities around the refinery including:

- Direct communication with community relations personnel who visit the communities or via telephone conversations
- LINE group for community committee, condominium residents, and teachers in schools in the communities around the refinery
- Public announcement boards in the communities and condominiums
- Facebook group: Bangchak Family Group
- Expanded coverage of audio announcement system for advance communication of work plans

2020 Activities for the Benefits of Bangchak's neighbors:

Economic: Project "Community Kitchen - Pansuk Market" Community Kitchen - Pansuk Market has been on-going since 2012. The project aims to generate income for residents in the communities by providing occasional retail space to sell food and other products free of charge such as during major turnarounds and during construction projects, in staff canteen, as well as catering food from community sellers during various community activities. In addition, Bangchak provides biodegradable containers and packaging as well as educate sellers on waste separation so that they can take part in caring for the environment. In 2020, Community Kitchen - Pansuk Market was able to generate over 7,764,000 baht of income for 12 sellers, which helped strengthen communities and improve product offering through a customer satisfaction and feedback survey.

Environment: "Bangchak Cares for the Community" project to reduce dust

Bangchak partnered with Phra Khanong District Office to help alleviate PM2.5 health problems in the community. Bangchak's management and employees together with District Office personnel gave away 20,000 N95 masks to residents in the communities, schools and government agencies surrounding the refinery.



Quality of life: "Bangchak Cares - Fight COVID-19" Bangchak started projects and activities to produce and distribute masks and sanitizing alcohol which were in short supply through multiple projects as follows:

- **Bangchak COVID-19 Care Bags:** Provided 32,000 care bags which include cloth masks, sanitizing alcohol gel, vitamin C, and a sticker with emergency contact number to communities residents, condominiums, and schools.
- **Provide alcohol gel for hand washing during shortage** to residents of the community and condominiums, their families and student and health centers around the refinery

- **Employing community residents to sew masks** to fight COVID-19 members of the communities (mostly stay-at-home mothers and young adults) were able to generate additional incomes for their families. The masks sewn were given to Service Station personnel and contractors in the refinery.
- **Bangchak helped organized an activity** where community volunteers sew masks for donation. Bangchak supported by provided sewing kits and fabrics, as well as taught volunteers to sew cloth masks. The volunteers were able to donate 300 masks to the elderly in the community.
- **Bangchak provided vegetable seeds to 200 families** so that they can grow their own food, reduce trips to buy food, reduce costs and create family activities during Work from Home periods.
- **Setup “Tanks of Happiness”** in our Service Stations, schools, and temples around the area to ease the hardship of community members during the crisis. Food and necessity items to people in needs were provided to people in needs



Education: Eco-school project

The project is a partnership between Bangchak, Department of Environmental Quality, Phra Khanong District Office, and Bang Na District Office. The project aims to encourage school administrator and science teachers in 11 schools around the refineries to learn how to develop curriculums that include environmental issues in an integrated manner. In 2020, the project utilized online resources such as uploading clips on Youtube to enable participants to learn anywhere and anytime

2. Supporting the Society Bangchak supports the UN Sustainable Development Goals (SDGs) using “Bangchak WOW” framework by promoting activities in three areas: Well Being Improvement, Oxygen Enhancement, and Water Management.

SDG 13: Climate Action - encouraging Bangchak’s customers to take part in carbon reduction in their everyday lives. Relevant projects include:

- **“Your Tree” Project** - a mobile application that encourage consumers to use cleaner fuel to reduce emission from combustion process which is like planting a tree to capture carbon.
- **“Upgrading Diesel Products to Reduce PM2.5 ” Project** - Bangchak produced low sulfur (10 ppm) diesel fuel to be sold in greater Bangkok Area to help reduce PM2.5. As emission from vehicle contribute to 51% of the PM2.5 in Bangkok, it is important that Bangchak act to be part of the solutions to this health crisis. Even though low sulfur diesel cost higher, Bangchak did not pass these costs on to the customers. In addition, the Company planted over 300,000 trees in Bangkok to increase green areas.

- “Everlasting Battery: Revolutionizing the Future of Energy” Seminar - which featured academics, government agencies, and world-class startups who shared experiences and development trends of Li-ion batteries that will have profound implications to the energy industry. Battery is a key technology Bangchak is focusing on to transition itself to greener and more innovative businesses.



- Project to develop Wet Forest area in Phu Long forest - the last remaining forest in Lamphao, Chaiyaphum province. Although the project has been on-going for 16 years, dry conditions led to wildfires that damaged over 3,000 rai of the forest. Bangchak’s proposed solution is to grow 10 rai of wet forest to capture water based on Koh Nong Na model. Over 2,000 trees were planted and the area is monitor quarterly.

SDG 12: Responsible Consumption and Production

Plastic waste remains a major global problem. The COVID-19 crisis and the subsequent increase in food delivery means that the volume of plastic waste continue to grow. In order to do our part in reducing plastic waste per SDG 12.4, Bangchak uses Circular Economy framework and bioplastics innovation to produce bioplastic. In addition, the Company support SDG 12.8 in raising consumer awareness by campaigning to reduce single-use plastics in Inthanin Coffee shops and convenient stores as follows:

- “Reduce Waste with Bangchak” Project - Bangchak encourages customers to bring their own cups to Inthanin Coffee to reduce waste (except during COVID-19). Customers who bring their own cups receive a discount. This campaign help to reduce 1 - 2.4 million plastic cup waste annually. In parallel, the Company is switching beverage cups and lids to bioplastics. To date over 60 million plastic cups have been replaced by bioplastic.
- “Rak Pan Suk” project - Bangchak collected PET bottles to be recycled into fibers which can be used to produce products from recycled plastics. In 2020, over 300,000 bottles were collected and recycled into tote bags, canvas bags, and masks, all of which were given to Bai Mai Pan Suk Foundation to be sold for charity to support the foundation’s work.



- **“Biodiesel from used vegetable oil” project**
Bangchak expanded the buying locations throughout the communities around the refinery. Employee volunteers went into the communities to collect and buy used vegetable oil in partnership with government agencies, restaurants, and private companies. In 2020, over 22,750 kilograms of used vegetables oil were collected. This project also helped to reduce the reuse of oil when cooking as well as discharging oil into the environment by raising awareness to the public in multiple areas in Bangkok such as Phasicharoen District and Laksi District. After the project, water qualities around the areas were tested and shown to have improved, especially the level

of oil and grease. The project helps to alleviate water pollution as well as clogged water drains. In addition, Bangchak also collaborated with "Tung won Thung" and Nursery Cup "Kaew Pao Kla" projects by donating bio plastic cups to the Royal Forest Depart to grow seeding instead of using plastic nursery bags.



SDG 8: Decent Work and Economic Growth Helping to improve the well-being of Thai society is one of Bangchak’s core believes. Since the foundation of the company, Bangchak grew our business in tandem with society’s growth, the Company focuses on building economic strength to the communities and Thai farmers. Projects to support SDG 8 are:

- **Community Service Stations (COOP Service Station) Project**
- The project is supported by Cooperative Promotion Department and agricultural cooperatives across the country Agricultural cooperatives with their own service stations can help reduce the cost of fuel to members in the COOP. In addition, members also receive profit sharing in the form of dividends as well as member privileges. The project has improved the livelihood of over 1 million farmer families. Bangchak sets a target to add 10 COOP service stations annually. Bangchak also help COOP partners on the marketing and internal management tools to increase sale and operational effectiveness as well as improve the image of the service station. The COOP Turnpro project was established to improve business acumen of COOP management and agricultural cooperation.

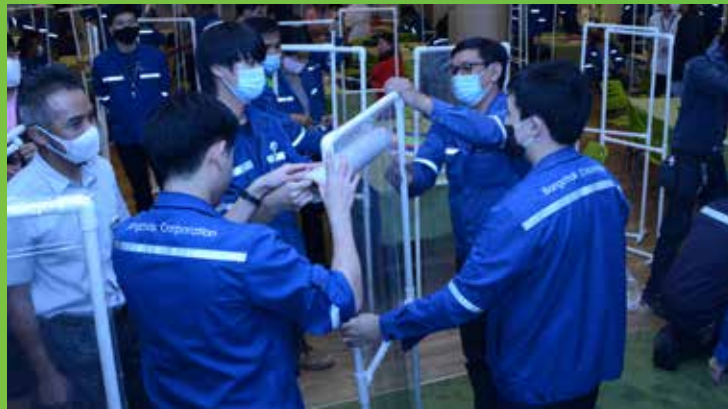




- **Partnership School Project** - Bangchak, Agricultural Cooperative Project, and the Mechai Viravaidya Foundation have partnered with 5 schools in Khon Kaen, Lampang and Surin provinces to establish “Agricultural business in school”. The project aims to teach students to learn about agriculture management, saving and budgeting under the guidance of teachers. The project also lends money to families who wish to develop their own business. To date, 19 loans have been given and the fund has over 440,000 baht.
- **“Winnonie” project** - the project aims to improve the economic conditions of motorcycle taxi drivers who must pay high interest rate on their motorcycles. The project encourage the motorcycle taxi drivers to lease an electric motorcycle to reduce interest payments, fuel cost, and maintenance costs. The project was initiated by Bangchak’s employees under the “Intrapreneur” project, which also supports Bangchak’s goal to become a green and innovative business.

- **Education: Bai Mai Pan Suk Foundation** COVID-19 crisis has led to many students falling behind in their education. In 2020 Bai Mai Pan Suk Foundation has adjusted its work plan on helping to improve literacy rate by focusing on year 1 students under the “Read, Write, Learn, Fun Make Dek Jew Becomes Dek Jaew” project. The project is entirely online from recruiting, teachers training, and monitoring. The Foundation was able to expand its reach to over 42 schools in 30 provinces and 1,100 students.

For more details, please refer to Integrated Sustainability Report 2020
<https://www.bangchak.co.th/storage/document/sd-report/sd2020-th.pdf>





Bangchak Group Getting Through COVID-19 Together



4. Management Discussion and Analysis: MD&A

Executive Summary

Summary of the company and its subsidiaries' operating result for the 4th quarter and for the year 2020

Unit: THB Million	Q4/2020	Q3/2020	QoQ	Q4/2019	YoY	2020	2019	YoY
Total Revenue	33,134	33,652	-2%	50,146	-34%	136,450	190,489	-28%
Accounting EBITDA	2,750	2,769	-1%	2,420	14%	4,104	8,709	-53%
<i>Refinery and Trading Business^{1/}</i>	600	606	-1%	1,073	-44%	(2,169)	2,871	-176%
<i>Marketing Business^{2/}</i>	602	766	-21%	359	68%	2,174	2,279	-5%
<i>Power Plant Business^{3/}</i>	868	1,138	-24%	795	9%	3,640	2,964	23%
<i>Bio-Based Product Business^{4/}</i>	590	390	51%	374	58%	1,828	1,000	83%
<i>Natural Resources Business^{5/}</i>	221	(58)	481%	(57)	488%	(1,004)	(36)	N/A
<i>Others</i>	(131)	(73)	-81%	(124)	-6%	(365)	(369)	1%
Profit (Loss) attributable to owners of the Company	251	(647)	139%	620	-59%	(6,967)	1,732	-502%
Earnings (Loss) per share (Baht)	0.09	(0.57)		0.38		(5.50)	1.18	

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

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

Performance in 2020, Bangchak Corporation Plc. (The company) and its subsidiaries recorded revenue from selling of goods and rendering of service of THB 136,450 million (-28% YoY), with EBITDA of THB 4,104 million (-53% YoY), and recorded Operating EBITDA of THB 8,874 million (-10% YoY). In 2020, the company group faced various challenges arising from the escalation of the global COVID-19 pandemic, which has unprecedented global implications. The world economy went into a recession after lockdown measures were announced in many countries, leading to demand for fuel consumption across the world declining with significance. Moreover, pressures from the Saudi Arabia - Russia oil price war. This led to a decline in the price of crude oil and finished product with significance, resulting the performance of petroleum related businesses to be the most adversely affected. Whereas, the continuous growth of Power Plant and Bio-Based Product Businesses' performance mitigated the volatility in performance. Thus, Dubai crude price averaged in 2020 was 42.27 \$/BBL, a decline of 21.24 \$/BBL when compared to the previous year. This caused the Refinery Business's Gross Refinery Margin to remain consistently at low levels, and the company group recorded Inventory Loss of THB 4,743 million (including reversal on losses of inventories devaluation (NRV)). Also recorded loss on asset impairment of THB 2,375 million, which mainly from the Exploration and Production Business. Additionally, the impairment loss in accordance with TFRS 9 of THB 891 million was recorded, which mostly from trade account receivable went into business rehabilitation under the supervision of the Central Bankruptcy Court, and has already been set up an allowance. All resulting in 2020 recording the **net loss attributable to owners of the parent at THB 6,967 million** (-502% YoY) or **loss per share of THB 5.50**.

The volatility of oil price and the slowdown in global economic activity. Furthermore, the macro of the Thai economy, especially businesses related to the tourism industry was the most affected during Q2/2020. During the second half of the year, the economy started to show signs of recovery, with demand for domestic fuel consumption making continuous recovery from the various government measures to stimulate the economy. However, the company group made efforts to mitigate the effects of COVID-19 by focusing on a work process to be more efficient, agile and easily adapting to various scenarios. Changes were made to the business continuity plan and the organization to create new channels to reach the market and the customers. As well as, proceeding to improve production capacity and searching for new source of revenue, including focusing on cost control. In 2020, the company was able to lower expenses by THB 900 million from its budget. While making adjustments to investment structures, and utilizing suitable financial instruments. Along with the aforementioned activities to maximize company benefit in preparation for events that will transpire in 2021. As a result, cash flow was THB 21,651 million as of the end of 2020.

As for Q4/2020 performance, the company and its subsidiaries recorded revenue from selling of goods and rendering of services THB 33,134 million (-2% QoQ, -34% YoY) with EBITDA of THB 2,750 million (-1% QoQ, +14% YoY), and recorded **net profit attributable to the owners of the parent THB 251 million** (+ 139% QoQ, -59% YoY) or **earning per share of THB 0.09**. EBITDA was on similar levels to Q3/2020. As such during this quarter, the price of crude oil adjusted upward with support from the progress in the development of the COVID-19 vaccine. This caused the company group to record an Inventory Gain of THB 144 million (including reversal on losses of inventories devaluation (NRV)), and the Refinery Business saw an increase in Operating GRM by 1.41 \$/BBL due to the Crude Premium declining with significance. As a result of the increase in oil price, this quarter the Natural Resources Business realized share of profit from invested capital in associate company, OKEA due to increase in revenue from the sales of crude oil and natural gas. Moreover, there was a partial reversal of impairments of the Yme field. The Bio-Based Product Business's performance continues to grow from the previous quarter. However, the Marketing Business was affected by the new emerging phase of COVID-19 outbreak during December 2020, leading to sales volume at levels similar to the previous quarter. Under normal circumstances, fourth quarter would be a period for the High Season for fuel sales. And, the performance of the Power Plant Business declined due to the Hydro Power Plant project in Lao PDR under BCPG was out of production season. The Company's performance of each business group are as follow:

Note: Operating EBITDA is EBITDA excluding Inventory Gain/Loss (net NRV), one-time item and Gain/(Loss) from foreign currencies forward contract.

The Refinery and Oil Trading Business saw its performance severely affected by the volatility of oil price, and Gross Refinery Margin was at low levels; coinciding with demand for fuel consumption across the globe that declined with significance. During this year Operating GRM was 3.20 \$/BBL which declined from the previous year by 2.21 \$/BBL. This can mainly be attributed to every crack spread declining. Due to the domestic demand for oil consumption declining, which caused the refinery to lower its production to an optimal level. Average production rate was 97.2 KBD or 81% utilization rate. Furthermore, as crude oil price declined sharply this year, the refinery recorded an Inventory Loss of THB 4,379 million. The company postponed turnaround maintenance plan from Q3/2020 to Q1/2021. Moreover, the company has upgraded refinery in order to produce niche products i.e. the solvent product group under the name BCP White Spirit 3040 and has branched into becoming the sole producer of UCO (Unconverted Oil) in Thailand, which served to improve Gross Refinery Margin. As for the Oil Trading business under BCPT Pte. Ltd., it is still expanding, recording increase in trade transaction by 20% YoY. Gross profit increased from the previous year, due to the Low

Sulphur Fuel Oil product that had been further treated to add more value to the product under the IMO measures. Furthermore, new products were traded i.e. Unconverted Oil (UCO) and Solvent (White Spirit) to name a few, and its traded market extends to Pakistan.

The Marketing Business in 2020 recorded total sales volume declining by 17% YoY, due to the COVID-19 outbreak, both the first wave and the new emerging phase. Which caused the domestic demand for consumption of fuel to decline. Especially, the tourism industry and airlines were severely affected. Thus, fuel volume sold through the industrial channel being detrimentally affected, lowering by 51% YoY from the decline in the sales volume of Jet Fuel which lowered by 72% YoY. Whereas, the company has focused on retail channel sales, and therefore was not so severely affected. However, net marketing margin increased 11% YoY attributed to the company's ability manage sales to coincide with market demand by focusing on sales through the retail channel. The proportion of sales through the retail market increased, of which the retail market has higher marketing margin than the industrial market. In this year, the Marketing Business recorded Inventory Loss (including reversal on losses of inventories devaluation (NRV)) THB 365 million. The company still maintains its service station expansion strategy, despite easing on portions of the investment due to the contracting aggregate economy. The total number of service stations as of the end of 2020 was 1,233 stations with cumulative retail sales volume market shares in 2020 at 15.6% (data from Department of Energy Business), and is still able to maintain its popularity as the number 1 among customers for the second year in a row from the Net Promoter Score (NPS). The company sell the B10 Diesel fuel which has been designated as the standard Diesel fuel within its service stations across the country, and has debuted the new Gasohol S EVO FAMILY products, as well as upgrading the E20 S EVO to premium quality. Moreover, the company implemented the Digital Payment system to receive payment and collect membership reward points within its service stations, this helped lower handing cash and increased customers' confidence. As for the Inthanin Coffee Shop, it had a total of 673 branches as of the end of 2020. It is the only coffee brand to receive the Best Coffee GET Awards 2019 and the Best Operation GrabFood Awards 2020 from the 2 Food Delivery services. It was also awarded the Thai Star Packaging Award 2020 in the category of environmentally friendly packaging.

Power Plant Business recorded growth in performance, mainly from the investment expansion in the Hydro Power Plant project Nam San 3A and Nam San 3B (total PPA of the 2 projects is 114 MW) in Lao PDR, and the acquisition of the Solar Power Plant project in Thailand, "RPV" comprising of 4 projects (PPA 20 MW) – leading to an increase in 2020 total electricity sales by 100% YoY. At present, the total PPA is 473.7 MW, and realized shares of profit from associate companies in the amount of THB 270 million, which declined from the previous year. Mainly from the Geothermal Power Plant business in Indonesia recorded an expense related to the refinancing THB 172 million. The refinancing has led BCPG Plc. ("BCPG") to receive share payment form the capital reduction in its associate company, Star Energy Group Holding Pte. Ltd., in the amount of THB 842 million (proportionate to shares held by BCPG at 33.33%). Furthermore, at BCPG's extraordinary general shareholder meeting, approvals were given to the plans to increase registered capital through the offering of 1.3 billion ordinary shares. The company expects to receive an additional THB 10.2 billion in capital, with goals for expand the investment in accordance to its 5 year strategic plan, and parts of the capital will be used for loan repayment; strengthening the company's financial structure.

Bio-Based Product Business, saw its performance grow continuously and has reached an all-time high level since its operation. The **Biodiesel Business** recorded increase in gross profit by 201% QoQ and 177% compared with

2019 from its ability to better manage raw material cost, and revenue from sales increase from the average price of B100 rising significantly. A result of the various measures issued by the government sector to promote the consumption of crude palm oil. The sales volume of B100 rose by 14% QoQ from the COVID-19 outbreak subsiding. This caused demand for Diesel fuel consumption in the transport sector, agriculture sector, also including travel to increase, but declined 16% compared with the previous year due to the business was impacted by the COVID-19 outbreak in 2020. The **Ethanol Business** saw the selling price of Ethanol increasing in relation to its raw material cost. Despite demand for Ethanol consumption in the energy sector declining, but was able increase sales of industrial grade ethanol, which was to be used to produce alcohol gel and disinfectant products during Q2/2020 when the COVID-19 outbreak was occurring. Thus, leading to an increase in gross profit by 26% from 2019 but declining 46% QoQ. This is due to Q3/2020, there were amendments to the cost of the molasses raw material, in accordance to the announced average molasses domestic selling price declining. This caused the price of raw material to increase when compared to the previous quarter. Furthermore, BBGI Plc. expanded its business to high value bio-based product business via its investment in Manus Bio Inc. , which is famous across the world as a leading manufacturer of high-value bio-based products. Its production has deployed advanced bio-fermentation.

The Natural Resources Business saw its performance declining significantly, due to realization of share of loss from invested capital in its associate company, OKEA. Whereas, the previous year the company realized share of profit. The price of crude oil and natural gas adjusted downward sharply in 2020, due to the effects of the COVID-19 outbreak. This resulted in OKEA to record a decline in revenue. Also, incremental records in impairments was Technical Goodwill, Ordinary Goodwill of the Draugen and Gjøa fields. Additionally, an impairment related to the Yme asset under development was recorded due to the delay in its production plan and an increase in capital expenditure. However, realized gains from foreign exchange due to the appreciation of the Norwegian Krone (NOK) against the US Dollar. Finance cost decline when compared to the previous year, due to the partial of interest expenses was capitalized as a part of the project cost, and realized deferred income tax which assisted lower net loss for this year. As such, in 2020 OKEA invested in the Calypso and Aurora petroleum fields which are situated near the Draugen and Gjøa fields, respectively. This will help lower the cost of development and production from joint synergy. Moreover, invested in the Vette fields and awarded 6 new production licenses, which served to help strengthen OKEA investment portfolio. As of the end of 2020, the book value of invested capital in OKEA is valued at a level close to its market value. Furthermore, late in the year, BCP Innovation Pte. Ltd. (“BCPI”) reduced its shareholding in Lithium Americas Corp. (“LAC”). The total value from divestment was approximately USD 136 million, which has been reserved for future business expansion opportunities.

Statement of Income

Consolidated Statement of Income (THB Million)						2020	2019	YoY
	Q4/2020	Q3/2020	QoQ	Q4/2019	YoY			
Revenue from sale of goods and rendering of services	33,134	33,652	-2%	50,146	-34%	136,450	190,489	-28%
Cost of sale of goods and rendering of services	(30,741)	(31,058)	-1%	(47,130)	-35%	(132,122)	(180,257)	-27%
Gross Profit	2,393	2,593	-8%	3,017	-21%	4,328	10,232	-58%
Other income	120	121	-1%	140	-14%	533	495	8%
Selling and administrative expenses	(2,180)	(1,613)	35%	(2,262)	-4%	(7,141)	(7,614)	-6%
Gain (loss) from derivatives	165	(72)	N/A	142	N/A	17	160	N/A
Gain on foreign exchange	140	134	N/A	274	N/A	732	614	N/A
Loss from impairment of assets	115	(1,003)	N/A	(34)	N/A	(2,375)	(34)	N/A
Profit (loss) from operating activities	752	160	369%	1,277	-41%	(3,907)	3,853	-201%
Finance costs	(484)	(504)	-4%	(425)	14%	(1,969)	(1,701)	16%
Impairment loss determined in accordance with TFRS 9	23	(24)	N/A	-	N/A	(891)	-	N/A
Share of profit (loss) of associates and joint ventures accounted for using equity method	264	58	N/A	52	N/A	(592)	404	N/A
Profit (loss) before income tax expense	555	(310)	279%	903	-39%	(7,359)	2,556	-388%
Tax income (expense)	46	(19)	N/A	(36)	N/A	1,589	(68)	N/A
Profit (loss) for the period	601	(329)	282%	867	-31%	(5,770)	2,488	-332%
Owners of the parent	251	(647)	139%	620	-59%	(6,967)	1,732	-502%
Non-controlling interests	349	318		247		1,197	757	
Basic earnings (loss) per share (Baht)	0.09	(0.57)		0.38		(5.50)	1.18	

The Company and its subsidiaries 2020 performance recorded a net loss for the period of THB 5,770 million, net loss attributable to the owners of the parent is THB 6,967 million (-502% YoY), or in basic loss per share of THB 5.50 mainly due to the following reasons:

1. Revenue from sale of goods and rendering of services was THB 136,450 million, a decrease of 28% YoY mostly be attributed to petroleum related businesses. The revenue attributed to the company decline from the average selling price per unit and total finished products sales volume decreased by 18% and 14%, respectively. A result of the first wave and new emerging phase of COVID-19 outbreaks. For BCP Trading Pte. Ltd. ("BCPT"), trading transactions of crude oil and fuel oil group increased by 20% and an expansion of their market to new country groups. Moreover, Power Plant Business's electricity sales volume increased from the Hydro Power Plant project "Nam San 3A" and "Nam San 3B" in Lao PDR, and solar power plant projects in Thailand from the investment in the 4 solar power plant projects "RPV" in August 2020. Additionally, Bio-Based Product Business's revenue rose from the average selling price of B100 product, and ethanol product was higher, due to policies to induce the consumption of crude palm oil to lower

production surplus and the higher demand for consumption of industrial grade ethanol to be used in the production of alcohol gel and disinfectant products.

2. Gross profit was recorded at THB 4,328 million, a decrease of 58% YoY, primarily from the Refinery Business which recorded a loss of Total Gross Refinery Margin (Total GRM) 0.68 \$/BBL, compared to the gain 4.55 \$/BBL in 2019. This was due to the decline of crack spread in every products category declining. And, in 2020 the Refinery Business recorded Inventory Loss of THB 4,379 million, whereas in 2019 recorded Inventory Loss (including reversal on losses of inventories devaluation (NRV)) of THB 1,253 million. While Power Plant Business and Bio-Based Product Business recorded higher gross profit. Especially, an increasing in Bio-Based Products Business by 92%.
3. Selling and administrative expenses was recorded at THB 7,141 million, a decrease of 6% YoY due to strict measures to control expenses during the COVID-19 pandemic situation and decrease of transportation expenses in accordance with the lower sales volume.
4. Loss from impairment of assets was recorded at THB 2,375 million mainly from the Exploration and Production Business.
5. Finance costs was recorded at THB 1,969 million, an increase of 16% YoY mainly attributed to the company group's increase in long-term loans from financial institutions and more issuance of debentures. Moreover, there was finance cost recorded in accordance with adoption of the Thailand Financial Reporting Standards 16 (TFRS 16) in 2020.
6. Impairment loss determined in accordance with TFRS 9 was recorded at THB 891 million mostly from the higher amount of expected credit loss (ECL) of trade account receivable since the major trade account receivable went into business rehabilitation process under the supervision of the Central Bankruptcy Court.
7. Share of loss of associates and joint ventures accounted for using equity method was recorded at THB 592 million mainly from OKEA due to the selling price of crude oil and natural gas adjusted sharply downward.
8. Tax income was recorded at THB 1,589 million, mainly from the company recorded deferred tax assets from net loss on taxes, impairment investments and impairment assets.

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

1.) Refinery and Oil Trading Business Group

Crude Oil Price Situation

Crude Oil Price (\$/BBL)	Q4/2020			Q3/2020	QoQ	Q4/2019	YoY	2020	2019	YoY +/-
	MAX	MIN	AVG	AVG	+/-	AVG	+/-			
Dubai (DB)	51.44	36.26	44.64	42.88	1.76	62.03	-17.39	42.27	63.51	-21.24
Dated Brent (DTD)	51.97	36.21	44.16	42.94	1.22	63.08	-18.92	41.84	64.21	-22.37
DTD/DB	0.53	(0.05)	(0.48)	0.06	-0.54	1.05	-1.53	(0.44)	0.70	-1.13

Dubai crude price average in Q4/2020 increased compared to Q3/2020 with support from the progress in the development of the COVID-19 vaccine and began rolling out in various countries. This had led to investor sentiment gearing towards a swifter economic recovery in 2021 and demand for oil consumption will also increase. Furthermore, the Organization of Petroleum Exporting Countries (OPEC) and their alliance jointly decided to maintain their production reduction, in order to preserve the current equilibrium in the market. As for average price of Dubai crude in 2020, it declined significantly when compared to 2019, a result of the COVID-19 outbreaks in various countries around the world had to impose lockdown measures and travel limit measures to curb the spread of COVID-19.

As for the Dated Brent and Dubai spread (DTD/DB) average in Q4/2020 lowered in comparison to Q3/2020 due to demand for Light crude in Europe slowing down from the COVID-19 outbreak, which has forced various countries to adopt lockdown measures. As for the Dated Brent and Dubai spread (DTD/DB) average in 2020 lowered in comparison to 2019 as well. Due to demand for Gasoline and Diesel fuel declining from the COVID-19 outbreak, which has affected the demand for Light crude, which provided high yield of Gasoline and Diesel fuel, to be a state of market excess.

Crack Spreads Situation

Crack Spreads (\$/BBL)	Q4/2020			Q3/2020	QoQ	Q4/2019	YoY	2020	2019	YoY +/-
	MAX	MIN	AVG	AVG	+/-	AVG	+/-			
UNL95/DB	7.66	2.37	4.11	4.45	-0.34	12.97	-8.87	4.43	9.07	-4.64
IK/DB	4.80	0.14	2.42	(0.77)	3.19	13.94	-11.52	2.54	13.73	-11.19
GO/DB	5.08	1.79	3.69	4.13	-0.44	14.32	-10.63	6.14	13.72	-7.58
FO/DB	2.57	(3.99)	(0.57)	(2.53)	1.96	(18.59)	18.02	(2.98)	(4.91)	1.94

Gasoline and Dubai crack spread (UNL95/DB) in Q4/2020 on average lowered from Q3/2020 due to pressure stemming from the US, the world leader in Gasoline consumption, to have lower demand after it had imposed lockdown measures and travel limit measures in order to limit the new wave of COVID-19 outbreak. In tandem with demand for Gasoline puttering down for winter season. Also, the Gasoline and Dubai crack spread (UNL95/DB) average in 2020 lowered in comparison to 2019 due to weak demand after the COVID-19 outbreak. Whereas, the Jet (Kerosene) and Dubai crack spread (IK/DB) on average in Q4/2020 rose in comparison to Q3/2020 due to demand for Kerosene consumption to produce heat during the colder than normal winter season in Northern Asia and Europe. Also in

combination with headway in the development of vaccines, has led the market to speculate that the aviation industry will make a recovery. However, the Jet (Kerosene) and Dubai crack spread (IK/DB) average in 2020 declined in comparison to 2019 after the outbreak of COVID-19, which has led to airlines around the world having to cancel flights causing demand in aviation industry to decline. As for the Gasoil and Dubai crack spread (GO/DB) in Q4/2020 declined in comparison to Q3/2020 due to weak demands after the new wave of COVID-19 outbreak in Europe, which is one of the world's biggest Gasoil consumer. Furthermore, the average Gasoil and Dubai crack spread (GO/DB) in 2020 declined in comparison to 2019 due to demand for Gasoil slowing down across the world, which has led to high Gasoil stock levels. As for the Fuel Oil and Dubai crack spread (FO/DB) in Q4/2020, it has increased in comparison to Q3/2020, as well as Fuel Oil and Dubai crack spread (FO/DB) in 2020 also adjusted upward over 2019 due to support from measures to lower production of Heavy crude by the OPEC and the lower exports volume of Fuel Oil from the West to Asia (arbitrage) due to it not being economically sound. Which has resulted in the Fuel Oil markets in Asia to tighten up amidst demands from the Middle East and South Asia to be used in the production of electricity.

Refinery and Oil Trading Business Group Performance

	Q4/2020	Q3/2020	QoQ	Q4/2019	YoY	2020	2019	YoY
EBITDA (THB Million)	600	606	-1%	1,073	-44%	(2,169)	2,871	-176%
Average Crude Run (KBD)	100.0	95.3	5%	116.9	-14%	97.2	112.6	-14%
Utilization Rate (%)	83%	79%		97%		81%	94%	
Average FX (THB/USD)	30.78	31.49		30.45		31.46	31.22	
<i>(Unit: \$/BBL)</i>								
Operating GRM	3.74	2.33	1.41	5.61	-1.87	3.20	5.41	-2.21
Oil Hedging	(0.39)	0.22	-0.60	0.43	-0.81	0.03	0.11	-0.09
Inventory Gain/ (Loss) ^{1/}	(0.03)	0.97	-1.00	0.08	-0.11	(3.91)	(0.98)	-2.94
Total GRM	3.32	3.52	-0.20	6.12	-2.79	(0.68)	4.55	-5.23
Total Sales Volume in each market category of the Company ^{2/} (Million Liters)								
Marketing Business	1,284	1,286	-0.1%	1,631	-21%	5,140	6,218	-17%
Petroleum traders in accordance with section 7	161	170	-5%	147	10%	670	584	15%
Export	206	308	-33%	316	-35%	990	1,090	-9%
Total Sales Volume	1,651	1,764	-6%	2,094	-21%	6,800	7,892	-14%

Note: 1/ Inventory Gain/(Loss) in the table included (Reversal of) losses on inventories devaluation (NRV)

2/ Sales volume does not include oil swaps between major oil companies (petroleum traders in accordance with section 7) and sales of crude oil products

Performance for Q4/2020, the Refinery and Oil Trading Business Group recorded EBITDA of THB 600 million, similar to levels recorded in Q3/2020, with the following factors affecting performance as follow:

1. The Bangchak refinery averaged its production in Q4/2020 at 100 KBD or 83% utilization rate, which is higher than the previous quarter's average production rate. The production level was increased to preemptively stock finished products to satisfy the customer demand, as a measure to coincide with the turnaround maintenance that will take place during Q1/2021 for 39 days.

2. During this quarter, the refinery's Total Gross Refinery Margin (Total GRM) was recorded at 3.32 \$/BBL, a decline of 0.20 \$/BBL when compared to the previous quarter, mainly due to the following reasons.

- Operating GRM was recorded at 3.74 \$/BBL, an increase of 1.41 \$/BBL, the main reason being that the Crude Premium has declined with significance. Due to the new emerging phase of COVID-19 outbreak across the world, which can be attribute to the contraction of the demand for crude oil. This has led to Saudi Aramco Oil Company to announce discounts for their Official Selling Price (OSP) for crude cargo deliveries in Q4/2020. As well as, Jet (Kerosene) and Dubai crack spread (IK/DB) and Fuel Oil and Dubai crack spread (FO/DB) adjusted upward from the previous quarter due to demand for consumption of Jet fuel has grown and the supplies of Fuel Oil in Asia has tighten. As such, the refinery has increased the value of its products during periods where demand for consumption of Jet fuel is at low levels. Accomplish by producing the BCP White Spirit 3040 which is a product in the line of solvents, in order to help support the GRM.
- During this quarter the refinery business recorded loss from crude and product oil price hedging contract 0.39 \$/BBL whereas the previous quarter realized gain in the amount of 0.22 \$/BBL.
- The refinery business recorded a minuscule amount of Inventory Loss during this quarter, due to the cost of crude oil being refined in Q4/2020 is still higher than the price of crude oil quoted in the global market from the appreciation of Thai Baht against the US Dollar compared to the previous quarter. Whereas, in Q3/2020 recorded an Inventory Gain (including reversal on losses of inventories devaluation (NRV)) in the amount of THB 269 million or 0.97 \$/BBL.

3. BCP Trading Pte. Ltd. ("BCPT") recorded trade transactions of crude oil and finished product for a total of 7.59 million barrels, a decline of 1.04 million barrels (-12%) when compared to the previous quarter. Most of the reduction was from Low Sulphur Fuel Oil. However, gross profit increased mainly from crude oil. Furthermore, this quarter debuting a new product to be traded i.e. the Solvent (White Spirit) which follows the BCPT's business expansion strategy.

Performance comparison between 2020 and 2019, the Refinery and Oil Trading Business Group recorded EBITDA decline of THB 5,041 million, with the following factors affecting performance:

1. The Bangchak refinery's average production rate declined 14% YoY due to weak demand from the COVID-19 outbreak. Also, low levels of Gross Refinery Margin due to demand for finished product within the global market contracting with significance. Therefore, the Bangchak refinery had to lower its production to optimal levels.

2. Total Gross Refinery Margin (Total GRM) was recorded at -0.68 \$/BBL, a decline of 5.23 \$/BBL when compared to 2019, mainly due to the following reasons:

- Operating GRM was recorded at 3.20 \$/BBL, a decline of 2.21 \$/BBL when compared to 2019, mainly attributed to the crack spread declining across all products due to the COVID-19 outbreak experienced in various countries for either the first wave and the new emerging phase, which has caused demand for finished product to contract.
- In 2020, the Refinery Business recorded gains from crude and product oil price hedging contract 0.03 \$/BBL whereas 2019 recorded gains of 0.11 \$/BBL.

- The Refinery Business recorded Inventory Loss of THB 4,379 million or 3.91 \$/BBL due to the pricing situation of crude oil within the global market that contracted sharply during the first half of the year. Due to the COVID-19 outbreak and the oil price war that was sparked by the meeting between the Organization of Petroleum Exporting Countries and their alliance during March 2020 that were unable to come to an agreement on the production reduction of oil. Whereas in 2019 recorded an Inventory Loss (including reversal on losses of inventories devaluation (NRV)) of THB 1,253 million or 0.98 \$/BBL from the volatility of crude oil price due to the market having concerns over the trade war between the US and China.

3. BCPT recorded trade transactions of crude oil and finished product for a total of 31.26 million barrels, an increase of 5.12 million barrels (+20%) when compared to 2019. The increase can mainly attributed to the trade of crude oil and fuel oil group. During this year BCPT expanded their market to new country groups such as Pakistan. Combined with trade of new products such as Unconverted Oil (UCO) and Solvent (White Spirit) for instance. Aside from this, the company earned incremental revenue partially from logistic service. As such BCPT recorded increase gross profit in comparison to the previous year, mainly from the Low Sulphur Fuel Oil that had been further treated to add more value. After the market experienced increases in demand of Low Sulphur Fuel Oil adhering to the IMO measures that had been enforced since the 1st January 2020.

4. Operating expenses lowered from 2019 due to changes in accounting record method under TFRS 16 Lease which had been in effect since the 1st January 2020. Which led to lease contract related expenses to decline, but would instead be realized in higher depreciation and interest expenses. Also, combined with the company had expense controlling measures to lower the effects of the COVID-19 outbreak.

2.) Marketing Business Group

Marketing Business Performance	Q4/2020	Q3/2020	QoQ	Q4/2019	YoY	2020	2019	YoY
EBITDA (THB Million)	602	766	-21%	359	68%	2,174	2,279	-5%
Net Marketing Margin (Baht / Liter)	0.77	0.89	-13%	0.70	10%	0.84	0.75	11%
Sales Volume (Million Liters)								
Retail (Service Stations)	1,101	1,104	-0.2%	1,095	1%	4,197	4,297	-2%
Industrial	183	182	1%	536	-66%	943	1,921	-51%
Total	1,284	1,286	-0.1%	1,631	-21%	5,140	6,218	-17%
Sales volume in each product category (Million Liters)								
LPG	35	33	6%	46	-23%	138	152	-9%
Gasoline	11	13	-16%	12	-13%	47	35	34%
Gasohol	415	448	-7%	437	-5%	1,603	1,705	-6%
Jet Fuel	30	14	114%	258	-88%	266	951	-72%
Diesel	746	731	2%	841	-11%	2,900	3,224	-10%
Fuel Oil and Others	47	47	-0.2%	36	30%	186	152	23%
Total	1,284	1,286	-0.1%	1,631	-21%	5,140	6,218	-17%

Note: Net Marketing Margin of Bangchak only (excluding Inventory Gain/(Loss) and NRV)

The Q4/2020 performance of the Marketing Business Group recorded EBITDA of THB 602 million, a decline of THB 164 million compared to Q3/2020, with the following factors affecting performance:

1. Total sales volume of the Marketing Business Group was near identical to the previous quarter. Under normal circumstances, the fourth quarter is high season period for sales of fuel, as the crop harvesting season approaches and the travel season. However, Q4/2020 experienced floods in the Southern region of the country, combined with the new emerging phase of the COVID-19 outbreak within the country which led to the government announcing measures to curb the outbreak e.g. lockdown measures in special control areas, shutting down risk areas, utilizing special control measures to prevent further outbreaks, limit travel for citizens in some areas, to name a few. This had led to the sales volume still being similar to the previous quarter. However, the aviation industry has been continuously recovering, with the sales of Jet fuel increasing significantly from the previous quarter.

2. During this quarter, the Marketing Business Group recorded an inventory gain of THB 152 million whereas the previous quarter recorded an Inventory Gain of THB 3 million from the rising price of oil late in the quarter.

3. Net marketing margin per unit decreased, due to the finished product cost that rose in relation to the conditions of the global market, and the rise in the B100 product cost throughout the quarter. Of which, the company was unable to adequately adjust retail prices at service station to coincide with the rising oil product cost. Furthermore, the price was not adjusted as a gift to the Thai people during the New Year's celebration from the 25th December 2020 to the 3rd January 2021. Also Jet Fuel sales volume increased from the previous quarter. Of which the Jet Fuel had substantially lower marketing margin compared to other products. This has led to net marketing margin per unit declining.

4. The company is still following the strategy to grow its customer base by expanding its service station in accordance to its investment plans. New service stations were opened in Q4/20 at 14 stations. At the end of Q4/2020

the total number of service stations was 1,233 stations. The company's cumulative retail sales volume market share in 2020 was at 15.6% (data from Department of Energy Business). During this quarter the company participated in relieving the PM 2.5 situation by producing Diesel fuel with Sulphur content lower than 10 parts per million (10 PPM) and has 5 times lower Sulphur content. The product is available at Bangchak service stations within Bangkok from the 1st December 2020 to the 28th February 2021, sold at the same price, despite having higher production cost.

5. The Marketing Business Group still emphasizes the development and expansion of Non-Oil business. As the end of quarter, the number of Inthanin coffee shop was 673 branches, where a total of 43 branches were newly opened. New branches were located both inside and outside service stations in order to reach more consumers. Moreover, sales via the online channel grew continuously from Q3/2020, and still continuously holds various promotional campaigns to satisfy customer needs. It is done by launching new menus and seasonal menus e.g. the Inthanin Home Coffee, beverages to welcome the Vegetarian Festival, the Inthanin Ready to Drink to name a few. Seasonal promotions and the participation in the "Shop Dee Mee Kuen" program. Moreover, the Inthanin coffee shops uses Bio Cups which is made from plants and 100% Biodegradable Plastic-Bio Based, which received an award from the Thai Star Packaging Award 2020 in the category of environmentally friendly packaging held by the Department of Industrial Promotion.

6. Normally, during this quarter there is an increase in selling and administrative expenses from employee related expenses and marketing promotions. Thus, serving to lower the recorded EBITDA from the previous quarter.

Performance comparison between 2020 and 2019, the Marketing Business Group recorded EBITDA decrease of THB 105 million, with factors affecting operations as follow:

1. Total sales volume of the Marketing Business Group declined by 17% YoY, due to this year being impacted by the COVID-19 outbreak both the first wave and the new emerging phase. Which caused various economic activities to slow down. Together, with lockdown measure announcements and shut down the country caused demand for domestic fuel consumption to decline. Especially, in the tourism and aviation industries that were severely impacted. The volume of Jet Fuel sold through the industrial market declined by 72% YoY, affecting the volume of fuel sold through the industrial market significantly, which declined by 51% YoY. Whereas, the company has been pushing sales through the retail market, essentially not receiving much impact, seeing sales declining by 2% YoY.

2. The Marketing Business Group recorded Inventory Loss of THB 365 million (including reversal on losses of inventories devaluation (NRV)) in accordance to the company's allocation policy that was enacted since Q1/2020

3. Net marketing margin per unit in 2020 increased 11% YoY, due to the company's sales management that coincided with market demand by focusing on the retail channel. As a result, the proportion of sales through the retail market increased from the previous year. Of which the retail market has higher marketing margin than the industrial market. Also, the company pushed the sales of products with higher marketing margin. Thus, leaving net marketing margin per unit higher when compared to the previous year.

4. The company's cumulative market share in 2020 was 15.6%, whereas the cumulative market share in 2019 was 15.9% (data from Department of Energy Business). The number of service stations as of the end of 2020 was 1,233 stations, and the company had opened new service stations in the amount of 45 stations. The company is still expanding its service station in accordance to its investment plans, despite slowing down some investments due to

the contracting aggregate economy. In 2020, the company sold B10 Diesel through its service stations across the country in accordance to the policies of the Ministry of Energy that has mandated B10 Diesel to be the standard Diesel fuel. Also, the company debuted the new of products Gasohol S EVO FAMILY, and simultaneously upgraded its E20 S EVO to premium quality under the same price. Moreover, the company proceeded to further refine the quality of its Diesel fuel with Sulphur content lower than 10 parts per million, and has 5 times lower Sulphur content, in order to reduce the pollution from the PM 2.5 particles. The new diesel fuel is sold at the same price from the 15th December 2019 to the 29th February 2020, and from the 1st December 2020 to the 28th February 2021. Due to the COVID-19 outbreak, the Bangchak service station had come to focus on rigorous hygiene and cleanliness measure. The staff at forecourt is required to wear a mask, and the company has given out alcohol gels to customers and the public. Furthermore, the company adopted the Digital Payment system to be used in fuel transaction that simultaneously allows for member reward point collection at its service stations, all Inthanin coffee shop, and convenience stores located in Bangchak service stations. Transactions are carried out by scanning QR codes to access the payment feature on all mobile banking and PromptPay Platform. This lowers handling cash, and keep a physical distance from service employees in order to increase customers' confidence.

5. As for the Non-Oil business compared to the previous year, the Inthanin coffee shop had been newly opened 111 branches YoY. However, with the COVID-19 outbreak some branches had to be temporarily shut down to coincide with the policy of those in charge of the area. Moreover, government measures asked for cooperation from the population to stay home, thusly the company pushed sales promotion on online channels with Grab, Lineman, Gojek and Food Panda. Leading to 2020 recording increasing revenue from online channels, and receiving the Best Coffee GET Awards 2019 and the Best Operation GrabFood Awards 2020; being the only coffee brand to receive awards from these 2 food delivery services. Furthermore, renovations were made to stores, constructing Pick-up store situated in communities, and continuous debuting new products to meet the needs and attract customers to its services. Moreover, Inthanin received the Thai Star Packaging Award 2020 in the category of environmentally friendly packaging. Furthermore, the company partnered with Central Food Retail Company Limited, which operates convenience stores, by opening Tops Daily and Family Mart in service stations. Also, Bangchak Retail Company Limited had made changes to its retail business model, which led to the company recording various related expenses causing EBITDA to decline.

6. Selling and Administrative expenses lowered from 2019 due to changes in accounting record method under the TFRS 16 Lease which had been in effect since the 1st January 2020. Which led to lease contract related expenses to decline, but would instead be realized in higher depreciation and interest expenses. Also, combined with the company had expense controlling measures to lower the effects of the COVID-19 outbreak.

3.) Power Plant Business Group

Power Plant Business Performance (THB Million)	Q4/2020	Q3/2020	QoQ	Q4/2019	YoY	2020	2019	YoY
EBITDA	868	1,138	-24%	795	9%	3,640	2,964	23%
Revenue from sale and rendering of services	1,137	1,238	-8%	981	16%	4,231	3,427	23%
Share of profit (loss) from associated companies	(25)	101	-124%	48	-152%	270	355	-24%
Wind Power Plant	50	(22)	328%	(7)	836%	37	27	39%
Geothermal Power Plant	(74)	122	-161%	54	-237%	233	328	-29%
Electricity Sales (Million KWh)								
Solar Power Business – Thailand (164.2 MW)	73.49	73.70	-0.3%	75.63	-3%	290.46	286.59	1%
Wind Power Business – Thailand (9.0 MW)	3.41	2.68	27%	3.19	7%	11.66	10.02	16%
Solar Power Business – Japan (14.7 MW)	4.22	5.06	-17%	3.52	20%	17.20	18.00	-4%
Hydropower Business – Lao PDR (114.0 MW)	157.12	188.82	-17%	64.34	144%	453.32	72.04	529%
Total Electricity Sales	238.25	270.27	-12%	146.69	62%	772.64	386.65	100%

Performance comparison between Q4/2020 and Q3/2020 of the Power Plant Business Group recorded EBITDA of THB 868 million, a decline of THB 270 million, with the following factors affecting operations as follow:

1. Solar Power Plant projects in Thailand recorded total electricity sales similar to the previous quarter, despite the lower average irradiation hours caused by more rain storm, particularly in October. Which was even out by the full quarter performance recognition of the Solar Power Plant projects, “RPV”, comprising of 4 projects (PPA 20 MW).

2. Wind Power Plant project in Thailand, the “Lom Ligor”, recorded an increase in total electricity sales by 27% QoQ, due to higher wind speed sweeping through the project locations when compared to the previous quarter, from entering its high season.

3. Solar Power Plant projects in Japan recorded a decrease in total electricity sales by 17% QoQ, due to the cloudy weather from winter season in Q4/2020.

4. Hydro Power Plant project in Lao PDR recorded total electricity sales declining by 17% QoQ, due to seasonal factor of hydro power plant that third quarter in every year is high season.

5. Recorded shares of loss from investments in associated companies of THB 25 million, a decline from the previous quarter of THB 125 million, with details as follow:

- Share of profit from the Wind Power Plant business in the Philippines recorded THB 50 million, an increase from the previous quarter of THB 71 million, due to high season factor. Combined with the project being granted an increase in tariff rate from PHP 7.4 per kWh to PHP 8.6 per kWh by Energy Regulatory Commission (ERC) of Republic of the Philippines in November 2020. The project was also granted retroactive adjustment for 5 years (2016 - 2020).
- Share of loss from the Geothermal Power Plant business in Indonesia was recorded at THB 74 million, a decline of THB 196 million from the previous quarter. Due to Q4/2020 recording refinance related expense of THB 172 million, undergoing higher planned maintenance days and realizing of increasing drilling

expenses related to additional production well. Moreover, the refinance by issuing bond provided lower average interest rate and fixed rate along the projects life of Salak and Darajat.

Performance comparison between 2020 and 2019, the Power Plant Business Group recorded EBITDA increase of THB 676 million, with the following factor affecting operation as follow:

1. Solar power plant projects in Thailand recorded marginal increase in total electricity sales from the investment in the solar power plant project, “RPV”, which is a total of 4 projects (PPA 20 MW) since the 11th August 2020. Which compensated the impact of lower irradiation hours in 2020 due to longer than usual rainy season.

2. Wind Power Plant project in Thailand, the “Lom Ligor”, recorded an increase in total electricity sales by 16% YoY, from its first full year commencing commercial operations in 2020 (PPA 8.965 MW).

3. Solar Power Plant projects in Japan recorded a decline in total electricity sales volume by 4% YoY, mainly due to curtailment from Japan Electric Power Company caused by declined in electricity consumption in early of 2020.

4. Hydro Power Plant project in Lao PDR recorded total electricity sales 453.32 million kWh from the first full year recognition of revenue from the “Nam San 3A” (PPA 69 MW), and the 100% share acquisition of “Nam San 3B” (PPA 45 MW); with its performance being realized since February 2020.

5. Realized share of profit from investments in associated companies THB 270 million, a decline from the previous year THB 85 million, with details as follow:

- Share of profit from the Wind Power Plant business in the Philippines increased by THB 10 million, despite the performance in terms of electricity generation declining. This is due to lower wind speed sweeping through the project location compared to the previous year. However, realized revenue from the aforementioned retroactive tariff rate, resulting in increasing share of profit when compared to the previous year.
- Share of profit from the Geothermal Power Plat business in Indonesia declined by THB 95 million. Despite seeing improvements in electricity generation performance due to the lower of planned maintenance shut down days from the previous year. However, recorded a one-time items in the amount of THB 238 million, which comprises of tax provision THB 24 million, allowance for account receivable THB 43 million, and refinance related expenses in the amount of THB 172 million – all combined to lower share of profit when compared to the previous year.

4.) Bio-Based Product Business Group

As for the performance of the Bio-Based Product Business Group in Q4/2020, total EBITDA was recorded at THB 590 million, an increase of THB 200 million when compared to Q3/2020, and for the entirety of 2020 recorded EBITDA of THB 1,828 million, an increase of THB 828 million from the previous year.

Biodiesel Business

Biodiesel Business Performance	Q4/2020	Q3/2020	QoQ	Q4/2019	YoY	2020	2019	YoY
Revenue (THB Million)	2,604	1,508	73%	1,543	69%	8,143	5,875	39%
Gross Profit (THB Million)	484	161	201%	209	131%	1,089	393	177%
B100 Production Volume (Million Liters)	71.74	66.01	9%	78.49	-9%	258.02	299.38	-14%
B100 Sales Volume (Million Liters)	76.81	67.40	14%	87.53	-12%	275.99	327.69	-16%

Performance comparison between Q4/2020 and Q3/2020 are as follow:

1. B100 production volume in Q4/2020 was 71.74 million liters, and B100 sales volume was 76.81 million liters. Both the production and sales volume increased 9% and 14% QoQ, respectively. Due to the continuing recovery of the COVID-19 outbreak from Q3/2020, demand for consumption of Diesel fuel within the transport sector, agriculture sector, also including travel increased.

2. Revenue from sales during this quarter was THB 2,604 million, an increase of 73% QoQ, mainly stemming from the average selling price of B100 adjusting upward sharply. The B100 price (in accordance to announcements made by the Department of Energy Business) in Q4/2020 averaged at 37.86 THB/Liter, an increase of 53% QoQ. Due to the quarter being a period that saw less of palm oil products entering the market, resulting in the domestic crude palm oil stocks lowering. Together with the ability to manage raw material cost during the period while crude palm oil price was increasing, leading to an increase in the gross profit up to 201% QoQ. Moreover, revenue in this quarter was partially from the market trial of Refined Glycerin, yielded from the Refined Glycerin Plant, which is nearing completion and currently in the commissioning phase. The process feeds Crude Glycerin through a refining process that yields higher value Refined Glycerin.

Performance comparison between 2020 and 2019 are as follow:

1. B100 production volume declined by 14% YoY, which coincides with the direction of B100 sales volume that declined by 16% YoY. The business was impacted by the COVID-19 outbreak in 2020, which affected the demand for consumption of oil to decline. With the halt of economic activities, and various government measures to curb the outbreak e.g. lockdown measures, the declaration of the state of emergency, and national shut down – limiting travel. This served to lower demand for consumption of Biodiesel fuel from the previous year, despite the outbreak seeing slight relief in severity during the second half of the year. Moreover, in 2019 the government promoted the use of B20 Diesel fuel to support the use of B100 within the energy sector. However, in 2020 the support was redirected towards the consumption of B10 Diesel fuel, resulting in lower B100 sales volume.

2. Sales revenue increased 39% YoY, from the higher average selling price of B100 product when compared to 2019, the B100 price (in accordance to announcements made by the Department of Energy Business) in 2020

averaged at 37.86 THB/Liter, an increase of 43% YoY. Which was a result of the government sector's issuing measures to induce the consumption of crude palm oil to lower production surplus e.g. the encouragement for the use of Biodiesel by appointing B10 Diesel fuel as the standard high-speed diesel fuel replacing B7 Diesel fuel, the promotion of the export of crude palm oil, and utilizing crude palm oil in the electricity generation process. However, the business efficiently managed the raw material cost serving the Biodiesel Business to record a gross profit increase of 177% YoY.

Ethanol Business

Ethanol Business Performance	Q4/2020	Q3/2020	QoQ	Q4/2019	YoY	2020	2019	YoY
Revenue (THB Million)	1,171	1,218	-4%	969	21%	4,428	4,138	7%
Gross Profit (THB Million)	93	171	-46%	142	-35%	634	503	26%
Ethanol Production Volume (Million Liters)	31.95	51.31	-38%	43.65	-27%	178.85	194.48	-8%
Ethanol Sales Volume (Million Liters)	49.22	52.35	-6%	44.51	11%	185.28	189.43	-2%

Performance comparison between Q4/2020 and Q3/2020 are as follow:

1. Total production volume of Ethanol products was 31.95 million liters, a decline of 38% QoQ. Due to this quarter, the KSL Green Innovation Plc. ("KGI") plant at Bo Ploi district, Kanchanaburi province underwent its annual maintenance, and the plant at Nam Pong district, Khon Kaen province is still under turnaround maintenance continuing from the previous quarter. As such, total sales volume of Ethanol products was at 49.22 million liters, a decline of 6% QoQ. Whereas, Q3/2020 was a period in which the government relaxed its lockdown measures after the COVID-19 outbreak had subsided, allowing the population to travel and pursue more activities outdoors. Which had essentially led to immense increase in demand for Ethanol in the production of Gasohol fuel.

2. Revenue from sales was recorded at THB 1,171 million, a decline of 4% QoQ, a result of the lower volume of Ethanol products sales, despite the average selling price of Ethanol product increasing in respect of the new raw material cost that increased. This is due to the effect of the draught that led to lower amount of cassava and sugar cane yield entering the mill. Also in Q3/2020, KGI adjusted its molasses raw material cost in accordance to the announced average molasses domestic selling price lowering. Thus, leading to raw material cost within this quarter increased in comparison to the previous quarter. As a result, gross profit of the Ethanol Business was recorded at THB 93 million, a decline of 46% QoQ.

Performance comparison between 2020 and 2019 are as follow:

1. Total production volume of Ethanol products decreased by 8% YoY, as the KGI plant at both the Bo Ploi district, Kanchanaburi province and Nam Pong district, Khon Kaen province underwent annual maintenance for a longer duration than the previous year. Total sales volume of Ethanol products declined 2% YoY, mainly from the demand for consumption of Gasohol within the energy sector adjusting downward from the COVID-19 outbreak. However, the company sold industrial grade ethanol due to the government sector permitting Ethanol manufacturers to sell industrial grade ethanol for the production of alcohol gel and disinfectant products. Therefore, volume sold declined slightly when compared to the previous year.

2. Sales revenue increased 7% YoY, which can be attributed to the average selling price of Ethanol products increasing significantly in relation to the higher raw material cost, following the draught that led to lower sugar cane yield, and the outbreak of the Cassava Mosaic Disease. Furthermore, the selling price of Ethanol increased significantly in relation to higher demand for consumption of industrial grade ethanol to be used in the production of alcohol gel and disinfectant products during Q2/2020, when the COVID-19 outbreak had been rampant. This has caused the Ethanol Business to record an increase gross profit 26% YoY, despite the sales volume of ethanol seeing a decline.

5.) Natural Resources Business Group

Natural Resource Business Group Performance	Q4/2020	Q3/2020	QoQ	Q4/2019	YoY	2020	2019	YoY
EBITDA (THB Million)	221	(58)	481%	(57)	488%	(1,004)	(36)	N/A
Share of profit (loss) OKEA (THB Million)	275	(50)	654%	4	N/A	(914)	26	N/A
Production Volume - Net to OKEA (KBD)	16.17	13.30	22%	17.02	-5%	16.15	18.66	-13%
Sales Volume - Net to OKEA (KBD)	18.79	14.23	32%	13.84	36%	15.87	19.48	-19%

Performance of the Natural Resources Business Group in Q4/2020 recorded an EBITDA of THB 221 million, an increase from Q3/2020 of THB 279 million, due to the realization of share of profit from invested capital in the associate company, OKEA in this quarter. Whereas, a share of loss was realized in the previous quarter. With the following factors affecting operations:

- This quarter, OKEA earned higher revenue mainly from the selling price of crude oil and natural gas increasing from the previous quarter, in accordance with the increase of the crude oil price in the global market. Moreover, the sales volume increased by 32% QoQ due to the Draugen and Gjøa fields had planned maintenance turnaround in the previous quarter.
- Realized increase in gains from foreign exchange compared to the previous quarter, mostly attributed to the conversion of loans in foreign currencies. The Norwegian Krone (NOK) is still appreciate against the US Dollar, at a higher rate than the previous quarter.
- Recorded reversal of impairment related to the Yme asset under development, due to a crucial construction process of the project was completed in this quarter, which assisted de-risking of delayed project completion. Combined with the improvements in the price of crude oil in the global market.

Performance in 2020 compared to 2019, the Natural Resources Business Group recorded EBITDA decline of THB 968 million, due to share of loss from invested capital in the associate company, OKEA increased from the previous year. With the following factors affecting operations:

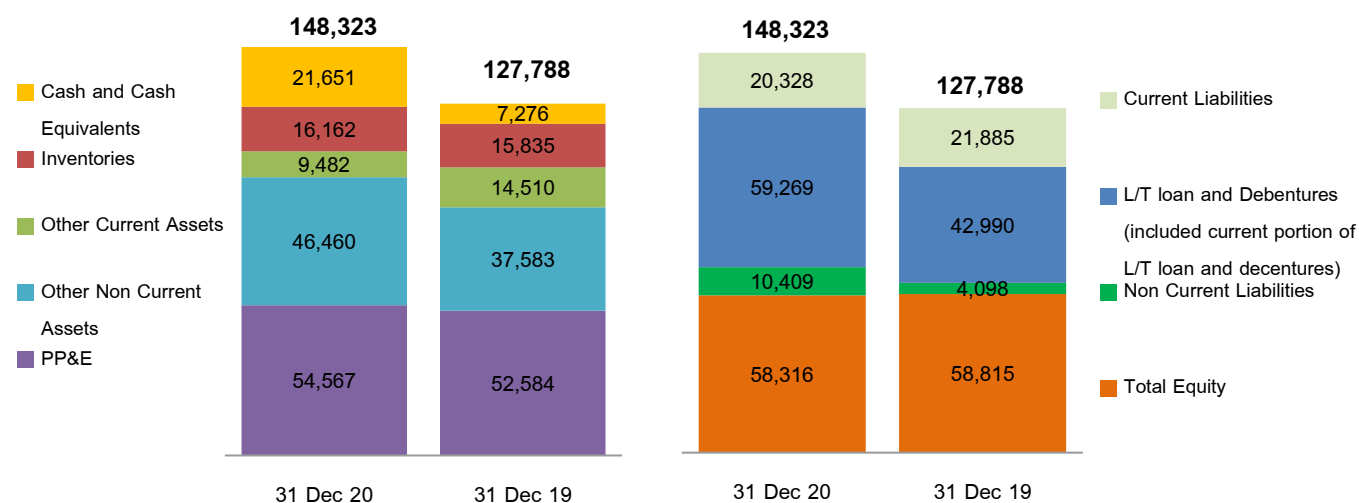
- OKEA received less revenue compared to the previous year, mainly from the selling price of crude oil and natural gas which declined sharply in consequence of the COVID-19 outbreak. Furthermore, the sales volume declined by 19% YoY due to re-optimize production plan to coincide with the declining

demand of crude oil. Moreover, the Draugen and Gjøa fields underwent its planned maintenance turnaround in 2020.

- Incremental impairment from 2019 was recorded due to the state of the price of crude oil and natural gas that declined sharply during the first half of the year. Impairment of Technical Goodwill and Ordinary Goodwill on Draugen and Gjøa fields were recorded. Furthermore, impairment related to the Yme asset under development due to delayed production plan and increase in capital expenditure.
- Realized gain from foreign exchange from the appreciation of the Norwegian Krone (NOK) against the US Dollar which mainly from the conversion of loans in foreign currencies. Whereas, in 2019 realized loss from the depreciation of the Norwegian Krone (NOK)
- Financial cost declined compared to the previous year because the partial of interest expenses was capitalized as a part of the project cost. Moreover, realized deferred income tax which assisted in lowering the net loss within this year.

Statement of Financial Position of the Company and its subsidiaries

Unit: THB Million



Assets

As of the 31st December 2020, the Company and its subsidiaries has Total Assets in the amount of THB 148,323 million, an increase of THB 20,535 million when compared to the 31st December 2019, changes in assets are as follow:

- Cash and cash equivalents increased by THB 14,375 million. Details are stated in Analysis of the Cash Flow Statement.
- Inventories increased by THB 327 million, mainly attributed from petroleum businesses that the increase in crude oil and finished products volume while average inventory cost per unit declined. The quantity of finished products was increased to preemptively stock for the scheduled Major Turnaround Maintenance in Q1/2021.
- Other current assets decreased THB 5,028 million, mainly contributed from:
 - Trade and other current receivables decreased THB 4,671 million, mostly from the Company's trade account receivables declining from lower selling price and sales volume of finished products.
- Other non-current assets rose by THB 8,877 million, mainly due to:
 - Right-of-use assets and Leasehold rights increased by THB 7,962 million from adoption of the Thailand Financial Reporting Standards 16 (TFRS 16).
 - Goodwill and Intangible assets increased by THB 208 million and 2,686 million respectively, from BCPG Plc. investing in the Hydropower plant project owned by Nam San 3B Power Sole Co., Ltd. in Lao PDR, through the acquisition of 100% shares during February 2020 and investing in the Solar Power Plant projects in Thailand, through the acquisition of 99.99% shares of RPV Energy Co., Ltd. during August 2020.
 - Investments in associates and joint ventures decreased by THB 3,706 million, primarily from the effects of translation financial statements conversion and the capital deduction in BCPG Plc's associated companies, impairment investments, realizing a share of loss from invested capital in its associate company, OKEA.

- Deferred tax assets increased by THB 1,860 million, mainly from net loss on taxes, impairment investments and impairment assets.
 - Other non-current financial assets and Other long-term investments decreased by THB 373 million, due to BCP Innovation Pte. Ltd. reducing its share in Lithium Americas Corp. (“LAC”) to 0.5% of total share in December 2020. However, BBGI Plc. has invested in the Series B Preferred Stock in Manus Bio Inc. valued approximately at THB 800 million.
5. Property, plant and equipment net increased by THB 1,983 million (Depreciation for the year was THB 4,336 million). The company invested in assets in the amount of THB 4,407 million, mainly from Efficiency, Energy, and Environment Enhancement Project (3E), Power plant business investment in the amount of THB 1,506 million, and Bio-based product business investment in the amount of THB 840 million for the construction of the refined glycerin plant and ethanol plant modification.

Liabilities

As of the 31st December 2020, the Company and its subsidiaries has Total Liabilities THB 90,006 million, an increase of THB 21,033 million, changes in liabilities are as follow:

1. Current Liabilities (exclude current portion of long-term loans from financial institutions and debentures) decreased by THB 1,557 million, mainly contributed from:
 - Trade and other current payables decreased by THB 1,170 million, mainly from trade payables attributed to the company from the price of crude purchased lowering in December 2020 compared to December 2019.
 - Short-term loan from financial institutions net decreased by THB 1,076 million.
 - Current portion of lease liabilities increased by THB 1,287 million from adoption of the Thailand Financial Reporting Standards 16 (TFRS 16).
2. Loans from financial institutions and debentures (including current portion of long-term loans from financial institutions and debentures) increased by THB 16,279 million, due to the bond issuance of THB 8,000 million, loan drawdown increased by THB 13,834 million, BCPG’s business acquisition by THB 583 million, redemption of debenture by THB 3,000 million, and loan repayment by THB 2,836 million. There were also the adjustments for the effects of foreign exchange rate and foreign currency conversion of financial statements resulted in a gain of THB 261 million and the amortized issuance cost of loans and debentures by THB 41 million.
3. Other non-current liabilities increased by THB 6,311 million mainly attributed to lease liabilities by THB 6,581 million from adoption of the Thailand Financial Reporting Standards 16 (TFRS 16).

Equities

As of 31st December 2020, the Company and its subsidiaries' total equity was THB 58,316 million which decreased by THB 499 million. Mainly from the net loss for the year of THB 5,770 million, paid dividends by THB 743 million, effects from changes in accounting policies resulting in a reduction of retained earnings by THB 20 million, an increased in treasury stock of THB 74 million, changes in ownership interest in subsidiary by THB 5,042 million and gain on disposal investment LAC designated at fair value through other comprehensive income by THB 3,142 million. While other comprehensive income decreased by THB 1,596 million. Moreover, coupon payment on perpetual subordinated debentures of THB 501 million. There was total equity attributable to owners of the parent was THB 46,366 million, and book value per share (exclude perpetual subordinated debentures) was THB 26.83.

Statement of Cash Flows of the Company and its subsidiaries

As of 31st December 2020, the Company and its subsidiaries had Cash and cash equivalents in the amount of THB 21,651 million, details are as follow:

Cash Flows (THB Million)	2020	2019
Net cash received (used in) operating activities	6,340	6,749
Net cash received (used in) investing activities	(6,353)	(14,604)
Net cash received (used in) financing activities	14,567	3,762
Effect of exchange rate changes on cash and cash equivalents	(178)	(182)
Net increase (decrease) in cash and cash equivalents	14,375	(4,275)
Cash and cash equivalents at 1 st January	7,276	11,551
Cash and cash equivalents at 31st December	21,651	7,276

Details of each activities are as follows:

Net cash received from operating activities in the amount of THB 6,340 million are attributed to cash received from operating activities of THB 5,224 million. Cash received from net operating assets and liabilities of THB 897 million, mainly from (1) Trade and other receivables decreased by THB 3,452 million (2) Inventories increased by THB 387 million. (3) Trade and other payables decreased by THB 1,898 million (4) Non-current provisions for employee benefit decreased by THB 166 million and tax received by THB 218 million.

Net Cash used in investing activities of THB 6,353 million, mainly from net cash outflow from acquisition of subsidiaries and associates in the amount of THB 5,015 million. Payment from acquisition of Property, Plant and Equipment by THB 5,597 million. Mostly are working in progress of Efficiency, Energy, and Environment Enhancement Project (3E), power plant business and bio-based product business. Payment for other investments in the amount of THB 797 million. Cash received from sale of investments in the amount of THB 4,252 million, capital reduction in associates in the amount of THB 842 million and interest and dividend in the amount of THB 302 million.

Net Cash received from financing activities of THB 14,567 million, mainly from proceeds from long-term loans from financial institutions by THB 13,784 million, proceed from issuance of debentures by THB 8,000 million and proceed from the increase of the subsidiary's share capital by THB 5,149 million. While cash used in (1) Redemption of debentures by THB 3,000 million. (2) Repayment of long-term loans from financial institutions by THB 2,836 million. (3) Cash paid for financial cost, coupon payment on perpetual subordinated debentures by THB 2,677 million. (4) Repayment of short-term loans from financial institutions by THB 1,076 million. (5) Dividend paid by THB 743 million. And (6) Payment of lease liabilities by THB 1,963 million.

Financial Ratios of the Company and its subsidiaries (Consolidated)

	Q4/2020	Q3/2020	Q4/2019	2020	2019
Profitability Ratios (%)					
Gross Profit Margin	7.22%	7.71%	6.02%	3.17%	5.37%
EBITDA Margin	8.30%	8.23%	4.83%	3.01%	4.57%
Net Profit Margin	1.81%	-0.98%	1.73%	-4.23%	1.31%
Return on Equity ^{1/} (ROE)	-14.22%	-14.90%	3.67%		
Efficiency Ratio (%)					
Return on Assets (ROA)	-3.90%	-3.87%	3.47%		

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

	2020	2019
Liquidity Ratios (Times)		
Current Ratio	1.85	1.39
Quick Ratio	1.10	0.69
Accounts Receivable Turnover	18.33	23.76
Collection Period (Days)	20	15
Accounts Payable Turnover	13.44	20.92
Payment Period (Days)	27	17
Financial Policy Ratios (Times)		
Debt to Equity	1.54	1.17
Interest bearing Debt to Equity	1.22	0.82
Net Interest bearing Debt to Equity	0.85	0.69
Issuance of Debenture Ratio (Times)		
Net Interest bearing Debt to Net Equity	0.66	0.57

Financial Ratios Calculation

Profitability Ratios

- 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
- Net Profit Margin (%) = Profit attributable to owners of the parent / Revenue from sale of goods and rendering of services
- Return on Equity (%) = Profit attributable to owners of the parent (Yearly) / Total Equity attributable to owners of the parent (Average)

Efficiency Ratio (%)

- Return on Assets (%) = EBIT (Yearly) / Total Asset (Average)

Liquidity Ratios (Times)

- Current Ratio (Times) = Current Asset / Current Liabilities
- Quick Ratio (Times) = (Cash & Equivalents + Short term investments + Trade and other Account Receivable) / Current Liabilities

- Accounts Receivable Turnover (Times) = $\frac{\text{Revenue from sale of goods and rendering of services}}{\text{Accounts receivable before doubtful debt (Average)}}$
- Collection Period (Days) = $\frac{365}{\text{Account Receivable Turnover}}$
- Accounts Payable Turnover (Times) = $\frac{\text{Cost of sale of goods and rendering of services}}{\text{Accounts Payable (Average)}}$
- Payment Period (Days) = $\frac{365}{\text{Account Payable Turnover}}$

Financial Policy Ratios (Times)

- Debt to Equity (Times) = $\frac{\text{Total Debt}}{\text{Equity}}$
- Interest Bearing Debt to Equity (Times) = $\frac{\text{Interest bearing Debt}}{\text{Total equity}}$
- Net Interest Bearing Debt to Equity (Times) = $\frac{(\text{Interest bearing Debt} - \text{Cash and cash equivalents} - \text{Current investments})}{\text{Total equity}}$

Issuance of Debenture Ratio (Times)

- Net Interest Bearing Debt to Net Equity (Times) = $\frac{(\text{Interest bearing Debt} - \text{Cash and cash equivalents} - \text{Current investments})}{(\text{Total equity} - \text{Unrealised gain/loss from derivatives} - \text{Unrealised gain/loss on foreign exchange} - \text{Inventory gain/loss})}$

Note:

1/ Average Total Equity attributable to owners of the parent

- Yearly = $\frac{(\text{Total Equity attributable to owners of the parent of the year before} + \text{Total Equity attributable to owners of the Company of this year})}{2}$
- Quarterly = $\frac{(\text{Total Equity attributable to owners of the parent of the quarter of the year before} + \text{Total Equity attributable to owners of the parent of the quarter this year})}{2}$

2/ Average Total Assets

- Yearly = $\frac{(\text{Total Assets of the year before} + \text{Total Assets of the Company of this year})}{2}$
- Quarterly = $\frac{(\text{Total Assets of the quarter of the year before} + \text{Total Assets of the quarter this year})}{2}$

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

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

5/ Average Accounts Receivable before doubtful debt

- Yearly = $\frac{(\text{Accounts Receivable before doubtful debt of the year before} + \text{Accounts Receivable before doubtful debt of the Company of this year})}{2}$
- Quarterly = $\frac{(\text{Accounts Receivable before doubtful debt of the quarter of the year before} + \text{Accounts Receivable before doubtful debt of the quarter this year})}{2}$

6/ Average Accounts payable

- Yearly = $\frac{(\text{Accounts payable of the year before} + \text{Accounts payable of the Company of this year})}{2}$
- Quarterly = $\frac{(\text{Accounts payable of the quarter of the year before} + \text{Accounts payable of the quarter this year})}{2}$

7/ Interest Bearing Debt defined as Short-term loans + Long-term loans (including current portion of long-term loans) + Debentures (including current portion of long-term debentures) + Lease liabilities (including current portion of lease liabilities)

Management Outlook towards the Business in 2021

Due to the COVID-19 outbreak situation and the volatility of 2020 global oil price, which both have continued to persist into 2021, has estimated to affect the performance of the company group in some businesses but tends to improve from the previous year. Thus, the company's business group has made preparations in order to accommodate the situation, with emphasis on the work process that has become more concise, agile, and adaptable to changing circumstances. Of which, **the Refinery and Oil Trading Business Group** is the most heavily affected by the two factors. Adjustments were made to the refinery to develop Niche Refinery Products. By producing Unconverted Oil (UCO) that is the base substance for the production of Lube Base Oil, and Paraffin Wax used in the candle industry, wax polish industry, paper coating substance and glue industry. As well as, improvements being made to the production process of Solvents under the name of "BCP White Spirit 3040" to be used in the paint, thinner, and resin product industry. The refinery has a planned Major Turnaround Maintenance in Q1/2021, and plans to produce at 95 - 100 KBD in 2021. Whereas the refinery margin is expected to remain stable compared to 2020. **The Marketing Business Group** plans to maintain its service standards to guarantee maximum satisfaction from consumers. Done by turning Bangchak service stations into the "Greenovative Destination", and by continuously expanding the business of both the service station and non-oil business. Also concurrently, bringing about the Digitization system to deliver the Evolving Greenovative Experience to customers. The company has plans to increase the number of service stations in 2021 by 100 stations, as well as further developing the Inthanin Coffee Shop brand to secure the 3rd place in the coffee business with plans to expand 150 branches per year. **The Power Plant Business Group** under BCPG Public Company Limited ("BCPG") aims to be the leader in the power production business in the ASEAN region. With plans to expand its business both domestic and abroad. BCPG has raised new capital by THB 10,000 million in late 2020 which helped strengthen its financial position in order to adequately accommodate future investments. **The Bio-Based Product Business Group** of BBGI Public Company Limited ("BBGI") has expanded its business into the high value bio-based product business through its investment in Manus Bio Inc., a world leader in Bio Technology, and incorporated a joint venture company named Win Ingredients to conduct businesses related to Bio-Tech. Furthermore, the company has plans to expand its business via other Green energy innovations e.g. the scaling of the Winnonie project which is a part of the innovation initiative within the company called "The Intrapreneur" under the **Bangchak Initiative and Innovation Center (BiiC)** by bringing in green innovated electric motorcycles for a rent trial to taxi motorcyclists within the vicinity of company headquarters and refinery. By being the first project in Thailand to utilize the battery swapping business model, batteries can be swapped at battery-swapping machines located in Bangchak service stations. And, a memorandum of understanding has been signed with Provincial Electricity Authority to expand the EV charging station to no less than 150 Bangchak service stations across the country within 2021.

Furthermore, the performance was still be affected by the COVID-19 outbreak. The company group has always recognized the importance of expense and investment control, however the company has maintained its 2021 CAPEX at THB 23,000 million, of which 78% has been dedicated to CAPEX of the Power Plant Business of BCPG, 17% for the Refinery and Marketing Business which pertains to the opening of new service stations, the maintenance of the refinery

taking place between February and March 2021, the refinery capability expansion project, et cetera. The remaining 5% will go to BBGI's Bio-Based Product Business and others.

Research & Development and Innovation

The Company allocated Baht 10 million capital investment in 2020 to the construction of a microalgae laboratory, a biorefinery, and the pilot plant for astaxanthin, a keto-carotenoid naturally synthesized by microalgae. In addition, more than Baht 5.5 million was allocated to develop tar products, the side products of a gas treatment system using biodiesel, joint R&D with university researchers on a variety of pilot products derived from compostable plastics, and plant-based alternative protein product development. These projects won tax incentives from the National Science and Technology Development Agency (NSTDA) worth about Baht 1 million.

Bangchak submitted applications for petty patent registration of seven items for intellectual property protection.

5. General Information and Other Key Information

5.1 General information

Bangchak Corporation Public Company Limited

Registration No.

0107536000269

Registered capital

(as of December 31, 2020)

1,376,923,157 Baht, of which Baht 1,376,923,157 was paid up, dividing into 1,376,923,157 shares, at 1 Baht per share.

Company establishment & Commercial operation

November 8, 1984 & April 1, 1985

Shareholders of BCP	Amount of Share (Million)	Percentage
Vayupak Fund ^{1/}	202	14.66
Social Security Office	198	14.40
Ministry of Finance ^{1/}	137	9.98
Minor Shareholder	839	60.96
Total	1,377	100.00

Note: ^{1/} The Ministry of Finance sold and transferred the Company's common shares to Vayupak Fund 1 managed by MFC Asset management Plc. And Vayupak Fund 1 manage by Krung Thai Asset management Plc. totaling 71,899,000 shares, on January 19, 2021

Nature of business

Oil Refinery and Trading Business, Marketing Business, Green Power Business, Bio-based Products Business, Natural Resource Business and Business Development

Contact

- Internal Audit Department

Tel. 0 2335 4566

Email: ico@bangchak.co.th

- Investor Relations Divisixon

Tel. 0 2335 8663 Fax. 0 2335 8000

Email: ir@bangchak.co.thh

- 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

Northern Region Business Office

87/9 Starwork Building, 3rd Floor, Thung Hotel Road, Tambon Wat Ket, Amphoe Muang, Chiang Mai 50000
Tel. 053 300 484
Fax. 053 300 485

Phichit Oil Terminal

99/8 Moo 9 Tambon Banna, Amphoe Wachirabarami, Phichit 66140
Tel. 0 2335 8728
Email: bphcenter@bangchak.co.th

Samut Sakhon Oil Distribution Center

100/149 Moo 1, Tambon Tha Chin, Amphoe Muang, Samut Sakhon 74000
Tel. 034 820 519-20

Southern Region Business Office

126/70 Moo 6, Bypass Road, Tambon Makham Tia, Amphoe Muang, Surat Thani 84000
Tel. 077 224 792
Fax. 077 224 793

Surat Thani Oil Distribution Center

104/1 Moo 2, Surat-Pak Nam Road, Tambon Bang Kung, Amphoe Muang, Surat Thani 84000
Tel. 077 275 056-8

Song Kla Oil Distribution Center

3/26 Moo 6, Tambon Sa Ting Mor, Amphoe Singha Nakorn, Song Kla 90280
Tel. 074 332 782
Fax. 074 332 783

Rayong Oil Distribution Center

1, 3B Road, Tambon Map Ta Phut, Amphoe Muang, Rayong 21150
Tel. 038 609 389
Fax. 038 609 413

Northeastern Region Business Office

499 Moo 12, Mitraphab Road, Tambon Muang Kao, Amphoe Muang, Khon Kaen 40000
Tel. 043 261 751-52
Fax. 043 261 790

Sri 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

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

Head Office

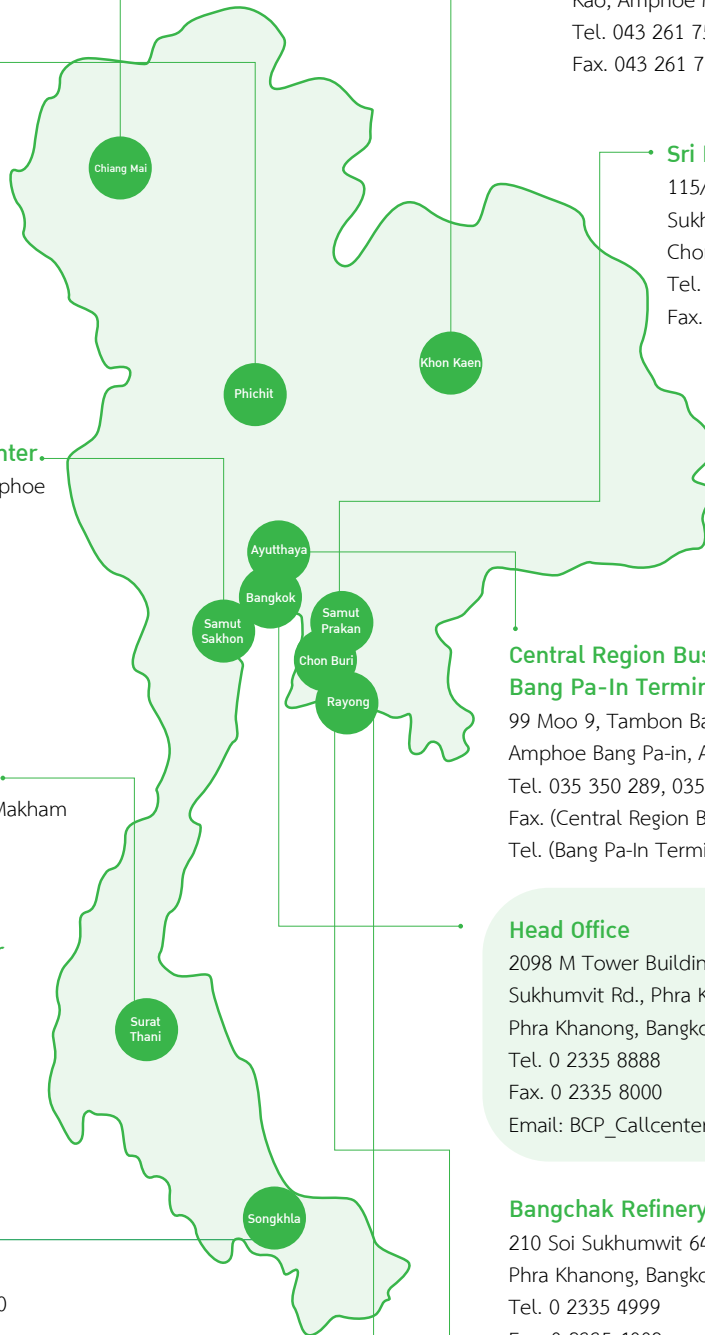
2098 M Tower Building, 8th Floor Sukhumvit Rd., Phra Khanong Tai, Phra Khanong, Bangkok 10260
Tel. 0 2335 8888
Fax. 0 2335 8000
Email: BCP_Callcenter@bangchak.co.th

Bangchak Refinery and Terminal

210 Soi Sukhumvit 64, Phra Khanong Tai, Phra Khanong, Bangkok 10260
Tel. 0 2335 4999
Fax. 0 2335 4009

Suksawat Lubricant Oil Distribution Center

196 Moo 1, Suksawat Road, Tambon Pak Khlong Bang Pla Kot, Amphoe Phra Samut Chedi, Samut Prakan 10290
Tel. 0 2815 6997-8



Subsidiaries

BCPG Public Company Limited

2098 M Tower Building, 12th Floor, Sukhumvit Rd.,
Phra Khanong Tai, Phra Khanong, Bangkok 10260

Tel. 0 2335 8999

Fax. 0 2335 8900

Email: info@bcpgroup.com

Website: www.bcpgroup.com

BBGI Public Company Limited

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

Tel. 0 2335 8899

Fax. 0 2335 8800

Website: www.bbgroup.com

Bangchak Retail Co., Ltd.

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

Tel. 0 2335 8400

Fax. 0 2016 3963

Bangchak Green Net Co., Ltd.

223/94 Country Complex, Building A, 19th Floor,
Sanpawut Rd., Bangna, Bangkok 10260

Tel. 0 2367 2699

Fax. 0 2745 7945

BCPR Co., Ltd.

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

Tel. 0 2335 8654

BCV Partnership Co., Ltd.

BCV Bio Based Co., Ltd.

BCV Innovation Co., Ltd.

BCV Energy Co., Ltd.

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

Tel. 0 2335 4999

Fax. 0 2335 4572

BCP Energy International Pte. Ltd.

BCP Innovation Pte. Ltd.

BCPR 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

Others

Bangchak Initiative Innovation Center (BiIC)

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

Email: biic@bangchak.co.th

Happiness Sharing Foundation

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

Tel. 0 2335 4608

Fax. 0 2016 3969

Oam Suk Social Enterprise Co., Ltd.

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

Tel. 0 2335 4600

Fax. 0 2016 3969

5.2 Other key information

Reference Persons

Securities Registrar

Thailand Securities Depository Co., Ltd.
93 Ratchadaphisek Road, Dindaeng, Dindaeng,
Bangkok 10400
Tel. 0 2009 9000 Fax. 0 2009 9991

Auditor

KPMG Phoomchai Audit Limited
48th - 51st Floors, Empire Tower
195 South Sathorn Road, Yannawa, Sathorn,
Bangkok 10120
Tel. 0 2677 2000 Fax. 0 2677 2222

Legal Counsel

Baker & Mckenzie Ltd.
25th Floor, Abdulrahim Place
990 Rama IV Road, Silom, Bangrak,
Bangkok 10500
Tel. 0 2636 2000 Fax. 0 2636 2111

LS Horizon Limited

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

Chandler MHM Law Officers Limited

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

Others

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

Issuer Support Unit

Thailand Securities Depository Co., Ltd.
93 Ratchadaphisek Road, Din Daeng
Bangkok 10400
Tel. 0 2009 9000 Fax. 0 2009 9991

5.3 Legal Disputes

Bangchak is a party to a lawsuit involving an ongoing legal dispute that may render a significant effect on Bangchak's business operation and arose outside the ordinary course of business. Details of the case as at December 31, 2020, were as follows:

1. A lawsuit was filed against Bangchak as the first defendant with another company as the second defendant for breaching a distributor agreement for lubricants. The plaintiff demanded Baht 45.64 million as the amount of claim in that case. Another case was later filed against Bangchak by the same plaintiff for breach of contract and damage resulting from its suspension of lubricant distribution, where the amount of claim was set at Baht 688.28 million. On March 23, 2017, both cases were dismissed by judgement of the Civil Court, whose decision was then appealed by the plaintiff. Then on June 6, 2018, the Court of Appeals overturned the judgement of the Civil Court in both cases and ordered that Bangchak pay a total of Baht 1.2 million to the plaintiff, in addition to court expenses and lawyer's fees for the litigation in both courts for the plaintiff. Both parties have submitted their application to the Dika Court (Supreme Court) for approval to lodge dika appeals; both applications have been filed and accepted by the court. This is therefore pending the Dika Court's decision. Bangchak confirms having duly complied with the terms.
2. One company ("debtor company") incurred an outstanding aviation fuel payment to Bangchak and later filed a petition for business reorganization, approved by the Central Bankruptcy Court on September 14, 2020, directing it to reorganize its business and appoint a planner. On October 8, 2020, Bangchak filed an application for receipt of payment to the official receiver in the amount of USD 31,707,494.94. On December 28, 2020, the planner filed a petition to the court for an extension of the submission period of the reorganization plan, which was approved for early February 2021. A meeting of the creditors is expected by the first quarter of 2021 for a review of the plan.

5.4 Contact financial institution

Debenture Registrar and Payment Agent (for 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, Payment Agent, and Debenture Holders' Representative (for BCP19PA)	Krung Thai Bank Public Company Limited Capital Market Services Department 977/2 SM Tower, 3rd Floor, Phahonyothin Road, Samsen Nai, Phaya Thai, Bangkok 10400 Tel. 0 2298 0835 Website: www.krungthai.com
Debenture Registrar and Payment Agent (for BCP214A, and BCP244A)	Bank of Ayudhya Public Company Limited 1222 Rama III Road, Bang Phongphang, Yan Nawa, Bangkok 10120 Tel. 0 2296 5715 Fax. 0 2683 1298 Website: www.krungsri.com
Debenture Registrar, Payment Agent and Debenture Holders' Representative (for BCP225A, BCP238A, BCP258A, BCP275A, BCP28DA and BCP305A)	Bank of Ayudhya Public Company Limited 1222 Rama III Road, Bang Phongphang, Yan Nawa, Bangkok 10120 Tel. 0 2296 5715 Fax. 0 2683 1298 Website: www.krungsri.com

Part 2 Corporate Governance

- A** > **Accountability**
- R** > **Responsibility**
- T** > **Transparency**
- E** > **Equitable Treatment**
- V** > **Vision to Create Long-term Value**
- E** > **Ethics**



QR Code
Corporate
Governance
Policy
Full Version



6. Corporate Governance Policy

6.1 Overview of Corporate Governance Policy and Practices

Bangchak Corporation Plc. has instituted its corporate governance policy in writing since 2003 as a result of a workshop engaging all employees where everyone played a part in contributing ideas for the Company's practical guidelines. To date, the Company has focused on cultivating an understanding of good corporate governance as well as awareness of how to apply such principles in their daily life. This has turned into a company culture. The Company has constantly evolved its corporate governance practices by way of studying domestic and international governing guidelines for such practices. The Board has decided to annually revise its policy.

6 Key Principles of Corporate Governance

1. Accountability

Action or decision-making undertaken with care and prudence supported by bona fide rationale as adequate, marked by responsibility for its consequences.

2. Responsibility

Full commitment and dedication to one's responsibility in Bangchak's best interests. This responsibility includes recognition of one's duty to always learn and enhance one's competency.

3. Transparency

Commitment to business conduct with integrity, auditability, and transparency, with valid references.

4. Equitable Treatment

Treatment of others fairly and righteously, without discrimination.

5. Vision to Create Long-term Value

Business execution to enable Bangchak to supplement value to stakeholders and lead it toward inclusive and sustainable growth, including avoidance of any action undermining such value.

6. Ethics

Moral behavior founded on conscience and propriety and meant to create virtue and ultimately form Bangchak's employee culture of "To be virtuous, knowledgeable, and contributive to society".

6.1.1 Policies and guidelines on the Board of Directors

As corporate leaders and ultimately responsible parties, the Board of Directors not only plays a key role in ensuring sound long-term business performance and credibility among shareholders and stakeholders in Bangchak's best interests, but also forges sustainable business values. Working independently of the management, the Board of Directors is to perform its duties with responsibility, care, and integrity, while complying with the law, Company objectives and regulations, its own article of association, and those of the shareholders' meetings. Bangchak has set policies and guidelines for the Board of Directors as follows:

📌 Composition and appointment

- The Board of Directors is composed of a minimum of 5 and a maximum of 15 members. At least a half of the Board must be residents in Thailand. Each director must be qualified by the law and Company regulations without sexism or other discrimination.
- The Board consists of at least one-third being Independent directors
- The Board consists of directors who are knowledgeable, skillful, and experienced in the oil business,

retail sales business, energy business, other related businesses (like petroleum exploration and production, power generation, and alternative energy), international business, accounting and finance, internal control, law, organizational development and innovation in information and digital technology, social / environmental / safety matters, and risk and crisis management. At least one of them must be adequately knowledgeable or experienced in accounting and finance. At least one non-executive director must possess experience in the core business or industry operated by Bangchak.

- The Chairman of the Board should be an Independent Director and must not be the same person as the President and Chief Executive Officer. Additionally, the Chairman must not hold any position in the appointed Sub-committee (sometimes called Committee) in view of clear-cut responsibilities and duties. If the Chairman is not an Independent Director, the number of Independent Directors must exceed half of the Board; alternatively, an Independent Director must be appointed to jointly decide the Board agenda.
- Each newly elected Director must attend an orientation course to ensure appreciation of objectives, main goals, vision, missions, corporate values, business characteristics and approach, applicable regulations, corporate governance policy, and other essential information for efficient performance.
- Attend at least one training course organized by Thai Institute of Directors Association (IOD), such as Director Accreditation Program (DAP) or Director Certification Program (DCP) or equivalent, to increase expertise at work.

o **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 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.

o **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' 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.

o **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.

🕒 **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 9 of 12 times a year)

🕒 **Terms of Directorship**

In every Annual General Meeting (AGM), one-third of the Directors must retire; moreover, if this number is not a multiple of three, then the number nearest to one-third. The directors who have completed their terms may be re-appointed. 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.

🕒 **Board Assessments**

The Board of Directors set an evaluation form for the Board's performance at least once a year. The Board conduct the evaluation in three forms, namely individual evaluation (self-evaluation), individual evaluation (cross-evaluation) and group evaluation, for the Board's review of performance outcomes and problems for performance development.

🕒 **Board Remuneration**

Decision on Directors' compensation (monthly & meeting fees and bonuses) aligns with Bangchak's long-term strategies and goals. Such compensation is comparable to industry practices, experience, accountability and responsibility, and expected benefits from each Director that has assumed additional duties and responsibilities. The remuneration is enough to attract qualified directors who can complete their duties to achieve a desirable goal and direction for the Company. The remuneration process is transparent and creates shareholders' confidence.

🕒 **The Board's terms on the succession planning and development of executives**

Ensuring a succession plan for the positions of the President and Chief Executive Officer and senior management, the Board requires annual reporting on compliance with this plan as a minimum. On the recruitment policy for the President and Chief Executive Officer, for optimal purposes, qualified outsiders or senior executive vice presidents upward may enter the selection process. The Board also assigned the Nomination and Remuneration Committee to review the criteria and procedure for recruitment, development, and assessment of the President and Chief Executive Officer, including the criteria and compensation structure for the position.

○ Oversight of subsidiaries, associates, and joint-venture companies

Bangchak runs its businesses through subsidiaries, associates, and joint-venture companies, as detailed under “1.3 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.

○ The sub-committees

The Board appoints four committees to consider significant matters, consist of the Audit Committee, Nominating and Remuneration Committee, Enterprise-wide Risk Management Committee, and Corporate Governance Committee.

6.1.2 Policies and Practices related to Shareholders and Stakeholders

○ Rights and Equitability of Shareholders

1. Rights of Shareholders

The shareholders are entitled to Bangchak’s ownership by exercising their rights to appoint directors to perform on their behalf and the rights to make decisions on key changes. The Board recognizes and values such rights by promoting such exercise and refraining from violating or depriving their rights.

2. Equitable Treatment of Shareholder

All shareholders are entitled to receive fair treatment. The Board is to ensure such fair treatment and safeguard their fundamental rights.

○ The Company’s Role toward Stakeholders

Bangchak is committed to looking after stakeholders, whose rights are provided by applicable laws. The Board establishes a process promoting cooperation between Bangchak and stakeholders in creating wealth, financial security, and business sustainability. The Board recognizes and values the rights of stakeholders as defined by laws, human rights and fair labor treatment to ensure that the stakeholders’ rights are protected and well-treated. It also establishes suitable communication channels for all stakeholders and whistleblowing channels for employees and other stakeholders so that stakeholders may more efficiently participate in maintaining Bangchak’s interests as follows;

1. Responsibility to the shareholders
2. Responsibility to employees
3. Responsibility to customers
4. Responsibility to business partners
5. Responsibility to competitors
6. Responsibility to creditors
7. Responsibility to the public sector
8. Responsibility to communities around the refinery, society, and the environment

○ Disclosure of Information and Transparency

Bangchak discloses key information, whether financial or non-financial, in an accurate through readily accessible channels that are equitable and credible. This policy on disclosure of information forms part of the Company’s good corporate governance policy. The Company is committed to the fair

disclosure of information to the shareholders, financial institutions, securities companies, investors, those needing financial information, and the general public. It highly values communication practices that are open, complete, accurate, timely, and regular for past information and future value addition without bias against positive or negative information. The Company recognizes the need to maintain sensitive information for critical business information and operating strategies. This policy aligns with the SET and SEC criteria and terms for information disclosure.

🕒 **Safety, Health, Environment, and Energy (SHEE)**

Bangchak values the stewardship of safety, occupational health, the environment, and energy to ensure that all activities fall under an international-standard management system that does not harm the environment, society, and communities. The Company is committed to raising its management excellence by the approach of the Thailand Quality Awards, which values social responsibility; protection of health, safety and the environment; and business conduct and employees. In addition, the Company values resource conservation, which encompasses all activities, products and services-all with key business roles; loss prevention; and compliance with the law and public regulations. Viewing these regulations as opportunities for improvement over and beyond what need to be complied with, the Company devises the SHEE policy, and all executives and rank-and-file employees-including all contractors working on behalf of the Company-are held directly responsible.

🕒 **Risk Management, Internal Control, and Internal Audit**

Bangchak has established risk management and internal control systems to enable business to achieve its objectives, while complying with related laws and regulations and lowering corruption-related risks. An internal audit system is in place to ensure achievement of Bangchak's goals.

🕒 **Anti-Corruption**

Bangchak has defined business ethics against corruption in every form and integrated the ethics in the corporate governance policy. Also, it has waged a campaign to stress anti-corruption within the Company. At the same time, Bangchak has integrated the anti-corruption policy into its corporate governance policy to reiterate its intention to operate business by abiding by the law and regulations relevant to corporate governance, refusing all forms of fraud and covering all businesses in all applicable countries and agencies. It has defined anti-corruption measures to implement the policy and has regularly reviewed them to comply with changes in laws and business circumstances and uphold Bangchak's reputation by ensuring that directors, executives, and employees implement them. The relevant implementing measures apply to all subsidiaries, associates, and other companies that the Company has control over, as well as its business agents. Bangchak became one of the first 22 companies to gain membership certification for CAC (Thai Private Sector Collective Action Coalition against Corruption).

6.2 Code of Conducts

Bangchak commands a written code of conduct as part of the Corporate Governance Policy, regarded as its definition of business standard and personnel behavior together with governance of its key corporate culture. The code of conduct states guidelines for good practices reflecting awareness of responsibility and work ethics, which are linked to and support Bangchak's vision, objectives, goals, and strategies. As role models and CG leaders, the Board ensures that management commands tools for establishing and driving a corporate culture firmly underlined by ethics and a code of conduct in all work processes. Bangchak's Code of Conduct consists of:

6.2.1 Code of Conduct for Business

o **Respect for the law and human rights principles**

In all its operations worldwide, Bangchak values and is committed to compliance with the law. Employees strictly honor laws, customs, traditions, and culture of each locality. In addition, they honor human rights principles under international laws and standards.

o **Anti-corruption of all forms**

Conduct business with a commitment to opposing corruption of all forms. Institute a risk management process and scrutiny to prevent and suppress corruption and malfeasance. Support the establishment of a company culture where people are firmly committed to integrity and ethics.

o **Moral and ethical behavior at every organization level**

Morality and ethics are important elements of good corporate governance principles. It is the work ethics at every level of the organization.

o **Responsibility to society and stakeholders**

In conducting its business, Bangchak shows due regard for duties and responsibility in line with society, the environment, and the good of all. It is committed to treating all stakeholders—shareholders, employees, customers, business partners, competitors, the public sector, and neighbors around the refinery—in line with their respective needs.

o **Strive for excellence**

Bangchak is committed to upgrading its standards for management excellence under the Thailand Quality Award criteria by promoting, for optimal outcomes, its business and employees' best performance with propriety and transparency. Also, it constantly drives curiosity and innovation.

o **Transparency and disclosure of information**

Management, financial records and financial reports are properly handled to comply with laws and regulations and meet international standards. Accurate, clear and timely information is disclosed to ensure confidence of investors, shareholders and related lenders.

6.2.2 Employee Code of Conduct

o **Conduct and behavior among employees**

Carry out all duties with integrity, attentiveness, and seriousness to foster quality, and efficiency. Strictly comply with relevant laws, rules, regulations, goals, and plans under the approved budget. Also, refrain from engaging in any business or investment that could potentially compete so with the Company.

o **Treatment of colleagues**

Respect others' rights and refrain from slandering others. Jointly forge and maintain unity among the workforce.

o **Executives' duties**

Executives serve as director of other companies or any other position in a business organization must have a prior approval. In addition to, executives wishing to engage in the trading of Company securities must notify Internal Audit at least one day in advance for the quarterly reporting to the Audit Committee's meeting and refrain from securities trading at least one month before the announcement of the Company's financial statements and at least three days after such announcement.

o **Acceptance or giving of gifts**

Refrain from requesting, accepting or agreeing to accept, undue extra benefits or improper payment with customers, business partners, contractors, agents, and sellers of products and services to the Company, or from any parties engaging in businesses with it.

- o Entertainment, gifts, and other expenses**
 Employees must not accept or sponsor entertainment and other expenses beyond necessary extents, or those unsuitable for public officials or those engaging in business with Bangchak. Employees must never accept gifts or other tokens of any value.
- o Preparation of financial reports and financial statements**
 Accounting entries and preparation of financial reports and financial statements must reflect actual transactions under generally accepted accounting principles. Disclosure of information must be accurate, clear, and updated so that relevant parties may examine it.
- o Maintaining the Company's reputation**
 Refrain from any act that could potentially harm the Company's reputation or pose problems for it and uphold their own dignity in society.
- o Stewardship of properties**
 Make the best use of Company properties, jointly care for them against defects and losses, and refrain from using them for other businesses. as well as respect others' property.
- o Respect for intellectual properties**
 Maintain and safeguard Bangchak's intellectual property rights, while respecting and maintaining others' intellectual property rights.
- o Use of information technology (IT)**
 Strictly comply with applicable laws governing and guidelines for Bangchak's IT applications and include IT as part of the strategies and operation.
- o Use of inside information**
 Maintain and ensure that information recipients maintain confidentiality and market-sensitive information through suitable access methods and keep it from other employees or unrelated parties. Also, Employees must not use inside information and information regarded as Bangchak's or affiliates' confidential information for or the benefit of oneself or others wrongfully.
- o Conflicts of interest**
 Refrain from any act posing conflicts of interest with the Company, that is, any act potentially depriving the Company of its fair interests, or from sharing benefits with the Company.

6.2.3 Procurement Code of Conduct

- o Acceptance of gifts, tokens, entertainment, and preferential treatment**
 Employees must never accept gifts or other tokens of any value and must avoid getting excessively friendly with one particular supplier or vendor that others could mistake for bias and therefore avoid bidding against those preferred.
- o Injustice arising from procurement and hiring processes**
 Procurement should not be based on the specifications of any particular product or deliberately biased toward such products unless adequately justified and necessary.
- o Conduct toward suppliers or vendors**
 The relationship between buyers and sellers should bolster mutual confidence through goodwill and justice, with continuous treatment toward each other.
- o Purchasing priority**
 Locally available products must receive first priority. In addition to supporting domestic industries, buying such products is less costly. Unless absolutely necessary, the Company shall buy products available from the Company and its affiliates and available in the market, except when those items are unavailable

6.3 Milestones of Policy, Guidelines, and Corporate Governance of This Past Year

6.3.1 Milestones of Policy, Guideline, and Corporate Governance System

The Board recognizes the importance of upgraded corporate governance (CG) practices to become comparable with leading domestic and international companies, which would benefit its pursuit of sustainable growth. It therefore annually reviews the suitability and adequacy of the policy and guidelines for its CG and code of conduct to align with its business model and prevailing circumstances, which include laws, rules, guidelines, and stakeholders' views.

This year the Board endorsed Revision 17 of the CG Policy, adding the Board Skill Matrix to embrace the “information technology and digital” aspect to align with the DJSI and suit the current business model.

6.3.2 Compliance with CG Code

The Board reviewed the SEC-developed CG Code of 2017 and recognized its role as corporate leaders in the application of CG to create sustainable business value. It assessed compliance with each item of the code of Bangchak's policies, CG practices, and business context, concluding that its overall policies, measures, and business processes aligned with CG Code guidelines and proved appropriate for its business growth directions, except the following matters which are the aspects not yet applied, which will in time be adapted as seen fit.

CG Code guideline	Bangchak's justification or alternative measure
The appropriate number of directors is between 5 and 12 (Guideline 3.1.2)	Bangchak's articles of association requires 5-15 directors. Since 2014 it had appointed 15 directors in keeping with its articles of association and business model of continued investment in new businesses. As a result, Bangchak has needed diversity in directors' background, meaning qualifications and competencies fitting business expansion.

6.3.3 Other practices under CG Code

Thanks to its firm commitment and intention to operate with CG, Bangchak continually ranked high among companies, with CG accolades including:

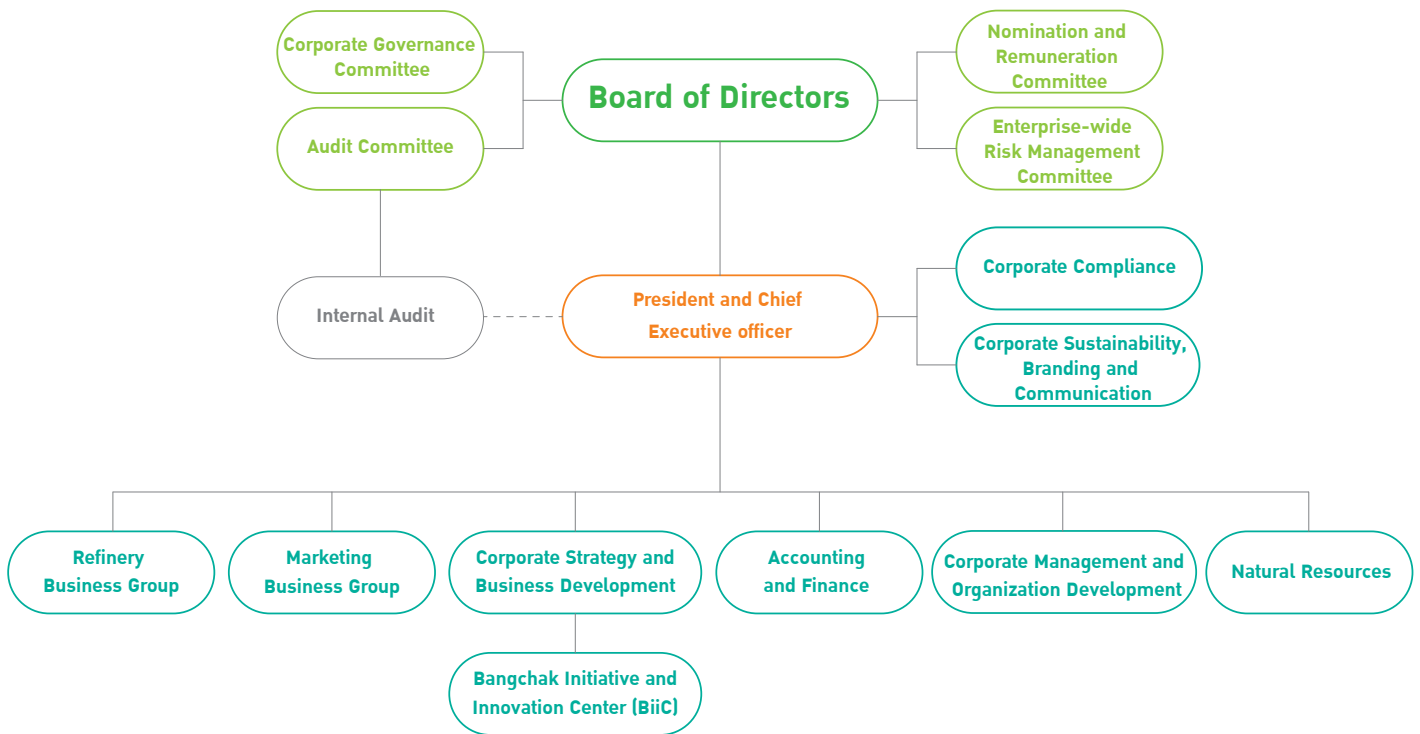
- Excellent ranking (five emblems) under the 2020 CGR (Corporate Governance Report) survey of listed companies, organized by Thai IOD and SET. Bangchak was among those in Thailand with top scores.
- Country TOP3 PLCs, ASEAN Asset Class PLCs for listed companies scoring 97.5 and more, and ASEAN Top 20 PLCs, earned at the 2019 ASEAN Corporate Governance Scorecard (ACGS) event, organized by SEC and Thai IOD in conjunction with ASEAN Capital Markets Forum (ACMF) and the Asian Development Bank (ADB)

7. Corporate Governance Structure and Key Information About the Board, Sub-Committees, Management, Employees, and Others

7.1 Corporate Governance 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. The Board appoints sub-committees to consider significant matters, consist of the Audit Committee, Corporate Governance Committee, Nomination and Remuneration Committee and Enterprise-wide Risk Management Committee. The President & CEO is the top executive.

Information of Board of Director



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

The Board of Directors



Mr. Pichai Chunhavajira

Chairperson of the Board and Director with Authorized Signature
Independent Director
(Started on April 24, 2012 and Independent director since June 1, 2017)



Mr. Surin Chiravisit

Vice Chairperson and Director with
Authorized Signature
(Started on April 8, 2010)



Mr. Suthep Wongvorazathe

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



Gen. Vitch Devahasdin

Independent Director
Chairperson of the Corporate Governance Committee
(Started on April 5, 2016)



Adm. Sucheep Whoungmaitree

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



Gen. Thammanoon Withee

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



Pol.Lt.Gen. Chaiwat Chotima

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





Dr. Poramete Vimolsiri
Independent Director
Chairperson of the Audit Committee
(Started on June 7, 2018)



Mrs. Prisana Praharnkhasuk
Independent Director and Director
with Authorized Signature
Chairperson of the Nomination
and Remuneration Committee
(Started on April 5, 2016)



Mr. Teerapong Wongsiwawilas
Independent Director
(Started on January 26, 2017)



Mr. Suthi Sukosol
Director
(Started on July 26, 2019)



Dr. Anuchit Anuchitanukul
Director
(Started on April 25, 2018)



Dr. Prasert Sinsukprasert
Director
(Started on April 5, 2016)



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)



7.2 The Board of Directors

7.2.1 The Board Composition

- Board diversity prevails, equipped with a series of skills matching Bangchak's business strategies, which are identified through Board Skill Matrix preparation. Also, there is a wide variety of education and experience without discrimination (detailed in Attachment 1).
- The Board consists of 5-15 directors without gender discrimination. Today there are 14 of them, with one female member and one executive director.
- Independent directors account for more than one-third of the Board. Today there are 8 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		Knowledge of company business	International business	Accounting and finance	Management	Compliance	Organizational development and innovation	Information and digital technology	Society, environment, and safety	Risk and crisis management
1.	Mr. Pichai Chunhavajira	x	x	x	x		x		x	x
2.	Mr. Surin Chiravisit	x			x	x	x		x	x
3.	Mr. Suthep Wongvorazathe	x	x	x	x					x
4.	Gen. Vitch Devahasdin	x			x	x	x		x	x
5.	Adm. Sucheep Whoungmaitree	x			x	x	x		x	x
6.	Pol.Lt.Gen. Chaiwat Chotima	x			x				x	x
7.	Gen. Thammanoon Withee	x			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			x
11.	Dr. Anuchit Anuchitanukul	x	x	x	x		x	x		x
12.	Dr. Prasert Sinsukprasert	x			x				x	x
13.	Mr. Suthi Sukosol	x	x		x		x		x	x
14.	Mr. Chaiwat Kovavisarach	x	x	x	x		x	x	x	x
Total		14	6	6	14	5	11	3	10	14

7.2.2 The Board Information and the Authorized Director

Board of Directors There were 14 directors (As of December 31, 2020) as follows:

Name	Position	Appointment date
1. Mr. Pichai Chunhavajira	- Chairperson (Independent Director)	April 24, 2012 (Independent director since June 1, 2017)
2. Mr. Surin Chiravisit	- Vice Chairperson - Member of the Enterprise-wide Risk Management Committee - Member of the Corporate Governance Committee	April 8, 2010
3. Mr. Suthep Wongvorazathe	- Director - Member of the Corporate Governance Committee	October 30, 2012
4. Gen. Vitch Devahasdin	- Independent Director - Chairperson of the Corporate Governance Committee	April 5, 2016
5. Adm. Sucheep Whoungmaitree	- Independent Director - Member of the Nomination and Remuneration Committee	May 26, 2015
6. Pol.Lt.Gen. Chaiwat Chotima	- Independent Director - Member of the Audit Committee - Member and Secretary of the Nomination and Remuneration Committee	April 9, 2014
7. Gen. Thammanoon Withee	- Independent Director - Member of the Nomination and Remuneration Committee	February 28, 2018
8. Mrs. Prisana Praharnkhasuk	- Independent Director - Chairperson of the Nomination and Remuneration Committee - Member of the Enterprise-wide Risk Management Committee	April 5, 2016
9. Mr. Teerapong Wongsiwawilas	- Independent Director - Member of the Audit Committee	January 26, 2017
10. Dr. Porameteer Vimolsiri	- Independent Director - Chairperson of the Audit Committee	June 7, 2018
11. Mr. Suthi Sukosol	- Director (Representative of Social Security Office) - Member of the Corporate Governance Committee	July 26, 2019
12. Dr. Anuchit Anuchitanukul	- Director (Representative of Ministry of Finance) - Member of the Enterprise-wide Risk Management Committee	April 25, 2018
13. Dr. Prasert Sinsukprasert	- Director - Member of the Enterprise-wide Risk Management Committee	April 5, 2016
14. 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	October 30, 2012

Directors whose terms were completed and resigned directors in 2020

Name	Position	Appointment date
1. Mr. Prasong Poontaneat	- Director (Representative of Ministry of Finance) - Chairperson of the Enterprise - wide Risk Management Committee	April 24, 2012 (resigned October 1, 2020)

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 Gen. Thammanoon Withee, being two persons, with affixation of the Company's seal.

7.2.3 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 utilizing 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 programs 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 prioritize 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 throughout 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. Directors wishing to engage in the trading of Company securities must notify Internal Audit at least one day in advance for the quarterly reporting to the Audit Committee meeting.
12. 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.
13. Each Director cannot hold the position of Director in more than other two listed companies in the Stock Exchange of Thailand (SET), excluding Directors' current positions (as of August 19, 2016), the policy-amending date. This excludes the executive director or CEO in the capacity of board director for companies in the group.

Roles and Responsibilities of the Chairman, leader of the Board

- 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.

Matters involving shared responsibility of the board and management:

- Formulating and reviewing policies and strategies, plans and targets.
- Ensuring robust system for risk management and internal control.
- Clearly defining management's responsibilities.
- Overseeing appropriate policies and plans for resource allocation, including HR, IT, and budgeting.
- Monitoring and evaluating financial and non-financial corporate performance.
- Ensuring integrity of financial and non-financial information disclosures.

Matters that the board should delegate or not get involved with:

- Engaging in activities which under normal circumstances are not expected roles of the board, including day-to-day management and decisions (such as procurement and staffing), ongoing monitoring that conduct and operations are in compliance with the company's policies, strategies, plans, and applicable law and standards.
- Not getting involved in or influencing matters in which a director may have vested interests.

The President & CEO is authorized to execute his core duty of running Bangchak's day-to-day business as assigned by the Board. To this end, he must strictly follow the Board-approved policies, plans, and budgets with integrity and care in the best interests of Bangchak and its shareholders.

7.3 Sub-Committees

7.3.1 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 sub-committee charters as follows:

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.

Roles and Responsibilities

- 1) To ensure accuracy and adequacy of the Company's financial reporting according to Accounting Principles governed by laws.
- 2) To ensure that the Company has a suitable and efficient internal control system and internal audit and to ensure the efficiency and adequacy of the risk management system.
- 3) To review the performance of the Company to ensure compliance with the securities and exchange law, regulations of the exchange or laws relating to business of the Company.
- 4) To review a connected transaction or transaction that may lead to conflict of interest or acquisition and disposition of assets transaction to ensure compliance with the laws and regulations of the Stock Exchange of Thailand (SET), and that it is reasonable and brings the highest benefit to the Company.
- 5) To inspect and consider with the management on the defects that have been found and on the responses from the management.
- 6) To empower the auditing and investigating of all related parties under the authorization of the Audit Committee and also to authorize hiring of an expert so as to audit and investigate in compliance with the Company's regulations.
- 7) To prepare a report of the Audit Committee and disclose it in the annual report of the Company, and have such report signed by Chairman of the Audit Committee.
- 8) To consider, select, nominate the person who is independent to be the Company's auditor, recommend remuneration of the Company's auditor, recommend the removal of the Company's auditor and, at least once a year, attend the private meeting with an auditor without management.
- 9) To consider auditing scopes and plans of the external auditor and the Internal Audit so that they are contributory to each other and to reduce double operations as concerns financial auditing.
- 10) To approve the Charter, audit work plans, budget, training plans and manpower of the Internal Audit.

- 11) To appoint, transfer, dismiss, and undertake annual evaluation of the Chief Audit Executive and review the independence of Internal Audit.
- 12) To review the efficiency and effectiveness of internal control and risk management focusing on the issue of information technology.
- 13) In performing the duty of the Audit Committee, if there is transaction or act which could extremely affect the Company's financial status and the Company's performance, namely
 - Transaction which lead to conflict of interest
 - Dishonest, extremely unusual or remiss internal control system
 - Breaking the securities and exchange law, regulations of the exchange or laws relating to business of the Company

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

- 14) To review and consider the Self-Evaluation Tool for Countering Bribery of Thailand's Private Sector Collective Action Coalition Against Corruption (CAC).
- 15) To perform any other act assigned by the Board of Directors with approval of the Audit Committee.

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.

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.

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.

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.

7.3.2 List of Sub-Committee

1. Audit Committee (AC)

Name	Position
1. Dr. Porametee Vimolsiri	Chairperson and Independent Director with expertise in accounting and finance
2. Pol.Lt.Gen. Chaiwat Chotima	Member and Independent Director
3. Mr. Teerapong Wongsiwawilas	Member and Independent Director
4. Vice President, Internal Audit Department	Secretary

2. Nomination and Remuneration Committee (NRC)

Name	Position
1. Mrs. Prisana Praharnkhasuk	Chairperson and Independent Director
2. Adm. Sucheeep Whoungmaitree	Member and Independent Director
3. Gen. Thammanoon Withee	Member and Independent Director
4. Pol. Lt. Gen. Chaiwat Chotima	Member and Secretary, Independent Director

3. Enterprise-wide Risk Management Committee (ERMC)

Name	Position
1. Mr. Surin Chiravisit	Member and Non-Executive Director
2. Dr. Prasert Sinsukprasert	Member and Non-Executive Director
3. Dr. Anuchit Anuchitanukul	Member and Non-Executive Director
4. Mrs. Prisana Praharnkhasuk	Member and Independent Director
5. Mr. Chaiwat Kovavisarach	Member and Secretary, Executive Director

4. Corporate Governance Committee (CGC)

Name	Position
1. Gen. Vitch Devahasdin	Chairperson and Independent Director
2. Mr. Surin Chiravisit	Member and Non-Executive Director
3. Mr. Suthep Wongvorazathe	Member and Non-Executive Director
4. Mr. Suthi Sukosol	Member and Non-Executive Director
5. Mr. Chaiwat Kovavisarach	Member and Secretary, Executive Director

The Executives



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)



Mr. Chalermchai Udomranu

Senior Executive Advisor, Refinery Business Group



Mr. Pongchai Chaichirawiwat

Senior Executive Advisor



Mr. Somchai Tejavanija

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



Mr. Bundit Sapianchai

Senior Executive Vice President, appointed
to BCPG Public Company Limited





Mr. Surachai Kositsareewong
Senior Executive Vice President, Accounting and
Finance and Acting Executive Vice President
Financial Controller



Mr. Chokchai Atsawarangsalit
Senior Executive Vice President, Corporate
Management and Organization Development



Mr. Viboon Wongsakul
Senior Executive Vice President, Corporate Strategy
and Business Development



Mr. Pativat Tivasasit
Senior Executive Vice President,
Refinery Business Group



Mr. Kittiphong Limsuwannarot
Senior Executive Vice President, appointed
to BBGI Public Company Limited
(Effective on 1st January 2021)



7.4 Executive Management

7.4.1 Names and Positions of Executives

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 21 persons, No.1 through No.10 of whom are regarded as executives under SEC's definition (As of December 2020):

Name	Position
1. Mr. Chaiwat Kovavisarach	President and Chief Executive Officer
2. Mr. Chalermchai Udomranu	Senior Executive Advisor, Refinery Business Group
3. Mr. Pongchai Chaichirawiwat	Senior Executive Advisor
4. Mr. Somchai Tejavaniya	Chief Marketing Officer & Senior Executive Vice President, Marketing Business Group
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 and Acting Executive Vice President Financial Controller
7. Mr. Chokchai Atsawarangsalit	Senior Executive Vice President, Corporate Management and Organization Development
8. Mr. Viboon Wongsakul	Senior Executive Vice President, Corporate Strategy and Business Development
9. Mr. Pativat Tivasasit	Senior Executive Vice President, Refinery Business Group
10. Mr. Kittiphong Limsuwannarot*	Senior Executive Vice President, appointed to BBGI Public Company Limited
11. Mr. Pichit Wongrujiravanich	Executive Advisor
12. Ms. Revadee Pornpatkul	Executive Advisor, appointed to Power Plant Project Development
13. Ms. Pakawadee Junrayapes	Executive Vice President Corporate Compliance Acting Vice President Legal Compliance and Company Secretary
14. Dr. Michael William Fischer*	Executive Vice President, Business Development
15. Mr. Suwat Meemook	Executive Vice President, Bangchak Initiative and Innovation Center (BiIC)
16. Ms. Sattaya Mahattanaphanij	Executive Vice President, appointed to BCPG Public Company Limited
17. Ms. Phatpuree Chinkkulkitnivat	Executive Vice President, appointed to BCPG Public Company Limited
18. Mr. Bundit Hansapaiboon	Executive Vice President, Planning and Trading Business
19. Mr. Warakorn Kosolpisitkul	Executive Vice President, Marketing Business and Acting Vice President Marketing Strategy and Communication
20. Ms. Gloyta Nathalang*	Executive Vice President, Corporate Sustainability, Branding and Communication
21. Mr. Thamarat Paryoonsuk*	Executive Vice President, Refinery Manufacturing Business

Note: * Executives No. 10, 14, 20 and 21 effective on January 1, 2021

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:

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. Thai Digital Energy Development Co., Ltd. (TDDED)
12. BCPG Indochina Co., Ltd (BIC)
13. BSE Power Holdings (Thailand) Co., Ltd. (BSPH)
14. JKR Energy Co., Ltd. (JKR)
15. RPV Energy Co., Ltd. (RPV)
16. Lopburi Solar Co., Ltd. (LS)
17. Prachin Solar Co., Ltd. (PS)
18. Aquatist Energy Co., Ltd. (AQU)
19. NamSan 3A Sole Power Co.,Ltd. (NS3A)
20. NamSan 3B Sole Power Co.,Ltd. (NS3B)
21. BCPG Wind Cooperatief U.A. (BCPG Wind)
22. Greenergy Holdings Pte. Ltd. (Greenergy Holdings)
23. Greenergy Power Pte. Ltd. (Greenergy Power)
24. Huang Ming Japan Company Limited (Huang Ming)
25. BSE Energy Holdings Pte. Ltd.
26. BCPG Investment Holdings Pte. Ltd.
27. Bangchak Biofuel Co., Ltd. (BBF)
28. Bangchak Bioethanol (Chachoengsao) Co., Ltd. (BBE)
29. KSL Green Innovation Plc. (KGI)
30. BBGI Utility and Power Co., Ltd. (BUP)
31. Win Ingredients Co., Ltd. (WIN Ing.)
32. BCPR Co., Ltd. (BCPR)
33. BCPR Pte. Ltd. (BCPR SG)
34. BCP Trading Pte. Ltd. (BCPT)
35. BCP Innovation Pte.Ltd. (BCPI)
36. BCP Energy International Pte.Ltd. (BCPE)
37. BCV Energy Co., Ltd. (BCVE)
38. BCV Innovation Co., Ltd. (BCVI)
39. BCV Partnership Co., Ltd. (BCVP)
40. BCV Biobase Co., Ltd. (BCVB)
41. Lom Ligor Co., Ltd. (LLG)
42. Nido Petroleum Pty Ltd (NIDO)

Associated Companies

1. Bongkot Marine Services Co., Ltd. (Bongkot Marine)
2. Oam Suk Social Enterprise Co., Ltd. (AomSuk)
3. Ubon Bio Ethanol Co., Ltd. (UBE)
4. Ubon Bio Gas Co., Ltd. (UBG)
5. Ubon Agricultural Energy Co., Ltd. (UBA)
6. Ubon Sunflower Co.,Ltd. (UBS)
7. OKEA ASA (OKEA)
8. PetroWind Energy Inc. (PWEI)
9. Impact Energy Asia Development Limited (IEAD)
10. Star Phoenix Geothermal JV B.V.(Star Phoenix)
11. Star Energy Group Holdings Pte. Ltd. (Star Energy Holding)
12. star Energy Geothermal Pte Ltd. (Star Energy1)
13. Star Energy Geothermal Holdings (Salak - Darajat) B.V. (Star Energy2)
14. Star Energy Geothermal (Salak - Darajat) B.V. (Star Energy3)

Joint Ventures

1. Fuel Pipeline Transportation Co., Ltd. (FPT)
2. Lithium Americas Corp. (LAC)
3. Manus Bio Inc., (Manus Bio)

Others

1. Happiness Sharing Foundation (Foundation)

7.4.2 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.

7.4.3 Total executives' remuneration

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

Remuneration	2019		2020	
	Persons	Baht	Persons	Baht
Salary	11	83,899,655	10	69,405,821
Bonus & Retirement pay	11	42,964,594	10	28,568,602
Provident fund	11	7,364,004	10	6,120,327
Total	11	134,228,253	10	104,094,750

7.5 Personnel

On December 31, 2020, the Company had a total headcount of 1,230:

Employee	Persons
Corporate Management and Organization Development	108
Accounting and Finance	79
Corporate Strategic Planning and Sustainability Development	46
Marketing Business Group	346
Refinery Trading Business Group	566
The President and Chief Executive Officer	74
BCPG Plc.	4
BBGI Plc.	7

Significant changes in number employee for the past three years

None (Total employee in year 2020 were 1,230 persons, which reduced slightly from 1,242 persons in year 2019 and 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; discipline remuneration; special bonus and other welfare. 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 2020 the Company paid remuneration as follows.

Remuneration	Baht
Salary	1,023,239,183.00
Allowance	275,177,575.86
Overtime	68,087,724.00
Bonus	264,168,183.00
Provident Fund	98,455,241.00
Social Security	8,893,739.00
Total	1,738,021,645.86

The remuneration for President & CEO and Senior executive vice presidents upward is 5.99% 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.

This year, various training was provided to employees, averaging 23.29 hours/person/year (see details under Driving Sustainable Business), including environmental aspects of training curricula and seminars. Instances were training on draft laws promoting greenhouse gas reduction with the ETS (Emissions Trading Scheme), a project to develop economic tools for carbon pricing and investment to lower greenhouse gas emission, a seminar on low-carbon business sustainability, a Carbon Pricing Seminar: A Price Tool to Lower Global Warming, a seminar on Setting Science-based Targets in Asia: The Business Case for Settling Science-based Targets, and a seminar on PRTR (Pollutant Release and Transfer Registers).

7.6 Other Key Information

7.6.1 Responsible Executives

o Company Secretary

Under the Securities and Exchange law (Articles 89/15 and 89/16), Board Meeting No. 6/2009 appointed Ms. Pakawadee Janrayapes, Executive Vice President, Corporate Compliance, as Company Secretary, effective from July 1, 2009. Details of the company secretary profile appear in Attachment 1.

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.

o **Accounting Supervisor**

The Company assigned Ms. Chantip Wongchieowittaya Vice President, Financial Accounting to be directly responsible for the supervision of accounting, effective from June 10, 2019 Please see information of the head of Accounting Supervisor in Attachment 1.

o **Head of Internal Audit**

The Audit Committee meeting No. 6/2563 of June 18, 2020, selected Ms. Pornjit Sojisunsanee as Vice President, Internal Audit Department, citing her solid knowledge and understanding of Bangchak's businesses, complemented by her internal audit expertise, skills, and experience, and those in corporate governance, risk assessment, and internal control at the business and overall levels. As a result, the committee regarded her as suitable and sufficient for such duties.

The Audit Committee considers, appoints, transfers, and assesses the performance of the head of Internal Audit. Please see information of the head of Internal Audit in Attachment 3.

o **Head of the Compliance Department**

At its meeting No. 6/2009 held on June 26, 2009, the Board of Directors appointed Ms. Pakawadee Junrayapes as Company Secretary, effective from July 1, 2009. In 2017, due to the Company's management restructuring, the Company appointed Ms. Pakawadee Junrayapes as Executive Vice President, effective from January 1, 2018. Please see information of the head of Legal and Corporate Compliance in Attachment 3.

7.6.2 Head of Investor Relations

Investors and related parties can make queries or ask for the Company's information at Ms. Supamol Aiem-On, Investor Relations Manager, Tel. 0 2335 8663 or Email address: ir@bangchak.co.th

7.6.3 Audit Fee

For the fiscal year 2020, the Company and its subsidiaries paid for audit fees amounting to 11.95 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 2020

1. Fees for annual audit and quarterly review of the Company and consolidated financial statements amounted to 2.09 Million Baht to KPMG.

Audit fees of the Company	
1. Annual audit fee for the Company's financial statement	0.42 Million Baht
2. Fees for annual audit and quarterly review of the Company and consolidated financial statements	1.67 Million Baht
Total audit fees of the Company	2.09 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	
- Number of subsidiaries	25 Companies
- Amount	6.14 Million Baht
2. Fees for annual audit of the overseas subsidiaries' financial statements	
- Number of subsidiaries	40 Companies
- Amount (equivalent)	3.72 Million Baht
Total audit fees of subsidiaries	9.86 Million Baht

Non-audit Fee

The Company and its subsidiaries paid for other fees amounting to 1.09 Million Baht, the Company paid for business advisory fees amounting to 9.50 Million Baht, and the subsidiaries paid for auditing compliance with the conditions of the BOI Promotion Certificate amounting to 1.87 Million Baht to the audit firm and persons or businesses related to the auditors and the audit firm.

8. Highlights of Corporate Governance

8.1 Performance of the Board of Directors

8.1.1 Recruitment, Development, and Performance Assessment of the Board of Directors

1. Independent Directors

The Board consists of at least one-third being Independent directors, each of whom must comply with the following:

- (1) An Independent Director must hold no more than 0.5% of all the voting shares of Bangchak and its parent company, subsidiaries, affiliates, major shareholders or Corporate Governance Policy, Bangchak Corporation Public Company Limited controlling persons. An Independent Director's shares must include those held by related person to that Independent Director.
- (2) An Independent Director must not be nor ever have been a director who is involved with management, an employee, a salaried adviser or a controlling individual of Bangchak, its parent company or any of its subsidiaries, affiliates, peer companies under the same parent company, major Shareholders or controlling individuals/entities. An exception is made in the case of a candidate who used to hold one of the positions mentioned above but left it at least two years prior. An individual who was a civil servant of or an adviser to a government agency that was a Bangchak major shareholder or controlling entity is not forbidden from being a Bangchak Independent Director.
- (3) Independent Directors must not have familial (blood ties or legal) relations to individuals such as a parent, spouse, sibling, child, spouse of the child of another Director, an Executive, a major Shareholder, a controlling individual or an individual who is about to be nominated as a Director, an Executive or a controlling individual of Bangchak or any of its subsidiaries.
- (4) Independent Directors must not have nor ever had a business relationship with Bangchak, its parent company or any of its subsidiaries, affiliates, major Shareholders or controlling individuals/entities in a manner that might obstruct their independent use of discretion. In addition, they must not be nor have ever been a significant Shareholder or a controlling individual of an entity having a business relationship with Bangchak, its parent company or any of its subsidiaries, affiliates, major Shareholders or Bangchak controlling individuals/entities. An exception is made in the case of a candidate who used to have such a relationship or hold one of the positions mentioned above but ended it or left it at least two years prior.
- (5) An Independent Director must not be nor ever have been an auditor of Bangchak, its parent company or any of its subsidiaries, affiliates, major Shareholders or controlling individuals/entities. In addition, he/she must not be a significant Shareholder, a controlling individual or a partner of the audit firm where the auditors of Bangchak, its parent company, or any of its subsidiaries, affiliates, major Shareholders or controlling individuals/entities work. An exception is made in the case of a candidate who used to hold any of the positions mentioned above but left it at least two years prior.
- (6) An Independent Director must not be nor ever have been a provider of any professional service (including services as a legal or financial adviser) who receives compensation to the amount of over two million baht per year from Bangchak or any of its subsidiaries, affiliates, major Shareholders or controlling individuals/entities. In addition, he/she must not be a significant Shareholder, a controlling individual or a partner of a provider of such professional services. An exception is made in the case of a candidate who used to hold any of the positions mentioned above but left it at least two years prior.

- (7) An Independent Director must not be appointed as an agent of another Bangchak Director, a major Bangchak Shareholder or a Bangchak Shareholder connected with a major Bangchak Shareholder.
- (8) Independent Directors must not own businesses that are in the same industry and significant competition to the business of Bangchak or any of its subsidiaries. They must not be significant partners in a limited partnership or directors who are involved in management, employees, and salaried advisers or own more than one percent of all voting shares of another firm that runs a business that is in the same industry as and is in significant competition with the business of Bangchak or any of its subsidiaries.
- (9) An Independent Director must not have any other characteristics that might hinder the free expression of their opinions about Bangchak operations.

After being appointed an Independent Director who meets the nine criteria stated above, might be tasked by the Board of Directors with making decisions in regard to the operations of the Company, its parent company or any of its subsidiaries, affiliates, peer companies under the same parent company, major Shareholders or controlling individuals/entities. They must be able to make collective decisions. The definitions in regards to Independent Directors are in line with the regulations of definitions in the notification of the Capital Market Supervisory Board on the issuance and offering of securities.

2. Nomination and Appointment of Directors and the President & CEO

Today, Bangchak has 14 directors, 8 of whom are independent ones. Ten 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.

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.

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.

New Directors' Orientation

Bangchak stages lectures and company visit 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. In this regard, the company secretary is the coordinator.

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:

- Talk on "Corporate Strategy, Beyond the Crisis" by a speaker from Bain & Company Thailand at the 2020 annual seminar on corporate strategies on August 28, 2020

As of today, two directors have attended IOD's Director Accreditation Program (DAP) and nine have attended its Director Certification Program (DCP). Training details appear under Attachment 1.

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 94.7%, 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 95.5%, 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 95.8%, 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 96.7%, rated excellent.
 - Nomination and Remuneration Committee, the group evaluation had the average score of 97.5%, rated excellent.
 - Corporate Governance Committee, the group evaluation had the average score of 92.9%, rated excellent.
 - Enterprise-wide Risk Management Committee, the group evaluation had the average score of 96.7%, rated excellent.

Succession Planning and Management Development

Under the Board's policy on the President and Chief Executive Officer's nomination, if 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, with four-year term from 1 January 2019 to 31 December 2022.

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

Bangchak measures performance outcomes as KPIs (key performance indicators), 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 earn benefits as the top management executive in addition to the compensation as a director.

8.1.2 Meeting Attendance and Remuneration of Individual Directors

In 2020, the Board held 15 meetings (12 regular and 3 special ones) with exclusive meetings of the independent directors in March and August and meetings of the non-executive directors in April and September, and one annual seminar on corporate strategies with the management to review and revise the corporate vision 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.

Summary of Board and Sub-committees meeting attendance

Names	Meeting attendance / total (times)							
	Board of Directors			Sub-Committees				
	Meeting	Seminar	Total	AC	NRC	ERMC	CGC	
1. Mr. Pichai Chunhavajira ^{1/}	15/15	1/1	16/16	-	-	-	-	
2. Mr. Surin Chiravisit	15/15	1/1	16/16	-	-	6/6	2/2	
3. Mr. Suthep Wongvorazathe ^{2/}	15/15	1/1	16/16	3/3	1/1	-	1/2	
4. Gen. Vitch Devahasdin	15/15	1/1	16/16	-	-	-	2/2	
5. Adm. Sucheep Whoungmaitree	15/15	1/1	16/16	-	3/3	-	-	
6. Gen. Thammanoon Withee	14/15	1/1	15/16	-	2/3	-	-	
7. Pol.Lt.Gen. Chaiwat Chotima	15/15	1/1	16/16	12/12	3/3	-	-	
8. Mrs. Prisana Praharnkhasuk ^{3/}	15/15	1/1	16/16	-	2/2	6/6	-	
9. Mr. Teerapong Wongsiwawilas ^{4/}	15/15	1/1	16/16	9/9	-	-	-	
10. Dr. Porametee Vimolsiri ^{5/}	14/15	1/1	15/16	12/12	-	-	-	
11. Mr. Suthi Sukosol	14/15	1/1	15/16	-	-	-	1/2	
12. Dr. Anuchit Anuchitanukul	15/15	1/1	16/16	-	-	6/6	-	
13. Dr. Prasert Sinsukprasert	14/15	1/1	15/16	-	-	6/6	-	
14. Mr. Chaiwat Kovavisarach	15/15	1/1	16/16	-	-	6/6	2/2	
15. Mr. Prasong Poontaneat ^{6/}	12/12	0/1	12/13	-	-	5/5	-	

- Note:**
- ^{1/} Chairman did not join any Sub-Committee as Member
 - ^{2/} Appointed as Member of CGC and dismissed from Chairman of AC and NRC on April 11, 2020
 - ^{3/} Appointed as Chairman of NRC on April 11, 2020
 - ^{4/} Appointed as Member of AC and dismissed from Member of CGC on April 11, 2020
 - ^{5/} Appointed as Chairman of AC on April 11, 2020
 - ^{6/} Resigned on October 1, 2020

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.

Moreover, as a consequence of economic situations and other factors impacting the Company's turnover, the Board of Directors agreed to **decrease their monthly remuneration and meeting allowances** for six months (April to September 2020) as follows:

- Chairman, by 25%
- Vice Chairman, by 12.5% and
- Directors, by 10%.

Director Remuneration approved by 2020 AGM of July 3, 2020 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

- 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 2020, the individual remuneration of Directors was as follows:

Names	Remuneration in Baht						
	BOARD	AC	NRC	ERMC	CGC	Bonus	Total
1. Mr. Pichai Chunhavajira	945,000	-	-	-	-	1,070,912.24	2,015,912.24
2. Mr. Surin Chiravisit	892,500	-	-	90,000	30,000	963,821.01	1,976,321.01
3. Mr. Suthep Wongvorazathe	798,000	93,750	18,750	-	15,000	856,729.79	1,782,229.79
4. Gen. Vitch Devahasdin	798,000	-	-	-	37,500	856,729.79	1,692,229.79
5. Adm. Sucheep Whoungmaitree	798,000	-	45,000	-	-	856,729.79	1,699,729.79
6. Gen. Thammanoon Withee	771,000	-	30,000	-	-	856,729.79	1,657,729.79
7. Pol.Lt.Gen. Chaiwat Chotima	798,000	300,000	45,000	-	-	856,729.79	1,999,729.79
8. Mrs. Prisana Praharnkhasuk	798,000	-	37,500	90,000	-	856,729.79	1,782,229.79
9. Mr. Teerapong Wongsiwawilas	798,000	225,000	-	-	-	856,729.79	1,879,729.79
10. Dr. Poramettee Vimolsiri	771,000	356,250	-	-	-	856,729.79	1,983,979.79
11. Mr. Suthi Sukosol ^{1/}	768,000	-	-	-	15,000	373,205.58	1,156,205.58
12. Dr. Anuchit Anuchitanukul	798,000	-	-	90,000	-	856,729.79	1,744,729.79
13. Dr. Prasert Sinsukprasert	771,000	-	-	90,000	-	856,729.79	1,717,729.79
14. Mr. Chaiwat Kovavisarach	798,000	-	-	90,000	30,000	856,729.79	1,774,729.79
Total	11,302,500	975,000	176,250	450,000	127,500	11,831,966.52	24,863,216.52

Directors whose terms were completed and resigned directors in 2020

1. Mr. Jarin Chakkaphark ^{1/}	591,000	-	-	93,750	-	856,729.79	1,541,479.79
Total	591,000	-	-	93,750	-	856,729.79	1,541,479.79

Note: ^{1/} Transferred bonus to the Social Security Fund in compliance with the regulations of the Office of the Social Security Fund

Bonuses for directors whose terms were completed and who resigned in 2019 (performance in 2019 paid in 2020)

Name	Bonus (Baht)	Remark
1. Mr. Jarin Chakkaphark ^{1/}	298,095.03	Resigned on May 8, 2019
Total	298,095.03	

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 2019 and 2020

Remuneration	2019		2020	
	Directors	Baht	Directors	Baht
Monthly remuneration and meeting allowance	15	13,182,580.64	15	13,716,000.00
Bonus	15	18,471,608.22	15	12,986,791.34
Total		31,654,188.86		26,702,791.34

Note: Bonus for 2019 performance under the resolution of the 2019 AGM, held on 11 April 2019 (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.)u

Directors' Remuneration due to Directorship of subsidiaries, associates, and joint ventures in 2020

Companies	Name	Total remuneration (Baht)				Net Total
		Monthly remuneration	Meeting allowance	Bonus	Sub-Committee remuneration	
BCPG	Mr. Pichai Chunhavajira	405,000	577,500	1,453,124	-	2,435,624.00
	Mr. Chaiwat Kovavisarach	382,500	543,750	953,090	187,500	2,066,840.00
BBGI	Mr. Pichai Chunhavajira	450,000	175,000	429,947.12	-	1,054,947.12
	Mr. Surin Chiravisit	360,000	222,500	343,957.73	-	926,457.73
	Mr. Chaiwat Kovavisarach	360,000	247,500	343,957.73	-	951,457.73
NIDO	Mr. Chaiwat Kovavisarach	29,162.24 AUD (per annum)	-	-	-	680,063.44
OKEA	Mr. Chaiwat Kovavisarach	497,682 NOK	80,000 NOK	-	-	2,044,994.28
	Mrs. Prisana Praharnkhasuk	327,844 NOK	56,000 NOK	-	100,000 NOK	1,712,807.76
LAC	Mr. Chaiwat Kovavisarach (resigned May 7, 2020)	35,165 USD	3,000 USD	-	1,758 USD	1,206,073.83

Notes:

- BCPG: BCPG Public Company Limited
- BBGI: BBGI Public Company Limited
- NIDO: Nido Petroleum Pty. Ltd.
- OKEA: OKEA ASA
- LAC: Lithium Americas Corp.
- Exchange rate AUD 1 equivalent to approximately Baht 23.32
- Exchange rate NOK 1 equivalent to approximately Baht 3.54
- Exchange rate USD 1 equivalent to approximately Baht 30.21

8.1.3 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 “7. Corporate Governance Structure”.
- Definition of an oversight approach for joint-venture companies for representative directors to uphold so that the businesses of subsidiaries, associates, and joint-venture companies may be uniform and in line with Bangchak’s policy approach and relevant legislation. Voting or actions on important matters must secure prior approval from the President and 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.

8.1.4 Monitoring Compliance of Corporate Governance Policy and Guidelines

1) Policy

Bangchak has instituted its corporate governance policy in writing since 2003 as a result of a workshop engaging all employees where everyone played a part in contributing ideas for the Company’s practical guidelines. This year the Board endorsed Revision 17 of the CG Policy, adding the Board Skill Matrix to embrace the “information technology and digital” aspect to align with the DJSI and suit the current business model.

2) Communication

The Corporate Governance Committee agreed on Bangchak’s annual corporate governance plan by requiring the Company to constantly communicate its corporate governance code and its performance to employees and stakeholders via various channels to raise awareness and communicate to stakeholders on the Company’s intention to elevate corporate governance and set a standard for conducting business such as:

- Communication of good deeds, morality and ethics, and anti-corruption, as well as guidelines of corporate governance policy through Tone from the Top, prepared as the executive’s CG Motto, on the Company’s Intranet.
- On March 13, 2020, Bangchak held a talk on corporate governance and anti-corruption for new employees as part of the Newcomer Discovering Program (orientation) at M Tower.
- On June 5, 2020, the President and CEO gave an interview to Collective Action against Corruption (CAC) as CAC had prepared and disseminated the contents on social media to publicize Bangchak’s success in joining the CAC Project as a Change Agent and encouraging business organizations in their concrete anti-corruption efforts and measures to prevent bribes to government officials.



- On June 23, 2020, the Chairman of the Board and the President and CEO gave an interview on “The Secret Sauce: Boardroom Wisdom” to share their experience in management thinking and perspectives of the Board and organization leaders. The content and the VDO of the interview would probably be used as part of the IOD course, held by Thai Institute of Directors (IOD) with the Standard, an online news agency.
- On June 23, 2020, the Chairman of the Board and the President and CEO gave an interview on “What is the role of the directors that contributes to each company’s success?” on best practices and as an example of directors’ work in formulating sustainable business strategies, held by Thai Institute of Directors (IOD).
- On August 25, 2020, the Company gave a talk on corporate governance for senior executives of the Bank for Agriculture and Agricultural Cooperatives on organizational development at Head Office, Bank for Agriculture and Agricultural Cooperatives.

Bangchak planned to organize the annual CG Day activity with its group to communicate and cultivate awareness among employees and stakeholders on the corporate governance code for concrete implementation.

3) Measures and Guidelines

- All employees were required to undertake a test on annual corporate governance and anti-corruption policy. They must pass certain criteria to ensure proper understanding. The test was administered through the online human resource management system (e-HR) and the online knowledge management system (“We Share”) on the promotion of knowledge and understanding of corporate governance, good internal control system based on the internal control scope, as well as the contents of the Personal Data Protection Act (between November 2 - 9, 2020) with an average score of 90.88%.
- 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.

4) 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 as detailed under 9.1 Internal Control.

5) Audit

Internal Audit formulates the annual audit plans and reports audit findings to the Audit Committee and the Board for acknowledgment as detailed under 8.2 Report of the Audit Committee).

6) Anti-Corruption

Bangchak incorporated business ethics for anti-corruption in all forms into its corporate governance policy and campaigned for ongoing anti-corruption in the organization through various channels. Bangchak has integrated the anti-corruption policy into its corporate governance policy under Section 4 to reiterate its intention to operate business by abiding by the law and regulations relevant to corporate governance, refusing all forms of fraud and covering all businesses in all applicable countries and agencies. It has defined anti-corruption measures to implement the policy and has regularly reviewed them to comply with changes in laws and business circumstances and uphold Bangchak's reputation.

- Bangchak has established disbursement regulations by defining financial limits, approval authorities, objectives, and recipients, all of which require clear supporting documents to prevent unlawful political help and ensure that charitable donations do not go to corrupt purposes, business support funds are not excuses for corrupt practices, and receptions, gifts, and other expenses conform to the policy. Also in place is an audit process issued by Internal Audit.
- Bangchak has regularly established processes for auditing sales and marketing, purchasing, and contract administration concerning risk to corrupt practices in conformance to disbursement regulations and purchasing regulations. To this end, Internal Audit provides its comments and explores for suitable corrective actions.
- Bangchak has put in place a personnel administration process that underscores its commitment to anti-corruption measures, ranging from selection, training, performance assessment, compensation, to promotion.
- Bangchak has established internal control for finance, accounting, data recording, and other company processes related to anti-corruption measures, together with control self-assessment for consultation about the findings of internal control.
- Bangchak has established risk management to ward off and suppress frauds and malfeasance, by analyzing business risks, defining the importance of risks and proper measures for assessed risks, and regularly tracking the progress of risk management plans.
- Bangchak has put in place internal audit to ensure that the defined internal control system and risk management can help it achieve goals, and to audit all units' work against requirements and regulations. Internal audit also helps detect weaknesses and provides advice on the development of business processes for greater efficiency and effectiveness under the approach of corporate governance.

The Anti-Corruption policy applies to all Bangchak directors, executives, and employees and its subsidiaries. The relevant implementing measures apply to all affiliates and other companies that the Company has control over, as well as its business agents.

In addition, Bangchak values good corporate governance and anti-corruption alike. Bangchak also joined the UN Global Compact and in 2013 was one of the first 22 companies to achieve CAC membership certification. Achieving the first CAC membership in 2013 thanks to ongoing transparent business conduct, in 2019 it won the second membership recertification since its first membership recertification in 2016.

During the spread of Covid-19, Bangchak continued to encourage its business partners to join the CAC project. The Company assisted with the public relations and invited the business partners who announced their intention with CAC in the form of an online seminar through the WebEx system. Three CAC seminars were held with the participation of 57 companies, with eight companies serving as the Company's business partners or 14% of the total participants.

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”, 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 30, 2020.
- 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 and parking spaces are adequately reserved,
 - 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 2020 AGM, Bangchak invited Mrs. Nisanat Pongsawasdi, 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 representative from the shareholders joined the witnesses verifying the AGM ballot-counting.

Results of Quality Assessment for AGM: 100 points and listed as "Excellent" for the 12th consecutive year in participation of the AGM Quality Assurance evaluation. The evaluation was conducted by Thai Investors Association (TIA).

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 31 days ahead of the meeting and delivered them to the shareholders 28 days ahead of the meeting.
- Allowed the shareholders to propose additional AGM agenda items and nominate directors from August 30 to December 31, 2020. 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 six 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 3. Driving business for sustainability).

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, each year, the Company will conduct a survey of compensation and welfare benchmark between the petroleum industry and the related industry, including the surrounding environment in order to review and improve the compensation criteria. 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. In 2020, Bangchak encouraged its employees to concretely implement the principles of 7Rs (Reduce, Reuse, Recycle, Recovery, Repurpose, Reject, Rethink) as part of the policy of Circular Economy. Employees were given opportunities to submit their ideas for more efficient and environmentally friendly work improvement. A contest and an award presentation were held on SHEE Excellence Day 2020.
- Environmental stewardship
 - Internally, the Company campaigned on reducing printing jobs or photocopying and reliance on electronic communication means instead of paper, including printing on both pages instead of one. It modified business processes to electronic, while educating employees on occupational health, safety, and energy, 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

Bangchak 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:

Emails: ico@bangchak.co.th
Letters: Internal Audit Department
Bangchak Corporation Public Company Limited
2098 M Tower Building, 8th Floor, Sukhumvit Rd.,
Phra Khanong Tai, Phra Khanong, Bangkok 10260
Tel. 0 2335 4566

Bangchak monitored complaint and whistleblowing reports through Internal Control's channel. This year there was one such report filed through ico@bangchak.co.th concerning suspected corrupt or unethical practices, specifically unfair job inspection. After due investigation, Bangchak found no grounds for this complaint, since the complainant had delivered his or her job not by its standard specified in the agreement, making it impossible for Bangchak to inspect the job.

Contact channels

The Board of Directors	Tel: 0 2335 4638 Fax: 0 2016 3982 Email: bcpsecretary@bangchak.co.th
Company Secretary	Tel: 0 2335 4050 Fax: 0 2016 3982 Email: pakawadee@bangchak.co.th
Investor Relations	Tel: 0 2335 8663 Fax: 0 2335 8000 Email: 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. Below are Bangchak's actions taken this year:

- 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.

- 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 March and August, and a meeting of the non-management directors in April and September.
- To encourage the Board of Directors to acquire beneficial knowledge and experience, the Company held a talk on “Corporate Strategy, beyond the Crisis” by a speaker from Bain & Company Thailand at the 2020 annual seminar on corporate strategies on August 28, 2020.
- Developed performance assessment forms for the Board: individual (self-assessment and cross-assessment), group, and committee.
- Instituted an effective internal control system, internal audit, and risk management measures together with regular tracking at Board meetings.
- Established the Legal and Compliance department 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.

8) 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.

9) 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.
- **Intention to trade Bangchak Corporation’s securities form**
To enable directors and the management to inform the Company of the intention to trade Bangchak shares through Internal Control at least one day in advance, for reporting to the Audit Committee every quarter. Written notices can be sent through ICO@bangchak.co.th or other electronic channels, including the LINE application.

10) Investor Relations

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

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

Activities	Number (times)
Local Roadshow and Online roadshow	3
Analyst Meeting	4
Opportunity Day (organized by the SET)	4
Conference Call และ Online meeting	10
Answering Inquiries by E-mail/telephone	522 (twice a day in average)
Performance Update one website	4
Factsheet	4
Press Conference (2021 Business Plan)	1

information given to SET. Other data were presented through meeting documents, video and audio recordings, E-Newsletters, and executives' interviewing, 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.

8.2 Report of the Audit Committee and Other Sub-Committees

Report of the Audit Committee

Dear Shareholders,

The current Audit Committee of Bangchak Corporation Public Company Limited consists of qualified directors who are independent and experienced, with Dr. Porameteer Vimolsiri serving as Chairman and Pol. Lt. Gen. Chaiwat Chotima and Mr. Teerapong Wongsiwawilas serving as members.

In 2020, the committee met 12 times, eight of which with management (in the absence of those with invested interests on applicable items). Below are the meeting attendance records.

Name	Meeting attendance/total (times)
Dr. Porameteer Vimolsiri	12/12
Pol. Lt. Gen. Chaiwat Chotima	12/12
Mr. Teerapong Wongsiwawilas *	9/9
Mr. Suthep Wongvorazathe	3/3

Note: * Member since April 2020

Below are the highlights of deliberations in 2020:

1. Review of financial statements

Reviewed the quarterly and annual financial statements, related financial reports with the auditor, Internal Audit, and management. Investigated and commented on repercussions on financial statements such as key changes in accounting policies, investment in subsidiaries and associated companies, policy and accounting records for investment impairment, and criteria for allowance of debtors' doubtful accounts to ensure that the financial statements met with generally accepted accounting standards and adequate information disclosure.

2. Review of connected transactions

Reviewed connected transactions or transactions with possible conflicts of interest. Viewed that the connected transactions were in line with regular business practices and trade criteria and benefited the business operations of Bangchak and its subsidiaries, as well as with adequate information disclosure.

3. Nomination of the auditor

Selected, nominated, and proposed pay for KPMG Phoomchai Audit Ltd. as Bangchak's external auditor for 2021; held quarterly discussions with the external auditor about audit problems and timely corrective actions on key issues.

4. Risk management process review

Reviewed the adequacy of Bangchak's risk management processes and proceeded with audit under the existing risks. This year two meetings were held with the Enterprise-wide Risk Management Committee for exchange of views.

5. Compliance review

Reviewed Bangchak's compliance with all announced accounting standards, legal provisions, SET's requirements, and applicable laws in a thorough, accurate fashion under the corporate governance code as well as through the drive and supervision to ensure that the operations met with safety standards.

6. Internal control review

Conducted quarterly investigation of internal control with Internal Audit including operation, asset supervision, safety, prevention or reduction of mistakes/damage, leak or loss of assets or material information, reliability of financial reports, and compliance with laws, rules, regulations, as well as review of governance of subsidiaries' operations.

In 2020 the Audit Committee assigned Internal Control to audit compliance with the Covid-19 risk management measures and closely monitor management's compliance. Management monitored and made rectifications based on the recommendations of the committee and Internal Audit to ensure a sound internal control system.

7. Internal audit review

- Approved its own charter in accordance with the criteria and regulations of SEC and SET and the corporate governance policy to ensure the shareholders, business partners and customers, and other stakeholders that Bangchak's operations complied with ethics while maintaining an efficient internal control system.
- Reviewed the policy and operation manual of Internal Audit to cover the roles, duties, and responsibilities of the committee and in accordance with the criteria and regulations of SEC and SET as practical guidelines.
- Nominated the Internal Audit chief. The committee viewed that the current Internal Audit chief possessed education qualifications and experience in internal audit, as well as knowledge and understanding of the business of Bangchak, with past attendance of training courses on internal audit, which were sufficient and appropriate for such task.
- Supported the development of the Internal Audit chief to achieve quality based on international standards.
- Encouraged Internal Audit to apply computer and IT systems to the analysis of information through analytical programming and display of results, as well as the development of guidelines of investigation by focusing on continuous auditing.

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

(Signed) Dr. Poramettee Vimolsiri

(Dr. Poramettee Vimolsiri)

Chairman, Audit Committee

January 28, 2021

Report of the Enterprise-wide Risk Management Committee

Dear Shareholders,

To foster confidence that Bangchak Corporation can execute its businesses under volatile circumstances, it appointed an Enterprise-wide Risk Management Committee (ERMC) to define policies supporting its risk management practices affecting the corporation, dealing with strategic, operation, financial, and reputation risks. ERMC executed its Board-assigned duties under the enterprise-wide risk management criteria.

This year the committee held six meetings with management and the internal auditor as well as two meetings with the Audit Committee, highlighted below.

- **Supervision and formulation of policies and management of key corporate risks arising from fluid business circumstances stemming from several external and internal factors:** To this end, it defined risk management plans in parallel with corporate strategies, under which three cases of scenario planning were defined for adaptation of execution fitting actual circumstances. Key risk indicators were defined and tracked, as they affected corporate KPIs in a timely way with fluid business circumstances under various factors. For instance, the lethargic world economy and repercussions of Covid-19, safety, social-community-environmental impacts, compliance with laws, anti-corruption, and cyber-security vigilance. The committee's aim is sustainable development under Environmental, Social and Governance (ESG). As a result, ERMC valued risk management of Bangchak Group companies, which included assessment of risk management for suppliers and stakeholders' expectations together with vigilance and monitoring of overall impacts so as to produce manageable risk control and proper business conduct for the entire group.
- **Recommendations on new investments:** To accommodate the Group's global investment expansion in emerging businesses, Bangchak required that significant investment projects must command risk management plans in assorted aspects before seeking ERMC's endorsement for the Board's approval. This fostered confidence that such businesses commanded proper risk management practices, did not unduly impact communities and the environment, and stood a good chance of goal achievement. This year the committee gave recommendations and observations on the defining of investment project risk management plans so as to raise its production efficiency and particularly BCPG Plc, which made further investment in the solar power and wind power businesses.
- **Support to BCM (Business Continuity Management):** Bangchak should focus on its strategic, process, and resource preparedness by advocating preparedness for the Covid-19 pandemic, which could wield wide impacts, including public-sector epidemic control measures, social distancing, lockdowns of towns, cities, and country, and driving of domestic and global economies toward recession. Below are Bangchak's situation assessment and business execution approach development.
- **Safety:** The committee advocated conformance to BCM plans encompassing epidemic crises, giving top priority to the safety of employees, customers, and related parties. To this end, the committee ensured BCM plan drills, put in place operating and information systems for working from home, organized an incident command center during crises, systematically rolled out plans, and regularly communicated with employees and related parties.

- **Uninterrupted business:** In view of Covid impacts, Bangchak reviewed its plans for operation and marketing while lowering expenses and investment capital to fit circumstances. It also appointed an Innovation Continuity Taskforce to brainstorm ideas from employees on emerging businesses for income in the face of business change.
- **Marketing:** Bangchak adjusted its marketing plans for decreasing demand, notably that for diesel and aviation fuels, while for the Non-Oil business it added sales through delivery in line with the change in circumstances.
- **Financial standing:** Bangchak trimmed expenses and investment capital by roughly 20%. It also successfully issued Baht 8 billion's worth of debentures with excellent support from financial institutions for long-term loans of up to Baht 6 billion.

The committee also advocated knowledge enhancement about the BCM system among related personnel. To this end, this year it ensured BCM Internal Audit training for awareness of duties and recommended practices while reviewing and adjusting BCM plans for connection and the ability to efficiently manage under all circumstances. As a result, this year Bangchak garnered ISO 22301:2012 certification for the Head Office at M Tower, Bangchak Refinery, Bangchak Oil Distribution Center, the Central Region Business Office, and Bang Pa-in Oil Distribution Center to foster confidence among stakeholders that its businesses can go on uninterrupted even during crises.

The Enterprise-wide Risk Management Committee is committed to ensuring that Bangchak commands supervision and properly manages risks. As a result of the actions taken this year, the committee is confident that Bangchak can indeed operate efficiently in pursuit of its goals.

(Signed) Mr. Surin Chiravisit

(Mr. Surin Chiravisit)

Member, Enterprise-wide Risk Management Committee

December 18, 2020

Report of the Nomination and Remuneration Committee

Dear Shareholders,

Board Meeting No. 4/2563 appointed the present Nomination and Remuneration Committee, chaired by Ms. Prisana Praharnkhasuk, with Adm. Sucheep Whoungmaitree and Gen. Thammanoon Withee as members and Pol. Lt. Gen. Chaiwat Chotima as member and secretary.

This year the committee held three meetings, highlighted below.

Director nomination: The committee nominated new directors to replace the retiring ones and those resigning ahead of term completion by reviewing their competency, experience, sound career records, leadership, vision, virtue, ethics, good attitudes toward the corporation, and the ability to dedicate adequate time-all of which benefit Bangchak. In addition, the committee took into account board diversity and produced a board skills matrix to define the qualifications of desirable directors. To this end, it reviewed missing essential skills as well as proper qualifications in line with Bangchak's Board composition and structure suiting business strategies; to complement the nomination, it also leveraged IOD's Director Pool. Today the Board consists of 14 directors, eight of whom are independent ones, five are non-executive directors, and the President & CEO the sole management director. Their profiles appear under Governance Structure and Key Information on Board of Directors, Sub-committees, Management, Employees, and Others along with addition to the board skills matrix, specifically dealing with IT and digital aspects, in line with the DJSI assessment criteria for success.

Board and President & CEO compensation consideration: The committee considered commensuration with their duties as well as responsibilities suiting Bangchak's results of operation and performance as well as parity with SET's peer listed companies of comparable sizes. Such compensation must be able to inspire quality directors and management to execute their duties and fulfill Bangchak's goals as well as business directions. Compensation information appears under Report on Key Results of Operation on Corporate Governance.

The Nomination and Remuneration Committee independently executed its duties under the corporate governance code to ensure transparent processes and foster confidence among shareholders and all stakeholders.

(Signed) Ms. Prisana Praharnkhasuk

(Ms. Prisana Praharnkhasuk)

Chairperson, Nomination and Remuneration Committee

December 18, 2020

Report of the Corporate Governance Committee

Dear Shareholders,

The Board of Directors appointed a Corporate Governance Committee, chaired by Gen. Vitch Devahasdin, with Mr. Surin Chiravisit, Mr. Suthep Wongvorazathe, and Mr. Suthi Sukosol as members together with Mr. Chaiwat Kovavisarach as member and secretary.

This committee was assigned by the Board to define and review policies as well as guidelines for corporate governance (CG) and sustainable development, and to develop optimal governance processes for shareholders and stakeholders.

This year the committee held two meetings to track actions under the CG development plan, highlighted below.

1. Rights of shareholders

- ✔ Publicized AGM information through websites 31 days ahead of the meeting and mailed documents to shareholders 28 days in advance
- ✔ Installed enough AGM registration points for the attendees for registration speed
- ✔ Publicized the 2020 AGM minutes on Bangchak's website within 14 days
- ✔ Allowed the shareholders to submit questions needing responses at the AGM from September 1, 2020.

2. Equitable treatment of shareholders

- ✔ Recommended the names of six independent directors as AGM proxy choices for shareholders
- ✔ Allowed the shareholders to propose AGM meeting agenda and nominate directors in advance from September 1 to December 31, 2020
- ✔ Reported the shareholding of directors and management at every monthly Board meeting.

3. Roles of stakeholders

- ✔ Monitored complaint and whistleblowing reports through Internal Control's channel. This year there was one such report filed through ico@bangchak.co.th concerning suspected corrupt or unethical practices, specifically unfair job inspection. After due investigation, Bangchak found no grounds for this complaint, since the complainant had delivered his or her job not by its standard specified in the agreement, making it impossible for Bangchak to inspect the job.

4. Information disclosure and transparency

- ✔ Announced operation results, company information, and outlook to domestic and international analysts and investors every quarter.

5. Board responsibility

- ✔ Enhanced the skills and expertise of directors as corporate leaders for effectiveness and achievement of short-term and long-term goals, thus leading the corporation toward sustainability
- ✔ Joined the annual corporate strategic seminar with management to review its vision and set goals
- ✔ Organized two meetings of the independent directors (in March and August)
- ✔ Organized two meetings of the non-management directors (in April and September).

6. Good corporate governance policy

- Revised the 2020 Corporate Governance Policy (Revision 17) by adding to the Board Skills Matrix an IT and digital table in line with the DJSI and suitability for today's business operation
- Required that all employees provide personal information through e-HR on information change and complete a test of CG policy understanding through We Share. This year Bangchak put in place promotion of CG mastery, internal control defined by COSO (The Committee of Sponsoring Organizations of the Treadway Commission), and essences of the application of the Personal Data Protection Act of 2019.

7. Participation in the publicity of the CG code

- The Chairman and the President & CEO were guest speakers on the CG policies and experience on The Secret Sauce series entitled Boardroom Wisdom, produced by The Standard. The show concerned adaptation to digital disruption and Covid-19
- The President & CEO gave an interview to CAC (Collective Action against Corruption) on CAC Change Agent Success Story in view of Bangchak's value given to promotion of the formulation of concrete policies and anti-corruption measures.

8. Public relations activities promoting the CG culture

- Discussed CG during employee orientation sessions
- Discussed CG with external agencies
- Publicized good deeds, ethical practices, anti-corrupt practices, and CG guidelines via Tone from the Top, in which CG Mottos by executives appeared on Bangchak's website.

9. Anti-corrupt practices

- Bangchak encourages its suppliers to become certified CAC members. This year it encouraged suppliers to undergo quarterly CAC training by organizing online seminars through the WebEx system. Thanks to these, since 2013 a total of 96 suppliers have joined the declared intention, of which 28 have been CAC-certified. (This year Global Connection Plc. and V.C. Shipping and Services Co., Ltd., earned such certification.)
- Bangchak valued and stressed its No Gift Policy for all festive and other occasions so as to elevate CG while setting good precedents for fair business dealing with all related parties.

Thanks to all these CG practices, this year Bangchak earned steady prestigious rankings and CG awards, including

- Excellent ranking (five emblems) under the 2020 CGR (Corporate Governance Report) survey of listed companies, organized by Thai IOD and SET. Bangchak was among those in Thailand with top scores.
- Country TOP3 PLCs, ASEAN Asset Class PLCs for listed companies scoring 97.5 and more, and ASEAN Top 20 PLCs, earned at the 2019 ASEAN Corporate Governance Scorecard (ACGS) event, organized by SEC and Thai IOD in conjunction with ASEAN Capital Markets Forum (ACMF) and the Asian Development Bank (ADB)
- International Finance Awards 2020 for Best Corporate Governance Energy Company and Most Sustainable Renewable Energy Company, awarded to energy industry entities achieving steady and sustainable growth. These awards were presented at the International Finance Awards 2020 event, organized by the UK-based International Finance Magazine (IFM)

- Global Good Governance (3G) Awards, consisting of the CSR Award 2020 (for a third consecutive year) and the 3G Green Innovation Award 2020 (first year). These awards were presented to entities striving to establish CG and sustainability called for by organizational strategies, commanding green strategies in line with UN SDGs, and commanding innovation drive in the green energy and bio-businesses. The event was staged by Cambridge International Finance Advisory, UK.

The Corporate Governance Committee has reviewed CG practices, which indicated its own adequate and effective performance as called for by the Corporate Governance Policy and assigned by the Board.

(Signed) Gen. Vitch Devahadin

(Gen. Vitch Devahadin)

Chairperson, Corporate Governance Committee

November 19, 2020

8.3 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	Shares as of	Increase (Decrease)
	Year-end 2019	Year-end 2020	
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. Gen. Thammanoon Withee	-	-	-
8. Mrs. Prisana Praharnkhasuk	-	-	-
9. Mr. Teerapong Wongsiwawilas	-	-	-
10. Dr. Porametee Vimolsiri	-	-	-
11. Mr. Suthi Sukosol	-	-	-
12. Mr. Prasong Poontaneat	-	-	-
13. Dr. Anuchit Anuchitanukul	-	-	-
14. Dr. Prasert Sinsukprasert	-	-	-
15. Mr. Chaiwat Kovavisarach	1,200,000	1,200,000	-
Executive Management			
1. Mr. Chalermchai Udomranu	1,865	1,865	-
2. Mr. Pongchai Chaichirawiwat	64,332	64,332	-
- Mr. Pongchai Chaichirawiwat	44,332	44,332	-
- Mrs. Siriwan Chaichirawiwat (Spouse)	20,000	20,000	-
3. Mr. Somchai Tejavanija	28,522	28,522	-
4. Mr. Bundit Sapianchai	95	95	-
5. Mr. Surachai Kositsareewong	-	-	-
6. Mr. Chokchai Atsawarangsalit	300	300	-
7. Mr. Viboon Wongsakul	-	-	-
8. Mr. Pativat Tivasasit	-	-	-
- Mrs. Suvimol Tivasasit (Spouse)	12,000	12,000	-
9. Mr. Kittiphong Limsuwannarot	-	-	-

Note: Directors and executives do not have any indirect shareholding (except the executive no.2 and 8).

9. Internal Control and Connected Transactions

9.1 Internal Control

Bangchak Corporation Public Company Limited values a sound internal control system under the scope of The Committee of Sponsoring Organizations of the Treadway Commission (COSO), which requires these components of internal control: control environment, risk management, control activities, information and communication, and monitoring activities.

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 work environment favors proceeding under the internal control system. Legal and Corporate Compliance centralizes compliance efforts for laws and regulations of agencies in a clear, concrete way to guide employees' performance. Internal Control Division promotes and steers compliance with the internal control system under COSO. This has been communicated to executives and staff to win their recognition of sound internal control. Moreover, the Control Self-Assessment process has been developed with a consulting firm to strengthen internal control.

Amendment is made to business policies, employee manual, operating manual, and organization and taskforce structuring to render the management's efficiency. Finally, Bangchak relentlessly values business integrity and ethics under its corporate governance (CG) policy, sustainable business development with the environment and society, as well as 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.

Bangchak takes fraud risk and conflict of interest very seriously. Staff are required to declare their conflicts of interest on the e-HR system, designed to provide convenience and facilitate annual updates. Bangchak also values corporate governance, thus producing the CG Manual, which demands executives and staff to comply with the CG policy. Key points in the manual have been communicated and publicized among both internal and external parties. For example, the six key principles of Bangchak's corporate governance, namely accountability, responsibility, transparency, equitable treatment, vision to create long-term value, and ethics, the No Gift Policy, and the Do's & Don'ts together with short messages from executives to staff on such matters as doing good, anti-corruption, and tone at the top leadership. Bangchak still encourages suppliers and partners to join Thailand's Private Sector Collective Action Coalition against Corruption (CAC), which underscores continuous commitment to anti-corruption. This year Bangchak received CAC's first prize for the No Gift Policy 2020 Photo activity in a campaign for the No Gift policies among businesses to minimize bribery in line with international practices.

2. Risk Assessment

Bangchak appointed an Enterprise-wide Risk Management Committee (ERMC) to steer risk management for the entire corporation and develop a continually efficient enterprise risk management system under the ISO 31000 international standard embracing strategic, operation, financial, and reputation risks. These risks imply safety and occupational health risks; risks of impacts on the environment, society, and communities; compliance risks; and risks of corrupt practices, among others. Risk management processes cover the entire corporation, namely the corporate, business group/functional group, section, and work process groups. Also, in place is a formulating process for investment project risk management in each of Bangchak's projects worldwide. And to promote ESG (Environmental, Social and Governance), the Board values risk management by affiliates and joint ventures so that they may operate suitably, stay vigilant, and monitor overall impacts for manageable risk control. Overall, Bangchak Group successfully managed these risks.

Bangchak's defined policy and key risk management practices have been well-aligned with TQA and Dow Jones Sustainability Indices (DJSI) in parallel with corporate strategic plan formulation. Foreseeable post-Covid situations have been defined, prompting Bangchak to draw up a strategy under three scenarios to adapt to the actual situation. Key risk indicators (KRIs) have been applied to the vigilance monitoring of risk likelihood to finetune and define additional risk management plans to ease impacts on corporate goals and achieve manageable key corporate risk control and desired outcomes.

To enable Bangchak to handle unforeseen risks that could hurt business capability, including natural catastrophes, sabotage, political change, pandemic and other incidents, it appointed a Business Continuity Management Taskforce to develop a system, oversee strategic preparedness, processes, resources, 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 eight 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. E-signature technology has been introduced to support business agility. Checks and balances and authority inspection are the mandates of dedicated units and committees, including Internal Audit, the Investment Committee, and ERMC.

Bangchak has adopted a system for documents and evidence of delegating responsibility should errors arise. Custody of company assets prevents losses or abuses, as does the monitoring of transactions with

long-term corporate commitment, under which agreed terms are to be honored. Measures are in place to prevent exploitation of opportunities or benefits from personal gain. This year Bangchak repeated to staff procedures on corporate data management and control so that all units may effectively treat company information to avoid any harm to the business.

At Bangchak, procedures ensure compliance with laws and applicable regulations as well as key operating procedures. Technology systems have been developed for promoting internal control. This year Bangchak rolled out its “Work process management policy”, which takes seriously proper work practices by designated work processes. Work processes are constantly improved for effectiveness with due regard for points of control and control measures to lessen risks; these efficient processes are modern and align with Bangchak’s directions and goals. This year, developments have been made to work processes in response to the Personal Data Protection Act B.E. 2562 (2019), such as staff training to ensure their awareness of and compliance with the act.

At Bangchak, watertight measures are in place for its transactions with major shareholders, directors, among others, to avert the siphoning of benefits. For instance, such transactions must be approved by those without vested interests and such transactions’ data must be disclosed under SEC’s rules, including data on parties or related undertakings under accounting standards.

Bangchak set up an ISMS Management Team to deal with information security management, which involves review and improvement of IT policy and regulations. The team’s mission includes monitoring of threats, email filtering, malware prevention, firewall system, as well as staff communication about regulations concerning information security and risk. Threat prevention is regularly run together with measures to boost awareness of possible threats to the business. Thanks to information security management, Bangchak won ISO/IEC 27001:2013 (information security management system) and a Letter of Compliance, which exhibits agreement with the standard (Guidelines for Cybersecurity) - the first to be so awarded in Thailand. Recertification has been continued to this date. Furthermore, this year Bangchak won ISO/IEC 27001:2013 concerning information security management in the oil refining control system from SGS Thailand Limited.

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

4. Information and Communication

Every year Bangchak revises its Digital Roadmap to agree with its strategic plans on refinery management, marketing, and key business processes, namely finance, accounting, personnel administration. To this end, new technologies heled map out business processes to grow business caliber, including IoT (Internet of Things). A sensor was installed to monitor and increase the operation reliability of main machinery in the refinery. Additionally, an E-Work Permit Online system was implemented to raise work efficiency. On the marketing front, an e-payment through electronic data capture (EDC) device was introduced to avoid physical contact. A marketing plan for individual customers was also drawn up to better respond to customers’ demand and create impressive experience for customers. Notably, Bangchak adopted the Robotic Process Automation (RPA) technology to support work processes involving a large volume of information and repetitive work.

Bangchak's various employee communication channels and processes educate employees on various issues in a swift manner to ensure that messages get through, including the Intranet, Emails, intercom, and digital message boards, in addition to informal but popular channels like LINE Group. Also, communication with external stakeholders is carried out through multiple media, especially online media, today's popular means of communication due to its data transmission speed, including its website and Facebook. The purpose is easy access and application as well as successful data search results through mobile devices to quickly and efficiently meet business demand.

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

5. Monitoring

Bangchak commands a system that monitors compliance with internal control. The Internal Control Division works to assess corporate compliance, with relevant executives assessing the adequacy and suitability of the internal control system. Online technologies have been adopted for greater efficiency of the assessment system. Meanwhile, Internal Audit takes charge of assessing internal control under an audit plan earlier approved by the Audit Committee and giving recommendations for further development of the system. Should any flaw in the system be spotted, Bangchak takes corrective actions so that the business targets could be achieved.

9.2 Connected Transactions

1. Connected transactions with subsidiaries, jointly-controlled businesses, associated companies and related companies during 2019 and 2020 consisted of the following:

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

Related company	2019	2020	Relationship for the year ended 31 December 2020		
	(Million Baht)		Shareholding	Proportion	Management
Subsidiary					
Bangchak Green Net Co., Ltd.	33,298.87	23,620.62	Bangchak	49.00	Bangchak delegates its representatives as directors
Bangchak Biofuel Co., Ltd.	0.03	0.01	BBGI Plc. (Subsidiary)	70.00	Bangchak delegates its representatives as directors
BCP Trading Pte. Ltd.	10,650.21	6,467.13	Bangchak	100.00	Bangchak delegates its representatives as directors
Bangchak Retail Co., Ltd.	11.55	16.72	Bangchak	100.00	Bangchak delegates its representatives as directors
Bangchak Bioethanol (Chachoengsao) Co., Ltd.	5.04	2.23	BBGI Plc. (Subsidiary)	85.00	Bangchak delegates its representatives as directors
KSL Green Innovation Plc.	0.79	2.71	BBGI Plc. (Subsidiary)	100.00	Bangchak delegates its representatives as directors
Associated Company					
Ubon Bio Ethanol Plc.	15.07	10.05	BBGI Plc. (Subsidiary)	21.28	Bangchak delegates its representatives as directors
Ubon Bio Agricultural Co., Ltd.	0.52	1.77	Ubon Bio Ethanol Plc. (Associated Company)	100.00	Bangchak delegates its representatives as directors

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

Related company	2019	2020	Relationship for the year ended 31 December 2020		
	(Million Baht)		Shareholding	Proportion	Management
Subsidiary					
Bangchak Green Net Co., Ltd.	0.18	-	Bangchak	49.00	Bangchak delegates its representatives as directors
Bangchak Biofuel Co., Ltd.	4,942.08	7,142.79	BBGI Plc. (Subsidiary)	70.00	Bangchak delegates its representatives as directors
BCP Trading Pte. Ltd.	24,073.52	25,586.04	Bangchak	100.00	Bangchak delegates its representatives as directors
Bangchak Bioethanol (Chachoengsao) Co., Ltd	1,001.09	881.32	BBGI Plc. (Subsidiary)	85.00	Bangchak delegates its representatives as directors
KSL Green Innovation Plc.	1,756.77	1,835.80	BBGI Plc. (Subsidiary)	100.00	Bangchak delegates its representatives as directors
Associated Company					
Ubon Bio Ethanol Plc.	1,327.40	1,183.57	BBGI Plc. (Subsidiary)	21.28	Bangchak delegates its representatives as directors
Joint Venture					
Bongkot Marine Services Co., Ltd.	459.52	453.93	Bangchak	30.00	Bangchak delegates its representatives as directors
Related Business					
Fuel Pipeline Transportation Co., Ltd.	453.56	301.33	Bangchak	4.95	Bangchak delegates its representatives as directors

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

Related company	2019	2020	Relationship for the year ended 31 December 2020		
	(Million Baht)		Shareholding	Proportion	Management
Subsidiary					
Bangchak Green Net Co., Ltd.	30.35	32.76	Bangchak	49.00	Bangchak delegates its representatives as directors
Bangchak Biofuel Co., Ltd.	0.69	1.17	BBGI Plc. (Subsidiary)	70.00	Bangchak delegates its representatives as directors
NIDO Petroleum Pty. Ltd.	6.94	6.86	BCP Energy International Pte. Ltd. (Subsidiary)	100.00	Bangchak delegates its representatives as directors
BBGI Plc.	47.83	47.78	Bangchak	60.00	Bangchak delegates its representatives as directors
BCPG Plc.	971.37	490.19	Bangchak	60.36	Bangchak delegates its representatives as directors
Bangchak Bioethanol (Chachoengsao) Co., Ltd	0.60	0.55	BBGI Plc. (Subsidiary)	85.00	Bangchak delegates its representatives as directors
Bangchak Retail Co., Ltd.	20.19	23.64	Bangchak	100.00	Bangchak delegates its representatives as directors
BCPR Co., Ltd.	0.24	0.17	Bangchak	100.00	Bangchak delegates its representatives as directors
BCP Trading Pte. Ltd.	2.78	3.98	Bangchak	100.00	Bangchak delegates its representatives as directors
BCP Innovation Pte. Ltd.	37.87	49.98	Bangchak	100.00	Bangchak delegates its representatives as directors
BCPR Pte. Ltd.	14.98	137.55	BCPR Co., Ltd. (Subsidiary)	100.00	Bangchak delegates its representatives as directors
BBGI Utility and Power Co., Ltd.	-	0.30	BBGI Plc. (Subsidiary)	100.00	Bangchak delegates its representatives as directors

Related company	2019	2020	Relationship for the year ended 31 December 2020		
	(Million Baht)		Shareholding	Proportion	Management
Associated Company OKEA ASA	4.14	2.92	BCPR Pte. Ltd. (Subsidiary)	46.32	Bangchak delegates its representatives as directors
Joint Venture Bongkot Marine Services Co., Ltd.	15.00	5.84	Bangchak	30.00	Bangchak delegates its representatives as directors
Related Business Fuel Pipeline Transportation Co., Ltd.	4.73	4.52	Bangchak	4.95	Bangchak delegates its representatives as directors

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

Related company	2019	2020	Relationship for the year ended 31 December 2020		
	(Million Baht)		Shareholding	Proportion	Management
Subsidiary Bangchak Green Net Co., Ltd.	32.09	31.88	Bangchak	49.00	Bangchak delegates its representatives as directors
Bangchak Retail Co., Ltd.	6.44	3.53	Bangchak	100.00	Bangchak delegates its representatives as directors
Bangchak Bioethanol (Chachoengsao) Co., Ltd.	-	0.34	BBGI Plc. (Subsidiary)	85.00	Bangchak delegates its representatives as directors
BCP Trading Pte. Ltd.	2.12	-	Bangchak	100.00	Bangchak delegates its representatives as directors

Related company	2019	2020	Relationship for the year ended 31 December 2020		
	(Million Baht)		Shareholding	Proportion	Management
Joint Venture Oam Suk Social Enterprise Co., Ltd.	-	0.79	Bangchak	30.00	Bangchak delegates its representatives as directors
Related Business Fuel Pipeline Transportation Co., Ltd	0.25	0.05	Bangchak	4.95	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	2019	2020	Relationship for the year ended 31 December 2020		
	(Million Baht)		Shareholding	Proportion	Management
Subsidiary Bangchak Green Net Co., Ltd.	1,085.28	636.69	Bangchak	49.00	Bangchak delegates its representatives as directors
Bangchak Biofuel Co., Ltd.	0.02	-	BBGI Plc. (Subsidiary)	70.00	Bangchak delegates its representatives as directors
Bangchak Retail Co., Ltd.	1.65	3.66	Bangchak	100.00	Bangchak delegates its representatives as directors
BCP Trading Pte. Ltd.	932.10	19.96	Bangchak	100.00	Bangchak delegates its representatives as directors
Associated Company Ubon Bio Ethanol Plc.	1.56	1.31	BBGI Plc. (Subsidiary)	21.28	Bangchak delegates its representatives as directors
Related Business Fuel Pipeline Transportation Co., Ltd.	0.33	0.33	Bangchak	4.95	Bangchak delegates its representatives as directors

1.5.2 Debtors and loans to related businesses

1.5.2.1 Loans, net of allowance for impairment

Related company	2019	2020	Relationship for the year ended 31 December 2020		
	(Million Baht)		Shareholding	Proportion	Management
Subsidiary					
Nido Petroleum Pty. Ltd.	1,199.07	-	BCP Energy International Pte. Ltd. (Subsidiary)	100.00	Bangchak delegates its representatives as directors
Bangchak Retail Co., Ltd.	610.00	550.80	Bangchak	100.00	Bangchak delegates its representatives as directors
BCP Innovation Pte. Ltd.	878.69	-	Bangchak	100.00	Bangchak delegates its representatives as directors
BCPR Pte. Ltd.	3,103.70	1,033.54	BCPR Co., Ltd. (Subsidiary)	100.00	Bangchak delegates its representatives as directors
Related Business					
Fuel Pipeline Transportation Co., Ltd.	7.10	3.69	Bangchak	4.95	Bangchak delegates its representatives as directors

1.5.2.2 Other debtors, net of allowance for impairment

Related company	2019	2020	Relationship for the year ended 31 December 2020		
	(Million Baht)		Shareholding	Proportion	Management
Subsidiary					
Bangchak Biofuel Co., Ltd.	0.06	0.06	BBGI Plc. (Subsidiary)	70.00	Bangchak delegates its representatives as directors
Nido Petroleum Pty. Ltd.	10.42	-	BCP Energy International Pte. Ltd. (Subsidiary)	100.00	Bangchak delegates its representatives as directors
Bangchak Retail Co., Ltd.	3.13	10.46	Bangchak	100.00	Bangchak delegates its representatives as directors
BCPG Plc.	9.04	9.74	Bangchak	60.36	Bangchak delegates its representatives as directors
Bangchak Bioethanol (Chachoengsao) Co., Ltd.	0.05	0.05	BBGI Plc. (Subsidiary)	85.00	Bangchak delegates its representatives as directors
BBGI Plc.	4.38	4.56	Bangchak	60.00	Bangchak delegates its representatives as directors
BCP Innovation Pte. Ltd.	35.82	-	Bangchak	100.00	Bangchak delegates its representatives as directors
BCPR Co., Ltd.	0.15	-	Bangchak	100.00	Bangchak delegates its representatives as directors
BBGI Utility and Power Co., Ltd.	-	0.32	BBGI Plc. (Subsidiary)	100.00	Bangchak delegates its representatives as directors
Associated Company					
OKEA ASA	0.15	-	BCPR Pte. Ltd. (Subsidiary)	46.32	Bangchak delegates its representatives as directors
Bongkot Marine Services Co., Ltd.	-	0.83	Bangchak	30.00	Bangchak delegates its representatives as directors

1.6 Creditors of related businesses

1.6.1 Trader creditors

Related company	2019	2020	Relationship for the year ended 31 December 2020		
	(Million Baht)		Shareholding	Proportion	Management
Subsidiary					
Bangchak Biofuel Co., Ltd.	441.08	449.65	BBGI Plc. (Subsidiary)	70.00	Bangchak delegates its representatives as directors
BCP Trading Pte. Ltd.	240.23	3,452.07	Bangchak	100.00	Bangchak delegates its representatives as directors
Bangchak Bioethanol (Chachoengsao) Co., Ltd.	96.13	101.14	BBGI Plc. (Subsidiary)	85.00	Bangchak delegates its representatives as directors
KSL Green Innovation Plc.	92.30	208.11	BBGI Plc. (Subsidiary)	100.00	Bangchak delegates its representatives as directors
Associated Company					
Ubon Bio Ethanol Plc.	148.89	151.03	BBGI Plc. (Subsidiary)	21.28	Bangchak delegates its representatives as directors

1.6.2 Other creditors

Related company	2019	2020	Relationship for the year ended 31 December 2020		
	(Million Baht)		Shareholding	Proportion	Management
Subsidiary					
Bangchak Green Net Co., Ltd	4.67	19.90	Bangchak (Subsidiary)	49.00	Bangchak delegates its representatives as directors
Bangchak Retail Co., Ltd.	2.54	2.46	Bangchak (Subsidiary)	100.00	Bangchak delegates its representatives as directors
Nido Petroleum Pty. Ltd.	10.98	21.35	BCP Energy International Pte. Ltd. (Subsidiary)	100.00	Bangchak delegates its representatives as directors
Joint Venture					
Bongkot Marine Services Co., Ltd.	1.99	9.74	Bangchak	30.00	Bangchak delegates its representatives as directors
Related Business					
Fuel Pipeline Transportation Co., Ltd.	48.42	26.69	Bangchak	4.95	Bangchak delegates its representatives as directors

1.7 Other non-current assets, accrued interest net of allowance for impairment.

Related company	2019	2020	Relationship for the year ended 31 December 2020		
	(Million Baht)		Shareholding	Proportion	Management
Subsidiary					
Nido Petroleum Pty. Ltd.	305.40	-	BCP Energy International Pte. Ltd. (Subsidiary)	100.00	Bangchak delegates its representatives as directors
BCPR Pte. Ltd.	17.86	161.84	BCPR Co., Ltd. (Subsidiary)	100.00	Bangchak delegates its representatives as directors

1.8 Other current liabilities: These items are Bangchak's revenue received in advance for land lease and service fees

Related company	2019	2020	Relationship for the year ended 31 December 2020		
	(Million Baht)		Shareholding	Proportion	Management
Subsidiary BCPG Plc.	5.78	6.32	Bangchak	60.36	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	2019	2020	Relationship for the year ended 31 December 2020		
	(Million Baht)		Shareholding	Proportion	Management
Related business Fuel Pipeline Transportation Co., Ltd.	1.54	1.07	Bangchak	4.95	Bangchak delegates its representatives as directors

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

Bangchak Green Net managed Bangchak service stations and consumer product sales at Lemon Green and Bai Chak outlets. These connected transactions followed normal business terms, based on market prices, and conformed to details stated in the operating agreement.

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

Bangchak Biofuel Co., Ltd. an indirect subsidiary through BBGI Public 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 BCP Innovation Pte. Ltd.

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

4. Connected transactions with BCP Trading Pte. Ltd.

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

5. Connected transactions with Nido Petroleum Pty. Ltd.

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

6. 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.

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

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

8. 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.

9. 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.

10. 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.

11. Connected transactions with BCPR Co., Ltd.

A subsidiary company, BCPR Co., Ltd. was formed to be holding company which invests in BCPR Pte. Ltd. a subsidiary company in Singapore. Service fees among the two followed normal business terms, based on market prices, and conformed to details stated in the operating agreement.

12. Connected transactions with BCPR Pte. Ltd.

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

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

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

14. 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.

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

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

16. 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.

17. Connected transactions with OKEA ASA

An indirect associated company in Norway, OKEA ASA was formed to undertake petroleum exploration and production. These connected transactions followed normal business terms and were based on market prices.

18. Connected transactions with Ubon Bio Ethanol Plc.

An indirect associated 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.

19. Connected transactions with Ubon Bio Agricultural Co., Ltd. (former name is Ubon Agricultural Energy Co., Ltd.)

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

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

The Company entered into a contract for the use of Bongkot oil depot service with Bongkot Marine Services Co., Ltd. a joint venture which provides floating storage unit services. The transaction followed normal business terms, based on market prices, and conform to details stated in the operating agreement.

21. Connected transactions with BBGI Utility and Power Co., Ltd.

BBGI Utilities and Power Co., Ltd. a indirect subsidiary through BBGI, engages in the production and distribution of bio-energy, electricity, and utilities. Fees are based on normal business terms and in accordance with the details specified in the operating contract

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

Bangchak entered into contracts with FPT to take its oil products from Bangchak Depot to its Bang Pa-in Depot and sell them to its customers in the Central, Northern and Northeastern regions, followed normal business terms and were based on market prices.

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

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

Policy for future connected transactions

In undertaking future connected transactions, Bangchak will continue its product and oil pipeline transport service transactions with connected companies since these represent normal business practices in the same industry. The pricing of products and services follows market practices, or the details stipulated in commercial contracts, or both. The connected transaction shall be dealt on a fair and arm's length basis. However, in such cooperation, Bangchak takes into consideration its best interests. 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.

Part 3 Financial Statements

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 2020 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 Board concerning 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 Registration Statement / Annual Report 2020. Such statements have been prepared under generally accepted accounting standards, which regularly complies with a suitable accounting policies and due and reasonable discretion exercised in the preparation 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, 2020, 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 Officer

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 2020, the consolidated and separate statements of income, comprehensive income, changes in equity and cash flows for the year then ended, and notes, comprising a summary of significant accounting policies and other explanatory information.

In my opinion, the accompanying consolidated and separate financial statements present fairly, in all material respects, the financial position of the Group and the Company, respectively, as at 31 December 2020 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.

Acquisition of subsidiaries	
Refer to Notes 4 (a), 6 and 11 to the financial statements.	
The key audit matter	How the matter was addressed in the audit
<p>In 2020, the Group completed the acquisition of a hydropower plant in The Lao People's Democratic Republic and a solar power plant in Thailand. Management has determined the fair value of net assets acquired and the consideration transferred. The acquisition of the hydropower plant resulted in goodwill amounting to Baht 252.6 million. The acquisition of the solar power plant did not result in goodwill.</p> <p>Due to the materiality of the transactions and the significant judgment and complexities involved in determining the fair value, I considered this a key audit matter.</p>	<p>My audit procedures included the following:</p> <ul style="list-style-type: none"> - Made inquiries of management to obtain an understanding of management's procedures on identification of assets acquired and liabilities assumed and on the determination of the fair value of net asset acquired. - Read the share sale and purchase agreement, 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 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 Standards.

Impairment testing of investment in associates, investment in subsidiaries, oil exploration & production assets and goodwill	
Refer to Notes 4 (m), 11, 12, 17 and 18 to the financial statements.	
The key audit matter	How the matter was addressed in the audit
<p>The Group has 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.</p> <p>Due to the materiality of the transactions, the management's significant judgment and complexities involved in estimating a recoverable amount of investment in associates, investment in subsidiaries, oil exploration & production assets and goodwill from discounted cash flow method, I considered as the key audit matter.</p>	<p>My audit procedures included the following:</p> <ul style="list-style-type: none"> – Understood the management's operation plan, process of the indicators identification and impairment testing process and tested the calculation of recoverable amount prepared by the management. – Assessed the key assumptions estimated by the management with reference to internally and externally derived sources after taking into account the historical forecasting accuracy. – Evaluated the appropriateness of valuation methodology and financial parameters applied to the discount rate. – Considered the adequacy of disclosures in accordance with Thai Financial Reporting Standards.

Valuation of inventories	
Refer to Notes 4(g) and 10 to the financial statements.	
The key audit matter	How the matter was addressed in the audit
<p>Inventories are measured at the lower of cost and net realizable value. As a result of fluctuation in crude oil and oil products price which may cause the net realizable value to be lower than cost.</p>	<p>My audit procedures included the following:</p> <ul style="list-style-type: none"> – Evaluated the appropriateness of inventories valuation by management. – Verified the appropriateness of the net realizable value calculation. – 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 Standards.

Emphasis of Matter

I draw attention to note 3 to the financial statements: the Group has adopted TFRS - Financial instruments and TFRS16 Leases which became effective for fiscal years beginning on or after 1 January 2020. The Group elected to adjust the cumulative effects of initially applying such standards to the beginning balance of retained earnings and other components of equity. 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.



(Sakda Kaothanthong)
 Certified Public Accountant
 Registration No. 4628

KPMG Phoomchai Audit Ltd.
 Bangkok
 18 February 2021

Bangchak Corporation Public Company Limited and its Subsidiaries

Statement of financial position

Assets	Note	Consolidated financial statements		Separate financial statements	
		31 December		31 December	
		2020	2019	2020	2019
<i>(in Baht)</i>					
Current assets					
Cash and cash equivalents	8	21,651,076,845	7,275,805,822	6,042,910,455	4,086,864,086
Current investments		-	288,260,757	-	200,000,000
Trade and other current receivables	7, 9	6,401,832,975	11,072,590,757	3,004,450,187	7,327,455,458
Inventories	10	16,162,353,035	15,835,052,377	13,387,573,029	14,161,331,011
Current tax assets		73,286,408	461,092,527	69,195,961	257,059,035
Current portion of long-term loan to related parties	7	-	-	550,800,115	-
Other current financial assets		80,551,409	-	55,624,900	-
Oil fuel fund subsidies receivable		2,926,502,670	2,688,054,699	2,926,502,670	2,688,054,696
Total current assets		47,295,603,342	37,620,856,939	26,037,057,317	28,720,764,286
Non-current assets					
Other non-current financial assets		1,696,318,642	-	237,064,163	-
Investments in subsidiaries	11	-	-	13,851,135,308	13,536,054,659
Investments in associates and joint ventures	12	14,331,209,255	18,037,040,351	73,000,000	73,000,000
Long-term loans	7	1,254,716,892	1,035,871,932	1,033,535,738	5,791,464,107
Other long-term investments		-	2,068,971,527	-	237,124,411
Investment properties	13	126,965,546	126,965,546	682,953,148	682,953,148
Property, plant and equipment	14	54,567,027,553	52,584,000,770	33,478,542,269	32,329,931,547
Right-of -use assets	15	11,086,968,337	-	10,386,998,257	-
Goodwill	6, 17	2,128,980,036	1,920,678,430	-	-
Leasehold rights		-	3,125,136,434	-	3,125,136,434
Intangible assets	18	11,179,679,221	8,493,907,664	356,290,524	398,563,147
Deferred tax assets	34	2,980,980,320	1,120,772,050	2,930,043,526	1,069,862,706
Other non-current assets	7, 19	1,674,142,789	1,653,781,885	1,336,340,000	1,629,292,658
Total non-current assets		101,026,988,591	90,167,126,589	64,365,902,933	58,873,382,817
Total assets		148,322,591,933	127,787,983,528	90,402,960,250	87,594,147,103

The accompanying notes are an integral part of these financial statements.

Bangchak Corporation Public Company Limited and its Subsidiaries

Statement of financial position

Liabilities and equity	Note	Consolidated financial statements		Separate financial statements	
		31 December 2020	31 December 2019	31 December 2020	31 December 2019
(in Baht)					
Current liabilities					
Short-term loan from financial institutions	20	3,975,324,173	5,051,000,000	-	-
Trade and other current payables	7, 21	12,277,161,213	13,446,858,823	8,959,910,776	9,912,214,856
Current portion of long-term loans from financial institutions	20	2,674,132,316	2,198,187,068	425,153,846	375,153,846
Current portion of lease liabilities (2019: Current portion of finance lease liabilities)		1,316,127,944	28,673,646	1,283,743,076	-
Current portion of debentures	20	2,500,000,000	3,000,000,000	2,500,000,000	3,000,000,000
Excise tax and oil fuel fund payable		947,748,884	1,241,894,297	947,748,884	1,241,894,297
Current income tax payable		146,235,567	144,539,571	-	64,803,426
Long-term provisions		-	733,046,858	-	-
Other current financial liabilities		184,691,621	-	157,823,261	-
Other current liabilities		1,480,727,593	1,238,857,617	1,387,610,341	1,201,088,231
Total current liabilities		25,502,149,311	27,083,057,880	15,661,990,184	15,795,154,656
Non-current liabilities					
Long-term loans from financial institutions	20	30,614,930,636	19,807,451,813	5,334,217,785	2,339,407,988
Lease liabilities		6,581,482,721	-	5,906,993,560	-
Debentures	20	23,479,970,719	17,984,746,501	23,479,970,719	17,984,746,501
Deferred tax liabilities	34	794,627,463	608,592,026	-	-
Liabilities on long-term lease		-	32,515,789	-	32,515,789
Non-current provisions for employee benefits	22	2,336,038,743	2,588,110,805	2,231,625,137	2,489,668,146
Provision for the decommissioning cost		256,229,922	322,896,880	-	-
Other non-current financial liabilities		87,186,280	-	-	-
Other non-current liabilities	7	353,550,703	545,567,524	52,241,594	65,664,633
Total non-current liabilities		64,504,017,187	41,889,881,338	37,005,048,795	22,912,003,057
Total liabilities		90,006,166,498	68,972,939,218	52,667,038,979	38,707,157,713

The accompanying notes are an integral part of these financial statements.

Bangchak Corporation Public Company Limited and its Subsidiaries

Statement of financial position

	Note	Consolidated financial statements		Separate financial statements	
		31 December 2020	31 December 2019	31 December 2020	31 December 2019
<i>(in Baht)</i>					
Liabilities and equity					
Equity					
Share capital	23				
Authorised share capital <i>(1,376,923,157 ordinary shares, par value at Baht 1 per share)</i>		<u>1,376,923,157</u>	<u>1,376,923,157</u>	<u>1,376,923,157</u>	<u>1,376,923,157</u>
Issued and paid-up share capital <i>(1,376,923,157 ordinary shares, par value at Baht 1 per share)</i>		1,376,923,157	1,376,923,157	1,376,923,157	1,376,923,157
Share premium on ordinary shares	23	11,157,460,051	11,157,460,051	11,157,460,051	11,157,460,051
Other surpluses	23	3,441,394,816	2,742,874,460	189,617,759	189,617,759
Warrants		1,811,785	2,121,880	-	-
Retained earnings					
Appropriated					
Legal reserve	25	153,164,346	153,164,346	153,164,346	153,164,346
Treasury shares reserve	25	505,406,210	431,860,810	505,406,210	431,860,810
Unappropriated		22,441,357,804	27,146,932,121	14,917,959,248	26,069,027,367
Treasury shares	24	(505,406,210)	(431,860,810)	(505,406,210)	(431,860,810)
Perpetual subordinated debentures	26	9,940,796,710	9,940,796,710	9,940,796,710	9,940,796,710
Other components of equity		<u>(2,146,945,146)</u>	<u>(916,343,328)</u>	<u>-</u>	<u>-</u>
Equity attributable to owners					
of the parent		46,365,963,523	51,603,929,397	37,735,921,271	48,886,989,390
Non-controlling interests		<u>11,950,461,912</u>	<u>7,211,114,913</u>	<u>-</u>	<u>-</u>
Total equity		<u>58,316,425,435</u>	<u>58,815,044,310</u>	<u>37,735,921,271</u>	<u>48,886,989,390</u>
Total liabilities and equity		<u>148,322,591,933</u>	<u>127,787,983,528</u>	<u>90,402,960,250</u>	<u>87,594,147,103</u>

(Pichai Chunhavajira)
Chairman

(Chaiwat Kovavisarach)
Chief Executive Officer and President

The accompanying notes are an integral part of these financial statements.

Bangchak Corporation Public Company Limited and its Subsidiaries

Statement of income

	Note	Consolidated financial statements		Separate financial statements	
		Year ended 31 December		Year ended 31 December	
		2020	2019	2020	2019
<i>(in Baht)</i>					
Revenue from sale of goods and rendering of services	7, 27	136,450,288,879	190,488,588,378	114,445,188,348	162,226,974,145
Cost of sale of goods and rendering of services	7, 32	(132,122,127,969)	(180,256,901,884)	(115,869,042,171)	(157,041,653,982)
Gross profit (loss)		4,328,160,910	10,231,686,494	(1,423,853,823)	5,185,320,163
Dividend income	7	-	-	463,190,017	926,190,052
Other income	7, 28	532,528,699	495,086,326	511,379,830	375,488,385
Selling expenses	7, 29	(4,260,278,551)	(4,533,076,061)	(3,084,650,067)	(3,146,217,384)
Administrative expenses	7, 30	(2,880,755,707)	(3,081,240,035)	(1,576,356,775)	(1,877,318,014)
Gain from derivatives		16,555,015	160,034,808	55,415,169	137,503,413
Gain on foreign exchange		732,127,200	614,205,007	514,003,787	526,107,758
Loss from impairment of assets	11, 12, 14, 18	(2,374,857,657)	(33,750,058)	(2,085,441,944)	(33,750,058)
Profit (loss) from operating activities		(3,906,520,091)	3,852,946,481	(6,626,313,806)	2,093,324,315
Finance costs	33	(1,969,298,106)	(1,701,161,120)	(1,029,793,132)	(1,029,963,025)
Impairment loss determined in accordance with TFRS 9	37	(890,738,980)	-	(3,946,399,416)	-
Share of profit (loss) of associates and joint ventures accounted for using equity method	12	(592,023,674)	404,380,979	-	-
Profit (loss) before income tax expense		(7,358,580,851)	2,556,166,340	(11,602,506,354)	1,063,361,290
Tax income (expense)	34	1,588,597,371	(67,673,449)	1,762,661,133	26,790,599
Profit (loss) for the year		(5,769,983,480)	2,488,492,891	(9,839,845,221)	1,090,151,889
Profit (loss) attributable to:					
Owners of the parent		(6,967,069,656)	1,731,572,179	(9,839,845,221)	1,090,151,889
Non-controlling interests		1,197,086,176	756,920,712	-	-
Profit (loss) for the year		(5,769,983,480)	2,488,492,891	(9,839,845,221)	1,090,151,889
Basic earnings (loss) per share	35	(5.50)	1.18	(7.62)	0.72

(Pichai Chunhavajira)
Chaiman

(Chaiwat Kovavisarach)
Chief Executive Officer and President

The accompanying notes are an integral part of these financial statements.

Bangchak Corporation Public Company Limited and its Subsidiaries

Statement of comprehensive income

	Consolidated financial statements		Separate financial statements	
	Year ended 31 December		Year ended 31 December	
	2020	2019	2020	2019
	<i>(in Baht)</i>			
Profit (loss) for the year	(5,769,983,480)	2,488,492,891	(9,839,845,221)	1,090,151,889
Other comprehensive income (loss)				
<i>Items that will be reclassified subsequently to profit or loss</i>				
Exchange differences on translating financial statements	(1,504,726,256)	(790,345,369)	-	-
Gain on remeasurement of available-for-sale investments	-	5,016,074	-	-
Loss on cash flow hedges	(34,369,360)	-	-	-
Loss on hedges of net investment in foreign operations	(52,005,591)	-	-	-
Share of other comprehensive income of associates and joint ventures accounted for using equity method	40,794,813	-	-	-
Total items that will be reclassified subsequently to profit or loss	(1,550,306,394)	(785,329,295)	-	-
<i>Items that will not be reclassified to profit or loss</i>				
Gain on investment in equity instruments designated at FVOCI	156,014,650	-	-	-
Gain on investment in equity instruments designated at FVOCI sold during the year	2,923,696,311	-	-	-
Gain (loss) on remeasurments of defined benefit plans	911,121	(192,688,353)	-	(196,104,328)
Share of other comprehensive income (loss) of associates and joint ventures accounted for using equity method	15,205,727	(3,649,598)	-	-
Total items that will not be reclassified to profit or loss	3,095,827,809	(196,337,951)	-	(196,104,328)
Other comprehensive income (loss) for the year, net of income tax	1,545,521,415	(981,667,246)	-	(196,104,328)
Total comprehensive income (loss) for the year	(4,224,462,065)	1,506,825,645	(9,839,845,221)	894,047,561
Total comprehensive income (loss) attributable to				
Owners of the parent	(4,973,039,367)	788,625,198	(9,839,845,221)	894,047,561
Non-controlling interests	748,577,302	718,200,447	-	-
Total comprehensive income (loss) for the year	(4,224,462,065)	1,506,825,645	(9,839,845,221)	894,047,561

The accompanying notes are an integral part of these financial statements.

Bangchak Corporation Public Company Limited and its Subsidiaries

Statement of changes in equity

Consolidated financial statements

Note	Retained earnings				Other components of equity					Total equity					
	Issued and paid share capital	Share premium on ordinary shares	Other surpluses (deficits)	Warrants	Legal reserve	Treasury shares reserve	Unappropriated	Treasury shares	Perpetual subordinated debentures (in Baht)		Exchange differences on translating financial statements	Gain (loss) on remeasurement of available-for-sale investment	Share of other comprehensive income (loss) of associates and joint ventures using equity method	Equity attributable to owners of the parent	Non-controlling interests
Year ended 31 December 2019															
Balance at 1 January 2019 - as reported															
	1,376,923,157	11,157,460,051	2,730,389,098	8,400,091	153,164,346	-	27,415,986,225	-	-	(552,723,870)	381,835,837	5,578,675	42,677,013,610	6,806,409,162	49,483,422,772
Transactions with owners, recorded directly in equity															
Contributions by and distributions to owners of the parent															
24	-	-	-	-	-	431,860,810	(431,860,810)	(431,860,810)	-	-	-	-	(431,860,810)	-	(431,860,810)
	-	-	9,944,533	-	-	-	-	-	-	-	-	-	9,944,533	14,565,800	24,510,333
	-	-	7,109,376	(6,278,211)	-	-	-	-	-	-	-	-	831,165	354,213	1,185,378
36	-	-	-	(6,278,211)	-	-	(1,376,906,482)	-	-	-	-	-	(1,376,906,482)	(382,929,261)	(1,759,835,743)
Total	-	-	17,053,909	(6,278,211)	-	431,860,810	(1,808,767,292)	(431,860,810)	-	-	-	-	(1,797,591,594)	(3,688,009,248)	(2,166,000,842)
Changes in ownership interests in subsidiary															
Changes in an ownership interests in subsidiary without a change in control															
	-	-	(4,568,547)	-	-	-	54,020	-	-	-	-	-	(4,514,527)	54,514,552	50,000,025
Total	-	-	(4,568,547)	-	-	-	54,020	-	-	-	-	-	(4,514,527)	54,514,552	50,000,025
Total transactions with owners, recorded directly in equity															
	-	-	12,485,362	(6,278,211)	-	431,860,810	(1,808,713,272)	(431,860,810)	-	-	-	-	(1,802,506,121)	(313,494,696)	(2,116,000,817)
Comprehensive income (loss) for the year															
	-	-	-	-	-	-	-	-	-	-	-	-	1,731,572,179	756,920,712	2,488,492,891
	-	-	-	-	-	-	(191,913,011)	-	-	(752,631,197)	5,016,075	(3,418,848)	(942,946,981)	(38,720,263)	(981,667,246)
Total comprehensive income (loss) for the year	-	-	-	-	-	-	1,539,659,168	-	-	(752,631,197)	5,016,075	(3,418,848)	788,625,198	718,200,447	1,806,825,645
Issue of perpetual subordinated debentures															
26	-	-	-	-	-	-	-	-	10,000,000,000	-	-	-	10,000,000,000	-	10,000,000,000
Issuance cost of perpetual subordinated debentures															
26	-	-	-	-	-	-	-	-	(59,203,290)	-	-	-	(59,203,290)	-	(59,203,290)
Balance at 31 December 2019	1,376,923,157	11,157,460,051	2,742,874,460	2,121,880	153,164,346	431,860,810	27,146,932,121	(431,860,810)	9,940,796,710	(1,305,355,067)	386,851,912	2,159,827	51,603,929,397	7,211,114,913	58,815,044,310

The accompanying notes are an integral part of these financial statements.

Bangchak Corporation Public Company Limited and its Subsidiaries

Statement of changes in equity

	Consolidated financial statements																	
	Retained earnings					Other components of equity												
	Issued and paid-up share capital	Share premium ordinary shares	Other surpluses	Warrants	Legal reserve	Treasury shares reserve	Unappropriated	Treasury shares	Perpetual subordinated debentures	Exchange differences on translating financial statements	Loss on cash flow hedges	Gain (loss) on investment instruments designated at FVOCI	Share of other comprehensive income (loss) of associates and joint ventures using equity method	Total other components of equity	Equity attributable to owners of the parent	Non-controlling interests	Total equity	
Year ended 31 December 2020																		
Balance at 31 December 2019 - as reported	1,376,933,157	11,157,460,051	2,742,874,460	2,121,880	153,164,346	431,860,810	27,146,932,121	(431,860,810)	9,940,796,710	(1,305,355,067)	-	386,851,912	2,159,827	(916,343,228)	51,603,929,397	7,211,114,913	58,815,044,310	
Impact of changes in accounting policies (net of tax)	-	-	-	-	-	-	102,300,988	-	-	-	(653,813,138)	-	(22,407,779)	(83,220,917)	19,080,071	(38,916,934)	(19,836,863)	
Balance at 1 January 2020 - restated	1,376,933,157	11,157,460,051	2,742,874,460	2,121,880	153,164,346	431,860,810	27,249,233,109	(431,860,810)	9,940,796,710	(1,305,355,067)	(653,813,138)	386,851,912	(25,247,952)	(999,564,245)	51,623,009,468	7,172,197,979	58,795,307,447	
Transactions with owners, recorded directly in equity																		
<i>Contributions by and distributions to owners of the parent</i>																		
Treasury shares purchased	-	-	-	-	-	73,545,400	(73,545,400)	(73,545,400)	-	-	-	-	-	-	(73,545,400)	-	(73,545,400)	
Share options exercised	-	-	799,305	(310,095)	-	-	-	-	-	-	-	-	-	-	489,210	889,617	1,378,827	
Dividends	-	-	-	-	-	-	(407,301,572)	(407,301,572)	-	-	-	-	-	-	(407,301,572)	(335,253,220)	(742,554,792)	
Total	-	-	799,305	(310,095)	-	73,545,400	(480,846,972)	(73,545,400)	-	-	-	-	-	-	(480,846,972)	(334,363,603)	(814,721,365)	
Changes in ownership interests in subsidiary																		
Acquisition of a subsidiary with non-controlling interests	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	20,012,035	20,012,035
Changes in an ownership interests in subsidiaries without a change in control	-	-	697,721,051	-	-	-	-	-	-	-	-	-	-	-	697,721,051	4,344,038,199	5,041,759,250	
Total	-	-	697,721,051	-	-	-	-	-	-	-	-	-	-	-	697,721,051	4,364,080,234	5,061,771,285	
Total transactions with owners, recorded directly in equity	-	-	698,520,356	(310,095)	-	73,545,400	(480,846,972)	(73,545,400)	-	-	-	-	-	-	217,563,289	4,029,686,631	4,247,049,920	
Comprehensive income (loss) for the year																		
Profit (loss)	-	-	-	-	-	-	(6,967,069,656)	-	-	-	-	-	-	-	(6,967,069,656)	1,197,086,176	(5,769,983,480)	
Other comprehensive income (loss)	-	-	-	-	-	-	3,141,411,190	-	-	(1,100,146,127)	(23,697,673)	(62,149,474)	38,612,373	(1,147,380,901)	1,994,030,289	(448,508,874)	1,545,521,415	
Total comprehensive income (loss) for the year	-	-	-	-	-	-	(3,825,658,466)	-	-	(1,100,146,127)	(23,697,673)	(62,149,474)	38,612,373	(1,147,380,901)	(4,973,039,367)	748,577,302	(4,224,462,065)	
Coupon payment on perpetual subordinated debentures	-	-	-	-	-	-	(501,369,867)	-	-	-	-	-	-	-	(501,369,867)	-	(501,369,867)	
Balance at 31 December 2020	1,376,933,157	11,157,460,051	3,441,394,816	1,811,785	153,164,346	505,406,210	22,441,357,804	(505,406,210)	9,940,796,710	(2,405,501,194)	(79,510,811)	324,702,438	13,364,421	(2,146,945,146)	46,365,963,523	11,950,461,912	58,316,425,435	

The accompanying notes are an integral part of these financial statements.

Bangchak Corporation Public Company Limited and its Subsidiaries

Statement of changes in equity

	Separate financial statements							Total equity	
	Note	Issued and paid-up share capital	Share premium	Other Surpluses	Retained earnings				Perpetual subordinated debentures
					Legal reserve	Treasury shares reserve	Unappropriated		
Year ended 31 December 2019									
Balance at 1 January 2019		1,376,923,157	11,157,460,051	189,617,759	153,164,346	-	26,983,747,098	-	39,860,912,411
Transactions with owners, recorded directly in equity									
<i>Contributions by and distributions to owners</i>									
Treasury shares purchased	24	-	-	-	-	431,860,810	(431,860,810)	-	(431,860,810)
Dividends to owners of the Company	36	-	-	-	-	-	(1,376,906,482)	-	(1,376,906,482)
Total		-	-	-	-	431,860,810	(1,808,767,292)	-	(1,808,767,292)
Comprehensive income (loss) for the year									
Profit		-	-	-	-	-	1,090,151,889	-	1,090,151,889
Other comprehensive income (loss)		-	-	-	-	-	(196,104,328)	-	(196,104,328)
Total comprehensive income for the year		-	-	-	-	-	894,047,561	-	894,047,561
Issue of perpetual subordinated debentures	26	-	-	-	-	-	-	10,000,000,000	10,000,000,000
Issuance cost of perpetual subordinated debentures	26	-	-	-	-	-	-	(59,203,290)	(59,203,290)
Balance at 31 December 2019		1,376,923,157	11,157,460,051	189,617,759	153,164,346	431,860,810	26,069,027,367	9,940,796,710	48,886,989,390

The accompanying notes are an integral part of these financial statements.

Bangchak Corporation Public Company Limited and its Subsidiaries

Statement of changes in equity

	Separate financial statements							Total equity	
	Retained earnings								
	Issued and paid-up share capital	Share premium	Other Surpluses	Legal reserve	Treasury shares reserve <i>(in Baht)</i>	Unappropriated	Treasury shares		Perpetual subordinated debentures
Year ended 31 December 2020									
Balance at 1 January 2019 - as reported	1,376,923,157	11,157,460,051	189,617,759	153,164,346	431,860,810	26,069,027,367	(431,860,810)	9,940,796,710	48,886,989,390
Impact of changes in accounting policies (net of tax)	-	-	-	-	-	(329,006,059)	-	-	(329,006,059)
Balance at 1 January 2020 - restated	1,376,923,157	11,157,460,051	189,617,759	153,164,346	431,860,810	25,740,021,308	(431,860,810)	9,940,796,710	48,557,983,331
Transactions with owners, recorded directly in equity									
Contributions by and distributions to owners									
Treasury shares purchased	-	-	-	-	73,545,400	(73,545,400)	(73,545,400)	-	(73,545,400)
Dividends to owners of the Company	-	-	-	-	-	(407,301,572)	(407,301,572)	-	(407,301,572)
Total	-	-	-	-	73,545,400	(480,846,972)	(73,545,400)	-	(480,846,972)
Comprehensive income (loss) for the year									
Loss	-	-	-	-	-	(9,839,845,221)	-	-	(9,839,845,221)
Other comprehensive income (loss)	-	-	-	-	-	-	-	-	-
Total comprehensive income (loss) for the year	-	-	-	-	-	(9,839,845,221)	-	-	(9,839,845,221)
Coupon payment on perpetual subordinated debentures	-	-	-	-	-	(501,369,867)	-	-	(501,369,867)
Balance at 31 December 2020	1,376,923,157	11,157,460,051	189,617,759	153,164,346	505,406,210	14,917,959,248	(505,406,210)	9,940,796,710	37,735,921,271

The accompanying notes are an integral part of these financial statements.

Bangchak Corporation Public Company Limited and its Subsidiaries

Statement of cash flows

	Consolidated financial		Separate financial	
	statements		statements	
	Year ended 31 December		Year ended 31 December	
	2020	2019	2020	2019
	(in Baht)			
Cash flows from operating activities				
Profit (loss) for the year	(5,769,983,480)	2,488,492,891	(9,839,845,221)	1,090,151,889
<i>Adjustments for</i>				
Tax (income) expense	(1,588,597,371)	67,673,449	(1,762,661,133)	(26,790,599)
Finance costs	1,969,298,106	1,701,161,120	1,029,793,132	1,029,963,025
Depreciation and amortisation	6,821,366,531	5,031,831,929	5,216,866,940	3,848,746,659
Allowance for bad and doubtful debts expenses	-	3,446,697	-	3,369,760
Unrealised gain from derivatives	(31,890,616)	-	(54,230,777)	-
Unrealised (gain) loss on foreign exchange	(296,502,554)	428,004,019	(310,443,260)	457,624,688
Reversal of losses on inventories devaluation	(4,682,087)	(706,635,160)	-	(688,560,092)
Impairment loss on assets	2,374,857,657	33,750,058	2,085,441,944	33,750,058
Impairment loss determined in accordance with TFRS 9	890,738,980	-	3,946,399,416	-
Loss on disposal of property, plant and equipment	134,870,409	6,594,200	2,726,744	2,036,686
Loss on disposal of intangible assets	33,604,726	1,402,373	-	-
Loss on fair value adjustment	21,716,960	-	-	-
Gain on disposal of other investment	-	(318,512)	-	-
Expense for disposal of other investment	21,455,271	-	-	-
Interest income and dividend income	(157,410,894)	(157,902,057)	(726,422,771)	(1,076,222,049)
Provision for employee benefits	230,478,108	354,615,710	209,736,821	319,339,350
(Reversal of) provision for customer loyalty programmes	(9,781,272)	57,185,005	(9,781,272)	57,185,005
Deferred revenue	(7,353,215)	(7,190,211)	(7,011,452)	(7,190,211)
Share-based payment transactions	-	1,185,378	-	-
Share of (profit) loss of associates and joint ventures (net of tax)	592,023,674	(404,380,979)	-	-
	5,224,208,933	8,898,915,910	(219,430,889)	5,043,404,169
<i>Changes in operating assets and liabilities</i>				
Trade accounts receivable	3,196,589,518	(2,197,550,153)	3,341,760,681	430,850,200
Other receivables	255,195,930	(1,266,792,604)	(222,627,469)	(827,789,122)
Inventories	(386,763,857)	(34,741,998)	750,095,874	(148,620,747)
Other non-current assets	(44,411,087)	(105,123,343)	80,629,994	61,514,179
Trade accounts payable	(1,321,458,596)	4,076,867,330	(1,209,336,540)	2,059,199,778
Other payables	(576,764,001)	(487,863,766)	(264,271,179)	(451,536,733)
Other current liabilities	21,284,434	(1,861,927,294)	(93,288,261)	(1,876,466,489)
Provision for employee benefits	(165,902,903)	(60,253,172)	(161,414,171)	(58,585,462)
Other non-current liabilities	(80,318,800)	314,386,749	(6,411,587)	(6,257,947)
Net cash generated from operating	6,121,659,571	7,275,917,659	1,995,706,453	4,225,711,826
Tax received (paid)	217,922,463	(526,649,603)	149,889,790	(152,087,556)
Net cash from operating activities	6,339,582,034	6,749,268,056	2,145,596,243	4,073,624,270

The accompanying notes are an integral part of these financial statements.

Bangchak Corporation Public Company Limited and its Subsidiaries

Statement of cash flows

	Consolidated financial statements		Separate financial statements	
	Year ended 31 December		Year ended 31 December	
	2020	2019	2020	2019
	<i>(in Baht)</i>			
<i>Cash flows from investing activities</i>				
Interest received	239,844,849	123,942,932	149,450,444	114,661,797
Dividend received	62,342,773	56	463,190,017	926,190,052
(Increase) decrease in other current financial assets /				
current investments	267,931,247	(26,222,031)	200,000,000	-
Payment for other investments	(796,514,158)	(373,629,366)	-	-
Net cash outflow from calling up of subsidiary's share capital	-	-	-	(357,198,400)
Payment for investment in subsidiaries and associates, net of cash acquired	(5,015,464,810)	(5,132,678,956)	(2,226,702,335)	-
Proceeds from capital reduction in associates	842,336,487	67,229,200	-	-
Proceeds from sale of investments	4,251,704,493	81,540,712	-	-
Acquisition of property, plant and equipment	(5,596,818,930)	(7,835,306,291)	(3,585,741,089)	(5,528,309,741)
Proceeds from sale of property, plant and equipment	26,584,813	19,674,032	7,516,987	49,050,686
Increase in loan to related parties	(238,601,452)	(873,493,029)	(163,580,900)	(937,668,094)
Proceeds from repayment of loan to related parties	-	-	1,166,095,837	-
Acquisition of right-of-use assets	(196,600,000)	-	(196,600,000)	-
Payment for leasehold right	-	(459,284,689)	-	(459,284,689)
Acquisition of intangible assets	(199,808,029)	(195,955,222)	(110,383,426)	(78,526,996)
Net cash used in investing activities	(6,353,062,717)	(14,604,182,652)	(4,296,754,465)	(6,271,085,385)
<i>Cash flows from financing activities</i>				
Financial cost paid	(2,175,409,732)	(2,073,199,811)	(1,243,845,687)	(1,481,514,267)
Coupon payment on perpetual subordinated debentures	(501,369,867)	-	(501,369,867)	-
Dividend paid	(742,554,792)	(1,759,835,743)	(407,301,572)	(1,376,906,482)
Increase (decrease) in short-term loans from financial institutions	(1,075,675,827)	14,560,000	-	(3,290,440,000)
Proceeds from exercise of share options	1,378,826	24,510,333	-	-
Proceeds from increase in subsidiaries' share capital	5,149,074,814	49,999,975	-	-
Proceeds from issuance of debentures	8,000,000,000	-	8,000,000,000	-
Redemption of debentures	(3,000,000,000)	(4,000,000,000)	(3,000,000,000)	(4,000,000,000)
Proceeds from long-term loans from financial institutions	13,784,122,642	6,817,408,331	3,610,336,000	2,550,616,000
Repayment of long-term loans from financial institutions	(2,835,865,581)	(4,879,426,423)	(375,153,846)	(2,900,769,846)
Proceeds from perpetual subordinated debentures	-	10,000,000,000	-	10,000,000,000
Redemption of treasury shares	(73,545,400)	(431,860,810)	(73,545,400)	(431,860,810)
Payment of lease liabilities	(1,963,463,174)	-	(1,901,915,037)	-
Net cash from (used in) financing activities	14,566,691,909	3,762,155,852	4,107,204,591	(930,875,405)
Net increase (decrease) in cash and cash equivalents, before effect of exchange rates	14,553,211,226	(4,092,758,744)	1,956,046,369	(3,128,336,520)
Effect of exchange rate changes on cash and cash equivalents	(177,940,203)	(182,055,235)	-	-
Net increase (decrease) in cash and cash equivalents	14,375,271,023	(4,274,813,979)	1,956,046,369	(3,128,336,520)
Cash and cash equivalents at 1 January	7,275,805,822	11,550,619,801	4,086,864,086	7,215,200,606
Cash and cash equivalents at 31 December	21,651,076,845	7,275,805,822	6,042,910,455	4,086,864,086

The accompanying notes are an integral part of these financial statements.

Bangchak Corporation Public Company Limited and its Subsidiaries

Notes to the financial statements

For the year ended 31 December 2020

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For the year ended 31 December 2020

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 authorised for issue by the Board of Directors on 18 February 2021.

1 General information

Bangchak Corporation Public Company Limited, the “Company” is incorporated in Thailand and was listed on the Stock Exchange of Thailand. The Company’s 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 2020, major shareholders of the Company were Vayupak Fund 1 and Social Security Office holding 14.66% and 14.40% of issued and paid-up capital, respectively (2019: 14.66% and 14.77%, 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 2020 and 2019 are given in note 7 and 11.

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 and applicable rules and regulations of the Thai Securities and Exchange Commission.

New and revised TFRS are effective for annual accounting periods beginning on or after 1 January 2020. The initial application of these new and revised TFRS has resulted in changes in certain of the Group’s accounting policies.

The Group has initially applied TFRS - Financial instruments standards which comprise TFRS 9 *Financial Instruments* and relevant standards and interpretations and TFRS 16 *Leases* and disclosed impact from changes to significant accounting policies in note 3.

In addition, the Group has not early adopted a number of new and revised TFRS, which are not yet effective for the current period in preparing these financial statements. The Group has assessed the potential initial impact on the financial statements of these new and revised TFRS and expects that there will be no material impact on the financial statements in the period of initial application.

Bangchak Corporation Public Company Limited and its Subsidiaries

Notes to the financial statements

For the year ended 31 December 2020

(b) *Functional and presentation currency*

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

(c) *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 the Group's accounting policies. Actual results may differ from these estimates. Estimates and underlying assumptions are reviewed on an ongoing basis. Revisions to accounting estimates are recognised prospectively.

(i) Judgements

Information about judgements made in applying accounting policies that have the most significant effects on the amounts recognised in the financial statements is included in the following notes:

4(k), 16	Leases: <ul style="list-style-type: none">- whether an arrangement contains a lease;- whether the Group is reasonably certain to exercise extension options;- whether the Group exercise termination options;- whether the Group has transferred substantially all the risks and rewards incidental to the ownership of the assets to lessees.
5	Impact of COVID-19 Outbreak;
26	The classification of capital - similar debentures into equity.

(ii) Assumptions and estimation uncertainties

Information about assumption and estimation uncertainties at 31 December 2020 that have a significant risk of resulting in a material adjustments to the carrying amounts of assets and liabilities in the next financial year is included in the following notes:

4(k)	Determining the incremental borrowing rate to measure lease liabilities;
5	Impact of COVID-19 Outbreak;
6, 11	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;
11, 12, 14, 17, 18	Impairment test: key assumption underlying recoverable amounts;
22	Measurement of defined benefit obligations: key actuarial assumptions;
34	Recognition of deferred tax assets: availability of future taxable profit against which deductible temporary differences and tax losses carried forward can be utilised; and
37	Measurement of ECL allowance for trade receivables and contract assets: key assumptions in determining the weighted-average loss rate;
37	Determining the fair value of financial instruments on the basis of significant unobservable inputs.

Bangchak Corporation Public Company Limited and its Subsidiaries

Notes to the financial statements

For the year ended 31 December 2020

3 Changes in accounting policies

From 1 January 2020, the Group has initially applied TFRS - Financial instruments standards and TFRS 16 *Lease*.

	Note	Consolidated financial statements		Separate financial statements	
		Retained earnings	Other components of equity	Retained earnings	Other components of equity
Impact on changes in accounting policy					
At 31 December 2019 - as reported		27,147	(916)	26,069	-
<i>Increase (decrease) due to:</i>					
Adoption of TFRS – Financial instruments standards					
Classification of financial instruments	(a.1)	-	-	-	-
Impairment losses on financial assets	(a.2)	(47)	-	(599)	-
Difference of interest rate per lending agreement and market rate		-	-	123	-
Derivative and hedge accounting	(a.3)	21	(80)	23	-
Related tax		124	-	124	-
Adoption of TFRS 16 – net of tax	(b)	1	-	-	-
Classification of financial instruments of associate		-	(39)	-	-
At 1 January 2020 - restated		27,246	(1,035)	25,740	-

(a) TFRS - Financial instruments standards

The Group has adopted TFRS - Financial instruments standards by adjusting the cumulative effects to retained earnings and other components of equity on 1 January 2020. Therefore, the Group did not adjust the information presented for 2019. The disclosure requirements of TFRS for financial instruments have not generally been applied to comparative information.

These TFRS - Financial instruments standards establish requirements related to definition, recognition, measurement, impairment and derecognition of financial assets and financial liabilities, including accounting for derivatives and hedge accounting. The details of accounting policies are disclosed in note 4(d) and 4(l). The impact from adoption of TFRS – Financial instruments standards are as follows:

(a.1) Classification and measurement of financial assets and financial liabilities

TFRS 9 contains three principal classification categories for financial assets: measured at amortised cost, fair value through other comprehensive income (FVOCI) and fair value through profit or loss (FVTPL). The classification is based on the cash flow characteristics of the financial asset and the business model in which they are managed. However, the Group may, at initial recognition, irrevocably designate a financial asset as measured at FVTPL. TFRS 9 eliminates the previous classification of held-to-maturity debt securities, available-for-sale securities, trading securities and general investment as specified by TAS 105.

Under TFRS 9, interest income and interest expenses recognised from all financial assets and financial liabilities measured at amortised cost shall be calculated using effective interest rate method. Previously, the Group recognised interest income and interest expenses at the rate specified in the contract.

Bangchak Corporation Public Company Limited and its Subsidiaries

Notes to the financial statements

For the year ended 31 December 2020

The following table shows classification and measurement categories under TAS 105 and TFRS 9.

Consolidated financial statements					
Classification under TAS 105 at 31 December 2019	Classification under TFRS 9 at 1 January 2020				
Carrying amounts	FVTPL	FVOCI	Amortised cost - net	Total	
	<i>(in million Baht)</i>				
Current investments					
Short-term deposits at financial institutions	288	-	-	288	288
Other long-term investments					
Debt and equity securities available for sale	1,832	256	1,576	-	1,832
Other non-marketable equity security	234	-	234	-	234
Other debt instruments held to maturity	3	-	-	3	3
	2,069	256	1,810	3	2,069

Separate financial statements					
Classification under TAS 105 at 31 December 2019	Classification under TFRS 9 at 1 January 2020				
Carrying amounts	FVTPL	FVOCI	Amortised cost - net	Total	
	<i>(in million Baht)</i>				
Current investments					
Short-term deposits at financial institutions	200	-	-	200	200
Other long-term investments					
Other non-marketable equity security	234	-	234	-	234
Other debt instruments held to maturity	3	-	-	3	3
	237	-	234	3	237

The Group and the Company intends to hold non-marketable equity securities amounted of Baht 234 million for the long-term strategic purposes. The Group has designated them as measured at FVOCI. The accumulated gain (loss) on measurement of these investments will not be reclassified to profit or loss.

(a.2) Impairment – Financial assets and contract assets

TFRS 9 introduces the ‘expected credit loss’ (ECL) model whereas previously the Group estimated the allowance for doubtful account by analysing payment histories and future expectation of customer payment. TFRS 9 requires considerable judgement about how changes in economic factors affect ECLs, which are determined on a probability-weighted basis. The new impairment model applies to financial assets measured at amortised cost, contract assets, debt investments measured at FVOCI, and lease receivables.

Bangchak Corporation Public Company Limited and its Subsidiaries

Notes to the financial statements

For the year ended 31 December 2020

The Group has determined that the application of TFRS 9's impairment requirements at 1 January 2020 results in an additional allowance for impairment loss as follows:

	Consolidated financial statements	Separate financial statements
	<i>(in million Baht)</i>	
Allowance for impairment losses at 31 December 2019		
Allowance for doubtful debts – trade and other current receivables	14	14
	14	14
<i>Additional impairment loss recognised at 1 January 2020 on:</i>		
- Trade and other current receivables	37	15
- Loan to related parties and accrued interest	10	585
Allowance for impairment losses at 1 January 2020	61	614

The Group has opted to recognise the increase of impairment loss as an adjustment to retained earnings as at 1 January 2020.

(a.3) Derivatives and hedge accounting

Under TFRS 9, all derivatives are measured at fair value in the statement of financial position.

The Group designates certain derivatives held for risk management as well as certain non-derivative financial instruments as hedging instruments in qualifying hedging relationships. The Group documents the relationship between the hedging instruments and hedged items, including the risk management objective, strategy in undertaking the hedge, together with the method that will be used to assess the effectiveness of the hedging relationship. The Group makes an assessment of the effectiveness, both at inception of the hedge relationship and on an ongoing basis.

These hedging relationships are fair value hedges, cash flow hedges and net investment in a foreign operation hedge.

Previously, TFRS were silent on the requirements of hedge accounting and derivatives held for risk management purposes. In 2019, the Group accounted for these transactions as described in accounting policies in note 4(d.5) and 4(d.6).

	Consolidated financial statements	Separate financial statements
	<i>(in million Baht)</i>	
Impact of derivative and hedge accounting as at 1 January 2020		
Increase in other current financial assets	32	32
Increase in deferred tax assets	4	4
Increase in current portion of long-term loan from financial institution	1	-
Increase in other current financial liabilities	21	9
Increase in long-term loan from finance institution	7	-
Increase in other non-current financial liabilities	61	-
Increase in retained earnings	26	27
Other components of equity:		
- Decrease in hedging reserve – cash flow hedge	(80)	-

Bangchak Corporation Public Company Limited and its Subsidiaries

Notes to the financial statements

For the year ended 31 December 2020

(b) TFRS 16 Leases

From 1 January 2020, the Group has initially adopted TFRS 16 on contracts previously identified as leases according to TAS 17 *Leases* and TFRIC 4 *Determining whether an arrangement contains a lease* using the modified retrospective approach.

Previously, the Group as a lessee, recognised payments made under operating leases in profit or loss on a straight-line basis over the term of the lease. Under TFRS 16, the Group assesses whether a contract is, or contains, a lease. If a contract contains lease and non-lease components, the Group has elected not to separate non-lease components and account for the transaction as a single lease component. As at 1 January 2020, the Group recognised right-of-use assets and lease liabilities, as a result, the nature of expenses related to those leases was changed because the Group recognised depreciation of right-of-use assets and interest expense on lease liabilities

On transition, the Group also elected to use the following practical expedients:

- do not recognise right-of-use assets and lease liabilities for leases with less than 12 months of lease term;
- use hindsight when determining the lease term;
- apply a single discount rate to a portfolio of leases with similar characteristics;
- rely on previous assessments whether leases are onerous as an alternative to performing an impairment review; and
- exclude initial direct costs from measuring the right-of-use asset.

	Consolidated financial statements	Separate financial statements
	<i>(in million Baht)</i>	
Impact from the adoption of TFRS 16		
At 1 January 2020		
Decrease in other receivables	(3)	-
Decrease in property, plant and equipment	(397)	-
Decrease in leasehold rights	(3,071)	(3,071)
Increase in right-of-use assets	10,227	9,505
Decrease in other non-current assets	(66)	(66)
Increase in assets	6,690	6,368
Decrease in other current liabilities	(20)	-
Increase in lease liabilities	7,079	6,383
Decrease in other non-current liabilities	(370)	(15)
Increase in liabilities	6,689	6,368
Increase in retained earnings	1	-

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	Consolidated financial statements	Separate financial statements
<i>Measurement of lease liability</i>		
	<i>(in million Baht)</i>	
Operating lease commitment as disclosed at 31 December 2019	7,533	7,093
Recognition exemption for short-term leases and low-value assets	(151)	(42)
Extension and termination options reasonably certain to be exercised	101	60
Variable lease payments based on an index or a rate	(13)	(13)
Residual value guarantees	353	335
	7,823	7,433
Present value of remaining lease payments, discounted using the incremental borrowing rate at 1 January 2020	6,695	6,383
Finance lease liabilities recognised as at 31 December 2019	384	-
Lease liabilities recognised at 1 January 2020	7,079	6,383
Weighted-average incremental borrowing rate (<i>% per annum</i>)	2.44 - 5.00	2.44

4 Significant accounting policies

The accounting policies set out below have been applied consistently to all periods presented in these financial statements except as explained in note 3.

(a) Basis of consolidation

The consolidated financial statements relate to the Company and its subsidiaries (together referred to as the “Group”) and the Group’s interests in associates and joint ventures.

Business combinations

The Group applies the acquisition method for all business combinations when control is transferred to the Group, as describe in subsidiaries section, other than those with entities under common control.

The acquisition date is the date on which control is transferred to the acquirer.

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.

Any contingent consideration is measured at fair value at the date of acquisition, and remeasured at fair value at each reporting date. Subsequent changes in the fair value are recognised in profit or loss.

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.

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For the year ended 31 December 2020

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 recognised, to reflect new information obtained about facts and circumstances that existed at the acquisition date that, if known, would have affected the amounts recognised 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 recognises 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 recognised 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 joint ventures.

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

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For the year ended 31 December 2020

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) Investments in subsidiaries, associates and joint ventures

Investments in subsidiaries, associates and joint ventures in the separate financial statements of the Company are measured at cost less allowance for impairment losses.

Disposal of investments in the separate financial statements

On disposal of an investment, the difference between net disposal proceeds and the carrying amount is recognised in profit or loss.

If the Company 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.

(c) 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 recognised in profit or loss. However, foreign currency differences arising from the translation of the following items are recognised in other comprehensive income:

- an investment in equity securities designated as at FVOCI (*2019: available-for-sale equity investments*);
- a financial liability designated as a hedge of the net investment in a foreign operation to the extent that the hedge is effective; and
- qualifying cash flow hedges to the extent the hedge is effective.

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.

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Notes to the financial statements

For the year ended 31 December 2020

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.

(d) *Financial instruments*

Accounting policies applicable from 1 January 2020

(d.1) Recognition and initial measurement

Trade receivables, debt securities issued and trade payables are initially recognised when they are originated. All other financial assets and financial liabilities are initially recognised when the Group becomes a party to the contractual provisions of the instrument.

A financial asset and financial liability (unless it is a trade receivable without a significant financing component or measured at FVTPL) is initially measured at fair value plus transaction costs that are directly attributable to its acquisition or issue. A trade receivable without a significant financing component is initially measured at the transaction price. A financial asset and a financial liability measured at FVTPL are initially recognised at fair value.

(d.2) Classification and subsequent measurement

Financial assets - classification

On initial recognition, a financial asset is classified as measured at: amortised cost; fair value through other comprehensive income (FVOCI); or fair value through profit or loss (FVTPL).

Financial assets are not reclassified subsequent to their initial recognition unless the Group changes its business model for managing financial assets, in which case all affected financial assets are reclassified prospectively from the reclassification date.

A financial asset is measured at amortised cost if it meets both of the following conditions and is not designated as at FVTPL:

- it is held within a business model whose objective is to hold assets to collect contractual cashflows; and
- its contractual terms give rise on specified dates to cash flows that are solely payments of principal and interest on the principal amount outstanding.

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For the year ended 31 December 2020

A debt investment is measured at FVOCI if it meets both of the following conditions and is not designated as at FVTPL:

- it is held within a business model whose objective is achieved by both collecting contractual cash flows and selling financial assets; and
- its contractual terms give rise on specified dates to cash flows that are solely payments of principal and interest on the principal amount outstanding.

On initial recognition of an equity investment that is not held for trading, the Group may irrevocably elect to present subsequent changes in the investment's fair value in OCI. This election is made on an investment-by-investment basis.

All financial assets not classified as measured at amortised cost or FVOCI as described above are measured at FVTPL. This includes all derivative financial assets. On initial recognition, the Group may irrevocably designate a financial asset that otherwise meets the requirements to be measured at amortised cost or at FVOCI as at FVTPL if doing so eliminates or significantly reduces an accounting mismatch that would otherwise arise.

Financial assets – subsequent measurement and gains and losses

Financial assets at FVTPL	These assets are subsequently measured at fair value. Net gains and losses, including any interest or dividend income, are recognised in profit or loss. However, see note 4(d.6) for derivatives designated as hedging instruments.
Financial assets at amortised cost	These assets are subsequently measured at amortised cost using the effective interest method. The amortised cost is reduced by impairment losses. Interest income, foreign exchange gains and losses and impairment are recognised in profit or loss. Any gain or loss on derecognition is recognised in profit or loss.
Equity investments at FVOCI	These assets are subsequently measured at fair value. Dividends are recognised as income in profit or loss unless the dividend clearly represents a recovery of part of the cost of the investment. Other net gains and losses are recognised in OCI and are never reclassified to profit or loss.

Financial liabilities – classification, subsequent measurement and gains and losses

Financial liabilities are classified as measured at amortised cost or FVTPL. A financial liability is classified as at FVTPL if it is classified as held-for-trading, it is a derivative or it is designated as such on initial recognition. Financial liabilities at FVTPL are measured at fair value and net gains and losses, including any interest expense, are recognised in profit or loss. Other financial liabilities are subsequently measured at amortised cost using the effective interest method. Interest expense and foreign exchange gains and losses are recognised in profit or loss. Any gain or loss on derecognition is also recognised in profit or loss. See note 4(d.6) for financial liabilities designated as hedging instruments.

(d.3) Derecognition

Financial assets

The Group derecognises a financial asset when the contractual rights to the cash flows from the financial asset expire, or it transfers the rights to receive the contractual cash flows in a transaction in which substantially all of the risks and rewards of ownership of the financial asset are transferred or in which the Group neither transfers nor retains substantially all of the risks and rewards of ownership and it does not retain control of the financial asset.

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The Group enters into transactions whereby it transfers assets recognised in its statement of financial position, but retains either all or substantially all of the risks and rewards of the transferred assets. In these cases, the transferred assets are not derecognised.

Financial liabilities

The Group derecognises a financial liability when its contractual obligations are discharged or cancelled, or expire. The Group also derecognises a financial liability when its terms are modified and the cash flows of the modified liability are substantially different, in which case a new financial liability based on the modified terms is recognised at fair value.

On derecognition of a financial liability, the difference between the carrying amount extinguished and the consideration paid (including any non-cash assets transferred or liabilities assumed) is recognised in profit or loss.

(d.4) Offsetting

Financial assets and financial liabilities are offset and the net amount presented in the statement of financial position when, and only when, the Group currently has a legally enforceable right to set off the amounts and it intends either to settle them on a net basis or to realise the asset and settle the liability simultaneously.

(d.5) Derivatives

Derivative are recognised at fair value. At the end of each reporting period the fair value is measured. The gain or loss on remeasurement to fair value is recognised immediately in profit or loss, except where the derivatives qualify for cash flow hedge accounting or hedges of net investment in a foreign operation, in which case recognition of any resultant gain or loss depends on nature of the item being hedged (see note 4(d.6)).

(d.6) Hedging

The Group designates certain derivatives as hedging instruments to hedge the variability in cash flows associated with highly probable forecast transactions arising from changes in foreign exchange rates and interest rates and certain derivatives and non-derivative financial liabilities as hedges of foreign exchange risk on a net investment in a foreign operation.

At inception of designated hedging relationships, the Group documents the risk management objective and strategy for undertaking the hedge. The Group also documents the economic relationship between the hedged item and the hedging instrument, including whether the changes in cash flows of the hedged item and hedging instrument are expected to offset each other.

Cash flow hedges

When a derivative is designated as a cash flow hedging instrument, the effective portion of changes in the fair value of the derivative is recognised in OCI and accumulated in the hedging reserve. The effective portion of changes in the fair value of the derivative that is recognised in OCI is limited to the cumulative change in fair value of the hedged item, determined on a present value basis, from inception of the hedge. Any ineffective portion of changes in the fair value of the derivative is recognised immediately in profit or loss.

The Group designates only the change in fair value of the spot element of forward exchange contracts as the hedging instrument in cash flow hedging relationships.

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When the hedged forecast transaction subsequently results in the recognition of a non-financial item such as inventory, the amount accumulated in the hedging reserve and the cost of hedging reserve is included directly in the initial cost of the non-financial item when it is recognised.

For all other hedged forecast transactions, the amount accumulated in the hedging reserve and the cost of hedging reserve is reclassified to profit or loss in the same period or periods during which the hedged expected future cash flows affect profit or loss.

If the hedge no longer meets the criteria for hedge accounting or the hedging instrument is sold, expires, is terminated or is exercised, then hedge accounting is discontinued prospectively. When hedge accounting for cash flow hedges is discontinued, the amount that has been accumulated in the hedging reserve remains in equity until, for a hedge of a transaction resulting in the recognition of a non-financial item, it is included in the non-financial item's cost on its initial recognition or, for other cash flow hedges, it is reclassified to profit or loss in the same period or periods as the hedged expected future cash flows affect profit or loss.

If the hedged future cash flows are no longer expected to occur, then the amounts that have been accumulated in the hedging reserve and the cost of hedging reserve are immediately reclassified to profit or loss.

Net investment hedges

When a derivative instrument or a non-derivative financial liability is designated as the hedging instrument in a hedge of a net investment in a foreign operation, the effective portion of, for a derivative, changes in the fair value of the hedging instrument or, for a non-derivative, foreign exchange gains and losses is recognised in OCI and presented in the translation reserve within equity. Any ineffective portion of the changes in the fair value of the derivative or foreign exchange gains and losses on the non-derivative is recognised immediately in profit or loss. The amount recognised in OCI is reclassified to profit or loss as a reclassification adjustment on disposal of the foreign operation.

Accounting policies applicable before 1 January 2020

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.

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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.

Derivatives

Derivatives were recognised when they were exercised.

(e) Cash and cash equivalents

Cash and cash equivalents in the statements of cash flows comprise cash balances, call deposits and highly liquid short-term investments. 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 and contract assets

A receivable is recognised when the Group has an unconditional right to receive consideration. If revenue has been recognised before the Group has an unconditional right to receive consideration, the amount is presented as a contract asset.

A receivable is measured at transaction price less allowance for expected credit loss (*2019: allowance for doubtful accounts*) which is determined based on an analysis of payment histories and future expectations of customer payments. Bad debts are written off when incurred.

(g) 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.

(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.

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No depreciation is provided on freehold 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. Cost also may include transfers from other comprehensive income of any gain or loss on qualifying cash flow hedges of foreign currency purchases of property, plant and equipment. Purchased software that is integral to the functionality of the related equipment is capitalised as part of that equipment.

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

Any 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
Other assets	21 years

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

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

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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) 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 4 (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 amortisation and accumulated impairment losses.

Subsequent expenditure

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

Amortisations

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

Amortisation is recognised in profit or loss on a straight-line basis over the estimated useful lives of intangible assets, other than goodwill, from the date that they are available for use, 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
Right to connect electrical transmission line	20 - 25	years
Power purchase agreement	20	years
Power purchase agreement under concession agreement	28	years

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

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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.

(k) Leases

Accounting policies applicable from 1 January 2020

At inception of a contract, the Group assesses whether a contract is, or contains, a lease. To assess whether a contract conveys the right to control the use of an identified asset, the Group uses the definition of a lease in TFRS 16.

As a lessee

At commencement or on modification of a contract that contains a lease component, the Group allocates the consideration in the contract to each lease component on the basis of its relative stand-alone prices. However, for the leases of property the Group has elected not to separate non-lease components and account for the lease and non-lease components as a single lease component.

The Group recognises a right-of-use asset and a lease liability at the lease commencement date, except for leases of low-value assets and short-term leases which is recognised as an expense on a straight-line basis over the lease term.

Right-of-use asset is measured at cost, less any accumulated depreciation and impairment loss, and adjusted for any remeasurements of lease liability. The cost of right-of-use asset includes the initial amount of the lease liability adjusted for any lease payments made at or before the commencement date, plus any initial direct costs incurred and an estimate of restoration costs, less any lease incentives received. Depreciation is charged to profit or loss on a straight-line method from the commencement date to the end of the lease term, unless the lease transfers ownership of the underlying asset to the Group by the end of the lease term or the cost of the right-of-use asset reflects that the Group will exercise a purchase option. In that case the right-of-use asset will be depreciated over the useful life of the underlying asset, which is determined on the same basis as those of property and equipment.

The lease liability is initially measured at the present value of the lease payments that are not paid at the commencement date, discounted using the interest rate implicit in the lease or, if that rate cannot be readily determined, the Group's incremental borrowing rate. The lease payments included fixed payments less any lease incentive receivable, amount under option if the Group is reasonably certain to exercise option. Variable lease payments that do not depend on index or a rate are recognised as expenses in the accounting period in which they are incurred.

The Group determines its incremental borrowing rate by obtaining interest rates from various external financing sources and makes certain adjustments to reflect the terms of the lease and type of the asset leased.

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The lease liability is measured at amortised cost using the effective interest method. It is remeasured when there is a change in lease term, change in lease payments, change in the estimate of the amount expected to be payable under a residual value guarantee, or a change in the assessment of purchase, extension or termination options. When the lease liability is remeasured, a corresponding adjustment is made to the carrying amount of the right-of-use asset or is recorded in profit or loss if the carrying amount of the right-of-use asset has been reduced to zero.

As a lessor

At inception or on modification of a contract that contains a lease component and one or more additional lease or non-lease components, the Group allocates the consideration in the contract to each component on the basis of their relative standalone prices.

When the Group acts as a lessor, it determines at lease inception whether the lease transfers substantially all of the risks and rewards incidental to ownership of the underlying asset. If this is the case, then the lease is a finance lease; if not, then it is an operating lease.

The Group recognises lease payments received under operating leases as rental income on a straight-line basis over the lease term as part of 'other income.' Contingent rents are recognised as rental income in the accounting period in which they are earned.

The Group applies the derecognition and impairment requirements in TFRS 9 to the net investment in the lease (See note 4(1)). The Group further regularly reviews estimated unguaranteed residual values used in calculating the gross investment in the lease.

Accounting policies applicable before 1 January 2020

As a lessee, leases in terms of which the Group substantially assumes all the risk and rewards of ownership are classified as finance leases. Property, plant and equipment acquired by way of finance leases is capitalised at the lower of its fair value and the present value of the minimum lease payments at the inception of the lease, less accumulated depreciation and impairment losses. Lease payments are apportioned between the finance charges and reduction of the lease liability so as to achieve a constant rate of interest on the remaining balance of the liability. Finance charges are charged directly to the profit or loss.

Assets held under other leases were classified as operating leases and lease payments are recognised in profit or loss on a straight-line basis 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.

As a lessor, rental income from investment property is recognised in profit or loss on a straight-line basis over the term of the lease. Contingent rentals are recognised as income in the accounting period in which they are earned.

(1) Impairment of financial assets

Accounting policies applicable from 1 January 2020

The Group recognises allowances for expected credit losses (ECLs) on financial assets measured at amortised cost (including cash and cash equivalents, trade receivables and other receivables, loans to others and related parties), contract assets, lease receivables, and loan commitments issued which are not measured at FVTPL.

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Measurement of ECLs

ECLs are a probability-weighted estimate of credit losses. Credit losses are measured as the present value of all cash shortfalls (i.e. the difference between the cash flows due to the entity in accordance with the contract and the cash flows that the Group expects to receive). ECLs are discounted at the effective interest rate of the financial asset.

ECLs are measured on either of the following bases:

- 12-month ECLs: these are losses that are expected to result from possible default events within the 12 months after the reporting date; or
- lifetime ECLs: these are losses that are expected to result from all possible default events over the expected lives of a financial instrument.

Loss allowances for trade receivables, lease receivables and contract assets are always measured at an amount equal to lifetime ECLs. ECLs on these financial assets are estimated using a provision matrix based on the group's historical credit loss experience, adjusted for factors that are specific to the debtors and an assessment of both current and forecast general economic conditions at the reporting date.

Loss allowances for all other financial instruments, the Group recognises ECLs equal to 12-month ECLs unless there has been a significant increase in credit risk of the financial instrument since initial recognition or credit-impaired financial assets, in which case the loss allowance is measured at an amount equal to lifetime ECLs.

The maximum period considered when estimating ECLs is the maximum contractual period over which the Group is exposed to credit risk.

The Group considers a financial asset to have low credit risk when its credit rating is equivalent to the globally understood definition of 'investment grade'.

The Group assumes that the credit risk on a financial asset has increased significantly if it significant deterioration in financial instruments' credit rating, significant deterioration in the operating results of the debtor and existing or forecast changes in the technological, market, economic or legal environment that have a significant adverse effect on the debtor's ability to meet its obligation to the Group.

The Group considers a financial asset to be in default when the debtor is unlikely to pay its credit obligations to the Group in full, without recourse by the Group to actions such as realising security (if any is held).

Depending on the nature of the financial instruments, the assessment of a significant increase in credit risk is performed on either an individual basis or a collective basis. When the assessment is performed on a collective basis, the financial instruments are grouped based on shared credit risk characteristics, such as past due status and credit risk ratings.

ECLs are remeasured at each reporting date to reflect changes in the financial instrument's credit risk since initial recognition. Increased in loss allowance is recognised as an impairment loss in profit or loss. Loss allowances for financial assets measured at amortised cost are deducted from the gross carrying amount of the assets.

Credit-impaired financial assets

At each reporting date, the Group assesses whether financial assets carried at amortised cost and debt securities at FVOCI are credit-impaired. A financial asset is 'credit-impaired' when one or more events that have a detrimental impact on the estimated future cash flows of the financial asset have occurred. Evidence of credit-impairment includes significant financial difficulty, a breach of contract such as more than 90 days past due, probable the debtor will enter bankruptcy.

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Write-off

The gross carrying amount of a financial asset is written off when the Group has no reasonable expectations of recovering. Subsequent recoveries of an asset that was previously written off, are recognised as a reversal of impairment in profit or loss in the period in which the recovery occurs.

Accounting policies applicable before 1 January 2020

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.

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.

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.

Reversal 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.

(m) Impairment of non-financial assets

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 or its cash-generating unit 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.

Calculation of recoverable amount

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 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

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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 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.

(n) 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.

(o) Contract liabilities

A contract liability is the obligation to transfer goods or services to the customer. A contract liability is recognised when the Group receives or has an unconditional right to receive non-refundable consideration from the customer before the Group recognises the related revenue.

(p) 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 recognised 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 recognised 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.

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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 recognised in profit or loss in the period in which they arise.

Termination benefits

Termination benefits are expensed at the earlier of when the Group can no longer withdraw the offer of those benefits and when the Group recognises costs for a restructuring. If benefits are not expected to be settled wholly within 12 months of the end of the reporting period, then they are discounted.

Short-term employee benefits

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

(q) 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.

(r) 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.

(s) Fair value measurement

'Fair value' is the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date in the principal or, in its absence, the most advantageous market to which the Group has access at that date. The fair value of a liability reflects its non-performance risk.

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 one is available, the Group measures the fair value of an instrument using the quoted price in an active market for that instrument. A market is regarded as 'active' if transactions for the asset or liability take place with sufficient frequency and volume to provide pricing information on an ongoing basis.

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If there is no quoted price in an active market, then the Group uses valuation techniques that maximise the use of relevant observable inputs and minimise the use of unobservable inputs. The chosen valuation technique incorporates all of the factors that market participants would take into account in pricing a transaction.

If an asset or a liability measured at fair value has a bid price and an ask price, then the Group measures assets and long positions at a bid price and liabilities and short positions at an ask price.

The best evidence of the fair value of a financial instrument on initial recognition is normally the transaction price – i.e. the fair value of the consideration given or received. If the Group determines that the fair value on initial recognition differs from the transaction price and the fair value is evidenced neither by a quoted price in an active market for an identical asset or liability nor based on a valuation technique for which any unobservable inputs are judged to be insignificant in relation to the measurement, then the financial instrument is initially measured at fair value, adjusted to defer the difference between the fair value on initial recognition and the transaction price. Subsequently, that difference is recognised in profit or loss on an appropriate basis over the life of the instrument but no later than when the valuation is wholly supported by observable market data or the transaction is closed out.

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 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 or indirectly.
- Level 3: inputs for the asset or liability that are based on unobservable input.

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.

(t) 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.

Treasury shares

When share capital recognised as equity is repurchased, the amount of consideration paid, including directly attributable costs, is classified as treasury shares and recognised as a deduction from equity. An equal amount is appropriated from retained earnings and taken to a reserve for treasury shares within equity. When treasury shares are sold, the amount received is recognised as an increase in equity by crediting the cost of the treasury shares sold, calculated using the weighted average method, to the treasury shares account and transferring the equivalent amount back from reserve for treasury shares to retained earnings. Surpluses on the sale of treasury shares are taken directly to a separate category within equity, 'Surplus on treasury shares. Net deficits on sale or cancellation of treasury shares are debited to retained earnings after setting off against any remaining balance of surplus on treasury shares.

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(u) *Perpetual subordinated debentures*

Perpetual subordinated debentures are recognised as equity when the Company has the sole right and discretion to early redeem the debentures per conditions as stipulated in the terms of the debentures and to defer interest and cumulative interest payment without time and deferral amount limitation and the coupon payments are discretionary. Accordingly, any coupon payments are accounted for as dividends and are recognised directly in equity at the time the payment obligation arises. Coupon payments are recognised in the statement of cash flows in the same way as dividends to ordinary shareholders.

(v) *Revenue*

Revenue is recognised when a customer obtains control of the goods or services in an amount that reflects the consideration to which the Group expects to be entitled, excluding those amounts collected on behalf of third parties, value added tax and is after deduction of any trade discounts and volume rebates.

Sale of goods and services rendered

Revenue from sales of goods is recognised when a customer obtains control of the goods, generally on delivery of the goods to the customers. For contracts that permit the customers to return the goods, revenue is recognised to the extent that it is highly probable that a significant reversal in the amount of cumulative revenue recognised will not occur. Therefore, the amount of revenue recognised is adjusted for estimated returns, which are estimated based on the historical data.

For bundled packages, the Group accounts for individual products and services separately if they are distinct (i.e. if a product or service is separately identifiable from other items and a customer can benefit from it) or the multiple services are rendered in different reporting periods. The consideration received is allocated based on their relative stand-alone selling prices which are determined based on the price list at which the Group sells the products and services in separate transactions.

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.

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.

Income from operating rights

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

Loyalty programmes

The consideration received are allocated based on the relative stand-alone selling price of the products and the loyalty points. The amount allocated to the loyalty points is recognised as contract liabilities and revenue is recognised when loyalty points are redeemed or the likelihood of the customer redeeming the loyalty points becomes remote. The stand-alone selling prices of the points is estimated based on

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discount provided to customers and the likelihood that the customers will redeem the points, and the estimate shall be reviewed at the end of the reporting period.

(w) Rental income

Rental income from investment properties is recognised in profit or loss on a straight-line basis over the lease term. The initial expenses which are incurred specifically for the occurrence of the lease are recognised as a part of the total rental fee under the contract. The rental fee that may occur is recognised as income in the accounting period in which the rent is incurred.

(x) Other income

Other income comprises dividend, interest income and others. Dividend income is recognised in profit or loss on the date on which the Group's right to receive payment is established. Interest income is recognised in profit or loss as it accrues.

(y) Interest

Effective Interest Rate (EIR)

Interest income or expense is recognised using the effective interest method. The EIR is the rate that exactly discounts estimated future cash payments or receipts through the expected life of the financial instrument to:

- the gross carrying amount of the financial asset; or
- the amortised cost of the financial liability.

In calculating interest income and expense, the effective interest rate is applied to the gross carrying amount of the asset (when the asset is not credit-impaired) or to the amortised cost of the liability. However, for financial assets that have become credit-impaired subsequent to initial recognition, interest income is calculated by applying the effective interest rate to the amortised cost of the financial asset. If the asset is no longer credit-impaired, then the calculation of interest income reverts to the gross basis.

(aa) 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.

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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.

(bb) Earnings per share

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

(cc) Related parties

A related party is a person or entity that has direct or indirect control or joint control, or has significant influence over the financial and managerial decision-making of the Group; a person or entity that are under common control or under the same significant influence as the Group; or the Group has direct or indirect control or joint control or has significant influence over the financial and managerial decision-making of a person or entity.

(dd) 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.

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5 Impact of COVID-19 Outbreak

Due to the COVID-19 outbreak at the beginning of 2020, Thailand and many other countries have enacted several protective measures against the outbreak, e.g. the order to temporarily shut down operating facilities or reduce operating hours, social distancing, etc. This has significantly affected world economy, production, supply chain of goods and business operation of many entities in wide areas. The management is closely monitoring the situation to ensure the safety of the Group's staff and to manage the negative impact on the business as much as possible. At 31 December 2020, the situation of COVID-19 outbreak is still ongoing, resulting in estimation uncertainty on the potential impact, therefore, the Group elected to apply accounting guidance on temporary accounting relief measures for additional accounting options in response to impact from the situation of COVID-19 outbreak on the following:

(a) *Impairment of assets*

The Group considered impairment of trade accounts receivables under provision matrix using historical loss rate and did not take forward-looking information into account.

The Group elected to exclude the COVID-19 situation as impairment indicator for property, plant and equipment, investment properties, intangible assets, and elected to exclude the COVID-19 situation, which may affect future financial forecasts, from the impairment testing factors of goodwill.

(b) *Lease modifications*

During the year ended 31 December 2020, the Group was granted a partial rent concession as a result of the COVID-19 situation. The Group has monthly deducted lease liabilities in proportion to the reduced rental, reversed depreciation of ROU assets and interest on lease liabilities in proportion to the reduced rental, and recognised the differences to profit or loss for the year ended 31 December 2020.

(c) *Fair value measurement*

The Group elected to measure investment in non-marketable equity securities at 31 December 2020 using fair values at 1 January 2020.

(d) *Deferred tax assets*

The Group elected to exclude the factor of COVID-19 situation in considering sufficiency of future taxable profits to review the amount of deferred tax assets at 31 December 2020.

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6 Acquisition of subsidiaries

Nam San 3A Power Sole Co., Ltd.

On 20 September 2019, BCPG Indochina Co., Ltd., which is an indirect subsidiary of the Group, invested in a hydropower plant project in Laos PDR with total installed capacity of 69 megawatts. The subsidiary acquired 100% share of Nam San 3A Power Sole Co., Ltd. (Nam San 3A) from Phongsubthavy Roads and Bridges Construction and Irrigation Sole Co., Ltd. (Phongsubthavy) for an amount of not exceeding USD 174 million (approximately Baht 5,352 million) or including net working capital adjustments to be repaid to the seller the amount shall not exceed USD 174 million (approximately Baht 5,357 million) which consists of USD 96 million (approximately Baht 2,958 million) for the shares and USD 78 million (approximately Baht 2,400 million) for a repayment of loan which the hydropower plant company owed to Phongsubthavy. Currently, BCPG Indochina Co., Ltd. has already completed the share transfer from Phongsubthavy. During the period of acquisition date until 31 December 2019, the business contributed revenue of USD 5 million (approximately Baht 151 million) and net profit of USD 3 million (approximately Baht 81 million) to the Group's results. If the acquisition had occurred on 1 January 2019, management estimates that consolidated revenue would have increased by Baht 402 million and consolidated profit from normal operation for the year ended 31 December 2019 would have increased by Baht 236 million. In determining these amounts, management has assumed that the fair value adjustments, determined provisionally, that arose on the date of acquisition would have been the same if the acquisition had occurred on 1 January 2019.

Management believes that acquisition of this business will enable the Group to increase the Group's potential to expand their investment, development and operating renewable energy business within Asia.

The following summarises the major classes of consideration transferred, and the recognised amounts of assets acquired and liabilities assumed at the acquisition date:

Consideration transferred

	Fair value <i>(in million Baht)</i>
Cash	4,460
Contingent consideration	866
Total	5,326

At 31 December 2020, the Group had settled the payment of USD 173 million (approximately Baht 5,326 million).

Contingent consideration

In January 2020, the Group had entered into new power purchase agreement with Vietnam Electricity for Nam San 3A project, which is considered to be a completion of a contingent consideration at the amount of USD 23 million (approximately Baht 711 million), resulting in an increase in fair value of the power purchase agreement and a decrease in goodwill from the first assessment in September 2019.

Contingent consideration adjustment

The consideration has been reduced by USD 1 million (approximately Baht 31 million) from the first assessment in September 2019 because the seller could not achieve certain conditions to receive all contingent consideration.

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Identifiable assets acquired and liabilities assumed

	Book value	Adjustment <i>(in million Baht)</i>	Fair value
Cash and cash equivalents	1	-	1
Trade accounts receivable	69	-	69
Property, plant and equipment	9	-	9
Intangible asset	3,130	2,067	5,197
Other payables	(64)	-	(64)
Long-term loan from Phongsubthavy group	(2,400)	-	(2,400)
Deferred tax liabilities	-	(179)	(179)
Total identifiable assets and liabilities	745	1,888	2,633
Repayment of loan from Phongsubthavy group under the condition of business acquisition	2,400		2,400
Net assets and liabilities acquired the Group	3,145		5,033
Goodwill			293
Consideration transferred			5,326

The fair value of power purchase agreements under concession agreement which was classified as intangible asset was determined based on income approach using Multi-period Excess Earning Method (MEEM) with remaining operating period 28 years under power purchase agreement and related conditions. Key assumptions included forecast revenue and discount rate.

The investment in Nam San 3A creates an opportunity to expand the Group's business in Laos and its neighboring countries. This is a main factor that causes the goodwill arising from the acquisition.

Acquisition-related costs

The Group incurred acquisition-related costs of Baht 23 million related to external legal fees, due diligence, technical advisor and other costs which were included in administrative expenses in the consolidated statement of income for the Group's period which incurred.

Nam San 3B Power Sole Co., Ltd.

On 26 February 2020, BCPG Indochina Co., Ltd., which is an indirect subsidiary of the Group, invested in a hydropower plant project in Laos PDR with total installed capacity of 45 megawatts. The subsidiary acquired 100% share of Nam San 3B Power Sole Co., Ltd. (Nam San 3B) from Phongsubthavy Roads and Bridges Construction and Irrigation Sole Co., Ltd. (Phongsubthavy) for an amount of not exceeding USD 113 million (approximately Baht 3,581 million). The amount after deducting net working capital adjustments to be repaid to the seller is USD 112 million (approximately Baht 3,549 million) which consists of USD 51 million (approximately Baht 1,610 million) for the shares and USD 61 million (approximately Baht 1,940 million) for a repayment of loan which the hydropower plant company owed to Phonhagsubthavy. Currently, BCPG Indochina Co., Ltd. has already completed the share transfer from Phongsubthavy. During the period of acquisition date until 31 December 2020, the business contributed revenue of USD 12 million (approximately Baht 374 million) and net profit of USD 6 million (approximately Baht 185 million) to the Group's results. If the acquisition had occurred on 1 January 2020, management estimates that consolidated revenue would have increased by Baht 25 million and consolidated loss from normal operation for the year ended 31 December 2020 would have increased by Baht 2 million. In determining these amounts, management has assumed that the fair value adjustments, determined provisionally, that arose on the date of acquisition would have been the same if the acquisition had occurred on 1 January 2020.

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Management believes that acquisition of this business will enable the Group to increase the Group's potential to expand their investment, development and operating renewable energy business within Asia.

The Group has hired an independent appraiser to determine the fair value of net assets acquired at acquisition date.

The following summarises the major classes of consideration transferred, and the recognised amounts of assets acquired and liabilities assumed at the acquisition date:

Consideration transferred

	Fair value <i>(in million Baht)</i>
Cash	3,549

At 31 December 2020, the Group had settled the payment of USD 113 million (approximately Baht 3,581 million), including net working capital adjustments to be repaid as consideration transferred, and revenue from performance of Nam San 3B at acquisition date which as a part of seller totalling USD 112 million (approximately Baht 3,549 million).

Identifiable assets acquired and liabilities assumed

	Book value	Adjustment <i>(in million Baht)</i>	Fair value
Trade accounts receivable	25	-	25
Property, plant and equipment	13	-	13
Intangible asset	2,600	786	3,386
Other payables	(57)	-	(57)
Long-term loan from Phongsubthavy group	(1,940)	-	(1,940)
Deferred tax liabilities	-	(70)	(70)
Total identifiable assets and liabilities	641	716	1,357
Repayment of loan from Phongsubthavy group under the condition of business acquisition	1,940		1,940
Net assets and liabilities acquired by the Group	2,581		3,297
Goodwill			252
Consideration transferred			3,549

The fair value of power purchase agreements under concession agreement which was classified as intangible asset was determined based on income approach using Multi-period Excess Earning Method (MEEM) with remaining operating period 28 years under power purchase agreement and related conditions. Key assumptions included forecast revenue and discount rate.

The investment in Nam San 3B creates an opportunity to expand the Group's business in Laos and its neighboring countries. This is a main factor that causes the goodwill arising from the acquisition.

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Acquisition-related costs

The Group incurred acquisition-related costs of Baht 8 million related to external legal fees, due diligence, technical advisor and other costs which were included in administrative expenses in the consolidated statement of income for the Group's period which incurred.

The Group of RPV Energy Co., Ltd.

On 11 August 2020, BSE Power Holding Co., Ltd., which is an indirect subsidiary of the Group, invested in a solar power plant project in Thailand with total power purchase agreement capacity of 20 megawatts. The subsidiary acquired 99.99% shares of RPV Energy Co., Ltd. from Eternity Power Public Company Limited for an amount of not exceeding Baht 900 million. The details of RPV Energy Co., Ltd. and its subsidiaries were as follows:

Name of entity	Country of incorporation	Type of business	RPV's ownership interest (%)
RPV Energy Co., Ltd.	Thailand	Production and distribution of electricity	
<i>Subsidiaries</i>			
JKR Energy Co., Ltd.	Thailand	Production and distribution of electricity	99.99
Aquatist Energy Co., Ltd.	Thailand	Holding company	99.99
Lopburi Solar Co., Ltd.	Thailand	Production and distribution of electricity	99.99
Prachin Solar Co., Ltd.	Thailand	Production and distribution of electricity	99.99

Currently, BSE Power Holding Co., Ltd. has already completed the share transfer from Eternity Power Public Company Limited. During the period of acquisition date until 31 December 2020, the business contributed revenue of Baht 122 million and net profit of Baht 29 million to the Group's results. If the acquisition had occurred on 1 January 2020, management estimates that consolidated revenue would have increased by Baht 212 million and consolidated profit from normal operation for the year ended 31 December 2020 would have increased by Baht 97 million. In determining these amounts, management has assumed that the fair value adjustments, determined provisionally, that arose on the date of acquisition would have been the same if the acquisition had occurred on 1 January 2020.

Management believes that acquisition of this business will enable the Group to increase the Group's potential to expand their investment, development and operating renewable energy business in Thailand.

The Group has hired an independent appraiser to determine the fair value of net assets acquired at acquisition date.

The following summarises the major classes of consideration transferred, and the recognised amounts of assets acquired and liabilities assumed at the acquisition date:

Consideration transferred

	Fair value <i>(in million Baht)</i>
Cash	750
Contingent consideration	150
Total	900

At 31 December 2020, the Group had settled the payment of Baht 750 million.

Bangchak Corporation Public Company Limited and its Subsidiaries

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For the year ended 31 December 2020

Contingent consideration

The contingent consideration amounting to Baht 150 million will be paid on 17 October 2022 or on such earlier date as when the power purchase agreements of RPV Energy Co., Ltd. and JKR Energy Co., Ltd. have been renewed or the Group has transferred its shares in RPV Energy Co., Ltd. to any non-affiliated third party. The Group recognised this contingent consideration as non-current liability in the consolidated statement of financial position as at 31 December 2020.

Identifiable assets acquired and liabilities assumed

	Book value	Adjustment (in million Baht)	Fair value
Cash and cash equivalents	44	-	44
Trade accounts receivable and other current receivables	77	-	77
Loans to others	48	-	48
Other current assets	10	-	10
Property, plant and equipment	1,100	(746)	354
Right-of-use assets	27	-	27
Intangible assets	56	1,053	1,109
Deferred tax assets	-	59	59
Loan from financial institutions	(583)	-	(583)
Loan from others	(5)	-	(5)
Lease liabilities	(25)	-	(25)
Other current liabilities	(10)	-	(10)
Other non-current financial liabilities	(7)	-	(7)
Deferred tax liabilities	-	(198)	(198)
Total identifiable assets and liabilities	732	168	900
Consideration transferred			900

The fair value of power purchase agreements which was classified as intangible assets was determined based on income approach using Multi-period Excess Earning Method (MEEM). For the power purchase agreement with defined contract term, the remaining operating period was approximately 21 years. The remaining operating periods for the power purchase agreements with automatic renewal for every 5 years were assumed to be approximately 27 - 28 years. Other key assumptions included forecasted revenue and discount rate.

Acquisition-related costs

The Group incurred acquisition-related costs of Baht 3 million which were included in administrative expenses in the consolidated statement of income for the Group's period which incurred.

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7 Related parties

Relationships with subsidiaries, associates, joint venture and other 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	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
Thai Digital Development Company Limited	Thailand	Representative from the subsidiary as director
BCPG Indochina Company Limited	Thailand	Representative from the subsidiary as director
Lomligor Co., Ltd.	Thailand	Representative from the subsidiary as director
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 Group	Japan	Representative from the subsidiary as director/ indirect subsidiary of the subsidiary affiliate in TK investment
Greenergy Holdings Pte. Ltd.	Singapore	Representative from the subsidiary as director
Greenergy Power Pte. Ltd.	Singapore	Representative from the subsidiary as director
BCPG Wind Cooperatief U.A.	Netherland	Representative from the Subsidiary as director
Nam San 3A Power Sole Co., Ltd.	Laos	Subsidiary's director and management as director and management

Bangchak Corporation Public Company Limited and its Subsidiaries

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For the year ended 31 December 2020

Name of entities	Country of incorporation/ nationality	Nature of relationships
<i>Subsidiaries or indirect subsidiaries (Continue)</i>		
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
Bangchak Ventures Pte. Ltd.	Singapore	Representative from the Company as director <i>(See note 11)</i>
Nam San 3B Power Sole Co., Ltd.	Laos	Subsidiary's director and management as director and management.
BBGI Utility and Power Co., Ltd.	Thailand	Subsidiary's director and management as director and management.
RPV Energy Co., Ltd. Group	Thailand	Subsidiary's management as director and management.
BSE Power Holding (Thailand) Co., Ltd.	Thailand	Subsidiary's director and management as director and management.
Prathumwan Smart District Cooling Co., Ltd.	Thailand	Subsidiary's director and management as director.
<i>Indirect associates and joint venture</i>		
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
Ubun Bio Ethanol Public Company Limited	Thailand	Representative from the Subsidiary as director
Ubun 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 ASA	Norway	Representative from the Company as director
Impact Energy Asia Development Limited	Hong Kong	Representative from the Subsidiary as director
WIN Ingredients Co., Ltd.	Thailand	Representative from the Subsidiary as director
<i>Other related parties</i>		
Fuel Pipeline Transportation Ltd.	Thailand	Representative from the Company as director
Lithium Americas Corp.	Canada	Representative from the Subsidiary as director until 19 November 2020.
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.

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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
Sale fixed assets and other assets	Contractually agreed prices
Interest expense	Contractually agreed rate with reference to market rate and contract rate
Rental income	Market price/ Contractually agreed prices
Rental expense	Market price/ Contractually agreed prices

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

<i>Year ended 31 December</i>	Consolidated financial statements		Separate financial statements	
	2020	2019	2020	2019
	<i>(in million Baht)</i>			
Subsidiaries and indirect subsidiaries				
Sales of goods	-	-	30,109	43,966
Purchases of goods	-	-	35,446	31,774
Dividend income	-	-	463	911
Other income	-	-	124	110
Interest income	-	-	208	71
Other expenses	-	-	36	41
Sale fixed assets and other assets	-	-	-	42
Indirect associates and joint ventures				
Sales of goods	12	16	12	16
Purchases of goods	1,184	1,327	1,184	1,327
Dividend income	-	-	-	15
Other income	10	4	9	4
Interest income	10	-	-	-
Other expenses	454	460	454	460
Key management personnel				
Key management personnel compensation				
Short-term employee benefits	276	300	122	143
Post-employment benefits and other long-term benefits	13	14	9	9
Total key management personnel compensation	289	314	131	152
Other related party				
Other income	4	4	4	5
Interest income	83	59	-	-
Pipeline transportation expenses	301	454	301	454

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For the year ended 31 December 2020

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

	Consolidated financial statements		Separate financial statements	
	2020	2019	2020	2019
	(in million Baht)			
Trade accounts receivable				
Subsidiaries and indirect subsidiaries	-	-	661	2,019
Direct and indirect associate	1	2	1	2
Total	1	2	662	2,021
Other receivables				
Subsidiaries and indirect subsidiaries	-	-	36	63
Indirect associate and joint ventures	1	-	-	-
Other related party	32	28	-	-
Total	33	28	36	63
Less allowance for expected credit loss (2019: allowance for doubtful accounts)	-	-	(10)	-
Net	33	28	26	63

	Interest rate	Consolidated financial statements				
		At 31 December (% per annum)	At 1 January	Increase	Effect of change in exchange rates (in million Baht)	At 31 December
Loans to						
2020						
Indirect associate						
Impact Energy Asia Development Limited	4.7	152	107	(4)	255	
Total		152	107	(4)	255	
Less allowance for expected credit loss		(10)			(7)	
Net		142			248	
2019						
Indirect associate						
Impact Energy Asia Development Limited	4.7	-	154	(2)	152	
Other related parties						
Lithium Americas Corp.	8.0	199	720	(35)	884	
Total		199	874	(37)	1,036	

	Interest rate	Separate financial statements				
		At 31 December (% per annum)	At 1 January	Increase	Decrease	Effect of change in exchange rates (in million Baht)
Loans to						
2020						
Subsidiaries						
Bangchak Retail Co., Ltd.	4.2	610	35	-	-	645
BCP Innovation Pte. Ltd.	4.5	878	129	(997)	(10)	-
Indirect subsidiaries						
Nido Petroleum Pty. Ltd.	0.5	1,199	-	(94)	-	1,105
BCPR Pte. Ltd.	4.0	3,104	-	-	85	3,189
Total		5,791	164	(1,091)	75	4,939
Less current portion due within one year		-				(551)
Less allowance for expected credit loss		(585)				(3,355)
Net		5,206				1,033

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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-mueang 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. Agreements 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.

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For the year ended 31 December 2020

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, which is of a subsidiary of the group, 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 as stipulated in the same agreement.

The Company has entered into additional land rental agreement with BCPG Public Company Limited, which is a subsidiary of the Group, 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 as stipulated in the same 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., which is an indirect subsidiary of the Group for the credit facility of USD 120 million. The loan bears interest and repayment schedule as stipulated in the agreement.

The Company has an unsecured lending agreement with Bangchak Retail Company Limited, which is a subsidiary of the Group, for the credit facility of Baht 700 million. The interest rate and repayment schedule are as stipulated in the agreement.

The Company has an unsecured lending agreement with BCP Innovation Pte. Ltd. "BCPI", which is a subsidiary of the Group, 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., which is an indirect subsidiary of the Group, for the credit facility of USD 120 million. Subsequently in 2019, the Company amended the lending agreement by revision lending currency of the loan of USD 100 million to NOK 917 million. The loan has a repayment schedule, bears interest and conditions as stipulated in the agreement.

BCPG Public Company Limited, which is a subsidiary of the Group entered into an unsecured loan agreement with Impact Energy Asia Development Limited, an associated company of the subsidiary, in the total credit lines of USD 6 million. The loan has a repayment schedule, bears interest and conditions as stipulated in the agreement.

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Guarantee Agreement

BCPG Public Company Limited, which is a subsidiary of the Group, has entered into guarantee agreement with BCPG Engineering Company, an indirect subsidiary of the Group, 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, 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 in Japan, it is specified that the parent company is responsible for the guarantee of possible damage loss.

BCPG Public Company Limited, which is a subsidiary of the Group, has entered into guarantee agreement for loans from financial institutions of a subsidiary, in the amount not exceeding USD 172 million. As at December 31, 2020, the balance of loans from financial institutions is USD 166 million with a condition of installment payment of principal and interest within the year 2030.

8 Cash and cash equivalents

	Consolidated financial statements		Separate financial statements	
	2020	2019	2020	2019
	<i>(in million Baht)</i>			
Cash on hand	167	101	-	-
Cash at banks - current accounts	4,351	891	36	27
Cash at banks - savings accounts	17,133	4,146	6,007	2,060
Highly liquid short-term investments	-	2,138	-	2,000
Total	21,651	7,276	6,043	4,087

As at 31 December 2020, certain indirect subsidiaries has a restricted deposits at financial institution totaling Baht 764 million (*2019: Baht 259 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.

9 Other receivables

	Note	Consolidated financial statements		Separate financial statements	
		2020	2019	2020	2019
		<i>(in million Baht)</i>			
Related parties	7	33	28	26	63
Other parties					
Receivable from oil hedging contracts		-	44	-	44
Prepaid expenses		92	160	16	76
Advance payment		420	662	10	-
Receivable from revenue department		252	278	151	160
Other accounts receivable		685	863	385	311
Total		1,482	2,035	588	654

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10 Inventories

	Consolidated financial statements		Separate financial statements	
	2020	2019	2020	2019
	<i>(in million Baht)</i>			
Crude oil and other raw materials	7,047	7,936	5,814	7,374
Finished oil products	8,052	6,743	6,704	5,926
Materials and supplies	1,104	1,114	1,064	1,032
Consumer products	49	73	-	-
Semi - finished products	105	145	-	-
	<u>16,357</u>	<u>16,011</u>	<u>13,582</u>	<u>14,332</u>
Less: allowance for obsolete and slow moving allowance for decline in value	(195) -	(171) (5)	(194) -	(171) -
Net	<u>16,162</u>	<u>15,835</u>	<u>13,388</u>	<u>14,161</u>
Inventories recognised in cost of sale <i>(Note 32)</i>				
- Cost of sale	75,074	105,824	65,723	97,939
- Reversal of write-down to net realisable value	(5)	(706)	-	(689)
Total	<u>75,069</u>	<u>105,118</u>	<u>65,723</u>	<u>97,250</u>

As at 31 December 2020 and 2019, the Company's inventories included petroleum legal reserve of 256 million liters with approximated value of Baht 2,477 million and 413 million liters with approximated value of Baht 5,668 million, respectively.

11 Investments in subsidiaries

<i>Year ended 31 December</i>	<i>Note</i>	Separate financial statements	
		2020	2019
		<i>(in million Baht)</i>	
At 1 January - as reported		13,536	13,179
Impact of changes in accounting policies	3	123	-
At 1 January - restated		13,659	13,179
Addition		2,227	357
Difference of interest rate per lending agreement and market rate		11	-
Loss from impairment		(2,046)	-
At 31 December		<u>13,851</u>	<u>13,536</u>

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Investments in subsidiaries as at 31 December 2020 and 2019, and dividend income from the investment for the years then ended were as follows:

	Separate financial statements											
	Ownership interest (%)		Paid-up capital		Cost		Impairment (in million Baht)		At cost - net		Dividend income For the year	
	2020	2019	2020	2019	2020	2019	2020	2019	2020	2019	2020	2019
Subsidiaries												
Bangchak Green Net Co., Ltd.	49.00	49.00	1	1	-	-	-	-	-	-	15	15
BCPG Public Co., Ltd.	60.36	70.04	13,202	9,994	9,227	7,000	-	-	9,227	7,000	448	896
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	(3,673)	(2,203)	-	1,470	-	-
BCP Innovation Pte. Ltd.	100.00	100.00	1,790	1,790	1,790	1,790	-	-	1,790	1,790	-	-
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	100.00	661	661	661	661	(442)	-	219	661	-	-
BCV Bio Based Co., Ltd.	100.00	100.00	20	20	20	20	-	-	20	20	-	-
BCV Energy Co., Ltd.	100.00	100.00	20	20	20	20	-	-	20	20	-	-
BCV Innovation Co., Ltd.	100.00	100.00	20	20	20	20	-	-	20	20	-	-
BCV Partnership Co., Ltd.	100.00	100.00	20	20	20	20	-	-	20	20	-	-
Bangchak Ventures Pte. Ltd.	100.00	100.00	-	-	-	-	-	-	-	-	-	-
Nido Petroleum Pty. Ltd.			134	-	-	-	(134)	-	-	-	-	-
			18,100	15,739	15,739	15,739	(4,249)	(2,203)	13,851	13,536	463	911

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Change in investment in subsidiaries

On 7 October 2020, the subsidiary's Extraordinary General Shareholder' Meeting No. 1/2020 approved an increase in the registered share capital of Baht 6,508.5 million of BCPG Public Company Limited ("BCPG"), which is a subsidiary of the Group, from the existing share capital of Baht 10,000 million to Baht 16,508.5 million through newly issued 1,301.7 million ordinary shares at a par value of Baht 5 each for the issuance and offering newly issued ordinary shares to the existing shareholders in proportion to their shareholding (Rights Offering) and to the Private Placement investors and the issuance warrants to purchase newly issued ordinary shares to be allocated to the existing shareholders, Private Placement investors, BCPG's directors, BCPG and its subsidiaries' executives and employees. In November 2020, The Company has purchased for newly issued ordinary shares for 193.63 million shares at Baht 2,227 million. The Company's ownership interest in BCPG has changed to be at 60.36% without change in control.

On 28 October 2020, the Board of Directors of the Company resolved to approve the deregistration of Bangchak Ventures Pte. Ltd., a wholly-owned subsidiary of the Company in Singapore, as Bangchak Ventures Pte. Ltd. has no any operation or business activity.

Impairment of investment in subsidiary and oil exploration & production assets

Investment in BCP Energy International Pte. Ltd. ("BCPE") in Nido Petroleum Pty. Ltd. ("Nido") has the recoverable amount lower than its carrying amount from the effect of change in its operation plan. The Group recognised impairment loss of investment in BCPE and investment in Nido in the separate financial statements for year ended 31 December 2020 amounting to Baht 1,470 million and Baht 134 million, respectively and recognised impairment loss of oil exploration & production assets in the consolidated financial statements amounting to Baht 1,366 million.

12 Investments in associates and joint ventures

<i>Year ended 31 December</i>	<i>Note</i>	Consolidated financial statements		Separate financial statements	
		2020	2019	2020	2019
		<i>(in million Baht)</i>			
Indirect associates					
At 1 January - as previously reported		17,927	17,902	-	-
Effect from changing in accounting policies	3	(39)	-	-	-
At 1 January - as restated		17,888	17,902	-	-
Increase		-	226	-	-
Decrease		(842)	(77)	-	-
Share of net profit (loss) of associates		(623)	372	-	-
Share of other comprehensive income (loss) of associates		56	(4)	-	-
Loss from impairment		(1,013)	-	-	-
Dividend income		(40)	(24)	-	-
Effect of change in exchange rates		(1,277)	(468)	-	-
At 31 December		14,149	17,927	-	-
Joint ventures					
At 1 January		110	92	73	73
Increase		41	-	-	-
Share of net profit of joint ventures		31	33	-	-
Dividend income		-	(15)	-	-
At 31 December		182	110	73	73

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<i>Year ended 31 December</i>	<i>Note</i>	Consolidated financial statements		Separate financial statements	
		2020	2019	2020	2019
		<i>(in million Baht)</i>			
Total					
At 1 January - as previously reported		18,037	17,994	73	73
Effect from changing in accounting policies	3	(39)	-	-	-
At 1 January - as restated		17,998	17,994	73	73
Increase		41	226	-	-
Decrease		(842)	(77)	-	-
Share of net profit (loss) of associates and joint ventures		(592)	405	-	-
Share of other comprehensive income (loss) of associates		56	(4)	-	-
Loss from impairment		(1,013)	-	-	-
Dividend income		(40)	(39)	-	-
Effect of change in exchange rates		(1,277)	(468)	-	-
At 31 December		14,331	18,037	73	73

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Investments in associates and joint ventures as at 31 December 2020 and 2019, and dividend income for the years then ended, were as follows:

	Consolidated financial statements													
	Ownership interest (%)		Paid-up capital		Cost		Equity		Impairment		At equity - net		Dividend income for the year	
	2020	2019	2020	2019	2020	2019	2020	2019	2020	2019	2020	2019	2020	2019
	<i>(in million Baht)</i>													
Indirect associates														
Ubun Bio Ethanol Plc.	21.28	21.28	2,740	2,740	763	763	816	799	-	-	816	799	2	-
PetroWind Energy Inc.	40.00	40.00	895	895	922	922	1,128	1,126	-	-	1,128	1,126	38	24
Star Energy Group Holding Pte. Ltd.	33.33	33.33	25,214	28,035	10,949	11,889	10,595	12,497	-	-	10,595	12,497	-	-
OKEA ASA	46.32	46.52	38	38	3,844	3,844	2,623	3,505	(1,013)	-	1,610	3,505	-	-
Impact Energy Asia Development Limited	45.00	45.00	-	-	-	-	-	-	-	-	-	-	-	-
					16,478	17,418	15,162	17,927	(1,013)	-	14,149	17,927	40	24
Joint ventures														
Bongkot Marine Services Co., Ltd.	30.00	30.00	240	240	72	72	140	109	-	-	140	109	-	15
Oam Suk Social Enterprise Co., Ltd.	40.00	40.00	3	3	1	1	1	1	-	-	1	1	-	-
WIN Ingredients Co., Ltd.	51.00	-	81	-	41	-	41	-	-	-	41	-	-	-
					114	73	182	110	-	-	182	110	-	15
Total					16,592	17,491	15,344	18,037	(1,013)	-	14,331	18,037	40	39

None of the Group's equity-accounted investee is publicly listed and consequently does not have published price quotations, except for OKEA ASA, which is listed on the Norwegian Stock Exchange and has a fair value of NOK 489 million or equivalent to Baht 1,708 million as at 31 December 2020 (2019: NOK 831 million or equivalent to Baht 2,813 million).

Bangchak Corporation Public Company Limited and its Subsidiaries

Notes to the financial statements
For the year ended 31 December 2020

	Separate financial statements												
	Ownership interest (%)		Paid-up capital		Cost		Impairment		At cost - net		Dividend income for the year		
	2020	2019	2020	2019	2020	2019	2020	2019	2020	2019	2020	2019	
Joint ventures													
Bongkot Marine Services Co., Ltd.	30.00	30.00	240	240	72	72	-	-	72	72	-	-	15
Oam Suk Social Enterprise Co., Ltd.	40.00	40.00	3	3	1	1	-	-	1	1	-	-	-
Total			73	73	73	73	-	-	73	73	-	-	15

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

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Changes in investments in associates

OKEA ASA

On 16 March 2020, OKEA ASA (“OKEA”) issued 438,600 rights to purchase additional shares to their directors and employees. As a result, OKEA has 102,502,650 registered and paid-up share capital, which resulting in BCPR Pte. Ltd.’s shareholding in OKEA to decrease from 46.52% to 46.32%.

Star Energy Group Holding Pte. Ltd.,

During the year ended 31 December 2020, Star Energy Group Holding Pte. Ltd. reduced its registered share capital from USD 834 million to USD 750 million and distributed USD 84 million back to its shareholders. The Group received a distribution based on the Group’s ownership interest at 33.33%, calculated as USD 28 million (equivalent to Baht 842 million).

WIN Ingredients Co., Ltd.,

In August 2020, BBGI Public Company Limited (“BBGI”), which is a subsidiary of the Group, established Win Ingredients Co., Ltd. to operate in the business of manufacturing, distributing, importing, exporting biological products and chemicals. In October 2020, BBGI entered into a joint venture agreement with a certain enterprise.

Impairment of investment in indirect associate and investments in subsidiaries

The recoverable amount of investment in OKEA an indirect associate, 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 assumptions 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 impairment test has been prepared by the management and found that investment in OKEA ASA, an indirect associate, has the recoverable amount lower than its carrying amount. The Group, therefore, recognised impairment loss of investment in OKEA in the consolidated financial statements for the year ended 31 December 2020 amounting to Baht 1,013 million and recognised impairment loss of investment in BCPR Co., Ltd., which is a subsidiary of the Group, in the separate financial statements for the year ended 31 December 2020 amounting to Baht 442 million.

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 were to be increased by 25%, the estimated recoverable amount will be equal to the carrying amount.

The recoverable amount of investment in associate, Star Energy Group Holdings Pte. Ltd., calculated 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 impairment testing has been prepared by the Group’s management and found the investment in indirect associates, Star Energy Group Holding Pte. Ltd. had recoverable amount higher than carrying amount. Therefore, the Group did not recognise loss from impairment of investment.

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For the year ended 31 December 2020

The sensitivity analysis in the key assumption was estimated. The calculation were performed assuming a change to the variable being tested only. It is estimated that if the discount rate assumption were to be increased by 0.6% - 0.7%, found no impairment.

Associates

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

	OKEA ASA.		Star Energy Group Holdings Pte. Ltd.	
	2020	2019	2020	2019
	<i>(in million Baht)</i>			
Statement of income				
Revenue	5,506	11,015	16,925	15,860
Net profit (loss)	(2,008)	(267)	3,714	3,860
Other comprehensive income (loss)	(2)	-	321	(484)
Total comprehensive income (loss) for the year	(2,010)	(267)	4,035	3,376
Group's share of total comprehensive income (loss)	(914)	26	289	324

	OKEA ASA.		Star Energy Group Holdings Pte. Ltd.	
	2020	2019	2020	2019
	<i>(in million Baht)</i>			
As at 31 December				
Statement of financial position				
Current assets	6,668	8,175	13,158	9,029
Non-current assets	27,473	28,931	87,014	103,064
Current liabilities	(3,412)	(5,963)	(4,019)	(4,835)
Non-current liabilities	(26,948)	(25,622)	(70,874)	(71,169)
Net assets (100%)	3,781	5,521	25,279	36,089
Less non-controlling interest in net asset associates	-	-	(14,153)	-
Net assets of associates	3,781	5,521	11,126	36,089
Group's share of net assets	1,751	2,568	3,708	8,124
Goodwill	872	937	6,887	4,373
Carrying amount of interest in associates	2,623	3,505	10,595	12,497

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Immaterial associates and joint ventures

The following is summarised 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:

	2020	2019
	<i>(in million Baht)</i>	
Carrying amount of interests in immaterial of associates and joint ventures	2,125	2,035
Share of net profit from investment in associates and joint ventures in Consolidated financial statements:		
- Profit for the year	87	51
- Other comprehensive income	-	-
- Total comprehensive income	87	51

13 Investment properties

	Consolidated		Separate	
	financial statements		financial statements	
	2020	2019	2020	2019
	<i>(in million Baht)</i>			
<i>Cost</i>				
At 1 January	127	127	683	683
At 31 December	127	127	683	683
<i>Depreciation and impairment losses</i>				
At 1 January	-	-	-	-
At 31 December	-	-	-	-
<i>Net book value</i>				
At 1 January	127	127	683	683
At 31 December	127	127	683	683

The leases of investment properties comprise a number of commercial properties that are leased to BCPG Public Company Limited, which is a subsidiary of the Group (*see note 7*), are leased to third parties under operating leases. Each of the leases contains an initial non-cancellable period of 2-3 years. Subsequent renewals are negotiated with the lessee. For all investment property leases, the rental income is fixed under the contracts, but some leases require the lessee to reimburse the insurance costs of the Group. When this is the case, the amounts of insurance costs are determined annually.

The fair value is appraised by an independent appraiser at market comparison value. As at 31 December 2020, investment properties had fair value for consolidate and separate financial statements at Baht 346million and Baht 1,180 million, respectively (*2019: Baht 346 million and Baht 984 million, respectively*).

Bangchak Corporation Public Company Limited and its Subsidiaries

Notes to the financial statements

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14 Property, plant and equipment

Cost	Consolidated financial statements (in million Baht)										Total
	Land	Buildings	Machinery, equipment refinery plants and terminal	Electricity producing equipment	Exploration and production of petroleum assets	Marketing equipment and office	Platinum catalyst	Vehicles	Other assets	Construction work in progress	
At 1 January 2019	3,945	3,759	49,211	11,339	-	8,429	239	393	28	5,339	82,682
Additions	206	207	50	1	-	18	-	48	-	7,973	8,503
Acquired from business acquisition (Note 6)	-	3	-	6	-	-	-	-	-	-	9
Transfers	4	179	988	640	-	535	-	-	-	(2,446)	(100)
Disposals	-	(84)	(161)	(2)	-	(157)	-	(21)	-	-	(425)
Effect of movement in exchange rate	(22)	(9)	-	(73)	-	(1)	-	-	-	(103)	(208)
At 31 December 2019 and 1 January 2020	4,133	4,055	50,088	11,911	-	8,824	239	420	28	10,763	90,461
Impact of changes in accounting policies (note 3)	(156)	(206)	(23)	-	-	-	-	(15)	-	-	(400)
Additions	12	1	35	2	-	18	-	10	-	6,334	6,412
Acquired from business acquisition (Note 6)	87	24	-	256	-	-	-	-	-	-	367
Transfers	-	253	1,376	73	-	486	-	14	-	(2,245)	(43)
Disposals	-	(153)	-	(2)	-	(232)	-	(58)	-	-	(445)
Effect of movement in exchange rate	19	2	(71)	61	-	1	-	-	-	102	114
At 31 December 2020	4,095	3,976	51,405	12,301	-	9,097	239	371	28	14,954	96,466

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Notes to the financial statements

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	Consolidated financial statements										Total
	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	
<i>(in million Baht)</i>											
Depreciation and impairment losses											
At 1 January 2019	(6)	(1,200)	(25,869)	(1,981)	-	(4,506)	-	(238)	(5)	-	(33,805)
Depreciation charge for the year	-	(177)	(3,137)	(520)	-	(595)	-	(48)	(1)	-	(4,478)
Impairment losses	-	-	(10)	-	-	(1)	-	-	-	-	(11)
Transfer	-	-	-	-	-	1	-	-	-	-	1
Disposals	-	74	157	1	-	145	-	21	-	-	398
Effect of movement in exchange rate	-	6	-	11	-	1	-	-	-	-	18
At 31 December 2019 and 1 January 2020	(6)	(1,297)	(28,859)	(2,489)	-	(4,955)	-	(265)	(6)	-	(37,877)
Impact of changes in accounting policies	-	2	1	-	-	-	-	-	-	-	3
Depreciation charge for the year	-	(187)	(2,928)	(579)	-	(599)	-	(42)	(1)	-	(4,336)
Impairment losses	-	(4)	(16)	-	-	(3)	-	-	-	-	(23)
Transfer	-	1	-	-	-	(2)	-	(1)	-	-	(2)
Disposals	-	40	-	-	-	185	-	56	-	-	281
Effect of movement in exchange rate	-	(1)	67	(11)	-	-	-	-	-	-	55
At 31 December 2020	(6)	(1,446)	(31,735)	(3,079)	-	(5,374)	-	(252)	(7)	-	(41,899)
Net book value											
At 31 December 2019	4,127	2,758	21,229	9,422	-	3,869	239	155	22	10,763	52,584
At 31 December 2020	4,089	2,530	19,670	9,222	-	3,273	239	119	21	14,954	54,567

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As at 31 December 2020, certain subsidiaries have mortgaged its land, buildings and machinery as collateral with financial institutions for credit facilities totalling Baht 12,812 million (2019: Baht 12,561 million).

As at 31 December 2020, capitalised borrowing costs relating to construction of the new factory amounted to Baht 374 million (2019: Baht 196 million), with a capitalization rate of 0.95% - 4.52% p.a. (2019: 3.00% - 4.41% p.a.) (see note 33).

The gross amount of the Group's fully depreciated plant and equipment that was still in use as at 31 December 2020 amounted to Baht 10,812 million (2019: Baht 11,113 million).

During the year ended 31 December 2020, certain subsidiary of the Group did not renew the grocery franchise agreement and the shareholders of such subsidiary had a resolution to sell building improvements and marketing equipment that related to the marketing business. As a result, the subsidiary recognised loss from sale of assets amounting to Baht 135 million.

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Separate financial statements

	Land	Buildings	Machinery, refinery equipment plants and terminal	Electricity producing equipment	Marketing and office equipment	Platinum catalyst	Vehicles	Other assets	Construction work in progress	Total
Cost										
At 1 January 2019	2,328	757	44,734	72	7,808	239	331	28	3,238	59,535
Additions	41	-	24	-	-	-	26	-	5,796	5,887
Transfers	-	10	570	-	477	-	-	-	(1,144)	(87)
Disposals	-	(151)	(153)	-	(178)	-	(16)	-	-	(498)
At 31 December 2019 and 1 January 2020	2,369	616	45,175	72	8,107	239	341	28	7,890	64,837
Additions	-	-	33	-	-	-	9	-	4,365	4,407
Transfers	-	72	1,197	-	475	-	-	-	(1,772)	(28)
Disposals	-	(5)	(66)	-	(121)	-	(49)	-	-	(241)
At 31 December 2020	2,369	683	46,339	72	8,461	239	301	28	10,483	68,975
Depreciation and impairment losses										
At 1 January 2019	(6)	(577)	(24,560)	(3)	(4,173)	-	(204)	(5)	-	(29,528)
Depreciation charge for the year	-	(19)	(2,838)	(6)	(513)	-	(37)	(1)	-	(3,414)
Impairment losses	-	-	(10)	-	(1)	-	-	-	-	(11)
Disposals	-	113	153	-	164	-	16	-	-	446
At 31 December 2019 and 1 January 2020	(6)	(483)	(27,255)	(9)	(4,523)	-	(225)	(6)	-	(32,507)
Depreciation charge for the year	-	(19)	(2,621)	(6)	(524)	-	(32)	(2)	-	(3,204)
(Losses) reversal of impairment losses	-	-	(16)	-	1	-	-	-	-	(15)
Disposals	-	5	64	-	112	-	49	-	-	230
At 31 December 2020	(6)	(497)	(29,828)	(15)	(4,934)	-	(208)	(8)	-	(35,496)
Net book value										
At 31 December 2019	2,363	133	17,920	63	3,584	239	116	22	7,890	32,330
At 31 December 2020	2,363	186	16,511	57	3,527	239	93	20	10,483	33,479

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Capitalised borrowing costs relating to construction of the new plant amounted to Baht 360 million (2019: Baht 188 million), with a capitalization rate of 3.51% - 4.52% p.a. (2019: 4.00% - 4.41% p.a.) (see note 33).

The gross amount of the Company's fully depreciated plant and equipment that was still in use as at 31 December 2020 amounted to Baht 10,707 million (2019: Baht 10,580 million). Right-of-use assets

15 Right-of-use assets

		Consolidated financial statements						Total
		Land and building	Rental	Tank farm (in million Baht)	Machinery, equipment refinery plants and terminal	Vehicle and oil tanker		
Cost	Note							
At 1 January 2020 - restated	3	9,860	10	1,125	23	736	11,754	
Acquired from business acquisition	6	27	-	-	-	-	27	
Additions		1,175	1	892	-	667	2,735	
Transfers		-	-	-	-	(12)	(12)	
Disposal		(50)	-	-	-	(1)	(51)	
Effect of movement in exchange rate		13	-	-	-	-	13	
At 31 December 2020		11,025	11	2,017	23	1,390	14,466	
Depreciation and impairment losses								
At 1 January 2020 - restated	3	(1,526)	-	-	(1)	-	(1,527)	
Depreciation for the year		(756)	(2)	(643)	(4)	(475)	(1,880)	
Disposal		27	-	-	-	1	28	
At 31 December 2020		(2,255)	(2)	(643)	(5)	(474)	(3,378)	
Net book value								
At 1 January 2020		8,334	10	1,125	22	736	10,227	
At 31 December 2020		8,770	9	1,374	18	916	11,087	

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Separate financial statements

	Note	Land and building	Rental	Tank farm (in million Baht)	Vehicle and oil tanker	Total
Cost						
At 1 January 2020 - restated	3	8,690	10	1,125	708	10,533
Additions		1,161	1	892	662	2,716
Disposal		(44)	-	-	-	(44)
At 31 December 2020		9,807	11	2,017	1,370	13,205
Depreciation and impairment losses						
At 1 January 2020 - restated	3	(1,027)	-	-	-	(1,027)
Depreciation for the year		(703)	(2)	(643)	(467)	(1,814)
Disposal		24	-	-	-	24
At 31 December 2020		(1,706)	(2)	(643)	(467)	(2,818)
Net book value						
At 31 December 2019		7,663	10	1,125	708	9,506
At 31 December 2020		8,101	9	1,374	903	10,387

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16 Leases

<i>For the year ended 31 December</i>	Consolidated financial statements		Separate financial statements	
	2020	2019	2020	2019
	<i>(in million Baht)</i>			
<i>Amounts recognised in profit or loss</i>				
Interest on lease liabilities	201	-	176	-
Expenses relating to short-term leases	44	-	14	-
Expenses relating to leases of low-value assets	21	-	17	-
Variable lease payments	425	-	408	-

In 2020, total cash outflow for leases of the Group and the Company were Baht 1,963 million and Baht 1,902 million, respectively.

17 Goodwill

	Consolidated financial statements <i>(in million Baht)</i>
<i>Cost</i>	
At 1 January 2019	1,921
At 31 December 2019 and 1 January 2020	1,921
Acquired from business acquisition (<i>Note 6</i>)	253
Effect of contingent consideration adjustment (<i>Note 6</i>)	(31)
Effect of movement in exchange rate	(14)
At 31 December 2020	2,129

Impairment testing for the cash generating unit containing goodwill

Goodwill amounted to Baht 527 million from business combinations of BCPG Public Company Limited Group, the Group calculated the recoverable amount by using the value in use models which was determined by discounting future cash flows. The key assumptions used in the estimation of the future cash flows were based on the concession agreements, power purchase agreements, estimated selling production unit of electricity, with reference to historical data and external source such as inflation and exchange rate.

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.

The estimated recoverable amount of the CGU exceeded its carrying amount, therefore no impairment loss is recognised at 31 December 2020.

The management have also conducted sensitivity test by increasing discount rate or inflation 0.5% and found no impairment for goodwill.

For goodwill amounted to Baht 1,602 million from business combinations of BBGI Public Company Limited Group, the Group calculated the recoverable amount 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

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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 Company operates are ranged from 4% - 9%. 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 selling price decrease by 1 Baht per Litre or cost of raw material increase by 1 Baht per litre, there is still no impairment of goodwill.

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18 Intangible assets

	Consolidated financial statements					
	Right to use and cost of development of computer software	Exploration and evaluation expenditure	Right to connect electric transmission line <i>(in million Baht)</i>	Power purchase agreement	Power purchase agreement under concession agreement	Total
Cost						
At 1 January 2019	1,466	3,418	80	1,434	-	6,398
Acquired from business acquisition <i>(Note 6)</i>	-	-	-	-	5,197	5,197
Additions	91	74	8	-	-	173
Transfer	10	-	-	-	-	10
Disposals	(148)	-	-	-	-	(148)
Effect of movements in exchange rates	(17)	(242)	(2)	(84)	(101)	(446)
At 31 December 2019 and 1 January 2020	1,402	3,250	86	1,350	5,096	11,184
Acquired from business acquisition <i>(Note 6)</i>	-	-	1,109	-	3,386	4,495
Additions	200	-	-	-	-	200
Transfer	3	(49)	-	-	-	(46)
Disposals	(110)	-	-	-	-	(110)
Effect of movements in exchange rates	15	(11)	2	71	(192)	(115)
At 31 December 2020	1,510	3,190	1,197	1,421	8,290	15,608

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	Consolidated financial statements				
	Right to use and cost of development of computer software	Exploration and evaluation expenditure	Right to connect electric transmission line <i>(in million Baht)</i>	Power purchase agreement concession agreement	Total
Amortisation and impairment losses					
At 1 January 2019	(584)	(2,083)	(8)	-	(2,740)
Amortisation for the year	(169)	-	(4)	(54)	(249)
Disposals	147	-	-	-	147
Effect of movements in exchange rates	-	148	-	-	152
At 31 December 2019 and 1 January 2020	(606)	(1,935)	(12)	(54)	(2,690)
Amortisation for the year	(193)	-	(20)	(333)	(569)
Disposals	76	-	-	-	76
Loss from impairment	-	(1,315)	-	-	(1,315)
Effect of movements in exchange rates	-	60	-	14	70
At 31 December 2020	(723)	(3,190)	(32)	(373)	(4,428)
Net book value					
At 31 December 2019	796	1,315	74	5,042	8,494
At 31 December 2020	787	-	1,165	7,917	11,180

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	Separate financial statements	
	Right to use and cost of development of computer software	
	2020	2019
	<i>(in million Baht)</i>	
Cost		
At 1 January	903	969
Additions	110	79
Disposals	-	(145)
At 31 December	1,013	903
Amortisation and impairment losses		
At 1 January	(504)	(518)
Amortisation for the year	(153)	(131)
Disposals	-	145
At 31 December	(657)	(504)
Net book value		
At 31 December	356	399

19 Other non-current assets

	Consolidated financial statements		Separate financial statements	
	2020	2019	2020	2019
	<i>(in million Baht)</i>			
Restricted cash at bank	480	407	407	407
Investment in service stations	310	300	310	300
Deposit	302	372	293	363
Others	582	575	326	559
Total	1,674	1,654	1,336	1,629

20 Loans from financial institutions and debentures

	Consolidated financial statements		Separate financial statements	
	2020	2019	2020	2019
	<i>(in million Baht)</i>			
Current				
Short-term loan from financial institutions				
secured	2,027	3,030	-	-
unsecured	1,948	2,021	-	-
	3,975	5,051	-	-
Current portion of long-term loans from financial institutions				
secured	1,957	1,728	-	-
unsecured	717	470	425	375
	2,674	2,198	425	375
Debenture				
unsecured	2,500	3,000	2,500	3,000
	2,500	3,000	2,500	3,000
Total current	9,149	10,249	2,925	3,375

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For the year ended 31 December 2020

	Consolidated financial statements		Separate financial statements	
	2020	2019	2020	2019
	<i>(in million Baht)</i>			
Non-current				
Long-term loans from financial institutions				
secured	21,897	17,125	-	-
unsecured	8,718	2,682	5,334	2,339
	30,615	19,807	5,334	2,339
Debenture				
unsecured	23,480	17,985	23,480	17,985
	23,480	17,985	23,480	17,985
Total non-current	54,095	37,792	28,814	20,324
Total	63,244	48,041	31,739	23,699

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 which is an indirect associate of the group and total shares of issued and paid up capital of BCPG Indochina Company Limited, an indirect subsidiary of the Group.

The Group had unutilised credit facilities as follow:

As at 31 December	Consolidated financial statements		Separate financial statements	
	2020	2019	2020	2019
Baht	15,078 million	15,346 million	7,530 million	10,675 million
USD	35 million	-	-	-
JPY	16 million	7 million	-	-

Debentures

Detail of debentures as at 31 December 2020 and 2019 were as follows:

	Consolidated and Separate financial statements	
	2020	2019
	<i>(in million Baht)</i>	
Debentures	26,000	21,000
Less Unamortised deferred expenses on debentures	(20)	(15)
	25,980	20,985
Less Current portion due within one year	(2,500)	(3,000)
Total	23,480	17,985

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The Company issued long-term debentures which are named-registered, unsubordinated, unsecured and no bond holder (except debenture no.6 to 12 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		Interest rate (% per annum)	Term (years)	Maturity Date
	2020	2019			
	<i>(in million Baht)</i>				
1	1,000	1,000	5.35	10	30 April 2022
2	2,500	2,500	4.81	7	11 April 2021
3	3,500	3,500	5.18	10	11 April 2024
4	2,000	2,000	4.72	12	3 March 2027
5	1,000	1,000	5.05	15	3 March 2030
6	-	3,000	2.13	2	10 August 2020
7	400	400	2.96	5	10 August 2023
8	600	600	3.42	7	10 August 2025
9	7,000	7,000	4.04	10	20 December 2028
10	3,000	-	2.60	2	8 May 2022
11	500	-	3.00	7	8 May 2027
12	4,500	-	3.40	10	8 May 2030
	26,000	21,000			

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.

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

	Consolidated financial statements		Separate financial statements	
	2020	2019	2020	2019
	<i>(in million Baht)</i>			
Property, plant and equipment	12,812	12,561	-	-
Investment in associates	20,269	12,505	-	-
Restricted cash at bank	74	52	-	-
Total	33,155	25,118	-	-

21 Other payables

	Note	Consolidated financial statements		Separate financial statements	
		2020	2019	2020	2019
		<i>(in million Baht)</i>			
Related parties	7	36	51	80	69
Other parties					
Accrued expenses		971	827	524	476
Accrued interest		62	124	34	67
Payable for project construction		671	388	432	82
Payable for utilities		231	284	231	284
Other accounts payable		1,198	1,217	858	929
Total		3,169	2,891	2,159	1,907

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For the year ended 31 December 2020

22 Provisions for employee benefits

	Consolidated financial statements		Separate financial statements	
	2020	2019	2020	2019
	<i>(in million Baht)</i>			
Statement of financial position				
Non-current provisions for:				
Post-employment benefits	2,580	2,531	2,481	2,438
Other long-term employee benefits	62	57	57	52
Total	2,642	2,588	2,538	2,490
Current	306	-	306	-
Non-current	2,336	2,588	2,232	2,490
Total	2,642	2,588	2,538	2,490
Year ended 31 December				
Statement of comprehensive income:				
Recognised in profit or loss				
Post-employment benefits	216	342	203	307
Other long-term employee benefits	7	13	6	12
Total	223	355	209	319
Recognised in other comprehensive income:				
Actuarial (gain) losses recognised in the year	(3)	239	-	245
Cumulative actuarial losses recognised	658	661	695	695

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.

<i>Present value of the defined benefit obligations</i>	Consolidated financial statements		Separate financial statements	
	2020	2019	2020	2019
	<i>(in million Baht)</i>			
At 1 January	2,588	2,054	2,490	1,984
Include in profit or loss:				
Current service costs and interest on obligation	223	215	209	187
Past service cost	-	140	-	132
	223	355	209	319
Included in other comprehensive income				
Actuarial (gain) loss				
- Demographic assumptions	2	-	-	-
- Financial assumptions	3	246	-	245
- Experience adjustment	(8)	(6)	-	-
Effect of movements in exchange rate	-	(1)	-	-
	(3)	239	-	245

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Present value of the defined benefit obligations

	Consolidated financial statements		Separate financial statements	
	2020	2019	2020	2019
	(in million Baht)			
Others				
Benefit paid	(166)	(60)	(161)	(58)
At 31 December	2,642	2,588	2,538	2,490

Principal actuarial assumptions

	Consolidated financial statements		Separate financial statements	
	2020	2019	2020	2019
	(%)			
Discount rate	0.1 - 3.95	0.1 - 3.95	1.61	1.61
Future salary growth	2 - 6	2 - 6	6	6
Employee turnover	0 - 52	0 - 64	1 - 8	1 - 8

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

At 31 December 2020, the weighted-average duration of the defined benefit obligation was 10 - 29 years (2019: 10-29 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.

Impact to the employee benefits obligation At 31 December	Consolidated financial statements			
	1% increase in assumption		1% decrease in assumption	
	2020	2019	2020	2019
	(in million Baht)			
Discount rate	(227)	(226)	262	262
Future salary growth	318	292	(276)	(254)
Employee turnover	(115)	(113)	130	124

Impact to the employee benefits obligation At 31 December	Separate financial statements			
	1% increase in assumption		1% decrease in assumption	
	2020	2019	2020	2019
	(in million Baht)			
Discount rate	(219)	(217)	253	251
Future salary growth	308	281	(267)	(245)
Employee turnover	(104)	(101)	120	118

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For the year ended 31 December 2020

23 Share capital

	Par value per share (in Baht)	2020		2019	
		Number	Baht (million shares / million Baht)	Number	Baht
Authorised shares at 31 December		<u>1,377</u>	<u>1,377</u>	<u>1,377</u>	<u>1,377</u>
<i>Issued and paid-up shares</i>					
At 1 January					
Ordinary shares	1	<u>1,377</u>	<u>1,377</u>	<u>1,377</u>	<u>1,377</u>
At 31 December					
Ordinary shares	1	<u>1,377</u>	<u>1,377</u>	<u>1,377</u>	<u>1,377</u>

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

Capital surplus on share reduction is from capital surplus on registered and paid-up share 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.

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.

24 Treasury shares

On 21 November 2019, the meeting of the Board of Directors approved the share repurchase program for financial management purpose (Treasury Stock), in the maximum amount of share repurchase not exceeding Baht 2,100 million and maximum number of shares not exceed 70 million shares with a par value of Baht 1 per share. The number of shares to be repurchased is 5% of the total issued shares. The Company can purchase the share during the period from 6 December 2019 to 5 June 2020 with the condition that the share purchase must be resold after 6 months from the date that the repurchase is completed but must not exceed 3 years.

As at 31 December 2020, the Company has repurchased treasury shares under such program totaling 19 million shares, at Baht 505 million (2019: 16 million shares at Baht 432 million) and presented as a separated item in equity and as a deduction item in equity in the consolidated financial statements.

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Accordingly, the Company has appropriated retained earnings at the same amount as treasury share reserve.

25 Reserves

Appropriations of profit and/or retained earnings

Legal reserve

Section 116 of the Public Companies Act B.E. 2535 (1992) 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.

Treasury shares reserve

The treasury shares reserve is the amount appropriated from the retained earnings equal to the cost of the Company’s own shares held by the Company. The treasury shares reserve is not available for dividend distribution.

Other components of equity

Translation reserve

The translation reserves comprises all foreign currency differences arising from the translation of the financial statements of foreign operations, as well as the effective portion of any foreign currency differences arising from hedges of a net investment in a foreign operation (see note 4(d.6)).

Fair value reserve of 2020

The fair value reserve comprise: the cumulative net change in the fair value of equity securities designated at FVOCI.

Fair value reserve of 2019

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

26 Subordinated perpetual debentures

On 18 October 2019, the Company completed the issuance of Subordinated Perpetual Debentures of Baht 10,000 million. The debentures are unsecured, unconvertible, with debenture holder representatives and no scheduled repayment of principal. Bullet payment is upon dissolution of the Company or upon the exercise of the debenture issuer’s early redemption right per conditions as stipulated in the terms and conditions of the debentures. These debentures bear fixed interest rate of 5% per annum during the first year to the fifth year. The debenture issuer will adjust the interest rate of the debentures every 5 years and interest is payable on a semi-annual basis throughout the term of the debentures. The Company has the sole right to unconditionally defer interest and cumulative interest payments to debentures holders without time and deferral amount limitation. If the Company defers the interest payment, the Company shall not declare and make any dividend payment. From the determination of the terms and conditions of the debentures, Subordinated perpetual debentures are classified as equity. Issuance cost of debentures of Baht 59 million are recognised as a part of equity in the consolidated and separate financial statements as at 31 December 2019. During the year ended 31 December 2020, the Company paid coupon payment on perpetual subordinated debentures of Baht 501 million which were recognised as a part of equity in consolidated and separate financial statement as at 31 December 2020.

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For the year ended 31 December 2020

27 Operating segments

Management determined that the Group has six reportable segments, as described below, which are the Group's strategic divisions. For different products and services, and are managed separately because they require different technology and marketing strategies. The following summary describes the operations in each of the Group's reportable segments.

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

Each segment's performance is measured based on segment profit (loss) before tax, financial costs, depreciation and amortisation, gain on foreign exchange, gain (loss) on derivatives from forward contracts and impairment losses ("Group's Profit (loss) from operating segment"), as included in the internal management reports that are reviewed by the Group's CODM. Group's Profit (loss) from operating segment 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. Inter-segment pricing determined on an arm's length basis.

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For the year ended 31 December 2020

<i>For the year ended 31 December 2020</i>	Consolidated financial statements						Total	
	Refinery and oil trading	Marketing	Electricity	Bio-based product <i>(in million Baht)</i>	Natural resources	Others		Eliminations
External revenue	34,191	95,325	4,223	2,710	-	1	-	136,450
Inter-segment revenue	86,791	5	8	9,860	-	-	(96,664)	-
Total revenue	120,982	95,330	4,231	12,570	-	1	(96,664)	136,450
Profit (loss) from operating segment	(2,169)	2,174	3,640	1,828	(1,004)	(365)	-	4,104
Depreciation and amortisation								(6,821)
Gain from derivatives								20
Gain on foreign exchange								732
Loss from impairment								(3,266)
Finance costs								(1,969)
Tax income								1,589
Others								(159)
Loss for the year								(5,770)
Interest income	22	23	25	2	85	-	-	157
Financial costs	(380)	(394)	(816)	(123)	(220)	(36)	-	(1,969)
Depreciation and amortisation	(3,863)	(1,413)	(1,072)	(420)	(3)	(50)	-	(6,821)
Segments assets	59,764	18,807	51,118	11,984	6,649	-	-	148,322
Investments in associates and joint ventures	139	1	11,723	858	1,610	-	-	14,331
Capital expenditure	(3,664)	(270)	(1,140)	(928)	-	-	-	(6,002)

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For the year ended 31 December 2020

<i>For the year ended</i> 31 December 2019	Consolidated financial statements							Total
	Refinery and oil trading	Marketing	Electricity	Bio-based product <i>(in million Baht)</i>	Natural resources	Others	Eliminations	
External revenue	48,694	136,045	3,427	2,313	9	1	-	190,489
Inter-segment revenue	126,786	6	-	7,700	-	-	(134,492)	-
Total revenue	175,480	136,051	3,427	10,013	9	1	(134,492)	190,489
Profit (loss) from operating segment	2,871	2,279	2,964	1,000	(36)	(369)	-	8,709
Depreciation and amortisation								(5,032)
Gain on foreign exchange								614
Loss from impairment of assets								(34)
Finance costs								(1,701)
Tax expense								(68)
Profit for the year								2,488
Interest income	51	28	15	1	63	-	-	158
Financial costs	(648)	(218)	(568)	(103)	(113)	(51)	-	(1,701)
Depreciation and amortisation	(2,905)	(1,009)	(690)	(388)	(2)	(38)	-	(5,032)
Segments assets	53,547	17,404	37,134	8,914	10,879	-	-	127,878
Investments in associates and joint ventures	109	1	13,623	799	3,505	-	-	18,037
Capital expenditure	(5,102)	(1,036)	(6,506)	(1,037)	(78)	-	-	(13,759)

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Disaggregation of revenue

Timing of revenue recognition of major revenues of the Group and the Company are point in time, except power plant segment, which timing of revenue recognition is over time.

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.

<i>Geographical information</i>	Consolidated financial statements			
	Revenue		Non-current assets	
	2020	2019	2020	2019
			<i>(in million Baht)</i>	
Thailand	111,610	153,908	64,859	55,757
Malaysia	177	2,295	-	-
Japan	382	219	6,675	5,160
Korea	2,177	3,890	-	-
Philippines	2	18	1,143	2,392
Singapore	20,066	28,413	3,024	437
Indonesia	-	-	10,595	12,497
Norway	-	-	1,610	3,505
Laos	1,652	1,342	8,465	5,370
Others	384	404	1,674	3,928
Total	136,450	190,489	98,045	89,046

Major customer

Revenues from one customer of the Group's 1 and 2 segments represents approximately Baht 10,846 million (2019: Baht 12,714 million) of the Group's total revenues.

Promotional privileges

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

Production of Biodiesel, Ethanol and Biogas

- Exemption from payment of import duty on machinery approved by the Board;
- 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 electricity from solar cell

- Exemption from payment of import duty on machinery approved by the Board;
- 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.
- 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.

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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					
	2020			2019		
	Promoted businesses	Non-promoted businesses	Total	Promoted businesses	Non-promoted businesses	Total
	<i>(in million Baht)</i>					
Export sales	54	47,440	47,494	41	43,370	43,411
Local sales	9,155	145,497	154,652	8,406	214,269	222,675
Eliminations	-	-	(65,696)	-	-	(75,597)
Total	9,209	192,937	136,450	8,447	257,639	190,489

The Company has no revenue from promoted business.

28 Other income

	Consolidated financial statements		Separate financial statements	
	2020	2019	2020	2019
	<i>(in million Baht)</i>			
Interest income	157	158	263	150
Fee for land utilisation and management fee for NGV service station	46	30	45	26
Management service fee for subsidiaries	-	-	108	97
Others	330	307	95	102
Total	533	495	511	375

29 Selling expenses

	Consolidated financial statements		Separate financial statements	
	2020	2019	2020	2019
	<i>(in million Baht)</i>			
Personnel	1,131	1,264	553	593
Depreciation and amortisation	1,315	932	1,241	852
Advertising	453	503	333	364
Distribution	367	503	292	405
Rental	83	351	51	317
Others	911	980	615	615
Total	4,260	4,533	3,085	3,146

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30 Administrative expenses

	Consolidated financial statements		Separate financial statements	
	2020	2019	2020	2019
	<i>(in million Baht)</i>			
Personnel	1,353	1,391	809	849
Depreciation and amortisation	336	280	235	208
Advertising	67	136	66	135
Professional and consultant fees	284	327	139	150
Others	841	947	327	535
Total	2,881	3,081	1,576	1,877

31 Employee benefit expenses

	Consolidated financial statements		Separate financial statements	
	2020	2019	2020	2019
	<i>(in million Baht)</i>			
Wages and salaries	2,220	2,415	1,300	1,262
Defined contribution plans	124	130	103	99
Pension	221	334	219	320
Others	837	730	543	455
Total	3,402	3,609	2,165	2,136

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	
	2020	2019	2020	2019
	<i>(in million Baht)</i>			
<i>Included in cost of sales of goods and rendering of services:</i>				
Changes in inventories of finished goods and work in progress	844	636	777	382
Raw materials and consumables used	75,074	105,824	65,723	97,939
Tax expenses and oil fuel fund	27,529	30,471	27,529	30,471
Depreciation	4,704	3,664	3,647	2,717
Reversal of loss on decline in value of inventories	(5)	(706)	-	(689)
<i>Included in selling expenses:</i>				
Depreciation	1,016	638	942	559
<i>Included in administrative expenses:</i>				
Depreciation	233	176	167	138

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33 Finance costs

	Note	Consolidated financial statements		Separate financial statements	
		2020	2019	2020	2019
<i>(in million Baht)</i>					
Interest expense					
Financial institutions		1,034	904	184	268
Debentures		1,017	935	1,017	935
Lease liabilities		201	-	176	-
Total interest expense		2,252	1,839	1,377	1,203
Amortisation of transaction costs capitalised		51	53	12	13
Others finance costs		40	5	1	2
		2,343	1,897	1,390	1,218
<i>Less</i> Amount included in the cost of qualifying assets:					
- Property, plant and equipment under construction	14	(374)	(196)	(360)	(188)
Net		1,969	1,701	1,030	1,030

34 Income tax

	Consolidated financial statements		Separate financial statements	
	2020	2019	2020	2019
<i>(in million Baht)</i>				
Current tax expense				
Current year	231	332	-	215
Over provided in prior years	(42)	(8)	(27)	(14)
	189	324	(27)	201
Deferred tax expense				
Movements in temporary differences	(1,778)	(256)	(1,736)	(228)
	(1,778)	(256)	(1,736)	(228)
Total tax expense (income)	(1,589)	68	(1,763)	(27)

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	Consolidated financial statements		Separate financial statements	
	2020	2019	2020	2019
	<i>(in million Baht)</i>			
Reconciliation of effective tax rate				
Profit (loss) before income tax expense	(7,359)	2,556	(11,603)	1,063
Corporate income tax rate (%)	20.00	20.00	20.00	20.00
Profit (loss) before income tax using the Thai corporation tax rate	(1,472)	511	(2,321)	212
Effect of difference tax rates in foreign jurisdictions	(47)	(4)	-	-
Income not subject to tax / Expenses that are deductible at a greater amount	(647)	(717)	(233)	(266)
Expenses not deductible / Other adjustments	435	92	818	41
Current year losses for which no deferred tax assets was recognised	184	197	-	-
Over provided in prior years	(42)	(8)	(27)	(14)
Others	-	(3)	-	-
Total	(1,589)	68	(1,763)	(27)
Tax rate (%)	(21.59)	2.66	(15.19)	(2.54)

	Consolidated financial statements			
	Assets		Liabilities	
Deferred tax	2020	2019	2020	2019
At 31 December	<i>(in million Baht)</i>			
Total	3,074	1,187	(888)	(675)
Set off of tax	(93)	(66)	93	66
Net deferred tax assets (liabilities)	2,981	1,121	795	(609)

	Separate financial statements			
	Assets		Liabilities	
Deferred tax	2020	2019	2020	2019
At 31 December	<i>(in million Baht)</i>			
Total	2,952	1,122	(22)	(52)
Set off of tax	(22)	(52)	22	52
Net deferred tax assets	2,930	1,070	-	-

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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 2020	Change of accounting policies (note 3)	At 1 January 2020 - restated	Profit/loss (in million Baht)	Other comprehensive income	Acquisition through business combinations (note 6)	Exchange differences	At 31 December 2020
Deferred tax assets								
Loss from impairment of assets	490	117	607	467	-	-	-	1,074
Property, plant and equipment	77	-	77	21	-	59	1	158
Provisions for employee benefits	514	-	514	24	(4)	-	-	534
Loss carry forward	33	-	33	1,188	-	-	1	1,222
Others	73	7	80	5	-	-	1	86
Total	1,187	124	1,311	1,705	(4)	59	3	3,074
Deferred tax liabilities								
Property, plant and equipment	(153)	-	(153)	76	-	(8)	2	(83)
Intangible assets	(506)	-	(506)	6	-	(260)	(20)	(780)
Leasehold rights	(1)	-	(1)	-	-	-	-	(1)
Others	(15)	-	(15)	(9)	-	-	-	(24)
Total	(675)	-	(675)	73	-	(268)	(18)	(888)
Net	512	124	636	1,778	(4)	(209)	(15)	2,186

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	Consolidated financial statement					
	At 1 January 2019	(Charged)/Credited to:	Other comprehensive income	Acquisition through business combinations	Exchange differences	At 31 December 2019
		Profit/loss	<i>(in million Baht)</i>			
Deferred tax assets						
Loss from impairment of assets	484	6	-	-	-	490
Property, plant and equipment	90	(13)	-	-	-	77
Provisions for employee benefits	408	56	50	-	-	514
Loss carry forward	27	6	-	-	-	33
Others	54	19	-	-	-	73
Total	1,063	74	50	-	-	1,187
Deferred tax liabilities						
Property, plant and equipment	(233)	81	-	-	(1)	(153)
Intangible assets	(359)	6	-	(179)	26	(506)
Leasehold rights	(1)	-	-	-	-	(1)
Others	(110)	95	-	-	-	(15)
Total	(703)	182	-	(179)	25	(675)
Net	360	256	50	(179)	25	512

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	Separate financial statements				Separate financial statements			
	At 1 January 2020	Change of accounting policies (note 3)	At 1 January 2020 - restated	(Charged)/Credited to: Other comprehensive income (in million Baht)	At 31 December 2020	At 1 January 2019	(Charged)/Credited to: Other comprehensive income (in million Baht)	At 31 December 2019
Deferred tax assets								
Loss from impairment of assets	490	117	607	467	1,074	484	6	490
Property, plant and equipment	70	-	70	20	90	85	(15)	70
Provisions for employee benefits	499	-	499	9	508	397	52	499
Loss carry forward	-	-	-	1,197	1,197	-	-	-
Others	63	7	70	13	83	51	12	63
Total	1,122	124	1,246	1,706	2,952	1,017	55	1,122
Deferred tax liabilities								
Property, plant and equipment	(51)	-	(51)	30	(21)	(128)	77	(51)
Inventories	-	-	-	-	-	(96)	96	-
Leasehold rights	(1)	-	(1)	-	(1)	(1)	-	(1)
Total	(52)	-	(52)	30	(22)	(225)	173	(52)
Net	1,070	124	1,194	1,736	2,930	792	228	1,070

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35 Earnings per share

	Consolidated financial statements		Separate financial statements	
	2020	2019	2020	2019
	<i>(in million Baht / million shares)</i>			
Profit (loss) for the period attributable to ordinary shareholders of the Company	(6,967)	1,732	(9,840)	1,090
Less Cumulative coupon payment for the period on perpetual subordinated debentures	(501)	(103)	(501)	(103)
Profit (loss) for calculating earnings per share	(7,468)	1,629	(10,341)	987
Number of ordinary shares outstanding	1,377	1,377	1,377	1,377
Effect of treasury shares	(19)	(1)	(19)	(1)
Weighted average number of ordinary shares outstanding	1,358	1,376	1,358	1,376
Earnings (loss) per share (basic) <i>(in Baht)</i>	(5.50)	1.18	(7.62)	0.72

36 Dividends

Dividends paid to shareholders are as follows:

	Approval Date	Dividend payment date	Baht per share <i>(Baht)</i>	Amount <i>(in million Baht)</i>
2020				
Annual dividend 2019	30 March 2020	24 April 2020	0.80	1,096
An interim dividend 2019	15 August 2019	10 September 2019	(0.50)	(689)
Dividend payment during the year 2020			0.30	407
2019				
An interim dividend 2019	15 August 2019	10 September 2019	0.50	689
Annual dividend 2018	11 April 2019	24 April 2019	1.35	1,858
An interim dividend 2018	24 August 2018	19 September 2018	(0.85)	(1,170)
Dividend payment during the year 2019			1.00	1,377

37 Financial instruments

(a) Carrying amounts and fair values

The following table shows the carrying amounts and fair values of financial assets and financial liabilities, including their levels in the fair value hierarchy. It does not include fair value information for financial assets and financial liabilities measured at amortised cost if the carrying amount is a reasonable approximation of fair value.

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	Consolidated financial statements					Fair value			
	Carrying amount					Fair value			
	Fair value – applied hedge accounting	Fair value through profit or loss	Fair value through other comprehensive income	Amortised cost - net (in million Baht)	Total	Level 1	Level 2	Level 3	Total
At 31 December 2020									
Financial assets									
Equity and debts instruments	-	90	1,369	3	1,462	192	-	1,271	1,463
Other non-marketable equity instruments	-	-	234	-	234	-	-	234	234
Loan to (fixed interest rate)	-	-	-	1,266	1,266	-	1,437	-	1,437
Derivatives assets	-	56	-	-	56	-	56	-	56
Financial liabilities									
Loans from financial institutions (fixed interest rate)	-	-	-	2,571	2,571	-	2,720	-	2,720
Debentures	-	-	-	25,980	25,980	-	26,925	-	26,925
Derivatives liabilities	114	158	-	-	272	-	272	-	272
At 31 December 2020									
Financial assets									
Equity and debts instruments	-	-	-	3	3	-	-	3	3
Other non-marketable equity instruments	-	-	234	-	234	-	-	234	234
Loan to (fixed interest rate)	-	-	-	4,939	4,939	-	4,132	-	4,132
Derivatives assets	-	56	-	-	56	-	56	-	56
Financial liabilities									
Loans from financial institutions (fixed interest rate)	-	-	-	1,501	1,501	-	1,582	-	1,582
Debentures	-	-	-	25,980	25,980	-	26,925	-	26,925
Derivatives liabilities	-	158	-	-	158	-	158	-	158

Separate financial statements

	Consolidated financial statements					Fair value			
	Carrying amount					Fair value			
	Fair value – applied hedge accounting	Fair value through profit or loss	Fair value through other comprehensive income	Amortised cost - net (in million Baht)	Total	Level 1	Level 2	Level 3	Total
At 31 December 2020									
Financial assets									
Equity and debts instruments	-	-	-	3	3	-	-	3	3
Other non-marketable equity instruments	-	-	234	-	234	-	-	234	234
Loan to (fixed interest rate)	-	-	-	4,939	4,939	-	4,132	-	4,132
Derivatives assets	-	56	-	-	56	-	56	-	56
Financial liabilities									
Loans from financial institutions (fixed interest rate)	-	-	-	1,501	1,501	-	1,582	-	1,582
Debentures	-	-	-	25,980	25,980	-	26,925	-	26,925
Derivatives liabilities	-	158	-	-	158	-	158	-	158

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For the year ended 31 December 2020

	Carrying amount	Consolidated financial statements			
		Fair value			
		Level 1	Level 2	Level 3	Total
<i>(in million Baht)</i>					
31 December 2019					
<i>Financial assets and financial liabilities measured at fair value</i>					
<i>Financial assets</i>					
Equity securities available for sale	1,349	1,349	-	-	1,349
Cross currency and interest rate swap contracts	19	-	27	-	27
Loan to related parties (fixed interest rate)	1,036	-	1,340	-	1,340
<i>Financial liabilities</i>					
Debentures	20,985	-	22,859	-	22,859
Long-term loans (fixed interest rate)	2,496	-	2,695	-	2,695
Cross currency contracts	-	-	6	-	6
Interest rate swap contracts	-	-	65	-	65
Cross interest rate swap contracts	-	-	52	-	52
Crude and product oil price hedging contracts	-	-	28	-	28

	Carrying amount	Separate financial statements			
		Fair value			
		Level 1	Level 2	Level 3	Total
<i>(in million Baht)</i>					
31 December 2019					
<i>Financial assets and financial liabilities measured at fair value</i>					
<i>Financial assets</i>					
Cross currency and interest rate swap contracts	19	-	27	-	27
Loan to related parties (fixed interest rate)	5,791	-	5,854	-	5,854
<i>Financial liabilities</i>					
Debentures	20,985	-	22,859	-	22,859
Long-term loans (fixed interest rate)	1,801	-	1,892	-	1,892
Forward exchange contracts	-	-	13	-	13
Crude and product oil price hedging contracts	-	-	28	-	28

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.

Level 3 fair values for investments in non-marketable securities, the fair values are based on cost which considered as estimated fair values, except there are significant changes in their operations.

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(b) Movement of marketable equity securities

	Consolidated financial statements					
	At 1 January	Purchase	Disposal <i>(in million Baht)</i>	Fair value adjustment	Effect of change in exchange rate	At 31 December
Marketable equity securities						
2020						
Non-current financial assets						
Equity securities measured at - FVOCI	1,349	-	(1,131)	(69)	43	192
2019						
Other long-term investments						
Available-for-sale securities	1,432	17	(2)	5	(103)	1,349

During the year ended 31 December 2020, a subsidiary had sold most of its investment in Lithium Americas Corp. The objective is to comply with the Company's investment policy and to increase liquidity. The subsidiary recognised gain from sales of investment in equity instruments designated at fair value through other comprehensive income amounted to Baht 3,142 million in equity.

(c) Financial risk management policies

Risk management framework

The Group's board of directors has overall responsibility for the establishment and oversight of the Group's risk management framework. The board of directors has established the risk management committee, which is responsible for developing and monitoring the Group's risk management policies. The committee reports regularly to the board of directors on its activities.

The Group's risk management policies are established to identify and analyse the risks faced by the Group, to set appropriate risk limits and controls and to monitor risks and adherence to limits. Risk management policies and systems are reviewed regularly to reflect changes in market conditions and the Group's activities.

The Board of Directors' 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.

(c.1) Credit risk

Credit risk is the risk of financial loss to the Group if a customer or counterparty to a financial instrument fails to meet its contractual obligations, and arises principally from the Group's receivables from customers and loans to related parties of the Group.

(c.1.1) Trade accounts receivables

The Group's exposure to credit risk is influenced mainly by the individual characteristics of each customer. However, management also considers the factors that may influence the credit risk of its customer base, including the default risk associated with the industry and country in which customers operate.

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For the year ended 31 December 2020

The following table provides information about the exposure to credit risk and ECLs for trade accounts receivables and contract assets.

<i>At 31 December 2020</i>	Consolidated financial statements		Separate financial statements	
	Trade accounts receivables	Allowance for expected credit loss <i>(in million Baht)</i>	Trade accounts receivables	Allowance for expected credit loss
Within credit terms	4,365	5	2,351	-
Overdue:				
Less than 3 months	508	2	59	-
3-6 months	39	11	-	-
6-12 months	887	876	870	869
Over 12 months	40	25	20	14
Total	5,839	919	3,300	883
<i>Less allowance for expected credit loss</i>	<i>(919)</i>		<i>(883)</i>	
Net	4,920		2,417	

Loss rates are based on actual credit loss experience over the past 1 year. These rates are multiplied by scalar factors to reflect differences between economic conditions during the period over which the historical data has been collected, current conditions and the Group's view of economic conditions over the expected lives of the receivables.

During the year ended 31 December 2020, certain trade account receivable of the Group entered into rehabilitation process under supervision of the Central Bankruptcy Court. The Group set up additional allowance for impairment to reflect the credit risk of this account receivable.

<i>At 31 December 2019</i>	Consolidated financial statements <i>(in million Baht)</i>	Separate financial statements
Trade accounts receivables		
Within credit terms	8,678	6,420
Overdue:		
Less than 3 months	296	223
3-6 months	23	20
6-12 months	23	7
Over 12 months	32	18
	9,052	6,688
<i>Less allowance for doubtful accounts</i>	<i>(14)</i>	<i>(14)</i>
Net	9,038	6,674

The normal credit term granted by the Group ranges from 5 days to 105 days.

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<i>Movement of allowance for expected credit loss of trade accounts receivables and contract assets</i>	Note	Consolidated financial statements (in million Baht)	Separate financial statements
At 1 January 2020 – restated	3	51	29
Addition		895	890
Reversal		(2)	-
Effect of change in exchange rates		(25)	(25)
At 31 December 2020		919	894

(c.1.2) Loans to related parties and accrued interest.

The following table presents the exposure to credit risk for loans to related parties and accrued interest at amortised cost. It indicates whether assets measured at amortised cost were subject to a 12-month ECL or lifetime ECL allowance and, in the latter case, whether they were credit-impaired.

<i>Movement of allowance for expected credit loss</i>	12-months ECL (Stage 1)	Lifetime ECL- not credit-impaired (Stage 2)	Lifetime ECL- credit-impaired (Stage 3)	Total
<i>(in million Baht)</i>				
Consolidated financial statements				
<i>Loans to related parties and accrued interest</i>				
At 1 January 2020 – restated (<i>see note 3(a.2)</i>)	-	10	-	10
Net remeasurement of loss allowance	-	(10)	-	(10)
New financial assets acquired	-	8	-	8
Effect of change in exchange rates	-	(1)	-	(1)
At 31 December 2020	-	7	-	7
Separate financial statements				
<i>Loans to related parties and accrued interest</i>				
At 1 January 2020 – restated (<i>see note 3(a.2)</i>)	107	478	-	585
Net remeasurement of loss allowance	68	1,967	1,161	3,196
Transfer from Stage 1 to Stage 2	(44)	44	-	-
Transfer from Stage 2 to Stage 3	-	(478)	478	-
Financial assets repaid	(37)	-	(98)	(135)
New financial assets acquired	-	145	(130)	15
At 31 December 2020	94	2,156	1,411	3,661

(c.1.3) Cash and cash equivalent and derivatives

The Group's exposure to credit risk arising from cash and cash equivalents and derivative assets is limited because the counterparties are banks and financial institutions for which the Group considers to have low credit risk.

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(c.2) 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.

The following table are the remaining contractual maturities of financial liabilities at the reporting date. The amounts are gross and undiscounted and include contractual interest payments and exclude the impact of netting agreements.

<i>At 31 December 2020</i>	Consolidated financial statements				Total
	Carrying amount	Contractual cash flows			
		1 year or less	More than 1 years but less than 5 years	More than 5 years	
		<i>(in million Baht)</i>			
<i>Non-derivative financial liabilities</i>					
Trade payables	9,108	9,108	-	-	9,108
Contingent consideration	150	-	150	-	150
Loans from financial institutions	37,264	6,510	24,178	7,321	38,009
Lease liabilities	7,898	1,510	3,800	3,944	9,254
Debentures	25,980	2,500	8,500	15,000	26,000
	<u>80,400</u>	<u>19,628</u>	<u>36,628</u>	<u>26,265</u>	<u>82,521</u>
<i>Derivative financial liabilities</i>					
Interest rate swaps					
- Cash outflow	(103)	(68)	(172)	(88)	(328)
- Cash inflow	-	31	92	57	180
Cross currency swaps					
- Cash outflow	(10)	(50)	(133)	(140)	(323)
- Cash inflow	-	48	128	135	311
Forward exchange contracts					
- Cash outflow	(2)	(50)	-	-	(50)
- Cash inflow	-	41	-	-	41
Crude and product oil price hedging contract					
- Cash outflow	(156)	(149)	(55)	-	(204)
- Cash inflow	-	6	-	-	6
	<u>(272)</u>	<u>(191)</u>	<u>(140)</u>	<u>(36)</u>	<u>(367)</u>

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<i>At 31 December 2020</i>	Separate financial statements				Total
	Carrying amount	Contractual cash flows			
		1 year or less	More than 1 year but less than 5 years	More than 5 years	
		<i>(in million Baht)</i>			
Non-derivative financial liabilities					
Trade payables	6,800	6,800	-	-	6,800
Loans from financial institutions	5,759	425	5,342	-	5,767
Lease liabilities	7,191	1,452	3,271	3,688	8,411
Debentures	25,980	2,500	8,500	15,000	26,000
	<u>45,730</u>	<u>11,177</u>	<u>17,113</u>	<u>18,688</u>	<u>46,978</u>
Derivative financial liabilities					
Forward exchange contracts					
- Cash outflow	(2)	(8)	-	-	(8)
- Cash inflow	-	-	-	-	-
Crude and product oil price hedging contract					
- Cash outflow	(156)	(149)	(55)	-	(204)
- Cash inflow	-	6	-	-	6
	<u>(158)</u>	<u>(151)</u>	<u>(55)</u>	<u>-</u>	<u>(206)</u>

<i>At 31 December 2019</i>	Effective interest rate	Consolidated financial statements			Total
		Maturity period			
		Within 1 year	After 1 year but within 5 years	After 5 years	
	<i>(% per annum)</i>	<i>(in million Baht)</i>			
Financial Assets					
Non-current					
Loans receivable - related parties	4.5 - 8.0	-	1,036	-	1,036
Total		<u>-</u>	<u>1,036</u>	<u>-</u>	<u>1,036</u>
Financial Liabilities					
Current					
Loans payable - financial institutions	1.3 - 5.3	7,249	-	-	7,249
Debenture	2.1	3,000	-	-	3,000
Non-current					
Loans payable - financial institutions	1.3 - 5.3	-	17,851	1,956	19,807
Debenture	2.9 - 5.4	-	7,396	10,589	17,985
Total		<u>10,249</u>	<u>25,247</u>	<u>12,545</u>	<u>48,041</u>

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	Effective interest rate <i>(% per annum)</i>	Separate financial statements			Total
		Maturity period			
		Within 1 year	After 1 year but within 5 years <i>(in million Baht)</i>	After 5 years	
At 31 December 2019					
Financial Assets					
Non-current					
Loans receivable - Related parties	0.5 - 4.5	-	5,791	-	5,791
Total		<u>-</u>	<u>5,791</u>	<u>-</u>	<u>5,791</u>
Financial Liabilities					
Current					
Loans payable - Financial institutions	4.2 - 4.4	375	-	-	375
Debenture	2.1	3,000	-	-	3,000
Non-current					
Loans payable - Financial institutions	4.2 - 4.4	-	2,339	-	2,339
Debenture	3.0 - 5.4	-	7,396	10,589	17,985
Total		<u>3,375</u>	<u>9,735</u>	<u>10,589</u>	<u>23,699</u>

The cash inflows and cash outflows disclosed in the above table represent the contractual undiscounted cash flows relating to derivative financial liabilities held for risk management purposes and which are not usually closed out before contractual maturity. The disclosure shows net cash flow amounts for derivatives that are net cash-settled and gross cash inflow and outflow amounts for derivatives that have simultaneous gross cash settlement.

(c.3) Market risk

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 derivatives for speculative or trading purposes.

(c.3.1) Foreign currency risk

The Group is exposed to the transactions with foreign currency risk to the extent that there is a mismatch between the currencies in which sales, purchases, lendings and borrowings are denominated and the respective functional currencies of the Group. The functional currencies of the Group are primarily Thai Baht. The currencies in which these transactions are primarily denominated are US Dollars and Japanese Yen.

The Group primarily utilises forward exchange contracts with maturities of less than one year to hedge such financial liabilities denominated in foreign currencies. The forward exchange contracts entered into at the reporting date also relate to anticipated purchases of equipments, denominated in foreign currencies. These contracts are not designated as cash flow hedges. The Group's policy specifies the critical terms of the forward exchange contracts to align with the hedged item.

The Group primarily utilises cross currency swap contracts to hedge such financial liabilities denominated in foreign currencies. The cross currency swap contracts entered into at the reporting date also relate to borrowings denominated in foreign currencies. These contracts are designated as cash flow hedges.

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The Group determines the existence of an economic relationship between the hedging instrument and hedged item based on the currency, amount and timing of their respective cash flows. The Group assesses whether the derivative designated in each hedging relationship is effective in offsetting changes in cash flows of the hedged item using the hypothetical derivative method.

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<i>Exposure to foreign currency at 31 December 2020</i>	Consolidated financial statements			Separate financial statements				
	United states Dollars	Japanese Yen	Laos Kip	Total (in million Baht)	United states Dollars	Krone Norway	Australian Dollars	Total
Cash and cash equivalents	2,375	22	132	2,529	973	-	-	973
Trade and other receivables	336	-	-	336	344	-	-	344
Loan to related parties	248	-	-	248	-	1,033	-	1,033
Interest-bearing liabilities	(6,097)	(6,158)	-	(12,255)	(2,416)	-	-	(2,416)
Trade and other payables	(500)	(1)	(4)	(505)	(3,899)	-	(21)	(3,920)
Net statement of financial position exposure	(3,638)	(6,137)	128	(9,647)	(4,998)	1,033	(21)	(3,986)
Loans from financial institution designated as net investment hedge	-	978	-	978	-	-	-	-
Currency swaps contracts	287	-	-	287	-	-	-	-
Forward exchange purchase contracts	2,010	-	-	2,010	1,968	-	-	1,968
Forward exchange selling contracts	(252)	-	-	(252)	(252)	-	-	(252)
Net exposure	(1,593)	(5,159)	128	(6,624)	(3,282)	1,033	(21)	(2,270)

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Sensitivity analysis

A reasonably possible strengthening (weakening) of the Thai Baht against all other currencies at 31 December 2020 would have affected the measurement of financial instruments denominated in a foreign currency and affected equity and profit or loss by the amounts shown below. This analysis assumes that all other variables, in particular interest rates, remain constant.

Consolidated financial statements					
<i>At 31 December 2020</i>	Movement	Profit or loss before tax		Equity, net of tax	
		Strengthening	Weakening	Strengthening	Weakening
	(%)		(in thousand Baht)		
USD	5	134	(134)	-	-
JPY	2	(13)	13	-	-
NOK	5	(159)	159	-	-

Separate financial statement					
<i>At 31 December 2020</i>	Movement	Profit or loss before tax		Equity, net of tax	
		Strengthening	Weakening	Strengthening	Weakening
	(%)		(in thousand Baht)		
USD	5	250	(250)	-	-
NOK	5	(159)	159	-	-

(c.3.2) 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 loan interest rates are mainly float. The Group mitigates this risk by using interest rate swaps, to manage exposure to fluctuations in interest rates on specific borrowings.

The Group adopts a hedging policy to ensure that interest rate risk exposure is at an appropriate level. This is achieved partly by entering fixed-rate instruments and partly by borrowing at a floating rate and using interest rate swaps as hedges of the variability in cash flows attributable to movements in interest rates.

The Group determines the existence of a relationship between the hedging instrument and hedged item based on the reference interest rates, tenors, repricing dates and maturities and the notional or par amounts.

The Group assesses whether the derivative designated in each hedging relationship is expected to be effective in offsetting changes in cash flows of the hedged item using the hypothetical derivative method.

In these hedge relationships, the main sources of ineffectiveness are:

- the effect of the counterparty's and the Group's own credit risk on the fair value of the swaps, which is not reflected in the change in the fair value of the hedged cash flows attributable to the change in interest rates; and
- differences in repricing dates between the swaps and the borrowings.

Bangchak Corporation Public Company Limited and its Subsidiaries

Notes to the financial statements

For the year ended 31 December 2020

	Consolidated financial statements	Separate financial statements
	<i>(in million Baht)</i>	
<i>Exposure to interest rate risk at 31 December 2020</i>		
<i>Financial instruments with fixed interest rates</i>		
Financial assets	1,255	1,584
Financial liabilities	<u>(28,551)</u>	<u>(27,481)</u>
	<u>(27,296)</u>	<u>(25,897)</u>
<i>Financial instruments with variable interest rates</i>		
Financial liabilities	<u>(34,693)</u>	<u>(4,258)</u>
Interest rate swaps	<u>2,890</u>	<u>-</u>
	<u>(31,803)</u>	<u>(4,258)</u>

Fair value sensitivity analysis for fixed-rate instruments

The Group does not account for any fixed-rate financial assets or financial liabilities, at FVTPL, and the Group does not designate derivatives (interest rate swaps) as hedging instruments under a fair value hedge accounting model. Therefore, a change in interest rates at the reporting date would not affect profit or loss.

Cash flow sensitivity analysis for variable-rate instruments

A reasonable possible change of 0.25 % in interest rates at the reporting date would have increased (decreased) equity and profit or loss by the amounts shown below. This analysis assumes that all other variables, in particular foreign currency exchange rates, remain constant.

	Consolidated financial statements		Separate financial statements	
	Profit or loss		Profit or loss	
	0.25% increase in interest rate	0.25% decrease in interest rate	0.25% increase in interest rate	0.25% decrease in interest rate
<i>At 31 December 2020</i>				
Financial instruments with variable interest rate	<u>(51)</u>	<u>51</u>	<u>7</u>	<u>(7)</u>
Cash flow sensitivity (net)	<u>(51)</u>	<u>51</u>	<u>7</u>	<u>(7)</u>

(in million Baht)

Bangchak Corporation Public Company Limited and its Subsidiaries

Notes to the financial statements

For the year ended 31 December 2020

(c.4) Cash flow hedges

At 31 December 2020, the Group held the following financial instruments to hedge exposures to changes in foreign currency and interest rates.

<i>At 31 December 2020</i>	Consolidated financial statements		
	Less than 1 year	Maturity 1 - 5 years	More than 5 years
Foreign currency risk			
<i>Cross currency swaps</i>			
Net exposure (<i>in million Baht</i>)	48	128	135
Average THB:USD forward contracts rate	29.60	29.74	30.34
<i>Forward exchange contracts</i>			
Net exposure (<i>in million Baht</i>)	41	-	-
Average THB:USD forward contracts rate	30.29	-	-
Interest rate risk			
<i>Interest rate swaps</i>			
Net exposure (<i>in million Baht</i>)	31	92	57
Average fixed interest rate (%)	2.74	2.76	3.02

At 31 December 2020, cash flow hedge reserve in consolidated financial statement relating to foreign currency risk from loans from financial institution denominated in foreign currencies and interest rate risk from loans from financial institutions with variable interest rate are amounted to Baht 4 million and Baht 38 million, respectively.

The amounts relating to items designated as hedging instruments and hedge ineffectiveness were as follows.

	Consolidated financial statements (<i>in million Baht</i>)
Foreign currency risk	
<i>At 31 December 2020</i>	
Cross currency swaps – nominal amount	287
Carrying amount included in:	
- other current financial liabilities	1
- other non-current financial liabilities	9
Forward exchange contracts – nominal amount	41
Carrying amount included in:	
- other current financial liabilities	-
<i>For the year ended 31 December 2020</i>	
<i>Recognised in OCI</i>	
- changes in value of the hedging instrument	4
Interest rate risk	
<i>At 31 December 2020</i>	
Interest rate swaps – nominal amount	180
Carrying amount included in:	
- other current financial liabilities	25
- other non-current financial liabilities	78

Bangchak Corporation Public Company Limited and its Subsidiaries

Notes to the financial statements

For the year ended 31 December 2020

Consolidated financial statements (in million Baht)

For the year ended 31 December 2020

Recognised in OCI

- changes in value of the hedging instrument (38)

The following table provides a reconciliation by risk category of components of equity and analysis of OCI items, net of tax, resulting from cash flow hedge accounting.

Consolidated financial statements (in million Baht)

Balance at 1 January 2020	(80)
Cash flow hedges	
Changes in fair value:	
Foreign currency risk - Loans from financial institutions	4
Interest rate risk - Loans from financial institutions	(38)
Balance at 31 December 2020	(114)

(c.5) Net investment hedges

A foreign currency exposure arises from the Group's net investment in its Japanese subsidiary that has a Japanese Yen functional currency. The risk arises from the fluctuation in spot exchange rates between the Japanese Yen and the Thai Baht, which causes the amount of the net investment to vary.

The hedged risk in the net investment hedge is the risk of a weakening Japanese Yen against the Thai Baht that will result in a reduction in the carrying amount of the Group's net investment in the Japanese subsidiary.

The Group's net investment in its Japanese subsidiary is hedged by a Japanese Yen-denominated loans from financial institutions, which mitigates the foreign currency risk arising from the subsidiary's net assets. The loan is designated as a hedging instrument for the changes in the value of the net investment that is attributable to changes in the THB/JPY spot rate.

To assess hedge effectiveness, the Group determines the economic relationship between the hedging instrument and the hedged item by comparing changes in the carrying amount of the debt that is attributable to a change in the spot rate with changes in the investment in the foreign operation due to movements in the spot rate (the offset method). The Group's policy is to hedge the net investment only to the extent of the debt principal.

At 31 December 2020, foreign currency translation reserve related to Japanese Yen are amounted to Baht 52 million. Net investment risk from foreign exchange - denominated debt (JPY) - nominal amount are amounted to Baht 1,017 million and changes in value of the hedging instrument recognised in OCI for the year ended 31 December 2020 are amounted to Baht 52 million.

Capital Management

The Board of Directors' 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.

Bangchak Corporation Public Company Limited and its Subsidiaries

Notes to the financial statements

For the year ended 31 December 2020

38 Commitments with non-related parties

	Consolidated financial statements		Separate financial statements	
	2020	2019	2020	2019
	<i>(in million Baht)</i>			
Capital commitment				
Construction projects	4,090	1,521	391	1,091
Total	4,090	1,521	391	1,091
Other commitment				
Bank guarantees	150	121	68	28
Total	150	121	68	28
Future minimum lease payments under non-cancellable operating leases At 31 December 2019			Consolidated financial statements	Separate financial statements
			<i>(in million Baht)</i>	
Within one year			1,113	1,089
After one year but within five years			2,832	2,719
After five years			3,490	3,285
Total			7,435	7,093

39 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 totalling Baht 1 million. Currently, the case is under consideration of the Supreme Court.

40 Events after the reporting period

As disclosed in note 5, the Group has elected to apply accounting guidance on temporary accounting relief measures for additional accounting options in response to impact from the situation of coronavirus pandemic (COVID-19). The guidance expired on 31 December 2020. The COVID-19 pandemic continued subsequent to the expiration of the guidance as increasingly affected cases were found and spread all over Thailand.

As the situation is highly uncertain and fluid, it is currently not possible to determine the impact of the continued pandemic, government measures and roll out of the vaccination on the business of the Group. Management is closely monitoring the situation and managing to lessen the impact as much as possible.

At the Board of Directors' meeting held on 18 February 2021, the Board approved to submit for approval at the Annual General Meeting of the Shareholders, a full year 2020 dividend payment at the rate of Baht 0.40 per share 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 8 April 2021.

Bangchak Corporation Public Company Limited and its Subsidiaries

Notes to the financial statements

For the year ended 31 December 2020

At the Board of Directors' meeting of the subsidiary held on 17 February 2021, the Board of subsidiary approved to submit for approval at the Annual General Meeting of the Shareholders, a full year 2021 dividend payment at the rate of Baht 0.33 per share, of which Baht 0.16 per share the subsidiary was paid as an interim dividend. Thus, the remaining dividend will be at the rate of Baht 0.17 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 7 April 2021.

Part 4 Certification of Information and Data Accuracy for Submitting 56-1 One Report

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

1. The financial statements and data summarized in annual registration statement / annual report show essentially accurate information and data about its financial standing, performance, and cash flow of Bangchak and its subsidiaries.

2. It has put in place a good information and data disclosure system to ensure that it discloses essential details about itself and its subsidiaries completely and accurately, while ensuring due compliance.

3. It has put in place a good internal control system and ensured due compliance with such system. Bangchak has provided internal control system assessment details as of December 31st, 2020, to the external auditor and the Audit Committee, including defects and key changes in the internal control system together with wrongdoing potentially affecting the preparation of the financial reports for itself and its subsidiaries.

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

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

Authorized person	Position	Signature
Ms. Pakawadee Junrayapes	Executive Vice President Corporate Compliance and Company Secretary	<u>(Signed) Pakawadee Junrayapes</u>

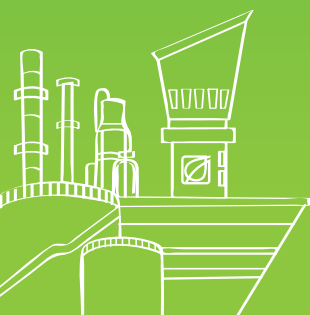
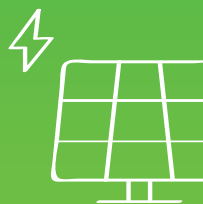


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Profiles of Directors, Executives, Head of finance and accounting, Accounting Supervisor and Company Secretary

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Profiles of subsidiaries' directors

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Attachment 3

Details of Head of Internal Audit and Head of Compliance Department

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Attachment 4

Review of Business Asset and Asset Revaluation

Profiles of Directors, Executives, Head of finance and accounting, Accounting Supervisor and Company Secretary

The Board of Directors

Mr. Pichai Chunhavajira

Chairperson of the Board and Director with Authorized Signature (Independent Director)

(Started on April 24, 2012 and Independent director since June 1, 2017)

- Age 71
- Education / Training
 - Master of Business Administration, Indiana University of Pennsylvania, USA
 - Bachelor of Business Administration (Accounting), Thammasat University
 - Honorary Ph.D. (Accounting), Thammasat University
 - Honorary Ph.D. (Financial Management), Mahasarakham University
 - Honorary Ph.D. (Financial Management), Sripatum University
 - Public and Private Joint Program, Class 13, The National Defence College
 - Certified Auditor, Federation of Accounting Professions
 - Director Accreditation Program (DAP49/2006), Thai Institute of Directors (IOD)
 - Director Certification Program (DCP143/2011), Thai Institute of Directors (IOD)
 - Top Executive Program, Class 5, Capital Market Academy (CMA), Stock Exchange of Thailand
- Experience (5 years past experiences)
 - 2012 - Present : Chairperson of the Board Bangchak Public Company Limited
 - 2014 - 2017 : Member of Board, Bank of Thailand
 - 2001 - 2013 : Director, PTT Exploration and Production Public Company Limited
- Other directorship positions / other positions at present
 - Other listed companies
 - o Chairman, BCPG Public Company Limited
 - Non-listed companies
 - o Chairman, BBGI Public Company Limited
 - o President, Thailand Boxing Association
 - o Vice President, National Olympic Committee of Thailand
 - o Executive Committee Member, The International Boxing Association (AIBA), Asian Zone
- Shareholding None (both directly and indirectly held) (As of December 31, 2020)
- Familial relationship between directors and executives : None
- Criminal records on violation of securities and futures contract laws : None

Mr. Surin Chiravisit

Vice Chairperson and Director with Authorized Signature (Started on April 8, 2010)

- Age 73
- 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
 - Certificate, National Defence Course (NDC40), The 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
 - 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)
 - 2008 : Senior Consultant, Amata Corporation Public Company Limited
 - 2006 - Retirement : Secretary-General, Social Security Office
- Other directorship positions / other positions at present
 - Other listed companies
 - None -
 - Non-listed companies
 - o Director, BBGI Public Company Limited
 - o Director, National Reform Society
- Shareholding in the Company : None (both directly and indirectly held) (As of December 31, 2020)
- Familial relationship between directors and executives : None
- Criminal records on violation of securities and futures contract laws : None

Mr. Suthep Wongvorazathe

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

- Age 72
- 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)
 - 2019 : Director, HSH-Siam Chaophraya Holdings Company Limited
 - 2003 - 2016 : Chairman of Audit Committee and Independent Director, Chumporn Palm Oil Industry Public Company Limited
 - 2010 - 2011 : Chairman of the Executive Board, Export-Import Bank of Thailand
- Other directorship positions / other positions at present
 - Other listed companies
 - o Chairman, Khonburi Sugar Public Company Limited
 - o Chairman, Seamico Securities Public Limited Company
 - o Chairman, M.K. Real Estate Development Public Company Limited
 - o Chairman of the Nomination Committee OKEA ASA - Oslo Stock Exchange (OSE) Non-listed companies
 - o Chairman of management committee, Krungthai Zmico Securities Company Limited
 - o Director, Asia Kangnam Company Limited
 - o Director, New Corp Company Limited
 - o Director, Buntudthong Pattana Company Limited
 - o Director, The Mall Group Company Limited
 - o Director, The Mall Shopping Complex Company Limited
- Shareholding in the Company : None (both directly and indirectly held) (As of December 31, 2020)
- 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)

Chairperson of the Corporate Governance Committee

- Age 70
- Education / Training
 - Bachelor of Business Administration (Management), Sripatum University
 - Chulachomklao Royal Military Academy, Class 22
 - Armed Forces Academies Preparatory School, Class 11
 - Vajiravudh College
- Experience (5 years past experiences)
 - 2015 : Petroleum Committee, Department of Mineral Fuels, Ministry of Energy
 - 2014 : Member, the National Legislative Assembly
 - 2010 : Director, Industrial Estate Authority of Thailand
 - : Judge, Military Supreme Court
 - : Royal Guard on Special Assignments
 - : Chairman of the Advisory Board, Royal Thai Army
- Other directorship positions / other positions at present
 - Other listed companies
 - None -
 - Non-listed companies
 - o Director, Five Provinces Bordering Forest Preservation Foundation
 - o Assistant Treasurer, National Olympic Committee of Thailand
- Shareholding in the Company : None (both directly and indirectly held) (As of December 31, 2020)
- 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 63
- 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)
 - Executive Program in Politics and Governance in Democratic Systems, Class 22, King Prajadhipok's Institute
 - Ethical Leadership Program (ELP) Thai Institute of Directors (IOD)
- Experience (5 years past experiences)
 - 2016 : Member of the National Legislative Assembly
 - : Commander-in-Chief, Royal Thai Fleet
 - 2015 : Deputy Chief of Staff, Royal Thai Navy
 - 2014 : Commander, 1st Naval Area Command
 - 2013 : Commander, Patrol Squadron, Royal Thai Fleet
 - 2011 : Academic Dean, Academic Branch Royal Thai Naval Academy
- Other directorship positions / other positions at present
 - Other listed companies
 - o Limited Director, Eastern Water Resources Development and Management Public Company Limited
 - Non-listed companies
 - o Director, The War Veterans Council of Thailand
- Shareholding in the Company : None (both directly and indirectly held) (As of December 31, 2020)
- Familial relationship between directors and executives : None
- Criminal records on violation of securities and futures contract laws : None

Gen. Thammanoon Withee

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

- Age 59
- Education / Training
 - Master of Public Administration Program (MPA), Burapha University
 - Bachelor of Science, Chulachomkhalo Royal Military Academy, Class 33
 - 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)
 - Sport Military Program, Class 31
 - Army Command and General Staff College, Class 73, Royal Thai Army
 - Develop Resource Management for The National Defense, Class 7
 - Certificate, National Defence Course (NDC58), The National Defence College
- Experience (5 years past experiences)
 - 2020 - Present : Assistant Commander in Chief, Royal Thai Army
 - 2017 : 1st Corps Commander
 - 2016 : 1st Army Area Deputy Commander
 - 2016 : Member of the National Legislative Assembly
 - 2015 : Commanding General, 9th Infantry Division
 - 2014 : Specialist, Royal Thai Army
 - 2013 : Deputy Commanding General, 2nd Infantry Division, The King's Guard
 - 2011 : Regimental Commanding Officer 12th Infantry Division, The King's Guard
 - 2010 : Director of Royal Thai Survey, School Army Region 1
 - 2008 : Deputy Regimental Commanding Officer 12th Infantry Division, The King's Guard
- Other directorship positions / other positions at present
 - Other listed companies
 - None -
 - Non-listed companies
 - o Assistant Commander in Chief, Royal Thai Army
- Shareholding in the Company: None (both directly and indirectly held) (As of December 31, 2020)
- 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 68
- Education / Training
 - Master of Political Science, New Mexico University, USA
 - Bachelor of Political Science, Thammasat University
 - Top Executive program, Capital Market Academy, Class 15
 - Advance Security Management Program (3/2011), The National Defence College
 - The Joint State - Private Sector Course (19/2006), The National Defence College
 - Advanced Police Administration Program, Class 17, Institute of Police Administration Development
 - Conference concerning Narcotics and launder money Control in other 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)
 - Certificate, Executive Program in Energy Literacy for a Sustainable Future, Class 7, Thailand Energy Academy (TEA)
 - Top Executive Program, Class 15, Capital Market Academy (CMA), Stock Exchange of Thailand
- Experience (5 years past experiences)
 - 2011 : Commissioner , Narcotics Suppression Bureau
 - 2010 : Inspector-General (Inspection Division 8)
- Other directorship positions / other positions at present
 - Other listed companies
 - None -
 - Non-listed companies
 - o Vice President and Secretary, Thailand Boxing Association
 - o Vice Chairman, Asian Boxing Confederation
 - o Youth Commission,, International Boxing Association (AIBA)
- Shareholding in the Company : None (both directly and indirectly held) (As of December 31, 2020)
- 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)

Chairperson of the Audit Committee

- Age 60
- Education / Training
 - Doctor of Philosophy (Ph.D.) (Economics) Public Finance and Policy, Carleton University, Canada
 - Master of International Affairs (International Economics), Columbia University, USA
 - Bachelor of 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)
 - Successful Formulation&Execution of Strategy (SFE19/2013) Thai Institute of Directors (IOD)
 - Executive Creative Economy Training (EXCET)
 - Chief Information Officer Program, Electronic Government Agency (EGA)
 - Top Executive Program in Commerce and Trade (TEPCoT), University of the Thai Chamber of Commerce
 - ASEAN Executive Management Programme
 - Business Development and Industry Investment for Executive, Institute of Business and Industrial Development (IBID)
- Experience (5 years past experiences)
 - Present : Chairman, Bank of Thailand
 - 2020 : Director, Electricity Generating Authority of Thailand
: Chairman, Government Pawnshop Board
 - 2018 – 2020 : Permanent Secretary, Ministry of Social Development and Human Security
 - 2015 - 2018 : Secretary General, Office of the National Economic and Social Development Board (NESDB)
 - 2009 - 2015 : Deputy Secretary General, Office of the National Economic and Social Development Board (NESDB)
- Other directorship positions / other positions at present
 - Other listed companies
 - None -
 - Non-listed companies
 - o Chairman, Bank of Thailand
 - o Chairman, Stone One Public Company Limited
- Shareholding in the Company : None (Both directly and indirectly held) (As of December 31, 2020)
- 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)

Chairperson of the Nomination and Remuneration Committee

- Age 66
- Education / Training
 - Master of Business Administration, Tarleton State University, USA
 - Bachelor of Business Administration, Chulalongkorn University
 - Bachelor of Business Administration (Accounting), Krirk University
 - Certificate of Insurance, College of Insurance, London, UK
 - Sasin Senior Executive Program (SEP13), Sasin Graduate Institute of Business Administration of Chulalongkorn University
 - Certificate of Completion CFO Certification Program, Federation of Accounting Professions
 - 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)
 - Top Executive Program, Class 14, Capital Market Academy (CMA), 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)
 - 2018 - 2019 : Director, Industrial Estate Authority of Thailand
 - 2017 - 2019 : Director, Siam Solar Power Public Company Limited
 - 2016 - 2019 : Director, Industrial Estate Authority of Thailand
 - 2015 - 2018 : Director, 10th Workmen's Compensation Fund Committee, Social Security Office
 - 2014 - 2015 : Senior Executive Vice President, Finance and Accounting, Thai Oil Public Company Limited
 - 2006 - 2013 : Executive Vice President, Corporate Accounting, PTT Public Company Limited
- Other directorship positions / other positions at present
 - Other listed companies
 - o Director, OKEA ASA - Oslo Stock Exchange (OSE)
 - o Director, TOA Paint (Thailand) Public Company Limited
 - Non-listed companies
 - o Director, Siamese Asset Public Company Limited
- Shareholding in the Company : None (both directly and indirectly held) (As of December 31, 2020)
- 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 56
- Education / Training
 - Bachelor of Laws, Thammasat University
 - Certificate, National Defence Course (NDC57), The National Defence College
 - Certificate, Public Law and Management, King Prajadhipok's Institute, Class 12/2013
 - 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)
 - 2019 - Present : Secretary-General to the Cabinet, The Secretariat of the Cabinet
 - 2019 : Member, National Legislative Assembly Coordination Committee
 - 2015 : Deputy Secretaries-General to the Cabinet
 - 2014 : Advisor of the Secretariat of the Cabinet
 - 2013 : Director of Bureau of Cabinet Submission Analysis
- Other directorship positions / other positions at present
 - Other listed companies
 - o Independent Director, Chairman of the Compliance Committee and Member of the Nomination and Remuneration Committee of Krung Thai Bank Public Company Limited
 - Non-listed companies
 - o Honorable Executive Director of the Judicial Administration (Administration and Management), Court of Justice
 - o Committee member of the Political Reform of the Thailand's National Reform ,Office of the National Economic and Social Development Council
 - o Council of State No.7 (Natural Resources and Environment Law), Office of the Council of State
 - o National Science and Technology Development Committee, National Science and Technology Development Agency
 - o Honorable Special Investigation Committee (Law), Department of Special Investigation, Ministry of Justice
 - o Secretary-General to the Cabinet, The Secretariat of the Cabinet
- Shareholding in the Company : None (both directly and indirectly held) (As of December 31, 2020)
- Familial relationship between directors and executives : None
- Criminal records on violation of securities and futures contract laws : None

Mr. Suthi Sukosol

Director (Started on July 26, 2019)

- Age 59
- Education / Training
 - Master of Arts (M.A.) in Public Policy and Administration, University of Wisconsin- Madison, Wisconsin, USA
 - Bachelor of Political Science (1st Class Honours) in Politics and Government, Thammasat University
 - Top Administrator Program, Class 41, Interior College, Prince Damrong Rajanupab Institute of Research and Development
 - Foreign Affairs Executive Programme, Class 2, Devawongse Varopakarn Institute of Foreign Affairs
 - Certificate, National Defence Course (NDC57), The National Defence College
 - Chief Human Resource Officer Program, Netherlands
- Experience (5 years past experiences)
 - 2017 - 2019 : Director General, Department of Skill Development, Ministry of Labour
 - 2016 - 2017 : Inspectors-General, Office of the Permanent Secretary, Ministry of Labour
 - 2015 - 2016 : Assistant Permanent Secretary, Office of the Permanent Secretary, Ministry of Labour
- Other directorship positions / other positions at present
 - Other listed companies
 - None -
 - Non-listed companies
 - o Permanent Secretary, Ministry of Labour
- Shareholding in the Company : None (both directly and indirectly held) (As of December 31, 2020)
- 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 49
- 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 (CUMMU)
 - Office Of Insurance Commission (OIC) (2012), OIC Advanced Insurance Institute (OIC All)
 - Top Executive Program in Commerce and Trade (TEPCoT2011), University of the Thai Chamber of Commerce
 - TLCA Executive Development Program (EDP2009), Thai Listed Companies Association
 - Executive Program for Senior Management, Fiscal Policy Research Institution Foundation
 - Directors Certification Program (DCP93/2007), Thai Institute of Directors Association
 - Thailand Insurance Super Leadership Program (1/2020), OIC Advanced Insurance Institute (OIC All)
 - Capital Market Academy Leadership Program (28/2020), Capital Market Academy
- Experience (5 years past experiences)
 - 2018 - 2019 : Director, The Stock Exchange of Thailand
 - 2010 - 2013 : Director, Krungthai AXA Life Insurance Public Company Limited
: Senior Executive Vice President, Krungthai Bank Public Company Limited
 - 2008 - 2013 : Director, Krungthai Panich Insurance Public Company Limited
: Director, National ITMX Company Limited
- Other directorship positions / other positions at present
 - Other listed companies
 - o Advisor to Chief Executive Office, Kiatnakin Phatra Financial Group
 - o Director, ICC International Public Company Limited
 - o Director, Aksorn Education Public Company Limited
 - Non-listed companies
 - o Director and Audit Committee Member, Arkitektura Company Limited
 - o Standard and Regulation Subcommissioner of the Electronic Transactions Commission
 - o Strategy and Promotion Subcommissioner of the Electronic Transactions Commission
 - o Qualified member, Computer Science of the Electronic Transactions Commission
 - o Advisor to the Working Group to promote liquidity in doing business with electronic tax documents
 - o Advisor, Digital Council of Thailand
 - o Advisor, Technology Subcommittee, Securities and Exchange Commission
 - o Public Private Partnership (PPP) Policy Committee, State Enterprise Policy Office (SEPO.)
 - o State Enterprise Development Assessment Subcommittee for Digital transformation and Knowledge and Innovation management
 - o Qualified member, The Capital Market Development Fund Committee
 - o Qualified member, Committee for the Protection of Credit Information
 - o Director, A Member of the Big Data Driven Board, Ministry of Finance
 - o Director, In the Revenue Department drive the committee into digital revenue, The Revenue Department
 - o Director, National e-Payment Committee, Office of the Prime Minister
 - o Advisor, Identity provider (IdP) Committee, Ministry of Digital Economy and Society
- Shareholding in the Company : None (Both directly and indirectly held) (As of December 31, 2020)
- 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 54
- Education / Training
 - Doctor of Philosophy (Ph.D.) in Energy Management and Policy, University of Pennsylvania, USA
 - Master of Energy Engineering, George Washington University, USA
 - Bachelor of Engineering (Civil), Chulalongkorn University
- Experience (5 years past experiences)
 - 2020 : Deputy Permanent Secretary, Office of the Permanent Secretary
: Director-General, Department of Alternative Energy Development and Efficiency, Ministry of Energy
 - 2019 : 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
- Other directorship positions / other positions at present
 - Other listed companies
 - None -
 - Non-listed companies
 - o Deputy Permanent Secretary, Office of the Permanent Secretary, Ministry of Energy
 - o Director-General, Department of Alternative Energy Development and Efficiency
- Shareholding in the Company : None (both directly and indirectly held) (As of December 31, 2020)
- Familial relationship between directors and executives : None
- Criminal records on violation of securities and futures contract laws : None

Executive Director

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 55
- Education / Training
 - Master of Engineering, Asian Institute of Technology (AIT)
 - Master of Business Administration (MBA), Thammasat University
 - Bachelor of Engineering (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 (NDC58), The National Defence College
 - Certificate, Executive Program in Energy Literacy for a Sustainable Future, Class 10, Thailand Energy Academy (TEA)
 - Role of the Chairman Program (RCP46/2020), Thai Institute of Directors (IOD)
- Experience (5 years past experiences)
 - 2015 - Present : President and Chief Executive Officer, The Bangchak Corporation
Public Company Limited
- Other directorship positions / other positions at present
 - Other listed companies
 - o Vice Chairman, BCPG Public Company Limited
 - o Chairman, OKEA ASA - Oslo Stock Exchange (OSE)
 - Non-listed companies
 - o Director, BBGI Public Company Limited
 - o Expert Member of Investment Committee, Government Pension Fund
 - o Director, Suan Kulab Witthayalai Alumnus Association Under the Royal Patronage of H.M. the King
 - o Vice Chairman, The Federation of Thai Industries and Chairman of The Institute of Research Development and Innovation for Industry
 - o Director of Thailand Management Association (TMA)
 - o Chairman of Executive Committee of Asian Institute of Technology (AIT)
 - o Chairman, Thai-Europe Business Council, The Federation of Thai Industries
 - o Advisory Board, The Petroleum and Petrochemical College, Chulalongkorn University
- Shareholding in the Company : 1,200,000 shares or 0.087150% directly held (As of December 31, 2020)
- Familial relationship between directors and executives : None
- Criminal records on violation of securities and futures contract laws : None

Mr. Chalermchai Udomranu

Senior Executive Advisor, Refinery Business Group

- Age 60
- Education / Training
 - Master of Business Administration (MBA), Thammasat University
 - Bachelor of Engineering (Electrical Engineering), 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 Diploma, Public Administration and Public Law, Class14/2015 King Prajadhipok's Institute
 - Leadership Succession Program (LSP6), Institute of Research and Development for Public Enterprises (IRDP)
 - Advanced Security Management Program (ASMP9), The Association National Defence College of Thailand
 - Certificate, Executive Program in Energy Literacy for a Sustainable Future, Class 14, Thailand Energy Academy (TEA)
 - Executive Development Program (EDP5), Thai Listed Companies Association (TLCA)
- Experience

Bangchak Corporation Public Company Limited

 - 2019 - Present : Senior Executive Advisor, Refinery Business Group
 - 2016 : Senior Executive Vice President, Refinery Business Unit
 - 2015 : Executive Vice President, Refinery Manufacturing Business
 - 2012 : Executive Vice President, Refinery Business
 - 2011 : Senior Vice President, Refinery Operation, Refinery Business
 - 2009 : Vice President, Refinery Operation, Refinery Business
 - 2005 : Vice President, Refinery Project
 - 2003 : Senior Manager, Refinery Project
 - 2001 : Senior Manager, Technical Service Division
 - 2000 : Senior Manager, Maintenance Service Division
 - 1997 : Manager, Maintenance Service Division
- Other directorship positions / Other positions at present
 - Other listed companies
 - None -
 - Non-listed companies
 - o Director, BCP Trading Pte. Ltd
- Shareholding in the Company : 1,865 shares or 0.000135% directly held (As of December 31, 2020)
- Familial relationship between directors and executives : None
- Criminal records on violation of securities and futures contract laws : None

Mr. Pongchai Chaichirawiwat

Senior Executive Advisor

- Age 60
- Education / Training
 - Master of Business Administration (MBA), Thammasat University
 - Master of Engineering, Asian Institute of Technology (AIT), Thailand
 - Bachelor of Engineering, Chulalongkorn University
 - Executive Development Program (EDP), Thai Listed Companies Association (TLCA)
 - Director Certification Program (DCP154/2011), Thai Institute of Directors (IOD)
 - Diploma, Senior Executive Program (SEP25/2012), Sasin Graduate Institute of Business Administration of Chulalongkorn University
 - Leadership Development Program (LDP0/2013), Thai Listed Companies Association (TLCA)
 - Advanced Diploma, Public Administration and Public Law, Class13/2014 King Prajadhipok's Institute
 - NIDA-Wharton Executive Leadership Program (7/2014), NIDA-Business School, Center for Business Innovation
 - Leading in a Disruptive World Program (LDW), Southeast Asia Center (SEAC), Stanford University Certificate, Executive Program in Energy Literacy for a Sustainable Future, Class 8, Thailand Energy Academy (TEA)
 - Top Executive Program, Class 28, Capital Market Academy (CMA), Stock Exchange of Thailand
- Experience

Bangchak Corporation Public Company Limited

 - 2020 : Senior Executive Advisor
 - 2018 : 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 Group
 - 2014 : Senior Executive Vice President, Marketing Business
 - 2011 : Executive Vice President, Renewable Energy Business, and Managing Director appointed to Bangchak Biofuel Company Limited
 - 2008 : Senior Vice President
(Managing Director appointed to Bangchak Biofuel Company Limited)
- Other directorship positions / Other positions at present
 - Other listed companies
 - None -
 - Non-listed companies
 - o Chairman, KSL Green Innovation Public Company Limited
 - o Chairman, Bangchak Biofuel Company Limited
 - o Chairman, BBGI Utility and Power Company Limited
 - o Director, BBGI Public Company Limited
 - o Director, Ubon Bio Ethanol Public Company Limited
 - o Director, Bangchak Bioethanol (Chachoengsao) Company Limited
 - o Director, Ubon Bio Gas Company Limited
 - o Director, Ubon Sunflower Company Limited
 - o Director, Ubon Bio Agricultural Company Limited
- Shareholding in the Company : 64,332 shares (44,332 shares; spouse 20,000 shares) or 0.004672% (As of December 31, 2020)
- 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 58
- Education / Training
 - Master of Business Administration (MBA), Thammasat University
 - Bachelor of Engineering, Kasetsart University
 - Stanford-SEAC Leading in a Disruptive World 4 (LDW4) The Stanford Center for Professional Development (SCPD), Stanford 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, Class 30, Capital Market Academy (CMA), Stock Exchange of Thailand
 - Top Executive Program in Commerce and Trade (TEPCoT11/2018), 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 Association National Defence College of Thailand
 - Thammasat Leadership Program (Class4), Thammasat University
 - Advanced Certificate Course in Public Administration and Law for Executives (Class12), King Prajadhipok' s Institute
 - Executive Development Program (EDP6), Thai Listed Companies Association (TLCA)
 - Energy Leadership Development for Senior Managers (Class4), Ministry of Energy
- Experience

Bangchak Corporation Public Company Limited

 - 2017 - Present : Chief Marketing Officer and Senior Executive Vice President, Marketing Business Group
 - 2016 : Senior Executive Vice President, Natural Resources and Business Development
 - 2014 : Senior Executive Vice President, Corporate Strategy and Business Development
 - 2013 : Executive Vice President, Business Development and Strategy
 - 2011 : Executive Vice President, Marketing Business, responsible for Retail Marketing, and Acting Vice President, Marketing Business Strategy and Planning
 - 2010 : Senior Vice President-Marketing Business Strategy and Planning, Marketing Business
- Other directorship positions / Other positions at present
 - Other listed companies
 - None -
 - Non-listed companies
 - o Director, Bangchak Green Net Company Limited
 - o Director, Bangchak Retail Company Limited
- Shareholding in the Company : 28,522 shares or 0.002071% directly held (As of December 31, 2020)
- 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 56
- Education / Training
 - Honorary Doctorate of Electrical Engineering, Rajamagala University of Technology Krungthep
 - Master of Engineering, Asian Institute of Technology (AIT)
 - Bachelor of Engineering, King Mongkut's Institute of Technology Ladkrabang (KMITL)
 - 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, Class10/2011 King Prajadhipok's Institute
 - Certificate, National Defence Course (NDC55), The National Defence College
 - Top Executive Program, Class 20, Capital Market Academy (CMA), Stock Exchange of Thailand
 - Certificate, Executive Program in Energy Literacy for a Sustainable Future, Class 11, Thailand Energy Academy (TEA)
 - Diploma, Executive Management with Business Development and Investment (IBID5), Institute of Business and Industrial Development
 - Advanced Security Management Program (ASMP), The Association National Defence College of Thailand
 - Certificate, Health Ambassador class 1, Chulabhorn Royal Academy
 - Digital Transformation for CEO class 1, Thansettakij
- 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
 - 2008 : Executive Vice President, Corporate Business Development
 - Others
 - 2004 : Executive Vice President, Finance and Strategy, NFC Fertilizer Public Company Limited
 - 1997 : Business Director, Air Liquid (Thailand) Company Limited
 - 1994 : Marketing Director, PTT Petrochemical Company Limited
 - 1988 : Commercial Manager, National Petrochemical Public Company Limited
- Other directorship positions / Other positions at present
 - Other listed companies
 - o President, BCPG Public Company Limited
 - Non-listed companies
 - o Director, Thai Digital Energy Development Company Limited
 - o Director, BCPG Indochina Company Limited
 - o Managing Director, NamSan 3A Power Sole Company Limited
 - o Managing Director, NamSan 3B Power Sole Company Limited
 - o Director, Huang Ming Japan Company Limited
 - o Director, BCPG Wind Cooperatief U.A.
 - o Director, PetroWind Energy Inc
 - o Director, Impact Energy Asia Development Ltd.
 - o Director, Star Phoenix Geothermal JV B.V.
 - o Director, Star Energy Group Holdings Pte. Ltd.
 - o Director, Star Energy Geothermal Pte Ltd.
 - o Director, Star Energy Geothermal Holdings (Salak – Darajat) B.V.
 - o Director, Star Energy Geothermal (Salak – Darajat) B.V.
- Shareholding in the Company : 95 shares or 0.000000% directly held
(As of December 31, 2020)
- 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 and Acting Executive Vice President Financial Controller

- Age 58
- Education / Training
 - Master of Business Administration, Steton School of Economics and Business Administration Mercer University, USA
 - Bachelor of Business Administration, 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, Class 12, Public Director Institute
 - Certificate, National Defence Course (NDC56), The National Defence College
 - CEDI BABSON Entrepreneurial Leadership Program, Babson College Wellesley, Massachusetts, USA
 - Top Executive Program, Class 23, Capital Market Academy (CMA), Stock Exchange of Thailand
 - Certificate, Program for Thai – Chinese Leadership Institute, Huachew Chalermprakiet University
 - Certificate, Program for Thammasat World Leadership Program (TWLP3)
 - Certificate, Thai Financial Reporting Standards 3 (Business Combination) (2019), EY Office Limited
 - Certificate, Thai Financial Reporting Standards 9 (Fundamental) (2019), Federation of Accounting Professions of Thailand
 - Financial Reporting Standards Program related to the operations of the group of companies (2020), KPMG Phoomchai Audit Company Limited
- 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 – 2018 : Commissioner of the Arbitration Committee
 - 2014 – 2017 : Commissioner, The Electronic Transactions Commission
 - 2012 - 2014 : Director, MCOT Public Company Limited
 - 2012 - 2014 : Director, Government Saving Bank
 - 2007 - 2009 : Vice President (Administration) and Chief Finance Officer, Dhanarak Asset Development Company Limited
- Other directorship positions / Other positions at present
 - Other listed companies
 - None -
 - Non-listed companies
 - o Director, BCPR Pte. Ltd.
 - o Director, BCPR Company Limited
 - o Director, Bangchak Biofuel Company Limited
 - o Director, BCP Energy International Pte. Ltd.
 - o Director, BCP Innovation Pte.Ltd.
 - o Director, BCP Trading Pte.Ltd
 - o Director, BCV Bio Based Company Limited
 - o Director, BCV Energy Company Limited
 - o Director, BCV Innovation Company Limited
 - o Director, BCV Partnership Company Limited
- Shareholding in the Company: None (both directly and indirectly held) (As of December 31, 2020)
- Familial relationship between directors and executives: None
- Criminal records on violation of securities and futures contract laws: None

Mr. Chokchai Atsawarangsalit

Senior Executive Vice President, Corporate Management and Organization Development

- Age 52
- Education / Training
 - Master of Business Administration, Kasetsart University
 - Bachelor of 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)
 - Executive Development Program (EDP), Thai Listed Companies Association (TLCA)
 - Energy Leadership Development for Senior Managers, Class6, Ministry of Energy
 - Executive Development Program 2011, Minister of Finance
 - Senior Executive Program (SEP26), 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 (LSP5), Institute of Research and Development for Public Enterprises (IRDP)
 - Leading in a Disruptive World Program (LDW), Southeast Asia Center (SEAC), Stanford University
 - Thammasat Leadership Program, Thammasat for Society (Class 12)
 - Certificate, National Defence Course (NDC63), The National Defence College
- Experience
 - Bangchak Corporation Public Company Limited
 - 2020 – Present : Senior Executive Vice President, Corporate Management and Organization Development
 - 2019 : Executive Vice President acting Senior Executive Vice President, Corporate Management and Organization Development
 - 2015 : Executive Vice President, Marketing Business and Oil Terminal
 - 2015 : Executive Vice President, Exploration and Production, Corporate Strategy and Business Development
 - 2014 : Senior Vice President, Exploration and Production, Corporate Strategy and Business Development
 - 2012 : Senior Vice President, Business Development, Corporate Business Development
 - 2009 : Vice President, Business Development, Corporate Business Development
 - 2007 : Vice President, Company Secretariat, and Company Secretary
 - Other directorship positions / Other positions at present
 - Other listed companies
 - None -
 - Non-listed companies
 - o Vice Chairman, Happiness Sharing Foundation
 - o Director, Fuel Pipeline Transportation Company Limited
 - Shareholding in the Company: 300 shares or 0.000022% (As of December 31, 2019)
 - Familial relationship between directors and executives: None
 - Criminal records on violation of securities and futures contract laws: None

Mr. Viboon Wongsakul

Senior Executive Vice President, Corporate Strategy and Business Development

- Age 53
- 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 Program (LDW), Southeast Asia Center (SEAC), Stanford University
 - 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
 - Director Certification Program (DCP294/2020), Thai Institute of Directors (IOD)
 - Certificate, National Defence Course (NDC61), The National Defence College
- Experience
 - Bangchak Corporation Public Company Limited
 - 2020 - Present : Senior Executive Vice President, Corporate Strategy and Business Development
 - 2019 : Executive Vice President acting Senior Executive Vice President, Corporate Strategic Planning and Sustainability Development Group, and appointed to Bangchak Retail Company Limited
 - 2018 : 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
 - o Director, Oam Suk Social Enterprise Company Limited
 - o Director, Happiness Sharing Foundation
- Shareholding in the Company: None (As of December 31, 2020)
- Familial relationship between directors and executives: None
- Criminal records on violation of securities and futures contract laws: None

Mr. Pativat Tivasasit

Senior Executive Vice President, Refinery Business Group

- Age 60
- Education / Training
 - Bachelor of Science (Chemical Technology), Chulalongkorn University
 - Executive Development Program (EDP), Thai Listed Companies Association (TLCA)
 - Advanced Diploma, Public Administration and Public Law, Class17/2018, King Prajadhipok's Institute
 - Advanced Security Management Program, Class 11/2019, Security Management Foundation
- Experience

Bangchak Corporation Public Company Limited

 - 2020 – Present : Senior Executive Vice President, Refinery Business Group
 - 2019 : Executive Vice President, Refinery Manufacturing Business acting Senior Executive Vice President, Refinery Business Unit
 - 2017 : 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
 - o Director, Bongkot Marine Service Co., Ltd
- Shareholding in the Company: 12,000 shares (spouse 12,000 shares) or 0.000872% (As of December 31, 2020)
- Familial relationship between directors and executives: None
- Criminal records on violation of securities and futures contract laws: None

Mr. Kittiphong Limsuwannarot

Senior Executive Vice President, appointed to BBGI Public Company Limited (Effective on 1st January 2021)

- Age 56
- Education / Training
 - Master of Business Administration (MBA), University of Dallas, Texas, USA
 - Bachelor of Science, Chemical Engineering, Chulalongkorn University
 - Director Certification Program (DCP191/2014), Thai Institute of Directors (IOD)
 - Top Executive Program in Commerce and Trade (TEPCoT13/2020), University of the Thai Chamber of Commerce
 - McKinsey Management Program (MMP) 2020, Thai Listed Companies Association (TLCA) & McKinsey
 - Thunderbird School of American Graduate School of International Management Arizona, USA (2004)
 - Esso Leading ship Program II, Malaysia (2002)
 - Esso Leading Change Program, Singapore (2001)
- Experience
 - Bangchak Corporation Public Company Limited
 - 2020 : Acting Senior Executive Vice President, appointed to BBGI Public Company Limited
 - 2020 : Managing Director, Bangchak Biofuel Company Limited
 - 2019 : Executive Vice President, appointed to BBGI Public Company Limited
 - Others
 - 2015 - 2020 : President Thai Bioplastics Industry Association : TBIA
 - 2015 - 2019 : Vice President – Downstream Market Development
PTT Global Chemical Public Company Limited
 - 2014 – 2018 : Managing Director, Solution Creation Co.,Ltd.
 - 2013 – 2015 : Vice President – Green Chemical Business
PTT Global Chemical Public Company Limited
 - 2007 – 2012 : Product manager, Global Polypropylene and Global Hydrocarbon Fluids
ExxonMobil Chemical, Texas, USA
 - 2002 – 2007 : Regional Manager, Sales Supply, ExxonMobil Chemical, Texas, Hongkong
- Other directorship positions / Other positions at present
 - Other listed companies
 - None -
 - Non-listed companies
 - o Chief Executive Officer, BBGI Public Company Limited
 - o Director, Bangchak Bioethanol (Chachoengsao) Company Limited
 - o Director, KSL Green Innovation Public Company Limited
 - o Director, Manus Bio Inc.,
 - o Director, WIN Ingredients Co., Ltd
 - o Managing Director, Bangchak Biofuel Company Limited
 - o Managing Director, National Energy Technology Center
 - o Vice chairman, The Innovation Institute for Industry, The Federation of Thai Industries
 - o Honorary Director Executive Board, Center of Excellence on Petrochemical and Materials Technology, Chulalongkorn University
 - o Director, Industrial Promotion and Support, The Federation of Thai Industries
 - o Vice Chairman, Engineering Institute of Thailand (Chemical and Petrochemical Engineering)
 - o Director, National Center for Genetic Engineering and Biotechnology (BIOTEC)
 - o Director, Council of Scientific and Technological Associations of Thailand (COSTAT)
 - o Managing Director, Plastics Institute of Thailand
- Shareholding in the Company: None (As of 31 December, 2020)
- Familial relationship between directors and executives: None
- Criminal records on violation of securities and futures contract laws: None

Mr. Pichit Wongrujiravanich

Executive Advisor

- Age 60
- 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
 - 2020 : Executive Advisor, Internal Audit
 - 2015 : 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 December 31, 20)
- Familial relationship between directors and executives: None
- Criminal records on violation of securities and futures contract laws: None

Ms. Revadee Pornpatkul

Executive Advisor, appointed to Power Plant Project Development

- Age 60
- Education / Training
 - Master of Business Administration (MBA), Thammasat University
 - Bachelor Business Administration (Accounting), Ramkhamhaeng University
 - Bachelor of Law, Sukhothai Thammathirat University
 - Bachelor of Science, Chulalongkorn University
 - Director Accreditation Program (DAP99/2012), Thai Institute of Directors (IOD)
 - Executive Development Program (EDP 12/2013), Thai Institute of Directors (IOD)
 - Company Secretary Program (CSP71/2016), Thai Institute of Directors (IOD)
 - Smart Disclosure Program (SDP/2016)
 - Executive Energy Management Program (EEM/2017), Ministry of Energy
 - Power Curriculum Program for Executives (Class 1/2017), Ministry of Energy
 - Developing an Outward Mindset (2018)
- Experience
 - Bangchak Petroleum Public Company Limited
 - 2018 - Present : Executive Vice President, Human Resource Management, appointed to BCPG Public Company Limited
 - 2015 : Senior Vice President, Corporate Administration and Information Technology, BCPG Public Company Limited
 - 2015 : Senior Vice President, Associated Company Business
 - 2013 : Vice President, Associated Company Business, appointed to Bangchak Solar Energy Company Limited
 - 2007 : Vice President, Accounting and Taxation, Accounting and Finance
 - 2004 : Senior Manager, Accounting, and Acting Vice President, Accounting and Tax
 - 2002 : Manager, Accounting
- Other directorship positions / Other positions at present
 - Other listed companies
 - None -
 - Non-listed companies
 - o Director, Happiness Sharing Foundation
- Shareholding in the Company: 16,967 shares or 0.001232% (As of December 31, 2020)
- Familial relationship between directors and executives: None
- Criminal records on violation of securities and futures contract laws: None

Ms. Pakawadee Junrayapes

Executive Vice President Corporate Compliance and Company Secretary

- Age 59
- 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 (EDP2012), Ministry of Finance
 - Successful Formulation and Execution of Strategy (SFE16/2012), Thai Institute of Directors (IOD)
 - Anti-Corruption: The Practical Guide (ACPG2/2013) Thai Institute of Directors (IOD)
 - Thailand and the ASEAN Economic Community class 4/2013, King Prajadhipok's Institute
 - Advances for Corporate Secretaries, Class 2/2017, Thai Listed Companies Association (TLCA)
 - Certificate of Top Management (2017), Company cooperate with Thailand Management Association (TMA) and Duke Corporate Education (DUKE)
 - Advanced Diploma, Public Administration and Public Law, Class 17/2018 King Prajadhipok's Institute
 - Executive Program for Senior Justice class 23/2018, Judicial Training Institute
 - Boards that Make a Difference (BMD) class 9/2019, Thai Institute of Directors (IOD)
- Experience
 - Bangchak Corporation Public Company Limited
 - 2020 - Present : Executive Vice President, Corporate Compliance and Company Secretary
 - 2018 : 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
 - Other
 - 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
 - o Director, BCPR Pte. Ltd.
 - o Director, BCPR Company Limited
 - o Director, BCP Innovation Pte. Ltd
- Shareholding in the Company: 15,500 shares or 0.001126% (As of December 31, 2020)
- 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, Business Development (Effective on 1st January 2021)

- Age 62
- Education / Training
 - PH.D Doctor of Philosophy, University of Wales
 - Bachelor Degree of Science, University of Leeds
- Experience
 - Bangchak Corporation Public Company Limited
 - 2018-2020 : Executive Vice President, Natural Resources Business Unit, Bangchak Corporation Public Company Limited

Others

- 2015 - Present : Managing Director & CEO, Nido Petroleum Pty 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
 - o Board member, OKEA ASA - Oslo Stock Exchange (OSE)
 - Non-listed companies
 - o Managing Director and Chief Executive Officer, Nido Petroleum Pty Ltd
 - o Director, BCPR Pte. Ltd.
 - o Director, BCPR Company Limited
 - o Director, BCP Energy International Pte. Ltd.
- Shareholding in the Company: None (As of December 31, 2020)
- 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 55
- 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
 - CEO Learning Through Experience (LTE#1) DEPA
 - Leading in a Disruptive World (LDW#4) South East Asia Center (SEAC)
 - Successful Formulation and Execution of Strategy (SFE31/2019) Thai Institute Directors (IOD)
 - CIO : Healthcare Chief Information Officer (CIO#5)
- 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
 - o Director, BCP Innovation Pte. Ltd
 - o Director, BCV Bio Based Co., Ltd.
 - o Director, BCV Energy Co., Ltd.
 - o Director, BCV Innovation Co., Ltd.
 - o Director, BCV Partnership Co., Ltd.
 - o Director, The National Innovation Agency
 - o Secretary and Committee, The Research Development and Innovation for Industry Institute, The Federation of Thai Industries
 - o Subcommittee, TMA Technology Innovation Management Group (TMA-TIMG), Thailand Management Association
- Shareholding in the Company: None (As of December 31, 2020)
- Familial relationship between directors and executives: None
- Criminal records on violation of securities and futures contract laws: None

Ms. Sattaya Mahattanaphanij

Executive Vice President, appointed to BCPG Public Company Limited

- Age 55
- Education / Training
 - Master's degree, International Business and Information Management System, Widener University, USA
 - Bachelor's degree, Business Administration (Finance and Banking), Assumption University
 - Certificate, Director Certification Program (DCP 293/2020), Thai Institute of Directors (IOD)
 - Certificate, Board Nomination and Compensation Program (BNCP 5/2019), Thai Institute of Directors (IOD)
 - Certificate, Company Secretary Program (CSP 82/2017), Thai Institute of Directors (IOD)
 - Committee of Occupational Safety, Health and Work Environment (SEP/2017)
 - Advance Senior Executive Program (ASEP-3) Sasin and Kellogg School of Management
- Experience
 - Bangchak Corporation Public Company Limited
 - 2019 – Present : Executive Vice President, appointed to BCPG Public Company Limited
 - Others
 - 2018 – Present : Senior Executive Vice President, Corporate Excellence, BCPG Public Company Limited
 - 2016 – 2017 : Executive Vice President, Finance and Accounting, BCPG Public Company Limited
 - 2006 – 2016 : Executive Director, Advantgarde Capital Company Limited
- Other directorship positions / Other positions at present
 - Other listed companies
 - None -
 - Non-listed companies
 - o Director, BCPG Investment Holdings Pte. Ltd.
 - o Director, Greenergy Holdings Pte. Ltd.
 - o Director, Greenergy Power Pte. Ltd
 - o Director, the Group of Bangchak Solar Energy
 - o Director, Chula District Cooling Company Limited
 - o Director, Advantgarde Capital Company Limited
- Shareholding in the Company: None (As of December 31, 2020)
- Familial relationship between directors and executives: None
- Criminal records on violation of securities and futures contract laws: None

Ms. Phatpuree Chinkkulitnivat

Executive Vice President, appointed to BCPG Public Company Limited

- Age 45
- Education / Training
 - Master of Business Administration (High Distinction), School of Business Administration, University of Michigan, Ann Arbor, USA
 - Bachelor of Economics (First Class Honors), Faculty of Economics Chulalongkorn University, Thailand
 - CFA ("Chartered Financial Analyst") Charter holder (2002)
 - Pacific Rim Bankers Program, Foster School of Business, University of Washington (2011)
 - CEDI-BABSON Entrepreneurial Leadership Program, Babson College (2013)
 - Bain Executive Digital Immersion, Silicon Valley, (2016)
 - Bain APAC Executive Digital Immersion, Beijing (2017)
 - Advanced Management Program, Harvard Business School (AMP 192/2017)
 - Director Certification Program, IOD (DCP300/2020)
 - BNEF Academy 2020, BloombergNEF
 - Recap Thai Financial Reporting Standards, KPMG Institute Thailand (2020)
- Experience
 - Bangchak Corporation Public Company Limited
 - 2019 – Present : Executive Vice President, appointed to BCPG Public Company Limited
 - Others
 - 2018 – Present : Senior Executive Vice President, Finance and Accounting and Corporate Strategy, BCPG Public Company Limited
 - 2014 – 2018 : Senior Vice President, Strategic Planning Head/ Office of President, Commercial Banking Group
 - 2012 - 2014 : Senior Vice President and Regional Manager, Commercial Banking Group
- Other directorship positions / Other positions at present
 - Other listed companies
 - None -
 - Non-listed companies
 - o Director, BSE Power Holdings (Thailand) Company Limited
 - o Director, JKR Energy Company Limited
 - o Director, RPV Energy Company Limited
 - o Director, Lopburi Solar Company Limited
 - o Director, Prachin Solar Company Limited
 - o Director, Aquatist Energy Company Limited
 - o Director, Thai Digital Energy Development Company Limited
 - o Director, Impact Energy Asia Development Limited
 - o Director, BCPG Indochina Company Limited
- Shareholding in the Company: None (As of December 31, 2020)
- Familial relationship between directors and executives: None
- Criminal records on violation of securities and futures contract laws: None

Mr. Bundit Hansapaiboon

Executive Vice President, Planning and Trading Business

- Age 49
- Education / Training
 - Master of Business Administration (MBA), LEHIGH University, USA
 - Bachelor of Engineering (Chemical Engineering), Chulalongkorn University
 - Executive Development Program (EDP), Thai Listed Companies Association (TLCA)
 - Energy Academy for New Executives, Thailand Academy Energy (TEA)
 - Financial Statements for Directors (FSD), Thai Institute of Directors (IOD)
 - Director Certification Program (DCP), Thai Institute of Directors (IOD)
- Experience

Bangchak Corporation Public Company Limited

 - 2019 - Present : Executive Vice President, Planning and Trading Business

Others

 - 2018 – 2019 : Senior Vice President, Planning and Trading Business
 - 2017 : Senior Vice President, Refinery Strategic and Planning
 - 2016 - 2017 : Vice President Associate Business, Bio-based products business
Bangchak Bioethanol (Chacheongsao) Co. Ltd.
 - 2014 – 2016 : Vice President Associate Business, Renewable energy business
 - 2012 – 2014 : Senior Manager Associate Business Bangchak Biofuel Co. Ltd.
- Other directorship positions / Other positions at present
 - Other listed companies
 - None -
 - Non-listed companies
 - o Director, Bongkot Marine Services Co. Ltd.
 - o Director, BCP Trading Pte. Ltd.
- Shareholding in the Company: 696 shares or 0.000051% (As of December 31, 2020)
- Familial relationship between directors and executives: None
- Criminal records on violation of securities and futures contract laws: None

Mr. Warakorn Kosolpisitkul

Executive Vice President, Marketing Business and Acting Vice President Marketing Strategy and Communication

- Age 53
- Education / Training
 - Master of Business Administration (MBA), Stetson School of Business and Economics, MERCER UNIVERSITY, Atlanta Georgia, U.S.A.
 - Bachelor of Business Administration, Bangkok University
 - Certificate of Top Management, Duke Corporate Education
 - Leadership Succession Program (LSP), Institute of Research and Development for Public Enterprises (IRDP)
 - Smart Branding & Marketing for Digital Economy (Smart Marketing)
 - Executive Development Program (EDP), FPRI & Kellogg
 - Middle level energy executive, Ministry of Energy
 - Top Executive Program in Commerce and Trade (TEPCoT) Class 12
- Experience

Bangchak Corporation Public Company Limited

 - 2020 : Executive Vice President, Marketing Business and Acting Vice President Marketing Strategy and Communication
 - 2019 : Acting Executive Vice President, Marketing Business and Oil Terminal
 - 2018 : Senior Vice President, Marketing Business Strategy and Planning
 - 2013 : Vice President, Retail Business
 - 2012 : Vice President, Associated business of Bangchak Green Net Company Limited
 - : Managing Director Bangchak Green Net Company Limited
 - 2003 : Manager, Business Development Division
 - 2001 : Manager, Central District Division
 - 1997 : Assistant Manager, Metropolitan District Division
- Other directorship positions / Other positions at present
 - Other listed companies
 - None -
 - Non-listed companies
 - o Director, Bangchak Green Net Company Limited
 - o Director, Happiness Sharing Foundation
- Shareholding in the Company: 19,885 shares or 0.001444% (As of August 29, 2019)
- Familial relationship between directors and executives: None
- Criminal records on violation of securities and futures contract laws: None

Ms. Gloyta Nathalang

Executive Vice President (Effective on 1st January 2021)

Corporate Sustainability, Branding and Communication

- Age 53
- Education / Training
 - Bachelor of Arts Chulalongkorn University
 - Postgraduate Diploma in Public Relations, University of Stirling, UK
 - Shell External Affairs Training Series (2000), UK
 - Tetra Pak Communications Leadership Training (2007), Dubai
 - Tetra Pak Academy Leadership Program by Ashridge Business School (2008), UK
 - Tetra Pak Environmental Leadership Training (2011), Sweden
 - Executive Development Program (18/2019), Thai Listed Company Association (TLCA)
 - McKinsey Management Program (MMP) 2020, TLCA & McKinsey
 - Strategic Executive Program, Public Communication in Broadcasting and Television Affairs (1/2020), ISRA Institute Thai Press Development Foundation Executive Development Program
- Experience
 - Bangchak Corporation Public Company Limited
 - 2020 : Acting Executive Vice President, Corporate Sustainability, Branding and Communication
 - 2019 : Senior Vice President, Corporate Branding and Communication
 - Others
 - 2016 : Senior Vice President, Corporate Communication, BCPG Plc.
 - 2015 : General Manager, Tea The' Cha (Thailand) Co., Ltd.
 - 2007 : Communications and Environment Director, Tetra Pak Thailand Ltd.
- Other directorship positions / Other positions at present
 - Other listed companies
 - None -
 - Non-listed companies
 - o Director, Oam Suk Social Enterprise Company Limited
- Shareholding in the Company: None (As of December 31, 2020)
- Familial relationship between directors and executives: None
- Criminal records on violation of securities and futures contract laws: None

Mr. Thamarat Paryoonsuk

Executive Vice President, Refinery Manufacturing Business (Effective on 1st January 2021)

- Age 50
- Education / Training
 - Master of Business Administration, Ramkhamhaeng University
 - Bachelor of Engineering, Kasem Bundit University
- Experience
 - Bangchak Corporation Public Company Limited
 - 2020 : Acting Executive Vice President, Refinery Manufacturing Business
 - 2019 : Vice President, Refinery Operation
 - 2019 : Senior Manager, Safety and Health Division
 - 2018 : Senior Manager, Utility Division
 - 2017 : Senior Manager, Oil Movement Division
 - 2017 : Manager, Oil Movement Division
- Other directorship positions / Other positions at present
 - Other listed companies
 - None -
 - Non-listed companies
 - o Director, Fuel Pipeline Transportation Co., Ltd.
- Shareholding in the Company: None
- Familial relationship between directors and executives: None
- Criminal records on violation of securities and futures contract laws: None

Ms. Chantip Wongchieowittaya

Vice President, Financial Accounting

Qualified bookkeeper and the conditions of being an accountant according to the criteria specified in the announcement of the Department of Business Development

- Age 42
- Education / Training
 - Master of Accountancy, Faculty of Commerce and Accountancy, Chulalongkorn University
 - Bachelor of Accountancy, Faculty of Commerce and Accountancy, Thammasat University
 - Financial Reporting Standards Program related to the operations of the group of companies (2020), KPMG Phoomchai Audit Company Limited
 - Accounting for hedges Program (2020), Federation of Accounting Professions
 - Digital Transformation Certificate (2020), Kasetsart University
 - Financial Management and Business Planning (2019), Japan Cooperation Center Petroleum (JCCP)
 - Executive Management Development Program (EMDP) (2019), Thailand Management Association (TMA)
 - CFO Focus on Financial Reporting Class 6 (2018), Federation of Accounting Professions
- Experience
 - Bangchak Corporation Public Company Limited
 - 2020 - Present : Vice President, Financial Accounting
 - 2019 : Acting Vice President, Financial Accounting
 - 2017 - 2018 : Manager, Accounting Policy and Consolidation Division
 - Others
 - 2014 - 2016 : Senior Manager, EY Office Limited
- Other directorship positions / Other positions at present
 - Other listed companies
 - None -
 - Non-listed companies
 - o Director, Bangchak Corporation Public Company Limited Registered Provident Fund
- Shareholding in the Company: None (both directly and indirectly held)
(As of December 31, 2020)
- Familial relationship between directors and executives: None
- Criminal records on violation of securities and futures contract laws: None

Attachment 2

Profiles of Subsidiaries' Directors

Subsidiary	Directors		Position
Bangchak Green Net Co., Ltd.	Mr. Meechai	Veeravaidya	X
	Mr. Somkiat	Thatrithorn	/
	Mrs. Saruda	Changsiricharoen	/
	Mr. Somchai	Tejavanija	/
	Mr. Warakorn	Kosolpitsukul	/
	Mr. Vattana	Phornpatkul	/
	Mr. Preecha	Sutthilertaroon	//
BCP Trading Pte. Ltd.	Mr. Wattana	Opanon-amata	/
	Mr. Surachai	Kositsareewong	/
	Mr. Pativat	Tivasasit	/
	Mr. Bundit	Hansapaiboon	/
	Mr. Lim Chia Wei Roy		/

Note: The 1.4th to 1.7th and 2.1st to 2.4th directors are representative directors of Bangchak

X = Chairman / = Director // = Managing Director

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

Attachment 3

Details of Head of Internal Audit

Ms. Pornjit Sojisunsanee

Vice President, Internal Audit Department

- Age 48
- Education / Training
 - Master of Accountancy, Chulalongkorn University
 - Bachelor of Business Administration, (Accounting) (Honor), Prince of Songkla University
 - Certified Internal Auditor (CIA), license no. 110527
 - Certification in Risk Management Assurance (CRMA), license no. 8828
- Experience
 - Bangchak Corporation Public Company Limited
 - 2020 - present : Vice President, Internal Audit Department
 - 2015 : Senior Manager, Internal Audit Office
 - 2011 : Manager, Internal Audit Office
- Other directorship positions / Other positions at present
 - Other listed companies
 - None -
 - Non-listed companies
 - None -
- Shareholding in the Company: 26,166 shares or 0.00190% directly held (As of December 31, 2020)
- Familial relationship between directors and executives: None
- Criminal records on violation of securities and futures contract laws: None

Details of Head of Compliance Department

Ms. Pakawadee Junrayapes

Executive Vice President Corporate Compliance Acting Vice President Legal Compliance and Company Secretary

- Age 59
- 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 (EDP2012), Ministry of Finance
 - Successful Formulation and Execution of Strategy (SFE16/2012), Thai Institute of Directors (IOD)
 - Anti-Corruption: The Practical Guide (ACPG2/2013) Thai Institute of Directors (IOD)
 - Thailand and the ASEAN Economic Community class 4/2013, King Prajadhipok's Institute
 - Advances for Corporate Secretaries, Class 2/2017, Thai Listed Companies Association (TLCA)
 - Certificate of Top Management (2017), Company cooperate with Thailand Management Association (TMA) and Duke Corporate Education (DUKE)
 - Advanced Diploma, Public Administration and Public Law, Class 17/2018 King Prajadhipok's Institute
 - Executive Program for Senior Justice class 23/2018, Judicial Training Institute
 - Boards that Make a Difference (BMD9/2019), Thai Institute of Directors (IOD)
- Experience
 - Bangchak Corporation Public Company Limited
 - 2020 - Present : Executive Vice President, Corporate Compliance and Company Secretary
 - 2018 : 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
 - o Director, BCPR Pte. Ltd.
 - o Director, BCPR Company Limited
 - o Director, BCP Innovation Pte. Ltd
 - o Director, Thai Listed Companies Association, Thai Institute of Directors (IOD)
- Shareholding in the Company : 15,500 shares or 0.001126% directly held (As of December 31, 2020)
- Familial relationship between directors and executives : None
- Criminal records on violation of securities and futures contract laws : None

Scope of duties

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

Attachment 4

Review of Business Asset and Asset Revaluation

Review of Business Asset

Details appear under (1.2) Business Description

Asset Revaluation

-None-



Bangchak Corporation Public Company Limited

Head office : M Tower Building, 8 th Floor,
Sukhumvit Road, Phra Khanong Tai, Phra Khanong,
Bangkok 10260 Thailand

Tel : 0 2335 8888 Fax : 0 2335 8000

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