



**ENERGY  
ELECTRIFY**

Annual Report 2019



*Silent Sound of the River*



# | Content

4	Financial Highlights
6	Message from Chairman of the Board
7	Message from CEO
10	Board of Directors
20	Executives Team
23	General and other important information
30	Policy and Business Overview
40	Nature of Business
61	Risk Factors
72	Information of securities and shareholders
76	Dividend Policy
77	Management Structure
88	Report of the Audit Committee
90	Report of the Nomination Committee
91	Report of the Remuneration Committee
92	Report of the Risk Management Committee
93	Report of the Corporate Governance Committee
95	Corporate Governance
129	Corporate Social and Environmental Responsibility
138	Awards and Recognitions
140	Internal Control and Risk Management
142	Connected Transactions
151	Management Discussion and Analysis
161	Report of the Board of Directors' Responsibilities for the Financial Report
162	Report of the Independent Certified Public Accountants / Financial Statement



## Vision

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### **To become the leader of alternative energy**

by using cutting-edge and  
environmental-friendly technology  
for the highest benefit returning back to shareholders,  
trading partners and employees with fairness.



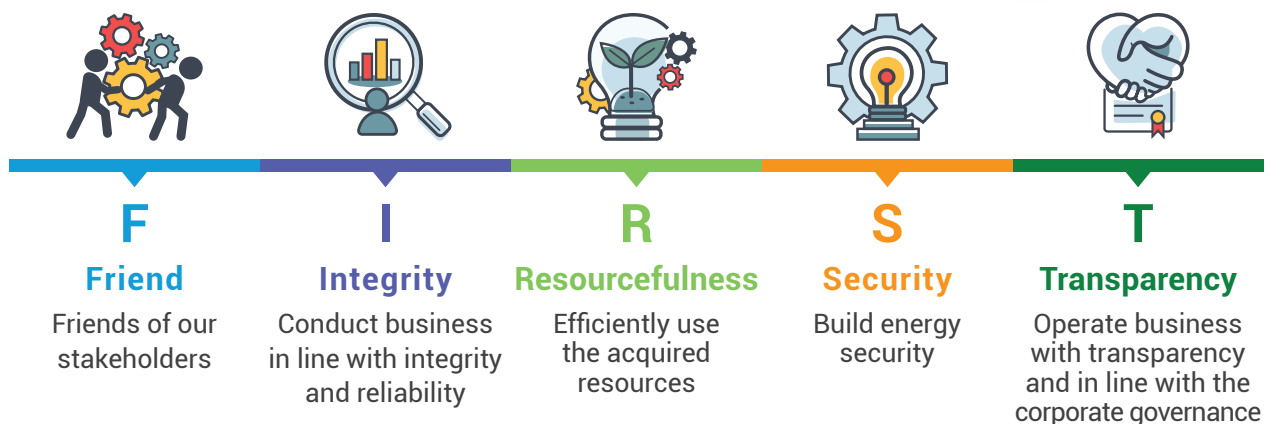




## Mission

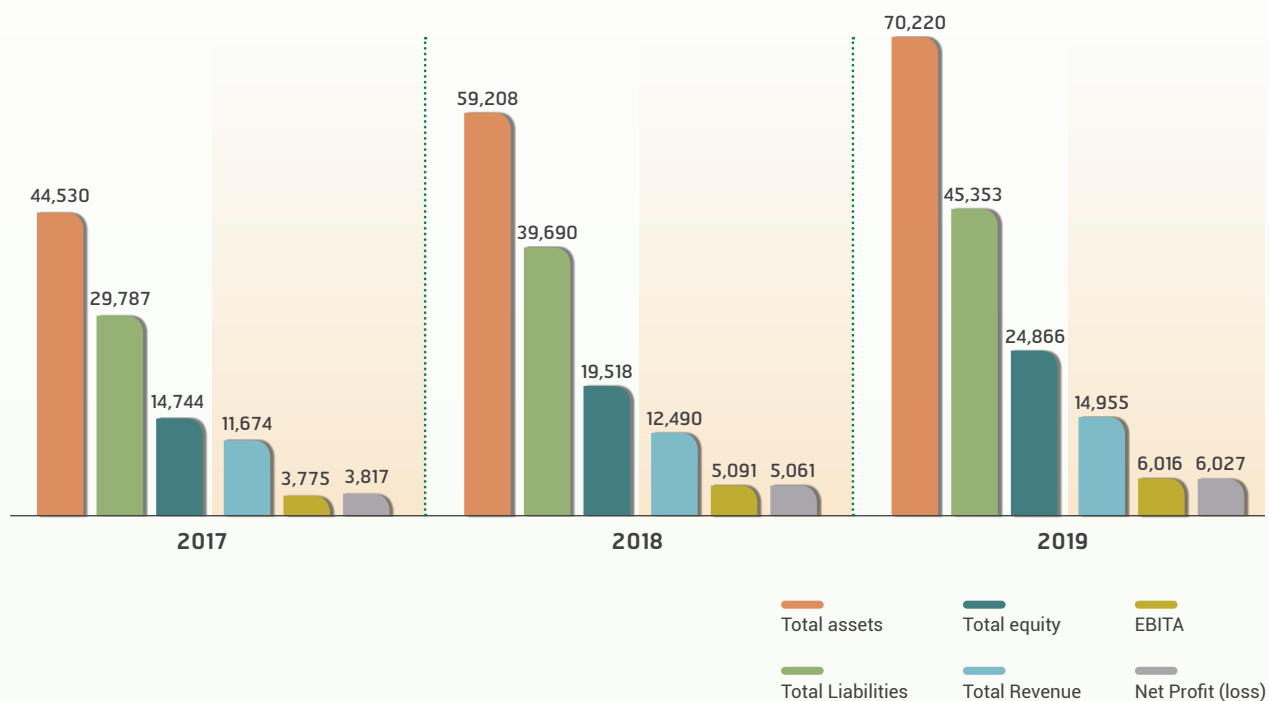
1. To use advanced technology in order to increase production efficiency
2. To support using energy crops as well as natural energy in order to reduce pollution released to the environment.
3. To support government policy, building the energy security of the nation.
4. To conduct a business based on fairness, build confidence among partners and shareholders.
5. To build a robust foundation on human resource for sustainable and stable growth.

## Values

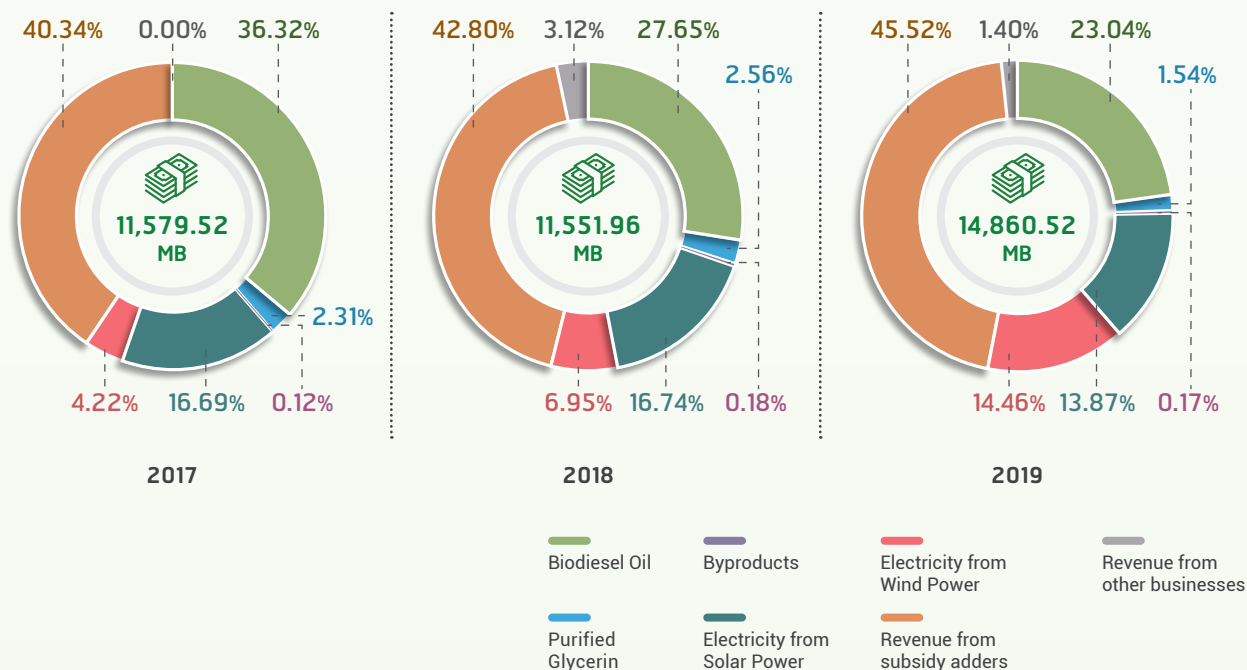


# Financial Highlights

(THB million)



## Product Sales Value and Services





## Significant Financial Ratios

		2017	2018	2019
<b>Liquidity Ratio</b>				
Liquidity Ratio	time	2.71	0.65	2.31
Quick Ratio	time	2.40	0.57	2.09
Cash Flow Current Ratio	time	2.03	0.95	0.94
Receivable Current Ratio	time	7.65	6.88	6.90
Avg. Debt Collection Period	day	47.69	53.05	52.92
Inventory Turnover Period	time	38.39	24.76	12.42
Avg. Selling Period	day	9.51	14.74	29.40
Payable Current Ratio	time	79.00	46.92	31.01
Loan Repayment Period	day	4.62	7.78	11.77
Cash cycle	day	52.58	60.01	70.54
<b>Profitability Ratio</b>				
Gross Profit Margin	%	47.79	50.93	54.64
Operating Profit Margin	%	43.37	45.78	49.72
Cash ratio per profitability	%	123.89	136.00	117.35
Net Profit Margin	%	32.70	40.52	40.30
Return on Equity (ROE)	%	29.31	30.86	29.19
<b>Efficiency Ratio</b>				
Return on Assets	%	11.53	11.91	11.44
Return on Fixed Assets	%	33.98	27.9	30.22
Asset Turnover	time	0.27	0.24	0.23
<b>Financial Policy Ratio</b>				
Debt to Equity Ratio	time	2.03	2.19	1.94
Interest Coverage Ratio	time	4.19	5.69	5.34
Dividend Pay Out Ratio	%	14.66	14.74	15.47



# Message from Chairman of the Board

## Dear Shareholders,

In 2019, the Company Group has performed an excellent in business growth as evidence in our operating results, which surpassed those of the previous year. The business lines and projects are proceeded according to the work frame set forth. The main income of the Company Group relies on revenue from the electricity business and revenue from the biodiesel business. For other projects such as Lithium-ion Battery business is greatly generate income to the Company Group gradually. Furthermore, the Company Group's business operation is also based on good corporate governance together with developing and strengthening capacity continuously.



Energy is a vital part that drives the economy, the Company Group, therefore, concentrates on business expansion to conform to the energy demand in the future. One of the business expansion is the electric charging station under the brand "EA Anywhere", electric automobile business under the brand "MINE Mobility", electric ferry, battery and energy storage system business. Our goal is to create a cost-effective use of energy as well as the highest benefits, especially, the clean energy right from nature. Moreover, the Company Group continues conducting researches and development of technologies, utilizing current innovation to carry on business to leverage product quality, resulting in cost-effective use of raw materials and resources such as the development of Green Diesel and Bio-PCM which enhancing our competitiveness in regional scale.

In addition, the Company remains committed to operating our business with good governance, in recent years, the Company has been ranked Excellent for the listed companies continuing from the previous year, reflecting that the company's emphasis on sustainable business growth in line with good governance and transparency. Besides, the Company realizes the social responsibility and intends to create prosperity together with communities. Hence, the Company emphasizes to help them with building careers, increasing income to communities under the sustainable and environmental-friendly policy.

Based on the success of the previous year, the Company would like to express the appreciation to the Management and all employees for your dedication, effort and being the important part in achieving success and business growth. This consideration also goes to the business operation that is adhering to transparency, compliance with corporate governance and social responsibility. The Company believes that these robust foundation of our work will bring to the Company Group the sustainable growth together with continual social responsibility to the future.

On behalf of the Board of Directors, I would like to express my appreciation to all shareholders, customers, business partners, public and private agencies from central and regional or even local territories, as well as all stakeholders for your ongoing confidence and trust in our potential, and hopefully to receive such a support in the future.

Sincerely Yours,

A handwritten signature in black ink, reading "Somchainuk Engtrakul". The signature is fluid and cursive, written in a professional style.

**(Mr. Somchainuk Engtrakul)**

Chairman of the Board of Directors



# Message from the CEO

## Dear Shareholders,

In recent year 2019, the Company's business operation was greater than expected even though encountered with difficult obstacles. These successful results have led to the annual revenues and net profits break the record high for the company. Essentially, the newly completed 260 MW Hanuman wind power plant project in Chaiyaphum province which started commercial operation date (COD) since last January and gradually ramped up to the full capacity on April 13th, 2019. As a result, the company has a total capacity of 664 megawatts of solar and wind power plants and those projects can generate electricity throughout the year up to 1,389.02 million kilowatt-hours, which generated income from the renewable energy business as high as Baht 10,974.26 million or 74% of total revenue. This electricity generation and distribution are provided in 7 provinces including Lopburi, Nakhon Sawan, Lampang, Phitsanulok, Songkhla, Nakhon Si Thammarat and Chaiyaphum.



Regarding the initial business, biodiesel the pressured from the oversupply of Palm Oil both in the country and in the region and also faced price war among the competitors, who aim to gain market share, caused the price dropped until affecting to the decrease in biodiesel selling price. Although the government tried to increase demand for biodiesel to absorb excess of palm oil stock by promoting the use of B20, but was not yet effective. The situation became more positive in the 4th quarter after the Ministry of Energy had push a strong measurement by announcing that B10 diesel is to become the standard diesel oil in Thailand since January 1st, 2020. The demand increased significantly and led to improving the price of CPO and biodiesel oil as a consequence, the company can produce and distribute biodiesel as much as 193.25 million litres, This is the highest sales volume for the company ever. Accordingly, in this year the company can generate total revenues of Baht 14,954.54 million and net profits of Baht 6,026.62 million.

Furthermore, the company has stepped into the new era of growth in which the threat of global warming and the disruptive technology have rapidly escalated and forced change in energy industry and related industries affecting both positive and negative impacts. It is a great opportunity to the company to expand the knowledge and expertise of our people to move forward, since our main policy is to conduct environmental-friendly energy business by using modern technology. Therefore, a special team has been set up to study and prepare to handle in advance for more than 5 years. Planning and steering to create new growth from new businesses have been prepared leading by the advance technology of lithium-ion batteries, which can further enhance the renewable power business by installing them together to produce and distribute electricity from renewable energy with greater stability, to support the daily electricity demand longer with competitive cost. The lithium-ion batteries can also be the most important parts of the electric vehicle such as electric car, electric ferry, and charging station business.

Although the new battery factory project in Thailand has been slightly delayed from our schedule but the company has already prepared a backup plan to manage risk in advance by utilizing the production capacity from Amita Technologies Inc., Taiwan factory to supply batteries for our electric cars branded "MINE Mobility" and our electric ferries that will be delivered in the middle of 2020. Moreover, the company has successfully invented the innovation from palm oil to produce high-value products such as Phase Change Material (PCM) and Green Diesel which have plans to start commercial production in the middle of 2020 onwards after completion of the new factory in Rayong province.

Throughout the year, the company has prepared investment structure of the group, human resource, information technology system, capital management, investing in various assets, co-partners both domestically and internationally along with aiming towards the goals of community and social development as well as conservation and restoration of forests, water sources and soil fertility to balance the ecosystem in the short-term and long-term plans. Our team intends to bring technologies and innovation that we have developed to be applied and integrated with our operations and affiliates without limitation to use only within the organization but also expanding for the benefit of relevant stakeholders. According to the concept of Corporate Social Innovation (CSI), for example, the collaboration project with educational institutions to create curriculum and training program for learning platform development, the use of Blockchain Technology for electricity trading as a pilot project in Chulalongkorn University, and the use of Blockchain Technology for facilitating palm trading that can inspect the origin of palm and share benefits to support the growth in the advancement of biodiesel business that will start operations in 2020.

I would like to express my gratitude to shareholders, the board of directors, employees, customers, business partners, financial institutions, government agency and state enterprise, communities as well as all stakeholders who collaborated and supported the company until achieving an honoured success. From the year 2020 onwards, the company will begin another challenge period with new round of growth. However, with our commitment to develop the business to be progressive, stable and risk management, we prepared to create growth according to the long-term goal. The company will continue to implement the plan in order to maintain leadership in the renewable energy business proudly and continuity.

Sincerely Yours,



**(Mr. Somphote Ahunai)**

Chief Executive Officer



# MINE SPA1

THE NEXT-GENERATION AUTOMOTIVE, SAFETY AND TRUSTWORTHY

STOBA  
TECHNOLOGY



CHARGER  
ANYWHERE



Not only using the lithium ion battery with outstanding safety feature, but EA Electric Car is also approved by Thailand Industrial Standard as well as passed the qualification of safety. With a light weight structure made of aluminum, it is capable of reducing the external impact, resisting corrosion, and spontaneously cooling down.

# Board of Directors

As of 6 January, 2020



**Mr. Somchainuk Engtrakul**

Independent Director /  
Chairman of the Board of Directors



**Mr. Somphote Ahunai**

Director / Member of Risk  
Management Committee /  
Chairman of Executive Committee /  
Chief Executive Officer



**Mr. Amorn Saphaweekul**

Director / Member of Remuneration  
Committee / Member of Risk  
Management Committee /  
Member of Executive Committee /  
Deputy CEO / Acting Vice President  
- Quality Control / Acting Vice  
President - Strategy Development  
and Investment Planning  
Department



**Mr. Wutthilerd Chiannilkulchai**

Director / Member of Risk Management  
Committee / Member of Executive  
Committee



**Mr. Sutham Songsiri**

Director / Member of Remuneration  
Committee / Member of Corporate  
Governance Committee / Member of  
Executive Committee





**ACM. Chainan Thumasujarit**

Independent Director / Chairman of Audit Committee / Chairman of Risk Management Committee / Member of Remuneration Committee / Member of Nomination Committee / Member of Corporate Governance Committee



**Mr. Chaiwat Pongpisitsakul**

Independent Director / Member of Audit Committee / Chairman of Corporate Governance Committee / Chairman of Remuneration Committee / Member of Nomination Committee



**M.R. Bravochat Chatchai**

Independent Director / Member of Audit Committee / Chairman of Nomination Committee / Member of Risk Management Committee / Member of Corporate Governance Committee / Member of Remuneration Committee



**Pol.Gen. Phatcharavat Wongsuwan**

Independent Director / Member of Risk Management Committee



**Mr. Somboon Ahunai**

Director / Member of Executive Committee



**Mr. Amornsuk Noparumpa**

Independent Director

## Profile of the Directors

As of 6 January, 2020

### Mr. Somchainuk Engtrakul

Independent Director/  
Chairman of the Board of Directors  
(Non- Executive Director)

**Date of Appointment:** 12 March 2008

**Age:** 75 years

#### Education

- Ph.D. (Honorary Degree) in Public Administration, Sripatum University
- Bachelor of Laws, Sripatum University
- Bachelor of Arts in Economics, UPSALA College New Jersey, U.S.A.
- Diploma, National Defense Course Class 35, National Defense College (NDC)

#### Training

##### By Thai Institute of Directors (IOD)

- Role of the Chairman Program (RCP) Class 9/2006
- Director Accreditation Program (DAP) Class 98/2012

#### Work Experiences during 5 years

##### Position in Company

2017 - Present Independent Director  
2008 - Present Chairman of the Board of Directors

##### Position in Subsidiary of the Company

-None-

##### Position in Other Listed Companies

2004 - Present Chairman of the Board of Directors,  
Major Cineplex Group PCL.  
1995 - Present Chairman of the Board of Directors,  
Dhipaya Insurance PCL.

##### Position in Non Listed Companies/ Other Organizations

2008 - Present Chairman of the Board of Directors,  
Vejthani PCL.  
2008 - Present Director, Siam Piwat Co.,Ltd.  
2000 - Present Director, Siam Piwat Holding Co.,Ltd.

#### Shareholding in EA

(including spouse / minor children)

- Shareholding as at the end of 2018 : -None-
- Shareholding as of 6 January, 2020 : -None-
- Share Increase / (Decrease) : -None-

#### Relationship with other Directors and Management

-None-

#### Meeting Attendance in 2019

- Board of Directors Meeting : 6/6 Meetings

### Mr. Somphote Ahunai

Director (Authorized Director)/ Member of Risk  
Management Committee/ Chairman of Executive  
Committee/ Chief Executive Officer

**Date of Appointment:** 12 March 2008

**Age:** 52 years

#### Education

- Master of Business Administration, University of Pittsburgh, USA
- Bachelor of Engineering, Chulalongkorn University

#### Training

##### By Thai Institute of Directors (IOD)

- Director Accreditation Program (DAP) Class 60/2006

##### Other Training

- Top Executive Program in Industrial Development and Investment Class 2, held by Institute of Business and Industrial Development (IBID)
- ULTRA WEALTH - INVEST LIKE A MASTER Class 1 held by Economics Association Chulalongkorn University
- The Executive Program in Energy Literacy for a Sustainable Future Class 9, (WorPorNor.9) held by Thailand Energy Academy

#### Work Experiences during 5 years

##### Position in Company

2014 - Present Member of Risk Management Committee  
2009 - Present Chief Executive Officer  
2008 - Present Director, Chairman of Executive Committee

##### Position in Subsidiary of the Company

Subsidiaries No. 1-8, 11-20, 22-28, 33-37, 39 and 40  
(Refer to the Information of companies which EA holds shares more than 10 percent of total paid up capital, Page 25-28)

##### Position in Other Listed Companies

-None-

##### Position in Non Listed Companies/ Other Organizations

2018 - Present Director,  
AekYingKrit Holding Co., Ltd./  
Eternity Holding Co., Ltd. /  
Land Prosperity Holding Co., Ltd. /  
SPBL Holding Co., Ltd.  
2017 - Present Director,  
Wattanapiboon Land Co., Ltd.



### Shareholding in EA

(including spouse/ minor children/ nominee)

- Shareholding as at the end of 2018 : 1,531,419,993 shares (41.057%)  
Held personally : 876,436,386 shares (23.497%)  
Held by trustee : 630,000,000 shares (16.890%)  
Held by spouse : 24,983,607 shares (0.670%)
- Shareholding as of 6 January, 2020 : 1,534,189,993 shares (41.131%)  
Held personally : 876,436,386 shares (23.497%)  
Held by trustee : 632,770,000 shares (16.964%)  
Held by spouse : 24,983,607 shares (0.670%)  
(Please refer to "Securities and Shareholders Information" Section)
- Share Increase / (Decrease) : 2,770,000 shares (0.074%)  
In portion of personal : -None-  
In portion of trustee : 2,770,000 shares (0.074%)  
In portion of spouse : -None-

### Relationship with other Directors and Management

- Brother of Mr.Somboon Ahunai (Director, Member of Executive Committee)

### Meeting Attendance in 2019

- Board of Directors Meeting : 4/6 Meetings
- Risk Management Committee Meeting : 4/5 Meetings
- Executive Committee Meeting : 5/12 Meetings

### Mr. Amorn Saphaweekul

Director (Authorized Director) / Member of Remuneration Committee / Member of Risk Management Committee / Member of Executive Committee / Deputy CEO / Acting Vice President - Quality Control Department / Acting Vice President - Strategy Development and Investment Planning Department

**Date of Appointment:** 30 March 2012

**Age:** 45 years

### Education

- Master of Science in Finance, Chulalongkorn University
- Bachelor of Business Administration (Finance and Banking), Thammasat University

### Training

**By Thai Institute of Directors (IOD)**

- Director Accreditation Program (DAP) Class 98/2012

### Other Training

- Top Executive Program in Industrial Development and Investment Class 3, (WorTorOr.3) held by Institute of Business and Industrial Development
- The Executive Program in Energy Literacy for a Sustainable Future Class 14 (WorPorNor. 14) held by Thailand Energy Academy
- TFRS 9 Training held by Pricewaterhouse Coopers ABAS Co., Ltd.

### Work Experiences during 5 years

#### Position in Company

- 2015 - Present Acting Vice President - Strategy Development and Investment Planning Department
- 2015 - Present Acting Vice President - Quality Control Department
- 2014 - Present Member of Risk Management Committee / Member of Remuneration Committee / Vice Chairman of Executive Committee
- 2012 - Present Director / Member of Executive Committee

#### Position in Subsidiary of the Company

Subsidiaries No. 1-7, 9, 11-20, 22-27, 30, 31, 33-37, 39 and 40

(Refer to the Information of companies which EA holds shares more than 10 percent of total paid up capital, Page 25-28)

#### Position in Other Listed Companies

-None-

#### Position in Non Listed Companies/ Other Organizations

- Director, Watabak Wind Co., Ltd.
- Director, Advance Finance PCL.

### Shareholding in EA

(including spouse/ minor children/ nominee)

- Shareholding as at the end of 2018 : 123,201,103 shares (3.303%)  
Held personally : 99,968,316 shares (2.680%)  
Held by spouse : 23,232,787 shares (0.623%)
- Shareholding as of 6 January, 2020 : 123,201,103 shares (3.303%)  
Held personally : 74,968,316 shares (2.010 %)  
Held by trustee: 25,000,000 shares (0.670%)  
Held by spouse : 23,232,787 shares (0.623%)  
(Please refer to "Securities and Shareholders Information" Section)
- Share Increase / (Decrease) : -None-

### Relationship with other Directors and Management

-None-

### Meeting Attendance in 2019

- Board of Directors Meeting : 6/6 Meetings
- Remuneration Committee Meeting : 2/2 Meetings
- Risk Management Committee Meeting : 4/5 Meetings
- Executive Committee Meeting : 10/12 Meetings

### Mr. Wutthilerd Chiannikulchai

Director (Authorized Director) /  
Member of Risk Management Committee /  
Member of Executive Committee

**Date of Appointment:** 12 March 2008

**Age:** 49 years

#### Education

- Master of Science in Computer and Engineering Management, Assumption University
- Bachelor of Accountancy, Chulalongkorn University

#### Training

**By Thai Institute of Directors (IOD)**

- Director Accreditation Program (DAP) Class 71/2008

#### Work Experiences during 5 years

##### Position in Company

2014-Present Member of Risk Management Committee

2008-Present Director / Member of Executive Committee

##### Position in Subsidiary of the Company

Subsidiaries No. 1, 2, 4, 6, 7, 10, 12-14, 16-18, 22-27, 32, 35, 36, 39 and 40

(Refer to the Information of companies which EA holds shares more than 10 percent of total paid up capital, Page 25-28)

##### Position in Other Listed Companies

-None-

##### Position in Non Listed Companies/ Other Organizations

2004 - Present Director,  
Perfect Oil Co., Ltd.

2001 - Present Director  
Power 10 Co., Ltd. / Double 10 Co., Ltd. /  
Famous 10 Co., Ltd. / Mitsiamoil Co., Ltd.

1995 - Present Director  
Chalee Trading Co., Ltd. /  
Ma Jarearn Co., Ltd. /  
Sueb Nueng Karn Kha Co., Ltd. /  
Two Plus One Oil Co., Ltd.

1994 - Present Director  
Malee Oil Co., Ltd. / C.C. Oil Co., Ltd.

#### Shareholding in EA

(including spouse/ minor children)

- Shareholding as at the end of 2018 : 15,632,849 shares (0.419%)  
Held personally : 15,632,849 shares (0.419%)  
Held by spouse : -None-
- Shareholding as of 6 January, 2020 : 15,332,849 shares (0.411%)  
Held personally : 15,332,849 shares (0.411%)  
Held by spouse : -None-  
(Please refer to "Securities and Shareholders Information" Section)
- Share Increase / (Decrease) : (300,000) shares (0.008%)  
In portion of personal : (300,000) shares (0.008%)  
In portion of spouse : -None-

#### Relationship with other Directors and Management

-None-

#### Meeting Attendance in 2019

- Board of Directors Meeting : 4/6 Meetings
- Risk Management Committee Meeting : 3/5 Meetings
- Executive Committee Meeting : 11/12 Meetings

### Mr. Sutham Songsiri

Director / Member of Remuneration Committee /  
Member of Corporate Governance Committee /  
Member of Executive Committee

**Date of Appointment:** 12 March 2008

**Age:** 81 years

#### Education

- Master of Economics, San Francisco State University
- Bachelor of Economics, Lincoln University
- Strategy Formulation and Execution, Columbia University, USA
- Kaplan - Norton Master Class to Mastering New Management System Boston, USA
- Change Management Course Massachusetts Institute of Technology USA

#### Training

**By Thai Institute of Directors (IOD)**

- Directors Certification Program (DCP) Class 97/2007
- Role of the Chairman Program (RCP) Class 22/2009
- Role of the Nomination and Governance Committee (RNG) Class 1/2001

#### Other Training

- Internal control and Risk management / Value adding support strategic management held by Energy Absolute PCL.

### Work Experiences during 5 years

#### Position in Company

- 2015 - Present Member of Corporate Governance Committee
- 2014 - Present Member of Remuneration Committee
- 2008 - Present Director
- 2008 - Present Member of Executive Committee

#### Position in Subsidiary of the Company

Subsidiaries No. 4, 6 and 23-27

(Refer to the Information of companies which EA holds shares more than 10 percent of total paid up capital, Page 25-28)

#### Position in Other Listed Companies

-None-

#### Position in Non Listed Companies/ Other Organizations

- 2019 - Present Director,  
Public Policy for Social Governance  
Foundation

### Shareholding in EA

(including spouse/ minor children)

- Shareholding as at the end of 2018 : 1,650,000 shares (0.044 %)  
Held personally : 1,650,000 shares (0.044 %)  
Held by spouse : -None-
- Shareholding as of 6 January, 2020 : 1,650,000 shares (0.044 %)  
Held personally : 1,650,000 shares (0.044 %)  
Held by spouse : -None-  
(Please refer to "Securities and Shareholders Information" Section)
- Share Increase / (Decrease) : -None-

### Relationship with other Directors and Management

-None-

### Meeting Attendance in 2019

- Board of Directors Meeting : 5/6 Meetings
- Remuneration Committee Meeting : 2/2 Meetings
- Corporate Governance Committee Meeting : 4/4 Meetings
- Executive Committee Meeting : 8/12 Meetings

### ACM. Chainan Thumasujarit

Independent Director / Chairman of Audit Committee / Chairman of Risk Management Committee / Member of Remuneration Committee / Member of Nomination Committee / Member of Corporate Governance Committee (Non- Executive Director)

**Date of Appointment:** 7 August 2012

**Age:** 69 years

### Education

- Bachelor of Engineering (the 2nd Class Honors), Chulalongkorn University
- Bachelor of Arts in Political Science, Ramkhamhaeng University
- Bachelor of Business Administration (General Managements), Ramkhamhaeng University
- Bachelor of Business Administration (the 1st Class Honors), Sukhothai Thammathirat Open University
- Diploma, The National Defence College Class 2003, National Defence College (NDC)
- Naval Command and staff college, Institute of Advanced Naval Studies
- M. Eng. Asian Institute of Technology (A.I.T.)
- D. Eng. (Candidate) Asian Institute of Technology (A.I.T.)

### Training

#### By Thai Institute of Directors (IOD)

- Director Accreditation Program (DAP) Class 67/2007
- Audit Committee Program (ACP) Class 22/2008
- Monitoring of the Quality of Financial Reporting (MFR) Class 16/2012
- Risk Management Program for Corporate Leader (RCL) class 13/2018

#### Other Training

- Drafting, Negotiating & Managing Successful Construction Contracts Summit 2015 held by Omega World Class Research Institute
- AC HOT UPDATE - Prepare for Next Generation CG and Sustainability held by Federation of Accounting Professions Under The Royal Patronage of His Majesty The King
- Forensic Data Analytics: Fighting Fraud with Big Data held by PricewaterhouseCoopers ABAS Co., Ltd.
- Intelligent City and Information Center held by Institute of Electrical and Electronics Engineers of Thailand
- Internal control and Risk management / Value adding support strategic management held by Energy Absolute PCL.



## Work Experiences during 5 years

### Position in Company

2016 - Present	Member of Remuneration Committee
2015 - Present	Member of Corporate Governance Committee
2014 - Present	Member of Nomination Committee / Member of Risk Management Committee / Chairman of Audit Committee
2012 - Present	Independent Director
2012 - 2014	Member of Audit Committee

### Position in Subsidiary of the Company

-None-

### Position in Other Listed Companies

2012 - April 2019	Independent Director/ Chairman of Audit Committee/ Chairman of Nomination and Remuneration Committee, Hydrotek PCL.
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### Position in Non Listed Companies/ Other Organizations

2019 - Present	Chairman of the Board of Directors, Gold Shores Co., Ltd.
2018 - Present	Chairman of the Board of Directors, Asia recycle Technology Co., Ltd. / Asia waste management Co., Ltd. / Universal Waste Management Co., Ltd.
2006 - Present	Retired Government Official, Office of the Permanent Secretary, Ministry of Defence
1974 - Present	Freelance Structural Engineer, Office of the Permanent Secretary, Ministry of Defence

## Shareholding in EA

(including spouse/ minor children)

• Shareholding as at the end of 2018	: -None-
• Shareholding as of 6 January, 2020	: -None-
• Share Increase / (Decrease)	: -None-

## Relationship with other Directors and Management

-None-

## Meeting Attendance in 2019

• Board of Directors Meeting	: 5/6	Meetings
• Audit Committee Meeting	: 10/10	Meetings
• Remuneration Committee Meeting	: 2/2	Meetings
• Nomination Committee Meeting	: 3/3	Meetings
• Corporate Governance Committee Meeting	: 4/4	Meetings
• Risk Management Committee Meeting	: 5/5	Meetings

## Mr. Chaiwat Pongpisitsakul

Independent Director / Member of Audit Committee (who has accounting knowledge and experience to review creditability of financial statements) / Chairman of Corporate Governance Committee / Chairman of Remuneration Committee / Member of Nomination Committee (Non- Executive Director)

**Date of Appointment:** 12 March 2008

**Age:** 73 years

## Education

- Master of Public Administration, The National Institute of Development Administration (NIDA)
- Bachelor of Accounting, Thammasat University
- Bachelor of Laws, Thammasat University

## Training

### By Thai Institute of Directors (IOD)

- Director Accreditation Program (DAP) Class 32/2005
- Audit Committee Program (ACP) Class 41/2012
- Board Nomination & Compensation Program (BNCP) Class 1/2017

### Other Training

- Drafting, Negotiating & Managing Successful Construction Contracts Summit 2015 held by Omega World Class Research Institute
- The UK Experience on Implementing the Enhanced Auditor Reporting held by Securities and Exchange Commission (SEC)
- AC HOT UPDATE - Prepare for Next Generation CG and Sustainability held by Federation of Accounting Professions Under The Royal Patronage of His Majesty The King

## Work Experiences during 5 years

### Position in Company

2016 - Present	Chairman of Remuneration Committee
2015 - Present	Chairman of Corporate Governance Committee
2014 - Present	Member of Audit Committee / Member of Nomination Committee
2008 - Present	Independent Director
2014 - 2016	Member of Remuneration Committee
2008 - 2014	Chairman of Audit Committee

### Position in Subsidiary of the Company

-None-

### Position in Other Listed Companies

-None-

### Position in Non Listed Companies/ Other Organizations

2009 - Present	Manager / Auditor, Chaiwat Auditing Office
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### Shareholding in EA

(including spouse/ minor children)

- Shareholding as at the end of 2018 : -None-
- Shareholding as of 6 January, 2020 : -None-
- Share Increase / (Decrease) : -None-

### Relationship with other Directors and Management

-None-

### Meeting Attendance in 2019

- Board of Directors Meeting : 6/6 Meetings
- Audit Committee Meeting : 10/10 Meetings
- Remuneration Committee Meeting : 2/2 Meetings
- Nomination Committee Meeting : 3/3 Meetings
- Corporate Governance Committee Meeting : 4/4 Meetings

### M.R. Bravochat Chatchai

Independent Director / Member of Audit Committee / Chairman of Nomination Committee / Member of Risk Management Committee / Member of Corporate Governance Committee / Member of Remuneration Committee (Non- Executive Director)

**Date of Appointment:** 26 November 2010

**Age:** 59 years

### Education

- Master of Arts, Phranakhon Rajabhat University
- Bachelor of Laws, Ramkhamhaeng University

### Training

**By Thai Institute of Directors (IOD)**

- Director Accreditation Program (DAP) Class 98/2012
- Audit Committee Program (ACP) Class 41/2012
- Role of Nomination and Governance Committee (RNG) Class 7/2015
- Risk Management Program for Corporate Leader (RCL) Class 13/2018

### Other Training

- AC HOT UPDATE - Prepare for Next Generation CG and Sustainability held by Federation of Accounting Professions Under The Royal Patronage of His Majesty The King
- Forensic Data Analytics: Fighting Fraud with Big Data held by PricewaterhouseCoopers ABAS Co., Ltd.
- Internal control and Risk management / Value adding support strategic management held by Energy Absolute PCL.

### Work Experiences during 5 years

#### Position in Company

- 2016 - Present Member of Remuneration Committee
- 2015 - Present Member of Corporate Governance Committee
- 2014 - Present Chairman of Nomination Committee / Member of Risk Management Committee
- 2010 - Present Independent Director / Member of Audit Committee

#### Position in Subsidiary of the Company

-None-

#### Position in Other Listed Companies

-None-

#### Position in Non Listed Companies/ Other Organizations

- 1999 - Present Director, M.R. Bravochat Laws Office

### Shareholding in EA

(including spouse/ minor children)

- Shareholding as at the end of 2018 : -None-
- Shareholding as of 6 January, 2020 : -None-
- Share Increase / (Decrease) : -None-

### Relationship with other Directors and Management

-None-

### Meeting Attendance in 2019

- Board of Directors Meeting : 6/6 Meetings
- Audit Committee Meeting : 10/10 Meetings
- Remuneration Committee Meeting : 2/2 Meetings
- Nomination Committee Meeting : 3/3 Meetings
- Corporate Governance Committee Meeting : 4/4 Meetings
- Risk Management Committee Meeting : 5/5 Meetings

## Pol.Gen. Phatcharavat Wongsuwan

Independent Director / Member of Risk Management Committee (Non- Executive Director)

**Date of Appointment:** 18 April 2014

**Age:** 70 years

### Education

- Master of Arts (Social Development), Kasetsart University
- Royal Police Cadet Academy Class 25
- Armed Forces Academies Preparatory School Class 9
- Diploma, The National Defence College, The State, Private Sector and Political Sectors Class 2, National Defence College

### Training

**By Thai Institute of Directors (IOD)**

- Director Accreditation Program (DAP)

### Work Experiences during 5 years

#### Position in Company

- |                |                                     |
|----------------|-------------------------------------|
| 2014 - Present | Independent Director                |
| 2014 - Present | Member of Risk Management Committee |

#### Position in Subsidiary of the Company

-None-

#### Position in Other Listed Companies

- |                |   |
|----------------|---|
| 2017 - Present | Vice Chairman of the Board of Director, Country Group Development PCL.  |
| 2016 - Present | Independent Director/ Chairman of the Remuneration and Nominating Committee, Charoen Pokphand Foods PCL.  |
| 2013 - Present | Independent Director/ Chairman of the Remuneration and Nominating Committee/ Member of Sustainability and Corporate Governance Committee, CP ALL PCL. |

#### Position in Non Listed Companies/ Other Organizations

- |         |   |
|---------|---|
| Present | Consultant, National Broadcasting and Telecommunication Commission (NBTC) |
|---------|---|

### Shareholding in EA

(including spouse/ minor children)

- Shareholding as at the end of 2018 : 1,140,000 shares (0.031 %)  
Held personally : 1,140,000 shares (0.031 %)  
Held by spouse : -None-
- Shareholding as of 6 January, 2020 : 1,140,000 shares (0.031 %)  
Held personally : 1,140,000 shares (0.031 %)  
Held by spouse : -None-  
(Please refer to "Securities and Shareholders Information" Section)
- Share Increase / (Decrease) : -None-

### Relationship with other Directors and Management

-None-

### Meeting Attendance in 2019

- Board of Directors Meeting : -/6 Meetings
- Risk Management Committee Meeting : -/5 Meetings

## Mr. Somboon Ahunai

Director / Member of Executive Committee

**Date of Appointment:** 22 April 2015

**Age:** 64 years

### Education

- Master of Business Administration, Jacksonville State University
- Bachelor of Science (Honors) in Chemical Engineering, University of Alabama

### Training

**By Thai Institute of Directors (IOD)**

- Director Accreditation Program (DAP) Class 47/2005
- Audit Committee Program (ACP) Class 12/2006

#### Other Training

- Internal control and Risk management / Value adding support strategic management held by Energy Absolute PCL.

### Work Experiences during 5 years

#### Position in Company

- |                |                               |
|----------------|-------------------------------|
| 2017 - Present | Member of Executive Committee |
| 2015 - Present | Director                      |
| 2011 - Present | Advisor                       |

#### Position in Subsidiary of the Company

-None-

#### Position in Other Listed Companies

-None-

#### Position in Non Listed Companies/ Other Organizations

- |                |   |
|----------------|---|
| 1983 - Present | Director, Ruammit Panich Co., Ltd.  |
| 2000 - Present | Director, Songphon Co., Ltd.  |
| 2004 - 2015    | Executive Vice President (Director), Small and Medium Enterprise Development Bank of Thailand |



### Shareholding in EA

(including spouse/ minor children)

- Shareholding as at the end of 2018 : 10,043,951 shares (0.269 %)  
Held personally : 10,043,951 shares (0.269 %)  
Held by spouse : -None-
- Shareholding as of 6 January, 2020 : 10,093,951 shares (0.271 %)  
Held personally : 10,093,951 shares (0.271 %)  
Held by spouse : -None-  
(Please refer to "Securities and Shareholders Information" Section)
- Share Increase / (Decrease) : 50,000 shares (0.001 %)  
Held personally : 50,000 shares (0.001 %)  
Held by spouse : -None-

### Relationship with other Directors and Management

- Brother of Mr.Somphote Ahunai (Director, Chairman of Executive Committee, Member of Risk Management Committee, and Chief Executive Officer)

### Meeting Attendance in 2019

- Board of Directors Meeting : 6/6 Meetings
- Executive Committee Meeting : 11/12 Meetings

### Mr. Amornsuk Noparumpa

Independent Director (Non- Executive Director)

**Date of Appointment:** 27 April 2017

**Age:** 73 years

### Education

- Bachelor of Laws (Honors), Thammasat University
- Barrister-at-Law, Council of Legal Education Thailand
- Barrister-at-Law, Lincoln's Inn, London
- Diploma The National Defence College Class 399

### Training

By Thai Institute of Directors (IOD)

- Director Certification Program (DCP) Class 30/2003
- Audit Committee Program (ACP) Class 23/2008
- Role of Compensation Committee Program (RCC) Class 9/2009
- Role of the Chairman Program (RCP) 36/2015

Other Training

- Security Psychology Program Class 31
- Senior Management Program Class 7

### Work Experiences during 5 years

Position in Company

2017 - Present Independent Director

Position in Subsidiary of the Company

-None-

Position in Other Listed Companies

2005 - Present Independent Director/  
Chairman of the Board of Directors,  
L.P.N. Development PCL.

1998 - Present Independent Director/  
Chairman of the Audit Committee/  
Member of Nomination and  
Remuneration Committee,  
Regional Container Lines PCL.

Position in Non Listed Companies/ Other Organizations

-None-

### Shareholding in EA

(including spouse/ minor children)

- Shareholding as at the end of 2018 : -None-
- Shareholding as of 6 January, 2020 : -None-
- Share Increase / (Decrease) : -None-

### Relationship with other Directors and Management

-None-

### Meeting Attendance in 2019

- Board of Directors Meeting : 6/6 Meetings

# Executive Team

As of 6 January, 2020



**Mr. Somphote Ahunai**

Chairman of Executive Committee /  
Chief Executive Officer



**Mr. Amorn Saphaweekul**

Member of Executive Committee /  
Deputy CEO / Acting Vice President  
- Quality Control / Acting Vice  
President - Strategy Development and  
Investment Planning Department



**Mrs. Dujdao Luksanaviwat**

Special Assistant to CEO /  
Vice President – Quality, Health,  
Safety and Environment Department



**Ms. Yaowalug Pukpikul**

Corporate Secretary / Secretary of  
the Board of Directors / Secretary of  
Executive Committee / Secretary of  
Risk Management Committee /  
Secretary of Corporate Governance  
Committee / Vice President –  
Corporate Secretary, Compliance and  
Contract Management



**Ms. Omsin Siri**

Vice President – Corporate  
Communication Department



**Ms. Wimolmas  
Wongmakornpan**

Vice President – Social Enterprise  
Department



**Mr. Manop Oulandsiripong**

Vice President – Information  
Technology and System  
Development Department



**Mrs. Pornthip Saengchan**

Vice President – Human Resource  
and Administration Department /  
Secretary of the Remuneration Committee



**Mr. Narawut Tantianurak**

Vice President - Internal Audit  
and Risk Management / Secretary of  
the Audit Committee



**Mr. Kitiphong Tuesataya**

Vice President - Purchasing and  
Procurement Department



**Ms. Nopamas Choomklang**

Vice President - Accounting



**Mrs. Tanapa Amornmatevarin**

Vice President - Facility and Asset  
Management Department



**Mr. Cheerapan Panyanan**

Vice President - Factory Department



**Mr. Kawin Kaewkong**

Vice President - Sales and  
Marketing Department





# General and other important information

## General information

Company Name	: Energy Absolute Public Company Limited
Security Name	: EA
Company Registration Number	: 0107551000061
Nature of business	: <ul style="list-style-type: none"><li>1) <b>Biodiesel Business</b> (through the Company and Subsidiaries)<ul style="list-style-type: none"><li>• Produces and Distributes biodiesel (B100), purified glycerin and byproducts</li><li>• Produces and Distributes Phase Change Material: PCM</li></ul></li><li>2) <b>Renewable Power Plant Business</b> (through Subsidiaries)<ul style="list-style-type: none"><li>• Produces and Distributes solar electric power</li><li>• Produces and Distributes wind electric power</li></ul></li><li>3) <b>Other Businesses</b> (through Subsidiaries)<ul style="list-style-type: none"><li>• Develop, Produces and Distributes of batteries</li><li>• Electric Charging Station Business (for electric vehicle), Electronic transaction</li><li>• Research and Development Business</li><li>• Others</li></ul></li></ul>
Registered Capital / Paid-up Capital	: THB 373,000,000 (as of January 6, 2020)
Listed share	: 3,730,000,000 ordinary shares, with a par value of THB 0.10 per share
Head Office	: No. 89 AIA Capital Center Building, 16 <sup>th</sup> Floor, Ratchadapisek Road, Din Daeng Sub-district, Din Daeng District, Bangkok 10400 <b>Tel:</b> 0 2248 2488-92, 0 2002 3667-9 <b>Fax:</b> 0 2248 2493 <b>Website:</b> <a href="http://www.energyabsolute.co.th">www.energyabsolute.co.th</a> : <b>Corporate Communications Department</b> <b>Tel:</b> 0 2248 2488-92, 0 2002 3667-9 Ext. 19531 <b>Fax:</b> 0 2248 2493 <b>E-mail :</b> <a href="mailto:ir@energyabsolute.co.th">ir@energyabsolute.co.th</a>

## Plant Location / Project Office:

### Biodiesel Business

- **Biodiesel (B100), Purified Glycerin and Byproducts**  
Plant Project Office / Project Location:  
507, Moo 9, Soi 7, Kabinburi Industrial Estate, Kabin Buri - Nakhon Ratchasima Road, Km.12, Nong Ki Sub-district, Kabin Buri District, Prachin Buri 25110

- **Phase Change Material (PCM) Plant**  
Project Office / Project Location:  
WHA Eastern Industrial Estate (Map Ta Phut), 88, Soi G5, Pakorn Songkrohraj Road, Map Ta Phut sub-district, Muang Rayong district, Rayong 21150

### Renewable Power Plant Business

- **Solar Power Plant project 8 megawatts / Lopburi Province**  
Project Office / Project Location:  
188, 188/2, Moo 3, Khok Tum - Pa Sak River Road (Highway No. 3333) Km.21, Phatthana Nikhom sub-district, Phatthana Nikhom District, Lop Buri Province 15140

- **Solar Power Plant 90 megawatts / Nakhon Sawan Province**  
Project Office / Project Location:  
99/9, 99/10, Moo 5, Huawai Sub-District, Takhli district, Nakhon Sawan 60140

- **Solar Power Plant 90 megawatts / Lampang province**  
Project Office:  
333, Moo 1, Ban-uam Sub-district, Mueang Lampang District, Lampang 52100  
Project Location : Located at Ban-uam sub-district, Ban-Pao district, Mueang Lampang district and Nonglom sub-district, Hangchat district, Lampang

- **Solar Power Plant 90 megawatts / Phitsanulok province**  
Project Office / Project Location:  
88, Moo 11, Matong Sub-district, Phrom Phiram District, Phitsanulok 65180

- **Wind Power Plant 126 megawatts / Nakhon Si Thammarat and Songkhla province**  
Project Office:  
212, Moo 2, Hua Sai sub-district, Hua Sai district, Nakhon SiThammarat 80170  
Project Location : Located at Hua Sai district, Pak Panang District, Nakhon Si Thammarat and Ranot district, Songkhla

- **Wind Power Plant 260 megawatts / Chaiyaphum province**  
Project Office:  
8/8, Moo 8, Tako Thong sub-district, Sap Yai district, Chaiyaphum 36130  
Project Location : Located at Thep Sathit district, Nong Bua Ra haew district and Bamnet Narong district, Chaiyaphum



## Information of companies which the Company holds shares more than 10 percent of total paid up capital.

(As of December 31, 2019)

Subsidiaries	(Abbreviation)	Type of Business	Registered Capital (THB)	Number of Share sold (Share)	Par Value (THB/Share)	Number of Shareholding (Share)	Shareholding (%)	Office Location
<b>Subsidiaries (Direct)</b>								
1. EA Bio Innovation Co., Ltd.	EBI	Produces and Distributes Biodiesel Products	400,100,000	40,010,000	10	40,009,997	99.99	89 AIA Capital Center Building, 16 <sup>th</sup> Floor, Ratchadapisek Road, Din Dang Sub-district, Din Dang district, Bangkok 10400 <b>Tel :</b> 0 2248 2488-92, 0 2002 3667-9 <b>Fax :</b> 0 2248 2493
2. EA Solar Co., Ltd.	ESLO	Solar power producer, generating and supplying solar electricity	550,000,000	Common Stock: 4,480,000 Preferred Stock: 1,020,000	Common Stock: 100 Preferred Stock: 100	Held by EA: 2,694,999 SUSO: 2,805,000 (Common Stock: 1,785,000 Shares and Preferred Stock: 1,020,000 Shares)	Held by EA: 49.00 Held by subsidiary: 51.00	
3. EA Solar Nakhon Sawan Co., Ltd.	ESN		5,590,000,000	559,000,000	10	558,999,998	99.99	
4. Thebsathit Wind Farm Co., Ltd.	TWF	Wind power producer, generating and supplying wind electricity	2,000,000	20,000	100	19,998	99.99	
5. Energy Solution Management Co., Ltd.	ESM	Electric Power Consulting and Power Plant construction services	110,000,000	1,100,000	100	1,099,995	99.99	
6. EA Renewable Holding Co., Ltd.	ERH	Invest in solar and wind electric power business	7,429,200,000	742,920,000	10	742,919,997	99.99	
7. Surachai (1997) Co., Ltd.	SUS97	Invest in solar electric power business	190,500,000	190,500	1,000	190,300	99.90	
8. Wind Nayaangklaik Co., Ltd.	WNYK	Invest in wind electric power business	1,879,500,000	187,950,000	10	187,949,997	99.99	
9. Wind Progressive Co., Ltd.	WPGS		1,879,500,000	187,950,000	10	187,949,997	99.99	
10. Wind Tossaphum Co., Ltd.	WTSP		1,670,000,000	167,000,000	10	166,999,997	99.99	
11. Emma Corporation Co., Ltd.	EMMA	Research and Development in Electrical Equipment	100,000	1,000	100	500	50.00	
12. Green Technology Research Co., Ltd.	GTR	Research and Development in Biodiesel	112,000,000	11,200,000	10	11,199,997	99.99	
13. Mine Mobility Research Co.,Ltd.	MMR	Research and Development in electric vehicle	300,000,000	30,000,000	10	29,999,997	99.99	

Subsidiaries	(Abbreviation)	Type of Business	Registered Capital (THB)	Number of Share sold (Share)	Par Value (THB/Share)	Number of Shareholding (Share)	Shareholding (%)	Office Location
<b>Subsidiaries (Direct) (Cont.)</b>								
14. Energy Beyond Research Co.,Ltd.	EBR	Research and Development	20,000,000	2,000,000	10	1,999,997	99.99	89 AIA Capital Center Building, 16 <sup>th</sup> Floor, Ratchadapisek Road, Din Dang Sub-district, Din Dang district, Bangkok 10400 Tel : 0 2248 2488-92, 0 2002 3667-9 Fax : 0 2248 2493
15. Mine Mobility Corporation Co.,Ltd.	MMC	Assembly, Produce and Distribute electric vehicle	550,000,000	55,000,000	10	54,999,997	99.99	
16. E Smart Transport Co., Ltd.	EST	Provides transportation services and tourism	1,000,000	100,000	10	99,997	99.99	
17. EV Now Co.,Ltd.	EV Now	Produces and Distributes electric vehicles and public transportation services	50,000,000	5,000,000	10	3,749,497	74.99	
18. Smart Waste Management Co.,Ltd.	SWM	Operating waste disposal services	10,000,000	1,000,000	10	999,997	99.99	
19. Energy Mahanakhon Co.,Ltd.	EMN	Install and provide electric charging station services	200,000,000	20,000,000	10	Held by EA : 9,999,997 Held by EBI : 422,222	Held by EA: 50.00 Held by subsidiary: 2.11	Building No. 518, 5 <sup>th</sup> Floor, Ratchadapisek Road, Samsen Nok sub-district, Huai Khwang district, Bangkok 10310 Tel: 0 2087 6300, 0 2087 6311
20. Amita Technologies Inc.	Amita Taiwan	Research and Development of Lithium-Ion Polymer batteries	2,000,000,000 <sup>/1</sup>	147,249,406	10 <sup>/1</sup>	Held by EA : 96,609,821 EA BVI 1 : 8,929,000 EA BVI 2 : 4,465,000	Held by EA: 65.61 Held by subsidiaries: 9.10	No. 6, Chazhuan Rd., Gueishan, Taoyuan County 33349, Taiwan Tel : +886-3-2631212 #133 Fax : +886-3-3-3200638 www.amitatech.com
21. EA CON DAO (SG) PTE. LTD.	EA Con Dao	Invest in renewable energy business	10,000 <sup>/2</sup>	10,000	1 <sup>/2</sup>	9,500	95.00	No. 8 MARINA BOULEVARD #05-02 MARINA BAY FINANCIAL CENTRE
22. EA BVI Holding Limited	BVI Holding	Invest in EV Powertrain System design and development	500,000 <sup>/3</sup>	50,000	10 <sup>/3</sup>	50,000	100.00	SINGAPORE (018981) Tortola, Pier Park, Building 1 Second Floor, Wickhams Cay 1, Road Town, Tortola British Virgin Islands

**Remark :** <sup>/1</sup> Taiwan Dollar <sup>/2</sup> Singapore Dollar <sup>/3</sup> United States Dollar

Subsidiaries	(Abbreviation)	Type of Business	Registered Capital (THB)	Number of Share sold (Share)	Par Value (THB/Share)	Number of Shareholding (Share)	Shareholding by EA Group (%)	Office Location
<b>Subsidiaries (Indirect)</b>								
23. EA Solar Lampang Co., Ltd.	ESL	Solar power producer, generating and supplying solar electricity	2,125,000,000	212,500,000	10	Held by ERH : 212,499,997	99.99	89 AIA Capital Center Building, 16 <sup>th</sup> Floor, Ratchadapisek Road, Din Dang Sub-district, Din Dang district, Bangkok 10400 Tel : 0 2248 2488-92, 0 2002 3667-9 Fax : 0 2248 2493
24. EA Solar Phitsanulok Co., Ltd.	ESP		2,125,000,000	212,500,000	10	Held by ERH : 212,499,997	99.99	
25. EA Wind Hadkumhan 1 Co., Ltd.	EWHK 1	Wind power producer, generating and supplying wind electricity	98,470,000	9,847,000	10	Held by ERH : 9,846,997	99.99	
26. EA Wind Hadkumhan 2 Co., Ltd.	EWHK 2		123,065,000	12,306,500	10	Held by ERH : 12,306,497	99.99	
27. EA Wind Hadkumhan 3 Co., Ltd.	EWHK 3		3,120,000,000	312,000,000	10	Held by ERH : 311,999,997	99.99	
28. Nayangklaik Development Co., Ltd.	NYKD		939,000,000	93,900,000	10	Held by WNYK : 93,899,997	99.99	
29. Nayangklaik Wind Power Co., Ltd.	NWP		939,000,000	93,900,000	10	Held by WNYK : 93,899,997	99.99	
30. Benjarat Development Co., Ltd.	BJRD		876,000,000	87,600,000	10	Held by WPGS : 87,599,997	99.99	
31. Pongnok Development Co., Ltd.	PND		1,002,000,000	100,200,000	10	Held by WPGS : 100,199,997	99.99	
32. Ban Chuan Development Co., Ltd.	BCD		1,669,000,000	166,900,000	10	Held by WTSP : 166,899,997	99.99	
33. Amita Technology (Thailand) Co., Ltd.	Amita-TH	Produces and Distributes Lithium-Ion batteries and energy storage	2,400,000,000	240,000,000	10	Held by Amita -SG : 239,999,997	99.99	
34. EA Station Co., Ltd.	EA Station	Hub Station and Logistic business	500,000	50,000	10	Held by EMN : 49,970	99.94	
35. Surachai (1997) Solar Co., Ltd.	SUSO	Solar power producer, generating and supplying solar electricity	179,500,000	179,500	1,000	Held by SU97 : 179,498	99.99	
36. Paypop Co., Ltd.	POP	Electronic transaction (E-Money) Business	100,000	10,000	10	Held by EMN : 9,997	99.97	Building No. 518, 5 <sup>th</sup> Floor, Ratchadapisek Road, Samsen Nok sub-district, Huai Khwang district, Bangkok 10310 Tel : 0 2087 6300, 0 2087 6311



Subsidiaries	(Abbreviation)	Type of Business	Registered Capital (THB)	Number of Share sold (Share)	Par Value (THB/Share)	Number of Shareholding (Share)	Shareholding by EA Group (%)	Office Location
<b>Subsidiaries (Indirect)</b>								
37. AMITA NEW TECHNOLOGY PTE.LTD.	Amita-SG	Investment and Holding	43,507,834 <sup>/3</sup>	43,507,834	1 <sup>/3</sup>	Held by Amita-Taiwan : 43,507,834	100	No. 1 Robinson Road #17-00 AIA Tower
38. Sun Field Investments Co.,Ltd.	Sun Field		10,000,000 <sup>/3</sup>	10,000,000	1 <sup>/3</sup>	Held by Amita-Taiwan : 10,000,000	100	Singapore (048542) Equity Trust Chambers, P.O. Box 3269, Apia, Samoa
39. EA BVI 1 Limited	BVI 1	Investment Business	30,000 <sup>/3</sup>	3,000	10 <sup>/3</sup>	Held by BVI Holding : 3,000	100	Tortola, Pier Park, Building 1 Second Floor, Wickhams Cay 1, Road Town, Tortola British Virgin Islands
40. EA BVI 2 Limited	BVI 2		30,000 <sup>/3</sup>	3,000	10 <sup>/3</sup>	Held by BVI Holding : 3,000	100	
<b>Associates</b>								
41. Wan Meng Automatic Precision Co., Ltd.	Wan Meng	Distribute electric equipment and Machinery	100,000,000 <sup>/1</sup>	3,596,000	10 <sup>/1</sup>	Held by Amita-Taiwan : 1,296,000	36.04	58-1, Alley 289, Lane 68, Ming Fu Rd. Sec. 3, Yangmay, Taoyuan, Taiwan
42. Zept Inc.	Zept	Research and Development of EV Powertrain Systems	22,083,333 <sup>/1</sup>	22,083,333	1 <sup>/1</sup>	Held by BVI Holding : 10,000,000	45.28	Room. A306, No.18, Siyuan St., Taipei, Taiwan, 100
<b>Joint Venture</b>								
43. Shenzhen Atess Power Technology Co., Ltd.	Atess Power	Distribute electric equipment and Machinery	3,600,000 <sup>/3</sup>	The Company's investment amount is 1,320,000 <sup>/3</sup>			36.67	Room 203, 2 <sup>nd</sup> Floor, Building 5, Jiayu Industry Park, No. 28, Guangming, Xibianling, Shangwu Village, Shiyan Street, Baoan District, Shenzhen, China

**Remark :** <sup>/1</sup> Taiwan Dollar <sup>/2</sup> Singapore Dollar <sup>/3</sup> United States Dollar

## Other References

### Securities Registrar

Thailand Securities Depository Company Limited (TSD)  
The Stock Exchange of Thailand Building,  
93 Ratchadaphisek Road, Din Daeng sub-district,  
Din Daeng district Bangkok 10400  
Telephone : 0 2009 9999 Fax: 0 2009 9991  
SET Contact Center : 0 2009 9999  
Website: <http://www.set.or.th/tsd/th/tsd.html>  
E-mail: SETContactCenter@set.or.th

### Debenture Registrar No. 1/2016

Siam Commercial Bank Public Company  
Limited Head Office  
No. 9, Ratchadapisek Road, Chatuchak sub-district,  
Chatuchak district, Bangkok 10900  
Contact Registrar  
Siam Commercial Bank Public Company Limited,  
Chidlom Office Building 2, 3rd Floor, No. 1060,  
Petchburi Road, Makkasan sub-district, Ratchathewi  
district, Bangkok 10400  
Telephone: 0 2256 2329 Fax: 0 2256 2406  
Website: <http://www.scb.co.th/th/home>

### Debenture Registrar No. 1-3/2019

Bank of Ayudhya Public Company Limited  
Head Office  
No. 1222, Rama 3 Road, Bang Phong Pang sub-district,  
Yan Nawa district, Bangkok 10120  
Telephone: 0 2296 3582 Fax: 0 2683 1298  
Website: <https://www.krungsri.com/bank/th/home.html>

### Audit Firm

- Miss Amornrat Permpoonwattanasook  
Certified Public Accountant Registration No. 4599
- Mr. Boonrueng Lerdwiseswit  
Certified Public Accountant Registration No. 6552
- Mr. Pongtawee Rattanagosate  
Certified Public Accountant Registration No. 7795

PricewaterhouseCoopers ABAS Company Limited  
Bangkok City Tower, 15th Floor, No. 179/74-80,  
South Sathorn Road, Thung Maha Mek sub-district,  
Sathon district, Bangkok 10120  
Tel: 0 2344 1000, 0 2824 5000  
Fax: 0 2286 5050

### Legal Consultant

S.C. Law Office Company Limited  
90/42 16th Floor, Sathorn Thani Building,  
North Sathorn Road, Silom sub-district, Bangrak district,  
Bangkok 10500  
Tel: 0 2696 9696-97  
Fax: 0 2696 9698

## Other Information

The Company has been granted by the Securities and Exchange Commission (SEC) for issuance and offering the debentures. (Refer to the Information of Securities and Shareholders Information-Other Securities)

# Policy and Business Overview

## Vision, Mission, Goal and Strategy of the Company and Subsidiaries

### Vision

To become the leader of alternative energy by using cutting-edge and environmental-friendly technology for the highest benefit returning back to shareholders, trading partners and employees with fairness.

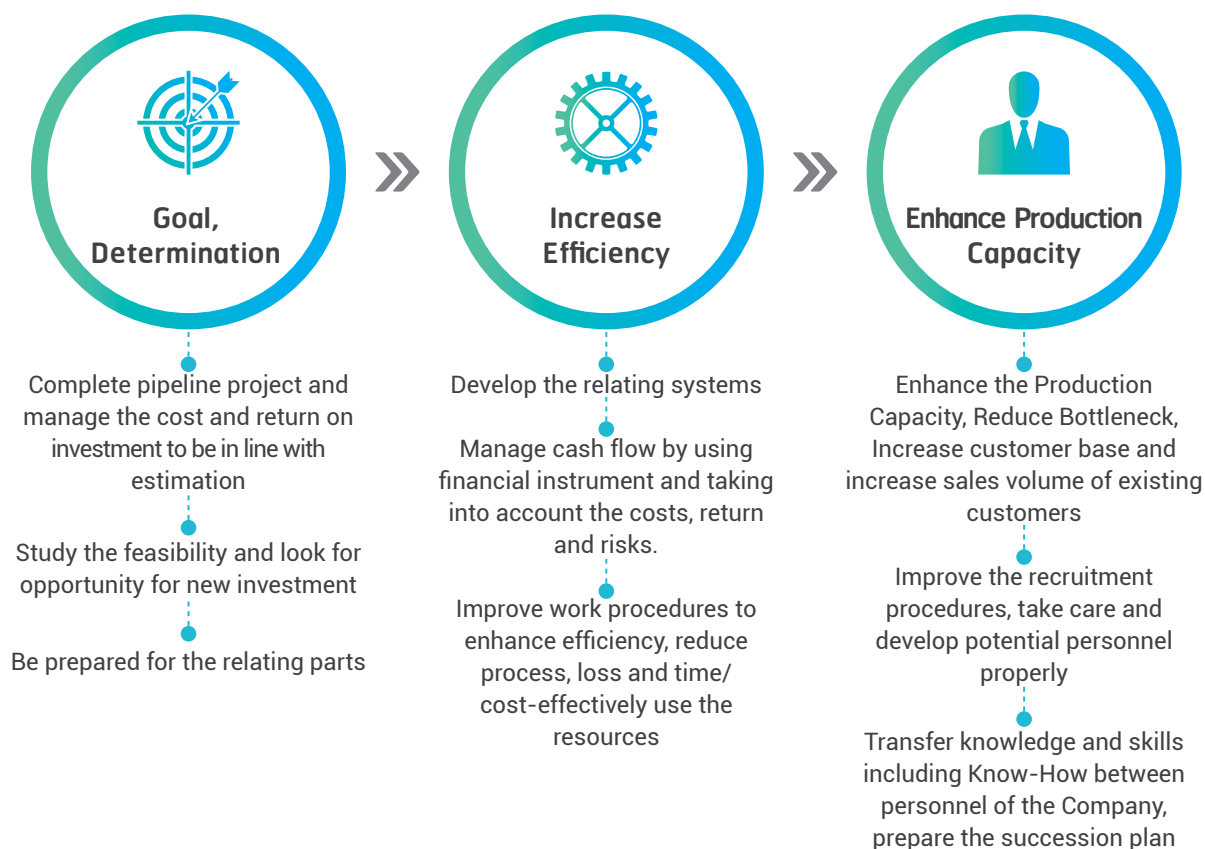
### Mission

- To use advanced technology in order to increase production efficiency.
- To support using energy crops as well as natural energy in order to reduce pollution released to the environment.
- To support government policy, building the energy security of the nation.
- To conduct a business based on fairness, build confidence among partners and shareholders.
- To build a robust foundation on human resource for sustainable and stable growth.

### Values



### Goal / Strategy





## History

Energy Absolute Public Company Limited ("the Company" or "EA") was first incorporated on 6 March 2006 in original name Suntech Palm Oil Company Limited, with registered capital of THB 50 million. In 2008, the Company was converted into a public company limited and renamed as Energy Absolute Public Company Limited. The registered capital was added from THB 50 to 250 million. In 2009, registered capital increased to THB 360 million. After that, in 2012, the registered capital decreased to THB 305 million by share amount reduction from deducting of the unpaid shares, then increase the capital to THB 373 million by issuing new ordinary share of 680 million shares with a par value of THB 0.10 per share in order to initial public offering with the number of IPO 560 million shares at a IPO price of THB 5.50 per share and offer to the existing shareholders in proportion to their shareholding amount to 120 million shares at a price of THB 1.50 per share during 21-23 January 2013. As a result, the Company's registered and paid-up capital was added to THB 373 million.

In the early of 2013, the Company registered 3,730 million shares, at the par value of Baht 0.10 per share, total value of Baht 373 million to the "Market for Alternative Investment (mai)". Later in the end of 2016, the Company submitted a request to the Stock Exchange of Thailand to approve the trading of EA's securities in the Stock Exchange of Thailand (SET) (from mai to SET). Accordingly, the Stock Exchange of Thailand approved the trading of 3,730 million shares of the Company at the par value of Baht 0.10 per share, in the Stock Exchange of Thailand. The ordinary shares were allocated in the Resources category, Energy and Utilities section. The abbreviation for securities trading remained "EA" as before since 6 January 2017 onwards.

As for the current business operation, Nature of business can be divided to 3 groups as follow:

- 1.) Biodiesel Business
- 2.) Renewable Power Plant Business
- 3.) Other Businesses

Biodiesel Business, The Company operated business relating to Biodiesel products, namely Produces and Distributes biodiesel (B100), purified glycerin and byproducts (which has been granted a license of Oil Trader pursuant to Section 7 of the Fuel Trade B.E. 2543) Furthermore, the Company has expanded the business to Renewable Power Plant Business, starting from solar power plants and wind power plants to distribute to the Provincial Electricity Authority (PEA) and the Electricity Generating Authority of Thailand (EGAT) under the management of the subsidiaries. At present, the Company has 4 solar power plants with total production capacity 278 megawatts, and wind power plants with total production capacity 386 megawatts. For Other Businesses, The Company has expanded its business operation to development and manufacture of Lithium-Ion Polymer batteries. Initially, the Company invested 35.20 percent of the ordinary shares issued and sold in Amita Technologies Inc. ("Amita-Taiwan"), the company incorporated under the law of the Republic of China (Taiwan) and also listed in the Emerging Stock Market (ESM) of the Stock Exchange of Taiwan. The aim of the said investment is to expand and enhance the competitiveness of the Company including to be inconformity with the business policy that thrive for environmental-friendly concept.

Furthermore, the Company has broadened the scope of operation by establishing electric charging station for electric vehicles under the trademark "EA Anywhere". The aim is to utilize the clean energy in automotive industry and to reduce the emission of carbon dioxide gas and to promote the use of environmental-friendly energy. In addition to the business expansion, the Company continues operation to other business such as production and distribution of automobiles, the import-export of automotive parts, electric vehicles. Additionally, the Company amplifies the business scope to hub station and logistics with an aim to support the core business (biodiesel/charging). These new businesses will cover services such as stop spots for energy refill including electric charging and fuel refilling, restaurants and beverages, product distribution center.

## Development and Significant Changes during the past 3 years

### Development and Significant Changes of the Company and Subsidiaries

#### 2017

- In the first quarter of 2017, The Company was certified for Environmental Management System) ISO 14001: 2015 and the Occupational Health and Safety Management System) OHSAS 18001: 2007, by URS Thailand (United Registrar of Systems (Thailand) Co., Ltd.) which is the Certification Body to certify international standards. The purpose of above certification is to improve environmental management, occupational and safety into a systematic approach, to conform with the requirement and law, to create a good working environment where employees performing work with safety. Besides, such standard will reflect the endeavor of the Company on social responsibility, environment responsibility that covering inside and out of the organization.
- In the first quarter of 2017, the Company is classified as a plant/controlled building (TSIC-ID 20299 -1005). According to the Energy Conservation Promotion Act B.E. 2535, as amended by the Energy Conservation Promotion Act (Vol. 2) B.E. 2550 of the Department of Alternative Energy Development and Energy Conservation, Ministry of Energy.
- The Company was certified for the Green System Level 3 (G13) by the Ministry of Industry to ensure of its systematic environmental management. The Ministry of Industry supported the industrial sector to have an eco-friendly operation, social responsibility, create a harmony living together with the society and community, sustainable development by focusing on 3 subjects as follows.
  - 1.) Development and Improvement of Production Process
  - 2.) Environmental Management for Continuous Improvement
  - 3.) Social Responsibility both inside and outside the Organization (throughout the supply chain)In order that, the Company monitored and reviewed the development on continual basis.
- The Company maintained its standard of Roundtable on Sustainable Palm Oil: RSPO, ISO 9001: 2008 (Quality Management Systems) and Kosher accredited from the certified body throughout the year 2017.

- The Company has been approved for listing in the Thailand Voluntary Emission Reduction Program: T-VER of Thailand Greenhouse Gas Management Organization (public organization) or TGO. TGO develops the project to promote and support all sectors to take part in reducing the green house on a voluntary basis. The amounts of the greenhouse gas reduced are known as 'Carbon Credit' under T-VER or "TVERs" can be traded to the local voluntary carbon market. In addition, TGO has determined criteria and procedures for project development, methodology for reducing greenhouse gas, listing and certifying the amount of greenhouse gas. The project must cause reduction/absorb the greenhouse gas in Thailand, in order to reduce the emission rate which is the main cause of global warming, increase the source to store the greenhouse gas, generating income from trading the greenhouse gas through the subsidiaries for the following projects:
  - 1.) Project Name: Solar Power Plant at Nakhon Sawan, Thailand
  - 2.) Project Name: Solar Power Plant at Lampang, Thailand
  - 3.) Project Name: Solar Farm at Pisanulok, Thailand

In 2017, the Company still accumulates the greenhouse gas of 3 projects continuously. The projects are now under approval process from the Sub-Committee of TGO regarding to the amount of the greenhouse reduced.

- The Wind Power Plants (Hadjkanghan Project 1-3) with total production capacity of 126 megawatts operated by EA Wind Hadkanghan Co., Ltd. has started its commercial operation and recognized the revenue already for all of 3 projects.
- Since the Company was approved the investment promotion by the Board of Investment (BOI) for 5 wind power plants in Chaiyaphum (under the Company's name), by the Investment Promotion Act B.E. 2520, the Board of Investment has issued the Promotional Certificate to the affiliated companies as follows.
  - 1.) Indirect subsidiary - Nayangklak Development Co., Ltd. Wind Power Plant (Hanuman Project 1) with production capacity 45 megawatts.

- 2.) Indirect subsidiary - Pongnok Development Co., Ltd. Wind Power Plant (Hanuman Project 5) with production capacity 48 megawatts.
- 3.) Indirect subsidiary - Nayangklak Wind Power Co., Ltd. Wind Power Plant (Hanuman Project 8) with production capacity 45 megawatts.
- 4.) Indirect subsidiary - Benjarat Development Co., Ltd. Wind Power Plant (Hanuman Project 9) with production capacity 42 megawatts.
- 5.) Indirect subsidiary - Banchuan Development Co., Ltd. Wind Power Plant (Hanuman Project 10) with production capacity 80 megawatts.

The said 5 projects have been granted promotion for Class 7.1: Public Utility and Basic Service with the rights and benefits as per Investment Promotion Act B.E. 2520 and the amendment (vol. 3) B.E. 2544. For example, the promotion granted exemption on income tax incurred of the net profit generated from the business operation for a period of 8 years since from the date of earning income. After 8 years, the Company would be exempted 50 percent of income tax incurred from the net profit for a period of 5 years.

- The Company signed MOU with the Metropolitan Electricity Authority (MEA) to carry on the Electric Charging Station for Electric Automobile" under the trademark "EA Anywhere". The first station was opened on 16 November 2017 at the parking facilities of Siam Paragon Department Store, GA NORTH floor and Siam Center Department Store, GB floor.
- The Company established new subsidiaries (direct and indirect) as follows.
  - Energy Mahanakorn Co., Ltd. ("EMN") established with registered and paid-up capital of Baht 10 million which the Company holds 99.99 percent of shares. The purpose is to provide the installation service and provide electric charging station for all types of vehicles.
  - Green Technology Research Co., Ltd. ("GRT") established with registered and paid-up capital of Baht 40 million which the Company holds 99.99 percent of shares. The purpose is to conduct the research and development of Oleochemical.
  - MINE Mobility Research Co., Ltd. ("MMR") established with registered and paid-up capital of Baht 10 million which the Company holds 99.99 percent of shares. The purpose is to conduct research and development that related to affiliated company.
  - PayPop Co., Ltd. ("POP") established with registered and paid-up capital of Baht 100,000 which EMN holds 99.97 percent of shares. The purpose of POP is to provide electronic financial transaction (E-Money).

- Energy Beyond Research Co., Ltd. ("EBR") established with registered and paid-up capital of Baht 100,000 which the Company holds 99.99 percent of shares. The purpose is to conduct the research and development about the electricity storage system.
- EA Bio Innovation Co., Ltd. ("EBI") was established with registered and paid-up capital of Baht 100,000 which the Company holds 99.99 percent of shares. The purpose is to produce and distribute biodiesel (B100) and the by-products.
- The Company invested in joint venture by acquiring 44 percent of the issued and paid-up shares or USD 264,000 in Shenzhen Growatt Power Technology Co., Ltd. a newly incorporated company in the Republic of China. Shenzhen Growatt Power Technology Co., Ltd. is a distributor of equipment, machinery and others.
- The Company acquired more ordinary shares in Amita Technologies Inc. (Amita-Taiwan) through the Emerging Stock Market in Taiwan. After increasing the shareholding by 15.49 percent, the Company eventually held 50.69 percent of the issued and paid-up shares in Amita-Taiwan.
- The registered capital increased for the subsidiaries (direct and indirect) are as follows.
  - Registered capital increased for Energy Mahanakorn Co., Ltd., ("EMN") from Baht 10 million to Baht 150 million leads to the shareholding proportion reduced from 99.99 percent to 66.67 percent.
  - Registered capital increased for Energy Solution Management Co., Ltd., ("ESM") from Baht 10 million to Baht 110 million which the Company held 99.99 percent of shares.
  - The Stock Exchange of Thailand approved the transfer of the Company's securities from mai to SET since 6 January 2017 onwards. In addition, the Company's securities was considered to be included in SET50 Index since 1 July 2017 and included in FTSE SET Large Cap since 18 December 2017.

- Throughout the year 2018, the Company maintained management system as follows:
  - RSPO standard, ISO 9001:2015, ISO 14001: 2015, OHSAS 18001:2007, Kosher, Green System (GI3).
- The Company received a certification for the operating premise that meet the environment governance criteria to certify that the Company determined to apply environmental governance to its business operation, in order to be consistent with the criteria set forth and to focus on prevention and conservation of environment together with the community and society. The Company complied with the following criteria.
  - Allow communities to have access to the correct information of environmental management.
  - Allow the public to take part in expressing their opinions and give suggestions on the environmental issues.
  - Disclose facts, information with transparency and accountability.
  - Show responsibility in case of the impact occurred to communities. Provide a channel to receive complaints.
  - Adhere to the juristic prudence for the environmental management to be in conformity with the law.
  - Maintain the justice in appropriate procurement of resources and bring about benefits to society.
  - Operate business with consciousness, not causing impacts to communities and environment.
- The Company attended the Energy Conservation Project with the Department of Alternative Energy Development and Conservation as follows.
  - The Company received investment support in changing, improving or implementing automated control system to enhance the efficiency of the compressed air system. The support is provided under the improvement of energy management in compressed air system with the automated system under Thailand 4.0 Policy.
  - Expanding the enhancement of boiler efficiency pilot project by boiler engineer or energy engineer under funding by Energy Conservation Promotion for the year 2018, to leverage efficiency of the boiler that use liquid as a thermal conductivity in the industry.
- The Company's subsidiary - EA Solar Phitsanulok ("ESP") received a certificate for the operating premise that passed the Environmental Governance by the Ministry of Industry. This is to certify that ESP is an operating premise that proceed under the Environmental Governance Criteria and also certified by URS Thailand (United Registrar of Systems (Thailand) Co., Ltd.) for its Quality Management and Environmental Management

System as follow:

- International Quality Management System ISO 9001: 2015
- The Environmental Management System ISO 14001: 2015
- The Company's subsidiary - EA Solar Lampang Co., Ltd. ("ESL") was certified by URS Thailand (United Registrar of Systems (Thailand) Co., Ltd. for the Quality and Environmental Management System. Details are as follows:
  - International Quality Management System ISO 9001: 2015
  - The Environmental Management System ISO 14001: 2015
- The Company's subsidiary - EA Solar Co., Ltd. and EA Solar Nakhon Sawan Co., Ltd. maintained the management system including the work operation and environment certified by URS Thailand (United Registrar of Systems (Thailand) Co., Ltd. regarding the Quality and Environmental Management System throughout the year 2018 as follows:
  - The Company's subsidiary -EA Solar Co., Ltd. certified to the International Quality Management System ISO 9001:2015 which has been improved from ISO 9001:2008 and the Environmental Management System ISO 14001: 2015 which has been improved from ISO 14001: 2004
  - The Company's subsidiary - EA Solar Nakhon Sawan Co., Ltd. certified to the International Quality Management System ISO 9001:2015 which has been improved from ISO 9001: 2008 and The Environmental Management System ISO 14001: 2015
- The Sub-Committee of TGO has certified the amount of greenhouse has reduced during as Follows:
  - Solar Power Plant at Nakhon Sawan, Thailand, December 2016 to November 2017 is 104,543 tons of carbon dioxide equivalents (tCO<sub>2</sub>e)
  - Solar Power Plant at Lampang, Thailand, December 2016 to November 2017 is 112,548 tons of carbon dioxide equivalent (tCO<sub>2</sub>e).
  - Solar Power Plant at Phitsanulok, Thailand, October 2016 to December 2017 is 126,713 tons of carbon dioxide equivalent (tCO<sub>2</sub>e).
- Indirect subsidiary - EA Wind Hadkanghan 3 Co.,Ltd has been approved for listing in the Thailand Voluntary Emission Reduction Program: T-VER by the Thailand Greenhouse Gas Management Organization (public organization) or TGO for wind power generation project in Songkhla and Nakorn Si Thammarat, Thailand. The Sub - Committee of TGO has certified that the amount of greenhouse has reduced during March 2017 to September 2017 is 63,907 tons of carbon dioxide equivalent (tCO<sub>2</sub>e).



- The Company received the promotion for Class 7.27: Electric Charging Station Service for Electric Automobiles with the rights and benefits as per Investment Promotion Act B.E. 2520 and the amendment (vol. 3) B.E. 2544. for example, being exempted for the import tax of the machinery as approved by the BOI, being exempted for the corporate income tax for the net profit derived from the promoted business, in total not exceeding 100 percent of the capital, excluding the land and working capital within a period of 5 years from the date of generating income from such business.
- The Company introduced the Electric Charging Station for electric automobiles, using the charging technology that certified for international safety standard from IEC. The Company has marked its ground to drive the major revolution by expanding the number of charging stations, as a part that motivates the use of electric vehicles within the country.
- Launched "Smart Move" platform for renting service of electric automobiles 100 percent on 12 February 2018 fulfills the creation of the ecosystem of electric vehicles in Thailand. Users can search for the charging stations using EA Anywhere application on the mobile phone through Smart Move platform. The charging stations were installed in Sansiri projects with DC Super Charge to support the charging, where the fastest time was only 7 minutes. This is the first time and first device installed in the real estate project.
- The Company launched the charging station service together with its alliances throughout the route from Bangkok-Hua Hin within the distance of over 380 km, total 8 spots, marking the first spot in Thailand on 4-5 July 2018.
- Energy Mahanakorn Co., Ltd. and Inch Cape (Thailand) Co., Ltd., the importer and the sole official dealers of Land Rovers in Thailand signed MOU on 20 September 2018 to allow Energy Mahanakorn Co., Ltd. to become the official service provider and facilitate the convenient about charging stations and electric charging device to the customers who own electric Land Rovers.
- The Energy Mahanakorn Co.,Ltd. and Southeast Advisory Co., Ltd. signed the MOA on 6 November 2018 to expand the number of electric charging station in TCC Group and installation of electric charging station in Southeast Building, the head office in Silom as the first spot.
- The Company acquired more ordinary shares in Amita-Taiwan. After the acquisition, the Company held total 76,109,821 shares, representing 77.21 percent of the issued and paid-up ordinary shares in Amita-Taiwan. Hence, at present, Amita-Taiwan becomes a subsidiary of the Company.
- The Company established new subsidiaries (direct and indirect) as follows:
  - EA CON DAO (SG) PTE. LTD. ("EA Con Dao") was established in Singapore with the registered capital of SGD 10,000 or approximately Baht 244,780. The Company held 95 percent of shares. The purpose is to invest in the renewable energy.
  - AMITA NEW TECHNOLOGY PTE. LTD. ("Amita-SG") was established with the registered capital of USD 1.6 million or approximately Baht 52,527,680. Amita-Taiwan held 100 percent of shares. The purpose of Amita-SG is to be an investing and holding company.
  - Amita Technology (Thailand) Co., Ltd. ("Amita-TH") was established with registered and paid-up capital of 10,000 Baht which Amita-SG held 99.99 percent of shares. The objective is to manufacture and distribute Lithium-Ion Polymer batteries and high capacity electricity storage system. The Company also increased the registered capital to Baht 49.99 million lead to the total registered capital equal to Baht 50.00 million which Amita-SG still held 99.99 percent of shares.
  - MINE Mobility Corporation Co., Ltd. ("MMC") was established with registered and paid-up capital of Baht 100,000 which the Company held 99.99 percent of shares. The purpose of MMC is to produce and distribute electric vehicle. Subsequently, the Company increased registered capital of MMC to Baht 399.90 million lead to the total registered capital equal to Baht 400 million which the Company holds 99.99 percent of shares.
  - EA Station Co., Ltd. ("EA Station") was established with registered and paid-up capital of Baht 500,000 which Energy Mahanakorn Co., Ltd. held 99.94 percent of shares. The purpose of EA Station is to become a hub station and logistics.
- The registered capital increased for the subsidiaries (direct and indirect) are as follows:
  - Registered capital increased for GTR from Baht 40 million to Baht 112 million.
  - Registered capital increased for MMR from Baht 10 million to Baht 100 million.
  - Registered capital increased for EBI from Baht 100,000 to Baht 400.10 million.
  - Registered capital increased for EMN from Baht 150 million to Baht 200 million.
  - Registered capital increased for EBR from Baht 100,000 to Baht 20 million.

## 2019

- Wind Power Plant (Hanuman Project) has already commercial operated. Details are as follows:

Projects	Production Capacity	Started commercial operation
Hanuman 1	45 megawatts	25 January 2019
Hanuman 5	48 megawatts	22 March 2019
Hanuman 8	45 megawatts	25 January 2019
Hanuman 9	42 megawatts	30 March 2019
Hanuman 10	80 megawatts	13 April 2019

- Study the solution to increase the efficiency of electricity generation of solar power plant at Nakhon Sawan by using solar panel cleaning robot to mitigate the impact of dust on solar panels. The study result in 2019 showed that using cleaning robot can increase the efficiency of electricity generation up to 2.5 percent. The Company planned to use solar panel cleaning robot within the year 2020.
- Develop Backtrack Function to decrease shade cast upon solar panels. The tracking system will increase the efficiency of backtrack function on a steep and sloping ground. The expecting result is to increase electricity generation up to 0.77 percent.
- Energy Mahanakorn Co., Ltd. and SAIC Motor-CP Co., Ltd. and MG Sales (Thailand) Co., Ltd., signed MOU on 15 May 2019 for charging network development to support MG vehicles through i-Smart function technology.
- The Company invested in joint venture with Shenzhen Ateess Power Technology Co., Ltd. (Former name is Shenzhen Growatt Power Technology Co., Ltd.). The proportion of the Company decreased from 44 percent to 36.67 percent due to Shenzhen Ateess Power Technology Co., Ltd. received contribution from another joint venture party.
- The Company acquired 96,609,821 newly-issued ordinary shares of Amita-Taiwan, As a result, the Company held 65.61 percent of issued and paid-up share capital.
- The Company established new subsidiaries (direct and indirect) as follows:
  - EA BVI Holding Limited. ("BVI Holding") was established in British Virgin Island with the registered capital of USD 200,000 or approximately Baht 6.31 million. The Company held 100 percent of shares. The purpose is to invest and do business in Taiwan. Later, BVI holding increased the capital to USD 500,000.
  - EA (BVI1) Limited. ("BVI 1") was established in British Virgin Island with the registered capital of USD 30,000 or approximately Baht 949,248 which BVI Holding held 100 percent with the purpose of investing in Taiwan.
  - EA (BVI2) Limited. ("BVI 2") was established in British Virgin Island with the registered capital of USD 30,000 or approximately Baht 949,248 which BVI Holding held 100 percent with the purpose of investing in Taiwan.
  - E Smart Transportation Co., Ltd. ("EST") was established with the registered and paid-up capital of USD 1 million which the Company held 99.99 percent of shares. The purpose is to provide public boat transportation services and public boat tour.
  - Smart Waste Management Co., Ltd. ("SWM") was established with the registered and paid-up capital of USD 1 million which the Company held 99.99 percent of shares. The purpose is operating waste disposal.
  - EV Now Co., Ltd. ("EV Now") was established with the registered and paid-up capital of USD 1 million at the par value of THB 10 per share which the Company held 74.99 percent of shares. The purpose is manufactures and distributes electric buses, trucks and other vehicles including public transportation business.
- Subsidiary - EA BVI Holding Limited (BVI Holding) invested in Zept Inc, the company incorporated under the law of the Republic of China (Taiwan) which operated the business in designs, developing and assembly related to EV powertrain systems. The purpose is to expand and increase the competitiveness. The total acquiring is Taiwan Dollars 10 million. Currently, BVI holding held 45.28 percent.
- The registered capital increased for the subsidiaries (direct and indirect) are as follows:
  - Registered capital increased for MMC from Baht 400 million to Baht 550 million.
  - Registered capital increased for MMR from Baht 100 million to Baht 300 million.
  - Registered capital increased for Amita-SG from USD 1.6 million to USD 43,507,834 million.
  - Registered capital increased for Amita-TH from Baht 50 million to Baht 2,400 million
  - Registered capital increased for SWM from Baht 1 million to Baht 10 million.
  - Registered capital increased for EV Now from Baht 1 million to Baht 50 million.

- Amita-Taiwan invested in Wan Meng Automatic Precision Co., Ltd. ("Wan Meng"), the company incorporated under the law of the Republic of China (Taiwan) which operated the business in Automatic control equipment engineering. The purpose is to expand and increase the competitiveness of Amita-Taiwan with the total investment Taiwan Dollars 100 million, equivalent to 36.04 percent of total issued and paid-up shares capital of Wan Meng.
- Amita-Taiwan invested in Sun Field Investments Co., Ltd. ("Sun Field"), the company incorporated under the law of the Independent State of Samoa which operated the investment and holding business. The purpose is to expand and increase the competitiveness of AMITA-Taiwan with the total investment USD 10 million, equivalent to 100 percent of total issued and paid-up shares capital of Sun Field.
- Improve Biodiesel production to be consistent with the notification of the nature and quality of biodiesel type of fatty acid methyl esters 2019 which effective on 1 December 2019.
- MINE Mobility Corporation Co., Ltd. ("MMC") and Suvarnabhumi Pattana Credit Union Cooperative, Limited, taxi service operator signed MOU in Motor show 2019 event for a subscription of 3,500 units and also agree to use charging stations services.



## Controlling power of the Company, changes in shareholding structure and the management

### Shareholder Structure

Since the Company has established, Mr. Somphote Ahunai is the first major shareholder. Shareholding as of 6 January 2020 is 40.461 percent of total registered shares (exclude the shares held by spouse). Mr. Somphote Ahunai disposed 632.77 million shares (16.964%) in EA to Sotus & Faith #1 Limited and Sotus & Faith #2 Limited ("Sotus") to establish the trust and reported the change of securities holding to the Securities and Exchange Commission. Since Mr. Somphote Ahunai is entitled to vote together with another two members of Protector Committee, therefore, in order to have an anonymous resolution, Mr. Somphote Ahunai will be entitled to vote to oppose the two members from the Protector Committee only. However, Mr. Somphote Ahunai cannot control the two members of the Protector Committee in order to force them to vote in favor of him. However, after the consideration by the Securities and Exchange Commission, Sotus is the ultimate beneficiary owner, Mr. Somphote Ahunai must count in the said shares to the shares in EA of which he holds from the beginning until the disposal to Sotus. This includes the consideration on the duty to report the acquisition or disposal of securities or the duty to prepare the tender offer pursuant to the Security and Stock Exchange Act B.E. 2535 as well.

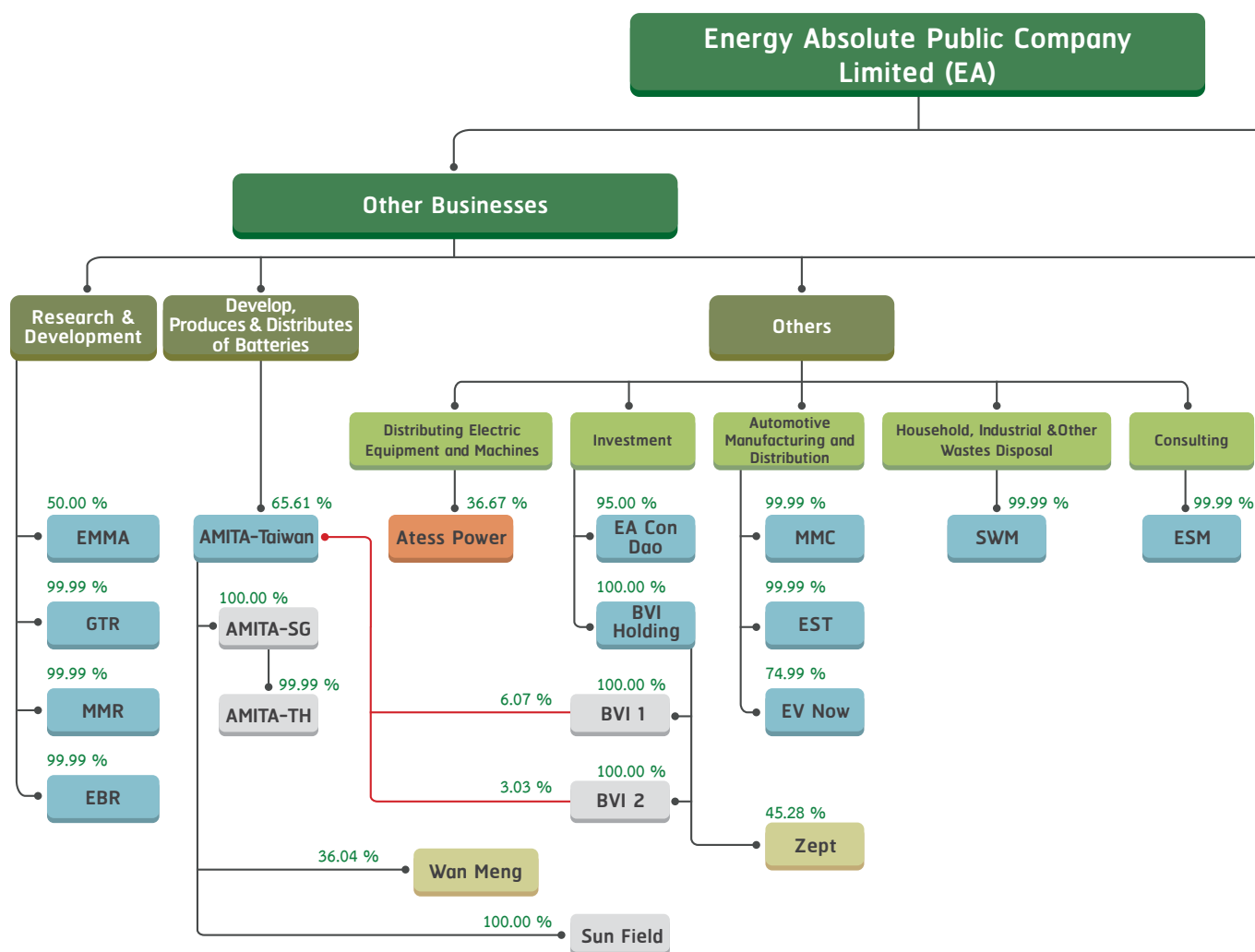
### The Management

There is no significant change in the management of the Company and the Company Group. In other word, since the establishment of the Company until present, Mr. Somphote Ahunai still holds the positions in the Company as follows:

- An authorized signatory director
- Chairman of the Executive Committee
- Chief Executive Officer

# Group's Shareholding Structure

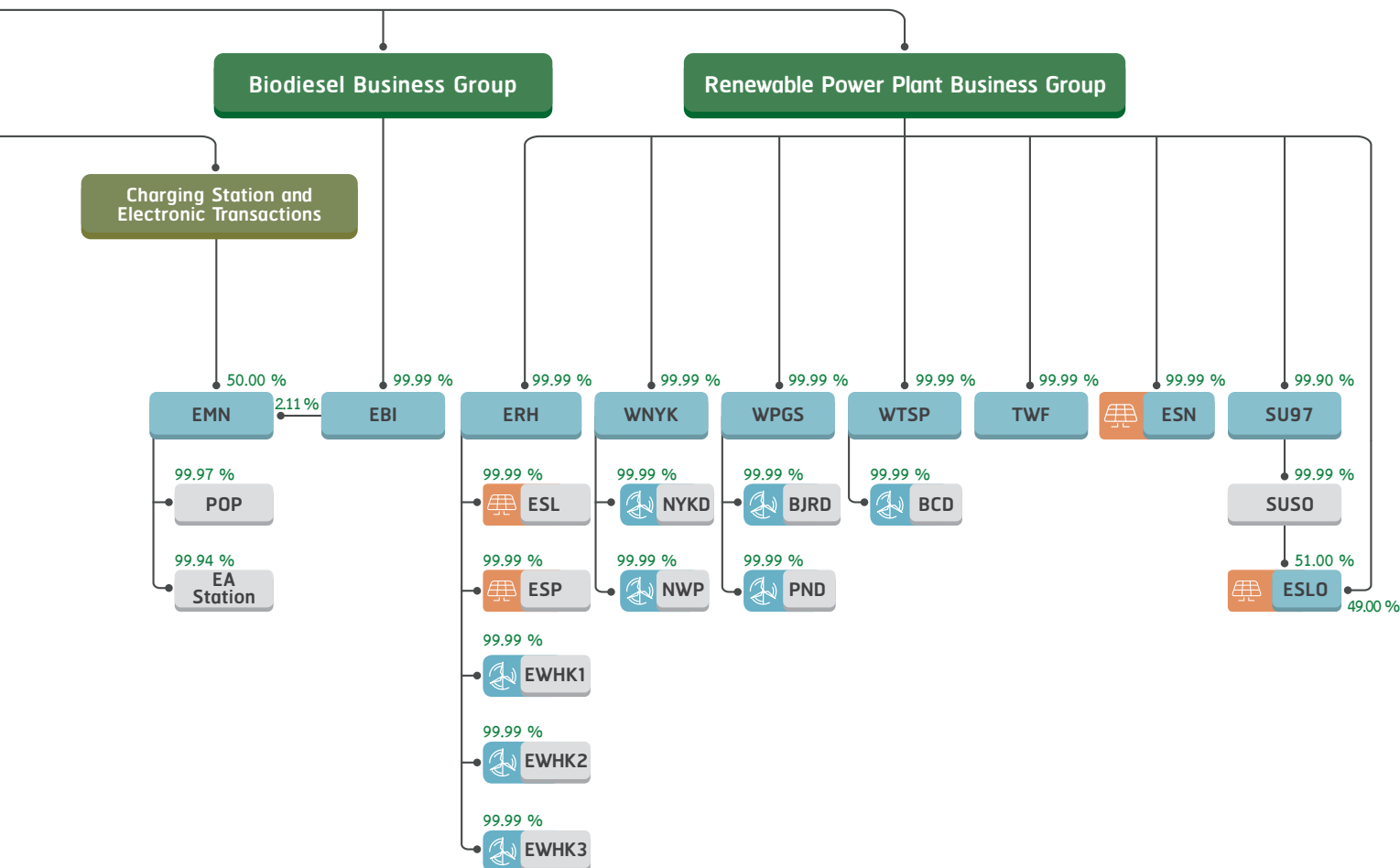
(As of 31 December 2019)



■ Direct Subsidiary   
 ■ Indirect Subsidiary   
 ■ Associates   
 ■ Joint Venture

EMMA	: Emma Corporation Co., Ltd.	BVI Holding	: EA BVI Holding Limited
GTR	: Green Technology Research Co., Ltd.	BVI 1	: EA BVI 1 Limited
MMR	: Mine Mobility Research Co., Ltd.	BVI 2	: EA BVI 2 Limited
EBR	: Energy Beyond Research Co., Ltd.	Sun Field	: Sun Field Investments Co., Ltd.
AMITA-Taiwan	: Amita Technologies Inc.	MMC	: Mine Mobility Corporation Co., Ltd.
AMITA-SG	: Amita New Technology PTE.LTD.	EST	: E Smart Transport Co., Ltd.
AMITA-TH	: Amita Technology (Thailand) Co., Ltd.	EV Now	: EV Now Co., Ltd.
Ateess Power	: Shenzhen Ateess Power Technology Co., Ltd.	Zept	: Zept Inc.
Wan Meng	: Wan Meng Automatic Precision Co., Ltd.	SWM	: Smart Waste Management Co., Ltd.
EA Con Dao	: EA Con Dao (SG) PTE. LTD.	ESM	: Energy Solution Management Co., Ltd.





■ Direct Subsidiary   
 ■ Indirect Subsidiary   
 ■ Solar Power Plant   
 ■ Wind Power Plant

EMN : Energy Mahanakon Co., Ltd.  
 POP : Paypop Co., Ltd.  
 EA Station : EA Station Co., Ltd.  
 EBI : EA Bio Innovation Co., Ltd.  
 ERH : EA Renewable Holding Co., Ltd.  
 ESL : EA Solar Lampang Co., Ltd.  
 ESP : EA Solar Phitsanulok Co., Ltd.  
 EWHK 1 : EA Wind Hadkunghan 1 Co., Ltd.  
 EWHK 2 : EA Wind Hadkunghan 2 Co., Ltd.  
 EWHK 3 : EA Wind Hadkunghan 3 Co., Ltd.  
 WNYK : Wind Nayangklak Co., Ltd.  
 NYKD : Nayangklak Development Co., Ltd.

NWP : Nayangklak Wind Power Co., Ltd.  
 WPGS : Wind Progressive Co., Ltd.  
 BJRD : Benjarat Development Co., Ltd.  
 PND : Pongnok Development Co., Ltd.  
 WTSP : Wind Tossaphum Co., Ltd.  
 BCD : Ban Chuan Development Co., Ltd.  
 TWF : Thebsathit Wind Farm Co., Ltd.  
 ESN : EA Solar Nakhon Sawan Co., Ltd.  
 SU97 : Surachai (1997) Co., Ltd.  
 SUSO : Surachai (1997) Solar Co., Ltd.  
 ESLO : EA Solar Co., Ltd.

# Nature of Business

## Revenue Structure

Majority of revenues of the Company and its subsidiaries comprised of the revenue from **Biodiesel Business**, namely biodiesel, purified glycerin and byproducts, revenue from **Renewable Power Plant Business**, namely solar electric power, wind electric power and subsidy for adders and revenue from Other Businesses. Furthermore, the Company has revenue from **Other income** and accounting gain on Business Combination. The details are as follows:

Type of Revenue	Operated by / % of shareholding by the Company	2017		2018		2019	
		THB (million)	%	THB (million)	%	THB (million)	%
Biodiesel Business							
1. Biodiesel oil	EA	4,205.23	36.02	3,194.23	25.57	3,423.24	22.89
2. Purified glycerin	EA	267.07	2.29	296.16	2.37	228.93	1.53
3. Byproducts	EA	14.16	0.12	20.76	0.17	25.51	0.17
		4,486.43	38.43	3,511.14	28.11	3,677.68	24.59
Renewable Power Plant Business							
4. Solar electric power	ESLO, ESN, ESL, ESP	1,933.05	16.56	1,934.12	15.49	2,061.64	13.79
5. Wind electric power	EWHK3, PND, BJRD, NYKD, NWP, BCD	489.07	4.19	802.48	6.43	2,148.29	14.37
6. Subsidy for adders		4,670.94	40.01	4,944.22	39.58	6,764.35	45.22
		7,093.06	60.76	7,680.82	61.50	10,974.28	73.38
Other Businesses							
7. Revenue from other services		-	-	359.99	2.88	234.91	1.57
Total Revenue from Sales and Services		11,579.49	99.19	11,551.96	92.49	14,886.87	99.55
8. Accounting gain on Business Combination		-	-	894.58	7.16	-	-
9. Other income		93.98	0.81	43.69	0.35	67.67	0.46
Total Revenue		11,673.47	100.00	12,490.23	100.00	14,954.54	100.00
Share of gain (loss) from investments in associates and a joint venture		(62.27)		(6.31)		(14.26)	

Remarks : EA Solar Co., Ltd. (ESLO): The Company holds direct shares of 49% and indirect shares of 51%  
EA Solar Nakhon Sawan Co., Ltd. (ESN): The Company holds direct shares of 99.99%  
EA Solar Lampang Co., Ltd. (ESL): The Company holds indirect shares of 99.99%  
EA Solar Phitsanulok Co., Ltd. (ESP): The Company holds indirect shares of 99.99%  
EA Wind Hadkunghan Co., Ltd. (EWHK3): The Company holds indirect shares of 99.99%

Pongnok Development Co., Ltd. (PND): The Company holds indirect shares of 99.99%  
Benjarat Development Co., Ltd. (BJRD): The Company holds indirect shares of 99.99%  
Nayangklak Development Co., Ltd. (NYKD): The Company holds indirect shares of 99.99%  
Nayangklak Wind Power Co., Ltd. (NWP): The Company holds indirect shares of 99.99%  
Banchuan Development Co., Ltd. (BCD): The Company holds indirect shares of 99.99%



PCM



BIODIESEL



## Biodiesel

The Company operated business relating to Biodiesel products, namely Produces and Distributes biodiesel (B100), purified glycerin and byproducts which has been granted a license of Oil Trader pursuant to Section 7 of the Fuel Trade B.E. 2543 (The oil trader who has a trade volume of each type of fuel or in all types altogether per year from 100,000 metric tons or 120 million liters upwards.) Furthermore, the Company conducted research and development on the high value-added using the crude palm oil as a primary material. Such a method is a know-how of production developed from biodiesel production which is known as the Phase Change Materials (PCM) which operated through subsidiary company - EA Bio Innovation Company Limited. PCM are on demand currently in many countries that aiming to reduce energy consumption or use resources efficiency. By the way for taking crude palm oil also helping to support the palm agriculturists and create price stability of crude palm to get higher.

### Nature of Products

#### Biodiesel (B100)

Biodiesel (B100) is liquid fuel produced from vegetable oil and animal fat such as crude palm oil, refined bleached deodorized palm oil, and stearin engaging in a chemical reaction called trans- esterification process in triglyceride by combining with alcohol such as methanol to generate ester substance. Ester substance has a similar property to diesel fuel that can directly be substituted for diesel fuel which can be called B100 biodiesel. The B100 biodiesel refers to a fuel which contains only biodiesel used as diesel.

High-speed diesel fuel is typically used with high-speed diesel engines with speeds up to 1,000 rpm or more i.e. diesel engine cars, small trucks, big trucks, tractors, fishing boats, passenger boats, and generators in vessels.

In addition, as announced by the Department of Energy Business, Ministry of Energy to change the proportion of B100 with Monoglyceride reduction from 0.7% to below 0.4% (Source: Department of Energy Business "The notification of the nature and quality of biodiesel type of fatty acid methyl esters 2019" as of 14 October 2019) which effective on 1 December 2019. As consequent, the production of B100 decreased from 800,000 Liter per day to 650,000 Liter per day. However, the Company planned to improve production process to increase the production of B100 to be 750,000 Liter per day within March 2020 and 800,000 Liter per day within June 2020 respectively.

### Purified glycerin

Purified glycerin is a transparent, colorless, scentless, sweet-tasting liquid, and well-soluble in alcohol and water but not in fats. Since glycerin has various chemical properties, it can be used as a substrate to synthesize with other chemical substances. It is widely used in food, medicine, cosmetics, and soap industries.

Purified glycerin is made by refining raw glycerin from biodiesel production process through the glycerin refining process. Purified glycerin is one of the Company's products using as an ingredient in many types of products such as cosmetics, medicine and consumer daily products such as toothpaste. The production capacity for glycerin is at 80 tons per day.

### Byproduct

In addition to the above-mentioned products, there are byproducts generated from the production process of biodiesel which include crude glycerin-the orange liquid soluble in alcohol and water, free fatty acid (FFA) - the fat dark color liquid used as a mixture in feed meals industry and others. The byproducts result from the palm oil extraction includes Palm Fatty Acid Distillate: PFAD which become solid at the room temperature, similar to a candle.

## Type of the business being promoted

Type of the business being promoted	Promotion Card No.	Capacity per year being promoted	Date of approval
1. Pure glycerin production	1657(2)/2551	24,000 tons/year	12 May 2008
	2037(2)/2554 <sup>/1</sup>	124,800 tons/year	11 July 2011
2. Biodiesel production	2182(9)/2551	289 million liters per year	6 May 2015
3. Refined Bleached Deodorized Palm Oil production (RBD)	1889(2)/2554	178,200 tons per year	24 November 2017

Remarks : <sup>/1</sup> having the same privileges as production of purified glycerin as per promotion card no. 1657(2)/2551

Furthermore, the Company is certified for Quality Management Systems ISO 9001: 2015, Roundtable on Sustainable Palm Oil: RSPO, Kosher standard, Environmental Management Systems ISO 14001: 2015, Occupational Health and Safety Management Systems (OHSAS) 18001: 2007, and the Green Industry Level 3 (GI3) Systematic Environmental Management.

### Phase Change Material : PCM

PCM are substances that absorb and release thermal energy during the process of melting and freezing. When a PCM freezes, it releases a large amount of energy in the form of latent heat at a relatively constant temperature. Conversely, when such material melts, it absorbs a large amount of heat from the environment. PCMs recharge as ambient temperatures fluctuate, making them ideal for a variety of everyday applications that require temperature control such as wall, House, Clothes, Parcel. In addition, PCM benefits in term of energy saving. For the industries, PCM was used in the buildings and construction, transportation, cooling industry, clothes, packaging and others in order to maintain temperatures. Furthermore, some PCM has bio base which friendly to environment, using PCM for heat storage option are particularly attractive because they offer high-density energy storage.

### Promotional privileges and benefits

#### from the Board of Investment of Thailand

The Company has been granted promotion privileges from the Board of Investment (BOI) according to the Investment Promotion Act, as follows:

The Company strives to improve management into a systematic approach, to conform to the requirement and law, to create a good working environment where employees performing work with safety which will reflect the endeavor of the Company on social responsibility, environmental responsibility that covering inside and out of the organization, creating a positive image for the organization.



# Marketing and Competition

## Marketing policy

### 1. Product Strategy

The quality of B100 biodiesel meets quality standards as announced by the Department of Energy Business, the Ministry of Energy. The Company concentrates on continual development production technology including the research and development (R&D) in order to seek for new material with lower price for production of quality biodiesel. All these comprise to the creation of competitive performance and adding value to the products in long run as well as product development that create added value to the products.

The Company examined raw materials by collecting samples from all production tanks for the quality control where any materials which is not in line with the standard will reprocess. All products stored in the ready-made product tanks must pass quality control. The Company also created labs to perform quality testing by random selecting products to ensure product quality.

### 2. Pricing strategy

The product prices are stipulated as follows:

#### (1) Biodiesel (B100)

The price of B100 biodiesel is based on the price announced by the Energy Policy and Planning Office (announced price) on weekly basis, and is also depended on the demand and supply of the particular period of time where the Company has no control over the selling price. However, the Company set the selling price of biodiesel at the rate higher than the announced price, deducted with the discount which is varied depending on a particular period of time. The Company will offer the selling price which is lower than the announced price to huge customers whose sale contract made with the Company shall come into expiration soon, in order to support customer's decision for contract renewal. However, any selling prices cannot be made at a lower rate than the announced price without approval from the Executive Committee's meeting.

#### (2) Purified glycerin

The selling price of purified glycerin is based on the ICIS pricing which is a standard price for chemical supplies and energy in the world market. The Company has set the policy of purified glycerin selling price at the rate not lower than ICIS price, deducted by the discount as stipulated by the Company. However, any selling prices cannot be made at a lower rate than the announced price without the approval from Executive Committee meeting.

#### (3) Byproducts

Byproduct from production, the Company has set the sales policy of byproducts to meet the reasonable market price and quality.

### 3. Sales channel strategy (place)

The Company sells biodiesel fuel directly to the large oil distributor by directly coordinated and communicated through Sales and Marketing department. One of the marketing tactics is to offer more discount to the major customers to increase sale volume while lessening the cost of production per unit (economies of scale). For purified glycerin selling, the Company distributed to domestic and oversea customers which using glycerin as a raw material or customer which produce and distribute chemical supplies or consumer goods etc. In addition, the purified glycerin is distributed to oversea market to reduce risk from dependent on local market.

### 4. Marketing and publicity strategy (promotion)

The Company operates marketing and publicity strategy by maintaining production quality that meets the standard, building a good relationship with customers to retain existing customer base, including continuing the operation development, and obtaining industrial certification to build confidence in the Company's business. Meanwhile, the Company also expands the customer base regularly.

In regard to service, the Company and customers plan together about the details of transport and deliver i.e. product quantity and time to ensure that our service is performed to meet customers' requirements and meet the effectiveness of production and procurement plan.

## Target groups

Target groups of the Company are as follows:

### (1) Biodiesel (B100)

The whole biodiesel is distributed within the country where the majority of customers are fuel traders as defined in Section 7 (local major oil traders) and the oil trader as defined in Section 10 mainly, the biodiesel trading contract is made with the major customers where each contract duration is valid for 3 months, maximum not exceeding 3 years. Over 99 percent of the biodiesel sales is distributed to the large oil traders in Thailand.

### (2) Purified glycerin

Purified glycerin can be divided into various grades based on the purity level. The Company can produce glycerin at the purity level of 99.50 - 99.85 percent

(the purity level of more than 99.50 percent is categorized to Pharmaceutical Grade). The Company provided purified glycerin to group of customers both in domestic and overseas countries. In 2019, the proportion of customers in domestic is 92 percent and 8 percent are customers from overseas such as India - using glycerin as a raw material in the production process, or those who produce and distribute chemicals.

### (3) Byproducts

Target groups of the Company are the producers and distributors of chemical supplies both in domestic and overseas.

### (4) Phase Change Material (PCM)

Target groups of the Company are the producer of construction materials and fiber producer both in domestic and overseas.

## Biodiesel Industry Competition

For the year 2019, the Department of Energy Business, Ministry of Energy has announced the list of biodiesel producer type of fatty acid methyl esters which approved for sales or possession for sales from the Ministry of Energy, the total capacity equal to 8,272,242 liter per day, namely as the details below:

As of 8 January 2020

No.	Company	capacity (liter/day)	location
1	AI Energy Public Company Limited	600,000	55/2 Moo 8 Sethakrit1 road, Klongmadua, Krathumban District, Samutsakorn 74110
2	Bangchak Biofuel Company Limited	840,000	28 Moo 9 Bang Krasan, Bangprain, Pranakorn Sri Ayutthaya 13160
3	Global Green Chemicals Public Company Limited	693,642	199/1 Moo 2 Khaosok, Nongyai District, Chonburi 20190
		1,028,600	8 soi G12 Pakornsongkorraj road, Maptapud, Rayong District, Rayong 21150
4	New Biodiesel Company Limited	1,000,000	23 Moo 6 Sawiat, Tha Chang, Surat Thani 84150
5	PPP Green Complex Company Limited	630,000	321 Moo5 Phetkasem, Kang Raek, Bang Saphan District, Prachuap Khiri khan, 77170
6	GI Green Power Company Limited	100,000	217 Moo 15 Tasae, Tasae District, Chumpornbang 86140
7	Patum Vegetable Oil Company Limited	1,800,000	29/3 Moo 6 Phathumthani- Lad Lum Kaew, Kubangluang District, Lad Lum Kaew, Phathumthani 12140
8	Verasuwan Company Limited	200,000	53/6 Moo 5 Sethakij road, Natee, Samut Sakhon District, Samut Sakhon 74000
9	Absolute Power P Company Limited	150,000	8/1 Moo 11 Nongbua, Ban Khai, Rayong 21120
10.	Trang Oil Palm Company Limited	100,000	168 Moo 1 Trang-Sikao Road, Namuangphet, Sikao District, Trang 92000
11.	Bio Synergy Company Limited	30,000	150 Moo 13 Khok Kruat, Nakhon Ratchasima District, Nakhon Ratchasima 30280
12.	Energy Absolute Public Company Limited	650,000	507 Moo 9 Kabin Buri-Korat road, Nong Ki, Kabin Buri District, Prachinburi 25110
13.	Suksomboon Energy Company Limited	450,000	110 Moo 4 Hang Sung, Nong Yai District, Chon Buri 20190
Total		8,272,242	

Source: The Department of Energy Business, Ministry of Energy (<http://www.doeb.go.th/info/data/dataoil/Methyl-ester.pdf>)

## Product Procurement

The Company realizes the importance of procurement of raw material for the production of B100 biodiesel as a part of continual development in the production process. The Board of procurement which comprised of representatives from production, procurement and sales department under the supervision of the Executive Committee is appointed to enhance the efficiency of the procurement plan to be in line with the market situation by information provided from the production department as a supplementary factor. The proper procurement plan enables effective competitiveness in the long term.

### 1. Crude palm oil (CPO), stearin and refined bleached deodorized palm oil (RBD)

The crude palm oil, stearin and RBD are the main raw materials used in the production of biodiesel. These materials are supplied to the Company directly from suppliers namely, vegetable oil factory or crude palm oil factory or purified glycerin distributor from different regions i.e. south, east, central in order to prevent the risk of insufficient supplies. At present, the local producers of crude palm oil comprised of more than 100 palm pressing factories which the Company carefully selects more than 30 suppliers for the procurement procedure and have never experienced any significant issues. Furthermore, the Company carries on the development of the production process to enlarge the scope of available raw materials to be used as a feedstock to biodiesel production. For instance, palm fatty acid distillate (PFAD) and free fatty acid (FFA) are used as a raw material in the production of biodiesel in order to reduce risk of insufficient supplies as a result of price fluctuation.

Nevertheless, the procurement criteria as prescribed above are based on reservation quantity as regulated in Section 7 as well as advanced sales plan, risk of the cost of raw materials, the situation in the market and price announcement from the Energy Policy and Planning Office.

### 2. Methanol

Methanol is a substantial input in the transesterification process of which the Company procures from local suppliers.

### 3. Catalyst

The catalyst is a substance used in biodiesel production which consists of Sodium Methylate to catalyze the reaction in transesterification. The catalyst is supplied by local producers and distributors.

### 4. Activated Carbon

Activated Carbon is used to decolorization of glycerin which supplied by local chemical supplies distributors.

### 5. Refined Palm Oil

Refined Palm Oil is the main raw material used to produce Phase Change Material (PCM) which the company procures from local suppliers both in south region and east region.







## Renewable Energy Business Group

The Company expands its business to produce and distribute solar and wind electric power generated from renewable energy. The aim is to maximize the utilization of resources within the country in responding to the government policy that promotes the production of electricity from renewable energy for reducing the dependence on import of energy and to stabilize the energy security. At the present, the Company operates 13 projects as detailed below:



1.) Solar Power Plant  
4 Projects with total  
production capacity of

**278**  
megawatts



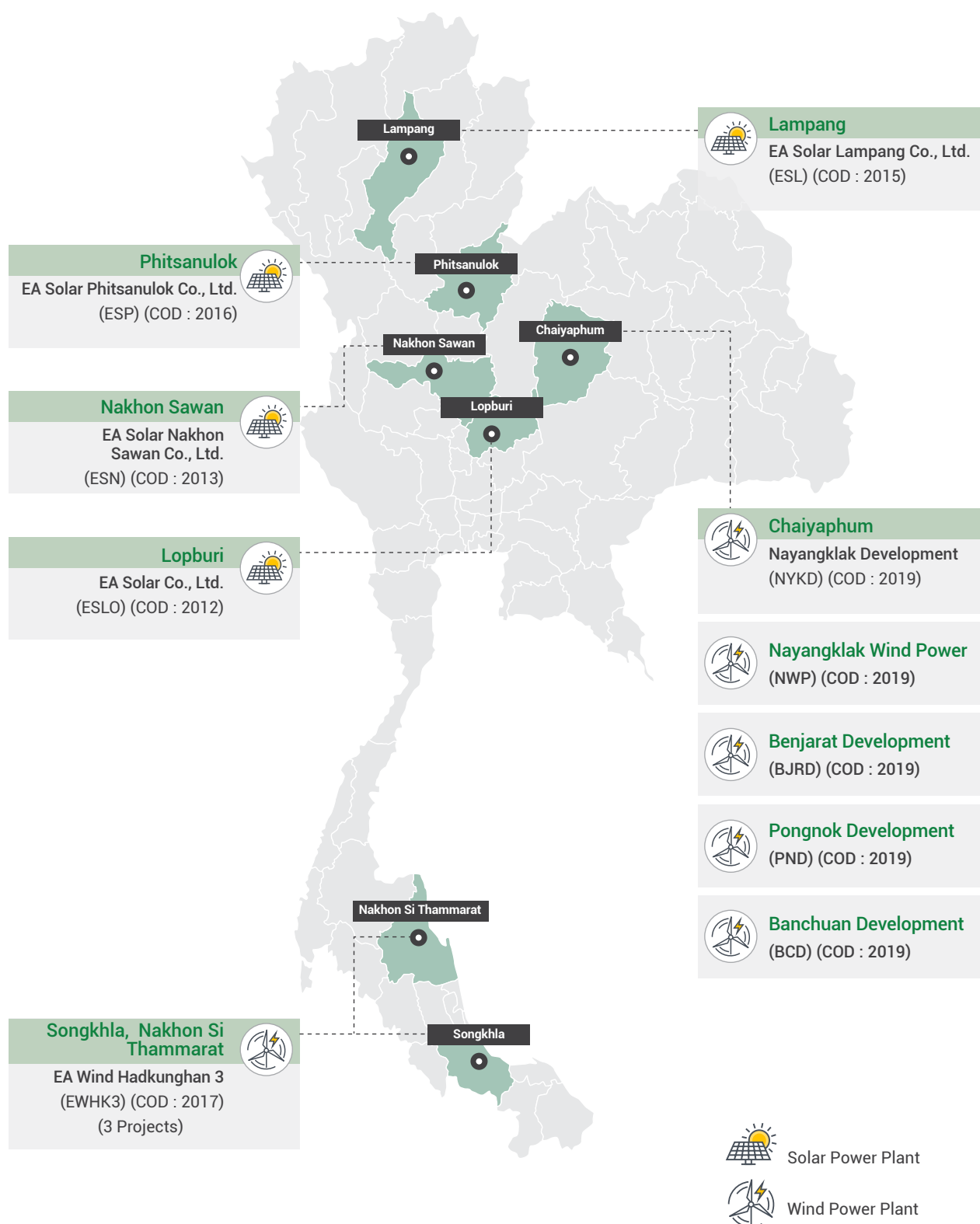
2.) Wind Power Plant  
8 Projects with total  
production capacity of

**386**  
megawatts





## The Company Group's Power Plants Location



## Product and service characteristics

The Company produces and distributes electric power generated from renewable energy from the sun and wind to distribute to the Provincial Electricity Authority (PEA) and the Electricity Generating Authority of Thailand (EGAT).



### Solar Power Plant

The Company produces and distributes solar electric power. There are 4 projects commercial operated with total production capacity of 278 megawatts. Details are as follows:

Projects	Production Capacity	Status
Solar Power Plant, Lopburi	8 megawatts	Started commercial operation on 17 October 2012
Solar Power Plant, Nakhon Sawan	90 megawatts	Started commercial operation on 23 December 2013
Solar Power Plant, Lampang	90 megawatts	Started commercial operation on 17 February 2015
Solar Power Plant, Phitsanulok	90 megawatts	Started commercial operation on 1 April 2016
<b>Total production capacity</b>	<b>278 megawatts</b>	

#### 1.) Solar Power Plant, 8 megawatts, located in Lopburi

- The power plant is under the management of EA Solar Company Limited, a direct subsidiary company classified as a Very Small Power Producer (VSPP). The Project is located at No. 188, 188/2, Moo 3, Khok Tum - Pa Sak River Road (Highway No. 3333) Km.21, Phatthana Nikhom sub-district, Phatthana Nikhom District, Lopburi Province in the area approximately 315 Rais.
- A power purchase agreement (PPA) with the Provincial Electricity Authority ("PEA") for 5 years. Each default renewal is valid for 5 years and effective until the agreement will be terminated.
- The EA Solar was granted Adder privilege for VSPP of renewable energy in the rate of Baht 8 per kilowatt per hour for 10 years from the COD as announced by the PEA. The Adder privilege for VSPP is as per resolution of the National Energy Policy Council dated 9 March 2009.

#### 2.) Solar Power Plant, 90 megawatts, located in Nakhon Sawan

- The power plant is under the management of EA Solar Nakhonsawan Company Limited, a direct subsidiary company classified as a Small Power Producer (SPP). The project is located at No. 99/9, 99/10, Moo 5, Huawai Sub-District, Takhli district, Nakhon Sawan District, Nakhon Sawan Province, on the area of approximately 1,810 Rais.
- A power purchase agreement (PPA) between EA Solar Nakhonsawan Company Limited and the Electricity Generating Authority of Thailand (EGAT) for 5 years. Each default renewal is valid for 5 years under a condition that the party who wishes to renew the agreement must inform in writing to another party at least 30 days before the expiration date of the agreement.
- Granted Adder privilege for SPP of renewable energy in the rate of Baht 6.50 per kilowatt per hour for 10 years from the COD.



### 3.) Solar Power Plant, 90 megawatts, located in Lampang

- The power plant is under the management of EA Solar Lampang Company Limited, a direct subsidiary company classified as a Small Power Producer (SPP). The project is located at Ban-uam Sub-district, Ban-Pao District, Mueang Lampang District, Lampang including an area in Nonglom Sub-district, Hang Chat District, Lampang in the area of approximately 2,477 Rais.
- A power purchase agreement (PPA) between EA Solar Lampang Company Limited and the Electricity Generating Authority of Thailand (EGAT) for 5 years. Each default renewal is valid for 5 years under a condition that the party who wishes to renew the agreement must inform in writing to another party at least 30 days before the expiration date of the agreement.
- Granted Adder privilege for SPP of renewable energy in the rate of Baht 6.50 per kilowatt per hour for 10 years from the COD.

### 4.) Solar Power Plant, 90 megawatts, located in Phitsanulok

- The power plant is under the management of EA Solar Phitsanulok Company Limited, a direct subsidiary company classified as a Small Power Producer (SPP). The project is located at No. 88, Moo 11, Ban Klongkla, Matong Sub-district, Phrom Phiram District, Phitsanulok in the area of approximately 2,230 Rais.
- A power purchase agreement (PPA) between EA Solar Phitsanulok Company Limited and the Electricity Generating Authority of Thailand (EGAT) for 5 years. Each default renewal is valid for 5 years under a condition that the party who wishes to renew the agreement must inform in writing to another party at least 30 days before the expiration date of the agreement.
- Granted Adder privilege for SPP of renewable energy in the rate of Baht 6.50 per kilowatt per hour for 10 years from the COD.

### Promotional privileges and benefits

from the Board of Investment of Thailand : The Company has been granted promotion privileges from the Board of Investment (BOI) according to the Investment Promotion Act, as follows:

### Type of the business being promoted

Type of the business being promoted	Promotion Card No.	Capacity per year being promoted	Date of approval
1. Solar Power Plant Business	2467(1)/2554	8 megawatts	17 November 2011
2. Solar Power Plant Business	1251(1)/2556	90 megawatts	20 May 2013
3. Solar Power Plant Business	2076(1)/อ./2557	90 megawatts	3 September 2014
4. Solar Power Plant Business	58-2034-0-00-2-0	90 megawatts	10 July 2015





## Wind Power Plant

The Company produces and distributes wind electric power. There are 8 projects commercial operated with total production capacity of 386 megawatts. Details are as follows:

### 1.) Hadkanghan 1-3, total 3 projects with the total production capacity of 126 megawatts.

Projects	Production Capacity	Status
Hadkanghan 1 Ranod District, Songkhla	36 megawatts	Started commercial operation on 3 March 2017
Hadkanghan 2 Huasai District, Nakhon Si Thammarat	45 megawatts	Started commercial operation on 10 June 2017
Hadkanghan 3 Pak Panang District, Nakhon Si Thammarat	45 megawatts	Started commercial operation on 23 June 2017
<b>Total production capacity</b>	<b>126 megawatts</b>	

- The power plant 3 projects are under the management of EA Wind Hadkanghan3 Company Limited, classified as a Small Power Producer (SPP). The project is located at Huasai District, Pak Panang District, Nakhon Si Thammarat to Ranod District, Songkhla
- A power purchase agreement (PPA) between EA Wind Hadkanghan3 Company Limited and the Electricity Generating Authority of Thailand (EGAT) for 5 years. Each default renewal is valid for 5 years under a condition that the party who wishes to renew the agreement must inform in writing to another party at least 30 days before the expiration date of the agreement.
- The EA Wind Hadkanghan 3 was granted Adder privilege in the rate of Baht 3.50 per kilowatt per hour for 10 years from the COD.
- Granted tax benefits from the Board of Investment (BOI) for 8 years corporate income tax exemption and 50% reduction of corporate income tax on net profit desired from the promoted activity for 5 years.

### 2.) Hanuman 1, 5, 8, 9, 10, total 5 projects with the total production capacity of 260 megawatts.

Projects	Production Capacity	Status
Hanuman 1 Thep Sathit District, Chaiyaphum	45 megawatts	Started commercial operation on 25 January 2019
Hanuman 5 Thep Sathit District, Chaiyaphum	48 megawatts	Started commercial operation on 22 March 2019
Hanuman 8 Thep Sathit District, Chaiyaphum	45 megawatts	Started commercial operation on 25 January 2019
Hanuman 9 Thep Sathit District, Nong Bua Rawe District, Chaiyaphum	42 megawatts	Started commercial operation on 30 March 2019
Hanuman 10 Bamnet Narong district, Chaiyaphum	80 megawatts	Started commercial operation on 13 April 2019
<b>Total production capacity</b>	<b>260 megawatts</b>	

- The power plants are under the management of 5 indirect subsidiary companies, classified as a Small Power Producer (SPP). The project is located Thep Sathit district, Nong Bua Rawe district and Bamnet Narong district, Chaiyaphum.
- A power purchase agreement (PPA) between 5 indirect subsidiary companies and the Electricity Generating Authority of Thailand (EGAT) for 5 years. Each default renewal is valid for 5 years under a condition that the party who wishes to renew the agreement must inform in writing to another party at least 30.
- Granted Adder privilege in the rate of Baht 3.50 per kilowatt per hour for 10 years from the COD.
- The Company is granted tax benefits from the Board of Investment (BOI) for 8 years corporate income tax exemption and 50% reduction of corporate income tax on net profit desired from the promoted activity for 5 years.



### Promotional privileges and benefits

**from the Board of Investment of Thailand** The Company has been granted promotion privileges from the Board of Investment (BOI) according to the Investment Promotion Act, as follows:

#### Type of the business being promoted

Type of the business being promoted	Promotion Card No.	Capacity per year being promoted	Date of approval
1. Wind Power Plant Business (Hadjkanghan 1)	1702(1)/2558	36 megawatts	12 February 2015
2. Wind Power Plant Business (Hadjkanghan 2)	1701(1)/2558	45 megawatts	12 February 2015
3. Wind Power Plant Business (Hadjkanghan 3)	1703(1)/2558	45 megawatts	12 February 2015
4. Wind Power Plant Business (Hanuman 1)	60-0055-0-13-2-0	45 megawatts	12 February 2015
5. Wind Power Plant Business (Hanuman 5)	60-0051-0-13-2-0	48 megawatts	12 February 2015
6. Wind Power Plant Business (Hanuman 8)	60-0052-0-13-2-0	45 megawatts	12 February 2015
7. Wind Power Plant Business (Hanuman 9)	60-0053-0-13-2-0	42 megawatts	12 February 2015
8. Wind Power Plant Business (Hanuman 10)	60-0054-0-13-2-0	80 megawatts	12 February 2015

## Marketing and Competition

### Trends and growth of alternative energy business (renewable energy) in the future

The Thailand Power Development Plan 2018-2037 (PDP2018) was endorsed by the National Energy Policy Council (NEPC) and acknowledged by the Cabinet on 30 April 2019 to be in accordance with the government policy which focusing on 3 parts as follows

#### 1. Energy Security :

The security of power supply, transmission system and distribution system in response to the demand of electricity to support economic and social development plan including consider the power plant in order to sustain energy security.

#### 2. Economy :

It is vital to consider the optimized energy costs and promote low cost production while not causing obstacles to economic and social development including the readiness preparation for electrical system in order

to the competition in electricity production to increase the efficiency of Electricity production in overall.

#### 3. Ecology :

To reduce the impacts on the environment by supporting the production of electric power generated from renewable energy and increasing the efficiency of electrical system both electricity production and electric energy consumption by developing smart Grid to support power distribution system development.

The Government is taking steps to increase renewable energy to correspondence with the outstanding renewable energy and support electricity consumption behavior including Disruptive Technology and in line with the conference of the parties (COP21) which consists of biomass, biogas, solar energy, Hydro Floating Solar Hybrid Power plant and other renewable energies. The purpose of purchasing power of renewable energy is to maintain the pricing fluctuation and comply to the government policy which targeting the production capacity as of 2037 amount to 18,176 megawatts.

## The energy renewable projects during 2018 to 2037, Details are as follows:

(According to the Thailand Power Development Plan 2018-2037 (PDP2018))

Energy Source	Production Capacity (MW– megawatts)
Solar Energy (Solar PV)	10,000.00
Biomass Power Plant (Biomass)	3,376.00
Biogas Power Plant (Biogas)	546.00
Hydro Floating Solar Hybrid Power plant	2,725.00
Wind Energy (Wind)	1,485.00
Industrial Waste	44.00
<b>Total</b>	<b>18,176.00</b>

Remark : the National Policy Council Energy department, Ministry of Energy

## Marketing Policy

### Marketing strategy

The Company has no direct competitors in term of marketing due to all the productions are distributed to the state authorities which are the Electricity Generating Authority of Thailand (EGAT) and Provincial Electricity Authority (PEA), based on the sale contracts (PPA). The Company has a strong determination to become a leading producer of alternative energy by using cutting-edge technology, choosing quality equipment from reliable manufacturers to ensure the smooth and stable performance of the power plants. In addition, the Company and the Company Group take into account the influence of teamwork which is an essential part of workflow. Through operation of the Company group, we employ personnel with experience and skills especially, civil work, to design and maintain the solar power plants.

### Target customers/ Distribution

The target customers for solar and wind power plants is electricity agencies from the government sector which includes the Provincial Electricity Authority (PEA) for 8 megawatts solar power plant in Lopburi and Electricity Generating Authority of Thailand (EGAT) for solar power plants in Nakhon Sawan, Lampang and Phitsanulok, each project has 90 megawatt capacity and total wind power plants as prescribed in the power purchase agreement which the Company and the Company Group made with the said government agencies in order to support the government policy about increasing the production capacity of electricity from renewable energy, to reduce importing energy in the long-term.



## Other Businesses

### Battery development, manufacturing and distribution business

To enhance competitiveness in the renewable energy business and to comply with the business operation policy of the Company's Group, the Company on 7 December 2016 acquired ordinary shares of Amita Technologies Inc. (AMITA-Taiwan), a company incorporated under the law of Taiwan, the Republic of China (ROC) and listed on the Emerging Stock Market of the Stock Exchange of Taiwan to operate lithium-ion polymer battery development and manufacturing business. At present, the Company acquired newly-issued ordinary shares of Amita Technologies Inc. Upon the acquisition, the Company held 96,609,821 shares in AMITA-Taiwan, representing 65.61% of total issued and paid-up shares. In addition, the Company has established a subsidiary, i.e. Amita Technology (Thailand) Co., Ltd. to develop, manufacture, and distribute lithium-ion batteries.

### Nature of Products

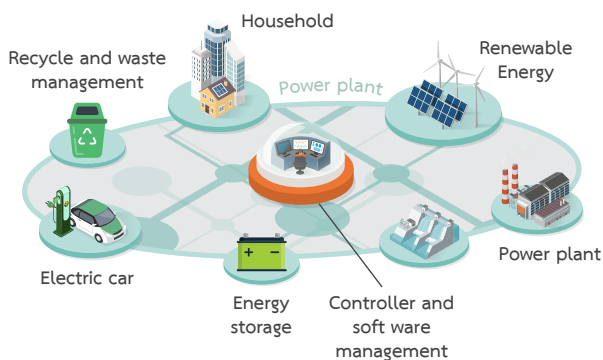
Generally, lithium-ion battery is an energy storage device which can store high volume of electric charge. After electricity is used up, the battery can be rechargeable as it contains chemicals which can react change to the former form by putting electricity into the equipment called "changer." Regarding properties of a lithium-ion battery, apart from electrode materials, the Company has designed them to have outstanding properties enabling it to contain high volume of energy, have light weight and long useful life. Lithium-ion batteries of the Group not only have no chemicals which are hazardous to environment, such as acid liquid or lead, the Company also have STObA as components of lithium-ion battery to ensure higher safety during use by users, such as heat emitted during changer or explosion. The Group is committed to developing and manufacturing lithium-ion batteries for diverse applications as follows:

## 1. Electric automobiles

These comprise electric passenger cars, electric trucks and electric transport boats, which can help lessen pollution from internal combustion engines, reduce use of fuel oil, and prevent emission of exhaust gases into the air. Using electric power for automobiles can be regarded as an alternative energy to efficiently replace fuel energy. Especially amid increasing concerns about global warming, use of lithium-ion batteries can be a good choice of core power for electric automobiles in order to save the world.

## 2. Energy storage system (ESS)

### Energy Storage System Ecology



Source: Krungsri Research

Since renewable energy becomes part of electric power industry with an image of clean technology, it has increasingly been used for electricity generation. However, renewable energy has some limitations concerning system stability as most of them come from solar and wind power, hence inability to generate and distribute electricity at a consistent pace. As such, energy storage system has increasingly played a significant part in power generation system, paving way for advancement toward the age of energy for the future.

Energy storage system (ESS) refers to a system and equipment which can change electric power or electricity to power in other forms so that electricity can be stored for use when needed, and will change the stored energy to electric power again when electricity is needed. ESS is very essential to the electric system in the future as it can help stabilize the electricity generating system and maintain consistent electricity quality. In addition, it helps support the change of electrical load to the appropriate period of time. For example, when electricity generated exceeds the existing electrical load, instead of throwing it away, the excess energy can be stored in the ESS for the period of lower electricity generation. This will enable smooth energy management in overall.

Strengths of energy storage system (ESS) are as shown below :

- Enhance stability of renewable energy for consistent electricity generation even when there is disruption in renewable energy power generation such as in case of thick clouds blocking sunlight (solar radiation density) or no wind blow (wind speed), etc.
- Serve as a backup energy source to store electric power from the generation system and for use in place of solar power which cannot be generated during night time.
- Stabilize the electric system to cope with fluctuations in the electric system by using power from batteries to maintain stability of the electric pressure and frequency of the system.
- Manage congestion of electric power network by having power from batteries to supplement the system instead of transmitting electricity from afar in case such areas need high volume of electricity for a certain period of time. The ESS uses lithium-ion batteries as they are suitable for installation, storage, and fast transmission of electricity, and worthwhile compared with their useful life. In addition, they can easily be moved for installation elsewhere (subject to regulatory authority's permission).

### Each lithium-ion battery has the following components:

- Negative electrode: Main components are graphite-coated copper plates.
- Positive electrode : Main components are nickel manganese cobalt-coated aluminum plates.
- Electrolyte solution: It is solution which has lithium as the main component. Electrolyte solution will exchange lithium's ion and electrons between negative and positive electrodes.
- Semipermeable membrane: Polypropylene (PP) separates negative and positive electrodes.

## Types of Products

### Lithium-ion battery cells

Lithium-ion battery cell is the smallest product unit. When battery cells are connected to attain the required electric capacity, it will be called module. For battery pack which is used with electric cars, electric boats or ESS, it comes from connection of several modules. Each battery cell mainly contains cathode (positive electrode) and anode (negative electrode) and electrolyte solution as lithium is the element which allows electron to come from atom easiest among all elements. Therefore, lithium-ion can store high volume of energy.



### Lithium-ion battery modules

Lithium-ion batteries can change electric power capacity according to the application requirements. As capacity of each type of machine requires different capacity, the Company designs arrangement of lithium-ion battery cells to be in modules of various sizes so as to be convenient for diverse applications, whether they are for electric cars, electric trucks, electric boats, or energy storage system, etc.

### Promotional privileges and benefits from the Board of Investment of Thailand

The Company has been granted promotion privileges from the Board of Investment (BOI) for its lithium-ion battery (high density battery) manufacturing business according to the Investment Promotion Act, Promotion Certificate No. 62-1184-1-18-1-0 approved by the Board on 22 October 2019, with a production capacity of approximately 100,000 modules per year (6,415,200 cells per year). Major privileges and benefits are as follows:

1. Exemption of import duty for machinery as approved by the BOI.
2. Exemption of corporate income tax for net profit from the promoted business for a period of 8 years from the date of starting income generation from the business operation.
3. Exemption of having dividend from the promoted business included in the income for calculation of income tax, except corporate income tax, throughout the promotion period.
4. 50% Reduction of corporate income tax for net profit from investment for a period of 5 years from the end of the period in Item 2 above.
5. Exemption of import duty for raw materials and necessary materials imported from overseas for production for export for a period of 1 year from the date of first import.

## Marketing and Competition

**Business growth trend and outlook of Battery** Lithium battery is currently a popular topic amid public interest of smart electronic equipment and the energy storage system (ESS) which has lithium-ion batteries as main components and used in various types. The National Metal and Materials Technology Center has classified lithium-ion batteries according to negative and positive electrodes and applications into six types as below:

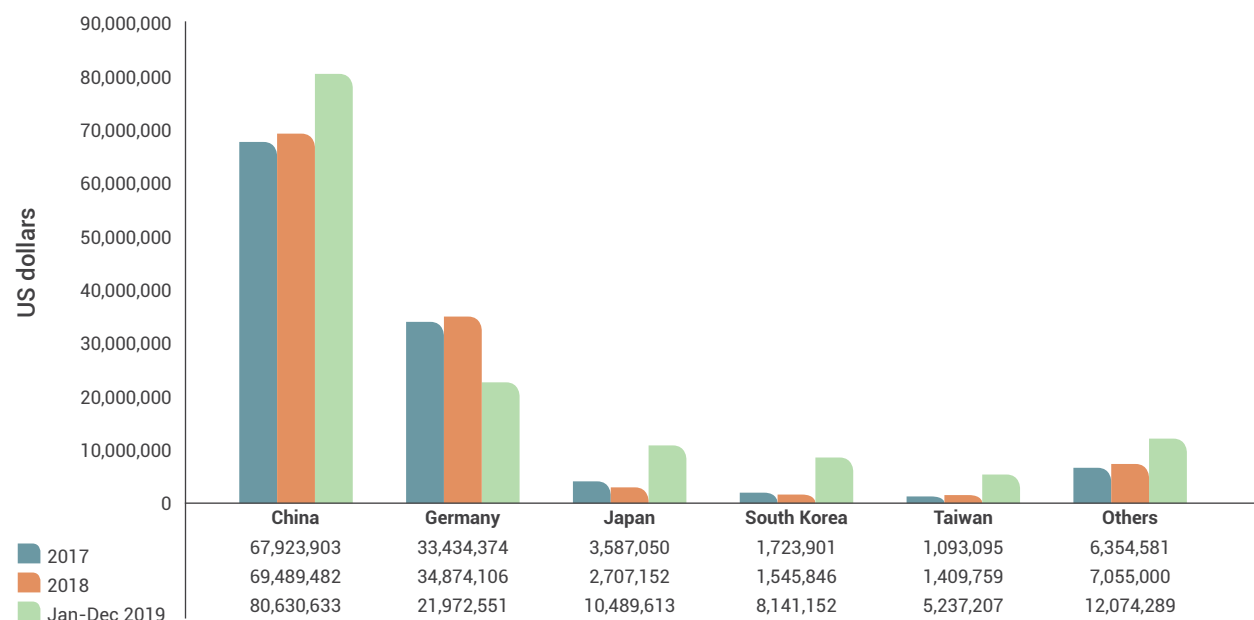
**Table: Types of lithium-ion batteries classified by negative and positive electrodes and applications**

Type no.	Positive electrode	Negative Electrode	Applications
1	Lithium Cobalt Oxide (LiCoO <sub>2</sub> , LCO)	Graphite	Mobile phones, tablets, laptops, digital cameras
2	Lithium Manganese Oxide (LiMn <sub>2</sub> O <sub>4</sub> , LMO)	Graphite	Power tools, medical equipment, power transmission system in electric vehicles
3	Lithium Nickel Manganese Cobalt Oxide (Li(Ni,Mn,Co)O <sub>2</sub> , NMC, NCM)	Graphite	Electric bikes, medical equipment, power transmission system in electric vehicles (normally hybrid cars), backup power system
4	Lithium Nickel Cobalt Aluminum Oxide (Li(Ni, Co,Al)O <sub>2</sub> , NCA)	Graphite	Medical equipment, power transmission system in electric vehicles (found in Tesla Model S), backup power system
5	Lithium Iron Phosphate (LiFePO <sub>4</sub> , LFP)	Graphite	Power transmission system in electric vehicles or replacement of start-lighting-ignition battery), system which requires high current and durability
6	Graphite or LMO	Lithium Titanate (Li <sub>4</sub> Ti <sub>5</sub> O <sub>12</sub> , LTO)	Backup power system, power transmission system in electric vehicles (Mitsubishi i-MiEV, Honda Fit EV)

Source: Article on Get to Know Batteries, Part 4, Material Technology Magazine Volume 80, January – March 2016: [https://www2.mtec.or.th/th/e-magazine/magazine\\_detail.asp?Run\\_no=dlkebwzrve](https://www2.mtec.or.th/th/e-magazine/magazine_detail.asp?Run_no=dlkebwzrve)

Currently, Thailand has still imported lithium-ion batteries in a large volume. Any future increase in investment in lithium-ion battery manufacturing will help cut down import and import costs. In addition, it is an opportunity for manufacturers of equipment in which lithium-ion batteries are used as components, such as wireless charging devices and charging stations for electric cars, etc.

**Table: Thailand's import of lithium-ion battery (850760) during 2017-2019**



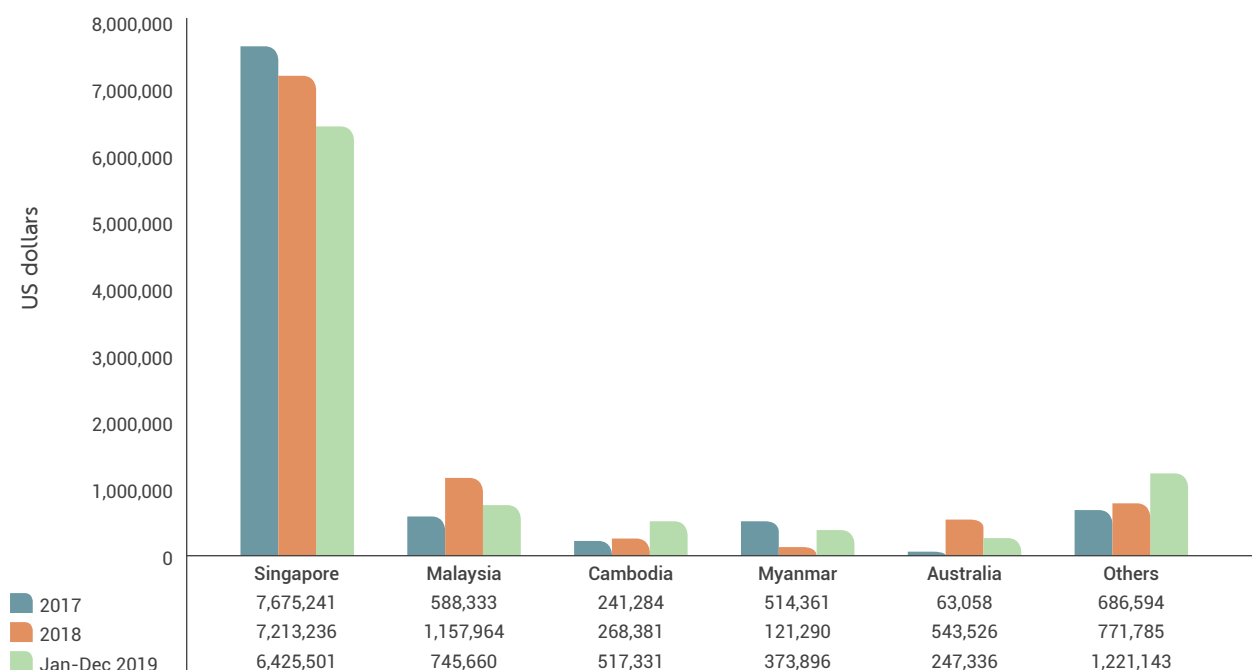
Source: Information and Communication Technology Center, Office of Permanent Secretary, Ministry of Commerce, with collaboration from Customs Department

Most of lithium-ion batteries used in Thailand is imported. In 2018, Thailand imported lithium-ion batteries in the value of 117,081,346 US dollars, an increase by 2.53% year-on-year, attributable to customs tax reduction for products in the sensitive list (SL), i.e. secondary batteries, imported from China from 20% to 5% under the ASEAN-China Free Trade Agreement (ACFTA). Import from China was the largest with a total value of 69,489,482 US dollars with market share of 58.20% and growth rate of 13.82%.

In 2019 (Jan-Dec), Thailand's lithium-ion battery import was 138,545,445 US dollars by value with a growth of 15.50% year-in-year. Import from China was the largest with a total value of 80,630,633 US dollars with a market share of 58.20% and growth rate of 13.82%.



**Table: Thailand's export of lithium-ion battery (850760) during 2017-2019**



Source: Information and Communication Technology Center, Office of Permanent Secretary, Ministry of Commerce, with collaboration from Customs Department

According to the graph exhibiting Thai export of lithium-ion batteries by value, in 2018, Thailand's lithium-ion battery export amounted to 10,076,183 US dollars by value, with a growth rate of 3.05%. Export to Singapore topped the list with a total value of 7,213,236 US dollars. In 2019 (Jan.-Dec.), Thailand's lithium-ion battery export was in the value of 9,530,865 US dollars, a 5.72% year-on-year contraction. Export to Cambodia and Myanmar grew by 48.12% and 67.56% year-on-year.

## Marketing Policy

### Marketing strategy

The Company has focused on continuous research and development of production technology to ensure the designed lithium-ion batteries have high quality and efficiency, store higher quantity of energy, and spend less charging time. The Company's research and development team has enabled improvement of quality of lithium-ion battery cells at all times, as well as production formula, manufacturing process, and quality control in every step of the manufacturing process. Also, the Group has invested in construction of electrolyte mixture plant as an important component of lithium-ion batteries. Therefore, it is able to improve electrolyte formula appropriately and continuously. For such downstream products as module batteries, the Company has set up module battery assembly units to provide application convenience for each group of customers who prefer batteries with diverse capacities, whether they are electric cars, electric trucks, electric boats or electric storage batteries for electricity generation and distribution system.

### Pricing strategy (Price)

The Company has set a policy on distribution of products at market prices and with appropriate quality, and control of production costs in all aspects involving procurement of quality raw materials from various sources, construction of large plants, and automation of manufacturing process. This will help control and allow for efficiency and reduction of product unit costs in the manufacturing process, and enhance competitiveness in both domestic and overseas markets.

### Distribution channel strategy (Place)

The Company has distributed battery packs through direct distribution channels to electric automobile manufacturers such as electric cars, electric trucks, electric buses or even electric boats both at home and overseas. Its Group's sales teams are direct contact for sales activities. Manufacturing of the products of both module and pack types are in the sizes as required by customers (made to order).

### Procurement of raw materials

As the Company realizes raw material procurement risk, it has a policy in place to procure each type of raw materials from more than three reputable and reliable distributors to prevent shortage of raw materials for battery manufacturing.





# Charging Station

## "EA Anywhere"

### The Charging Station for electric vehicles

is available for both **PHEV (Plug-in hybrid Electric Vehicle)** and **BEV (Battery Electric Vehicle)**. The chargers of the Company Group use Conductive Charging Technology which uses the direct contact between electric vehicle and charger via a cable (charging cable). This type of charging is widely used nowadays.

At the end of 2019, the charging stations for electric vehicles have been installed totally **368 stations**. It can be categorized into **DC Charger** for 234 chargers (DC 150 kW with 36 charger inlets, DC New Model or AC-DC Combo for 900 charger inlets) and **AC Charger** for 556 chargers. Ultimately, the **AC Charger** are ready for services totally **988 charger inlets**.







Electric Car



## Electric charging station service business (For electric automobiles), electronic transactions

The Company has expanded business to electric charging station business for electric vehicles under “EA Anywhere” brand, operated by Energy Mahanakhon Company Limited, its subsidiary. Its objective is to promote use of clean energy in the automobile industry to reduce greenhouse gas emission and also use of renewable energy which is environmentally friendly in place of fuel energy in the country’s transport system. This also responds to the development of infrastructure in preparation for electric automobile innovation or next generation automotive industry.

### Nature of Products

- **Electric charging station** is the station that provides charging service for electric automobiles which include PHEV (plug-in hybrid electric vehicle) and BEV (battery electric vehicle). The electric charging station is based on conductive charging technology. The electric vehicle is connected to the charger by cable (or charging cable) which is widely used nowadays. The charging is available for direct current and alternating current. The alternating current can be charged up to 44 kWh, depending on the onboard charger of each automotive model. Meanwhile, the direct current charger can charge up to 150 kWh.
- Initially, the targeted locations for electric charging stations are in the public areas which can accommodate the parking of electric vehicles for at least 1-3 hours, such as department stores, hotels, restaurants, hospitals, parking facilities in business districts, rest areas on the main routes and petrol station premises, etc. The selection of location is based on consideration of the feasibility of such location as regards the volume of electric vehicles passing by, for example, an area where a lot of customers or tourists visit by cars or take rest before resuming the journey in Bangkok and the vicinity as well as the provincial areas. As of the end of 2019, 368 electric charging stations were installed to serve electric vehicles, with 234 DC chargers (offering 36 dispensers of DC 150 kW and 900 dispensers of DC New Model or AC-DC Combo) and 556 AC chargers of which 988 dispensers are currently available for service.
- To use the electric charging station service, the customers can walk-in for immediate use or book the chargers by indicating the required station and charger in advance through “EA Anywhere” application. Payment can be made via 2C2P Payment Gateway, which is available online and accepts credit card and debit card for service users’ convenient, fast and safe spending in the digital age. Customers can download the application via App Store for iOS or Playstore for Android.



## Research and development business

The Company incorporated subsidiaries to conduct research and development of products related to palm oil, lithium-ion batteries, and electric automobiles involving both electric cars and electric boats. This serves as an extension of development to launch new innovative products, improve potential and quality of existing products, and boost competitiveness of the Group on a long-term sustainable basis.

### Nature of research and development

#### (1) Green Technology Research Company Limited

Established to develop and conduct research works on innovation to pursue development and add value to Thai agricultural products. The Company's products or services involve the manufacturing processes from palm-related raw materials for higher value added. The manufacturing processes innovated can be registered for patents. The target customers are companies in its Group.

#### (2) Energy Beyond Research Company Limited

Established to develop and conduct research works on innovation of lithium batteries and energy storage system. The Company's products or services involve the manufacturing processes of lithium batteries and battery control system as well as other related innovations. The innovations invented can be registered for patents. The target customers are companies in its Group.

#### (3) MINE Mobility Research Company Limited

Established to develop and conduct research works on electric vehicles, e.g. electric cars, electric boats, etc., to carry on the electric automotive technology that truly meets the needs of users under the concept Mission No Emission. The Company has focused on creating vehicles that do not emit pollution, and are eco-friendly, cost-saving and safe, as well as easy to maintain and cost-effective in the long run. This aims for Thai people to be able to use high-quality electric cars and boats and for Thailand to become a nation of innovation free of pollution. All these have prompted the Company to develop and invent electric vehicles under the brand "MINE Mobility." Mine Mobility Corporate Company Limited., the Company's subsidiary, manufactures, assembles, and distributes electric cars and parts. Moreover, in 2019, the Company launched a project to design and develop electric boats using lithium-ion batteries under the STOBA technology as a power source to drive electric motors. The electric boat is a 24-meter sized Catamaran offering good balance and high safety. It is driven by electric power in a 800 kWh battery, and charged by EA Anywhere charging system to serve up to 250 passengers. It aims to promote pollution-free and eco-friendly water transport with E Smart Transport Company Limited., a subsidiary, to provide logistics and transport of passengers and goods.

# Risk Factors

The Company recognizes and gives importance to management of risks in all perspectives under changing circumstances from both internal and external factors which may affect its business operation. This aims to build confidence among its stakeholders, and enable smooth and continuous operation as planned, and with highest efficiency according to the objective of being a renewable energy business leader. Modern, also, environmentally friendly technology has been adopted for maximum benefits to users, shareholders, trade partners, and employees in a fair manner. Major risks in the year in subject which may affect business operation of the Company and its group of companies (Group) can be divided into seven areas as follows:



Strategic Risk



Operational Risk



Financial Risk



Compliance Risk



Business Operation Risk



Risk from Investment in New Overseas Projects



Emerging Risk



## 1.Strategic Risk

Based on its vision, the Company has mapped out a technology-driven strategy to be the business and project pioneer using modern technology as a key factor of the strategy. This has made the Company among the first to innovate projects in the country and overseas so as to generate higher returns than those from general investments. Therefore, the Company may have come across instability of the surrounding environment and competition both domestically and abroad. Strategic risk factors can be summarized as below:

### Risk from dependence on key executives

The Company's energy business operation has been developed and grown under the management of major shareholders and key executives, namely Mr. Somphote Ahunai, Mr. Amorn Saphaweekul, and Mr. Wutthilerd Chiannilkulchai, who are authorized directors to sign on behalf of the Company, executive directors, and top executives. The three executives above are competent with in-depth knowledge, expertise, and experience in terms of both daily business operation and execution of projects according to the Company's new business expansion plan towards energy industry-related industries in order to drive its Group's growth under a long-term plan to enhance consistent returns and growth. As such, running the Company's business still depends on the executives aforementioned.

However, realizing on the risk of dependence on the key executives, the Company's management structure has been adjusted to be more systematic and professional by prioritizing and decentralizing certain parts of daily management tasks to various business units as well as allocating duties and responsibilities of the key executives explicitly to other executives and employees of each business unit. The Company has properly set the internal control, information storage and database systems. Regular sharing and exchange of necessary and relevant news and information between executives and employees is also promoted. In addition, the Nomination Committee has given consent to the succession planning policy to strengthen and get the Group well-prepared. Also, the Executive Trainee Program has been launched to attract personnel with high potential to join the Group to succeed key personnel in major projects as new generation executives, which will help drive the Group's business expansion at home and overseas alike.

Moreover, the Board of Directors has approved the establishment of Employee Trust to seek and provide additional long-term benefits to talented employees to motivate and retain them to work for the Group. It is also a project aimed to inspire new hires for the Group in the future.



### Risk from implementation of new business projects

As new investment projects require advanced technology and high investment amount, and in which the Group has not so much experience, the project implementation must be carried out with prudence in investment planning to align with the business framework of the Company and its Group in both short and long terms, and with action plans worked out in the same direction. Details can be summarized as below:

- Create business ecosystem which features the network of organizations in which various business sections are inter-related and support one another to drive integrated business success. For instance, the Company aims to grow clean energy business so it has invested in solar and wind power plants, energy storage business (i.e. batteries), charging station for electric vehicles like electric cars and electric boats, and electricity sale and purchase system.
- Establish an investment structure that is appropriate for nature of business and business structure of each project. The Company has a policy to focus on investment at a significant level to allow for control of major parts of the operation (*no less than 50% unless in case otherwise as deemed reasonable*) and collaborate with strong allies in the country and those overseas. Collaboration may be in the form of joint venture with business partners or self investment but partnering with allies, especially in investment in lithium-ion battery electric power storage, which is a strategic investment conducive to future growth. The Company has collaborated with various sectors to get ready for such endeavor. Most importantly, on 8 October 2017, the Company signed a Letter of Intent (LOI) to join hands with Mr. Jong-Chin Shen, Ministry of Economic Affairs, Taiwan, Republic of China (R.O.C.) in the ceremony presided over by President Tsai Ing-wen of Taiwan at the 2018 Taiwan Business Alliance Conference officially held by the Taiwanese government in Taipei, R.O.C. The Taiwanese government confirmed the intention to render support in terms of information, problem solution, and operational assistance as requested by the Company, as well as allow access to business opportunities and technical as well as business facilities between the Company and companies in Taiwan.

- Devise a strategy of gradual implementation of investment projects by studying and checking related factual information, and preparing a feasibility test of investment in various scenarios. If the project is found worth investment, the Company will first start with a small size of investment until there is more clarity and risks can be controlled and managed, the Company will then gradually expand investment to meet the target set forth. Such investment is in the same manner as that made in solar or wind power plant projects, starting from a small scale to a large scale of investment.
- During project implementation, a working team consisting of main business units in charge of the project will be set up to work together with the strategy development and investment planning department under close monitoring and supervision of Chief Executive Officer and Deputy Chief Executive Officer with support from relevant work units. The working team will hold meetings regularly and report the project progress to the Executive Committee at least once a month, and also have risk issues reported to and discussed with the Risk Management Committee before submission to the Board of Directors for acknowledgement or approval as the case may be. Hence, control and monitoring mechanism is in place according to the strategic plan.

### Risk from competition in the industries

- **Biodiesel manufacturing and distribution industry :** Competition tends to intensify due to expansion of production capacity of existing manufacturers and market entry of newcomers. As such, the Company has to bear higher competition risk in the domestic market, such as offering discount on biodiesel prices announced by the government, etc. However, with awareness of the rising trend of competition, the Company has improved and developed its manufacturing process to cut cost per unit while maintaining product quality in line with the standards in place to ensure that the Company still has competitive advantage over its competitors, especially amid fierce competition situation, in parallel to product development to add value to and differentiate its products from those of competitors in order to achieve the phase change material (PCM) development.



- **Renewable energy manufacturing and distribution industry:** As it is an industry with high growth potential and good returns on investment, competition has been increasing from both existing and new players, and both at home and overseas, hence continued decline in expected rates of returns. However, the Company has set a strategy of adopting high technology with the use of the power storage system to create differentiation from its competitors (representing a barrier to entry), i.e. offering renewable power generating system in conjunction with the energy storage system as a total solution which can satisfy electricity demand in areas which lack transmission lines or rural areas such as islands and mountains, etc. This helps lessen capital expenditure in transmission line system, increase efficiency in renewable energy production and distribution, and respond to electricity management during peak hours. The market for such total solution is large but there are only a few solution providers. In 2019, the Company started distribution of energy storage system to Federated States of Micronesia, and has been preparing for investment in other projects.
  - **Electric vehicle charging industry:** It is a new business which attracts increasing interest in line with the growth of hybrid car and electric car market as well as concerns over PM 2.5 and global warming caused by pollution emissions from vehicles today. However, as cars using fuel oil are still widely in use, the Company has to bear risk from running electric vehicle charging business. The Company has then devised a strategy of focusing on business management at low investment cost by partnering with owners of locations with high potential in installing the electric vehicle charging equipment without having to pay rent but under the agreements on sharing of operating profits. Moreover, the Company has made a joint venture investment with manufacturers of charging equipment to control technology of the equipment and costs of equipment manufacturing and installation to ensure lower costs than its competitors, as well as speeded up investment and installation of the equipment at charging stations in operation across the country, with focus on Bangkok and Greater Bangkok to dominate prime locations ahead of its competitors. As a result, the Company is currently the market leader with a total of 368 charging stations from the country's total charging stations of 988 (as at 31 December 2019).
- Moreover, the Company has entered into cooperation agreements with electric car manufacturers to offer electric charging service for electric car buyers in order to build connections and exchange important technologies and technical information as a way to foster relationship. This will bring about smooth business expansion and it will be difficult for other competitors to enter the market.
- **Energy storage or lithium-ion battery industry:** It is the industry where competition is based on technology aimed at developing the batteries for longer useful life at lower cost and with high electricity storage capacity that can respond to extracting electric power for use in a short period of time and in diverse industries with high safety. High competition is evident in ongoing development for new models of better quality. The Company has thus devised a strategy to collaborate with institutions that have high technology and personnel teams available in Taiwan and Thailand to apply new technology for development of products and prepare special personnel teams with qualifications and potential to learn technology. In addition, the Company is ready to invest in the lithium manufacturing plant project with a generating capacity of 50 GWh per year. Apart from having the most advanced technology in ASEAN, the Company can control costs at low level and well compete with other manufacturers.
  - **Electric vehicle industry:** In 2019, the Group started designing and launching electric cars under the "MINE Mobility" brand, SPA1 model. It is a multipurpose electric car, which is 100% driven by electricity using batteries manufactured by the Group, which is a new car business operator in the industry that has several entrepreneurs or business operators, especially the big ones with large production capacity. The Company has formulated a strategy to focus on the segment that can fill the market gap, i.e. public service vehicle or taxi. The Vehicle Act B.E. 2522 requires the useful life of each taxi car to be not exceeding nine years from the date of registration to ensure public cars are in good and safe conditions to serve the general public. (Source: Department of Land Transport or [https://www.dlt.go.th/th/public\\_news/view.php?\\_did=2166](https://www.dlt.go.th/th/public_news/view.php?_did=2166)) Hence, the number of taxis which reach the end of the useful life in each year and services of which are terminated is as below:

**Table of Number of Taxis Reaching End of Useful life Per Year (2017-2028)**

Registration date	Individual person vehicles (units)	Juristic person vehicles (units)	Total (units)	Useful life ending year	Remark
Jan-Dec 2005-2008	6,884	25,380	32,264	2017	Expired
Jan-Dec 2009	1,872	8,277	10,149	2018	
Jan-Nov 2010	1,765	5,018	6,783	2019	
Dec 2010	136	411	547	2020	Useful life ended on the date and in the month matching those of registration
Jan-Dec 2011	2,649	5,257	7,906	2020	
Jan-Dec 2012	3,969	4,914	8,883	2021	
Jan-Dec 2013	5,022	3,934	8,956	2022	
Jan-Dec 2014	3,437	2,778	6,215	2023	
Jan-Dec 2015	5,526	4,491	10,017	2024	
Jan-Dec 2016	5,027	3,240	8,267	2025	
Jan-Dec 2017	4,546	3,776	8,322	2026	
Jan-Dec 2018	5,736	8,560	14,296	2027	
Jan-Nov 2019	2,972	3,892	6,864	2028	
<b>Total</b>	<b>39,020</b>	<b>41,253</b>	<b>80,273</b>		

Source: Transport Statistics Sub-Division, Planning Division, Department of Land Transport

Moreover, taxi market requires no advertising and public relations budget, or other marketing expenses, unlike other users, hence prices can be set close to those of competitors. The Group focuses on presenting its strength, i.e. safety of the battery, using the technology that prevents circuit short that might cause explosion and fire, helps save energy expenses compared with use of fuel oil and gas, alongside the availability of

energy charging station for electric cars and after-sale maintenance service for taxis and general customers. As such, entrepreneurs of public car communication service centers which have taxi pool (taxi cooperatives) and interested people registered to reserve the purchase rights at the 40th Bangkok International Motor Show 2019 and through the booking system. Production and delivery will gradually be carried out in 2020 and beyond.





## 2. Operational Risk

### Risk associated with human resource management

The Company's business operation partly requires personnel with specific expertise, especially in new technologies and innovation of energy business and related businesses, which are complicated and hard to learn as well as changing rapidly. Ongoing development is thus required to keep updated. Particularly, lithium-ion battery energy storage business involves high technology and applications in related businesses. Therefore, the Company has set teams to study and develop knowledge from the initial phase of investment, get transfer of technology from know-how providers, collaborate with major organizations and agencies domestically and overseas. For instance, the Company joined the signing of memorandum of understanding between the private sector and 10 educational institutions on 29 November 2019 under the cooperation framework set by a working team on human resources development in the Eastern Economic Corridor (EEC). This aims to collaborate with educational institutions to develop curriculum and training courses as well as prepare learning tools toward creation of new generation personnel for the electric energy storage industry, new-age vehicle industry, and oleochemical industry. Moreover, a development roadmap has been worked out to develop employees and executives in a systematic manner.

### Risk of operational disruption

Solar and wind power plants may not be able to be operated during a natural disaster such as in cases of strong wind to the extent much beyond the normal level, flash flood, lightning, etc. These incidents may cause damage to or deteriorating conditions of machinery and equipment. However, the Company has put in place a business continuity plan, and prepared spare parts and tools for repair and maintenance to reduce potential risk of machinery and equipment impairment and for prompt recovery to normalcy.

For the solar power plant, there is power output guarantee from the manufacturers throughout 25 years of useful life, and product warranty of 10 years. Also, the Company has selected inverters with production technology from a renowned manufacturer well accepted overseas and with product warranty of five years. As regards wind power plant, the Company has engaged Vestas and Siemens Gamesa which are manufacturers of wind turbines to specifically provide wind turbine generator operation and maintenance service in conjunction with using wind turbines from a reputable manufacturer with 5-year product warranty.

Regarding biodiesel plant, tools and equipment have adequately been prepared to deal with fire outbreak, flood, and disasters. All business units will also have practice drills every year to understand the procedures and be able to timely deal with emergency cases.





### 3. Financial Risk

#### Risk of change in electricity offtake rate

Risk may be incurred from automatic adjustment of electricity tariff or Ft which the Energy Regulatory Commission (ERC) announces every four months with reference to uncontrollable fuel costs in production of electricity, i.e. fuel prices, inflation, foreign exchange rates; therefore, the Group's revenues from sales of electricity will vary to Ft change. However, the Ft rate does not pose significant impact on the overall electricity sales, and the Group should only be slightly affected. Impact on the Group may be either positive or negative, hence increase or decrease in its revenue.

#### Risk associated with debt service capability

The Company has in place investment and business expansion plan both domestically and overseas, which requires a large amount of funds. The Group's financial source mainly comes from financial institution loans, hence liability to comply with agreements and conditions in the loan agreements throughout the contractual period. The Company has systematically managed and worked out a long-term financial plan, alongside monitoring and management of liquidity. Viewing its quarterly performance so far, there have been consistent cash flows from operation as projected with an appropriate level of debt to equity ratio. According to Tris Rating Co., Ltd. (TRIS) in 2019, the Company's credit rating has been raised to "A" from "A-" in the foregoing year. This reflects the Company's stronger credibility with continued cash flow growth, which can help build confidence among creditors, trade partners, and other stakeholders, and ensure that the Company has good cash flow position and stable financial status for payment of principal and interest debts as scheduled. At present, the Group has good debt payment record without any debt default, and considerable financial potential to support its efficient expansion of investment according to its master plan.

#### Risk of investment returns lower than projected

The Company and its Group's business expansion is project based, depending on investment in new projects. This will involve diverse nature of projects, investment risks and investment returns. Certain necessary tools and equipment need to be imported, such as solar panels, wind turbines, and electric vehicle chargers, etc. Each project has to bear respective risks of changes in key factors used in investment assumptions like indefinite costs of projects due to uncertain prices of imported equipment as a result of foreign exchange volatility, demand and supply fluctuations, cost overrun, and so on. The Company has prevented such risks by prudently and comprehensively studying each project before making investment and working with as well as under advice from specialized experts. In addition, it has entered into tool and equipment supply agreements in advance to mitigate risk of changes in prices. In case of equipment of high value and in a foreign currency, the Company has a policy to manage exchange rate risk by devising such financial instrument as FX forward based on payment schedule of imported equipment. It also has a policy to manage loan interest rate risk by employing such a financial instrument as interest rate swap to convert floating interest rates to fixed rates.

Furthermore, in case of natural disasters, the Company has closed risks by taking out insurance for each project so that it can make claims for revenue loss and damage of properties as a result of a natural disaster.



### Risk associated with funding for new businesses

Project development requires high investment. The Company makes investment through each newly established subsidiary for each project with formulation of shareholding and investment structures as deemed appropriate to prepare for funding from financial institutions. Subsidiaries newly established for new businesses might bear risks if financial institutions take a long time in loan underwriting process, reject the projects, or set strict loan conditions to the extent that may affect investment returns or disable acquisition of funds as scheduled.

However, in view of the Company and its Group's business operation with consistent growth, systematic risk management, professional management, financial liquidity, and operating profit, the Company and its Group have successively gained confidence from financial institutions in approving long-term loans and from institutional investors in supporting the Company and its Group's issuance and offering of debentures to fund project development. Coupled with its good debt payment record without any debt default, the Company is confident that it can negotiate with financial institutions and institutional investors to continuously provide financial support for the Company's future projects.



## 4. Compliance Risk

### Risk from changes in government policies

#### Policy on biodiesel business

According to the statistical data during 2016-present, the Ministry of Energy has adjusted the proportion of biodiesel (B100) in diesel oil to be in consistent with demand and supply situation in each respective period as follows:

Period	Proportion of biodiesel (B100)
	To diesel oil (percent by volume) High speed diesel
3 Aug 2015 – 24 Jul 2016	Not lower than 6.5% Not higher than 7%
25 Jul 2016 - 24 Aug 2016	Not lower than 5.0% Not higher than 7%
25 Aug 2016 - 24 Nov 2016	Not lower than 3.0% Not higher than 7%
25 Nov 2016 - 31 Dec 2016	Not lower than 5.0% Not higher than 7%
8 May 2017 - 7 Nov 2018	Not lower than 6.5% Not higher than 7%
8 Nov 2018 onwards	Not lower than 6.6% Not higher than 7%

Source: Notification of the Department of Energy Business

The change in the energy policy of the government is aimed to balance the palm supply for use as fuel within the country. It is an external factor beyond the Company's control. However, in overall, the government has continued to promote the increase in the proportion of biodiesel in diesel. In a short term, basic diesel oil has been adjusted from B7 to B10. Sales on B10 diesel at all service stations starts from 1 March 2020 onwards.

#### Policy on renewable power plant business

Even though the country's master plan on alternative energy development specifies priority and promotion of proportionate use of alternative energy or renewable energy to reduce environmental impact and increase dependence on domestic energy source in place of import. However, in practice, it has been found that implementation of the policy has been delayed from that expected. This has affected the Group's expansion of the existing business line. Therefore, the Company has focused on expanding business to related industries such as electric power storage, electric vehicles, electric charging station, etc., and explored opportunities of expanding its investment to neighboring countries and beyond.

### Policy on electric vehicle business

The government has yet to establish any definite action plan on promoting use of electric vehicles in the country. This is different from other countries which support this industry through tax cuts or financial support for electric vehicle buyers. Therefore, Thailand's electric vehicle industry and related industries will only gradually grow. However, the Company has stimulated market demand and got prepared by setting up Energy Mahanakhon Co., Ltd. to operate the business of installing electric charging stations for "EA Anywhere" electric cars to build confidence among consumers in making decision to buy electric cars, and also expanding channels for use of lithium-ion batteries from the main market, i.e. electric cars, to electric trucks, electric boats, and electric storage system for the production and distribution of electricity (ESS). The Company has also expanded distribution channels overseas.

### Policy on promoting investment in the Eastern Economic Corridor (EEC) areas

The Company has envisaged that its Group's new business investment projects are mainly in the target industries according to Thailand 4.0 policy. Therefore, it has prepared to invest in building production bases in the EEC areas to be eligible for additional privileges which will ensure long-term success and stability of each project. However, development of EEC in detail toward implementation has been delayed from that

anticipated, necessitating the Company to adjust its investment plan from that previously set forth. Once the EEC development plan becomes clearer, the Company will rev up its project implementation and also adopt its backup plan such as use of batteries produced by its subsidiary in Taiwan while waiting for the completion of the battery plant construction in Thailand.

### Risk from non-compliance with relevant laws and regulations

Thailand's directives on supervision of electric power producers have been changed significantly in accordance with the Energy Industry Act and other changes which may affect domestic electricity industry and business operation of the Company. Any violation of the rules and regulations may affect the Company's business operation and reputation.

The Company has realized and attached importance to strict compliance with laws, rules and regulations, and had Internal Audit Department to monitor and supervise compliance with such laws and regulations to prevent potential impact on the business operation. It has also communicated to its executives and employees across the organization as well as contractors so that they understand and are aware of the potential impact of non-compliance and actions to be taken to encourage them to strictly comply with the laws and regulations in an attempt to reduce risk or impact on the organization as much as possible.



## 5. Business Operation Risk

### Risk from dependence on large customers

The Company is a producer and distributor of biodiesel (B100) for use as fuel. It also produces and distributes purified glycerin and by-products. In the sale of biodiesel, the Company has relied on 6-7 large customers under sales agreements. The sales to each customer will not exceed 30% of total revenues. Sales to large oil distributors in Thailand is an advantage to the Company as they are financially reliable. Nonetheless, the sale proportion may be adjusted downward in line with the demand in each period. Moreover, the Company believes that likelihood of losing major customers is minimal as the sales are carried out under sales agreements each with contractual term from 3 months to a maximum of 3 years. Discount on biodiesel price announced by the government will also be offered for the next agreement to be executed, which will help ensure consistent renewal of the agreement. Furthermore,

the government stipulates that large fuel oil traders or distributors pursuant to Section 7 of Fuel Trade Act B.E. 2543 (Fuel Trade Act B.E. 2543: A fuel trader under Section 7 refers to any person who is a fuel trader having annual trade volume for each type or for all types together of fuel from 100,000 metric tons or approximately 120 million liters upward) must use biodiesel (B100) as a mixture in high speed diesel to be distributed. Thus, demand for biodiesel (B100) should grow in line with the increase in automobiles that consume high speed diesel and in the mixture proportion of biodiesel in diesel oil.

Besides the production efficiency improvement, the Company recognizes that good customer relationship management leads to satisfaction and lasting relations between customers and the company, especially, in enhancing the probability of renewing long-term contracts with those nearing expiry. The Company therefore seeks for feedback through the customer satisfaction survey every year, with elements focusing on product or service and deliver that meet customers' needs, behaving in an appropriate manner, etc. The outcomes reflect customers' satisfaction and expectations to the Company and also indicate how to develop work process to address even more needs of old and new customers. In 2019, the Company has found that the overall customers of biodiesel business are indeed satisfied with its operations at the excellent level.

For production and distribution of renewable power industry, distribution is made to the Electricity Generating Authority of Thailand (EGAT) and the Provincial Electricity Authority (PEA). The contractual period is 5 years from the date of the Company's electricity sales. Renewals of the agreement can be made each for 5 years unless any of the contract parties terminates the agreement. To renew the agreement, the Company has to send a letter notifying its intention to the other contract party. If the Company and its Group's production and distribution of electricity can be carried on continuously without causing any damage to the electricity authorities' power systems, the agreements should be renewed according to the conditions in the master agreement. Therefore, the Company needs to maintain the quality of its power production and distribution systems and cause no problems to the systems by implementing an ongoing maintenance plan and coordinating with EGAT and PEA teams closely to facilitate exchange of information and cooperation in the operation.

### Risk from biodiesel price fluctuations

As biodiesel is one of the alternative energy sources promoted by the government to stabilize agricultural product prices. In 2019, the Ministry of Energy rolled out a measure to increase proportion of diesel (B100) in the energy sector to support palm oil farmers with a target to balance oil palm industry as a whole. The government has targeted the use of B100 of approximately 7 million liters per day, which can absorb about 2.2 million tons per year of crude palm oil. The Department of Energy Business (<http://app.energy.go.th/>) has supported the policy by issuing a notification specifying the appearance and quality of B10 high speed diesel oil (Referring to Notification of the Department of Energy Business on Determination of Appearance

and Quality of Fuel Oils B.E. 2562, effective from 15 May 2019 onwards or website: [http://elaw.doeb.go.th/document\\_doeb/TH/679TH\\_0001.pdf](http://elaw.doeb.go.th/document_doeb/TH/679TH_0001.pdf)) and Notification of the Department of Energy Business on Determination of Appearance and Quality of Fatty Acid Methyl Ester Biodiesel. (Notification of the Department of Energy Business on Determination of Appearance and Quality of Fatty Acid Methyl Ester Biodiesel B.E. 2562, effective from 1 December 2020 onwards or website: [http://elaw.doeb.go.th/document\\_doeb/TH/678TH\\_0001.pdf](http://elaw.doeb.go.th/document_doeb/TH/678TH_0001.pdf)) Quality of monoglyceride in Clause 17 is changed from not over 0.7% by weight to not over 0.4% by weight. In addition, B10 high speed diesel oil will be specified as basic diesel oil for general diesel vehicles, hence rapid increase in demand for crude palm oil for production of biodiesel. Also, due to the drought that hit palm plantation in 2019, palm oil output dropped, pushing up prices of crude palm oil and subsequently affecting raw material cost of biodiesel production, hence likely increase in biodiesel oil prices set by the Energy Policy and Planning Office (EPPO).

### Risk associated with raw material procurement and raw material price fluctuation

Main raw materials for the Company's biodiesel production are crude palm oil (CPO), stearin, and refined bleached and deodorized palm oil (RBD palm oil) which are subject to supply and price volatility. For example, they may be affected by drought or flood, trade protectionism, and demand in overseas markets, etc. The government has given priority to maintaining the levels of palm oil prices and palm oil reserve in the stock to ensure adequacy in line with demand and supply situation in the country and prohibiting import in order to generate income and maintain good returns for Thai palm farmers.

In 2019, there was oversupply of raw material and price slump worldwide. The government thus set a policy on use of palm oil in industries including food and energy industries, and increase biodiesel proportion in high speed diesel fuel based on the existing oil stock to drive commercial-scale production and distribution across the country. Outstanding CPO output volume totaled 334,745 tonnes (Referring to stock check data in December 2019 of Agricultural Trade Products Promotion Division 1, Internal Trade Department (<https://agri.dit.go.th>) surveyed in 34 provinces across the country during 25-27 December 2019), compared with the appropriate level of 300,000 tons (Referring to Notification of the Department of Energy Business on Determination of Appearance and Quality of Fatty Acid Methyl Ester Biodiesel B.E. 2562 (Volume 136, Special Section 264 Ngor) to promote use of B10 diesel oil as basic oil according to the government policy. The notification has taken effect since 1 December 2019. It has been found that the outstanding CPO output was slightly higher than the appropriate level

At present, the Company has made each raw material purchase and agreed on the prices based on the respective agreement. The raw materials are purchased from edible oil refineries and palm oil crushing mills who procure such raw materials for the Company without any long-term purchase agreements. By this method, there may be risk incurred if these producers and suppliers are unable to produce or supply the raw materials to the Company within the specified time and under the set conditions. Moreover, if they decide to produce biodiesel and stop supplying the raw materials to the Company, the Company's business operation may be impacted. However, in such case, it may help lessen risk from loss on stockpiling of high-priced raw materials.

As such, the Company has prepared to prevent and relieve the impact from such risk by contacting and maintaining good relationship with raw material producers and suppliers. Additionally, it also has a policy in place to diversify the procurement sources of raw materials among producers in various regions of the country.

For example, the Company will purchase CPO from palm oil refineries in the southern and north-eastern regions, and RBD palm oil and stearin from large vegetable oil factories in the central and eastern regions to prevent risk in case some regions may experience seasonal disruption or unprecedented incidents or disasters that might hinder their production and lead to shortage of supply.

Moreover, the Group has conducted a research and successfully developed a new product as a phase change material (PCM), which can add value to the traditional biodiesel. Commercial-scale production and distribution of PCM started in the second quarter of 2019.



## 6. Risk from Investment in New Overseas Projects

### Risk from investment in and operation of overseas businesses

The Company has planned to expand business overseas to align with its commitment to growing business with determination, consistency and sustainability. However, despite the attractiveness of overseas business investment and operation, there are certain risks in association with such endeavors, including legal and regulatory risks, economic and political instability, and different and unfamiliar national policies and processes of application for relevant licenses. This might delay the project implementation, hence change in returns or failure to achieve the targets. The Company has taken a risk management measure by setting prudent investment criteria and putting in place guidelines for supervising and monitoring development of new projects through due diligence. It also has a policy to seek business allies with potential, experience, and expertise in conducting business in a particular country to enhance investment capability and mitigate possible operational risk. In addition, the Company will engage advisors who have specialized expertise such as legal advisors, accounting advisors, etc., to work closely with its qualified teams to ensure that the Company will be successful in developing its projects and/or business acquisitions as planned.







## 7. Emerging Risk

The Company has analyzed and assessed three emerging risks comprising technology risk, new regulatory risk, and climate change risk the occurrence of deadly epidemics.

### Technology risk

The Company has continued to grow and expand its advanced electric power innovation business since 2017 according to its long-term business plan in which it adopts energy storage technology as a key factor to energy stability and increases the proportion of renewable energy consumption for environmental friendliness. The Company is also aware of the emerging risks that may be caused by the development of new technology in place of the existing technology in which the Company has been investing or the free trade of electric power both locally and internationally and at lower prices, which could cause contraction in the growth of electric power production and storage business. Having realized changes can be in various forms, the Company has strived to stabilize its business and revenues and expand its markets to electric power industry, electric vehicle industry, and other related industries alongside exploring opportunities for new investments and ongoing study and development of advanced technology.

### New regulatory risk

As the Company's business involves large investment and thus sizable use of modern tools and equipment such as solar panels, wind turbines, lithium batteries, etc. is required. Upon the end of the useful life of machines and equipment, they will be returned to the manufacturers for proper elimination. The Company has instilled in employees awareness of importance of maintenance measures and take these measures to expand the useful life of tools and equipment to the longest possible. However, there is a possibility that stricter laws or regulations on disposal will be established and in force both at home and abroad in the future. The Company's teams have kept abreast of technological development. It has started making investment in waste management business by incorporating a subsidiary, i.e. Smart Waste Management Co., Ltd. (SWM), which will not only boost business returns but also empower internal teams to be keen and work on waste disposal technology.

### The occurrence of deadly epidemics

The occurrence of deadly epidemics in many countries tends to intensify spreading faster every year without vaccine for some diseases. The situation became more difficult to control in a timely manner which affected our business operation indirectly. That is, unable to import tool, machinery, equipment, raw material and labor from our partners in many countries, especially China, the country of our important partners. Our executive directors and working team also had to postpone or cancel their business trip to the high risk countries, including suspending marketing activities that will have a lot of participants, caused delay in some of the company's new investment projects.

However, the company has its back up plan to find tool, machinery, equipment and raw material from alternative sources that can be substituted, as well as rescheduled its execution plan and activities to minimize impact including providing appropriate health care and sanitary to our people and related stakeholders.



# Securities and Shareholders Information

## 1. Registered Capital and Paid-up Capital

Energy Absolute Public Company Limited (EA) is a listed company on the Stock Exchange of Thailand with a total registered capital of THB 373,000,000 as at January 6, 2020, fully paid up and divided into a total of 3,730,000,000 ordinary shares with a par value of THB 0.10 per share.

## 2. Shareholders Structure

The first 10 major shareholders as at January 6, 2020 compare to December 31, 2018.

Major Shareholders	As at January 6, 2020		As at December 31, 2018		Increase / (Decrease)	
	Number of Shares	Shareholding Percentage	Number of Shares	Shareholding Percentage	Number of Shares	% of Shares Increase/ (Decrease)
<b>1. Group of Ahunai</b>	<b>1,629,586,330</b>	<b>43.688</b>	<b>1,627,116,330</b>	<b>43.622</b>	<b>2,470,000</b>	<b>0.066</b>
1.1 Mr. Somphote Ahunai	876,436,386	23.497	876,436,386	23.497	-	-
1.2 Sotus & Faith#1 (Custodian - UBS AG SINGAPORE BRANCH)	430,000,000	11.528	430,000,000	11.528	-	-
1.3 Sotus & Faith#1	200,000,000	5.362	-	-	200,000,000	5.362
1.4 Sotus & Faith#2 (Custodian - UBS AG SINGAPORE BRANCH)	2,770,000	0.074	200,000,000	5.362	(197,230,000)	(5.288)
1.5 Mrs. Blanca Shulan Huang	24,983,607	0.670	24,983,607	0.670	-	-
1.6 Mr. Somboon Ahunai	10,093,951	0.271	10,043,951	0.269	50,000	0.002
1.7 Ms. Supaporn Ahunai	24,217,049	0.649	24,217,049	0.649	-	-
1.8 Mr. Julin Ahunai	16,800,000	0.450	16,800,000	0.450	-	-
1.9 Mrs. Wilai Ahunai	6,200,000	0.166	6,600,000	0.177	(400,000)	(0.011)
1.10 Mr. Pholsith Ahunai	19,137,237	0.513	19,137,237	0.513	-	-
1.11 Mr. Peeraphol Ahunai	18,948,100	0.508	18,898,100	0.507	50,000	0.001
<b>2. UBS AG SINGAPORE BRANCH (excluded share held by Trustees in 1.2, 1.4 and 5.2)</b>	<b>408,778,593</b>	<b>10.959</b>	<b>471,293,593</b>	<b>12.635</b>	<b>(62,515,000)</b>	<b>(1.676)</b>
<b>3. Group of Chiannilkulchai</b>	<b>182,593,892</b>	<b>4.895</b>	<b>183,373,892</b>	<b>4.916</b>	<b>(780,000)</b>	<b>(0.021)</b>
3.1 Mrs. Mukda Boonsieng	167,261,043	4.484	167,741,043	4.497	(480,000)	(0.013)
3.2 Mr. Wutthilerd Chiannilkulchai	15,332,849	0.411	15,632,849	0.419	(300,000)	(0.008)
<b>4. Thai NVDR Co.,Ltd.</b>	<b>181,470,841</b>	<b>4.866</b>	<b>170,080,815</b>	<b>4.560</b>	<b>11,390,026</b>	<b>0.306</b>

Major Shareholders	As at January 6, 2020		As at December 31, 2018		Increase / (Decrease)	
	Number of Shares	Shareholding Percentage	Number of Shares	Shareholding Percentage	Number of Shares	% of Shares Increase/ (Decrease)
5. Group of Saphaweekul	153,992,809	4.129	153,592,809	4.118	400,000	0.011
5.1 Mr. Amorn Saphaweekul	74,968,316	2.010	99,968,316	2.680	(25,000,000)	(0.670)
5.2 Custodian - UBS AG SINGAPORE BRANCH	25,000,000	0.670	-	-	25,000,000	0.670
5.3 Ms. Wassa Rimchala	23,232,787	0.623	23,232,787	0.623	-	-
5.4 Mr. Anat Saphaweekul	30,791,706	0.826	30,391,706	0.815	400,000	0.011
6. Mr. Luchai Phukhuan-Anadha	145,632,408	3.904	145,632,408	3.904	-	-
7. Group of Noparumpa	75,243,100	2.017	85,743,100	2.299	(10,500,000)	(0.282)
7.1 Ms. Ploysongsang Noparumpa	68,970,700	1.849	68,970,700	1.849	-	-
7.2 Mr. Tim Noparumpa	6,272,400	0.168	6,272,400	0.168	-	-
7.3 Mr. Tirapol Noparumpa	-	-	10,500,000	0.282	(10,500,000)	(0.282)
8. MORGAN STANLEY & CO. INTERNATIONAL PLC	66,088,500	1.772	-	-	66,088,500	1.772
9. Mr. Somkiet Thanatchalernkul	53,416,900	1.432	56,573,800	1.517	(3,156,900)	(0.085)
10. STATE STREET EUROPE LIMITED	47,683,578	1.278	37,893,561	1.016	9,790,017	0.262
11. Other Shareholders	785,513,049	21.060	798,699,692	21.413	(13,186,643)	(0.353)
Total Shares	3,730,000,000	100.00	3,730,000,000	100.000		
Total Shareholders	24,923 persons		18,925 persons			

### 3. Limitations of Transferring of Shares

There is no limitation except the case of transferring of shares to foreign investors that cause such foreign investors to own more than 49% of total shares of the Company.

#### 4. Other Securities

The Annual General Meeting of Shareholders dated April 29, 2016 approved the offering and issuance of the debentures up to Baht 10,000 million in order to invest in power plant projects of the Company and the Annual General Meeting of Shareholders dated April 25, 2019 approved the offering and issuance of the debentures up to Baht 15,000 million in order to be used as working capital and invest in projects of the Company.

As at December 31, 2019, the Company offered and issued debentures of 4 times in the total of 8 tranches, which the outstanding debenture value total up to amount of Baht 17,000 million as details below:

##### 1. Debentures No. 1/2016 unsubordinated and secured debentures in registered name form with debentureholder representative and the issuer's right to early redemption.

Offering	Institutional investors and/or High net worth
Outstanding Debenture Value	Baht 7,000 million
Issue Date	July 22, 2016
Interest Payment Date	Every six months on each January 22 and July 22 that the debentures are outstanding; the first interest payment date on January 22, 2017.
Issue Rating	"AA" by TRIS Rating Co., Ltd.

Series	Debenture Value (Baht)	Interest Rate	Maturity Date
(Tranche 2) / 4 years	3,000,000,000	2.22% per annum	22 July 2020*
(Tranche 3) / 5 years	4,000,000,000	2.37% per annum	22 July 2021*

Remark : \* the issuer's right to early redemption

##### 2. Debentures No. 1/2019 unsubordinated and unsecured debentures in registered name form with debentureholder representative.

Offering	Institutional investors and/or High net worth
Outstanding Debenture Value	Baht 3,000 million
Issue Date	July 11, 2019
Interest Payment Date	Every six months on each January 11 and July 11 that the debentures are outstanding; the first interest payment date on January 11, 2020.
Issue Rating	"A-" by TRIS Rating Co., Ltd.

Series	Debenture Value (Baht)	Interest Rate	Maturity Date
(Tranche 1) / 3 years	1,000,000,000	2.61% per annum	11 July 2022
(Tranche 2) / 10 years	2,000,000,000	3.61% per annum	11 July 2029



**3. Debentures No. 2/2019 unsubordinated and unsecured debentures in registered name form with debentureholder representative.**

Offering	Institutional investors and/or High net worth
Outstanding Debenture Value	Baht 4,000 million
Issue Date	August 15, 2019
Interest Payment Date	Every six months on each February 15 and August 15 that the debentures are outstanding; the first interest payment date on February 15, 2020.
Issue Rating	"A-" by TRIS Rating Co., Ltd.

Series	Debenture Value (Baht)	Interest Rate	Maturity Date
(Tranche 1) 3 years	500,000,000	2.41% per annum	15 August 2022
(Tranche 2) 5 years	1,500,000,000	3.11% per annum	15 August 2024
(Tranche 3) 10 years	2,000,000,000	3.58% per annum	15 August 2029

**4. Debentures No. 3/2019 unsubordinated and unsecured debentures in registered name form without debentureholder representative.**

Offering	Institutional investors
Outstanding Debenture Value	Baht 3,000 million
Issue Date	October 16, 2019
Interest Payment Date	Every six months on each April 16 and October 16 that the debentures are outstanding; the first interest payment date on April 16, 2020.
Issue Rating	"A-" by TRIS Rating Co., Ltd.

Series	Debenture Value (Baht)	Interest Rate	Maturity Date
7 years	3,000,000,000	2.744% per annum	16 October 2026

# | Dividend Policy

## Dividend Policy of the Company

The Company has a policy to pay the annual dividends to shareholders at minimum of 30 percent of net profit after deduction of all income tax and reserves as specified in the articles of association and by the laws. Payment of dividends is subject to the cash flow, investment plans, conditions and requirements of company's contracts including legal limitations and other appropriateness in the future. The Board of Directors may consider paying the annual dividends with approval from the Annual General Meeting of Shareholders (AGM), except interim dividend payment which the Board of Directors has the authority to approve before reporting the interim dividend to the shareholders at the next shareholders' meeting.

## Dividend Payment (THB/share) for the year 2015 to 2018

Dividend Payment (THB/share)	2015 (Adjusted)	2016	2017	2018
Net Profit per share (THB : share)	0.62	0.56	1.08	0.93
Dividend rate per share (THB : ordinary share)	0.10	0.15	0.20	0.25
Dividend Payout Ratio per Net Profit (%)	16.23	26.60	18.58	26.75

Source: Separate Financial Statements

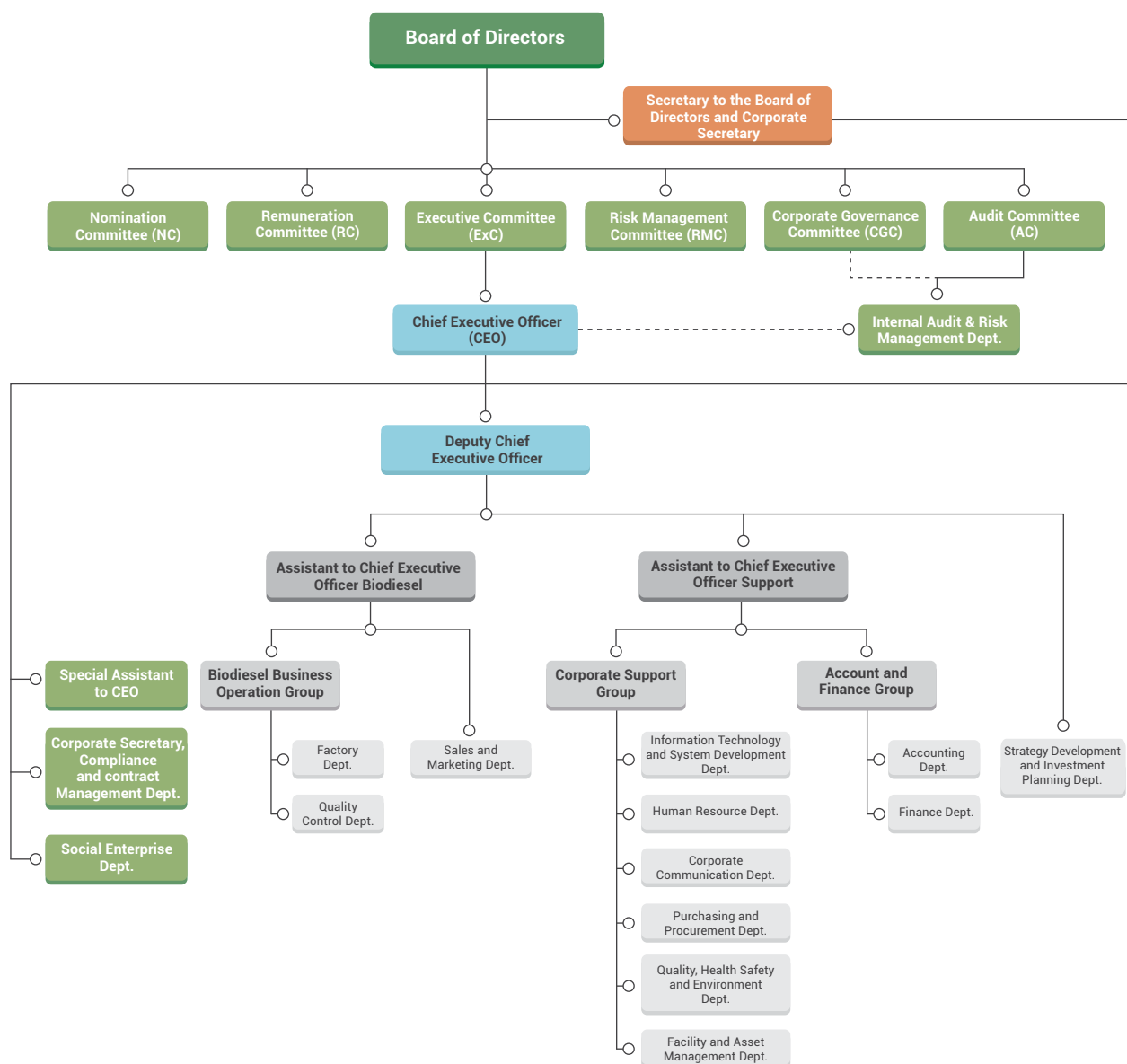
## Subsidiaries' Dividend Policy

The dividend payment of subsidiaries is according to the articles of association and as specified by laws. Regarding to the subsidiaries established for conducting solar power plant business, the consideration must base on conditions of the loan contract and debt service coverage ratio (DSCR).

# Management Structure

As of January 6, 2020, the management structure of Energy Absolute Public Company Limited comprises the Board of Directors and 6 Sub-Committees, namely 1.) Executive Team 2.) Audit Committee 3.) Nomination Committee 4.) Remuneration Committee 5.) Corporate Governance Committee 6.) Risk Management Committee

## Organization Structure



## Board of Directors

### Composition of the Board of Directors

As of January 6, 2020, the Board of Directors consists of 11 directors, composed of 9 non-executive directors and 2 executive directors, namely Chief Executive Officer and Deputy Chief Executive Officer which 6 of whom are independent directors.

The composition above is in line with the Company's Articles of Association, which prescribe that the Board of Directors must comprise at least 5 but not exceeding 15 directors, no less than half of whom must reside in Thailand.

### Board of Directors

Name /Position	Date Appointed	Meeting Attendance
1. Mr. Somchainuk Engtrakul • Chairman of the Board of Directors • Independent Director/*	12 March 2008	6/6
2. Mr. Somphote Ahunai • Director (Authorized Director) • Executive Director (Chief Executive Officer : CEO)	12 March 2008	4/6
3. Mr. Amorn Saphthaweekul • Director (Authorized Director) • Executive Director (Deputy Chief Executive Officer : Deputy CEO)	30 March 2012	6/6
4. Mr. Wutthilerd Chiannilkulchai • Director (Authorized Director)	12 March 2008	4/6
5. Mr. Sutham Songsiri • Director	12 March 2008	5/6
6. ACM.Chainan Thumasujarit • Independent Director	7 August 2012	5/6
7. Mr. Chaiwat Pongpisitsakul • Independent Director	12 March 2008	6/6
8. M.R. Bravochat Chatchai • Independent Director	26 November 2010	6/6
9. Pol.Gen. Phatcharavat Wongsuwan • Independent Director	18 April 2014	-/6
10. Mr.Somboon Ahunai • Director	22 April 2015	6/6
11. Mr. Amornsuk Noparumpa • Independent Director	27 April 2017	6/6

Ms.Yaowalug Pukpikul Corporate Secretary and Secretary of the Board of Directors

Remark : /\* Qualified as an independent director in 2017



### Authorized Directors

The directors authorized to act on behalf of the Company as stated in the Company affidavit are "Mr. Somphote Ahunai, Mr. Wutthilerd Chiannilkulchai, Mr. Amorn Saphthaweeikul with signatures of any 2 out of 3 mentioned directors and the corporate seal affixed.

### Roles and Responsibilities of the Board of Directors (Duty of Care, Duty of Obedience, Duty of Loyalty and Duty of Disclosure)

- To perform their duties under applicable laws, objectives, regulations of the Company and resolutions of shareholders' meetings with duty of loyalty, duty of care, respect the laws and regulations of the Company (Duty of Obedience) and disclose information to shareholders accurately, completely, transparently, timely (Duty of Disclosure), accountability, as well as full benefit of all shareholders.
- To determine vision, strategy, policy and business direction of the Company, control and monitor whether the management's performance is effectively and efficiently in order to maximize economic value to the shareholders and achieve the sustainable growth.
- To determine policy and regulate the Company to prepare guidelines for supporting anti-corruption measures to ensure that management aware of the importance of this anti-corruption and cultivate to be an organizational culture.
- The Board of Directors is responsible in considering important subjects such as policies and business plans, big investment projects, corporate acquisition, management authority and other subjects prescribed by the law.
- The Board of Directors is responsible to evaluate and determination of remuneration for the management.
- The Board of Directors is responsible business performance and management practices to carefully and cautiously perform.
- The Board of Directors is responsible for setting an accounting system, financial reports and reliable accounting audit as well as overseeing the process of assessment on the suitability of internal controls and the efficient and effective internal audit, risk management, financial reports and follow-ups.
- The Board of Directors is responsible to prevent the conflicts of interest between the stakeholders of the Company.
- The Board of Directors is responsible to report the report of the Board of Directors' Responsibilities for the Financial Report along with the auditor report in the Annual Report as well as covering important issues in accordance with the good practice for the directors of the listed company under the Stock Exchange of Thailand.

- To disclose information to shareholders, investors and all groups of stakeholders with accuracy, standard, transparency and in timely manner.
- To provide efficient internal control and audit system.
- To provide efficient risk management and regularly follow-up.
- To implement good corporate governance and regularly follow up the result.
- To appoint the Company Secretary to be responsible for arranging activities of the Board of Directors and to support the Board of Directors and the Company to comply with the law and related regulations.
- To implement business ethics for directors, executives and employees as a standard of work within the organization.
- It is duty of the independent directors to review the strategy, operating management, application of resource, appointment of directors and to determine standards of business conduct with their independent discreet, as well as to oppose the action of management or other directors in regard to the conflict which impact equality of all shareholders.
- The Board of Directors may seek for professional opinion in regard to business operation from external advisor at own cost of the Company.
- The Board of Directors may delegate or assign one or more directors or any other person to act on behalf of the Board. However, such delegation shall not be the delegation or sub-delegation which enables the Board of Directors or the attorney of the Board to approve any particular which him/herself or person who may have conflict, gain or loss or any conflict of interest in any other manner or conflict with the interests of the Company or its subsidiaries (if any), except for the resolution for the particular according to the policy and the criteria that the shareholders' meeting has approved.

### Roles and Responsibilities of the Chairman of the Board

- The Chairman of the Board is responsible for overseeing the use of policies and strategic operational guidelines of the management including providing advice and supporting the business operations of the management but not participate in the routine management of the Company.
- The Chairman of the Board acts as the Chairman of the Board of Directors' meeting and the shareholders' meeting and to encourage all directors to participate in the meeting as well as overseeing that the Board of Directors and shareholders' meetings are conducted effectively and successfully.
- Responsible as the leader of the Board of Directors in monitoring, supervising the Executive Committee and other sub-committees to achieve the objectives.
- Being the Chairman of the Board of Directors' Meeting and being the Chairman of the shareholders' meeting.
- Being a casting vote in the event that there are two equal votes in the Board of Directors' meeting.

## Executive Team

### The Executives (according to the notification of the SEC)

As of January 6, 2020, the Company has a total of 14 executives, as follows:

List of executives	Position
1. Mr. Somphote Ahunai	• Chief Executive Officer
2. Mr. Amorn Saphthaweeikul	• Deputy CEO • Acting Vice President - Quality Control Department • Acting Vice President - Strategy Development and Investment Planning Department
3. Mrs. Dujdao Luksanaviwat	• Special Assistant to CEO • Vice President - Quality, Health, Safety and Environment Department
4. Ms. Yaowalug Pukpikul	• Vice President - Corporate Secretary, Compliance and Contract Management Department • Corporate Secretary • Secretary of the Board of Directors • Secretary of Executive Committee • Secretary of Risk Management Committee • Secretary of Corporate Governance Committee
5. Ms. Omsin Siri	• Vice President - Corporate Communication Department
6. Ms. Wimolmas Wongmakornpan	• Vice President - Social Enterprise Department
7. Mr. Manop Oulandsiripong	• Vice President - Information Technology and System Development Department
8. Mrs. Pornthip Saengchan	• Vice President - Human Resource Department • Secretary of the Remuneration Committee
9. Mr. Narawut Tantanurak	• Vice President - Internal Audit and Risk Management Department • Secretary of the Audit Committee
10. Mr. Kitiphong Tuesataya	• Vice President - Purchasing and Procurement Department
11. Ms. Nopamas Choomklang	• Vice President - Accounting Department
12. Mrs. Tanapa Amornmatevarin	• Vice President - Facility and Asset Management Department
13. Mr. Cheerapan Panyanan	• Vice President - Factory Department
14. Mr. Kawin Kaewkong	• Vice President - Sales and Marketing Department

Remark : Executives was appointed during the year

List of executives	Position
1.) Mr.Narawut Tantanurak (executive no.9)	: was appointed as a VP of the Internal Audit department effective as of 1 April 2019 : was appointed as a Secretary of the Audit Committee effective as of 23 April 2019
2.) Mr.Kitiphong Tuesataya (executive no.10)	: was appointed as a VP of the Purchasing and Procurement department effective as of 2 May 2019
3.) Ms.Nopamas Choomklang (executive no.11)	: was appointed as a VP of the Accounting department effective as of 1 August 2019
4.) Mrs.Tanapa Amornmatevarin (executive no.12)	: was appointed as a VP of the Facility and Asset Management department effective as of 13 August 2019
5.) Mr.Cheerapan Panyanan (executive no.13)	: was appointed as a VP of the Factory Department effective as of 1 September 2019
6.) Mr.Kawin Kaewkong (executive no.14)	: was appointed as a VP of the Sales and Marketing Department effective as of 8 November 2019

Executives retired during the year

List of executives	Position
1.) Mr. Somphote Ahunai	: Retired from Acting-VP of Power Business Supervision Department effective as of 11 November 2019
2.) Mr. Borvorn Pienpongpanich	: Retired from Head of Accounting and Finance Group effective as of 1 January 2020
3.) Mr.Methee Sae-kang	: Retired from VP of Purchasing and Shipping Department, effective as of 16 March 2019
4.) Mrs. Khamaporn Thampipith	: Retired from VP of Accounting Department effective as of 11 March 2019
5.) Ms. Supaporn Ahunai	: Retired from VP of Finance Department effective as of 9 September 2019
6.) Mr. Pramote Lertpiyawong	: Retired from VP of Factory Department - Engineering Division effective as of 8 November 2019
7.) Mr. Patipat Sakdawongsiwimol	: Retired from VP of Factory Department-Production Division effective as of 11 September 2019 Retired from VP of Sales and Marketing Department effective as of 8 November 2019
8.) Ms.Tunyaluck Tangtrakul	: was appointed as a VP of Finance Department, and Retired effective as of 9 September 2019 effective as of 31 October 2019

## Roles and Responsibilities of the Chief Executive Officer

- Manage the business of the Company to be in accordance with laws, objectives, regulations and resolutions of the shareholders' meeting as well as policies, rules, regulations and resolutions of the Board of Directors.
- Perform duties with integrity and careful to protect the interests of the Company.
- Arrange the business plan, annual budget and operational goals including revising such plans during the year if deemed necessary in order to be consistent with the changing situation and propose to the Board of Directors for approval.
- Implement policies, business plans and budgets as approved by the Board of Directors to achieve the goals.
- Propose reports on the Company's performance and financial status for quarterly and annual including other reports that deem important to the Company's operations to the Board of Directors for consideration, acknowledgment or approval.
- Prepare or improve the organizational structure including the authority and responsibility of the executives under supervision, and propose to the Board of Directors for approval.
- Supervising the general administration of the Company to be effective including supervising the employees of the Company to strictly comply with the policies, rules, regulations, orders and resolutions of the Board of Directors and supporting anti-corruption policy by communicating to employee and related persons including review the process and measures to be in accordance with laws and regulations and up to date.
- To have authority to approve or take any action which the Board of Directors has already approved. The use of such approval authority cannot be done in the event that a person may have a conflict of interest (As defined in the Notification of the Securities and Exchange Commission) with the Company Or subsidiary. Except for the approval of normal business transactions with general trading conditions and the Board of Directors has already approved in principle under the Securities and Exchange Act.
- Perform other duties as assigned by the Board of Directors.
- The authority of the Chief Executive Officer as well as the authorizing to other persons that the Chief

Executive Officer deems appropriate which will not include the authority or delegation of authority to approve any transactions that he or the person concerned may have conflicts or have interest or have any conflict of interest in any other manner or there is a conflict of interests with the Company or subsidiary (if any) or items that are not under normal business operations of the Company. The approval of such transactions must be proposed to the Board of Directors and / or the shareholders' meeting of the Company to consider and approve according to the regulations of the Company or related laws.



## The Company Secretary

The Board of Directors appointed the Corporate Secretary pursuant to Section 89/15 of the Securities and Exchange Act. B.E. 2535 and the amendment (according to the Board of Directors' Meeting No.7/ 2013, held on 14 November 2013 resolved to appoint Ms.Yaowalug Pukpikul as the Company Secretary and Secretary of the Board of Directors, effective as of 14 November 2013 whose roles and responsibilities are as follow:

- 1.) To prepare and maintain the Company's documents, namely a registrar of directors, notices and minutes of the Board of Directors' meetings, annual reports, notices and minutes of shareholders' meetings.
- 2.) To maintain reports on interest submitted by directors or executives of the Company including any other matters as notified by the Capital Market Supervisory Board regarding to the applicable law of Securities and Exchange Act.

Ms.Yaowalug Pukpikul has legal education and Company Secretary training as follows:

- Bachelor of Laws, Thammasat University.
- Certificate "Merchant Marine Management", Merchant Marine Institute of Chulalongkorn University.
- Certificate "Marine Insurance" from Singapore National Shipping Association, Republic of Singapore.
- Company Secretary Program (CSP 56/2014), Thai Institute of Directors.
- Training Course "Principle of Life Coaching" held by the Company.
- Training Course "Leader as a Coach" held by the Company.
- Training Course "Internal Control and Risk Management / Value adding support strategic management" held by the Company.

## Director and Executive Remuneration

### Director Remuneration

The Company's policy regarding the remuneration payment for directors is subject to resolution of shareholders' meeting. The criteria for remuneration payment is based on the reasonableness and consistency to performance, scope of duty and responsibility of the directors, the Company's financial status including other practices of other companies having similar business scale and industry of the Company. The remuneration is paid in form of salary, attendance fee and annual reward. The matter was proposed to the 2019 AGM which the shareholders' meeting resolved to approve the remuneration of the Board of Directors as proposed.

#### 1.) Retainer fee for directors

(Same rate as 2018)

- Chairman 50,000.- THB/month
- Directors 40,000.- THB/month

#### 2.) Meeting allowance for Sub-Committee members (Same rate as 2018)

- Audit Committee, totally not exceeding 680,000 THB/year (Paid to only directors who attending the meetings)
- Remuneration Committee, totally not exceeding 170,000 THB/year (Paid to only directors who attending the meetings)
- Nomination Committee, totally not exceeding 170,000 THB/year (Paid to only directors who attending the meetings)
- Risk Management Committee, totally not exceeding 750,000 THB/year (Paid to only directors who attending the meetings)
- Corporate Governance Committee, totally not exceeding 420,000 THB/year (Paid to only directors who attending the meetings)
- Executive Committee, 20,000 THB/person/meeting (only for director who has no received any monthly salary or consulting fees).

#### 3.) Annual reward (Bonus)

- Chairman, not exceeding 2,000,000.- THB/year
- Directors, not exceeding 1,500,000.- THB/person/year

#### 4.) Other remuneration -None-



## Remuneration of Directors in 2019

Name	Annual bonus 2018 (Paid in 2019)	Retainer fee	Remuneration of Directors						Total (Baht)
			Audit Committee	Executive Committee	Remuneration Committee	Nomination Committee	Corporate Governance Committee	Risk Management Committee	
1. Mr. Somchainuk Engtrakul	✗ 2,000,000	600,000							2,600,000
2. Mr. Somphote Ahunai	✓ 1,500,000	480,000		✗ -				✓ 80,000	2,060,000
3. Mr. Amorn Saphaweekul	✓ 1,500,000	480,000		✓ -	✓ 32,380			✓ 80,000	2,092,380
4. Mr. Wutthilerd Chiannilkulchai	✓ 1,500,000	480,000		✓ -				✓ 60,000	2,040,000
5. Mr. Sutham Songsiri	✓ 1,500,000	480,000		✓ -	✓ 32,380	80,000			2,092,380
6. ACM Chainan Thumasujarit	✓ 1,500,000	480,000	✗ 200,000		✓ 32,380	✓ 40,000	✓ 80,000	✗ 125,000	2,457,380
7. Mr. Chaiwat Pongpitsitsakul	✓ 1,500,000	480,000	✓ 160,000		✗ 40,480	✓ 40,000	✗ 100,000		2,320,480
4. M.R. Bravochat Chatchai	✓ 1,500,000	480,000	✓ 160,000		✓ 32,380	✗ 50,000	✓ 80,000	✓ 100,000	2,402,380
9. Pol.Gen. Patcharawat Wongsuwan	✓ 1,500,000	480,000						✓ -	1,980,000
10. Mr. Somboon Ahunai	✓ 1,500,000	480,000		✓ -					1,980,000
11. Mr. Amornsuk Noparumpa	✓ 1,500,000	480,000							1,980,000

Remark : ✗ = Chairman

✓ = Director, Sub-committee member

## Executive Remuneration

### Monetary remuneration

- Monetary remuneration for the executives such as salary and bonus

	2019
Number of executives	14
Remuneration (million baht)	157.95*

Remark : \* including executives appointed and retired during the year

### Other remuneration

- Other remuneration such as Social security fund (deducts 5 percent of employees' salary but not exceeding 750 Baht/person) and provident funds (The Company makes its contribution at 4, 6, 8 and 10 percent of the employee's salary) as follows:

	2019
Number of executives	14
Social security fund (Baht)	123,000*
Provident funds (million Baht)	6.88*


Remark : \* including executives appointed and retired during the year

## Personnel of the Company and Subsidiaries

### Number of employees, remuneration and forms

As of 31 December 2019, the Company has total 303 employees (not include executives, directors and consultants).

### Number of employees of the Company separates by department (person)

	 Daily/ Temporary	 Full-Time	 Total
Corporate Secretary, Compliance and Contract Management	-	2	2
Social Enterprise	-	3	3
Internal Audit	-	1	1
Accounting	-	11	11
Finance	-	4	4
Strategy Development and Investment Planning	-	5	5
Information Technology and System Developme	-	4	4
Human Resource	-	5	5
Facility and Asset Management	-	20	20
Corporate Communication	-	2	2
Quality, Health, Safety and Environment	-	6	6
Sales and Marketing	-	4	4
Purchasing and Procurement	-	8	8
Factory	9	110	119
Quality Control	2	6	8
Special Project	-	101	101

## Number of employees of the Subsidiaries

the Company has a total 208 employees of the subsidiaries. Details are as follows:

	2019
Number of executives	8
Number of operating staff	200

## Monetary remuneration and forms

The remuneration of employees consists of monthly salary, bonus, overtime payments, social security fund and provident fund\* (\* As of 1 July 2019, the Company changed provident fund from K Master Pooled Fund to Ayudhya Master Fund operated by Krungsri Asset Management Ltd. as an additional welfare for employees of the Company and subsidiaries. The Company makes its contribution at 4, 6, 8 and 10 percent of the employee's salary, depending on employment duration of each employee.)

In addition to the compensation paid to employees as consistent to the economic situation, competition, labor market, the Company also provides welfares to its employees that include medical expenses covering in and out patient case, marriage contribution and funeral contribution to employees' family.

## Compensation of the Company

	2019
Number of employees (person)	303
Compensation amount (million baht)	193.75

## Compensation of the Subsidiaries

Compensation of the subsidiaries will be paid in the same way as the Company. Details are as follows:

	2019
Number of employees (person)	208
Compensation amount (million baht)	75.24*

Remark : \* the compensation amount of subsidiaries already included 8 executives.

## Significant of labor dispute in the past 3 years

- None -

## Hygiene and environment at work

Realizing the importance of maintaining environment for safety to lives, health, hygiene and properties of employees, the Company implements adequate occupational health and environmental measures to prevent the loss from accidents, to prevent injury and illness caused by working. The accident at work, illness and sick leaves of employees in the Company Group during year 2018 and 2019 are as follows.

- Accident from work



- Illness from work (stop working more than 3 days)



## Personnel Development Policy

The Company has policy to develop personnel in the Company Group to be competent and having skills at profession level, prepare for change and aware of Creating Shared Value for sustainable growth in accordance with the Company's policy and direction. The Company aims to be an organization with a high performance therefore; employees are the key engine that drives business growth toward the corporate goals so the Company has defined the key competencies that reflect to employee identity which the Company expected and would like employees to follow. This will benefit directly to the employees to understand the Company's expectations. These key competencies will be coherent to the employee assessment program (as defined in the part of EA's DNA and core behaviors factors) and also coherent to the individual development plan, to the salary adjustment consideration and to the annual bonus and Trust Fund which focusing on employees at all levels to understand the Company's values or EA's DNA which consists of

1. Enthusiastic, Determined and Energetic
2. EA Expertise can divide into 3H;
  - **Head:** create innovation, share value and aware of share value creation for sustainable growth
  - **Heart:** entrepreneurship Awareness
  - **Hand:** applying professional skills, experience and knowledge to a job
3. Synergy: ability to work with others as a team

The Company defined this EA's DNA value and coherent to performance assessment to be more systematic based on 360 degree assessment which is the multi-source feedback from self, supervisor, subordinate and co-workers to be fair to everyone

In addition the objectives and key results (OKRs) is also used as a tool to be the key performance indicators which help to drive business growth toward the corporate goals, support and push the executives to become a leader to create the change, create an environment that stimulates creative thinking and embolden their employees to create new innovation lead to the sustainable growth. For long-term development of employee, the Company recognizes the important of using digital tool to organize human resource management by using HR technology tool to develop workflow, communicate and share knowledge among employees including increase potential and develop employee's capability. Furthermore, employees can access to the information and knowledge sharing at any time on database system of the Company through electronic devices which will bring benefits to employee in term of study and continuously develop their competencies.

## Employee Development Project

### EA Inside EA

EA Inside EA is the project to encourage open innovation by empowering employee to present the ideas to the project committee for sharing such as new process improvement for efficiently work which benefit to the Company in order to revenue increasing and cost reduction including build a company reputation. This program will create an environment that stimulates creative thinking and together develop employees at the same time.

### Digital HR Platform

In 2019, the Company invested in developing the Human Resource Management System to help employee can access to their personal and company information easily through electronic devices at any time and can updated their personal data by themselves which help to reduce using paper in the company. This digital HR platform in the future will be developed to be knowledge exchange center for using to communicate and share information within the organization, therefore the company started with organizes new system training to educate employees to understand and get ready for digital HR platform in the future.



### Trust Fund

The Company emphasized on the power of motivation and employee engagement in long term therefore has established the Trust Fund with the objective to encourage employees as part owners to a company and create a security in life after retirement.

### Executive Management Program

The Company has the screening process for selecting potential employees to develop their competencies and skills through several missions and projects including participating the meeting with top management and grow to be a new generation of executives for supporting the company's succession plan.

### Employee Engagement and Satisfaction Level

In 2019, the Company evaluated employee feedback through the employee engagement survey which conducted by Mercer. The outcomes reflect employees' satisfaction and expectations to the Company and also indicate how to develop and increase employee engagement level to address even more needs of employees. This year the average of employee engagement score is 69 % which the Company will use this survey result to analyze and develop the plan for next year.

### Employee Training

In 2019, the average hour for employee training record of the Company and subsidiaries is 11.66 hours/person/year equal to 95% of training plan target (12 hours/person/year). Besides, the management courses that employee can apply to the work, the Company organizes trainings to cover leadership and management skill, environmental support and energy conservation in order to help achieve the Company goal which is to become the leader of alternative energy.



# Report of the Audit Committee

## To Shareholders,

The Audit Committee of Energy Absolute Public Company Limited consists of 3 Independent Directors, and one of them must be competent and experienced to review the reliability of the financial statement. They are, therefore, qualified in accordance with the regulations of the Stock Exchange of Thailand and independently performed its duties as specified in the Audit Committee Charter.

### The Audit Committee comprises of

1. ACM Chainan Thumasujarit  
Chairman of Audit Committee and Independent Director
2. Mr. Chaiwat Pongpisitsakul  
Member of Audit Committee and Independent Director
3. M.R. Bravochat Chatchai  
Member of Audit Committee and Independent Director

In 2019, the Audit Committee held 10 meetings with 100 percent of the members attending. The Audit Committee invited executives to attend the meeting in the agenda related to them, and invited the internal audit officer to report the internal audit result including certified public accountant to propose the financial statement, clarify the facts and report the audit result with supporting evidence in each quarter.

In the meetings, the Audit Committee strictly complied with the Audit Committee Charter which approved by the Board of Directors and reported to the Board of Directors with suggestions as a guideline for the Management. The substance is described as follows;

1. The quarterly and annual financial statements for the year 2019 of Energy Absolute Public Co., Ltd. and consolidated financial statements were reviewed and audited by the auditors before submitting to the Board of Directors. This procedure was to ensure that the preparation of financial statements, accounting transactions with related companies would be accurate in accordance with accounting standard and legal requirement. The notes to financial statements were added with adequate information. Additionally, the related management team and the auditors were invited to attend the meeting to clarify and answer the inquiries of the Audit Committee regarding to the accuracy, adequacy, significant adjustment which affect its financial statements and auditor's opinions after considered and reviewed financial statements. The Audit Committee had an opinion that the financial statements was prepared in accordance with generally accepted accounting principles, accurate and reliable.

In addition, the Audit Committee arranged a meeting, together with the external auditor, in the absence of the executives, discussed significant information and internal control system related to accounting and financial reports and other matters including obstacles occurred during work. The Committee found that the auditors had received full cooperation from the management and had exercised full performance with complete independence. In addition, the external auditors were deemed to be knowledgeable, with experience and expertise commensurate with their duties as auditors.

2. The Audit Committee assessed and reviewed the adequacy of the internal control system under the guidance of the Securities and Exchange Commission and the internal audit result of the Internal Audit Unit. The assessment was based on the report of the internal audit result conducted by the Internal Audit Unit and auditors. The Audit Committee instructed the Internal Audit Unit to monitor the matters that need to be corrected or improved to ensure that the Management has corrected or improved as per suggestions of the Internal Audit within the prescribed period of time. The Audit Committee had an opinion that the internal control system of the Company is effective and adequate, without any significant defects and the Internal Audit Unit was independent. The Audit Committee has approved the Internal Audit Plan for the year 2020 which focuses on the operation that results in the efficiency, effectiveness and the continual development.
3. The Audit Committee promoted, supported and pushed the Company to provide adequate and proper anti-corruption measures to prevent corruption risk from business transactions such as anti-corruption manual, internal and external communication, whistleblowing channel, anti-corruption risk assessment and internal control and reviewed the compliance with anti-corruption measures. The Audit Committee had an opinion that the anti-corruption measures of the Company is proper and adequate.

4. The Audit Committee reviewed the compliance with Securities and Exchange Act of Thailand, regulations of the Stock Exchange of Thailand, laws related to the business and the policy of the Company. The Audit Committee considered that the Company has appropriately complied with the laws and regulations.
5. Review the related transactions or the transaction that may have a conflict of interest: The Audit Committee reviewed the related transactions or the transaction that may have a conflict of interest which was classified as a related transaction pursuant to the Notification of the Securities Exchange Commission of Thailand and the Securities and Exchange Commission. It was considered that the said transactions proceeded in accordance with the articles of association which adhering to the compliance with the notification of the Stock Exchange of Thailand. The related transactions were proceeded with the reasonable ground, taking into account the highest benefits of the Company and adequate disclosed.
6. The Audit Committee selected and proposed for an appointment of auditor and auditing fee based on transparency, independence and good corporate governance including the performance of the auditor in the previous year. Additionally, the Audit Committee also considered the reputation, reliability, the ability to perform auditing and certify on financial statements in time. In 2019, the Audit Committee considered and proposed to appoint the auditor to be auditors of the Company and its subsidiaries in Thailand and proposed auditing fee to the Board of Directors which is to be proposed at the Annual General Meeting of Shareholders for the year 2019. These auditors are independence, skilled and approved by the Securities and Exchange Commission, Thailand.
7. The Audit Committee reviewed the Audit Committee Charter with an opinion that the Charter was appropriate and in line with criteria of the Stock Exchange of Thailand and good corporate governance.
8. Audit Committee assessed their performances both collectively and individually. In 2019, the performance assessment result on a collective basis was 98.89 percent and individual basis was 98.61 percent.

Energy Absolute Public Company Limited



**(ACM Chainan Thumasujarit)**  
Chairman of Audit Committee

# Report of the Nomination Committee

## To Shareholders,

The Nomination Committee of Energy Absolute Public Company Limited consists of 3 Independent Directors whose duties are to support the Board of Directors in nominating and proposing qualified persons with knowledge and skills that suit the position of directors and top executives.

The Nomination Committee comprises of 3 members namely below.

1. M.R. Bravochat Chatchai  
Chairman of Nomination Committee  
and Independent Director
2. Mr. Chaiwat Pongpisitsakul  
Member of Nomination Committee  
and Independent Director
3. ACM Chainan Thumasujarit  
Member of Nomination Committee  
and Independent Director

In 2019, the Nomination Committee performed their duties as assigned by the Board of Directors. Three meetings were held to consider and proceed with the following matters.

1. To consider and nominate directors who retired by rotation to re-elect to be the directors for another term. The Nomination Committee considered and selected the duly qualified persons without prohibited characteristics as stipulated by the Securities and Exchange Commission of Thailand. The nominated persons were proposed to the Board of Directors, before proposing to the General Meeting of Shareholders for appointment as a director to replace the directors who retired by rotation.

2. To review the criteria that allows shareholders to propose names of the qualified person to be nominated as a director of the Company, to propose nomination form for director position and to allow shareholders to nominate persons to become a director of the Company.
3. To review the Nomination Committee Charter to ensure compliance with the good corporate governance and the compatibility with current duties.
4. To organize the performance assessment of the Nomination Committee for the year 2019 both collectively and individually assessment. The performance assessment result on a collective basis was 97.03 percent and individual basis was 97.02 percent.

Energy Absolute Public Company Limited



(M.R. Bravochat Chatchai)

Chairman of the Nomination Committee



# Report of the Remuneration Committee

To Shareholders,

The Board of Directors of Energy Absolute Public Company Limited appointed the Remuneration Committee in order to support the Board to set the policy, form and criteria of the remuneration for directors, sub-committees and chief executive officer of the Company including proposed the opinion to the Board of Directors and shareholders' meeting in order to create more transparency, fair and can be comparative with other companies in the same size and business as well as to retain the qualified directors and top executives who have a significant roles in driving the business operation to achieve the goal.

The Remuneration Committee comprises of :

1. Mr. Chaiwat Pongpisitsakul  
Chairman of Remuneration Committee and Independent Director
  2. ACM Chainan Thumasujarit  
Member of Remuneration Committee and Independent Director
  3. M.R. Bravochat Chatchai  
Member of Remuneration Committee and Independent Director
  4. Mr. Sutham Songsiri  
Member of Remuneration Committee and Independent Director
  5. Mr. Amorn Sapthaweeikul  
Member of Remuneration Committee and Independent Director
2. To propose the remuneration of directors and sub-committees to the Board of Directors and shareholders' meeting including the budget allocation to be the bonus to director in each year.
  3. To consider the performance of the Chief Executive Officer including propose the opinion about salary and bonus for the year.
  4. To consider the performance evaluation of Chief Executive Officer to be in line with the Company's goal and plan for the year as well as the performance assessment in accordance with SET's criteria.
  5. In 2019, the Remuneration Committee organized the assessment for both collectively and individually assessment. The performance assessment result on a collective basis was 97.81 percent and individual basis was 98.18 percent

In 2019, the Remuneration Committee held 2 meetings to propose the resolution to the Board of Directors meeting. The substance is summarized as follows:

1. To consider and propose the bonus to director from the last year performance by referring to the result of self-assessment and operating result compared to the target achieved.

Energy Absolute Public Company Limited



**(Mr. Chaiwat Pongpisitsakul)**

Chairman of the Remuneration Committee

# Report of the Risk Management Committee

To Shareholders,

The Risk Management Committee of the Energy Absolute Public Company Limited (the "Company") consists of 6 members from the Board of Directors, dividing into 3 independent directors and 3 members from Executive Directors. All of them are qualified with knowledge, specific skills that cover the risk management which is beneficial to the business of the Company Group.

## The Risk Management Committee consists of:

1. ACM Chainan Thumasujarit  
Chairman of Risk Management Committee and Independent Director
2. M.R. Bravo Chat Chatchai  
Member of the Risk Management Committee and Independent Director
3. Pol.Gen. Patcharawat Wongsuwan  
Member of the Risk Management Committee and Independent Director
4. Mr. Somphote Ahunai  
Member of the Risk Management Committee and Executive Director
5. Mr. Amorn Saphaweeikul  
Member of the Risk Management Committee and Executive Director
6. Mr. Wuthilerd Chiannilkulchai  
Member of Risk Management Committee and Executive Director

The Risk Management Committee has performed its duties as assigned by the Board of Director and in accordance with the Risk Management Charter. In 2019, the Risk Management Committee held 5 meetings. The substance are summarized as follows:

- To consider the Risk Management Committee Charter in order to stipulate the responsibilities, composition and qualifications, term of office, meeting schedule as a practice guideline.
- To follow up major projects of the Company, to give advise and suggest the solution to reduce risks that may occur.
- To follow up operation, investment of new business projects of the Company to be in line with the direction and scope approved by the Board of Directors.

- The review the Risk Management framework, to determine level/change, impact and damage level precisely in order to adhere to as a guide for assessing the severity of the risk and risk management. The risk identification for business operation of the Company and the Company Group are classified in 5 types as follows.
  1. Risks from Business Operation
  2. Risks related to products and procurement
  3. Risks from the management
  4. Risks of completion of power plant projects
  5. Risks from delay in project completion
- As for the Risk Assessment, the Risk Management Committee has reviewed the classification and considered the priority of the current risks by assessing from the likelihood that a risk may occur and the impact. In risk assessment, the likelihood and impact are classified into 5 levels.
- In 2019, the risk Management Committee organized the assessment for both collectively and individually assessment. The performance assessment result on a collective basis was 98.68 percent and individual basis was 98.54 percent.

The Risk Management Committee thrives to perform its duties to cause the adequate supervision and risk management, to ensure that such risks are within an acceptable ranges and to promote the efficient and effective business operation of the Company Group.

Energy Absolute Public Company Limited



(ACM Chainan Thumasujarit)

Chairman of the Risk Management Committee

# Report from the Corporate Governance Committee

To Shareholders,

The Corporate Governance Committee of Energy Absolute Public Company Limited performs its duties by supporting the Board of Directors in determining criteria and practices in various fields to be in conformity to the good corporate governance principles and to operate a business with social responsibility.

The Corporate Governance Committee comprises of 4 members (3 independent directors) namely below.

1. Mr. Chaiwat Pongpisitsakul  
Chairman of the Corporate Governance Committee and Independent Director
2. ACM Chainan Thumasujarit  
Member of Corporate Governance Committee and Independent Director
3. M.R. Bravochat Chatchai  
Member of Corporate Governance Committee and Independent Director
4. Mr. Sutham Songsiri  
Member of Corporate Governance Committee

In 2019, the Corporate Governance Committee performed its duties as assigned by the Board of Directors. Total 4 meetings were held to consider the following matters.

1. To oversee the improvement of corporate governance and performance assessment. The Corporate Governance Committee monitored the improvement of corporate governance to ensure the conformity with good corporate governance principles. In 2019, the Stock Exchange of Thailand (SET) and the Thai Institute of Directors (IOD) collaborated in taking the survey on the corporate governance of the

Thai listed companies. The Corporate Governance Assessment (CG 2019) scored 91 percent which was more than an average score of total listed companies and the SET 100 Index, but lower than the average score of SET 50 Index which was 92 percent. The Corporate Governance Committee is committed to develop and improve the corporate governance coupling with the growth of the Company Group.

2. To consider applying the Good Corporate Governance Principles as a guideline and provide internal training.
3. To review an anti-corruption manual of the Company.
4. To review and amend the Corporate Governance Committee Charter to be at the current state and consistent with the responsibility of the Corporate Governance.
5. To review and conduct self-assessment for both collectively and individually assessment. The performance assessment result on a collective basis was 98.26 percent and individual basis was 98.30 percent.

Energy Absolute Public Company Limited



(Mr. Chaiwat Pongpisitsakul)

Chairman of the Corporate Governance Committee

# Corporate Governance





# Corporate Governance

The Board of Directors understands the importance of implementing "Good Corporate Governance 2017" as announced by Stock Exchange of Thailand, and therefore, implemented such "**Good Corporate Governance**"<sup>1</sup> as a guideline to enable effective and transparent management which will ensure trust and confidence among shareholders, investors, stakeholders and all related parties.

## Corporate Governance Policy

The Board of Directors has assigned the Corporate Governance Committee to govern and ascertain the Company's corporate governance in compliance with standard performance including with operational assessment and practical enhancement in accordance with both international and SET's Good Corporate Governance for listed companies and international standard. Good Corporate Governance can be divided into 5 sections as following details:



## CSR in Process

### Section 1 : Rights of shareholders:

The Company supports right practice as well as right protection of all shareholders as follows:

#### 1.) Rights of shareholders

- Right of holding Company's shares;
- Right to acquire, dispose and transfer the shares;
- Right to acknowledge complete information and news related to the Company;
- Right to attend and vote in the shareholders' meeting;
- Right to appoint or dismiss the Company's directors;
- Right to receive dividend from the Company;
- Right to take part in making decision and acknowledge the decision of the Company concerning changes of internal infrastructure which are
  - (1) Disposal or transfer as a whole or important part to other persons;
  - (2) Acquisition or receive business of other companies or private companies under ownership of the Company;
  - (3) Covenant, amend or terminate of agreements concerning all leasing business of the Company, as a whole or important part, delegate other person to operate the Company's business, or consolidate with other person with intention to share the profit/ loss;
  - (4) Change details in memorandum of association or articles of association or other regulations of the same nature;
  - (5) Increase or reduce the Company's capital;
  - (6) Merge or liquidation of the Company;
  - (7) Issue debenture;
  - (8) Execute other special transactions which are not normal transaction
- Right to propose matter as the agenda in the general meeting of shareholders;

Remarks: <sup>1</sup> Approved by the Board of Directors Meeting No.2/2009 on 25 May 2009  
<sup>2</sup> Reviewed and approved by the Board of Directors Meeting No.1/2019 on 27 February 2019

## 2.) The shareholders' meeting.

Shareholders have right to attend and vote in Shareholders' meeting with equal treatment. The Company shall refrain from any action that may limit the right to access the Company's information or to attend the meeting. The Company undertakes procedures regarding each meeting as follows:

- This year, the Annual General Meeting of Shareholders ("AGM") 2019 is held on Thursday, 25 April 2019 at 14.00 hours at Vibhawadee Ballroom, Centara Grand Hotel at Central Plaza Ladpraw, 1695 Phaholyothin Road, Chatuchak District, Bangkok. The Company has implemented for quality in convening the AGM through convenience meeting venue with various alternated transportations i.e. car, MRT, and other public transportations. In this regard, The Company has complied with assessment guidelines and examples in the Annual General Meeting of Shareholders (AGM Checklist) by the Thai Investors Association and SEC. In 2019, the Company has achieved a full score at 100 for 3 consecutive years.
- The Company provides notice of meeting with all necessary information and timely manner such as date, time, location and an agenda of the meeting, including supporting documents for each agenda in prior to the meeting date to allow shareholders to study supporting information for their vote, without additional agenda other than specified in the notice of the meeting or changes of important information without prior notice to the shareholders.
- The Company publicizes invitation to the Annual General Meeting of Shareholders including relevant enclosures and make it available on the Company's website at [www.energyabsolute.co.th](http://www.energyabsolute.co.th) in both Thai and English version not less than 30 days prior to the meeting date and sent by registered mail in advance at least 7 days prior to the meeting which requires ordinary resolution and 14 days prior to the meeting which requires special resolution.

Furthermore, the Company clearly specifies the shareholder's rights to attend meeting, voting rights, proxy for shareholders, and proxy forms, including with a map of meeting place which are indicated in the notice of AGM.

The annual general meeting of shareholders 2019, the Company sent the invitation letter 28 days prior to the date of meeting to provide shareholders an opportunity to study the key information within sufficient length of time.

- Rules and regulations of the shareholder's meeting as well as voting procedure to be clearly stated in the notice of the meeting and inform to shareholder in the meeting.

- The Company allows shareholders to propose agenda to the meeting, propose a list of candidates of director position and send their questions as well as name and contact details to the company prior to the meeting date through following methods:

**Energy Absolute Public Company Limited**

**Attention to: Company Secretary**

**16<sup>th</sup> Floor, AIA Capital Center Building,  
89 Ratchadaphisek Road, Dindaeng,  
Bangkok 10400**

**Tel : 0 2248 2488-92, 0 2002 3667-9**

**(Ext.19131, 19133)**

**Fax : 0 2248 2493**

- The Company determines criteria and pattern to enable minor shareholders to propose a list of candidates for nomination of director position as well as to approve the list of proposed candidates. The proposal is opened for 3 months prior to the date of the shareholders' meeting when the Nomination Committee will consider the pattern for proposing list of candidates for director position.
- The Company stipulates the criteria to enable shareholders to propose agenda to the meeting prior to the date of the shareholders' meeting by informing through the Stock Exchange of Thailand of which the form can be downloaded from the Company's website. For the AGM 2019, the Company had invited shareholders to propose agenda in advance and propose the qualified person to be elected as director of the Company and send their questions from 2 October 2018 to 15 January 2019 (*for the Annual General Meeting of Shareholder 2020, the Company determined to be proposed of name list for consideration propose agenda including sending their questions from 2 October 2019 - 15 January 2020*) for the purpose of transparency and fairness. For AGM 2019, this attracted no recommendation of such agenda items or nomination of director.
- The shareholders can enquire, express their opinion and ask for clarification from the Board of Directors, committee or the Management in regard to meeting agenda, policy, operation result, annual audit result from the independent auditor, remuneration policy of the directors and executives or other related matters.

- In the event that the shareholder is unable to attend the meeting, he/she can use proxy. The shareholders to be allowed to appoint an independent director or other person as considered an appropriate as well as their proxy on which he/she can specify their vote. Appointment of the proxy document must be clearly specified in invitation. In 2019, the Company has implemented online application allowing shareholders to watch the live shareholders' meeting online whereas the manual to watch live is also available on the Company's website.
- For the election of directors, the Company has enabling shareholders to vote each director individually to select a qualified representative to be a director in order to oversee the interests of shareholders and separated ballots individually by collecting all voting papers, whether agreed, disagreed or abstained.
- The Company held meetings in a timely manner, and support shareholders to fully express their opinion and ask for more information.
- The Company encourages directors, executives and auditors to attend the meeting for the benefit of answering questions of the shareholders. In the AGM 2019, the Chairman of the Board of Director, Chairman of the Audit Committee, Chairman of the Executive Committee and Chairman of other committees such as Chairman of the Nomination Committee, Chairman of the Remuneration Committee, Chairman of the Corporate Governance Committee and Chairman of the Risk Management Committees, as well as the Chief Executive Officer and Deputy Chief Executive Officer, all abovementioned management attended the AGM.
- In the meeting date, the registration is performed through Barcode system to facilitate shareholders at best convenience.
- The Company Secretary provided minutes of meetings with accurate, complete and clear details and submitted to SET, SEC as well as disseminated through the Company website within 14 days after the date of meeting.

## Section 2 : Equal treatment to shareholders:

All shareholders, investors, corporate investors both within the country and abroad, received equal treatment as specified in the Right of Shareholder Section. The Company has stipulated the policy to protect right of shareholders to ensure that everyone is being treated equally and fairly as follows:

### 1.) Use of internal information for purchase and sale of the Company's securities

The Board of Directors has set the protection of internal information and purchase and sale of the Company's securities to ensure equality and justice to all shareholders and to retrain directors and related executives from illegally sale and purchase of the securities for their own interest (Insider Trading).

#### • Use of Internal Information

The Company has implemented policy and protection approach for misuse of internal information for personal interest and securities sale-purchase as follows:

- 1.) All directors, executives and employees including their spouse and minor child, including related person as per Section 258 are not allowed to use internal information which has not been disclosed to the public domain, to purchase, sale, transfer or receive securities of the Company.
- 2.) Any purchase, sell, transfer or receive asset of the Company by directors, executive, including their spouse and minor child and related person as per Section 258 of the Securities and Stock Exchange B.E. 2535 must be report to the SEC and SET within 3 days from the date of transaction. The violation or failure to comply with the regulation issued in accordance with Section 275 of the Securities and stock Exchange B.E. 2535 be liable to a fine not exceeding Baht 500,000 and a further fine not exceeding Baht 10,000 for every day during which the contravention continues. A copy of transaction report must be submitted to the Company as evidence.
- 3.) Directors, executives and employees of the Company who have access to the internal information shall not use such information prior to disclosure to the public, and shall not purchase, sell, transfer or receive asset of the Company within a period of one month prior to, and 1 day subsequent to the quarterly and annual financial statement will be disclosed to the public. The materiality content of the information is prohibited be disclosed to any other parties.
- 4.) Report shareholding of director to the Board of Directors quarterly.

• **Control of internal information:**

All directors, executives and employees are not allowed to use internal information which has not been disclosed to the public domain for interest of their own or others. In addition, any third party who is involved or may have access to the important internal information of the Company, must enter into the non-disclosure agreement to ensure that the particular person will use the information with full caution and keep such information as confidential in the same manner as the executives and employees would practice.

• **Holding the Company's securities:**

All directors, executives and employees have freedom to sale and purchase of securities of the Company. However, to prevent conflict of interest, directors, executives and employees including their spouse and minor child are prohibited to sale

and purchase of securities of the Company during 1 month prior to the date of disclosure of the financial statement to the public and at least 1 day after disclosure of the financial statement. Any acquisition, disposition, transfer, or receipt of the Company's securities held in their account must be reported and disclosed to the related authority. The Company reports changes in securities holding of directors and executives in quarterly to Board of the Directors and also must be reported in the Annual report.

In case there is any unpublished information which will be affected to the price of securities of the Company, the aforementioned persons must not sale and purchase the securities of the Company until such information has been published.

**Directors and Executives' Shareholding in the Company in 2019 (Including spouse and minor child )**

Name - Surname	Shareholding as at		Share Increase / (Decrease) during the year	Remark
	Dec 31, 2018	Jan 6, 2020		
Directors				
1. Mr. Somchainuk Engtrakul	-	-	-	-
2. Mr. Somphote Ahunai	876,436,386	876,436,386	-	-
By Trustee	630,000,000	632,770,000	2,770,000	
By Spouse	24,983,607	24,983,607	-	-
3. Mr. Amorn Saphthaweeikul	99,968,316	74,968,316	(25,000,000)	-
By Trustee	-	25,000,000	25,000,000	
By Spouse	23,232,787	23,232,787	-	-
4. Mr. Wutthilerd Chiannilkulchai	15,632,849	15,332,849	(300,000)	-
5. Mr. Sutham Songsiri	1,650,000	1,650,000	-	-
6. ACM. Chainan Thumasujarit	-	-	-	-
7. Mr. Chaiwat Pongpisitsakul	-	-	-	-
8. M.R. Bravochat Chatchai	-	-	-	-
9. Pol.Gen. Phatcharavat Wongsuwan	1,140,000	1,140,000	-	-
10. Mr. Somboon Ahunai	10,043,951	10,093,951	50,000	-
11. Mr. Amornsuk Noparumpa	-	-	-	-
Executives (According to the definition of SEC)				
1. Mr. Somphote Ahunai	876,436,386	876,436,386	-	-
By Trustee	630,000,000	632,770,000	2,770,000	
By Spouse	24,983,607	24,983,607	-	-
2. Mr. Amorn Saphthaweeikul	99,968,316	74,968,316	(25,000,000)	-
By Trustee	-	25,000,000	25,000,000	
By Spouse	23,232,787	23,232,787	-	-



Name - Surname	Shareholding as at		Share Increase / (Decrease) during the year	Remark
	Dec 31, 2018	Jan 6, 2020		
3. Mrs. Dujdao Luksanaviwat	-	-	-	-
4. Ms. Yaowalug Pukpikul	-	-	-	-
5. Ms. Omsin Siri	-	-	-	-
6. Ms. Wimolmas Wongmakornpan	27,600	27,600	-	-
7. Mr. Manop Oulandsiripong	3,700	-	(3,700)	-
8. Mrs. Pornthip Saengchan	-	-	-	-
9. Mr. Narawut Tantikanurak	N/A	-	N/A	Appointed in 2019
10. Mr. Kitiphong Tuesataya	N/A	-	N/A	Appointed in 2019
11. Ms. Nopamas Choomklang	N/A	-	N/A	Appointed in 2019
12. Mrs. Tanapa Amornmatevarin	N/A	-	N/A	Appointed in 2019
13. Mr. Cheerapan Panyanan	N/A	2,200	N/A	Appointed in 2019
14. Mr. Kawin Kaewkong	N/A	-	N/A	Appointed in 2019

Remark : N/A means no information as the executive was appointed during 2019

In this regard, if the executive and employee violate the use of internal information policy aforesaid, such person shall be deemed as violation of the Company's regulations. In addition, if such person is considered violation of Section 242 of the Securities and Exchange Act (No.5) B.E. 2559, such person shall be punished under the Securities and Exchange Act (No.5) B.E. 2559.

## 2.) Conflict of interest policy

The Company operated business with honesty, integrity, transparency and fairness. Directors, executives and all employees are not allowed to engage in any business that competes with the Company or execute any business transaction which involves themselves or related person/juristic person that may lead to conflict of interest. It is responsibilities of the Board of Directors to monitor and ensure that everyone strictly comply with the rules and regulations of disclosing related transaction as stipulated by law or relevant authorities.

In case it is necessary to enter into a connected transaction, such transaction must be under general trade conditions as approved by the Board, with transparency and fairness, and executed in a manner as if to external party and conduct for the full benefit of the Company. However, the connected transaction which is not based on the general trade conditions may lead to conflict of interest and must be reviewed and considered by the Audit Committee prior to being proposed to the Board or shareholders for approval.

## Prevention on the conflict of interest

- The Company has structure of shareholding which is explicit, transparent without cross shareholding with major shareholders that may cause conflict of interest to a particular party. The structure of shareholding of the Company and subsidiaries is disclosed in the annual report with full details.
- The duties of the Board of Directors, executives and shareholders are clearly classified, therefore, there is no issue concerning intervening each other's duties.
- The Company determines that the directors and executives are responsible for providing report of stake holding as to review the related transactions.

## 3.) Report on the interest of directors and related persons

It is the responsibility of directors and executives to report interest of directors and related persons regarding the management of the Company as regulations and conditions set forth by the SEC. The Company Secretary is responsible for collecting and submitting report of interest to the Chairman of the Board of Directors and the Chairman of the Audit Committee within 7 days from the date of receiving report.

### Section 3. Roles of stakeholders:

The Company supports to conduct of business based on fairness and shared benefit between the Company and stakeholders. All related policies and measures are set forth as follows:

#### 1.) Treatment to stakeholders:

Stakeholders of the Company are categorized as follows:

- **Shareholders:** The Company determines to create quality and stable business growth for the full and sustainable benefit of the shareholders based on the effective work performance, excellent turnover, equal access to necessary information, disclosure of actual information, conducting business with honesty, integrity, transparency and fairness.
- **Customers:** The Company provides excellent service system to ensure that all customers receive appropriate response and complete, accurate information as required. The Company also has survey forms to take customers feedback as a guideline for continual improvement and development. The practice guideline to customers and product quality/ marketing communication are as follows:
  1. Advertise products and services of the Company based on true fact, refraining from misleading, against morality and culture, and does not cause conflict to society.
  2. Deliver products and service in accordance with the agreement made with customers.
  3. Maintain its standards, product/service quality to ensure confidence and satisfaction among customers.
  4. Willing to listen to claim from customers and take immediate action to improve. In case such improvement is limited or require longer period of time, the issue must be noticed to customer. Furthermore, status of the procedure must be reported to customers within timely manner from time to time.
  5. Not require for money, material or any benefit which indicate unfaithful action from customers.
- **Partner:** The Company continues to treat its partner whom deemed as business partner with equity and based on the mutual benefit, develop and maintain long-term relationship with partner, while creating trust between each other. The Company has complied with the procurement regulations which the procedures and practice guides are clearly stated. Treatment to contract parties ( partner and creditors):

1. Strictly comply with the conditions, terms or contract strictly, in case of non-compliance, promptly notify/negotiate with the contract party to find the solution and mitigate the damage with fairness.
  2. Procure transparently. Preceding the procurement with transparency, equally, accurately, clearly, completely, fairly and verifiably treat all stakeholders.
  3. Procure from entrepreneurs who comply with laws that are not or do not benefit from labor or production process which is unlawful and immoral.
  4. Take into account the quality, safety of purchased goods and services which may affect the health of users, employees, communities, society and environment.
  5. Not use the information obtained from the procurement operation for private benefit or other people who are not involved.
  6. Negotiate and enter into a contract with fairness, not taking advantage over the contract party by considering reputation and image of the Company.
- **Creditors:** The Company strictly and completely complies with the conditions agreed with creditors, manages to return loans plus interest in timely manner.
  - **Employees:** The Company treats its employees with fairness and appropriate manner in term of opportunity and compensation, appointment, transfer, skill development and safe working condition. The Company welcomes any opinion and suggestions from employees and treats everyone with fairness and equality.
  - **Competitors:** The Company determines to conduct business under fair competition environment, not seeking competitor's confidential information dishonestly or inappropriately, not executing any action that violates their intellectual property. The practice guideline to competitors is stipulated as follow:
    1. Refrain from damaging reputation of competitors by accusing in negative way;
    2. Refrain from seeking information, trade secret of competitors by dishonest method;
    3. Support fair competition and adhere to the competition rules strictly;
    4. Not enter into any agreement with competitors or any person which reduce or limit them competitiveness;
    5. Consider the equality and honesty in conduct of business and mutual benefit with the trading partners;
    6. Conduct business with morality

- **Community, Society, Environment, Health and Safety:** The Company maintains its participation in society by complying with the law and/or approved regulations, coordinates with government authorities, ensures that business operation will not cause any damage to community, society and environment, supports and develop society in terms of life quality development, education development, energy saving and environmental care. The practice guideline toward communities, societies, environment, health and safety are set forth as follows:

1. Comply with related laws correctly, completely and consistent to the management manual, and to support implementation of management system which in line with international standard to business management within organization.
2. Review, monitor and evaluate work performance to lower impact to environment, hygiene, safety of communities and environment.
3. Communicate for better understanding; participate in providing information to communities and societies, investors, shareholders and general people with latest situation related to status and facts of the business operation of the Company without hiding any facts.
4. Commit to participate in development and support social activities, environment care and development on life quality of local communities in accordance with sustainable development for the harmonized society.

## 2.) Risk Management Policy

- Risk management is an integral to the whole business where responsibility is adjacent to employees of all levels. With awareness toward risks adhered to their work and within department, everyone is assigned to ensure that an appropriate balance between risk and its control is achieved.
- To define risk management procedures in line with international standards, integrate same risk management to whole organization, implement risk management as a part of planning, strategy and business operation of the Company, as well as to achieve the target, vision, mission and strategy set forth in order to create success and confidence among stakeholders.
- To define prevention and minimize risks from business operation in order to avoid damage or loss, as well as to follow up and assess the risk management result regularly.

## 3.) Safety, Occupational Health and Working Environment policy

The Company realizes that safety occupational health and working environment management is the basic responsibility of organization and is an important and necessary factor for our business operation. To become an excellent organization, all departments are constantly supported and developed under safety occupational health and working environment policy as follows:

- Prevent accidents, injuries and sickness which may be incur from operation under strict compliance of everyone, as well as limit and control work that exposes to harmful risk.
- Quickly, effectively and carefully coordinate with government authorities and private companies to minimize emergency cases or accidents incur from work.
- Strictly comply with applicable laws, regulations and provisions regarding safety, and implement safety standard to business operation.
- Suitably provide equipment, tools, regulations, work plan and training course for employees of all levels to ensure they understand and receive sufficient information about safety at work and to prevent accidents or diseases incur from work.
- Arrange for the regulations, action plan and training course to educate employees at all levels appropriately. In order to have knowledge and understanding and receive adequate information about work safety to prevent potential hazards from work and various diseases.
- Arrange for the safety of employees and related parties by providing a safe and hygienic working environment.
- Provide the adequate personal protective equipment for employees who are in compliance with adequate risks, Use, organize, provide training, rehearsal and control for proper use.
- Review safety policy and regularly conduct assessment.

#### 4.) Society and Environment Policy

The Company realizes the importance of taking part in society and environment to be in good quality and conducts various activities to support and promote the sustainable development of society and environment by following policies:

- Operate business by taking into account the impact to society and environment;
- Aim to reduce and prevent pollution;
- Strictly comply with the applicable laws, regulations and related practices;
- Continuously develop and improve work standards to be in compliance with environmental standards.

#### 5.) Policy on non-violation on information, IT and intellectual property <sup>2</sup>

The Company determines policy against violation on information, IT and intellectual property of the Company and subsidiaries, and to comply with applicable law related to intellectual property or copyright, as well as not to support violation on intellectual property of other person. The details are as follow:

- Any works resulted from performing duties is deemed as intellectual property of the Company.
- After discharging from employee status, all intellectual properties including products of invention must be returned to the Company in all forms of collection.
- To use software and computer programs, user must receive permission from owner of copyright and the Company will permit to the extent of the Company's necessity.
- To bring works or information of which a copyright of external party to use within the Company, art work must be reviewed to ensure that the application will not violate the intellectual property of other persons.

#### 6.) Create good relationship with communities where the Company's office is located

Realizing the importance of good relationship with surrounding communities, the Company has determined its practice to support knowledge and develop occupation of the surrounding communities such as inviting the Local Administrative Office, community leaders and nearby schools to visit the solar power plants, sparing parts of the land into model plot of non-toxic vegetable growing, growing of vetiver grass to protect soil erosion, raising animals. Communities and Schools nearby are invited to visit for learning and practice.

#### 7.) Provide project or approach against corruption. Corruption includes support of compliance with related laws and regulations.

The Company is aware of the importance of ethics, morals, and transparency in business operations including corporate social responsibility, the environment, and all stakeholders in accordance with the principles of good corporate governance. The Company prioritizes importance on the compliance with the rules, regulations and laws relating to anti-corruption including anti-corruption promotion activities within the company for better understanding and conscious commitment to against corruption in all forms.

The Company has therefore established a written anti-corruption guideline in writing including explanations, understanding and communication of the said guidelines to the Board of Directors. The Board of directors various sub-committees as well as employees at all levels of the Company and the Company group thoroughly. This is to be considered as a clear guideline for anti-corruption in all forms that may occur in the operations of the Company.

To ensure that the Company has an appropriate risk management system to prevent corruption in all forms, the Company has set an anti-corruption policy to enable appropriate practices and operating regulations to prevent the corruption and to ensure the risk of fraud and corruption that may occur with the operations of the Company has been considered and implemented for prevention appropriately, sufficiently and prudently.

1. Prohibit the directors, executives, employees, and stakeholder groups of the Company and its affiliates proceed or accept all forms of corruption either directly or indirectly for the benefit of oneself, family, friends and acquaintances, covering all businesses in every country and all related agencies and to regularly review the implementation of this anti-corruption policy as well as reviewing the guidelines and operational requirements to be in line with business changes, regulations, and legal requirements.
2. To have measures to prevent and against corruption as a part of the Company's business operations. This is the responsibility of all departments, including directors, executives, employees of the Company and affiliates as well as groups of interested parties to participate in giving opinions on various practices to prevent and against corruption of the Company in order to achieve the Company's policy.

Remark : <sup>2</sup> Approved by the Board of Directors Meeting No.6/2014 on 14 November 2014



3. The Company must continually improve and develop measures to prevent and against corruption in accordance with relevant rules and regulations including the Code of Conduct and Good Corporate Governance, which must assess the risk of corruption that may occur in the Company's business operations and the preparation of guidelines under good internal control in order to prevent any forms of corruption from occurring in the Company's business operations.
4. The Company must not give or accept bribes or support all forms of bribery including supervision and control of various donations including charitable donations, donations to political parties including giving or accepting gifts or receiving financial support as well as rewards or other benefits in order to make the transactions transparent and not to convince or motivate related persons, including directors, executives, employees of the Company and its affiliates as well as groups of public and private stakeholders performing improper operations.
5. The Company must provide a suitable, adequate, and sufficient internal control system to prevent corruption in all forms.
6. The Company must communicate the commitment of the Company in preventing and anti-corruption in all forms as well as promoting the knowledge on preventing and anti-corruption to the directors, executives and employees in order to instill good awareness and for all personnel of the Company being aware of their duties and responsibilities in carrying out their duty to fight against corruption in all forms.
7. The Company must provide a transparent financial reporting mechanism in accurate and reliable.
8. The Company must promote good and diverse communication channels in order to receive notification of fraud and corruption from directors, executives, employees and all relevant parties with a guarantee for the whistleblower to be protected by not being unfair punishment or being bullied and including the appointment of a person or group of people to closely monitor and monitor all corruption reports that have been reported.

### **Guidelines for the implementation of the anti-corruption policy**

Directors, executives, and employees at all levels, stakeholder groups, and affiliates must comply with this anti-corruption policy including the code of ethics, good corporate governance policies, and guidelines for various groups of stakeholders as well as regulations and regulations about the work of the Company and/or other guidelines that the Company will be determined further and must not directly or indirectly engage in corruption by the following:

1. The Company is very determined and determined to create and maintain the corporate culture as well as raising awareness among personnel in the organization to have a common awareness that corruption is not acceptable to the Company regardless of the form of corruption in any form.
2. There is no circumstance of giving bribery, or receiving bribery, or bribery to various stakeholders' related duties and their responsibilities, either directly or indirectly, in order to gain improper benefits despite being the Company's benefits or personal interests which must be treated as follows:
  - 2.1 Not accepting or giving gifts, souvenirs, or similar items to any person related to their duties, responsibility, and their work both in public and private agencies.
  - 2.2 Not accepting assets, things, gifts, gifts or other benefits which is an inducement or inducement to refrain or omit to perform their duties. However, in the event that it is necessary to receive any property, gift, or other benefit, the recipient should ensure that it is carried out correctly in accordance with the regulations and/or the Company's policy as well as various related laws. In this regard, any property, item, gift, or other benefit which is given to each other in that function, its price should not expensive and should suitable for each occasion.
  - 2.3 Not giving the property, items, gifts, or other benefits which is an inducement or inducement the recipient to make a decision or causing the recipient to not follow the trade practices as if they were with other partners. However, such giving must have a value not more than normal practice and suitable for each occasion.
  - 2.4 Not being an intermediary or having any affiliations in offering money, assets, things or other benefits to those involved in the Company's business operations both public and private agencies in exchange for any special privileges that should not be obtained or unlawful or causing government officials to refrain or refrain from performing their duties according to the rules, regulations, and laws as specified.

3. For business operations and procurement with government agencies, do not give or accept bribes of any kind and must be done correctly. And being aware that rules, regulations, laws, rules, or traditions in each locality or in each country, may have different conditions, procedures, or practices. Therefore, contacting government agencies must be transparent, honest, and must proceed in accordance with relevant laws.
4. In procurement whether done with government sectors or private agencies, it must proceed through the procedures in accordance with the Company's regulations, transparent, and can be inspected.
5. Expenses for rearing business can do, but it must be reasonable, transparent, and can be inspected and to be in accordance with the ethics.
6. Charitable donations must do as follows:
  - 6.1 Use of funds or other assets of the company for donations for that charity Must operate on behalf of the company only and must be a foundation charity organizations, hospitals, hospitals, temples, or organizations for social benefits With certificate or reliable can check This must be done through procedures in accordance with the regulations of the company.
  - 6.2 Personal charitable donations can be done, but it must not cause suspicion of corruption or for any wrongful interest.
7. Use of money or assets of the Company in order to support the Company's projects must be specified in the name of the Company only and must have business objectives creating a good image or for the reputation of the Company. Disbursement must specify objectives that are clear, transparent, and can be inspected, and proceed through the procedures in accordance with the Company's regulations.
8. No political involvement. The Company will adhere to political neutrality, support and adhere to the law under democratic rule. And there is no policy to provide political assistance to any political party whether directly or indirectly.
9. Directors, executives and employees of the Company and its affiliates must notify the responsible person immediately, and cooperate in the investigation of various facts without neglecting or neglecting to see any action that is considered corruption. However, if in doubt or questions such person may consult with the responsible person through various channels.
10. The Company will provide fairness and protection for personnel of the Company who refuse or report fraud or corruption in accordance with the protection measures for whistle blowing, any offense and corruption without any action that is unfair to the whistleblowers, such as reducing positions, punishing or negatively affecting employees who refuse corruption, etc., although the said actions will cause the Company to lose business benefits or opportunities.
11. The Company considers that any corruption by directors, executives, employees of the Company and its affiliates, is a violation of the ethics and regulations of the Company. Such persons shall be subject to disciplinary consideration in accordance with the regulations stipulated by the Company, including legal penalties.

The Company is aware and gives importance to the dissemination of knowledge and understanding about anti-corruption policies. Corruption of the Company both personnel within the company including external parties involved in the company's business operations. In the year 2019, the Company announced its intention to join the collective action coalition against corruption of Thai private sectors on September 27, 2019 and prepared a written "Anti-Corruption Measures Guide" to be a clear guideline for the operations of the Company and to develop into a sustainable organization as well as arranging in-house training on anti-corruption measures for directors, executives, and employees, as well as assessing knowledge and understanding and communicate with business partners and stakeholders including the public along with the announcement of the **"No Gift Policy"**.

## 8.) Whistleblowing Policy

In order to encourage both internal and external stakeholders to participate in Good Corporate Governance process, the company therefore has set a policy in the event that various groups of stakeholders have questions or see actions suspected of violation or non-compliance with laws, regulations, or business ethics, or suspicions that may lead to corruption can report clues or complaints together with sending evidence and details to the Chairman of the Audit Committee of the Company.

### Conditions and consideration for receiving complaints / clues

- 1.) Details of the complaint must be true, clear, and have enough information to conduct a fact search for further action.
- 2.) The complainant can choose not to reveal themselves in order to protect the complainant.
- 3.) Information that the Chairman of the Audit Committee received will be considered a secret and reveal as necessary with regard to the safety of the complainant.
- 4.) Complaints that have been screened and investigated will be reported to the Board of Directors to consider and determine suitable measures.
- 5.) Complainants will be protected despite being a company employee and outsiders.

## Whistleblowing / Complaint Channels

Shareholders, directors, executives, employees and stakeholders in all groups can give clues in case of doubt or see actions suspected of violation or failure to comply with laws, regulations, or business ethics or events that may cause damage to the Company to the Chairman of the Audit Committee, which the Company will keep the said information confidential in order to prevent the whistleblower to suffer. Channels for whistleblowing are as follows:

- **Letter to the recipient of the complaint :**

**Chairman Of the Audit Committee**

**Address :** Energy Absolute Public Company Limited  
16<sup>th</sup> Floor, AIA Capital Center Building,  
No. 89 Ratchadaphisek Road, Dindaeng Subdistrict,  
Dindaeng District, Bangkok 10400 Thailand

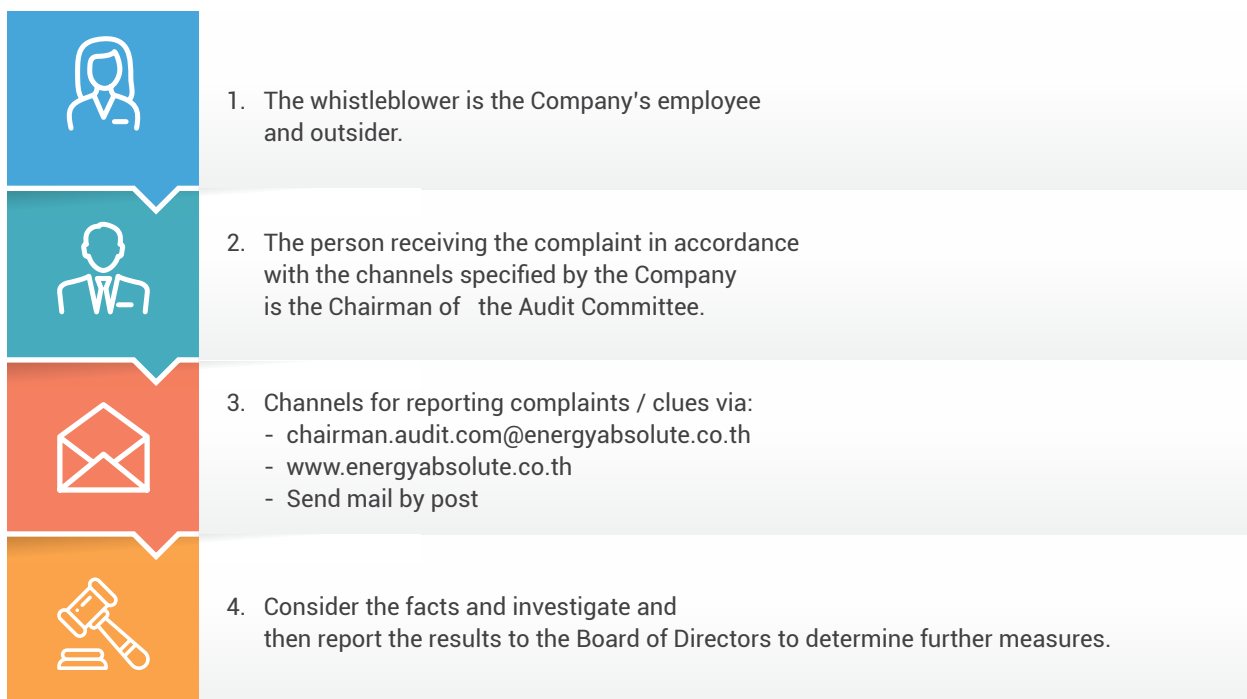
- **E-mail Address**

chairman.audit.com@energyabsolute.co.th

### Implementation

1. Notify the progress/ consideration result of complaints to whistle-blower who disclosed his/her name and contact address;
2. The Company reserved its rights to not disclose any information and details concerning the interrogation or disciplinary action affecting the personal information and confidentiality.

## Whistleblowing procedures



## 9.) Right Protection for employees, contractors or temporary staff

The Company refrains from any unfair treatment toward its employees, contractors or temporary staffs such as change of position, work scope, or place of work, suspend work, threatening, disturbing, dismissal or any other action defined as unfair treatment based on the ground that:

- Such person provides information, coordination or assistance whatsoever to directors, executives, government or related authorities in the event that those people reasonably believed that there is a violation or incompliance with the law, regulation, or good corporate governance policy.
- Giving statement, submitting evidence document or assistance whatsoever to the director, executive, government or related authorities in support of consideration or examination on violation of incompliance with the laws, regulations, provisions or good corporate governance.

## Section 4 : Information disclosure and transparency

### 1.) Information disclosure

The Board of Directors places attention on disclosure of reliable, accurate, complete, transparent and timely released information for financial and nonfinancial matters to investors and all stakeholders to have reliable and sufficient information for decision. The Office of Company Secretary and the Department of Corporate Communication are responsible for communicate and disseminate information necessary for individual investors, corporate investors, analyst and individuals within the country and abroad different channels i.e. notify through the SET Community Portal and the Company's website, announcement of quarterly results, business operation plan. Important information being disclosed to the public are such as annual statement (form 56-1), annual report (form 56-2), financial information, information related to major shareholders and rights of voting, information related to directors and committee, information disclosed to SET, corporate governance policy, business ethic, activities and operative plan etc.

### Disclosure of financial and non-financial information accurately, completely and in timely manner

The information appeared in the financial report is accurate in accordance with generally accepted accounting standards and reviewed by independent certified public auditors.

- The Company provides Report of the Board's Responsibility in the Financial Statements and encloses with the auditor's report in the Annual Report.
- Management Discussion and Analysis or MD&A has been provided to support disclosure of quarterly financial statement to ensure that investors acknowledge and understand well of any changes in relation to financial status and quarterly operation result besides the numbers shown in the financial statement.
- Disclose audit fee and other service fees related to the auditors in the Annual Report.
- Disclose roles and duties of the Board of Directors and sets of sub-committees, a number of meeting held and number of attendance of each director during the previous year in the annual report, under "Corporate Governance-Sub-committees".
- The Company has determined the policy on which directors and executives have to report their interest as well as related persons who involve with stake holding of business management of the Company or its subsidiaries. The criteria and method of report is as follow:
  - Make a report after first undertaking director or executive position;
  - Make a report for any changes related to stake holding.

### 2.) Auditor and quality of financial reports

The financial statements of the Company and its subsidiaries are reviewed and audited by an independent auditor who has been agreed by the Independent Securities and Exchange Commission who is an independent. To ensure that the Board of Directors and shareholders, the financial statements of the Company and the subsidiaries can show the financial position and operating results of the Company.



Nevertheless, the Company has policy to change the auditors if the auditor has been appointed for 7 consecutive fiscal years, and the Company can appoint a new auditor that is affiliated with the former audit firm of the former auditor. From the execution of duties due to the auditor, the Company's auditor can be re-appointed after pass the appointment period at least two fiscal years since the date of such auditor **passed the duty**<sup>3</sup>.

The Board of Directors places important and responsibility on the financial statements of the Company and its subsidiaries based on general accounting standards, with full caution, accuracy and completeness to reflect actual operative result of the Company. The Board of Directors provided operative result and information disclosure with transparency and sufficiency to related authorities such as SEC and SET regally by taking into account the benefit of shareholders and investors. Furthermore, the Audit Committee is appointed by the Board of Directors to verify and examine reliability and accuracy of the financial report and internal control system.

### Disclosure and summary of business ethics, ethics for directors, executives and employees as well as risk management policy

The Company has supervised to collect and create ethics, policy, and practice guideline of the Company Group in written form for directors, executives and employees to apply as a practice guideline. The subject matters are summarized as follow:

#### Business Ethics

The Board of Directors has established the **"Business Code of Conduct"**<sup>4</sup> for directors, executives and employees to use as a guideline for operations; it is divided into the following topics.

#### 1.) Human rights and treatment to employees

- Without discrimination: Respect for human rights, without discrimination on the basis of similarity or difference for race, religious, gender, age, education, status, including respect for personal liberty and privacy protection.

- Labor protection:
  - Do not employ labor younger than the legally required minimum age. Should child labor above the legally required minimum age be employed, their legally mandated rights shall be fully protected and proper development and promotion of quality of life and work be provided.
  - Female employees shall not engage in work may harm their health and safety. Pregnant workers shall be protected and provided their legally-mandated benefits.
  - Employment of foreign workers must be fully compliance with the regulatory requirements.
- Prohibition of Involuntary Labor: Do not use or get benefit from forced labor including the use of corporal punishment, threat, confinement at the workplace, coercion, harassment, human trafficking or any other means of violence.
- Wages and Benefits: Payment of wages, overtime pay, and holiday pay, as well as provide legally mandated benefits shall be made accurately, fairly, and not less than the minimum wage according to applicable laws and within the time set. Proper welfare is also provided.
- Working Hours: Do not force workers to work longer than the maximum working hours specified by applicable laws and also provide sufficient break out period during working day. Working overtime or working on a public holiday is voluntary. Workers must be granted holidays and leave as required by applicable laws.
- Have evaluation system, compensation for performance, rewards and penalties based on non-discriminatory justice and explicability.
- Open the opportunity and focus on the development of skills, knowledge and competency of employees thoroughly and continuously as well as prepare the succession plan for all key positions.
- Use knowledge, ability, appropriateness, and performance of employees as indicators in considering the nomination, transfer by fair, equitable and explicable assessment

Remark : <sup>3</sup> Norpor. 5/2561 Re : Guidelines on Auditor Rotation in Capital Market and Relaxation on Auditor Rotation in Capital Market

<sup>4</sup> Approved by the Board of Director Meeting No. 2/2014 on 11 March 2014

## **2.) Communities, societies, environment, health and safety**

- Correctly and fully comply with relevant laws, and management guidelines, as well as promote the implementation of international standard management systems as the tool of management.
- Inspect, monitor and evaluate the implementation to reduce the impact on the environment, occupational health, safety, community and environment.
- Communicate for understanding and cooperation in providing information to the community and society, investors, shareholders and other interested parties in timely manner with the situation and the fact of the business operation of the Company without obscuring facts.
- Aim to participate in the development and promotion of social activities, environmental protection and improve the quality of life in the community in according with the principle of sustainable development for happily living together.

## **3.) Receiving or Providing Property or any benefits that might motivate the decision.**

- Perform their duties with honesty, diligence and sense of responsibility.
- Disclose all factual information.
- Do not request or receive any property, item or benefit from people involving in business with the intention to act or refrain from any action that is not correct or exchange with the privilege of the Company.
- Not use the power in the position / duties in the Company for personal benefit

## **4.) Conflict of interest in transactions of the Company**

- Avoid any action that will cause conflicts of interest with the organization or that may affect the decision to perform duties.
- Be cautious about personal relationships with people who may have potential conflicts of interest or a commercial competitor with the Company, as well as relationships or personal business with colleagues that may cause the conflict or affect the performance.
- Do not take advantage of data or opportunity to be a staff member in the pursuit of personal interests for private or business purposes other than the Company's work which affects the job function.
- Do not conduct any action that is contrary to the business interests of the Company or competitive with the Company which affect the Company to lose benefits or receive lesser beneficial than it should be.

- Follow the rules, procedures and disclosure of connected transactions in accordance with the requirements of the Stock Exchange of Thailand and the Securities and Exchange Commission.

## **5.) Acquisition and disposal assets of the Company and the use of internal information**

- Do not use internal information or disclose internal information to outsiders or use the important information that is not publicly available for personal benefit.
- Avoid expressing opinions to outsiders or the media concerning the matter or the information of the Company which there is no clear policy or guidelines for doing so that may affect the stock price of the Company.
- Do not use the information obtained during performing duties for personal benefit or for any unlawful Insider Trading preventive measures of related persons, such as directors, executives and employees in relevant departments including their spouses and minor child of such person by forbidding to buy, sell, transfer or receive the transfer of securities of the Company within one month before disclosing the quarterly financial statements and annual financial statements and at least 1 working day after publicizing such financial statements.

## **6.) Compliance with laws, regulations, provisions**

- Strictly perform duties under the law and regulations of the Company.
- Respect and support activities / transactions that are legitimate and the ethics of the organization.

## **7.) Application of properties, information, IT and intellectual property of the Company**

- Comply with laws and regulations on information technology of the Company.
- Do not violate the copyrights and trademark that may cause damage to the Company.
- Use hardware and software provided by the Company for the Company's business.
- Maintain the security of information systems including not disclose the password to access the information system of the Company to others.
- Efficiently use the property of the Company to maximize the benefits to the Company and not use the property of the company for personal benefit.
- Protect the intellectual property of the Company from damage, loss, depreciation, and use of intellectual property to maximize the benefit of the Company including maintenance of confidential information appropriately.

## 8.) Treatment to customers and product quality / marketing communication

- Advertise the Company's products and services truthfully, do not make any misunderstanding and do not conflict with the good traditions and not cause the conflict.
- Deliver goods and services in accordance with agreements with customers.
- Maintain the quality standard of products and services to build up the customer confidence and satisfaction.
- Listen to customer complaints and timely improve and correct. In case of having limitation or requiring time to correct, the Company has to notify the customer to acknowledge in a timely manner and regularly report the progress of the improvement.
- Do not collect money, materials or any benefits from the customer which will be dishonest actions.

## 9.) Treatment to contract parties (trading partner and creditors)

- Formulate rule for selecting partners, which is considered business partners in accordance with "EA Code of Business Ethics" with fair business practices that have social and environmental responsibility and not violating human rights.
- Strictly follow the conditions and terms of the contract if the conditions cannot be met, notify / negotiate with the contract party to find solutions and remedies for damage.
- Precede the procurement with transparency and equally treat all stakeholders with fairness and verifiability.
- Procure from entrepreneurs who comply with the law that is not related or benefit from the use of labors or have the production process that is against the law and good morals.
- Take into account the quality, safety of purchased goods and services that may affect the health of the users, employees, communities, society and the environment.
- Do not use the information obtained from the procurement operation for personal benefit or benefit of others.
- Negotiate and enter into contract with fairness and without taking advantages from contract party by taking into account the reputation and image of the Company.

## 10.) Treatment to competitors

- Do not ruin the reputation of a competitor with the accusations in a bad way.
- Do not seek for information, trade secrets of competitors by dishonest means.
- Promote the fair competition and strictly adhere to the rules of competition.
- Do not make any agreements with a competitor or any person to reduce or limit the trade competition.
- Take into account equality and honesty in business operation and benefits with trading partners.
- Ethically conduct business.

## Ethic of directors, executives and employees

It can be summarized as follows:

### 1.) Contain no conflict of interest

Directors, executives, and employees must not seek for personal benefit which is against the interests of the Company or conduct any action that causes the conflict of interest to the Company by complying with following guidelines:

- Directors, executives, and employees should abide by any behavior or action that may cause the conflict of interest to the Company. If it is necessary to do any action that may cause the conflict of interest, the utmost benefit of the Company should be mainly considered.
- Directors, executives and employees who participate in activities outside the organization or hold the position outside the Company, such as directors, executives, consultants, representatives or employees in other organizations, shall not cause any conflict of interest to the Company, either directly or indirectly; it must not affect the performance of their duties in the Company.
- Directors, executives and employees must not ask for assets or any benefit from trading partners and / or staff involved or use their powers to pursue personal benefit.
- Directors, executives, and employees must not commit or be involved in bribery or use their powers to pursue personal benefit.
- Directors, executives, and employees must avoid receiving gifts or any present from those who do business with us, which may lead to benefits or make other people understand that there are benefits together in the wrong way

### 2.) Protect the confidential information of the Company

The Company is considered that it is the responsibility of directors, executives, and employees of the Company to strictly maintain the confidential information of the Company and apply following guidelines:

- Directors, executives and employees are responsible and maintain the confidential information of shareholders, customers, trading partners, officers and employees without disclosing such information if the information owner does not permit unless such disclosure is in compliance with the laws, regulations, terms or conditions that the Company must follow Including non-access to confidential information of such person with dishonest or inappropriate means.

- Directors, executives and employees must not seek for personal benefits and benefits of related person without disclosure of confidential internal information to outsiders, both directly and indirectly.
- Directors, executives and employees must not buy, sell, transfer or receive the transfer of the Company's securities based on internal information that is not disclosed by the Company.

### 3.) Be responsible for the Company's assets

The Company encourages its executives and employees to be responsible for the efficient use of resources and assets of the Company in order to make it worthwhile and most beneficial with following guidelines:

- Directors, executives and employees must supervise, manage, control and take care any assets of the Company in the condition that is usable and must maintain and use resources and assets in a cost-effective manner.
- Directors, executives and employees must adhere to the principles of savings to control production costs including unnecessary waste.

### 4.) Behave in line with morality and integrity

- Directors, executives, and employees must behave in a morally and ethically respectable way in which religion and society are respected.

## Section 5 : Responsibilities of the Board of Directors

The Board of Directors plays an important role in corporate governance for the best interest of the Company. The Board of Directors responsible for performance of duties to shareholders and independent from management.

### Structure of the Board of Directors

- The Board of Directors consists of at least 5 directors but not more than 15 directors, and at least half of the directors must have residence in Thailand.
- The Board of Directors consists of at least one-third (1/3) of total numbers of directors on board and/ or contain at least 3 directors.
- The Chairman of the Board of Directors and the Chairman of the Executive Officers must not be the same person to separate clear duties and responsibilities and to balance the power.
- Structure of the Board of Directors as of January 6, 2020, is comprise of 11 members which consisting of directors with diverse qualifications in terms of skills, experience, and specific talents that are beneficial to the company including Directors with knowledge and experience engineering, accounting, finance, banking, administrative law.
- The Board of Directors has independent directors who are able to freely give opinions on the work of the management as specified by the SEC.

- Term of office and number of years of the Board of Directors in the position of director of the Company according to the Company's regulations specify the number of years in each position of the Board of Directors shall be in accordance with the Public Limited Companies Act. At every Annual General Meeting of Shareholders, one-third of the number of directors shall vacate office. If the number of directors is not a multiple of three, then the number nearest to one-third shall vacate office. The director who has been longest in office shall vacate the office. However, the retiring directors may be re-elected.
- The Company has specified the qualifications of the person who will be "Independent Directors" so that the independent directors of the Company are truly independent in accordance with the regulations of the SEC. The definition / qualifications of independent directors of the Company equivalent to the definition of independent directors of the SEC and SET.
- The Chairman of the Board of Directors and Chief Executive Officer have clearly separated roles and responsibilities between the Board of Directors and management. The director is responsible for policy making and overseeing the management's operations at the policy level, while the management manages various tasks to be in accordance with the specified policy. Therefore, the Chairman of the Board of Directors and Chief Executive Officer is a different person and the Chairman of the Board of Director is not an executive director and not being a chairman or member in any sub-committee. Furthermore, the duties of the sub-committees are truly independent and does not participate in the management of the Company as well as having no power to sign to bind the Company to separate the duties between the policy oversight of the Company and management of the Company.
- Determination of the number of listed companies in which the directors will be appointed as directors, the Board of Directors is aware of the Good Corporate Governance in relation to the number of listed companies in which the directors will be appointed as directors. Therefore, the beneficial contribution from the directors being able to devote their time to perform their duties efficiently. There is no director in the company that takes a position more than other 4 listed companies.
- The Board of Directors appointed the Nomination Committee in order to select the directors of the Company and senior management by going through the process and procedures and guidelines definitions and terms of the Company and related rules.
- The Board of Directors appointed the Company Secretary who has legal knowledge, experience and passed the Company Secretary Program from the Thai Institute of Directors Association.



### 1.) Qualifications of directors

- Qualified, not being prohibited to run Public Company, Securities and Stock Exchange, law, including other applicable laws and good corporate governance of the Company.
- Having competent knowledge and good professional background, independent, performing duties' honest, moral, ethical and regularly attend the meetings
- Having one or more specific knowledge in a particular field which will generate benefit to the Company which are:
  - (1) Production and distribution of biodiesel oil
  - (2) Production and distribution of alternative energy
  - (3) have specialized knowledge useful for the Company to support the business expansion according to the strategic plan to achieve goals, such as, accountings, finances, laws, strategy and business plan Management, Information Technology etc.
  - (4) Good corporate governance
- Holding position as a director in the maximum of 4 listed companies, and not hold any position in the entity deemed as the Company's competitor
- Qualifications of **Independent Directors**<sup>5</sup> are as follows:
  - (1) Holding no more than 1% of total voting shares of the Company, parent company, subsidiaries, associate company, major shareholder or controlling person of the Company, including shares held by the **connected persons**<sup>6</sup> of such independent director.
  - (2) not being or having been an **executive director**<sup>7</sup>, employee, staff, advisor earning regular monthly salary or the controlling person of the Company, its parent company, subsidiary, associate company, **same-level subsidiary**<sup>8</sup>, major shareholder or controlling person, unless the foregoing status has ended for at least two years prior to the date of filing the application with the SEC Office. In this regard, such prohibited characteristics shall exclude the case where an independent director used to be a government official or advisor of a governmental agency, which is a major shareholder or the controlling person of the Company.
- (3) not being a person who is related by blood or legal registration as father, mother, spouse, sibling and child, including spouse of child, other directors, executives, major shareholders, controlling person or person to be nominated as director, executive or controlling person of the Company or its subsidiary.
- (4) not having or having had a business relationship with the Company, its parent company, subsidiary, associate company, major shareholder or controlling person in a manner that may interfere with independent discretion, which includes not being or having been a significant shareholder, director who is not independent director or the executive having a **business relationship**<sup>9</sup> with the Company, its parent company, subsidiary, associate company, major shareholder or controlling person, unless such foregoing relationships have ended for at least two years prior to the date of filing the Company with the SEC Office.
- (5) not being or having been an auditor of the applicant, its parent company, subsidiary, associate company, majority shareholder, or controlling person, and not being a significant shareholder, controlling person, or partner of the audit firm which employs the auditor of the applicant, its parent company, subsidiary, associate company, majority shareholder, or controlling person, unless the foregoing relationship has ended for not less than 2 years prior to the date of filing the application with the SEC Office.

Remark : <sup>5</sup> Notification of the Capital Market Supervisory Board No. Tor Jor. 39/2559 Clause 17(2) each independent director shall have the characteristics in accordance with the SEC and SET regulations.

<sup>6</sup> The "Connected persons" means the persons according to Section 258 of the Securities and Exchange Act.

<sup>7</sup> "Executive Director" means a director holding an executive position, a director responsible for any action deemed to be taken by an executive, and shall include a director authorized to bind a company unless it can be demonstrated that it is a joint authorization with other directors for a transaction that has been approved by the board of directors

<sup>8</sup> same level subsidiary company means two or more subsidiary companies under the same parent company regardless of being in which level

<sup>9</sup> The business relationship shall include normal business transactions, rental or lease of real estate, transactions related to assets or services or granting or receipt of financial assistance through receiving or extending loan, guarantee, providing assets as collateral, and any other similar actions, which result in the applicant or the counterparty being subject to indebtedness payable to the other party in an amount starting from three percent of the net tangible assets of the applicant or from twenty million baht or more, whichever amount is lower. In this regard, the calculation of such indebtedness shall be in accordance with the method for calculating the value of related party transactions under the Notification of the Capital Market Supervisory Board Re: Rules on Execution of Related Party Transactions. In any case, the consideration of such indebtedness shall include the indebtedness incurred during the period of one year to the date of establishing.

- (6) not being or having been a provider of professional services, which includes serving as a legal advisor or financial advisor being paid with a service fee of more than two million baht per year by the applicant, its parent company, subsidiary, associated company, majority shareholder, or controlling person, and not being a significant shareholder, controlling person, or partner of such provider of professional services, unless the foregoing relationship has ended for not less than two years prior to the date of filing the application with the SEC Office.
- (7) not being a director who is appointed as the representative of directors of the applicant, major shareholder, or shareholder who is a connected person of a majority shareholder.
- (8) not undertaking any business of the same nature and in significant competition with the business of the applicant or its subsidiary, or not being a significant partner in a partnership, or an executive director, employee, staff, advisor earning regular monthly salary, or holding more than one (1) percent of the voting shares of another company that undertakes a business of the same nature and in significant competition with the business of the applicant or its subsidiary.
- (9) Not having any other characteristics that cause the inability to express independent opinions on the business operation of the applicant.

## 2.) Term of directors and termination

At the Annual General Meeting of Shareholders (AGM), one-third of all directors shall resign by rotation. In case the number of resigned directors cannot be proceeding, the similar amount to one third shall be applied. The resigning directors may be re-elected. In addition to due term of office, the directors may vacate the position upon following situation:

- Death
- Resign
- Unqualified or having prohibited character as stipulated by the Public Limited Company Act or the Securities and Exchange Act
- By resolution of the shareholders' meeting
- By the court's order

## 3.) Meeting of the Board of Directors

- The meeting of the Board of Directors is held at least 3 months for a meeting, with advance schedule of total meeting per annum. Meeting with special agenda may be held as necessary.
- Not less than half (1/2) of the total directors attending the meeting shall constitute the quorum.

- To call for the Board of Directors meeting, the Chairman or the person assigned to do so shall send the notice of the meeting to all directors not less than (7) days prior the meeting date. (except for the urgent case and in order to protect the interest of the Company, the notification by other methods and set the meeting date earlier than that shall be allowed)
- The Chairman of the Board of Directors should allocate appropriate time to enable directors to discuss important matters in each agenda.
- The meeting of the Board of Directors will be held at least once a year with no executive or management members attending the meeting in order to open the opportunity to discuss various issues concerning the business operation of the Company or the subject in the interest. The Chief Executive Officer will be reported for acknowledgement of the meeting result.
- The Company sets the meeting schedule and the main agenda of the Board of Directors' meeting and sub-committees meeting for the whole year in advance and notifies each director of the schedule. Therefore, the directors can arrange the time and attend the meeting.
- The Board of Directors organized regular meetings in order to be informed and to jointly decide in the Company's business operations. The meeting agenda is clearly set in advance and there may be additional special meetings to consider important matters urgently. In the year 2019, the Company held 6 Board of Directors' meetings, which consist of 4 quarterly meetings, and 2 special meetings. In each Board of Directors' meeting, sufficient time is allocated for management and those involved will provide information and sufficient time for the directors to carefully consider the important information. In every Board of Directors' meeting, the Chairman of the Board asked all directors to exercise discretion carefully including freely expressing opinions voting at a meeting of the Board of Directors shall be made by a majority vote in which one director has one vote. If the votes are equal, the Chairman of the meeting will have an additional vote as the deciding vote. In each Board of Director's meeting, a meeting document is sent to the directors in advance in order to have sufficient time to study the information. In considering various matters, the Chairman of the Board which chaired the meeting gave the directors an opportunity to express their opinions appropriately.

- The Board of Directors' meeting organized a meeting between non-executive directors without management participation in the Board of Directors' meeting no. 4/2019, held on November 8, 2019, there was a discussion on important business issues by having summaries of useful issues and suggestions to the Board of Directors and the management for further development of related operations.
- In considering matters as the agenda of the Board of Directors' meeting, the Chief Executive Officer / Vice President Executive Officer, is responsible for proposing matters to the Chairman of the Board of Directors in order to consider the matter as the agenda of the Board of Directors' meeting.
- The Board of Directors opened the opportunity and invited top executives to join the Board of Directors' meeting to provide more detailed information as directly related to the information and to have an opportunity to get to know senior executives for consideration of a succession plan.
- The Board of Directors set the audit committee, which are all Independent Directors, to have a meeting among themselves at least once a year to discuss various issues about management that is of interest without the management team together and notify the Chief Executive Officer.
- To approve the organization structure of the Company.
- To select and appoint director(s), in the event that the director terminate during the year.
- To approve investment in business expansion and the investment.
- To appoint, withdraw and change sub-committee members.
- To approval of interim dividend payment.
- To approve the adjustment of remuneration for the Chief Executive Officer.
- To approve the succession plan for the position of Chief Executive Officer and Senior Management.
- To approve accounting policies additional investment write-offs or the disposal of the company's assets.
- To appoint the company secretary.
- To approve agenda for shareholders' meeting approval as follows:
  1. Entering into the connected transactions, the acquisition, the disposal of assets of the Company according to the laws and regulations of SEC.
  2. Disposal or transfer of all or part of the core Company's business.
  3. Acquisition or accepting the transfer of other companies' businesses to the Company.
  4. Modification of the Memorandum of Association and the article of association of the Company.
  5. Increase / decrease of registered capital.
  6. Issuing of any securities other than the ordinary shares.
  7. Dissolution of the Company / merging with other company.
  8. Determine the date of the shareholders' meeting and the annual meeting agenda.
  9. Annual dividend declaration.
  10. Any other business that required by law or the article of association of the Company to obtain the approval from the shareholders' meeting.

#### 4.) Board approval authority

- To approve and review the vision, mission and policy of the Company.
- To approve short-term and long-term strategic plans including the annual action plan, budget and manpower accordance with the strategic plan.
- To approve the work that is beneficial to the Company, shareholders and stakeholders and monitor the performance of the management and jointly consider and provide the suggestions to solve problems appropriately.
- To approve the sub-committees charter.



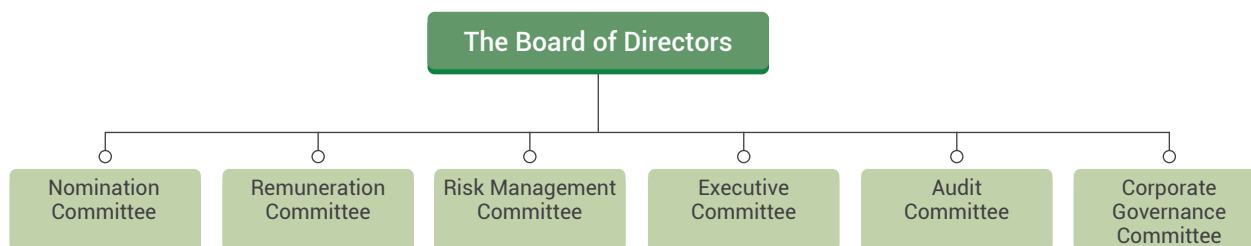
## Sub-Committees

### Appointment of Sub-Committees

The Board of Directors appointed sub-committees to oversee and monitor important issues and to regularly report to the Board. Sub-Committees are as follows:

- The Executive Committee
- The Audit Committee
- The Nomination Committee
- The Remuneration Committee
- The Risk Management Committee
- The Corporate Governance Committee

### Structure of Sub-committees of the Company



## The Executive Committee

The Executive Committee must be the Company's Director and/or the Company's Executive appointed by the Board of Directors based on the number of directors that the Board deemed appropriate and the Board of Directors will appoint one of executive committee member as the Chairman of the Executive Committee.

As of 6 January 2020: The Executive Committee consists of 5 members as follows:

	Name	Position	No. of attendance
1	Mr. Somphote Ahunai	Chairman of the Executive Committee	5/12
2	Mr. Amorn Saphthaweekul	Executive Committee	10/12
3	Mr. Wutthilerd Chiannilkulchai	Executive Committee	11/12
4	Mr. Sutham Songsiri	Executive Committee	8/12
5	Mr. Somboon Ahunai	Executive Committee	11/12

Ms. Yaowalug Pukpikul : Corporate Secretary, Vice President of the Corporate Secretary, Compliance and Contract Management, is responsible for the Secretary of the Executive Committee

### Scope of duties and responsibilities of the Executive Committee

- 1.) To consider and review direction of business operation, business plan and strategy for approval of the Board of Directors.
- 2.) To control the business operation of the Company to ensure the compliance with strategic business plan and the budget approved by the Board of Directors and to report result to the Board of Directors for consideration.
- 3.) Establish a promotion and supporting system of the anti-corruption policy to communicate with all employees and related parties including reviewing the suitability of various processes and measures to comply with business changes, regulations, and legal requirements.
- 4.) To review the code of conduct, handbooks for different departments to ensure compliance with the regulations stipulated by related government authority.



- 5.) To set efficient internal control system and risk management system as well as monitoring system and to ensure work procedures are completed in line with law, regulations and good corporate governance.
- 6.) To consider and propose accounting policy, investment, removal of bad debt, or removal of asset disposal to the Board of Directors for further consideration and approval.
- 7.) To consider and approve work procedures as assigned by the Board of Directors.
- 8.) To perform or act as a representative of the Board of Directors on behalf of the Company in coordination with government authorities such as SEC and SET, etc.
- 9.) To consider and approve budget for normal transaction of the Company, which maximum value is 250 Million Baht.

- 10.) To consider and approve employment, shifts, dismissal, approve Remuneration of the executives, as well as to determine punishment, indemnification, and approve on executive's resignation.
- 11.) The meeting shall be held on a monthly basis where at least half of the directors attending the meeting shall constitute the quorum.

Nonetheless, the authority of the Executive Committee including authorization to other person as considered appropriate by the Executive Committee shall not constitute the authority to approve transactions that there is potentially conflicted persons may involve or any involvement causing conflicts of interest to the Company or any conflict with the Company or its subsidiaries (if any) or the transaction which is not under normal business transaction of the Company. To approve such transaction, the matter must be proposed to the meeting of the Board of Directors and/or shareholders for consideration and approval as stipulated by the regulations of the Company or related law.

## The Audit Committee

The Audit Committee appointed by the Board of Directors are qualified in accordance with the Securities and Exchange Act including notification, rules and/or regulations prescribed by the SET that the Board of Directors appoints the Audit Committee, consisting of at least 3 Independent Directors, and at least 1 Independent Director with sufficient experience to review the financial statements.

As of 6 January 2020: the Audit Committee consists of 3 Independent Directors as following details:

	Name	Position	No. of attendance
1	ACM. Chainan Thumasujarit	Chairman of the Audit Committee and Independent Director	10/10
2	Mr. Chaiwat Pongpisitsakul	Audit Committee and Independent Director	10/10
3	M.R. Bravochat Chatchai	Audit Committee and Independent Director	10/10

Mr. Narawut Tantianurak: Vice President of the Internal Audit and Risk Management is responsible for the Secretary of the Audit Committee since April 23, 2019

### Audit Committee Qualification

- 1.) Not being a director assigned by the Board of Directors to decide on the business operation of the Company, its parent company, subsidiaries, joint ventures, subsidiaries in the same level, major shareholders or the person authorizing and controlling the Company; and
- 2.) Not being director of the parent company, subsidiaries or subsidiaries in the same level, particularly at listed companies;
- 3.) Have sufficient knowledge and experience to be able to act as a member of the Audit Committee. There must be at least one member of the Audit Committee who has sufficient knowledge and experience to be able to review the reliability of the financial statements.
- 4.) Have the same duties as prescribed in the Notification of the Stock Exchange of Thailand regarding qualifications and scope of work of the Audit Committee

## Duties and responsibilities of the Audit Committee are:

### 1. Financial Reports

- To review a financial report and consider the completeness of the information acknowledged and to assess the appropriateness of accounting principles applied to the financial report;
- To review accounting matters and significant financial report, including complicated or irregular transactions and the transaction which requires discretion;
- To enquire management and auditors in regard to auditing result of the important risk concerning financial report and plan to reduce such risk;
- To review efficiency of the internal control in regard to procedure of creating financial statement.

### 2. Internal control

- To review and ensure that the Management has set the internal control system as well as internal control of the proper technology implemented, communication guidelines, importance of the internal control and risk management through the whole organization;
- To review to ensure that the advice regarding to internal control suggested by the internal audit and auditor has been amended and improved.

### 3. Internal Audit

- Review and approve annual internal audit plan, as well as personnel and resources required;
- Review activities and performance of the Internal Audit Department to ensure independency as well as approve the appointment, transfer, employment termination of the Head of Internal Audit or any function responsible for internal audit;
- Review efficiency of the Internal Audit performance to ensure that the internal audit standard has been implemented.
- Review the effectiveness of Anti-Corruption guidelines as well as to consider and audit follows the Whistle Blowing policy to ensure that the Company performs with a concise and suitable operation and in accordance with international standards and able to prevent any form of corruptions.

### 4. Control the compliance with law and regulations

- Consider changes of law, regulations proposed by the Internal Audit which has impact to the business operation of the Company regularly;
- Review the facts found by controlling authority, follow up, improve, as well as report to the Board of Directors;
- Review efficiency of system which implemented to monitor compliance with the law, regulations, as well as correct in case the matter has not been followed.

### 5. Consider and ensure accuracy and completeness of the information disclosure of the Company in case there is connected transaction or conflict of interest.

### 6. Select, propose, appoint and consider remuneration of the Auditors.

- Responsible for selection, appointment and proposal of the remuneration of the Auditors.

### 7. Compliance to the morality and ethic of the executives and employees

- To review to ensure that business ethics and morality of the executives and employees, prevention policy on conflict of interest are made in written form and acknowledged by all executives and employees;
- To support the compliance with morality, ethic and prevention policy on conflict of interest.

### 8. Provide report of activities of the Audit Committee by disclosure such information in the Annual Report of the Company which will be signed with affixed name by the Chairman of the Audit Committee.

### 9. Other responsibilities

- Otherwise act as assigned by the Board of Directors;
- Review and assess charter of the Audit Committee on regular basis, as well as propose to Board of Directors for approval in case of amendment;
- Provide self-assessment, at least, on annual basis, and report the result to the Board of Directors.

The Audit Committee has the authority to terminate the external auditor contract if the external auditor is unable to perform his duties or neglected his duties or wrongfully performs his duties.

## The Nomination Committee

The Board of Directors appointed the Nomination Committee to support the Board of Directors in setting policies, criteria and procedures for recruiting qualified persons to serve as the Company's director, subcommittee member including top **executives**<sup>10</sup> and the person assigned by the Board of Directors in accordance with the nomination process and propose to the Board of Directors. The Nomination Committee consists of at least 3 directors and all of them are independent directors. The Nomination Committee meeting shall elect one member as the Chairman of the Nomination Committee.

As of 6 January 2020: The Nomination Committee consists of 3 Independent Directors as following details:

	Name	Position	No. of attendance
1	M.R. Bravochat Chatchai	Chairman of the Nomination Committee and Independent Director	3/3
2	ACM Chainan Thumasujarit	Nomination Committee and Independent Director	3/3
3	Mr. Chaiwat Pongpisitsakul	Nomination Committee and Independent Director	3/3

Ms. Pimvara Laemsuwanchuen: Senior Internal Audit is responsible for the Secretary of the Nomination Committee

### Duties of the Nomination Committee are as follows:

- 1.) To consider policy of nomination of directors and top executives, nominate, select and propose qualified person with morality, ethics and qualification suitable to the position of committee member and/or executives, as the case may be;
- 2.) To review and assess the work performance of the directors and executives;
- 3.) To provide the succession plan, revise the development plan of the Chairman of the Executive Officers or top executives as a prepared plan in the event that the CEO or top executives in particular position will retire or will be unable to perform their duties to assure smooth and continual business operation;
- 4.) Considering the vacant of the Board of Directors due to
  - Termination - Considering the selection of qualified candidates to be directors and propose to the Board of Directors for further propose to the annual shareholders' meeting for appointing
  - Termination other than the expiration of the term - Considering the selection of qualified persons as directors and propose to the Board of Directors for consideration and appointing to replace the vacant positions
- 5.) Encourage to allow shareholders to propose names of persons to be nominated as directors.
- 6.) Consider the preparation of the development plan for directors to develop knowledge of the current directors and new directors to understand the business, roles and duties of directors and important developments industry, such as the current conditions of the industry, the rules and laws related to the business of the Company
- 7.) Selecting the qualified directors to be directors in sub-committees in order to propose to the Board of Directors' meeting for appointment to fill in the vacant position.
- 8.) Considering and reviewing the Charter of the Nomination Committee and regularly perform.
- 9.) Other duties assigned by the Board of Directors

Remark : <sup>10</sup> Top Executives mean Chief Executive Officer or Managing Director or a person holding equivalent position with different position title of Energy Absolute Public Company Limited and its subsidiaries.

### Criteria for shareholder to propose the qualified candidate to be elected for director of the Company

1. Being a shareholder holds at least 5% of total shares of the Company (Not less than 186.5 million shares).
2. The shareholder who wishes to propose a person for directorship must be a shareholder holding shares at the amount as specified previously as of the date of proposal and as of the date of closing shareholders' register in order to determine right to attend the meeting of shareholders.
3. Provide evidence of shareholding such as certificate of Shareholding is sued by the securities company or any other evidence issued from the Stock Exchange of Thailand (SET) or the Thailand Securities Depository Co., Ltd. (TSD).
4. The person being proposed for directorship shall have qualifications as follows:
  - (1) Fully qualified, without any prohibited characteristics, under law related to the Public Company Limited, Securities and Stock Exchange, including other laws and notifications, and the good corporate governance of the Company.
  - (2) Having competent knowledge, good professional background, independent, performing duties with honesty, morality, ethics and regularly attend the Board of Directors' meeting.
  - (3) Having one or more specific knowledge in a particular field which will generate benefit to the Company which are business of production and distribution biodiesel oil/ business of production and distribution of electricity, including the good corporate governance.
  - (4) Neither holds directorship in more than 4 listed companies nor any position in the competitors' company.

## The Remuneration Committee

The Board of Directors appointed the Remuneration Committee to support the Board of Directors in setting policies, pattern and criteria for paying the remuneration for the Company's directors, sub-committees as well as setting the remuneration for top executives and the person assigned by the Board of Directors to propose to the Board of Directors. The Remuneration Committee consists of at least 4 directors. The Chairman shall be independent director and at least half of member shall be independent directors. Member of the Remuneration Committee shall be elect as Chairman of the committee.

As of 6 January 2020: The Remuneration Committee consists of 5 Directors as following details:

	Name	Position	No. of attendance
1	Mr. Chaiwat Pongpisitsakul	Chairman of the Remuneration Committee and Independent Director	2/2
2	ACM Chainan Thumasujarit	Remuneration Committee and Independent Director	2/2
3	M.R. Bravochat Chatchai	Remuneration Committee and Independent Director	2/2
4	Mr. Sutham Songsiri	Remuneration Committee	2/2
5	Mr. Amorn Saphthaweeikul	Remuneration Committee	2/2

Mrs. Pornthip Saengchan: Vice President of the Human Resource Department is responsible for Secretary of the Remuneration Committee

### The Remuneration Committee has duties and responsibilities as follows:

- 1.) To consider the policy and structure of directors' remuneration and sub-committee of the Company and propose to the Board of Directors for consideration and further propose to the meeting of shareholders for approval;
- 2.) To consider and review the remuneration structure and ratio of the top executives to be in compliance with the current market condition and suitable to the Company's business performance, and propose to the Board of Directors for further consideration.



To perform such duties, the Remuneration Committee considers from the reasonable and reflects the scope duties and responsibilities of director, the financial status of the Company in comparing with the good practice of other companies in the same size and same sector. The remuneration of directors shall be proposed to the Board of Directors for further approval by the shareholders' meeting consecutively.

The criteria to determine the remuneration are as follows:

1. **Remuneration of the Board of Directors** comprises of the monthly remuneration because the Company considers that the duties and responsibilities of directors are at all the time during their directors' term;
2. **Remuneration of Sub-Committees** shall be the attendance meeting fees for which this remuneration shall be proposed and obtain the approval from shareholders' meeting as the budget every year. Each sub-committee will set their working plan for the year as assigned by the board of directors;

3. **Annual award or bonus for the Company's Directors** is proposed as budget for shareholders meeting approval in advance. The bonus budget is considered from overall performance of the Company. However, the Board of Directors also conducts the self-assessment both of the whole board and each of director as well before paying such bonus;

4. **Remuneration of CEO** consists of salary and bonus, the Remuneration Committee considers and set KPI of Chief Executive Office according to goal and planning of the Company and as per assignment from the Board of Director. The evaluation, in comparing with the Key Performance Indicator (KPI) and remuneration of CEO of the company in the same size and sector of the Company, is conducted at the end of the year. The remuneration of CEO is proposed to the Board of Directors for approval.

## The Risk Management Committee

The Board of Directors appointed the Risk Management Committee to support the Board of Directors in setting risk management policy for overall corporate as well as to supervise and control to have risk management system or procedures to suitably remove/reduce the impacts on the business of the Company Group, also setting the composition, scope of authorities, duties and responsibilities to enable the Risk Management Committee to perform its duties with effectiveness.

The Risk Management Committee consists of at least 5 directors. Their duty is to propose and support to the Board of Directors. At least half of the members must have competent knowledge in finance, accounting, law or specific skill related to the business operation of the Company or risk management. The Risk Management Committee will select one member as the Chairman of the committee.

As of 6 January 2020: The Risk Management Committee consists of 6 Directors as following details:

	Name	Position	No. of attendance
1	ACM Chainan Thumasujarit	Chairman of Risk Management Committee and Independent Director	5/5
2	M.R. Bravochat Chatchai	Risk Management Committee and Independent Director	5/5
3	POL. GEN Phatcharavat Wongsuwan	Risk Management Committee and Independent Director	-/5
4	Mr. Somphote Ahunai	Risk Management Committee	4/5
5	Mr. Amorn Saphaweekul	Risk Management Committee	4/5
6	Mr. Wutthilerd Chiannilkulchai	Risk Management Committee	3/5

Ms. Yaowalug Pukpikul: Vice President of the Corporate Secretary, Compliance and Contract Management/  
Corporate Secretary, is responsible for the Secretary of the Risk Management Committee

### The duties of the Risk Management Committee are as follows:

- 1.) To establish risk management policies, supervise and support efficient risk management covering the business operations of the Company which includes the risk of corruption and considering and reviewing various measures to prevent those risks to be at an acceptable risk level.
- 2.) To follow up the implementation, review the report of risk management, ensure the appropriateness and sufficiency of the risk management, ensure the risk management remains in the acceptable level, and to ensure that the risk management has been continuously applied;
- 3.) To regularly coordinate with the Audit Committee by exchanging knowledge and information regarding risk and internal control which impacts or may impact the Company, encourage to have culture of risk management and proper internal control:



### The Corporate Governance Committee

The Board of Directors appointed the Corporate Governance Committee, consisting of at least 3 Directors to perform duties in setting and reviewing policies, regulations and operational approaches to be in line with the principles of good corporate governance, setting policies and planning activities related to the social responsibility, holding meeting to follow up the progress of corporate governance plan and social responsibility as well as providing suggestions and necessary support, implementing internal audit with the criteria of corporate governance in order to determine issues to be improved and being the Company's representative to communicate and implement activities related to the corporate governance with all executives, employees and external organizations.

As of 6 January 2020: The Corporate Governance Committee consists of 4 Directors as following details:

Name	Position	No. of attendance
1 Mr. Chaiwat Pongpisitsakul	Chairman of Corporate Governance Committee and Independent Director	4/4
2 ACM Chainan Thumasujarit	Corporate Governance Committee and Independent Director	4/4
3 M.R. Bravochat Chatchai	Corporate Governance Committee and Independent Director	4/4
4 Mr. Sutham Songsiri	Corporate Governance Committee	4/4

Ms. Yaowalug Pukpikul: Vice President of the Corporate Secretary, Compliance and Contract Management/  
Corporate Secretary, is responsible for the Secretary of the Corporate Governance Committee

### The duties of Corporate Governance Committee are as follows:

- 1.) To determine and review policy, regulations and work practices to be in line with good corporate governance, determine and plan about activities related to corporate social responsibilities, the stakeholders, i.e. 1.1) Shareholders 1.2) Employees 1.3) Social 1.4) Partners, 1.5) Creditor and 1.6) other stakeholders;
- 2.) To hold the meeting to monitor the progress of corporate governance plan as well as corporate social responsibilities, as well as to give advice and support as necessary;
- 3.) To conduct internal assessment based on corporate governance principles in order to seek for improvement;
- 4.) To act as representative of the Company in communication and conduct corporate governance with the executives, employees and external agencies.
- 5.) Review and propose amendments to the scope of duties and responsibilities of the Corporate Governance Committee in accordance with current situation.
- 6.) Performing other duties assigned by the Board of Directors

## Performance Evaluation of the Board of Directors and Sub-Committees

The Company conducts a self-assessment of the board of directors and sub-committees related to good corporate governance according to the board self-assessment form issued by the Stock Exchange of Thailand by conducting an evaluation form for both collectively and individually at least once a year. The Board of Directors jointly set criteria for self-assessment of the performance both collectively and individually. Self-Assessment is required to be conducted annually and the Board of Directors will jointly consider the evaluation results to determine ways to improve work.

### 1. Evaluation form for the entire Board of Directors is comprised of 6 topics:



Structure and qualifications of the Board of Directors.



Roles, duties and responsibilities of the Board of Directors



The meeting of the Board



Performance of Directors' duties



Relationship with the management



Self-development of directors and executives development

### 2. Individual Evaluation form for the individual Board of Directors is comprised of 3 topics:



Structure and qualifications of the Committee.



The meeting of the Committee



Roles, duties and responsibilities of the Committee

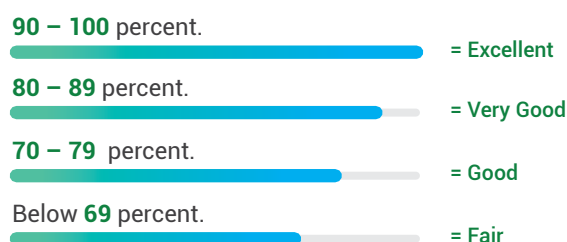
### Evaluation assessment form for the sub-committees:

- 1.) The criteria of assessment form for the entire sub-committees is comprised of 3 topics
  - Structure and qualifications of the Committee.
  - The meeting of the Committee.
  - Roles, duties and responsibilities of the sub-committee.
  - Self-development of directors and executives.

The Audit Committee brings the assessment form from the guideline of the SEC to be complied with the Company's assessment by adding the general responsibilities and specific duties of the Audit Committee.

- 2.) Individual Evaluation Form for sub-committees is comprised of 3 topics:
  - Structure and qualifications of the Committee.
  - Roles, duties and responsibilities of the sub-committee.
  - The meeting of the Committee.

### The criteria for scoring at each level are as follows.



### Evaluation Results

The performance evaluation of the Board of directors and sub-committees is based on personal opinion to overall performance of the board of directors and applied according to criteria.

For 2019, the result of self-assessment of the Board of Directors and Sub-committees are as follows:

	Board's Self-Assessment (%)	Director (individual)'s Self-Assessment (%)
Board of Directors	99.12	98.48
Audit Committee	98.89	98.61
Nomination Committee	97.03	97.02
Remuneration Committee	96.25	98.64
Risk Management Committee	99.68	99.54
Corporate Governance Committee	98.26	98.30
Executive Committee	98.33	96.67

## Directors' remuneration

The remuneration committee has duty to determine directors' remuneration policy and criteria and present to the Board for consideration and propose to the shareholders for approval. The remuneration is considered with appropriateness and consistent to the responsibility and contribution from each director.

In addition to the remuneration of the Board of Directors, the company also takes into account of the increased responsibilities from having more sub-committees, which the Board of Directors proposed to the shareholders' meeting to approve the remuneration of the sub-committees. For the compensation of the Chief Executive Officer, will go through the process of consideration by the remuneration committee before propose to the board of directors for approval.

## Training and Development Course for Directors

### Directors Orientation

Newly appointed director will be given company overview, regulations and business information relate to his duties. The company secretary is assigned to provide the information of the organization structure, nature of business, business structure of the Group Company, regulations, the article of association of the Company, Code of Conduct consisting of corporate culture, business ethics, code of conduct for directors, executives and employees, Good Corporate Governance, and anti-corruption policy, for the directors to understand the business of the Company and related regulations.

The Company also provides skills development of directors through continual training courses to support directors to perform their duties with full efficiency and effectiveness.

### Directors who received additional training in 2019

In the year 2019, there were additional directors who attended the training as follows:

Director	Program
Mr. Somphote Ahunai	• The Executive Program in Energy Literacy for a Sustainable Future Class 9 (WorPorNor. 9) held by Thailand Energy Academy
Mr. Amorn Saphaweeikul	• The Executive Program in Energy Literacy for a Sustainable Future Class 14 (WorPorNor. 14) held by Thailand Energy Academy • TFRS 9 Training, held by PricewaterhouseCoopers ABAS Co. Ltd.

## Succession Plan

The Board of Directors formulates the succession plan of Chief executive officer and top executives to ensure the confidence among shareholder, investors, organizations and employees for business continuity. The succession plan is reviewed on annual basis.

### • Succession Plan Policy

The succession plan is executed with transparency and adequacy to ensure that the Company will have professional and high potential executive. The details of succession plan are as follows:

#### 1. Chairman of the Executive Committee or equivalent position

Once the Chairman of the Executive Committee or equivalent position becomes vacant or unable to perform duties, the Company may assign the duties to other executive in the similar or lower position as an acting person until the qualified person will be elected. The person elected to replace the vacant position should have great vision, competent knowledge and skills as well as an experience which suit to the culture of organization. In the event that the Chief Executive Officer is vacant, the Nominating Committee will consider the qualifications of persons nominated for the position of Chief Executive Officer and propose to the Board of Directors to approve the appointment.

#### 2. Executive

Once the executive position ranked from director upward, becomes vacant or person holding such position is unable to perform duties, the Company may propose the elected successor to the Board of Executive Committee. The consideration procedures are as follows:

- Analyze the business operation, strategy, policy, investment plan, expansion plan, and evaluation of personnel readiness to be consistent with both short-term and long-term strategy of the Company.
- Formulate plan to prepare readiness of personnel by improving existing personnel to nominating for new replacement.
- Formulate recruitment program, employee training and development prior to the retirement or early resignation.
- Determine competencies which is knowledge, skill, personality and desirable attitude of the particular position, as well as to formulate development plan for individual person (Individual Development Plan).



- Select, evaluate on performance and competency of the applicant.
- Conduct testing and evaluating of applicant to analyze their competency.
- Specify the successor based on the evaluation, analysis of competency and performance, as well as advance notice to the applicant in to be prepared for handover and knowledge transfer, and to specify the alternative successor.
- Develop and evaluate applicant is expected to be successor to see career development and potential to achieve target, applicant who not meet the requirement will be replaced.

## Nomination and appointment of the directors and top executives

### Composition and Nomination of the Board of Directors

- 1.) The Company has Nomination Committee to select and propose the qualified person with morality, ethics and meets the requirements as prescribed in Section 68 of the Public Company Act B.E. 2535 and as stated in the related Notifications of the SEC and SET. The consideration also based on experience, knowledge, skills relevant to the business of the Company. Then the lists of selected applicants will be submitted to the Board of Directors for further proposal to the shareholders' meeting for selection and appointment. Currently, the Board of Directors consists of 11 members, 6 of them are Independent Directors, 2 of them are Executive Directors and 3 of them are non-Executive Directors.
- 2.) At the Annual General Meeting of Shareholders (AGM), one-third of all directors shall resign by rotation. In case the number of resigned directors cannot be precede, the similar amount to one-third of the directors to resign during the first year. In second year after registration of the company, the ballot papers will be provided for seeking director to resign. Later years, the directors who hold longest term shall be resigned. The resigning directors may be re-elected.
- 3.) Shareholders' meeting will appoint directors from majority votes according to the following rules and methods
  - 3.1 Shareholder has votes equal to one (1) share per one (1) vote.
  - 3.2 Each shareholder must use all existing votes according to Clause 3.1 to elect one person or many people as directors, however, the votes cannot be divided
  - 3.3 Persons who receive the highest votes in descending order being elected as a director equal to the number of directors that should have or should be elected at that time. In the event that the person elected in the next order having equal votes in excess of the number of directors that the shareholders' meeting must elect at that time, the chairman of the meeting is the casting vote

- 4.) In the event that the position of the director is vacant due to reasons other than the expiration of the term, the Board shall select the qualified person and does not have the characteristics of being prohibited under the law on public limited companies and the law on securities and stock exchange, to be replaced in the next board meeting except that director's remaining term shall be less than two months. The person who is the replacement director will be in the position of director only for the remaining term of the director that replaced.
- 5.) The shareholders' meeting may have resolution to terminate director(s) prior to the term expiration with the votes of not less than three-fourths (3/4) of the attending shareholders with total shares no less than half of total shares hold by the attending shareholders with the rights to vote.

## Nomination / and Qualifications of the Sub-Committees

### • Executive Committee

The Executive Committee must be the members of Board of Directors and/or executives and is appointed by the Board of Directors. The number of Executive Committee is as considered appropriate by the Board of Directors. The Chairman of the Executive Committee is also elected by the Board of Directors.

### • Audit Committee

The Audit Committee consists of directors from the Board of Directors, appointed by the Board of Directors, with qualifications in accordance with the Securities and Exchange Act, notifications, regulations and/or the rules stipulated by the Stock Exchange of Thailand. The Audit Committee consists of at least 3 Independent Directors and at least 1 director should have competent knowledge in accounting and finance.

### Qualifications of the Audit Committee

- 1.) Never be assigned by the Board to make decision in business operation of the Company, holding company, subsidiaries, and associated, subsidiaries in the same level, major shareholders or controlling parties of the Company; and
- 2.) Not holding directorship in the holding company, subsidiaries or subsidiaries in the same level only the listed company;
- 3.) Have sufficient knowledge and skill to perform duties as Audit Committee member. However, at least one committee member should have competent knowledge to review the accountability of the financial statement.
- 4.) Having the same duties as prescribed in the notification of the Stock Exchange of Thailand Re: Qualifications and Scope of Work of the Audit Committee.

- **Nomination Committee**

The Board of Directors appoints the Nomination Committee to support the Board of Directors in determination of policy, criteria and procedures in recruitment of the director, sub-committee, including top executives and the person as assigned by the Board of Directors in line with the nomination procedure stipulated, and to suggest opinion to the Board of Directors.

**Nomination Committee** consists of:

- 1.) At least 3 independent directors
- 2.) The Chairman of the Nomination Committee is elected by the resolution of the meeting of the Nomination Committee.

- **Remuneration Committee**

The Board of Directors appoints Remuneration Committee to support the Board in determination of policy, package and criteria of Remuneration for Directors, Sub-committee, Executives and person assigned by the Board of Directors, to propose to the Board of Directors for approval.

**Remuneration Committee** consists of:

- 1.) At least 4 directors from the Board.
- 2.) At least half of members are the Independent Directors.
- 3.) The Chairman of the Remuneration Committee is elected from the member of the committee elected by the meeting of the Remuneration Committee.

- **Risk Management Committee**

The Board of Directors appoints Risk Management Committee to support the Board in determination of risk management policy for all organization, to implement risk management system or procedure to reduce/ minimize impact on the business of the company group efficiently by formulating factors, scope of authority, duties, responsibilities to ensure the Risk Management Committee perform their duties with full effect.

**The Risk Management** consists of

- 1.) At least 5 directors from the Board;
- 2.) Comprise of the members who have competent knowledge in finance, accounting, legal, or risk management or skill or expertise related to business operation of the Company;
- 3.) The Chairman of the Risk Management Committee is elected from the member of the committee by the meeting of Risk Management committee.

- **Corporate Governance Committee**

The Corporate Governance Committee is appointed by the Board; consist of at least 3 directors elected from the Board. Their duties are to determine and review policy, regulations and work approach to be in line with good corporate governance, determine and plan about corporate social responsibilities, hold a meeting to follow up progress of corporate governance plan as well as corporate social responsibilities, as well as to give advice and support as necessary, to conduct internal assessment based on corporate governance principles in order to seek for improvement, to act as representative of the Company in communication and conduct corporate governance with the executives, employees and external agencies.

## **The Control of the subsidiaries and associates**

- 1.) Mechanism to control and manage work performance of the subsidiaries: To control and oversee work operation of the subsidiaries, the Company sends its representative to undertake different position such as director, executive or controlling party in the subsidiaries at least in proportion of shareholding. The duty of such representatives is to ensure the best performance of the subsidiaries. Moreover, the representatives must ensure that the subsidiaries has regulations of connected transactions or acquisition or disposal of the assets or any significant transaction to be accurate, apply criteria related to information disclosure and transaction mentioned above to be in line with the regulations of the Company, to ensure the information storage and accounting record of the subsidiaries can be reviewed and collected to enable delivering financial statement in timely manner.
- 2.) The agreement between the Company and other shareholders in management of subsidiaries and associated (shareholder's agreement): The Company has no agreement with other shareholders in management of subsidiaries and associated.

## **Use of Internal Information**

The Company has implemented policy and protection approach for misuse of internal information for personal interest and securities sale-purchase as follows:

- 1.) All directors, executives and employees including their spouse and minor child, including related person as per Section 258 are not allowed to use internal information which has not been disclosed to the public, to purchase, sale, transfer or receive securities of the Company.

- 2.) Any purchase, sell, transfer or receive asset of the Company by directors, executive, including their spouse and minor child and related person as per Section 258 of the Securities and Stock Exchange B.E. 2535 must be report to the SEC and SET within 3 days from the date of transaction. The violation or failure to comply with the regulation issued in accordance with Section 275 of the Securities and stock Exchange B.E. 2535 be liable to a fine not exceeding Baht 500,000 and a further fine not exceeding Baht 10,000 for every day during which the contravention continues.
- 3.) Directors, executives and employees of the Company who have access to the internal information shall not use such information prior to disclosure to the public, and shall not purchase, sell, transfer or receive asset of the Company within a period of one month prior to, and the disclosure of quarterly and annual financial statement will be disclosed to the public and 1 day after the disclosure. The materiality content of the information is prohibited be disclosed to any other parties.
- 4.) Report shareholding of director to the Board of Directors quarterly.

## Compensation for Auditors

For the fiscal year ended 31December 2019, the Company and its subsidiaries has paid remuneration to the auditor for the auditing of financial statements (Audit Fee) in the total amount of 10,030,185.00 Baht, which is divided into the audit fees of the Company in the amount of 2,327,600.00 Baht, and the audit fees of the subsidiary companies in the amount of 7,702,585.00 Baht, and other non-audit fees of 700,000.00 Baht, divided into other service fees of the Company of 100,000.00 Baht, and other service fees of the subsidiaries of 600,000.00 Baht. PricewaterhouseCoopers ABAS Co., Ltd., the Company's auditor has been approved by the SEC and has independence without directors or senior management of the Company had previously been an employee or partner of the audit company.

## The Company sets up department related to "Investor Relations or IR"

The Company has appointed Corporate Communication Division to be mainly responsible for Investors Relations in order to communicate with external parties such as shareholders, institution investors, public investors, analysts and related public sectors with fairness and justice and to enable them to meet the Company's executives as considered appropriate under the policy that the information provided has been disclosed to the public. In the year 2019, the Company has prepared the investor relations ethics of the company. To be used as a framework and guideline for the investor relations operator of the company with the following requirements

- Disclose important and necessary information to make investment decisions accurately, adequately, timely in accordance with related regulations.
- Do not use inside information for personal benefit or for others, including refraining from buying-selling, transferring-accepting the Company's securities within 1 month before disclosing the financial statements and at least 1 day after the financial statements are disclosed as well as refrain from meeting and / or providing information about the Company's performance to outsiders at least 2 weeks before the disclosure of the financial statements.

All shareholders, investors and interested parties can contact the Investor Relations unit for any inquiring and more information via mailing or direct contact the following channel:

### Investor Relations unit

#### Energy Absolute Public Company Limited

16<sup>th</sup> Floor, AIA Capital Center Building,  
No. 89 Ratchadaphisek Road., Dindaeng Subdistrict,  
Dindaeng District, Bangkok 10400 Thailand

**Tel:** 0 2248 2488-92, 0 2002 3667-9 Ext.19531

**E-mail:** ir@energyabsolute.co.th

**Investor relations activities of the company in 2019 are as follows:**

Investors Relations Activities	Total News	Additional information
<b>1. New Release:</b> Publishing news within the next business day from the date of reporting SET / SEC in the form of Press release, Photo release. Such release contain the requisite information to disclose according to rules and regulations of SET/SEC as well as the general business development of the group of the Company.	50 released News	After the Company disclosed the official information to SET/SEC, the Investor Relations will release information through media channels within the same business day or prior to the trading next day.
<b>2. Presenting information :</b> The number of times to present information of the Company through various activities.		
2.1 "Opportunity Day" organized by SET	4 times with approximately 100 audience	1. Financial Statements for the year ended 2018 2. Financial Statements for Q1 of 2019 3. Financial Statements for Q2 of 2019 4. Financial Statements for Q3 of 2019
2.2 "Analyst Group Meeting"	4 times	Number of participating company No. 1: 25 companies No. 2: 12 companies No. 3: 14 companies No. 4: 17 companies
2.3 "One-on-One Meeting" with analyst and institute investor at the office of the Company including the conference call after the announcement the operating results	68 times	Divided into Q1/2019 : Total 9 times Q2/2019 : Total 14 times Q3/2019 : Total 17 times Q4/2019 : Total 28 times
2.4 "Road Show" for investors, analysts and shareholder both domestic and international	13 times	Divided into - Domestic : 3 times - Aboard : 10 times
<ul style="list-style-type: none"> <li>Support the preparation and dissemination of the Company analysis journal to disseminate to investors and the general public for reference in reasonable investment decision in the securities of the Company.</li> </ul>	7 analysts	
<ul style="list-style-type: none"> <li>Other Stakeholders site visit at               <ul style="list-style-type: none"> <li>Biodiesel factory at Prachin-Buri province</li> <li>Solar Power Plants at Nakhorsawan, Lampang, and Phisanulok provinces</li> <li>Wind Power Plant at Chaiyaphum Songkla and Nakornsithammarat provinces</li> </ul> </li> </ul>	7 times	



## Compliance with the Principles of Good Corporate Governance

According to the survey conducted by the Corporate Governance Report of Thai Listed Companies 2019, the Stock Exchange of Thailand and the Thai Institute of Directors (IOD) made the overall assessment. The Company obtained the score at "Excellent" and its average score was higher than the average score of overall listed companies and SET100 Index

In 2019, the Company has reviewed the compliance of corporate governance and also implemented the following measures in line with the Corporate Governance Report of Thai Listed Companies and ASEAN Corporate Scorecard. The Company also adopted the principles of good corporate governance for listed companies of the Securities and Exchange Commission (revised in 2017) (Corporate Governance Code for Listed Companies 2017, CG Code 2017) to improve the corporate governance principles of the Company. Followings are the part that the Company is under on progress:

CGR Principles on progress	Reasons
<ul style="list-style-type: none"> <li>The company should set the policy of term of service holding the position of independent director for no more than 9 years.</li> </ul>	<p>Since the nature of the Company's business is a specialized business, therefore, the Company's directors who have a lot of experience and expertise as well as vision in this field of business. They are very important resources to push and drive the company's growth and become a leader in the industry.</p> <p>The Company is aware of knowledge, expertise and experience of independent directors and providing their independent opinion without the conflict of interest or gain and loss to the Company. As a result, the Company has expanded its policy of 9-year-term of service of the independent director.</p>
<ul style="list-style-type: none"> <li>The Company should appoint external consultants to provide guidance and advice on performance evaluation of the Board at least every 3 years and disclose such activities in the Annual Report.</li> </ul>	<p>The Board of Directors and all sub-committee member made their self-assessment for both individual and group and also made of evaluation on the performance of Chief Executive Officer every year. At present, the Company has directors who are knowledgeable about the business of the Company and capable to set the policy and strategy to efficiently drive the Company's business.</p> <p>However, the Board of Directors requires the Nomination Committee to have authority and can consider to hire external consultants when necessary for the Company.</p>
<ul style="list-style-type: none"> <li>All directors should attend not less than 75% of the total number of Board meetings held during the year.</li> </ul>	<p>In 2019, since some directors are not available due to urgent business then they cannot attend every meetings, however, the Company has consulted and discussed with the Board of Directors both at the meeting and outside the meeting.</p> <p>Therefore, in order that directors can attend all meetings, the Company prepares the annual meeting schedule in advance to be in line with the mission of the board as much as possible.</p>
<ul style="list-style-type: none"> <li>The Board of Directors to vote at the meeting should have directors not less than two-third of the total number of directors.</li> </ul>	<p>According to the resolution of the shareholders' meeting which prescribed in Clause 25 of the Company's Articles of Association that at least half of directors must present at the meeting, then can set a quorum. In the meeting of the Board of Directors, the resolution requires the majority of votes; therefore, the Company must comply with such regulations.</p> <p>However, more than two-third of the total number of directors attended all meetings of the Board of Directors throughout the whole year of 2019.</p>

# DEVELOPING TECHNOLOGY TO MAKE LIFE BETTER AND GO TOGETHER WITH ENVIRONMENTAL PROTECTION



FOCUSING ON RENEWABLE  
TECHNOLOGY  
DEVELOPMENT



CREATING  
NEW TECHNOLOGY



CARING  
FOR THE  
ENVIRONMENT



ENTERING  
TO THE FUTURE ENERGY  
ERA WITH CONFIDENCE



# Corporate Social and Environmental Responsibility

The Company produces clean energy and thrives for new innovation with an expectation to become a part that creates the security and stability of energy for the development of our country. The Company also realizes the importance of taking part in maintaining society and environment to be in good quality and to carry on the sustainable support and promotion of society and environment. The Company has determined social activities under the good corporate governance policy to ensure the responsibility covers the stakeholders, employees, customers and shareholders as well as to generate benefits and develop communities in order that the Company Group will apply the social and environmental responsibility as a part of our business management.

## The Company operations to Stakeholders



### 1. Shareholders

Recognizing its obligations to shareholders, the Company conducts business with determination, systematic planning and taking into account the return on investment and risks. It also discloses information completely, adequately, timely with transparency including facilitating shareholders equally and properly.



### 2. Customers

The Company sets procedures for strict quality control of products and services with regular improvement including determine terms of trading with fairness and flexibility as considered necessary to allow mutual benefit of both parties. It also conducts survey on customers' satisfactory as well as prepares sale plan and delivery schedule to customer closely.



### 3. Business Partners

The Company adheres to fair treatment to business partners and has established clear procurement terms with all business partners. Furthermore, the Company emphasizes on compliance agreement pertaining to contract and business ethics strictly. It also implements internal control system and ethic of business conduct to prevent using business's confidential information.



### 4. Creditors

The Company sets up Investment Plan Department and Finance Department to coordinate with creditors from financial institutions and other account payables and also arrange a meeting with creditors and related teams on regular basis to follow the progress, coordinate jointly plan, discuss closely with good relationship and ensure its consistent with terms and conditions stated in the related contracts. In addition, the Company has Risk Management Committee to supervise, control and monitor to ensure the appropriate risk management.



### 5. Employees

The Company treats employees with fairness, Provide sufficient welfare according to the Law, Consider human rights, hygiene and safety at work as well as provides personnel development programs for all employees in order to increase knowledge and skill. Furthermore, the Company also provide channel for complaint in case of receiving unfair treatment.



### 6. Competitors

The Company determines ethic of business conduct in respect to treatment of the competitors with good morality and in accordance with related laws.



### 7. Compliance Unit and Government Sector

Recognizing the importance of Compliance Unit and Government Sector, therefore the Company assigns person to be responsible for monitoring compliance of all related parties to be in accordance with the regulations of related agencies. Furthermore, The Company has its own Internal Audit Unit that providing internal audit service to inspect the compliance with regulations on a regular basis.





## CSR in Process



### Biodiesel Production Plant

The Company steps into the energy business through development of its own technology as to produce biodiesel oil extracted from the crude palm oil, a natural raw material. The biodiesel is distributed to customers that are a large oil refinery plants of Thailand. These oil refinery plants mix the biodiesel with diesel to reduce demand on imported oil, while increasing consumption of environment-friendly energy. This is how we start our first move to business with consideration placed on environment as a priority.

The Company focuses on production process of biodiesel which is truly environmental-friendly. In the previous year, the Company received standard certification from different environmental agencies as follows:

- Roundtable on Sustainable Palm Oil (RSPO)
- Environmental management system ISO 14001: 2015, which is an international standard system that the organization underlines to enhance environmental performance within and for the environmental sustainability including understands the requirements and expectations of stakeholders and refer such information to manage risks and opportunity. The Company also comprehends other requirements which are a foundation that will assist the Company toward the sustainable development.

- Occupational Health and Safety Assessment Series (OHSAS 18001:2007) from United Registrar of Systems (Thailand)
- The Green System Certification Level 3 (GI3) is an obvious event to ensure that the Company has managed its environment systematically. The Ministry of Industry promotes the industrial sector to operate their business in an environmental-friendly approach, with social responsibility, to be able to live in harmony with the society and community. The sustainable development concentrates on 3 topics below.
  - 1.) Development and Improvement of Production Process.
  - 2.) Environmental Management for Continuous Improvement and
  - 3.) Social Responsibility both inside and outside the Organization (throughout the supply chain)
- The Company receives a certification that indicating the operating premise and passes the Environmental Governance Criteria (Plant Registration Khor 3-7(1)-1/44 Por.Jor.). This is to certify that the Company thrives to apply the Environmental Governance Principles to its business operation to be in compliance with the criteria set forth and to focus on prevention and conservation of environment together with the local community and society.
 

The Company will comply with the following criteria:

  - Allow communities to have access to the correct information of environmental management.
  - Allow the public to take part in expressing their opinions and give suggestions on the environmental issues.
  - Disclose facts, information with transparency and accountability



- Show responsibility in case of the impact occurred to communities. Provide a channel to receive complaints.
- Adhere to the juristic prudence for the environmental management to be in conformity with the law.
- Maintain the justice in appropriate procurement of resources and bring about benefits to society.
- Operate business with consciousness, not causing impacts to communities and environment.
- The Company attended the Energy Conservation Project with the Department of Alternative Energy Development and Conservation as follows.
  - The Company accepted the support for investment in changing, improving or implementing automated control system to enhance the efficiency of the compressed air system. The support is provided under the improvement of energy management in compressed air system with the entire automated system under Thailand 4.0 Policy.
  - The Pilot Project to expand the enhancement of boiler efficiency by boiler engineer or energy engineer. The project is supported by the Fund for Energy Conservation Promotion to leverage efficiency of the boiler that use liquid as a thermal conductivity in the industry.



### Solar and Wind Power Plants

The Company Group outlines the influence in process of generating electricity from renewable energy and realizes the importance of the true engagement in environmental care. In the previous year, the Company Group also received standard certification from agencies related to environmental field as follows.

- Environmental management system ISO 14001: 2015
- The Company receives a certification that indicating the operating premise that passes the Environmental Governance Criteria (Plant Registration Khor3-88(1)-37/58 PorLor.). This is to certify that the Company thrives to apply the Environmental Governance Principles to its business operation to be in compliance with the criteria set forth and to focus on prevention and conservation of environment together with the local community and society.



### Support Greenhouse Gas Reduction

The Company has been approved for listing in the Thailand Voluntary Emission Reduction Program or T-VER with the Thailand Greenhouse Gas Management Organization (public organization) or TGO. TGO develops the project to promote and support all sectors to take part in reducing the greenhouse gas on a voluntary basis. The amount of the greenhouse gas reduced or known as 'Carbon Credit' can be traded to the local voluntary carbon market.

TGO has determined criteria and procedures for project development, methodology for reducing greenhouse gas, listing and certifying the amount of greenhouse gas. The project must cause reduction/absorb the greenhouse gas in Thailand, in order to reduce the emission rate which is the main cause of global warming, increase the source to store the greenhouse gas, generating income from trading the greenhouse gas. Therefore, the Company decided to join the project with TGO through its subsidiaries for the following projects:

- 1.) Project Name: **Solar Power Plant at Nakhon Sawan** of the subsidiary - EA Solar Nakhon Sawan Co., Ltd. The Sub-Committee of TGO has certified that the amount of greenhouse has reduced as detailed below:
  - In December 2015 to November 2016 is 106,148 tons of carbon dioxide equivalent (tCO<sub>2</sub>e).
  - In December 2016 to November 2017 is 104,543 tons of carbon dioxide equivalent (tCO<sub>2</sub>e).
  - In December 2017 to December 2018 is 108,540 tons of carbon dioxide equivalent (tCO<sub>2</sub>e).
- 2.) Project Name: **Solar Power Plant at Lampang** of the subsidiary - EA Solar Lampang Co., Ltd. The Sub-Committee of TGO has certified that the amount of greenhouse has reduced as detailed below:
  - In December 2015 to November 2016 is 111,104 tons of carbon dioxide equivalent (tCO<sub>2</sub>e).
  - In December 2016 to November 2017 is 112,548 tons of carbon dioxide equivalent (tCO<sub>2</sub>e).
  - In December 2017 to December 2018 is 119,009 tons of carbon dioxide equivalent (tCO<sub>2</sub>e).
- 3.) Project Name: **Solar Power Plant at Phitsanulok** of the subsidiary - EA Solar Phitsanulok Co., Ltd. The Sub-Committee of TGO has certified that the amount of greenhouse has reduced as detailed below:
  - In April 2016 to September 2016 is 63,178 tons of carbon dioxide equivalent (tCO<sub>2</sub>e).
  - In October 2016 to September 2017 is 126,713 tons of carbon dioxide equivalent (tCO<sub>2</sub>e).
  - In October 2017 to December 2018 is 149,019 tons of carbon dioxide equivalent (tCO<sub>2</sub>e).



4.) Project Name: **Wind Power Plant at Songkla and Nakhon Si Thammarat** of the subsidiary - EA Hadkunghan 3 Co., Ltd. The Sub-Committee of TGO has certified that the amount of greenhouse has reduced as detailed below:

- In March 2017 to September 2017 is 63,907 tons of carbon dioxide equivalent (tCO<sub>2</sub>e).
- In October 2017 to December 2018 is 205,065 tons of carbon dioxide equivalent (tCO<sub>2</sub>e).

5.) Project Name: **Hanuman 1, 5, 8, 9, 10 Hanuman Wind Power Plant Project at Chaiyaphum** of the Company Group. The Sub-Committee of TGO has passed a resolution to approve the said wind power plants are listed under the voluntary greenhouse reduction project that meets the standard of Thailand on 25 April 2018. The credit term is from 1 January 2019 - 31 December 2025.

Besides the promotion Greenhouse Gas reduction, the Company expands its operation to the business that promotes the use of renewable energy which is environmental-friendly in replacement of fuel energy in local transportation system and be a part of an infrastructure development that support the Next-generation Automotive by establishing the electricity charging stations for electric cars under the trade mark **"EA Anywhere"** including promotes researches and development about electric vehicles to carry on the electric automotive that truly meet the need of users under the concept Mission No Emission. The idea is to focus on building vehicles that generate no pollution, harmless to environment, to lead Thailand to become a city of the future innovation, free of pollution under the trademark **"MINE Mobility"**.





## CSR After Process

The Company conducts its business together with taking care and addressing the importance of the community and society as well as continuously arranges projects that bring about benefits to the society, by underlining the practice guideline for community engagement in development of communities surrounding the power plants and the practice guideline for engagement in social development. The projects concentrate on collaboration among all stakeholders and to create positive impact which follows the sustainable development direction.

The Company and its subsidiaries thrive to conduct business while focusing on society and communities around the power plants continuously. The aim is to highlight the improvement of life quality, generating income and careers to the communities around the Plants, promoting safety of producers, consumers and environment including collaborates with other organization to continue the research and development to connect to other businesses, following the Social Enterprise (SE) and the Creation of Supply Chain Value (CSV). There are three main approaches for social and community activity summarized as follows.

### 1.) Dissemination of Knowledge to the Community

Seeing the benefits and the importance of generating and consuming renewable energy, the Company and its subsidiaries, as a producer of electricity from renewable energy which considered as a clean energy, have supported, promoted and passed on knowledge about using renewable energy for generating electricity by arranging activities, allowing students, community leaders, interested people, analysts, government agency and state enterprise including all mass media to visit the solar power plants in Nakhon Sawan, Lampang and Phitsanulok and wind power plants in Nakhon Si Thammarat and Songkhla as well as takes part in displaying information in various exhibitions to share knowledge to the interested people about procedures of generating electricity from renewable energy and to visualize the more actual process.

In 2019, the Company Group has set up the project to share knowledge to the interested people about procedures of generating electricity from renewable energy. For instance:

- **Project: The Philosophy of Sufficiency Economy learning Exhibition**  
To share knowledge about Solar Power Plant at Ban Toong Kluay School, Lampang

- **Project: Knowledge Sharing Exhibition**  
To share knowledge about renewable energy to students and staff at Nhongpho Phittaya school, Nakhon Sawan
- **Project: Science Week Exhibition**  
at Takhli Prachasan School, Nakhon Sawan
- **Project: Support Learning and Skills Training**  
at Ta Kho Tong Subdistrict Administration Organization, Chaiyaphum

### 2.) Sharing of Resources and Support Community Activity

Since the solar power plants cover large area, the Company has allocated the remaining area from placing electrical equipment to build a large reservoir for use within the project. The Company also shares the water with surrounding communities during dry season. Based on the cost-effective use of resources that generate the utmost benefits to the projects and surrounding communities, the Company has developed free area of the project under solar panels into the testing of agriculture. The Company also designs the allocation of water in the large reservoir for use within the project and to use for agricultural activities under the solar panels, for the solar power plant in Phitsanulok by arranging projects to help farmers who do not own any land to have an area for plantation during farming and off-farming season.

Moreover, in 2019, the Company Group has supported funds and taken part in local activity related to religion, reforestation campaign and to relieve the public disasters and promote the career training courses continuously in all project locations. For instance:

- **Project: Lo Yai Afforestation**  
The project is arranged in response to the government policy that target to increase the forest area, raise awareness among communities to love and preserve their natural resources at Chaiyaphum.
- **Project: produce organic waste campaign**  
To promote knowledge and understanding of separate waste a home produce
- **Relieve public disaster for flood victim**  
To provide medicines to relieve public disaster for flood victim at Phitsanulok
- **Joining the Chak Phra Festival**  
To provide drinking water to support on a special religious day at Nakhon Si Thammarat
- **Project: Building a Check Dam**  
To protect and help drought relief for local people in Lampang and Chaiyaphum



### 3.) Create Jobs and Develop Career for the Community

The Company is well aware that building solar and wind power plants require large area and there are many communities located nearby. Hence, the planning for construction and development of the power plant project concentrates on generating benefits to local labor as a major factor. The employment to local labor can be both direct and indirect way during the construction phase. Upon completion and the power plant is commercially operated, the Company will continue to employ local labor to maintain the power plant.

Furthermore, the Company Group has initiated the alternative career structure to the community, following the Social Enterprise Concept, with an intention to bring about the sustainable development for the community. The aim is to emphasize on creating career that increase income and improve the quality of life, to support the community to be independent based on the development scheme that return benefits to all stakeholders and eco-friendly and to be consistent to the core value of business operation of the Company Group.

The Company seriously stress out the promotion on sustainable organic agriculture that following the social activity of the Company Group, the Ease Organic Project is established covering upstream, middle stream and downstream as follows:

- **Minimal material cost for improving soil by adding value to the non-valuable materials.** The purpose is to minimize the cost and create value from surrounding items. For example, organic compost from grass and effective micro-organism project in Lampang, organic compost from hyacinth and goat dung used in agricultural plots in Nakhon Sawan.
- **The experiment on combined organic farming** without using chemicals on lettuce, vegetables, rice, sugarcane, corn, fruits and rare herbs. The project is conducted within the three solar power plants in Nakhon Sawan, Lampang and Phitsanulok. The Company took part in promoting the organic agriculture by initiating the experiment plots in solar power plant in Nakhon Sawan and Phitsanulok. The experiment plot has been certified standard for organic plantation (Organic Thailand) from the Department of Agriculture (Nakhon Sawan), Organic Agriculture Standard from the organization of Northern Organic Agriculture Standard Phitsanulok.
- **Development of management system from farm to consumers and to the market.** The main idea is to increase income; expand the outcome and sustainable development. by analysis, selecting crops that suit to particular area and summarizes the project knowledge, procedures and prepares a handbook for agriculturists. Another concern is to stress out the management that taking into account the quality and safety until vegetable screening house in Phitsanulok. The project team plans and provides transportation system and product distribution to minor consumers, restaurants, supermarkets and big entities. The team also prepares publicity materials and disseminates the organic vegetables within the local to promote organic vegetables market.



## Vegetable farming value chain Ease Organic Project



**Ease Organic Project** determined to alleviate social problems faced by the farmers under the concepts **3 Wins** by adding value on supply chain sustainability which consists of

- **Farmer:** To support the quality of life with good health and happiness
- **Consumer:** Stay healthy with good quality and safe products and
- **The Earth:** Sustainable ecosystem and Environmental friendly

- **Higher Income :** The project generates income and careers to agriculturists who joining the Ease Organic project. The aim is to promote sustainable work and increase income. The average operating result for 2019, Farmers from this project can generate more income equal to 373 Baht/day. *(Reference information from the farmer who join the project: generally farmer can do rice farming approximately 10-15 rai per 100 days with the average profit 1,500 Baht/rai at a paddy price 6,000 Baht/ton and yield at 815 kg./rai which equal to the income 150 Baht/day)*
- **Better Quality Life:** The renewable power plants of the Company Group are a power plant that does not cause pollution to communities. Meanwhile, the Company Group supports the agriculturists to reduce using chemical for safety in their life and health. As a result, the community is able to stand on themselves on a sustainable basis that brings out benefits to all stakeholders. The products are safe for agriculturists, consumers and eco-friendly which all deemed the core value of the Company.
- **Good Health for All Stakeholders in Value Chain** is the concept that underlines the promotion on health safety. The output is an organic product and harmless to agriculturists, consumers and environment including the eco system in the plantation area. The production process is certified for organic standard by the Organization of Northern Organic Agriculture Standard and the project's vegetable screening house receives standard certification from the Food and Drug Administration (FDA). In 2019, the project releases an organic product to the market which includes fresh vegetable and

## Share Value and Social Impact of Ease Organic Project

### EASE ORGANIC PROJECT



organic rice in total over 10.5 tons (23% increasing from the last year) and organic sugarcane-Suphanburi 50 in total over 1.6 tons to produce sugarcane-pandanus juice representing 27,545 consumption units\* (18% increasing from the last year) *(Reference information from the consumption of vegetables and fruits 400 grams/day/person as per recommendation of the World Health Organization or WHO)*. The products are distributed to the surrounding communities in Nakhon Sawan and Phitsanulok province, consumer markets, supermarkets, restaurants and major distributors of vegetables and fruits in Bangkok and Phitsanulok.

- **Leverage Collaboration:** The Ease Organic Project is an expansion of collaboration of the project to the Company Group, institutions, and other organizations in order to create value and develop the sustainable business in the long term. The major parts are as follows:
  - Backhaul Logistic Collaboration
  - Market Collaboration for Long Term Customer Base
  - Farm R&D Collaboration



The Company Group receives the **"Social Empowerment"** reward under the "Ease Organic: The Organic Farming to ease farmers based on 3 Wins Concept" which is an honorable pride that considered by the commission from **Asia Responsible Entrepreneurship Awards (AREA)** established by the Enterprise Asia. This organization recognized in the Asian region. The reward is provided to an entrepreneur who performs an outstanding work in social and environment responsibility and corporate sustainable development. The awarding ceremony is launched in Philippines.



The award is a prove that the implementation of Ease Organic is successful. In other word, the power plant project is developed in coupling with creating value to the community and society including the environment. The project will be carried on with the aim to achieve the long term goal by conducting researches and development of new knowledge and technologies to the community. The Company plans to encourage the engagement and participation of the communities around the power plants with determination to develop the agriculture and Thai agriculturists to have a better well-being, health and life quality to sustainable future. The Company would like to grow together with the prosperity and development of the life of the local communities by following the CSV (Creating Shared Value) appropriately and sustainably, taking into account the creation of the shared value with all stakeholders in all dimensions.





# SENDING HEALTHY TO YOU BY E@SE ORGANIC



Ease Organic™  
Good health & Blissful heart

Supermarket

Fresh from the farm



To you



Organic agriculture by  
"Ease Organic Project"

## Awards and Achievements



1. **Award** : Excellent CG Scoring for 2 consecutive years  
**By** : Thai Institute of Directors and Stock Exchange of Thailand
2. **Award** : Thailand Sustainability Investment (THSI) for 2 consecutive years, SET Awards 2019  
**By** : Stock Exchange of Thailand
3. **Award** : Thailand's Top Corporate Brand for 2 consecutive years  
**By** : Chulalongkorn University

4. **Award** : Thailand Top Company Awards 2019 - Top Innovation Company Awards  
**By** : University of Thai Chamber of Commerce and Business Plus Magazine
5. **Award** : 3Rs , 3Rs+  
- Good waste management with 3Rs principles  
- Project to develop the potential of waste utilization  
- Economics return - Silver medal  
**By** : Department of Industrial Works





6. **Award** : CSR-DIW Continuous Award 2019" from promotion industrial project to have social and community responsibility  
**By** : Department of Industrial Works
7. **Award** : Green Industry Level 3 : Green System of the 4 solar power plants  
**By** : Ministry of Industrial
8. **Award** : Thailand Voluntary Emission Reduction (T-VER) Certificate of the 4 solar power plants and the 2 wind power plants  
**By** : Thailand Greenhouse Gas Management Organization (TGO)
9. **Award** : The biZZ Awards 2019
  1. World Business Leader
  2. World Leader Businessperson**By** : World Confederation of Businesses

And the Company received more awards from

- **Award** : Wind Power Project of the year – Thailand  
**By** : Asian Power
- **Award** : Asia Corporate Excellence & Sustainability Awards 2019 : Industry Champion  
**By** : MORS group and World Confederation of Business
- **Award** : Energy Company CEO of the Year Thailand 2019  
**By** : International Business Magazine
- **Award** : Most Innovative Renewable Energy Company for Business Tabloid Awards  
**By** : Business Tabloid Magazine
- **Award** : EA Green Bond for 260 MW Hanuman Wind Power Project  
**By** : Climate Bond Certified
- **Award** : Global Business Outlook Awards 2019
  1. Best Investor Relations – Thailand
  2. Best Renewable Energy Provider – Thailand**By** : Global Business Outlook
- **Award** : Visionary Innovation Leadership Award  
**By** : Frost & Sullivan

# Internal Control and Risk Management

The Board of Directors appointed the Audit Committee which comprised of three Independent Directors. Their duty is to be responsible for reviewing the accuracy and reliability of the financial reports, the efficiency of the internal control system, the compliance with relevant law and regulations including the transactions that may have a conflict of interest.

The Board of Directors, Audit Committee and the Management outlines the importance of internal control by conducting the efficiency and adequacy assessment on the internal control under COSO (The Committee of Sponsoring Organization of the Trade way Commission), the Good Corporate Governance of the Stock Exchange of Thailand and the Risk Management on regular basis. The assessment is to ensure that the Company will have good corporate governance, adequate internal control that suits the business operation, the risk management is in the acceptable level, the accounting system and financial reports are accurate and reliable, and the compliance with regulations related with business operation of the Company.

The Audit Committee arranges the adequacy assessment of the internal control system. The assessment is conducted by Dharmaniti Internal Audit Co., Ltd., under the assessment format as specified by the Securities and Exchange Commission (SEC). The assessment result is reported to the Board of Directors at least once a year. The topics of assessment are as follows.

## Control Environment

1. The organization expresses its adherence to the value of integrity and morality.
2. The directors are independent from the Management and have the duties of oversight and the development of internal control procedures.
3. The Management has established a framework for reporting and defining authority for directing and responsibilities that are appropriate for achievement of the Company's objectives under the oversight of the Board of Directors.
4. The organization demonstrates its emphasis on encouraging, developing and retaining personnel with knowledge and ability.
5. The organization determines to the personnel has a duty and responsibility on the internal control in order to achieve the corporate goal.

## Risk Assessment

6. The organization sets clear and adequate objectives in order to be able to identify and evaluate risks related to achieving the corporate goal.
7. The organization identifies and analyzes all types of risks that may affect the achievement of the objectives, covering the entire organization.
8. The organization considers chances of corruption that may occur in risk assessment toward goal achievement of the organization.
9. The organization can identify and assess changes that may affect the internal control system.

## Control Activities

10. The organization has control measures to reduce risks that the organization will not achieve its goal in an acceptable range.
11. The organization selects and develops general control activities using technology systems in order to support the achievement of the corporate goal.
12. The organization arranges controlling activities through a policy which determining the expectations and procedures to enable the practical procedures of the policy.

## Information & Communication

13. The body of knowledge is related and of good quality to support the implementation of internal control.
14. The internal communication includes the objectives and responsibility on the internal control which is necessary to the support of the implementation of the internal control.
15. The organization communicates with external agency related to the topics that may affect internal control.

## Monitoring Activities

16. The organization monitors and assesses the internal control to ensure that the internal control proceeds entirely and appropriately.
17. The organization assesses and communicates about defects of the internal control in a timely manner with the responsible person including the top executives and the Board of Directors as appropriate.

In addition to the fact that the Company assigns the Management to submit a performance report to the Executive Committee, the Audit Committee and the Internal Audit Unit also have to determine the inspection for the plants, projects of the Company in the Annual Audit Plan. The said procedure is to ensure that operations of the Company are in line with the standard, regulations, rules, requirements and conform to the vision and mission of the Company. In the Board of Directors' Meeting No. 1/2020 held on 21 February 2020, with attendance of the Audit Committee which comprises of three independent directors, the Board of Directors considers the assessment of the internal control system for the year 2019 under the adequacy assessment of the internal control system as specified by the Securities and Exchange Commission (SEC). According to the paragraph above, the Internal Control System consists of 5 principles namely Control Environment, Risk Assessment, Control Measures, Information Technology and Communication, Monitoring System. As mentioned above that the Board of Directors had the same agreement with the Audit Committee that the Company and its subsidiaries shall define measures for significant internal control which related to the adequacy of business operation, risk management and monitoring of the Management and the Board of Directors.

### **Notations from the auditors on internal control**

PricewaterhouseCoopers ABAS Limited, the auditor of the Company and Subsidiaries has no report on the notations and suggestions about the Company's internal control of the accounting, regarding the financial statements of the Company and its subsidiaries for the fiscal year 2019, ended on 31 December 2019.

### **Head of the Internal Audit Unit**

The Company has appointed Dharmniti Internal Auditing Company Limited to perform the Company's internal audit since 2008. Ms.Somjaree Kaewkhomadee\*, executive director and manager of Dharmniti is responsible for supervising internal control system of the Company and subsidiaries (\*appointed since 2018 to 31 Dec 2019) which Audit Committee has considered the qualification, education, experience and training of Ms.Somjaree Kaewkhomadee and agree that its suit and adequate to perform such duties, since she is independent and having experience on internal audit in the same industry. At present, the consideration and approval on appointment, dismissal, relocation including performance assessment consideration and compensation of Internal Audit must be approved by the Audit Committee.

Furthermore, the Company has established the Internal Audit Division which the vice president of internal audit who acting as a secretary of Audit Committee to perform internal audit functions to ensure that the internal audit procedure is in accordance with the plan and then report internal audit result which received from Dharmniti to Audit Committee in the meeting. Before the internal audit result will be reported, there will be discussing with involved executives first. The comments and suggestion from audit committee will be used to develop internal audit procedure in the future. The internal audit result in 2019 of the Company Group is adequate and appropriate and the Audit Committee expressed its opinions that the Internal Auditor performed work completely and covering all important departments.

## Connected Transactions

### 1. The Company and subsidiaries' connected transactions with potential parties of conflict of interest during the year 2018 and 2019 which summarized as follows:

#### 1.1 Dhipaya Insurance Public Company Limited ("TIP")

The Company and TIP have a common chairman of the board, namely Mr. Somchainuk Engtrakul

Transaction Description	Connected Transaction Value for the year		Justification and Sensibility
	Ended 31 Dec 19 (Million Baht)	Ended 31 Dec 18 (Million Baht)	
<ul style="list-style-type: none"> <li>The Company applied for <b>Industrial All Risks Insurance</b> to cover its biodiesel factory with Nam Seng Insurance PLC under the co-insurance between Nam Seng Insurance PLC at 20%, Bangkok Insurance PLC at 25%, Dhipaya Insurance PLC at 40%, Muang Thai Insurance PLC at 15% of total sum Insured.               <ol style="list-style-type: none"> <li>One year insurance period (since 19 October 2018 - 19 October 2019) with a sum insured of Baht 1,125.00 million.</li> <li>One year insurance period (since 19 October 2019- 30 November 2020) with a sum insured of Baht 1,125.00 million.</li> </ol> </li> </ul>	0.63	0.58	<p>The insurance is made with external party which not related to the Company. However, the condition of co-insurance concerns to related company which premium as mentioned, considered at market price.</p> <p>The Audit Committee was of the opinion that the transaction is necessary, reasonable and beneficial to the Company with worth the insurance premium.</p>
<ul style="list-style-type: none"> <li>The Company applied for <b>Public Liability Insurance</b> of biodiesel factory with Nam Seng Insurance PLC under the co-insurance between Nam Seng Insurance PLC at 50%, and Dhipaya Insurance PLC at 50% of total sum insured.               <ol style="list-style-type: none"> <li>One year insurance period (since 19 October 2018 - 19 October 2019) with a sum insured of Baht 50 million.</li> <li>One year insurance period (since 19 October 2019- 19 November 2020) with a sum insured of Baht 50 million.</li> </ol> </li> </ul>	0.04	0.04	
<ul style="list-style-type: none"> <li>The Company has prepaid insurance premiums of the above transactions at the end of the accounting period which recognized the premiums as a Cost of Sales (production expenses).</li> </ul>	-	0.49	



Transaction Description	Connected Transaction Value for the year		Justification and Sensibility
	Ended 31 Dec 19 (Million Baht)	Ended 31 Dec 18 (Million Baht)	
<b>EA Solar Co., Ltd. (Direct subsidiary)</b> <ul style="list-style-type: none"> <li>Applied for <b>Industrial All Risks Insurance</b> to cover the solar power plant with Dhipaya Insurance PLC under the co-insurance between Dhipaya Insurance PLC at 55%, Nam Seng Insurance PLC at 25% and Chubb Samaggi Insurance PLC at 20% of sum insured.               <ol style="list-style-type: none"> <li>One year insurance period (since 17 October 2018 -17 October 2019) with sum insured of Baht 500 million.</li> <li>One year insurance period (since 17 October 2019 - 30 November 2020) with sum insured of Baht 500 million.</li> </ol> </li> <li>Prepaid insurance premiums of the above transactions at the end of the accounting period which recognized the premiums as a Cost of Sales (production expenses).</li> </ul>	0.74	0.43	The Company applied for insurance to prevent the risk of potential damage. The selection of insurer has been conducted appropriately from the independent brokers.
	0.60	0.34	
<b>EA Solar Nakhon Sawan Co., Ltd. (Direct subsidiary)</b> <ul style="list-style-type: none"> <li>Applied for <b>Industrial All Risks Insurance</b> to cover the solar power plant with Dhipaya Insurance PLC under the co-insurance between Dhipaya Insurance PLC at 50%, Nam Seng Insurance PLC at 35% and Safety Insurance PLC at 15% of sum insured.               <ol style="list-style-type: none"> <li>One year insurance period (since 23 December 2018- 22 December 2019) with sum insured of USD 162.10 million.</li> <li>One year insurance period (since 23 December 2019 - 30 November 2020) with sum insured of USD 162.10 million.</li> </ol> </li> <li>Prepaid insurance premiums of the above transactions at the end of the accounting period which recognized the premiums as a Cost of Sales (production expenses).</li> </ul>	6.89	5.70	The Company applied for insurance to prevent the risk of potential damage. The selection of insurer has been conducted appropriately from the independent brokers.
	-	5.56	

Transaction Description	Connected Transaction Value for the year		Justification and Sensibility
	Ended 31 Dec 19 (Million Baht)	Ended 31 Dec 18 (Million Baht)	
<p>EA Solar Phitsanulok Co., Ltd. (Indirect subsidiary)</p> <ul style="list-style-type: none"> <li>Applied for <b>Industrial All Risks Insurance</b> to cover the solar power plant with Dhipaya Insurance PLC under the co-insurance between Dhipaya Insurance PLC at 50%, Nam Seng Insurance PLC at 35% and Tokio Marine Safety Insurance PLC at 15% of sum insured.</li> <li>Insurance period since 23 December 2018 - 22 December 2019 with sum insured of USD 184.70 million</li> <li>Insurance period since 23 December 2019 - 30 November 2020 with sum insured of USD 184.70 million</li> <li>Prepaid insurance premiums of the above transactions at the end of the accounting period which recognized the premiums as a Cost of Sales (production expenses).</li> </ul>	6.12	6.29	The Company complied with loan agreements in order to prevent the risk of potential damage. The selection of insurer has been conducted appropriately from the independent brokers.
	-	6.13	
<p>EA Solar Lampang Co., Ltd. (Indirect subsidiary)</p> <ul style="list-style-type: none"> <li>Applied for <b>Industrial All Risks Insurance</b> to cover the solar power plant with Dhipaya Insurance PLC under the co-insurance between Dhipaya Insurance PLC at 50%, Nam Seng Insurance PLC at 35% and Tokio Marine Safety Insurance PLC at 15% of sum insured.</li> <li>One year insurance period (since 23 December 2018 - 22 December 2019) with sum insured of USD 179.90 million.</li> <li>One year insurance period (since 23 December 2019 - 30 November 2020) with sum insured of USD 179.90 million.</li> <li>Prepaid insurance premiums of the above transactions at the end of the accounting period which recognized the premiums as a Cost of Sales (production expenses).</li> </ul>	6.77	6.45	The Company complied with loan agreements in order to prevent the risk of potential damage. The selection of insurer has been conducted appropriately from the independent brokers.
	-	6.29	

Transaction Description	Connected Transaction Value for the year		Justification and Sensibility
	Ended 31 Dec 19 (Million Baht)	Ended 31 Dec 18 (Million Baht)	
<b>EA Wind Hadkanghan 3 Co., Ltd. (Indirect subsidiary)</b> <ul style="list-style-type: none"> <li>Applied for <b>Industrial All Risks Insurance</b> to cover the wind power plant with Dhiphaya Insurance PLC under the co-insurance between Dhiphaya Insurance PLC at 51%, Nam Seng Insurance PLC at 40% and Tokio Marine Safety Insurance PLC at 9% of sum insured.               <ol style="list-style-type: none"> <li>Insurance period since 26 December 2018 to 25 December 2019, with sum insured of USD 266.29 million.</li> <li>Insurance period since 26 December 2019 to 30 November 2020, with sum insured of USD 266.29 million.</li> </ol> </li> <li>Prepaid insurance premiums of the above transactions at the end of the accounting period which recognized the premiums as a Cost of Sales (production expenses).</li> </ul>	8.94	7.60	The Company complied with loan agreements in order to prevent the risk of potential damage may occur during the power plant construction. The selection of insurer has been conducted appropriately from the independent brokers.
	-	7.47	
<b>Nayangklak Development Co., Ltd. (Indirect subsidiary)</b> <ul style="list-style-type: none"> <li>Applied for <b>Property Insurance</b> to cover the wind power plant during construction with Dhiphaya Insurance PLC under the co-insurance between Dhiphaya Insurance PLC at 51%, Nam Seng Insurance PLC at 40% and Safety Insurance PLC at 9% of sum insured.               <ul style="list-style-type: none"> <li>Insurance period since 23 December 2017 to 22 December 2018, with sum insured of USD 100.59 million (the premium included as the cost of power plant) and extended the Insurance period since 23 December 2018 to 25 January 2019 with the same condition and sum insured.</li> </ul> </li> <li>Applied for <b>Industrial All Risks Insurance</b> to cover the wind power plant with Dhiphaya Insurance PLC under the co-insurance between Dhiphaya Insurance PLC at 51%, Nam Seng Insurance PLC at 40% and Safety Insurance PLC at 9% of sum insured.               <ul style="list-style-type: none"> <li>Insurance Period since 25 January 2019 to 25 January 2020, with sum insured of USD 100.59 million</li> </ul> </li> <li>Prepaid insurance premiums of the above transactions at the end of the accounting period which recognized the premiums as a Cost of Sales (production expenses).</li> </ul>	1.58	2.69	The Company applied for insurance to prevent the risk of potential damage. The selection of insurer has been conducted appropriately from the independent brokers.
	0.07	-	

Transaction Description	Connected Transaction Value for the year		Justification and Sensibility
	Ended 31 Dec 19 (Million Baht)	Ended 31 Dec 18 (Million Baht)	
<p><b>Nayangklak Wind Power Co., Ltd. (Indirect subsidiary)</b></p> <ul style="list-style-type: none"> <li>Applied for <b>Property Insurance</b> to cover the wind power plant during construction with Dhiphaya Insurance PLC under the co-insurance between Dhiphaya Insurance PLC at 51%, Nam Seng Insurance PLC at 40% and Safety Insurance PLC at 9% of sum insured.</li> <li>Insurance Period from 23 December 2017 to 22 December 2018, with sum insured of USD 102.49 million (the premium included as the cost of power plant) and extended insurance period since 23 December 2018 to 25 January 2019 with the same conditions and sum insured.</li> </ul>	1.60	2.70	The Company applied for insurance to prevent the risk of potential damage. The selection of insurer has been conducted appropriately from the independent brokers.
<ul style="list-style-type: none"> <li>Applied for <b>Industrial All Risks Insurance</b> to cover the wind power plant with Dhiphaya Insurance PLC under the co-insurance between Dhiphaya Insurance PLC at 51%, Nam Seng Insurance PLC at 40% and Safety Insurance PLC at 9% of sum insured.</li> <li>Insurance Period since 25 January 2019 to 25 January 2020 with sum insured of USD 102.49 million</li> </ul>	0.07	-	
<ul style="list-style-type: none"> <li>Prepaid insurance premiums of the above transactions at the end of the accounting period which recognized the premiums as a Cost of Sales (production expenses).</li> </ul>			
<p><b>Pongnok Development Co., Ltd. (Indirect subsidiary)</b></p> <ul style="list-style-type: none"> <li>Applied for <b>Property Insurance</b> to cover the wind power plant during construction with Dhiphaya Insurance PLC under the co-insurance between Dhiphaya Insurance PLC at 51%, Nam Seng Insurance PLC at 40% and Safety Insurance PLC at 9% of sum insured.</li> <li>Insurance Period since 23 December 2017 to 22 December 2018, with sum insured of USD 105.16 million (the premium included as the cost of power plant) and extended insurance period since 23 December 2018 to 22 March 2019 with the same conditions and sum insured.</li> </ul>	1.72	3.11	The Company applied for insurance to prevent the risk of potential damage. The selection of insurer has been conducted appropriately from the independent brokers.



Transaction Description	Connected Transaction Value for the year		Justification and Sensibility
	Ended 31 Dec 19 (Million Baht)	Ended 31 Dec 18 (Million Baht)	
Pongnok Development Co., Ltd. (Indirect subsidiary) (Continue)			
<ul style="list-style-type: none"><li>Applied for <b>Industrial All Risks Insurance</b> to cover the wind power plant with Dhiphaya Insurance PLC under the co-insurance between Dhiphaya Insurance PLC at 51%, Nam Seng Insurance PLC at 40% and Safety Insurance PLC at 9% of sum insured.</li><li>Insurance Period since 22 March 2019 to 22 March 2020 with sum insured of USD 105.16 million.</li></ul>			
<ul style="list-style-type: none"><li>Prepaid insurance premiums of the above transactions at the end of the accounting period which recognized the premiums as a Cost of Sales (production expenses).</li></ul>	0.37	-	
Benjarat Development Co., Ltd. (Indirect subsidiary)			
<ul style="list-style-type: none"><li>Applied for <b>Property Insurance</b> to cover the wind power plant during construction with Dhiphaya Insurance PLC under the co-insurance between Dhiphaya Insurance PLC at 51%, Nam Seng Insurance PLC at 40% and Safety Insurance PLC at 9% of sum insured.</li><li>Insurance Period since 23 December 2017 to 22 December 2018, with sum insured of USD 89.39 million (the premium included as the cost of power plant) and extended insurance period since 23 December 2018 to 30 March 2019 with the same conditions and sum insured.</li><li>Applied for <b>Industrial All Risks Insurance</b> to cover the wind power plant with Dhiphaya Insurance PLC under the co-insurance between Dhiphaya Insurance PLC at 51%, Nam Seng Insurance PLC at 40% and Safety Insurance PLC at 9% of sum insured.</li><li>Insurance Period since 30 March 2019 to 30 March 2020 with sum insured of USD 89.39 million</li></ul>	1.40	2.64	The Company applied for insurance to prevent the risk of potential damage. The selection of insurer has been conducted appropriately from the independent brokers.
<ul style="list-style-type: none"><li>Prepaid insurance premiums of the above transactions at the end of the accounting period which recognized the premiums as a Cost of Sales (production expenses).</li></ul>	0.07	-	

Transaction Description	Connected Transaction Value for the year		Justification and Sensibility
	Ended 31 Dec 19 (Million Baht)	Ended 31 Dec 18 (Million Baht)	
<b>Banchuan Development Co., Ltd. (Indirect subsidiary)</b> <ul style="list-style-type: none"> <li>Applied for <b>Property Insurance</b> to cover the wind power plant during construction with Dhiphaya Insurance PLC under the co-insurance between Dhiphaya Insurance PLC at 51%, Nam Seng Insurance PLC at 40% and Safety Insurance PLC at 9% of sum insured. <ul style="list-style-type: none"> <li>Insurance Period since 23 December 2017 to 22 December 2018, with sum insured of USD 183.13 million (the premium included as the cost of power plant) and extended insurance period since 23 December 2018 to 13 April 2019 with the same conditions and sum insured.</li> </ul> </li> <li>Applied for <b>Industrial All Risks Insurance</b> to cover the wind power plant with Dhiphaya Insurance PLC under the co-insurance between Dhiphaya Insurance PLC at 51%, Nam Seng Insurance PLC at 40% and Safety Insurance PLC at 9% of sum insured. <ul style="list-style-type: none"> <li>Insurance Period since 13 April 2019 to 13 April 2020 with sum insured of USD 183.13 million</li> </ul> </li> <li>Prepaid insurance premiums of the above transactions at the end of the accounting period which recognized the premiums as a Cost of Sales (production expenses).</li> </ul>	2.87	5.52	The Company applied for insurance to prevent the risk of potential damage. The selection of insurer has been conducted appropriately from the independent brokers.
<b>EA Bio Innovation Co., Ltd. (Direct subsidiary)</b> <ul style="list-style-type: none"> <li>Applied for <b>Industrial All Risks Insurance</b> to cover its biodiesel factory during construction with Dhiphaya Insurance PLC under the co-insurance between Dhiphaya Insurance PLC at 85% and Muengthai Insurance PLC at 15% of sum insured. <ul style="list-style-type: none"> <li>Insurance Period since 19 July 2019 to 31 March 2020 with sum insured of USD 850 million.</li> </ul> </li> </ul>	1.45	-	The Company applied for insurance to prevent the risk of potential damage. The selection of insurer has been conducted appropriately from the independent brokers.

Transaction Description	Connected Transaction Value for the year		Justification and Sensibility
	Ended 31 Dec 19 (Million Baht)	Ended 31 Dec 18 (Million Baht)	
<b>Energy Solution Management Co., Ltd. (Direct subsidiary)</b> <ul style="list-style-type: none"> <li>Applied for <b>Industrial All Risks Insurance</b> to cover machinery during construction with Dhiphaya Insurance PLC under the co-insurance between Dhiphaya Insurance PLC at 70% and Safety Insurance PLC at 30% of sum insured.</li> <li>Insurance Period since 12 April 2019 to 11 April 2020 with sum insured of EURO 25.78 million.</li> </ul>	1.39	-	The Company applied for insurance to prevent the risk of potential damage. The selection of insurer has been conducted appropriately from the independent brokers.

### 1.2 Asia Recycle Technology Co.,Ltd. ("ART")

The Company and ART have a common director, namely ACM. Chainan Thumasujarit

Transaction Description	Connected Transaction Value for the year		Justification and Sensibility
	Ended 31 Dec 19 (Million Baht)	Ended 31 Dec 18 (Million Baht)	
<ul style="list-style-type: none"> <li>The company purchased of Biodiesel industrial waste disposal and treatment services from Asia Recycle Technology Co., Ltd. which has a contract term of 22 October 2019 to 31 December 2019.</li> <li>Expenses for the year</li> </ul>	0.040	-	Service of waste disposal and treatment (salt residue, sludge from wastewater treatment) from biodiesel production with prices and terms, considered normal business practice at identical rate charged to other business.

### 1.3 Advance Finance PCL. ("Advance Finance")

The Company and Advance Finance have a common as follows:

- Mr. Amorn Saphaweekul, the Company director and management executive, serve as Advance Finance Director.
- Mr. Manop Oulandsiripong, the Company management executive, serve as Advance Finance authorized director and member of risk management committee.
- Mr. Somphote Ahunai, the Company director and management executive holds 10% of Advance Finance shares and Mr. Amorn Saphaweekul, the Company director and management executive holds 10% of Advance Finance shares.

Transaction Description	Connected Transaction Value for the year		Justification and Sensibility
	Ended 31 Dec 19 (Million Baht)	Ended 31 Dec 18 (Million Baht)	
<ul style="list-style-type: none"> <li>Interest earned from Advance Finance PCL.</li> </ul>	0.173	-	Interest earned from bank deposit which is another way to manage liquidity and increase return on interest earned by comparing the return that beneficial to the Company.

## 2. Approval Measures and Procedures for Connected Transactions

The company focuses on the consideration of transparent and beneficial transactions to the Company. Therefore, for connected transactions involving the Company and/or its subsidiaries with potential parties of conflict, related parties transaction, or connected transaction. Approval Measures and Procedures for Connected Transactions are as follows;

- Criteria for the necessity and justification of such transactions for the best interest of the company and/or its subsidiaries to ensure that the company is operating in compliance with the code of conduct, rules and regulations of the Capital Market Supervisory Board and the Stock Exchange of Thailand including regulations, announcements, directives, or requirements of the Stock Exchange of Thailand.
- Criteria for fair price, the management executives provide its views on the price sensibility of such transactions to ensure that the terms involved follow the normal course of business, that third-party price comparison before proposes to the board of director and/or shareholders to approve. In the case that, Audit Committee does not have the expertise in the connected transactions, the company will provide an independent appraiser or external auditor of the company to ensure that such price is reasonable in support of decisions by the board of director and/or audit Committee and/or shareholders (as seen fit) which the potential conflicts of interest are not allowed to vote on the transactions.

## 3. Trends for Connected Transactions with Potential Parties of Conflict

- Directors and Management of the Company prepare reports on their individual vested interests with related parties and notify the company for use as reference for taking action under applicable requirements for connected transactions.
- Directors, Management and Employees are not allow to do business that may cause conflict of interests with the Company and avoiding to do the transaction that may cause conflict of interests with the Company. In addition, the board of director is to supervise and review the business transactions that are considered connected transactions according to the measures and procedures including disclosure of the Company connected transactions to comply with law and regulation.

For future connected transactions, must comply with all laws on securities and exchanges, regulations, announcements, directives, or requirements of the Capital Market Supervisory Board, SEC, and SET. For routine transactions likely to regularly occur, the Company must follow the criteria and approaches of general commercial practices, with price references and terms that are suitable and fair, sensible, and auditable. Such transaction engagement must follow principles on agreements with general commercial terms approved by the Board of Directors. To this end, the management must prepare a summary of connected transactions for reporting to the Audit Committee each year.



# Management Discussion and Analysis: MD&A

The operating results during the past 3 years for the Company and Subsidiary, the revenue from sales and services can be divided into 3 business groups as follows:



## Biodiesel Business

- 1.) Revenue from sales of biodiesel
- 2.) Revenue from sales of purified glycerin
- 3.) Revenue from sales of byproducts



## Renewable Power Plant Business

- 1.) Revenue from sales of solar electric power
- 2.) Revenue from sales of wind electric power
- 3.) Revenue from subsidy for adders



## Other Businesses

- 1.) Revenue from other services

## Revenue Structure

Type of Revenue	Operated by / % of shareholding by the Company	2017		2018		2019	
		THB (million)	%	THB (million)	%	THB (million)	%
Biodiesel Business							
1. Biodiesel oil	EA	4,205.23	36.02	3,194.23	25.57	3,423.24	22.89
2. Purified glycerin	EA	267.07	2.29	296.16	2.37	228.93	1.53
3. Byproducts	EA	14.16	0.12	20.76	0.17	25.51	0.17
		4,486.43	38.43	3,511.14	28.11	3,677.68	24.59
Renewable Power Plant Business							
4. Solar electric power	ESLO, ESN, ESL, ESP	1,933.05	16.56	1,934.12	15.49	2,061.64	13.79
5. Wind electric power	EWHK3, PND, BJRD, NYKD,NWP,BCD	489.07	4.19	802.48	6.43	2,148.29	14.37
6. Subsidy for adders		4,670.94	40.01	4,944.22	39.58	6,764.35	45.22
		7,093.06	60.76	7,680.82	61.50	10,974.28	73.38
Other Businesses							
7. Revenue from other services		-	-	359.99	2.88	234.91	1.57
Total Revenue from Sales and Services		11,579.49	99.19	11,551.96	92.49	14,886.87	99.55
8. Accounting gain on Business Combination		-	-	894.58	7.16	-	-
9. Other income		93.98	0.81	43.69	0.35	67.67	0.46
Total Revenue		11,673.47	100.00	12,490.23	100.00	14,954.54	100.00
Share of gain (loss) from investments in associates and a joint venture		(62.27)		(6.31)		(14.26)	

Remark : EA Solar Co., Ltd. (ESLO): The Company holds direct shares 49% and indirect shares of 51%  
 EA Solar Nakhon Sawan Co., Ltd. (ESN): The Company holds direct shares of 99.99%  
 EA Solar Lampang Co., Ltd. (ESL): The Company holds indirect shares of 99.99%  
 EA Solar Phitsanulok Co., Ltd. (ESP): The Company holds indirect shares of 99.99%  
 EA Wind Hadkumghan Co., Ltd. (EWHK3): The Company holds indirect shares of 99.99%

Pongnok Development Co., Ltd. (PND): The Company holds indirect shares of 99.99%  
 Benjarat Development Co., Ltd. (BJRD): The Company holds indirect shares of 99.99%  
 Nayangklak Development Co., Ltd. (NYKD): The Company holds indirect shares of 99.99%  
 Nayangklak Wind Power Co., Ltd. (NWP): The Company holds indirect shares of 99.99%  
 Ban Chuan Development Co., Ltd. (BCD): The Company holds indirect shares of 99.99%

## Results of Operation for the Company and Subsidiaries

### Revenue from Sales of products and Total Revenue

Total revenue from sales of products of the Company and subsidiaries in year 2017, 2018 and 2019 were THB 11,579.49 million, THB 11,551.95 million, and THB 14,886.87 million included Adder from PEA at the rate of THB 8 per kWh for 8-MW Solar power plant in Lopburi and from EGAT at the rate of THB 6.50 per kWh for 90-MW Solar power plant in Nakhon Sawan, 90-MW Solar power plant in Lampang, and 90-MW Solar power plant in Phitsanulok, and at rate THB 3.50 per kWh for 126-MW Wind power plant in Songkla and Nakorn Si Thammarat for a period of 10 years, starting from the commercial operation date respectively. This resulted in the total revenue of the Company and subsidiaries increase continually. In 2019, the total revenue increased THB 2,464.32 million from 2018 or 19.73% and increase THB 3,281.70 million or 28.11% from 2017

Having considered the proportion of revenue from the sales during 2017, 2018 and 2019 it found that the proportion of revenue from sales of 2 major products has changed significantly, i.e. the proportion of revenue from sales of biodiesel which declined continuously were 36.02%, 25.57%, and 22.89% of total revenue respectively. The revenue from sales of electricity and adder increased 60.76%, 61.49%, and 73.38% of the total revenue respectively.

In the year 2019 the Company and subsidiaries incurred the sale revenue of THB 14,886.87 million, increased by 28.87% compared to 2018. In proportion of revenue from sales of biodiesel 22.89%, Purified glycerin 1.53%, byproducts 0.17% and revenue from sales of solar and wind power plant business in proportion of 28.16% and revenue from subsidy for adders 45.23% of total revenue.

### Revenue from sales of biodiesel

in 2019 increased by THB 229.01 million or 7.17% from 2018 as a result of the increase of sales volume from 158.36 million liters in 2018 to 193.25 million liters in 2019, representing the increase of sales volume of 22.03%. In addition, due to the stable of raw material price which is the factor to pricing the distribution, affected to the value from sales of biodiesel in 2019 was increased.

### The revenue from solar and wind power plants

of the Company and subsidiaries' in 2017, 2018, and 2019 were THB 7,093.06 million, THB 7,680.82 million, and THB 10,974.28 million respectively. The continuing growth followed the commercial operation of each power plant project, where the earning was recognized from sales of the electricity units and Adder of which increased in every year.

### Revenue from other business

in 2019, the major revenue incurred from the recognition of Amita-Taiwan's income segment into the consolidated financial statements due to the reclassification of Amita-Taiwan changing from associate to subsidiary of the Company. Revenue from other business comprised of Amita-Taiwan's revenue from sales THB 208.56 million, the revenue from crane rental and renewable energy consulting income from ESM THB 23.39 million.

### Cost of sales and gross profit

Cost of sales of the Company and subsidiaries during the year 2017, 2018 and 2019 were THB 6,045.57 million, THB 5,668.29 million, and THB 6,752.39 million respectively, equivalent to 52.21%, 49.07% and 45.36% of revenue from sales. Proportion of the cost of sales to revenue is likely to decrease. This is due to the increase in the proportion of revenue of business which has high gross profit, such as production and distribution of electricity from solar and wind power plants which increased continually, for biodiesel business which has low gross profit and also revenue decreased lead to decreasing in proportion of the cost of sales to revenue.

Gross profit of the Company and subsidiaries during year 2017, 2018 and 2019 were THB 5,533.92 million, THB 5,883.66 million and THB 8,134.48 million respectively, equivalent to 47.79%, 50.93%, and 54.64% of revenue from sales. The gross profit trend of the Company is likely to increase due to the revenue recognitions gradually adding up from commercial operations of producing and distribution solar electric power plant business one project each year in order to revenue recognition gradually adding up in fourth quarter of the year 2013 for 90 MW solar power plant in Nakorn Sawan and revenue recognition in first quarter of the year 2015 for 90 MW solar power plant in Lampang and also revenue recognition in second quarter of the year 2016 for 90 MW solar power plant in Pitsanulok.

In 2017, the wind power plants with the aggregate capacity of 126 MW in Songkla and Nakorn Si Thammarat were commenced operation including during the year 2019, the wind power plants with the aggregate capacity of 260 MW in Chaiyaphum were commenced operation as well. The revenue from sales of electric power and revenue from subsidy for adders lead to increasing in gross profit of the Company.

Furthermore, if consider revenue and cost of sales of the Company and subsidiaries separated by business group, the revenue can be divided into 3 groups 1.) Produces and Distributes biodiesel and purified glycerin business (including byproducts) 2.) Produces and Distributes solar and wind electric power business 3.) Other Businesses as follows:

Type of Revenue	2017		2018		2019	
	THB (million)	%	THB (million)	%	THB (million)	%
<b>Produces and Distributes biodiesel and purified glycerin business (including byproducts)</b>						
- Revenue from Sales	4,486.43	38.75	3,511.14	30.39	3,677.68	24.70
- Cost of Sales	4,273.76	36.91	3,299.44	28.56	3,631.15	24.39
- Gross Profit	212.67	1.84	211.70	1.83	46.53	0.31
<b>Produces and Distributes solar and wind electric power business (included from subsidy for adders)</b>						
- Revenue from Sales	7,093.06	61.26	7,680.82	66.49	10,974.28	73.72
- Cost of Sales	1,771.81	15.30	1,793.27	15.52	2,532.43	17.01
- Gross Profit	5,321.25	45.95	5,887.55	50.97	8,441.85	56.71
<b>Other Businesses</b>						
- Revenue from Sales and Services	-	-	359.99	3.12	234.91	1.58
- Cost of Sales	-	-	575.58	4.98	588.80	3.96
- Gross Profit	-	-	(215.60)	(1.87)	(353.89)	(2.38)
<b>Total Revenue*</b>	<b>11,579.49</b>	<b>100.00</b>	<b>11,551.95</b>	<b>100.00</b>	<b>14,886.87</b>	<b>100.00</b>

**Remark :** \*Total revenue (Revenue generated from business operations excluding other income and accounting gain on Business Combination)

## Revenue from Sales and Cost of Sales by product for the year 2017 - 2019

Product	Revenue	Cost of Sales	Gross Profit	Gross Profit Margin (%)
<b>2017</b>				
Biodiesel	4,205,199,192	4,164,600,467	40,598,725	0.97 %
Purified Glycerin	267,068,146	98,909,813	168,158,333	62.96 %
Byproducts <sup>/1</sup>	14,162,655	10,249,575	3,913,080	27.63 %
Electricity from solar power plants (included adders)	5,977,749,259	1,340,333,854	4,637,415,405	77.58 %
Electricity from wind power plants (include adders)	1,115,304,379	431,472,998	683,831,381	61.31 %
<b>2018</b>				
Biodiesel	3,194,227,727	3,174,757,495	19,470,232	0.61 %
Purified Glycerin	296,155,581	93,761,113	202,394,468	68.34 %
Byproducts	20,760,800	30,924,619	(10,163,819)	(48.96) %
Electricity from solar power plants (included adders)	5,865,704,001	1,127,604,444	4,738,099,557	80.78 %
Electricity from wind power plants (included adders)	1,815,113,049	665,660,131	1,149,452,918	63.33 %
<b>2019</b>				
Biodiesel	3,423,241,100	3,427,717,236	(4,476,136)	(0.13) %
Purified Glycerin	228,932,711	104,180,970	124,751,741	54.49 %
Byproducts	25,509,932	94,602,411	(69,092,479)	(270.85) %
Electricity from solar power plants (included adders)	6,159,965,384	1,098,705,633	5,061,259,751	82.16 %
Electricity from wind power plants (included adders)	4,814,311,713	1,433,728,728	3,380,582,985	70.22 %

**Remark :** <sup>/1</sup> During the improvement of production (Ration B100) which is the reproducing byproducts to become main products, however, due to the lack of storage so have to sell in the second grade price.





## Selling Expenses

The Selling expenses of the Company and subsidiaries for the years 2017, 2018, and 2019 were THB 58.61 million, THB 69.19 million and THB 81.29 million respectively, or equivalent to 0.50%, 0.55% and 0.54% of total revenues, respectively. In 2019, the Selling expenses increased THB 12.09 million (or 17.48%) compare to 2018 mainly from 1.) Recognition of Amita-Taiwan's selling expenses into the consolidated financial statements due to the reclassification of Amita-Taiwan changing from associate to subsidiary which has selling expenses equal to THB 13.14 million in 2019. and 2.) Increase in selling expenses from the production and distribution of biodiesel business.

## Administrative Expenses

Administrative expenses of the Company and subsidiaries in 2017, 2018, and 2019 were THB 608.42 million, THB 735.35 million, and THB 864.55 million, equivalent to 5.21%, 5.89%, and 5.78% of total revenue respectively. The administrative expenses is mainly from 1.) The increase of employee expenses and remuneration of directors and executives expenses which was increased by THB 105.30 million as compared to the same period last year due to the increase of employees and executives of the Company and its subsidiaries in accordance with the investment expansion plan to new business. 2.) The increase in office expenses increased Baht 20 million as compared to the same period of last year. This is due to service to new businesses and other activities.

## Gains (losses) on Currency exchange

As of 31 December 2019, the Company and subsidiaries recorded the gain on Currency exchange of THB 160.08 million, which decreased THB 6 million from the last year (in 2018 equal to THB 166.08 million). The significant decrease was from the recording of assets and liabilities of the wind power plant project in Chaiyaphum which the construction was completed in some parts and there is some construction payables traded in foreign currencies and the Company group received credit terms from the seller.

## Financial Costs

During the year 2017, 2018, and 2019, the financial cost of the Company and subsidiaries were THB 1,184.32 million, THB 1,086.43 million, and THB 1,386.27 million, equivalent to 10.15%, 8.70% and 9.27% of total revenue respectively. The increasing of Financial Costs in 2019 due to long term loan from financial institutions and the issuance of debenture bonds in order to repay some part of supplier credits of Hanuman wind power plants project that was due.

## Net Profit and Rate of Net Profit

Net profit of the Company and subsidiaries (in part of the Profit attributable to Owners of the Parent) earned in 2017, 2018 and 2019 were THB 3,817.45 million, THB 5,147.54 million, and THB 6,081.62 million, equivalent to 32.97%, 41.21%, and 40.67% of total revenue respectively. The continual growth of the net profit of the Company and subsidiaries were results of following to the policy of business expansion that focus on business which will generate high income, such as the production and distribution of electricity which the Company group recognized the increase of revenue continuously from 90 MW solar power plant in Lampang in 2015 and 90 MW solar power plant in Phitsanulok in 2016, and 126 MW wind power plant in Nakhon Si Thammarat and Songkhla in 2017 and 260 MW wind power plant in Chaiyaphum in 2019,

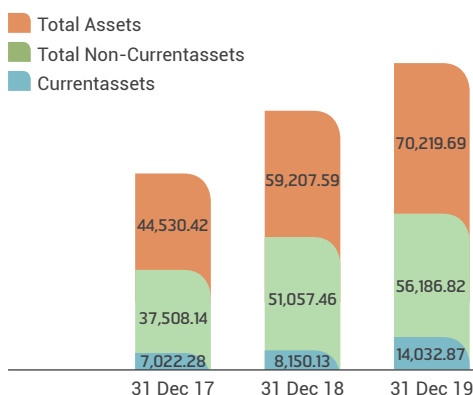
## Return on Equity

Return on equity of the Company and subsidiaries in year 2017, 2018 and 2019 were 29.31%, 31.22% and 29.19% respectively. Shareholder's equity (in part of equity attributable to owners of the Parent) was THB 14,667.60 million, THB 18,310.99 million, and THB 23,364.51 million respectively. The paid-up ordinary shares were THB 373 million and the premium on share capital were THB 3,680.62 million as are result from registered in the MAI during the first quarter of 2013.

# Statement of Financial Position

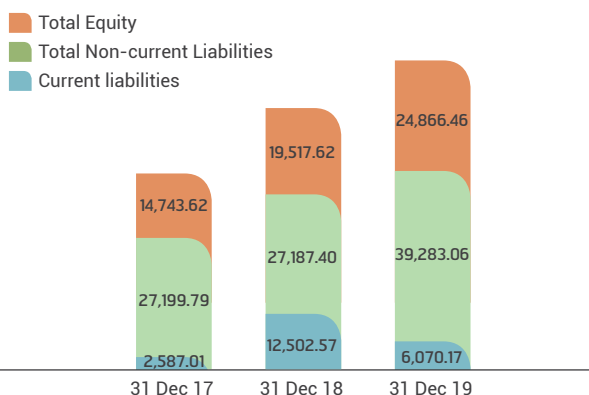
## Total Assets

(Unit: THB million)



## Total liabilities and Equity

(Unit: THB million)



## Assets

Total assets of the Company and subsidiaries as of 31 December 2017, 2018 and 2019 were THB 44,530.42 million, THB 59,207.59 million and THB 70,219.69 million respectively. Details of significant assets transaction are as follows:

- Cash and Cash equivalents**

Cash at financial institution of the Company and subsidiaries as of 31 December 2017, 2018 and 2019 were THB 4,505.65 million, THB 5,478.57 million and THB 10,028.95 million respectively. This is mainly from operating result, which will be reserved for current investment project and new business project for the next year in 2020.

- Trade accounts receivable and allowance for doubtful receivables**

As of 31 December 2017, 2018 and 2019 the Company and subsidiaries had trade accounts receivable of THB 1,706.91 million, THB 1,650.85 million, and THB 2,665.76 million or representing 3.83%, 2.79% and 3.80% of total assets respectively. In 2019, the trade accounts receivable has increased; this is mainly due to increasing of account receivable from the electric power plant.

However, if calculating the average collection period in 2017, 2018 and 2019, which was equal to 47.04 days, 52.32 days and 52.68 days, respectively, the debt collection period in 2019 was increased as a result from the increase in the proportion of income and debtors with longer term credit, including income from electricity sales, which usually have credit terms at 45 days.

- Other accounts receivable**

Other accounts receivable of the Company and subsidiaries as of 31 December 2017, 2018 and 2019 were THB 679.58 million, THB 644.06 million, and THB 509.51 million respectively. Other accounts receivable comprised of included Revenue Department receivable, incoming purchase tax, goods deposit, advanced expenses, etc.

- Inventories**

As of 31 December 2017, 2018 and 2019, the inventory of the Company and subsidiaries were THB 127.94 million, THB 329.96 million, and THB 757.68 million, equivalent to 0.29%, 0.56%, and 1.08% of total assets respectively. The significant increase in inventories in 2019 was due to the consolidation of Amita-Taiwan amount of THB 391.95 million into the consolidated financial statements due to reclassification of Amita-Taiwan from an associate to become a subsidiary.

- Property, plant and Equipment**

As of 31 December 2017, 2018 and 2019, the property, plant and equipment of Company and subsidiaries were THB 35,219.56 million, THB 47,587.21 million, and THB 51,371.09 million, equivalent to 79.09%, 80.37% and 73.15 of total assets. In 2019, the property, plant and equipment increased THB 3,783.88 million or 7.95% compare to the last year. Mainly has increased from the investment in wind power plant in Chaiyaphum (Hanuman Project).

## Property, plant and Equipment by asset type

Unit: THB million

Property, plant and Equipment	As of 31 Dec 2017	As of 31 Dec 2018	As of 31 Dec 2019
Land	1,077.92	1,083.44	1,234.05
Buildings and Buildings improvement	602.22	585.40	656.03
Machines, equipment, and instruments in the plants	973.66	1,184.77	1,242.87
Office equipment, furniture and motor vehicles	79.84	63.65	77.67
Assets and Construction in progress	1,981.81	15,569.72	1,209.82
Power plants, substation, transmission system and components	30,504.11	29,100.23	46,950.65
<b>Total</b>	<b>35,219.56</b>	<b>47,587.21</b>	<b>51,371.09</b>

### • Intangible Assets

The intangible assets of the Company and subsidiaries as of 31 December 2017, 2018 and 2019 were THB 977.16 million, THB 1,941.13 million and THB 2,792.78 million, equivalent to 2.19%, 3.28% and 3.98% of total asset respectively.

In 2019, intangible assets - net, compared with the same period of the last year, increased by THB 851.65 million or 43.87%. The significant increase is from the recognition patents of power transmission system for wind power plants 5 projects in Chaipayum which recognized as asset since starting its commercial operation in 2019.

### Intangible Assets details

Unit: THB million

List of Intangible Assets	As of 31 Dec 2017	As of 31 Dec 2018	As of 31 Dec 2019
Right to power purchase agreement	33.61	31.92	30.22
Right to use transmission line and substation			
• Solar Power Plant in Lopburi	11.77	11.17	10.58
• Solar Power Plant in Nakhon Sawan	163.17	155.40	147.63
• Solar Power Plant in Lampang	166.57	159.04	151.52
• Solar Power Plant in Phitsanulok	251.66	240.82	229.97
• Wind Power Plant in Nakhon Si Thammarat and Songkhla	339.35	325.44	311.54
• Wind Power Plant in Chaipayum	-	-	863.69
Computer software	11.03	14.67	31.74
Patents	-	745.12	670.07
Brand	-	257.54	231.07
Intangible assets under development	-	-	114.75
<b>Total</b>	<b>977.16</b>	<b>1,941.13</b>	<b>2,792.78</b>

## Liquidity

As of December 31, 2018 and 2019, the current assets of the Company and subsidiaries was THB 8,150.13 million, and THB 14,032.87 million, equivalent to 13.77% and 19.98% of total assets, respectively. The major current assets as of 31 December 2018 and 2019 that has high quality and liquidity such as cash and cash equivalents amounting to THB 5,478.57 million, and THB 10,028.95 million or 67.22%, and 71.47% of current assets, respectively. For trade accounts receivable of THB 1,650.85 million, and THB 2,665.76 million, or 20.26%, and 19.00% of current assets respectively and the inventories of THB 329.96 million, and THB 757.68 million, representing 4.05% and 5.40% of current assets, respectively. The ratio of current assets to total assets is likely to increase. This is due to the expansion of investment into the production and distribution of electricity from renewable energy which was an investment in non-current assets and high value, such as, land and power plants. The power plant construction has been completed and commenced the commercial operation to enable to sell electricity continuously. Consequently an increase in proportion of current assets against the proportion of current assets that will increase compared to the total assets.

As of 31 December of 2018 and 2019, the Company and its subsidiaries incurred the current liabilities of THB 12,502.57 million, and THB 6,070.18 million, equivalent to 21.12% and 8.64% of total assets, respectively. The current liabilities of the Company in 2019 compared to the same period of the previous year decreased by THB 6,432.39 million. The main reason was due to the decreased in assets payable for the wind power plant project under construction in the amount of THB 8,719.31 million. This affected the proportion of current liabilities to total liabilities that decrease from 31.50% in 2018 to 13.38% in 2019.

As above mention of the current assets and current liabilities, it effected to the Company's liquidity ratio was 2.71 times in 2017, 0.65 times in 2018, and 2.31 times in 2019. A liquidity ratio in 2019 was significantly increased due to 1). The classification of Long-term loan from financial institutions by changing from non-current liabilities to current liabilities as it will be due in 2019 amounting of THB 1,307.69 million and 2). The classification of debentures by changing from non-current liabilities to current liabilities as it will be due in 2019 amounting of THB 2,999.50 million. These affected to the increase of proportion of current liabilities to total liabilities.

## Source of Fund

### Liability

As of 31 December of 2017, 2018 and 2019, the Company and subsidiaries incurred total liabilities of THB 29,786.80 million, THB 39,689.97 million, and THB 45,353.23 million, equivalent to 66.89%, 67.04% and 64.59% of total assets respectively. The details of liabilities as follows:

- **Short-term loan from financial institutions**

As of 31 December of 2017, 2018 and 2019, the Company and subsidiaries incurred the short-term loans from financial institutions equal to THB 882.01 million, THB 1,817.01 million, and THB 659.86 million, respectively, or equivalent to 1.98%, 3.07% and 0.94% of total assets, respectively. As of 31 December 2019, the short-term loan from financial institutions was decreased in order to repay to payable from asset purchase for the wind power plants projects in Chaiphum.

- **Long-term loan from financial institutions**

As of 31 December, 2017, 2018 and 2019, the long-term loans from financial institutions (including the portion due within 1 year) of the Company and subsidiaries were THB 18,818.59 million, THB 19,406.52 million and THB 24,293.68 million, equivalent to 42.27%, 32.78% and 34.60% of total assets, respectively.

- **Debenture**

The issuance of debenture of the Company (including the portion due within 1 year) as of 31 December of 2019 was THB 16,990.86 million, equivalent to 24.20% of total assets in order to repay to payable from asset purchase for the wind power plants projects in Chaiphum.

### Shareholders' Equity

As of 31 December 2017, 2018 and 2019, shareholder's equity of the Company and subsidiaries was THB 14,743.62 million, THB 19,517.63 million and THB 24,866.46 million, respectively, equivalent to 33.11%, 32.96% and 35.41% of total asset respectively. Shareholder's equity is steadily increased due to the increase of profit consequently lead to retained earnings of the Company has increased in each year.



In 2017, the Annual General Meeting of Shareholders approved the payment of dividends to shareholders at the rate of THB 0.15 per share, totaling THB 559.50 million paid from the operating results for the year 2016 from businesses under BOI privilege, at the rate of THB 0.075 per share and Non- BOI businesses, at the rate of THB 0.075 per share. In 2018, the Annual General Meeting of Shareholders approved the payment of dividends to shareholders at the rate of THB 0.20 per share, totaling THB 746.00 million paid from the operating results from businesses under Non- BOI businesses. In 2019, the Annual General Meeting of Shareholders approved the payment of dividends to shareholders at the rate of THB 0.25 per share, totaling THB 932.50 million paid from the operating results from businesses under Non- BOI businesses.

Shareholders' equity as of 31 December 2018 and 2019 present in other components of equity equals to minus THB 778.89 million and minus THB 874.50 million respectively with details in each item as follows:

- In 2018, Premium on share capital incurred from changing in shareholder's portion of a direct subsidiary, namely Energy Mahanakorn Company Limited ("EMN"), which the Annual General Meeting of Shareholders of EMN approved to increase the registered capital from THB 150 million to THB 200 million. As the Company waived the right to subscribe the newly ordinary shares in order that other shareholder and subsidiary of the Company to subscribe all newly ordinary shares issued of EMN in the amount of 5,000,000 shares at the price of THB 45 per share and THB 100 per share is equivalent to the value of THB 390 million (Premium on share capital is between THB 35 per share and THB 90 per share respectively, is equivalent to the value of THB 340 million). As consequence, the proportion of shares held in EMN shall decrease from 66.67% to 50.00% of paid-up capital and the Company recognized non-controlling interests in the amount of THB 196.20 million and recognized surplus from changes in shareholding interests in other components of equity account in the amount of THB 174.80 million
- In 2018, the discount from changes in shareholding interests incurred in subsidiary, namely Amita-Taiwan on 18 April 2018, the Company paid for shares of Amita-Taiwan by proposing Voluntary Tender Offer of 9,698,020 ordinary shares at Taiwan Dollar 80 per share, totaling Taiwan Dollar 775.84 million or equivalent to THB 850.48 million. As a result, the Company's shareholding interest increased from 50.69% to 69.19% of total issued and paid-up share capital of Amita-Taiwan. The difference between the paid-up share value and the book value of THB 693.90 million was recorded in the list of other components of equity.

On 29 November 2018, Amita-Taiwan increased registered capital which the Company purchased shares from the existing shareholders who waived the right to subscribe the newly ordinary shares amount to 11,203,956 shares at Taiwan Dollar 28 per share, totaling Taiwan Dollar 313.71 million or equivalent to THB 340.69 million. As consequence, the proportion of shares held in Amita-Taiwan shall increase from 69.19% to 77.21% of total registered and paid-up share capital. The difference between the value of the shares paid and the book value of THB 175.79 million was recorded in the list of other components of the equity.

During the year, Amita-Taiwan increased its registered share capital from Taiwan Dollar 985.78 million to Taiwan Dollar 1,472.49 million by issuing new ordinary share of 48,671,906 shares with a par value of Taiwan Dollar 10 per share. The shares are issued at the premium price of Taiwan Dollar 28 per share, totaling Taiwan Dollar 1,362.81 million or equivalent to Baht 1,344.28 million. The Group acquired 33,894,000 newly-issued ordinary shares of Amita Technologies Inc. at par value plus premium of Taiwan Dollar 28 per share, totaling Taiwan Dollar 949.03 million or equivalent to Baht 967.51 million. As a result, the Group's shareholding interest decreased from 77.21% to 74.71% of registered and paid-up share capital. Therefore, the Group recognized the increase in non-controlling interests amounting to Taiwan Dollar 367.58 million and the surplus from changes in shareholding interest in subsidiaries amounting to Taiwan Dollar 8.32 million in the consolidated statement of changes in shareholders' equity. Amita Technologies Inc. registered the increase in share capital on 16 September 2019.

For debt to equity ratio of the Company and subsidiaries as at 31 December of 2017, 2018 and 2019, equal to 2.03 times, 2.19 times and 1.94 times, respectively. The changes in debt to equity ratio shareholders in the year 2019 decreased due to the amount of loan drawdown for the construction of the power plant. This is due to most of the construction was completed in 2019 and for the power plants that have been commercially operational with the gradual loan's principal payment lead to the overall debt decreased, while the Company incurred profit continuously, resulting in retained earnings and shareholders' equity increased. As consequence, the debt to equity ratio decrease continuously.

## Cash flow

The Company and its subsidiaries incurred net cash flows from operating activities in the fiscal year 2017, 2018 and 2019, equal to THB 6,221.38 million, THB 7,192.71 million and THB 8,703.24 million respectively. The increase in cash flows from operating activities was a result from continuous growth which is the result from sales of electricity in solar and wind power plants.

For the net cash payments in investing activities in the fiscal year 2017, 2018 and 2019, equal to THB 2,122.80 million, THB 5,566.72 million, THB 14,834.44 million respectively. The amount spent for investment in 2018 was significantly increase from 2017 due to during the year 2016, the group Company was in the process of construction of a wind power plant project. Therefore, there is a large amount of cash flow for investment

in assets of the aforesaid power plant projects which the construction of the wind power plant project in Nakhon Si Thammarat and Songkhla was completed in 2017 and by the end of 2017 until 2019 the group Company has investment in construction of a new wind power plant project in Chaiyaphum. (Hanuman Project) resulting in increased cash flow for investment in 2019

For financing activities in fiscal year 2017 2018 and 2019 cash receipts from (payments in) financing activities is equal to THB (2,265.67) million, THB (598.33) million and THB 10,723.13 million respectively. Cash flow from financing activities used in issuing debenture in 2019 amount to THB 10,000 million and repayment a debenture amount to THB 1,000 million, the outstanding debenture value to THB 9,000 million use for payment of power plant construction. The cash flow from various activities for the year ended 31 December of 2017, 2018 and 2019 summarized as follows:

Unit: THB million

	2017	2018	2019
<b>Cash flows from activities</b>			
Net cash receipts from (payments in) operating activities	6,221.38	7,192.71	8,703.24
Net cash payments in investing activities	(2,122.80)	(5,566.72)	(14,834.44)
Net cash receipts from (payments in) financing activities	(2,265.67)	(598.33)	10,723.13
<b>Increase (decrease) of net cash</b>	<b>1,832.91</b>	<b>1,027.66</b>	<b>4,591.93</b>
Cash and cash equivalents at beginning of year	2,672.74	4,505.65	5,478.57
Currency transaction differences	-	(54.74)	(41.55)
<b>Cash and cash equivalents at ending of year</b>	<b>4,505.65</b>	<b>5,478.57</b>	<b>10,028.95</b>



## Report of the Board of Directors' Responsibilities for the Financial Report

The Board of Directors is responsible for the Company's financial statements and financial information presented in this Annual Report. The financial statement is prepared in accordance with generally accepted accounting standard using proper accounting policy of which the Board of Directors always adheres to. With best discretion and calculation of the Board of Directors, the financial statement contains adequate information disclosed in the note to financial statement.

The Board of Directors provides to have and maintains the effective internal control system to assure that the accounting record is accurate, complete and adequate to safeguard the Company's asset and to identify the weakness. Eventually, the effectiveness of the internal control system will prevent the corruption or significant unusual operation. In this regard, the Board of Directors has appointed the Audit Committee which comprises of all independent directors, to be responsible for quality of the financial report and internal control system. The opinions of the Audit Committee is expressed in the Report of the Audit Committee and the Corporate Governance Committee in this Annual Report.

The Board of Directors is of the opinion that the Company's internal control system as a whole is in satisfactory level that creating trust and reliability. The Company's financial statement as at 31 December 2019 is accurate, complete and in line with generally accepted accounting standard and in compliance with relevant laws and regulations.

On behalf of the Board of Directors,  
Energy Absolute Public Company Limited



**Mr. Somchainuk Engtrakul**

Chairman of the Board of Directors

# Independent Auditor's Report

To the shareholders of Energy Absolute Public Company Limited

## My opinion

In my opinion, the consolidated financial statements of Energy Absolute Public Company Limited (the Company) and its subsidiaries (the Group) and the separate financial statements of the Company present fairly, in all material respects, the consolidated and separate financial position of the Group and of the Company as at 31 December 2019, and its consolidated and separate financial performance and its consolidated and separate cash flows for the year then ended in accordance with Thai Financial Reporting Standards (TFRSs).

## What I have audited

The consolidated financial statements and the separate financial statements comprise:

- the consolidated and separate statements of financial position as at 31 December 2019;
- the consolidated and separate statements of comprehensive income for the year then ended;
- the consolidated and separate statements of changes in equity for the year then ended;
- the consolidated and separate statements of cash flows for the year then ended; and
- the notes to the consolidated and separate financial statements, which include a summary of significant accounting policies.

## 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 Federation of Accounting Professions under the Royal Patronage of his Majesty the King's Code of Ethics for Professional Accountants together with the ethical requirements that are 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 matter

Key audit matter is the matter that, in my professional judgment, was of most significance in my audit of the consolidated and separate financial statements of the current period. I determine one key audit matter: Impairment assessment of goodwill. The matter was 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 the matter.



Key audit matter	How my audit addressed the key audit matter
<p><b>Impairment assessments of goodwill</b></p> <p>Refer to note 4 - Critical accounting estimates, assumption and judgements and Note 15 - Goodwill.</p> <p>As at 31 December 2019, the Group has goodwill of Baht 889.81 million, which represents 1.27% of the total consolidated assets. Goodwill arose from the acquisition of a developing, manufacturing and distributing battery business. The management did not recognise any impairment charge on this balance in the 2019 financial year.</p> <p>The management tests the impairment of goodwill annually. The impairment test is performed at the cash generating unit (CGU) level and calculated its recoverable amount by applying the value-in-use model, which involves the management's significant judgments about the future operating results of the business, projected cash flows and the discount rate to be applied to the projected cash flows. Key assumptions applied in the value-in-use model are projected sales and service revenue, the growth rate and discount rate applied to cash flow forecasts.</p> <p>I focused on the valuation of goodwill arising from the business combination due to the significant value and the fact that the determination of value-in-use depends on a number of assumptions. Those assumptions also involve significant judgement made by the management in assessing the potential future business plans.</p>	<p>I performed the following procedures to obtain evidence for the management's impairment assessment of goodwill:</p> <ul style="list-style-type: none"> <li>• Assessed the appropriateness of management's identification of the Group's CGUs.</li> <li>• Held discussions with the management to understand the basis for the assumptions used and assessed whether the impairment testing process and assumptions had been applied appropriately and in line with the nature of the business.</li> <li>• Challenged management's significant assumptions used in impairment testing for goodwill, specifically projected sales and service revenue, the growth rate and discount rate. The procedures included comparing the key assumptions to the external sources for the loan interest rate and rate of return and the approved business plan.</li> <li>• Assessed the reasonableness of the business plan by comparing the plans of 2019 with actual results.</li> <li>• Assessed the discount rate taking into accounts the independently obtained data from the available public information of companies in the industry to check whether the discount rate used by the management was within an acceptable range.</li> <li>• Tested the sensitivity analysis over key assumptions in the model prepared by the management in order to assess whether factors are sensitive to assumptions and the potential impact of a range of possible outcomes.</li> </ul> <p>As a result, I determined that the key assumptions used by the management are within a reasonable range in the light of the current environment and circumstances.</p>

## Other information

The directors are 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 the audit committee.

## Responsibilities of the directors for the consolidated and separate financial statements

The directors are responsible for the preparation and fair presentation of the consolidated and separate financial statements in accordance with TFRSs, and for such internal control as the directors determine 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, the directors are responsible for assessing the Group 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 the directors either intend to liquidate the Group and the Company or to cease operations, or has no realistic alternative but to do so.

The audit committee assists the directors in discharging their responsibilities for overseeing the Group 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 scepticism 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 the directors.

- Conclude on the appropriateness of the directors' use of the going concern basis of accounting 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 the audit committee 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 the audit committee 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 the audit committee, 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.

PricewaterhouseCoopers ABAS Ltd.



**Amornrat Pearmpoonvatanasuk**

Certified Public Accountant (Thailand) No. 4599

Bangkok

21 February 2020

Energy Absolute Public Company Limited  
Statement of Financial Position

As at 31 December 2019

	Notes	Consolidated		Separate	
		2019	2018	2019	2018
		Baht	Baht	Baht	Baht
<b>Assets</b>					
<b>Current assets</b>					
Cash and cash equivalents	7	10,028,951,620	5,478,570,449	5,260,281,030	544,675,310
Deposits at financial institutions used as collateral	8	11,534,539	43,993,427	-	-
Trade accounts receivable, net	9	2,665,758,015	1,650,849,986	321,655,322	190,695,815
Other accounts receivable	10	509,510,354	644,064,022	248,082,844	313,274,817
Short-term loans to other parties and related parties		3,192,550	2,692,550	1,013,817,540	2,234,142,550
Current portion of long-term loans to other parties and related parties		56,250,000	-	-	-
Inventories, net	11	757,677,910	329,962,040	200,587,215	127,114,652
<b>Total current assets</b>		<b>14,032,874,988</b>	<b>8,150,132,474</b>	<b>7,044,423,951</b>	<b>3,409,903,144</b>
<b>Non-current assets</b>					
Deposits at financial institutions used as collateral	8	166,306,110	129,701,454	98,128,211	100,770,954
Advance payment for purchase of investment in a joint venture	12.1	-	34,531,200	-	34,531,200
Investments in subsidiaries	12	1	1	24,072,837,448	22,538,018,916
Investment in associates	12	69,530,375	-	-	-
Investment in a joint venture	12	30,665,924	-	43,285,440	8,754,240
Long-term loans to other parties and related parties	35.4	23,596,250	4,846,250	13,000,000,000	-
Investment property, net	13	69,295,244	32,604,967	1,040,945,080	1,034,895,232
Property, plant and equipment, net	14	51,371,094,887	47,587,211,932	379,251,639	422,987,591
Goodwill	15	889,808,430	936,523,595	-	-
Intangible assets, net	16	2,792,784,053	1,941,126,718	11,132,235	10,707,132
Deferred tax assets	17	75,696,116	64,706,542	7,738,279	8,602,469
Other non-current assets, net	18	698,041,765	326,208,268	61,763,565	21,289,682
<b>Total non-current assets</b>		<b>56,186,819,155</b>	<b>51,057,460,927</b>	<b>38,715,081,897</b>	<b>24,180,557,416</b>
<b>Total assets</b>		<b>70,219,694,143</b>	<b>59,207,593,401</b>	<b>45,759,505,848</b>	<b>27,590,460,560</b>

The notes to the consolidated and separate financial statements on pages 15 to 79 are an integral part of these financial statements.



Energy Absolute Public Company Limited  
Statement of Financial Position

As at 31 December 2019

		Consolidated		Separate	
		2019	2018	2019	2018
Notes	Baht	Baht	Baht	Baht	Baht
<b>Liabilities and equity</b>					
<b>Current liabilities</b>					
Short-term loans from financial institutions	19	659,862,469	1,817,015,028	482,886,986	1,814,602,635
Trade accounts payable		285,293,648	150,180,319	239,149,989	71,819,649
Other accounts payable	20	735,741,309	460,548,765	376,612,774	143,096,418
Construction payables and payables for purchase of assets		62,158,264	8,781,472,635	-	-
Short-term loans from related parties	35.5	-	-	2,536,710,000	494,000,000
Current portion of long-term loans from financial institutions, net	21	1,307,686,226	264,048,006	-	-
Current portion of finance lease liabilities, net		1,061,644	622,074	-	-
Current portion of debentures, net	22	2,999,498,444	999,777,628	2,999,498,444	999,777,628
Income tax payable		5,656,670	28,647,591	-	-
Retention for constructions		13,218,448	258,365	-	-
<b>Total current liabilities</b>		<b>6,070,177,122</b>	<b>12,502,570,411</b>	<b>6,634,858,193</b>	<b>3,523,296,330</b>
<b>Non-current liabilities</b>					
Long-term loans from financial institutions, net	21	22,985,990,896	19,142,473,951	5,677,470,188	789,875,817
Debentures, net	22	13,991,362,918	6,996,144,829	13,991,362,918	6,996,144,829
Retention for constructions		15,919,789	5,165,508	-	-
Finance lease liabilities		2,282,934	6,401,676	-	-
Deferred tax liabilities	17	180,227,772	200,531,424	-	-
Retirement benefit obligations		49,947,884	33,888,357	44,725,300	30,913,050
Advance receipts for land rental from related parties	35.6	-	-	733,568,777	546,158,723
Provision for decommissioning costs	23	2,056,008,666	799,685,112	1,592,750	1,592,750
Other non-current liabilities		1,316,711	3,106,747	1,488,131	1,546,401
<b>Total non-current liabilities</b>		<b>39,283,057,570</b>	<b>27,187,397,604</b>	<b>20,450,208,064</b>	<b>8,366,231,570</b>
<b>Total liabilities</b>		<b>45,353,234,692</b>	<b>39,689,968,015</b>	<b>27,085,066,257</b>	<b>11,889,527,900</b>

The notes to the consolidated and separate financial statements on pages 15 to 79 are an integral part of these financial statements.

# Energy Absolute Public Company Limited

## Statement of Financial Position

As at 31 December 2019

	Note	Consolidated		Separate	
		2019	2018	2019	2018
		Baht	Baht	Baht	Baht
<b>Liabilities and equity (continued)</b>					
<b>Equity</b>					
Share capital					
Authorised share capital					
- 3,730,000,000 ordinary shares					
at par value of Baht 0.10 per share		373,000,000	373,000,000	373,000,000	373,000,000
Issued and paid-up share capital					
- 3,730,000,000 ordinary shares					
paid-up at Baht 0.10 per share		373,000,000	373,000,000	373,000,000	373,000,000
Premium on share capital		3,680,616,000	3,680,616,000	3,680,616,000	3,680,616,000
Retained earnings					
Appropriated					
- Legal reserve	24	37,300,000	37,300,000	37,300,000	37,300,000
Unappropriated		20,148,089,424	14,998,970,882	14,601,906,893	11,626,023,769
Other components of equity		(874,498,543)	(778,892,873)	(18,383,302)	(16,007,109)
<b>Equity attributable to owners</b>					
<b>of the parent</b>		23,364,506,881	18,310,994,009	18,674,439,591	15,700,932,660
Non-controlling interests		1,501,952,570	1,206,631,377	-	-
<b>Total equity</b>		24,866,459,451	19,517,625,386	18,674,439,591	15,700,932,660
<b>Total liabilities and equity</b>		70,219,694,143	59,207,593,401	45,759,505,848	27,590,460,560

The notes to the consolidated and separate financial statements on pages 15 to 79 are an integral part of these financial statements.

Energy Absolute Public Company Limited  
Statement of Comprehensive Income

For the year ended 31 December 2019

	Notes	Consolidated		Separate	
		2019	2018	2019	2018
		Baht	Baht	Baht	Baht
Revenue from sales and services	25	8,122,513,384	6,607,725,110	3,672,669,881	3,511,078,025
Revenue from subsidy for adders	26	6,764,353,399	4,944,224,099	-	-
Dividend income	12.2	-	-	4,745,364,506	3,934,463,266
Other income	27	67,673,775	43,693,177	393,940,806	125,192,598
Accounting gain on a business combination achieved without the transfer of consideration, net		-	894,576,989	-	-
<b>Total revenue</b>		<b>14,954,540,558</b>	<b>12,490,219,375</b>	<b>8,811,975,193</b>	<b>7,570,733,889</b>
Cost of sales and services		(6,752,387,011)	(5,668,289,723)	(3,626,500,617)	(3,299,443,226)
Selling expenses		(81,287,742)	(69,194,642)	(64,804,386)	(54,645,427)
Administrative expenses		(864,551,560)	(735,345,044)	(534,212,418)	(402,196,332)
Currency exchange gains (losses), net		160,076,461	166,076,971	(9,221,990)	(7,910,701)
Finance costs	28	(1,386,265,878)	(1,086,431,430)	(667,988,468)	(320,880,701)
<b>Total expense</b>		<b>(8,924,415,730)</b>	<b>(7,393,183,868)</b>	<b>(4,902,727,879)</b>	<b>(4,085,076,387)</b>
Share of loss from investments in associates and a joint venture	12	(14,259,073)	(6,306,673)	-	-
<b>Profit before income tax</b>		<b>6,015,865,755</b>	<b>5,090,728,834</b>	<b>3,909,247,314</b>	<b>3,485,657,502</b>
Income tax	30	10,752,519	(29,352,467)	(864,190)	637,793
<b>Profit for the year</b>		<b>6,026,618,274</b>	<b>5,061,376,367</b>	<b>3,908,383,124</b>	<b>3,486,295,295</b>
<b>Other comprehensive income (expense)</b>					
Items that will not be reclassified subsequently to profit or loss					
- Remeasurements of post-employment benefit obligations		(1,018,339)	(19,622,933)	(2,376,193)	(20,008,887)
- Income tax on items that will not be reclassified subsequently to profit or loss		-	3,758,242	-	4,001,778
<b>Total items that will not be reclassified subsequently to profit or loss</b>		<b>(1,018,339)</b>	<b>(15,864,691)</b>	<b>(2,376,193)</b>	<b>(16,007,109)</b>

The notes to the consolidated and separate financial statements on pages 15 to 79 are an integral part of these financial statements.

Energy Absolute Public Company Limited

## Statement of Comprehensive Income

For the year ended 31 December 2019

	Notes	Consolidated		Separate	
		2019	2018	2019	2018
		Baht	Baht	Baht	Baht
Items that will be reclassified subsequently to profit or loss					
- Share of other comprehensive expense of associates and a joint venture accounted for using the equity method		(1,578,129)	-	-	-
- Currency translation differences		(140,115,938)	(95,051,482)	-	-
- Reclassification of currency translation differences to profit and loss		-	15,983,407	-	-
- Income tax on items that will be reclassified subsequently to profit or loss		-	-	-	-
Total items that will be reclassified subsequently to profit or loss		(141,694,067)	(79,068,075)	-	-
<b>Other comprehensive expense for the year, net of tax</b>		(142,712,406)	(94,932,766)	(2,374,174)	(16,005,091)
<b>Total comprehensive income for the year</b>		<b>5,883,905,868</b>	<b>4,966,443,601</b>	<b>3,906,008,950</b>	<b>3,470,290,204</b>
<b>Profit (loss) attributable to:</b>					
- Owners of the parent		6,081,618,542	5,147,541,839	3,908,383,124	3,486,295,295
- Non-controlling interests		(55,000,268)	(86,165,472)	-	-
		<b>6,026,618,274</b>	<b>5,061,376,367</b>	<b>3,908,383,124</b>	<b>3,486,295,295</b>
<b>Total comprehensive income (expense) attributable to:</b>					
- Owners of the parent		5,977,697,656	5,084,297,256	3,906,008,950	3,470,288,186
- Non-controlling interests		(93,791,788)	(117,853,655)	-	-
		<b>5,883,905,868</b>	<b>4,966,443,601</b>	<b>3,906,008,950</b>	<b>3,470,288,186</b>
<b>Earnings per share</b>					
Basic earnings per share	31	1.63	1.33	1.05	0.93

The notes to the consolidated and separate financial statements on pages 15 to 79 are an integral part of these financial statements.



# Energy Absolute Public Company Limited Statement of Changes in Equity

For the year ended 31 December 2019

Attributable to owners of the parent																Consolidated
Notes	Issued and paid-up share capital	Premium on share capital	Retained earnings		Surplus (Discount) from changes in shareholding interests in subsidiaries	Other components of equity					Total owners of the parent	Non-controlling interests	Total equity			
			Legal reserve	Unappropriated reserve		Remeasurements of post-employment benefit obligations	Currency translation differences	Share of other comprehensive income (expense) of associates and a joint venture	Total other components of equity							
										Baht				Baht	Baht	
	373,000,000	3,680,616,000	37,300,000	10,597,429,043	(6,944,922)	-	-	(13,801,297)	(20,746,219)	14,667,598,824	76,021,917	14,743,620,741				
Opening balance as at 1 January 2018																
Changes in equity for the year																
	-	-	-	-	(519,105,409)	-	-	-	(519,105,409)	(519,105,409)	45,989,758	(473,115,651)				
	-	-	-	-	(175,796,662)	-	-	-	(175,796,662)	(175,796,662)	345,902,850	170,106,188				
	-	-	-	-	-	-	-	-	-	-	20,810,949	20,810,949				
	-	-	-	(746,000,000)	-	-	-	-	-	(746,000,000)	835,759,558	835,759,558				
32	-	-	-	5,147,541,839	-	-	-	-	-	-	-	-	(746,000,000)			
	-	-	-	-	-	(15,699,109)	(63,358,100)	15,812,626	(63,244,583)	5,084,297,256	(117,853,655)	4,966,443,601				
Closing balance as at 31 December 2018																
	373,000,000	3,680,616,000	37,300,000	14,998,970,882	(701,846,993)	(15,699,109)	(63,358,100)	2,011,329	(778,892,873)	18,310,994,009	1,206,631,377	19,517,625,386				
Opening balance as at 1 January 2019																
Changes in equity for the year																
12.1	-	-	-	-	8,315,216	-	-	-	8,315,216	8,315,216	367,581,542	375,896,758				
	-	-	-	(932,500,000)	-	-	-	-	-	(932,500,000)	21,531,439	21,531,439				
32	-	-	-	6,081,618,542	-	-	(1,378,665)	(100,964,092)	(1,578,129)	(103,920,886)	(93,791,788)	(932,500,000)				
	-	-	-	-	-	-	-	-	-	-	-	-	5,883,905,868			
Closing balance as at 31 December 2019																
	373,000,000	3,680,616,000	37,300,000	20,148,089,424	(693,531,777)	(17,077,774)	(164,322,192)	433,200	(874,498,543)	23,364,506,881	1,501,952,570	24,866,459,451				

The notes to the consolidated and separate financial statements on pages 15 to 79 are an integral part of these financial statements.

Energy Absolute Public Company Limited  
Statement of Changes in Equity

For the year ended 31 December 2019

		Separate									
Note		Other components of equity									
		Other comprehensive expense					Total other components of equity				
		Issued and paid-up share capital	Premium on share capital		Retained earnings		Remeasurements of post-employment benefit obligations	Total other components of equity		Total equity	Baht
		Baht	Baht	Baht	Legal reserve	Unappropriated		Baht	Baht		
	<b>Opening balance as at 1 January 2018</b>	373,000,000	3,680,616,000	8,885,728,474	37,300,000	8,885,728,474	-	-	-	12,976,644,474	
	<b>Changes in equity for the year</b>										
32	Dividend paid	-	-	(746,000,000)	-	(746,000,000)	-	-	-	(746,000,000)	
	Total comprehensive income (expense) for the year	-	-	3,486,295,295	-	3,486,295,295	(16,007,109)	(16,007,109)	(16,007,109)	3,470,288,186	
	<b>Closing balance as at 31 December 2018</b>	373,000,000	3,680,616,000	11,626,023,769	37,300,000	11,626,023,769	(16,007,109)	(16,007,109)	(16,007,109)	15,700,932,660	
	<b>Opening balance as at 1 January 2019</b>	373,000,000	3,680,616,000	11,626,023,769	37,300,000	11,626,023,769	(16,007,109)	(16,007,109)	(16,007,109)	15,700,932,660	
	<b>Changes in equity for the year</b>										
32	Dividend paid	-	-	(932,500,000)	-	(932,500,000)	-	-	-	(932,500,000)	
	Total comprehensive income (expense) for the year	-	-	3,908,383,124	-	3,908,383,124	(2,376,193)	(2,376,193)	(2,376,193)	3,906,006,931	
	<b>Closing balance as at 31 December 2019</b>	373,000,000	3,680,616,000	14,601,906,893	37,300,000	14,601,906,893	(18,383,302)	(18,383,302)	(18,383,302)	18,674,439,591	

The notes to the consolidated and separate financial statements on pages 15 to 79 are an integral part of these financial statements.

## Statement of Cash Flows

For the year ended 31 December 2019

	Notes	Consolidated		Separate	
		2019	2018	2019	2018
		Baht	Baht	Baht	Baht
<b>Cash flows from operating activities</b>					
Profit before income tax for the year		6,015,865,755	5,090,728,834	3,909,247,314	3,485,657,502
Adjustments to reconcile profit before income tax to net cash provided by operations:					
- Depreciation and amortisation		2,517,451,638	1,833,043,368	91,255,850	98,930,903
- Allowance for doubtful receivables		15,933,670	5,229,556	8,909,508	-
- Interest income		(41,920,480)	(17,527,632)	(312,676,969)	(3,828,935)
- Dividend income	12.2	-	-	(4,745,364,506)	(3,934,463,266)
- Finance costs		1,386,265,878	1,086,431,430	667,988,468	320,880,701
- Retirement benefit expenses		15,041,188	10,705,852	11,436,057	9,851,064
- Share-based payments		7,263,423	13,587	-	-
- Share of loss from investments in associates and a joint venture	12.1	14,259,073	6,306,673	-	-
- Gain on changing in shareholding interest in associates and a joint venture	12.1	(12,439,095)	-	-	-
- Accounting gains on a business combination achieved without the transfer of consideration, net		-	(894,576,989)	-	-
- Gains on disposal of investment property		-	-	-	(100,000)
- Losses (gains) on disposal of machines and equipment		(329,413)	807,080	-	-
- Losses on write-off of equipment		4,993,428	43,679,309	1,386,558	-
- Losses on exchange of assets		-	3,383,536	-	-
- (Reversal) allowance for decrease in value of inventories	11	6,848,214	(4,173,370)	(5,939,934)	(6,495,147)
- Unrealised losses (gains) on exchange rates		2,350,713	(132,580,665)	9,248,968	369,568
- Amortisation of advance receipts for land rental from related parties	35.6	-	-	(52,142,084)	(26,853,575)
Cash flows before changes in operating assets and liabilities		9,931,583,992	7,031,470,569	(416,650,770)	(56,051,185)
Change in operating assets and liabilities:					
- Trade accounts receivable		(1,021,932,191)	90,775,766	(130,959,507)	121,396,483
- Other accounts receivable		133,697,059	276,356,976	77,974,817	45,188,283
- Inventories		(434,564,084)	(109,571,905)	(67,532,629)	4,410,082
- Other non-current assets		(380,743,005)	(35,057,799)	(32,983,937)	165,124
- Trade accounts payable		135,113,329	10,703,808	167,330,340	(19,599,328)
- Other accounts payable		384,038,752	(29,426,065)	73,439,938	(17,192,366)
- Other non-current liabilities		(24,427,482)	1,546,401	239,493,868	1,546,401
Cash generated from (used in) operations		8,722,766,370	7,236,797,751	(89,887,880)	79,863,494
- Income tax paid		(19,526,632)	(44,083,210)	(16,399,454)	(9,208,919)
<b>Net cash receipts from (payments in) operating activities</b>		<b>8,703,239,738</b>	<b>7,192,714,541</b>	<b>(106,287,334)</b>	<b>70,654,575</b>

The notes to the consolidated and separate financial statements on pages 15 to 79 are an integral part of these financial statements.

## Statement of Cash Flows

For the year ended 31 December 2019

	Notes	Consolidated		Separate	
		2019	2018	2019	2018
		Baht	Baht	Baht	Baht
<b>Cash flows from investing activities</b>					
Deposits at financial institutions used as collateral		(4,145,768)	(72,726,166)	2,642,743	197,761
Proceeds from short-term loans to related parties	35.4	-	-	341,799,000	957,500,000
Payments for short-term loans to related parties	35.4	-	-	(12,128,346,000)	(1,839,900,000)
Payment for short-term loans to other party		(500,000)	(500,000)	-	-
Proceeds from long-term loans to related parties	35.4	-	-	-	35,000,000
Payments for long-term loans to other party		(75,000,000)	(4,846,250)	-	-
Proceeds from a business combination achieved without the transfer of consideration, net		-	305,617,991	-	-
Payments for investments in subsidiaries	12.1	-	-	(1,534,818,532)	(4,903,022,667)
Payments for investment in associates	12.1	(70,151,055)	-	-	-
Advance payment for purchase of investment in a joint venture		-	(34,531,200)	-	(34,531,200)
Payments for purchase of investment property	13	(38,790,830)	-	(8,472,839)	(5,519,987)
Proceeds from disposals of investment property		-	-	-	3,150,000
Payments for purchase of property, plant and equipment		(14,521,994,372)	(5,698,716,984)	(43,787,928)	(22,464,624)
Proceeds from disposals of machines and equipment		343,356	1,775,701	-	-
Payments for purchase of intangible assets		(139,436,589)	(4,719,790)	(3,120,640)	(2,006,138)
Proceeds from dividend income		-	-	4,745,364,506	3,934,463,266
Proceeds from interest income		41,409,539	17,586,192	299,867,880	3,828,935
Interest paid capitalised in property, plant and equipment		(26,169,813)	(75,657,872)	-	-
<b>Net cash payments in investing activities</b>		<b>(14,834,435,532)</b>	<b>(5,566,718,378)</b>	<b>(8,328,871,810)</b>	<b>(1,873,304,654)</b>
<b>Cash flows from financing activities</b>					
Proceeds from short-term loans from financial institutions	19	8,150,946,615	5,522,037,770	7,932,797,861	5,522,037,770
Payments for short-term loans from financial institutions	19	(9,307,937,046)	(4,628,246,402)	(9,264,513,510)	(4,589,445,015)
Proceeds from long-term loans from financial institutions	21.1	5,125,585,306	802,445,924	4,900,000,000	789,534,800
Payments for long-term loans from financial institutions	21.1	(266,025,473)	(264,434,986)	-	-
Proceeds from short-term loans from related parties	35.5	-	-	2,051,000,000	1,190,000,000
Payments for short-term loans from related parties	35.5	-	-	(8,290,000)	(750,000,000)
Payments for finance leases liabilities		(3,679,172)	(13,190,789)	-	-
Proceeds from issuing debentures	22	10,000,000,000	-	10,000,000,000	-
Payments for repayment a debenture	22	(1,000,000,000)	-	(1,000,000,000)	-
Proceeds from paid-up common shares of a subsidiary from non-controlling interest		387,804,660	596,244,695	-	-
Payment for shares of a subsidiary from non-controlling interest		-	(844,115,661)	-	-
Dividend paid		(932,406,789)	(745,950,202)	(932,406,789)	(745,950,202)
Interest paid		(1,431,157,787)	(1,023,124,278)	(525,471,985)	(309,744,761)
<b>Net cash receipts from (payments in) financing activities</b>		<b>10,723,130,314</b>	<b>(598,333,929)</b>	<b>13,153,115,577</b>	<b>1,106,432,592</b>

The notes to the consolidated and separate financial statements on pages 15 to 79 are an integral part of these financial statements.



## Statement of Cash Flows

For the year ended 31 December 2019

	Note	Consolidated		Separate	
		2019	2018	2019	2018
		Baht	Baht	Baht	Baht
<b>Net increase (decrease) in cash and cash equivalents</b>		4,591,934,520	1,027,662,234	4,717,956,433	(696,217,487)
Beginning balance		5,478,570,449	4,505,653,829	544,675,310	1,241,254,489
Currency translation differences		(41,553,349)	(54,745,614)	(2,350,713)	(361,692)
<b>Ending balance</b>		<b>10,028,951,620</b>	<b>5,478,570,449</b>	<b>5,260,281,030</b>	<b>544,675,310</b>
<b>Cash and cash equivalents are made up as follows:</b>					
- Cash on hand and deposits at financial institutions - maturities within three months	7	10,028,951,620	5,478,570,449	5,260,281,030	544,675,310
		<b>10,028,951,620</b>	<b>5,478,570,449</b>	<b>5,260,281,030</b>	<b>544,675,310</b>
<b>Non-cash transactions</b>					
- Changes in construction payables and payables for purchase of assets (including retention for constructions)		8,719,314,371	8,091,804,912	-	(8,463,700)
- Decommissioning costs	23	(1,214,810,281)	27,118,414	-	-
- Transfer cost of construction of high voltage station to right to use transmission line	16	(893,021,349)	-	-	-
- Acquisition of assets from exchanges		-	62,822,258	-	-
- Reclassification of advance payment for purchase of investment to be investment in a joint venture	12.1	(34,531,200)	-	(34,531,200)	-
- Reclassification of investment in an associate to be a subsidiary		-	911,134,445	-	987,180,248

The notes to the consolidated and separate financial statements on pages 15 to 79 are an integral part of these financial statements.

## Notes to the Consolidated and Separate Financial Statements

For the year ended 31 December 2019

### 1 General information

Energy Absolute Public Company Limited (the Company) is a public limited company, incorporated and resident in Thailand. The address of its registered office is 89, AIA Capital Center Building, 16th Floor, Ratchadaphisek Road, Dindaeng, Bangkok.

The Company is listed on The Stock Exchange of Thailand. For reporting purposes, the Company and its subsidiaries are referred to as “the Group”.

The Group engages in business of manufacturing and distributing Methyl Ester Biodiesel products and Glycerol, operating renewable power plants and develop, manufacture and distribute lithium-ion polymer battery.

These consolidated and separate financial statements were authorised for issue by the Board of Directors on 21 February 2020.

### 2 Accounting policies

The principal accounting policies applied in the preparation of these consolidated and separate financial statements are set out below:

#### 2.1 Basis of preparation

The consolidated and separate financial statements have been prepared in accordance with Thai Financial Reporting Standards (TFRSs) and the financial reporting requirements issued under the Securities and Exchange Act.

The consolidated and separate financial statements have been prepared under the historical cost convention except as disclosed in the significant accounting policies.

The preparation of financial statements in conformity with Thai generally accepted accounting principles requires the use of certain critical accounting estimates. It also requires management to exercise its judgement in the process of applying the Group’s accounting policies. The areas involving a higher degree of judgement or complexity, or areas where assumptions and estimates are significant to the consolidated financial statements are disclosed in Note 4.

An English language version of the consolidated and separate financial statements have been prepared from the statutory financial statements that are in the Thai language. In the event of a conflict or a difference in interpretation between the two languages, the Thai language statutory financial statements shall prevail.

#### 2.2 New and amended financial reporting standards that are relevant and have significant impacts to the Group

##### 2.2.1 New and amended financial reporting standards that are effective for accounting period beginning or after 1 January 2019.

Commencing from 1 January 2019, the Group adopted new and amended financial reporting standards effective for the period beginning on or after 1 January 2019 and relevant to the Group. The adoption of these standards does not have a significant impact to the Group.

## **2.2.2 New and amended financial reporting standards that are effective for accounting period beginning on or after 1 January 2020. The Group has not yet early adopted this standard.**

### **a) Financial instruments**

The new financial standards relate to financial instruments are:

TAS 32	Financial instruments: Presentation
TFRS 7	Financial Instruments: Disclosures
TFRS 9	Financial Instruments
TFRIC 16	Hedges of a Net Investment in a Foreign Operation
TFRIC 19	Extinguishing Financial Liabilities with Equity Instruments

These new standards address the classification, measurement, derecognition of financial assets and financial liabilities, impairment of financial assets, hedge accounting, and presentation and disclosure of financial instruments.

The Group's management is currently assessing the impact of adoption of these standards.

### **b) TFRS 16 Leases**

Where the Group is a lessee, TFRS 16, Leases will result in almost all leases being recognised on the statement of financial position as the distinction between operating and finance leases is removed. A right-of-use asset and a lease liability will be recognised, with exception on short-term and low-value leases.

The Group's management is currently assessing the impact of adoption of these standards.

## **2.3 Group accounting - investments in subsidiaries and associates**

### **2.3.1 Subsidiaries**

Subsidiaries are all entities (including structured entities) over which the Group has control. The Group controls an entity when the Group 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. Subsidiaries are fully consolidated from the date on which control is transferred to the Group. They are deconsolidated from the date that control ceases.

The Group applies the acquisition method to account for business combinations except business combination under common control. The consideration transferred for the acquisition of a subsidiary is the fair value of the assets transferred, the liabilities incurred to the former owners of acquiree and the equity interests issued by the Group. The consideration transferred includes the fair value of any asset or liability resulting from a contingent consideration arrangement. Acquisition-related costs are expensed as incurred. Identifiable assets acquired and liabilities and contingent liabilities assumed in a business combination are measured initially at their fair values at the acquisition date. On an acquisition-by-acquisition basis, the Group recognises any non-controlling interest in the acquiree either at fair value or at the non-controlling interest's proportionate share of the acquiree's net assets.

If the business combination is achieved in stages, the acquisition date carrying value of the acquirer's previously held equity interest in the acquiree is re-measured to fair value at the acquisition date; any gains or losses arising from such re-measurement are recognised in profit or loss.

Any contingent consideration to be transferred by the Group is recognised at fair value at the acquisition date. Subsequent changes to the fair value of the contingent consideration that is deemed to be an asset or liability is recognised in profit or loss. Contingent consideration that is classified as equity is not re-measured, and its subsequent settlement is accounted for within equity.

The excess of the consideration transferred, the amount of any non-controlling interest in the acquiree and the acquisition-date fair value of any previous equity interest in the acquiree over the fair value of the identifiable net assets acquired is recorded as goodwill. If the total of consideration transferred, non-controlling interest recognise and previously held interest measured is less than the fair value of the net assets of the subsidiary acquired in the case of a bargain purchase, the difference is recognised directly in profit or loss.

Intercompany transactions, balances and unrealised gains on transactions between group companies are eliminated. Unrealised losses are also eliminated unless the transaction provides evidence of an impairment of the transferred asset. Accounting policies of subsidiaries have been changed where necessary to ensure consistency with the policies adopted by the Group.

A list of the Group's subsidiaries is shown in Note 12.2.

### 2.3.2 Transactions with non-controlling interests

The Group treats transactions with non-controlling interests as transactions with equity owners of the Group. For purchases from non-controlling interests, the difference between any consideration paid and the relevant share acquired of the carrying value of net assets of the subsidiary is recorded in equity. Gains or losses on disposals to non-controlling interests are also recorded in equity.

### 2.3.3 Disposal of subsidiaries

When the Group ceases to have control, it shall cease to consolidate its subsidiaries. Any retained interest in the entity is re-measured to its fair value, with the change in carrying amount recognised in profit or loss. The fair value is the initial carrying amount for the purposes of subsequently accounting for the retained interest as an associate, joint venture or financial asset. In addition, any amounts previously recognised in other comprehensive income in respect of that entity are accounted for as if the Group had directly disposed of the related assets or liabilities.

### 2.3.4 Business combination under common control

The Group accounts for business combination under common control by measuring acquired assets and liabilities of the acquiree in the proportion of interests under common control at the carrying values of the acquiree presented in the highest level of the consolidation prior to the business combination under common control at the acquisition date. The Group retrospectively adjusted the business combination under common control transactions as if the combination occurred from the beginning of period of which the financial statements in the previous period are comparatively presented in accordance with the guidance of business combination under common control as issued by the Federation of Accounting Professions.

Costs of business combination under common control are the aggregated amount of fair value of assets transferred, liabilities incurred, and equity instruments issued by the acquirer at the date of which the exchange in control occurs. Other costs directly attribute to business combination under common control, such as professional fees of legal advisors and other advisors, registration fees, and costs relating to preparation of information for shareholders, are capitalised as an investment in the separate financial statements while immediately recognised as expenses in the consolidated financial statements in the period of which the business combination occurs.

The difference between costs of business combination under common control and the acquirer's interests in the carrying value of the acquiree is presented as "Surplus arising from business combination under common control" in equity and is derecognised when the investment is disposed (transfer to retained earnings).



### 2.3.5 Associates

Associates are all entities over which the Group has significant influence but not control or joint control. Investments in associates are accounted for using the equity method of accounting.

A list of the Group's principal associates is shown in Note 12.3.

### 2.3.6 Joint arrangements

Investments in joint arrangements are classified as either joint operations or joint ventures depending on the contractual rights and obligations of each investor, rather than the legal structure of the joint arrangements.

#### Joint operations

A joint operation is a joint arrangement whereby the Group has rights to the assets, and obligations for the liabilities relating to the arrangement. The Group recognises its direct right to the assets, liabilities, revenues and expenses of joint operations and its share of any jointly held or incurred assets, liabilities, revenues and expenses. These have been incorporated in the financial statements under the appropriate headings.

#### Joint venture

A joint venture is a joint arrangement whereby the Group has rights to the net assets of the arrangement. In the consolidated financial statements, interests in joint ventures are accounted for using the equity method.

A list of the Group's a principal joint venture is shown in Note 12.4.

### 2.3.7 Accounting under equity method

Under the equity method, the investment is initially recognised at cost, and the carrying amount is increased or decreased to recognise the investor's share of the profit or loss of the investee after the date of acquisition. The Group's investment in associates includes goodwill identifies on acquisition.

If the ownership interest in an associates and joint ventures is reduced but significant influence is retained, only a proportionate share of the amounts previously recognised in other comprehensive income is reclassified to profit or loss where appropriate. Profit or loss from reduce of the ownership interest in an associates and joint ventures is recognise in profit or loss.

The Group's share of its associate and joint venture's post-acquisition profits or losses is recognised in the profit or loss, and its share of post-acquisition movements in other comprehensive income is recognised in other comprehensive income. The cumulative post-acquisition movements are adjusted against the carrying amount of the investment. When the Group's share of losses in associates and joint ventures equals or exceeds its interest in the associates and joint ventures, together with any long-term interests that, in substance, form part of the entity's net investment in the associates and joint ventures, the Group does not recognise further losses, unless it has incurred obligations or made payments on behalf of the associates and joint ventures.

The Group determines at each reporting date whether there is any objective evidence that the investments in the associates and joint venture are impaired. If there is the case, the Group calculates the amount of impairment as the difference between the recoverable amount of the investments and its carrying value and recognises the amount adjacent to share of profit (loss) of associates and joint ventures in profit or loss.

Unrealised gains on transactions between the Group and its associates and joint ventures are eliminated to the extent of the Group's interest in the associates and joint ventures. Unrealised losses are also eliminated unless the transaction provides evidence of an impairment of the asset transferred. Accounting policies of associates and joint ventures have been changed where necessary to ensure consistency with the policies adopted by the Group.

#### 2.3.8 Separate financial statements

In the separate financial statements, investments in subsidiaries, associates and joint ventures are accounted for at cost less impairment. Cost is adjusted to reflect changes in consideration arising from contingent consideration amendments. Cost also includes direct attributable costs of investment.

A test for impairment on investments in subsidiaries, associates and joint ventures is carried out when there is a factor indicating that investments might be impaired. If the carrying value of the investments is higher than its recoverable amount, impairment loss is charged to the profit or loss.

### 2.4 Foreign currency translation

#### 2.4.1 Functional and presentation currency

Items included in the financial statements of each of the Group's entities are measured using the currency of the primary economic environment in which the entity operates (the functional currency). The financial statements are presented in Thai Baht, which is the Company's functional and the Group's presentation currency.

#### 2.4.2 Transactions and balances

Foreign currency transactions are translated into the functional currency using the exchange rates prevailing at the dates of the transactions or valuation where items are re-measured. Foreign exchange gains and losses resulting from the settlement of such transactions and from the translation at year-end exchange rates of monetary assets and liabilities denominated in foreign currencies are recognised in the profit or loss.

When a gain or loss on a non-monetary item is recognised in other comprehensive income, any exchange component of that gain or loss is recognised in other comprehensive income. Conversely, when a gain or loss on a non-monetary item is recognised in profit and loss, any exchange component of that gain or loss is recognised in profit and loss.

#### 2.4.3 Group companies

The results and financial position of all of the Group's entities (none of which has the currency of a hyper-inflationary economy) that have a functional currency different from the presentation currency are translated into the presentation currency as follows:

- Assets and liabilities for each statement of financial position presented are translated at the closing rate at the date of that statement of financial position;
- Income and expenses for each statement of comprehensive income are translated at average exchange rates; and
- All resulting exchange differences are recognised in other comprehensive income.

Goodwill and fair value adjustments arising on the acquisition of a foreign operation are treated as assets and liabilities of the foreign operation and translated at the closing rate.

## 2.5 Cash and cash equivalents

In the statements of cash flows, cash and cash equivalents includes cash on hand, deposits held at call, short-term highly liquid investments with maturities of three months or less from acquisition date and bank overdrafts. In the statements of financial position, bank overdrafts are shown in current liabilities.

## 2.6 Trade accounts receivable

Trade accounts receivable are carried at the original invoice amount and subsequently measured at the remaining amount less any allowance for doubtful receivables based on a review of all outstanding amounts at the year end. The amount of the allowance is the difference between the carrying amount of the receivable and the amount expected to be collectible. Bad debts are written-off during the year in which they are identified and recognised in profit or loss within administrative expenses.

## 2.7 Inventories

Inventories are stated at the lower of cost and net realisable value. Cost is determined by the first-in, first-out method, except for cost of battery which is determined by weighted average method. The cost of purchase comprises both the purchase price and costs directly attributable to the acquisition of the inventory, such as import duties and transportation charges, less all attributable discounts, allowances or rebates. The cost of finished goods and work in progress comprises design costs, raw materials, direct labour, other direct costs and related production overheads based on normal operating capacity. It excludes borrowing costs. Net realisable value is the estimate of the selling price in the ordinary course of business, less applicable variable selling expenses. Allowance is made, where necessary, for obsolete, slow-moving and defective inventories.

## 2.8 Investments in debt and equity securities

Investments other than investments in subsidiaries, associates and joint ventures are initially recognised at fair value of consideration paid plus direct transaction cost.

### *Trading and available-for-sale investments*

Trading investments and available-for-sale investments are subsequently measured at fair value. The unrealised gains and losses of trading investments are recognised in profit or loss. The unrealised gains and losses of available-for-sale investments are recognised in other comprehensive income and are subsequently reclassified to profit or loss when the investment is disposed.

### *Held-to-maturity investments*

Held-to-maturity investments are carried at amortised cost using the effective interest method less impairment.

### *General investments*

General investments are carried at cost less impairment.

### *Disposal of investments*

On disposal of an investment, the difference between the net disposal proceeds and the carrying amount, including cumulative changes in fair value which is recognised in equity, is charged or credited to the profit or loss. When disposing of part of the holding of a particular investment in debt or equity securities, the carrying amount of the disposed part is determined by the weighted average carrying amount of the total holding of the investment.

## 2.9 Investment property

Property that is held for long-term rental yields or for capital appreciation or both, and that is not occupied by the companies in the Group, is classified as investment property. Investment property also includes property that is being constructed or developed for future use as investment property.

Investment property is measured initially at its cost, including directly attributable costs and borrowing costs.

Subsequent expenditure is capitalised to the asset's carrying amount only when it is probable that future economic benefits associated with the expenditure will flow to the Group and the cost of the item can be measured reliably. All other repairs and maintenance costs are expensed when incurred. When part of an investment property is replaced, the carrying amount of the replaced part is derecognised.

After initial recognition, investment property is carried at cost less any accumulated depreciation and any accumulated impairment losses.

Land is not depreciated. Depreciation on other investment properties is calculated using the straight-line method to allocate their cost to their residual values over their estimated useful lives which is 20 years.

## 2.10 Property, plant and equipment

Property, plant and equipment is initially recorded at cost. Plant and equipment are subsequently stated at historical cost less accumulated depreciation and allowance for impairment. The costs of property, plant and equipment comprise both the purchase price and any costs directly attributable to bringing the assets to location and condition necessary for them to be capable of operating in the manner intended by management. Their costs also include the initial estimate of the costs of dismantling and removing the item and restoring the site on which they are located, the obligation for which the Group incurs either when the items are acquired or as a consequence of having used the items during a particular period.

Subsequent costs are included in the asset's carrying amount or recognised as a separate asset, as appropriate, only when it is probable that future economic benefits associated with the item will flow to the Group and the cost of the item can be measured reliably. The carrying amount of the replaced part is derecognised. All other repairs and maintenance are charged to profit or loss during the financial period in which they are incurred.

Land is not depreciated. Depreciation on other assets is calculated using the straight-line method to allocate their cost to their residual values over their estimated useful lives, as follows:

	Years
Buildings and buildings improvement	5, 6, 10, 20 and 25
Machines and equipment	5 and 10
Power plant, substations, transmission system and components	10 and 25
Office equipment, furniture, computers and motor vehicles	5

The assets' residual values and useful lives are reviewed, and adjusted if appropriate, at the end of each reporting period.

The asset's carrying amount is written-down immediately to its recoverable amount if the asset's carrying amount is greater than its estimated recoverable amount.

Gains or losses on disposals are determined by comparing the proceeds with the carrying amount. The net gains or losses are recognised in profit or loss.



## 2.11 Goodwill

Goodwill represents the excess of the consideration transferred over the fair value of the Group's share of the net identifiable assets, liabilities and contingent liability of the acquired subsidiary undertaking or joint venture or associate at the date of acquisition. Goodwill on acquisitions of subsidiaries is separately reported in the consolidated statement of financial position and of joint ventures or associate is included in investments in joint ventures or an associate in the consolidated statement of financial position and impairment test included in investment in joint venture or investment in as associate.

Goodwill is tested for impairment annually and is carried at cost less accumulated impairment losses. Impairment losses on goodwill are not reversed. Gains and losses on the disposal of an entity include the carrying amount of goodwill relating to the entity sold.

Goodwill is allocated to cash generating units for the purpose of impairment testing. The allocation is made to those cash generating units or groups of cash generating units that are expected to benefit from the business combination in which the goodwill arose.

## 2.12 Intangible assets

### 2.12.1 Research and development

Research expenditure is recognised as an expense as incurred. Costs incurred on development projects (relating to the design and testing of new or improved products) are recognised as intangible assets when it is probable that the project will be a success considering its commercial and technological feasibility, and only if the cost can be measured reliably. Other development expenditure is recognised as an expense as incurred. Development costs previously recognised as an expense are not recognised as an asset in a subsequent period. Development costs that have been capitalised are amortised from the commencement of the commercial production of the product on a straight-line basis over the period of its expected benefit.

### 2.12.2 Right to use transmission line

Right to use transmission line is stated at historical cost less accumulated amortisation. Right to use transmission line cost is amortised by using straight-line method based on its estimated useful life which is 25 years.

### 2.12.3 Right to power purchase agreement

Right to power purchase agreement from acquisition of a subsidiary is amortised by using straight-line method based on its estimated useful life which is 25 years.

### 2.12.4 Computer software

Computer software development costs recognised as assets are amortised by using straight-line method over their estimated useful lives, which are 5 and 10 years.

Costs associated with maintaining computer software programmes are recognised as an expense as incurred.

### 2.12.5 Patent and brand

Separately acquired patent and brand are shown at historical cost. Patent and brand acquired from a business combination are recognised at fair value at the acquisition date. Patent and brand have a finite useful life and are carried at cost less accumulated amortisation. Amortisation is calculated using the straight-line method to allocate the cost of patent and brand over their estimated useful lives of 20 years.

## 2.13 Impairment of assets

Assets that have an indefinite useful life, for example goodwill, are not subject to amortisation and are tested annually for impairment. Assets that are subject to amortisation are reviewed for impairment whenever events or changes in circumstances indicate that the carrying amount may not be recoverable. An impairment loss is recognised for the amount by which the carrying amount of the assets exceeds its recoverable amount. The recoverable amount is the higher of an asset's fair value less costs to sell and value in use. For the purposes of assessing impairment, assets are grouped at the lowest level for which there are separately identifiable cash flows. Non-financial assets other than goodwill that suffered an impairment are reviewed for possible reversal of the impairment at each reporting date.

## 2.14 Leases

### Leases - where the Group is the lessee

Leases in which a significant portion of the risks and rewards of ownership are retained by the lessor are classified as operating leases. Payments made under operating leases (net of any incentives received from the lessor) are charged to profit or loss on a straight-line basis over the period of the lease.

Leases of assets where the lessee has substantially all the risks and rewards of ownership are classified as finance leases. Finance leases are capitalised at the inception of the lease at the lower of the fair value of the leased property and the present value of the minimum lease payments.

Each lease payment is allocated between the liability and finance charges so as to achieve a constant rate on the liabilities balance outstanding. The corresponding rental obligations, net of finance charges, are included in other long-term payables. The interest element of the finance cost is charged to profit or loss over the lease period so as to achieve a constant periodic rate of interest on the remaining balance of the liability for each period. The property, plant or equipment acquired under finance leases is depreciated over the shorter period of the useful life of the asset and the lease term.

### Leases - where the Group is the lessor

When assets are leased out under a finance lease, the present value of the lease payments is recognised as a receivable. The difference between the gross receivable and the present value of the receivable is recognised as unearned finance income. Lease income is recognised over the term of the lease using the net investment method, which reflects a constant periodic rate of return. Initial direct costs are included in initial measurement of the finance lease receivable and reduce the amount of income recognised over the lease term.

Assets leased out under operating leases are included in property, plant and equipment in the statement of financial position. They are depreciated over their expected useful lives on a basis consistent with other similar property, plant and equipment owned by the Group. Rental income (net of any incentives given to lessees) is recognised on a straight-line basis over the lease term.

## 2.15 Borrowings

Borrowings are recognised initially at the fair value, net of transaction costs incurred. Borrowings are subsequently stated at amortised cost; any difference between proceeds (net of transaction costs) and the redemption value is recognised in profit and loss over the period of the borrowings.

Fees paid on the establishment of loan facilities are recognised as transaction costs of the loan to the extent that it is probable that some or all of the facility will be drawn down. In this case, the fee is deferred until the draw-down occurs. To the extent that there is no evidence that it is probable that some or all of the facility will be drawn down, the fee is capitalised as a pre-payment for liquidity services and amortised over the period of the facility to which it relates.

Borrowings are classified as current liabilities unless the Group has an unconditional right to defer settlement of the liability for at least 12 months after the end of reporting date.

Where the Group negotiates with lenders to restructure the terms of existing long-term loans and resulting in the existing loans being modified to have substantially different terms, the modification is accounted for as an extinguishment of the original long-term loan and any costs or fees incurred are recognised as part of the gain or loss on extinguishment. If the modification is not accounted for as an extinguishment, any costs or fees incurred are adjusted to the carrying amount of the long-term loans and are amortised over the remaining term of the modified loans.

The terms are substantially different if the discounted present value of the cash flows under the new terms, including any fees paid net of any fees received and discounted using the original effective interest rate, is at least 10 percent different from the discounted present value of the remaining cash flows of the original loans.

General and specific borrowing costs directly attributable to the acquisition, construction or production of qualifying assets, which are assets that necessarily take a substantial period of time to get ready for their intended use or sale, are added to the cost of those assets, until such time as the assets are substantially ready for their intended use or sale.

Investment income earned on the temporary investment of specific borrowings pending their expenditure on qualifying assets is deducted from the borrowing costs eligible for capitalisation.

All other borrowing costs are recognised as expense in the period in which they are incurred.

## 2.16 Current and deferred income taxes

The tax expense for the period comprises current and deferred tax. Tax is recognised in profit or loss, except to the extent that it relates to items recognised in other comprehensive income or directly in equity. In this case the tax is also recognised in other comprehensive income or directly in equity, respectively.

The current income tax charge is calculated on the basis of the tax laws enacted or substantively enacted at the end of reporting period in the countries where the Company and its subsidiaries operate and generate taxable income. Management periodically evaluates positions taken in tax returns with respect to situations in which applicable tax regulation is subject to interpretation. It establishes provisions where appropriate on the basis of amounts expected to be paid to the tax authorities.

Deferred income tax is recognised, using the liability method, on temporary differences arising from differences between the tax base of assets and liabilities and their carrying amounts in the financial statements.

However, the deferred income tax is not accounted for if it arises from initial recognition of an asset or liability in a transaction other than a business combination that at the time of the transaction affects neither accounting nor taxable profit or loss. Deferred income tax is determined using tax rates (and laws) that have been enacted or substantively enacted by the end of the reporting period and are expected to apply when the related deferred income tax asset is realised, or the deferred income tax liability is settled.

Deferred income tax assets are recognised only to the extent that it is probable that future taxable profit will be available against which the temporary differences can be utilised. Deferred income tax is provided on temporary differences arising from investments in subsidiaries, associates and joint arrangements, except where the timing of the reversal of the temporary difference is controlled by the Group and it is probable that the temporary difference will not reverse in the foreseeable future.

Deferred income tax assets and liabilities are offset when there is a legally enforceable right to offset current tax assets against current tax liabilities and when the deferred income tax assets and liabilities relate to income taxes levied by the same taxation authority on either the same taxable entity or different taxable entities where there is an intention to settle the balances on a net basis.

## 2.17 Employee benefits

The Group operates various post-employment benefits schemes. The Group has both defined benefit and defined contribution plans.

### 2.17.1 Defined contribution

The Group provides provident fund, which is contributed by the employees and the Group, and managed by an external fund manager in accordance with the Provident Fund Act. B.E. 2530. The Group has no legal or constructive obligations to pay further contributions once the contributions have been paid even if the fund does not hold sufficient assets to pay all employees the benefits relating to employee service in the current and prior periods. The contributions are recognised as employee benefit expense when they are due.

### 2.17.2 Retirement benefits

The Group provides for post-employment benefits, payable to employees under the labour laws. Typically, defined benefit plans define an amount of retirement benefit that an employee will receive on retirement, usually depends on one or more factors such as age, years of service and compensation.

The liability recognised in the statement of financial position in respect of defined benefit retirement plans is the present value of the defined benefit obligation at the end of the reporting period. The defined benefit obligation is calculated by independent actuaries using the projected unit credit method. The present value of the defined benefit obligation is determined by discounting the estimated future cash outflows using yields on government bonds which have terms to maturity approximating the terms of the related liability that are denominated in the currency in which the benefits will be paid.

Remeasurement gains and losses arising from experience adjustments and changes in actuarial assumptions are charged or credited to equity in other comprehensive income in the period in which they arise.

Past-service costs are recognised immediately in profit or loss.

## 2.18 Share-based payment

The Group operates a number of equity-settled, share-based compensation plans, under which the Group receives services from employees as consideration for equity instruments (options) of the Group. The fair value of the employee services received in exchange for the grant of the options is recognised as an expense. The total amount to be expensed is determined by reference to the fair value of the options granted:

- Including any market performance conditions;
- Excluding the impact of any service and non-market performance vesting conditions (for example, profitability, sales growth targets and remaining an employee of the Group over a specified time period); and
- Including the impact of any non-vesting conditions (for example, the requirement for employees to save or holdings shares for a specific period of time).

Non-market performance and service conditions are included in assumptions about the number of options that are expected to vest. The total expense is recognised over the vesting period, which is the period over which all of the specified vesting conditions are to be satisfied. At the end of each reporting period, the entity revises its estimates of the number of options that are expected to vest based on the non-marketing vesting conditions. It recognises the impact of the revision to original estimates, if any, in profit or loss, with a corresponding adjustment to equity.

When the options are exercised, the Group issues new shares. The proceeds received net of any directly attributable transaction costs are credited to share capital (nominal value) and share premium.

## 2.19 Provisions

### 2.19.1 General provisions

Provisions are recognised when the Group has a present legal or constructive obligation as a result of past events; it is probable that an outflow of resources will be required to settle the obligation; and the amount has been reliably estimated.

### 2.19.2 Provisions for decommissioning cost

The Group recognises provision for decommissioning costs, which are provided at the onset of completion of the project, for the estimate of the eventual costs that relate to the removal of the power and water plants. The recognised provisions for decommissioning costs are based on future removal cost estimates and incorporate many assumptions such as abandonment times and future inflation rate and discounted to present value at the discount rate estimated by the management. Those costs are included as part of the related assets.

## 2.20 Government grants

Government grants from the government are recognised at their fair value where there is a reasonable assurance that the grant will be received, and the Group will comply with all attached conditions.

The Group receives government grants relating to revenue as revenue from subsidy for adders in accordance with the Power Purchase Agreement with Electricity Generating Authority of Thailand and Provincial Electricity Authority. The compensations of costs are deferred and recognised in profit or loss over the period necessary to match them with the costs they are intended to compensate and are presented as revenue from subsidy for adders.



## 2.21 Share capital

Ordinary shares and non-redeemable preference shares with discretionary dividends are classified as equity. Other shares including mandatory redeemable preference shares are classified as liabilities.

Incremental costs directly attributable to the issue of new shares or options are shown in equity as a deduction, net of tax, from the proceeds.

## 2.22 Revenue recognition

Revenues are recorded net of value added tax. They are recognised in accordance with the provision of goods or services provided that collectability of the consideration is probable.

Multiple element arrangements involving delivery or provision of multiple products or services are separated into distinct performance obligations. Total transaction price of the bundled contract is allocated to each performance obligation based on their relative standalone selling prices or estimated standalone selling prices. Each performance obligation is recognised as revenue on fulfilment of the obligation to the customer, as follows:

### *Sales of goods*

Sales are recognised at a point in time when control of the products has transferred, being when the products are delivered to the destination as agreed in the contract. The revenue is recognised based on transaction price net of output tax, rebates and discounts.

### *Interest income*

Interest income is recognised on an accrual basis unless collectability is in doubt.

### *Dividend income*

Dividend income is recognised when the right to receive payment is established.

## 2.23 Dividend distribution

Dividend distribution to the Company's shareholders is recognised as a liability in the Group's financial statements in the period in which the dividends are approved by the Company's shareholders, and interim dividend are approved by the Board of Directors.

## 2.24 Segment reporting

Operating segments are reported in a manner consistent with the internal reporting provided to the chief operating decision-maker. The chief operating decision-maker, who is responsible for allocating resources and assessing performance of the operating segments, has been identified as the Steering Committee that makes strategic decisions.

### 3 Financial risk management

#### 3.1 Financial risk

The principal financial risks faced by the Group are interest rate and foreign exchange rate risks. The Group borrows and issues debentures to finance its operations, which involve payments in fixed and floating rates of interest and purchase of fixed assets, which involved payments in foreign currency.

The objectives of using borrowings and debentures with fixed interest rates and interest rate swap contracts are to reduce uncertainty over future cash flows arising from movements in interest rates. Moreover, the Group uses foreign currency forward contracts to reduce uncertainty over future cash flows arising from movements in foreign exchange rate and to manage liquidity of cash resources.

Trading for speculative purposes is not allowed. All derivative transactions are subject to prior approval by the respective board of each company in the Group.

#### 3.2 Interest rate risk

The Group manages interest rate risk by closely monitoring the trend of interest rates in the markets. The Group allocates its debt portfolio in either short- and long-term borrowings with fixed and floating interest rates corresponding to their types of investments and uses interest rate swap contracts to manage risk of movements in interest rates. The Group mostly borrows and issues debentures with fixed interest rate to specify a certain amount of future cash outflows of the Group.

#### 3.3 Foreign exchange risk

The Group purchases machines and equipment which are denominated in foreign currency and uses foreign currency forward contracts as cash flow hedges of future cash payments, which has the economic effect of payment of foreign currency amounts at a predetermined exchange rate. The Group considers the economic effect of expected future foreign exchange rate movement and current foreign exchange rate.

Foreign currency forward contracts reduce exposure to fluctuations in exchange rates. Such contracts are made with a contract period up to one year.

#### 3.4 Credit risk

The Group has no significant concentrations of credit risk relating to its cash on hand and cash at banks. The Group places its cash on hand and cash at banks with high quality financial institutions. The Group's policy is designed to limit exposure with any one institution and to invest its excess cash in low risk investment accounts. The Group has not experienced any losses on such accounts. For trade accounts receivable, the Group has policies to ensure that sales of biodiesel products and batteries are made to customers with appropriate credit profile. For sales of electricity, Group's sales are made to state-owned enterprises under the terms and conditions of the long-term Power Purchase Agreements.

#### 3.5 Liquidity risk

Prudent liquidity risk management implies maintaining sufficient cash and marketable securities, the availability of funding through an adequate amount of committed credit facilities, and the ability to close out market positions. Due to the dynamic nature of the underlying business, the Group treasury aims at maintaining flexibility in funding by keeping committed credit lines available.

### 3.6 Accounting for derivative financial instruments and hedging activities

The Group is party to derivative financial instruments, which mainly comprise interest rate swap contracts and foreign currency forward contracts. Such instruments are not recognised in the financial statements on inception.

Interest rate swap contracts protect the Group from movements in interest rates. Any differential to be paid or received on the interest rate swap contracts is recognised as a component of finance costs as incurred. Gains and losses from early cancellation of interest rate swap contracts is recognised in profit or loss.

Foreign currency forward contracts protect the Group from movements in exchange rates. Any differential to be paid or received on the foreign currency forward contracts is recognised as a component of currency exchange gains (losses) in the profit or loss as incurred.

Disclosures about financial instruments to which the Group is a party are provided in Note 34.

## 4 Critical accounting estimates and judgements

Estimates and judgements are continually evaluated and are based on historical experience and other factors, including expectations of future events that are believed to be reasonable under the circumstances.

During the year ended 2019, the Group makes estimates and assumptions concerning the future. The result of accounting estimates will, by definition seldom equal the related actual results. The estimates and assumptions that have a significant risk of causing a material adjustment to the carrying amounts of assets and liabilities within the next financial year are as follows:

### Estimated impairment of goodwill

The Group tests impairment of goodwill annually in accordance with the accounting policy stated in Note 2.11. The recoverable amounts of cash-generating units have been determined based on value-in-use calculations. These calculations use cash flow projections based on financial budget covering useful lives of assets used in developing, manufacturing and distributing battery incorporated in the Republic of China (Taiwan) as disclosed in Note 15.

If the discount rate used in the calculation increases by 1% per annum, there is no impairment of goodwill recorded in the consolidated financial statements for the year ended 31 December 2019.

## 5 Capital risk management

The Group's objectives when managing capital are to safeguard the Group's ability to continue as a going concern in order to provide returns for shareholders and benefits for other stakeholders and to maintain an optimal capital structure to reduce the cost of capital.

In order to maintain or adjust the capital structure, the Group may adjust the amount of dividends paid to shareholders, return capital to shareholders and issue new shares.

## 6 Segment information - Consolidated financial information

The Group has four segments report which comprises of manufacturing and distributing methyl ester biodiesel products, manufacturing and distributing pure glycerine products, manufacturing and distributing electricity from solar and wind power and consulting in the project regarding alternative electric energy. The chief operating decision-maker evaluates the segment's performance by using profit before income tax which is measured in the same basic as profit before income tax in the financial statements.

[illegible]

	Manufacturing and distributing methyl ester biodiesel products Million Baht 2019	Manufacturing and distributing pure glycerine products Million Baht 2019	Manufacturing and distributing electricity from solar and wind power Million Baht 2019	Consulting in the project regarding alternative electric energy Million Baht 2019	Head office and others Million Baht 2019	Total Million Baht 2019
Timing of revenue recognition:						
At a point in time	3,448	230	10,983	-	251	14,912
Over time	-	-	-	25	17	42
Total revenue of the operating segments	3,448	230	10,983	25	268	14,954

Segment information for the year ended 31 December 2018 is prepared under TAS 18 Revenue. Therefore, the current period segment information and the comparative figure are not comparable.

The Group generates revenue from sales and services by utilising the majority of assets located in Thailand, and majority of the Group's revenue is originated in Thailand.

For the year ended 31 December 2019, Group's revenue is based on 6 main customers from manufacturing and distributing methyl ester biodiesel products, and manufacturing and distributing electricity from solar and wind power plants who have transactions with the Group at 93% of total revenue or equivalent to Baht 13,875 million (2018: 6 main customers from manufacturing and distributing methyl ester biodiesel products, and manufacturing and distributing electricity from solar power plants who have transactions with the Group at 93% of total revenue or equivalent to Baht 10,747 million).

## 7 Cash and cash equivalents

	Consolidated		Separate	
	2019 Baht	2018 Baht	2019 Baht	2018 Baht
Cash on hand	8,285,472	676,123	54,124	34,956
Cash at banks in current accounts	145,223,860	141,953,328	45,321,190	37,811,633
Cash at banks in savings accounts	9,875,442,288	5,335,940,998	5,214,905,716	506,828,721
Total Cash and cash equivalents	10,028,951,620	5,478,570,449	5,260,281,030	544,675,310

As at 31 December 2019 and 2018, cash and cash equivalents mainly comprised cash at savings accounts with the banks. The interest rates were 0.05% - 1.50% per annum (2018: 0.05% - 0.50% per annum).

## 8 Deposits at financial institutions used as collateral

As at 31 December 2019, deposits at financial institutions of the Group and the Company amounting to Baht 166.31 million and Baht 98.13 million (2018: Baht 129.70 million and Baht 100.77 million) are pledged as collateral for issuing the letters of guarantee by domestic commercial banks and deposits at financial institutions of the Group and the Company amounting to Baht 11.53 million (2018: Baht 43.99 million) are pledged as collateral for short-term loans from financial institutions. The interest rates were 0.66% - 1.07% per annum (2018: 0.10% - 0.38% per annum).



## 9 Trade accounts receivable, net

Trade accounts receivable, net as at 31 December are trade accounts receivable from third parties which can be analysed as follow:

	Consolidated		Separate	
	2019 Baht	2018 Baht	2019 Baht	2018 Baht
Not yet due	2,644,167,983	1,650,657,913	321,655,322	190,695,815
Overdue below 3 months	17,858,040	192,073	-	-
Overdue 3 - 6 months	-	1,384,415	-	-
Overdue 6 - 12 months	7,569,370	-	-	-
Overdue more than 12 months	10,308,802	5,737,603	-	-
<u>Less</u> Allowance for doubtful receivables	(14,146,180)	(7,122,018)	-	-
Total trade accounts receivable, net	2,665,758,015	1,650,849,986	321,655,322	190,695,815

## 10 Other accounts receivable

	Consolidated		Separate	
	2019 Baht	2018 Baht	2019 Baht	2018 Baht
Other accounts receivable				
- third parties	8,159,754	26,333,620	32,565	18,102,275
- related parties (Note 35.3)	-	-	209,009,715	163,865,368
Prepaid expenses	87,810,374	72,279,370	36,378,023	51,184,401
Revenue department receivables	364,908,085	472,644,976	10,000	-
Undue input tax	29,191,656	31,467,452	935,095	789,272
Deposits for goods	-	223,426	-	-
Power plant development cost	-	-	-	55,754,999
Advance payment	16,793,033	24,350,717	1,254,435	23,174,373
Other	2,647,452	16,764,461	463,011	404,129
Total other accounts receivable	509,510,354	644,064,022	248,082,844	313,274,817

## 11 Inventories, net

	Consolidated		Separate	
	2019 Baht	2018 Baht	2019 Baht	2018 Baht
Raw materials	130,045,311	75,128,957	46,729,509	44,010,628
Work in process	271,588,588	125,741,046	74,445,659	50,143,331
Finished goods	333,299,339	126,016,737	75,315,870	36,050,575
Spare parts and supplies	56,251,269	29,733,683	14,146,109	12,899,984
	791,184,507	356,620,423	210,637,147	143,104,518
<u>Less</u> Allowance for decrease in value of raw materials	(13,750,785)	(21,077,750)	(7,650,081)	(15,989,866)
Allowance for decrease in value of works in process	(4,458,914)	(1,376,850)	-	-
Allowance for decrease in value of finished goods	(12,897,047)	(4,203,783)	-	-
Allowance for decrease in value of spare parts and supplies	(2,399,851)	-	(2,399,851)	-
Inventories, net	757,677,910	329,962,040	200,587,215	127,114,652

## 12 Investments in subsidiaries, associates and a joint venture

	Consolidated		Separate	
	2019 Baht	2018 Baht	2019 Baht	2018 Baht
Investments in subsidiaries (Note 12.2)	1	1	24,072,837,448	22,538,018,916
Investment in associates (Note 12.3)	69,530,375	-	-	-
Investment in a joint venture (Note 12.4)	30,665,924	-	43,285,440	8,754,240
Total investments in subsidiaries, associates and a joint venture	100,196,300	1	24,116,122,888	22,546,773,156

**12.1 The movement of the investments in subsidiaries, associates and a joint venture can be analysed as follow:**

	<b>Consolidated</b>	
	<b>2019 Baht</b>	<b>2018 Baht</b>
<b>For the years ended 31 December</b>		
Opening net book value	1	919,861,053
Acquisition of investment in associates	70,151,055	-
Calling for additional capital contributions of a joint venture	34,531,200	-
Reclassification of investment in an associate to be a subsidiary	-	(911,134,445)
Share of loss from investments in associates and a joint venture	(14,259,073)	(6,306,673)
Change in shareholding interest in associates and a joint venture	12,439,095	-
Currency translation differences	(2,665,978)	(2,419,934)
Closing net book value	100,196,300	1
	<b>Separate</b>	
	<b>2019 Baht</b>	<b>2018 Baht</b>
<b>For the years ended 31 December</b>		
Opening net book value	22,546,773,156	17,643,750,489
Acquisition of investment in subsidiaries	738,319,152	950,475,860
Increase in share capital and called for additional paid-up share capital of subsidiaries	796,499,380	3,952,546,807
Calling for additional capital contributions of a joint venture	34,531,200	-
Closing net book value	24,116,122,888	22,546,773,156

12.1.1 The movement of the investments in subsidiaries during the year ended 31 December 2019 as follow:

*Direct subsidiaries*

Calling for additional paid-up share capital

During the year, the Board of Directors passed resolutions calling for additional paid-up share capital. The Company made payments for additional paid-up share capital as details below:

Subsidiaries	Date of subsidiaries' Board of Directors' Meeting	Number of shares (Million shares)	Paid-up share (Baht per share)	Total (Million Baht)
Wind Nayangklak Co., Ltd.	28 December 2018	183.52	0.17	31.20
	22 January 2019	183.52	0.18	33.03
Mine Mobility Research Co., Ltd.	23 January 2019	9.00	1.11	9.99
	22 May 2019	20.00	4.00	80.00
Green Technology Research Co., Ltd.	18 January 2019	7.20	1.50	10.80
	19 August 2019	7.20	4.20	30.24
EA Bio Innovation Co., Ltd.	6 February 2019	40.00	5.00	200.00
	29 August 2019	40.00	1.25	50.00
	30 September 2019	40.00	1.25	50.00
Mine Mobility Corporation Co., Ltd.	1 October 2019	39.99	5.00	199.95
	22 November 2019	39.99	2.50	99.98
EV Now Co., Ltd.	22 November 2019	0.07	7.50	0.56
Smart Waste Management Co., Ltd.	6 December 2019	0.10	7.50	0.75
				<u>796.50</u>

*Incorporation and increase in share capital of subsidiaries*

EA BVI Holding Limited

On 13 February 2019, EA BVI Holding Limited was incorporated in British Virgin Islands by the Company with the registered share capital of 20,000 shares at a par value of US Dollars 10 per share. The Company holds 100% ordinary share of such company.

At the Board of Directors' Meeting of EA BVI Holding Limited on 22 April 2019, the Directors passed a resolution increasing the authorised share capital from US Dollars 200,000 to US Dollars 500,000 by issuing new ordinary share of 30,000 shares with a par value of US Dollars 10 per share. Subsequently, on 7 May 2019, the Company made a payment to EA BVI Holding Limited for 20,000 ordinary shares and 30,000 newly-issued ordinary shares at a par value, totalling US Dollars 500,000 or equivalent to Baht 16.04 million.

Mine Mobility Research Company Limited

At the Extraordinary Shareholders' Meeting of Mine Mobility Research Co., Ltd. on 9 April 2019, the shareholders passed a resolution increasing in the authorised share capital from Baht 100 million to Baht 300 million by issuing new ordinary share of 20,000,000 shares with a par value of Baht 10 per share. The subsidiary called for paid-up share capital at Baht 2.50 per share, totalling Baht 50 million and the Company made a payment on 10 April 2019. Mine Mobility Research Co., Ltd. registered the increase in share capital with the Ministry of Commerce on 11 April 2019.

#### Amita Technologies Inc.

During the year, Amita Technologies Inc. increased its registered share capital from Taiwan Dollar 985.78 million to Taiwan Dollar 1,472.49 million by issuing new ordinary share of 48,671,906 shares with a par value of Taiwan Dollar 10 per share. The shares are issued at the premium price of Taiwan Dollar 28 per share, totalling Taiwan Dollar 1,362.81 million or equivalent to Baht 1,344.28 million. The Group acquired 33,894,000 newly-issued ordinary shares of Amita Technologies Inc. at par value plus premium of Taiwan Dollar 28 per share, totalling Taiwan Dollar 949.03 million or equivalent to Baht 967.51 million (Company's portion of Baht 588.35 million and subsidiaries' portion of Baht 379.16 million). As a result, the Group's shareholding interest decreased from 77.21% to 74.71% of registered and paid-up share capital. Therefore, the Group recognised the increase in non-controlling interests amounting to Taiwan Dollar 367.58 million and the surplus from changes in shareholding interest in subsidiaries amounting to Taiwan Dollar 8.32 million in the consolidated statement of changes in shareholders' equity. Amita Technologies Inc. registered the increase in share capital on 16 September 2019.

#### E Smart Transport Co., Ltd.

On 7 August 2019, E Smart Transport Co., Ltd. was incorporated in Thailand by the Company with the registered share capital of 100,000 shares at par value of Baht 10. The Company holds 99.99% ordinary share of the said company. The Company made a payment for 99,997 shares at Baht 2.50 per share, totalling Baht 0.25 million.

#### Smart Waste Management Co., Ltd.

On 9 September 2019, Smart Waste Management Co., Ltd. was incorporated in Thailand by the Company with the registered share capital of 100,000 shares at par value of Baht 10. The Company holds 99.99% ordinary share of the said company. The Company made a payment for 99,997 shares at Baht 2.50 per share, totalling Baht 0.25 million.

At the Extraordinary Shareholders' Meeting of Smart Waste Management Co., Ltd. on 24 December 2019, the shareholders passed a resolution increasing in the authorised share capital from Baht 1 million to Baht 10 million by issuing new ordinary share of 900,000 shares with a par value of Baht 10 per share. The subsidiary called for paid-up share capital at Baht 10 per share, totalling Baht 9 million and the Company made a payment on 25 December 2019. Smart Waste Management Co., Ltd. registered the increase in share capital with the Ministry of Commerce on 25 December 2019.

#### EV Now Co., Ltd.

On 9 September 2019, EV Now Co., Ltd. was incorporated in Thailand by the Company with the registered share capital of 100,000 shares at par value of Baht 10. The Company holds 74.99% ordinary share of the said company. The Company made a payment for 74,987 shares at Baht 2.50 per share, totalling Baht 0.19 million.

At the Extraordinary Shareholders' Meeting of EV Now Co., Ltd. on 11 December 2019, the shareholders passed a resolution increasing in the authorised share capital from Baht 1 million to Baht 50 million by issuing new ordinary share of 4,900,000 shares with a par value of Baht 10 per share. The subsidiary called for paid-up share capital at Baht 10 per share, Company's portion of Baht 36.74 million and the Company made a payment on 12 December 2019. EV Now Co., Ltd. registered the increase in share capital with the Ministry of Commerce on 25 December 2019.

#### Mine Mobility Corporation Company Limited

At the Extraordinary Shareholders' Meeting of Mine Mobility Corporation Co., Ltd. on 11 December 2019, the shareholders passed a resolution increasing in the authorised share capital from Baht 400 million to Baht 550 million by issuing new ordinary share of 15,000,000 shares with a par value of Baht 10 per share. The subsidiary called for paid-up share capital at Baht 2.50 per share, totalling Baht 37.50 million and the Company made a payment on 12 December 2019. Mine Mobility Corporation Co., Ltd. registered the increase in share capital with the Ministry of Commerce on 16 December 2019.



### 12.1.2 The movement of the investments in associates during the year ended 31 December 2019 as follow:

#### **Associate held by the Group**

##### Zept Inc.

On 24 May 2019, the Group acquired an investment in Zept Inc. by acquiring 10,000,000 newly-issued ordinary shares, equivalent to 48.19% of the total issued and paid-up share capital, at a par value of Taiwan Dollar 1 per share, totalling Taiwan Dollars 10 million or equivalent to Baht 10.16 million.

On 6 September 2019, Zept Inc. issued 1,333,333 new ordinary shares to another investor at the premium price of Taiwan Dollar 15, totalling Taiwan Dollars 19.99 million or equivalent to Baht 19.60 million. As a result, the shareholding interest of the Group in Zept Inc. decreased from 48.19% to 45.28% of registered and paid-up share capital. The Group recognised a dilution gain amounting to Baht 8.57 million which was included in other income in the consolidated statements of comprehensive income for the year ended 31 December 2019.

##### Wan Meng Automatic Precision Co., Ltd.

On 27 May 2019, the Group acquired an investment in Wan Meng Automatic Precision Co., Ltd. by acquiring 1,296,000 newly-issued ordinary shares, equivalent to 36.04% of the total issued and paid-up share capital, at a premium of Taiwan Dollars 30 per share, totalling Taiwan Dollars 38.88 million or equivalent to Baht 39.99 million.

##### TF Tech Co., Ltd.

On 4 December 2019, the Group acquired an investment in TF Tech Co., Ltd. by acquiring 2,000,000 newly-issued ordinary shares, equivalent to 40% of the total issued and paid-up share capital, at par value of Baht 100 per share. The associate called for paid-up share capital at Baht 25 per share, totalling Baht 20 million.

### 12.1.3 The movement of the investments in a joint venture during the year ended 31 December 2019 as follow:

##### Shenzhen Ateess Power Technology Co., Ltd. (former Shenzhen Growatt Power Technology Co., Ltd.)

On 26 December 2018, the Company paid Shenzhen Growatt Power Technology Co., Ltd. in advance for US Dollar 1.06 million or equivalent to Baht 34.53 million. As a result, the Company's joint interest was 44.00%.

On 27 May 2019, Shenzhen Growatt Power Technology Co., Ltd. received contribution from another joint venture party at the amount of US Dollar 600,000 or equivalent to Baht 19.55 million. As a result, the interest of the Company in Shenzhen Growatt Power Technology Co., Ltd. decreased from 44.00% to 36.67% of total registered capital. The Company recognised dilution gain amounting to Baht 3.87 million which was included in other income in the consolidated statements of comprehensive income for the year ended 31 December 2019.

At the Board of Directors' Meeting of Shenzhen Ateess Power Technology Co., Ltd. on 8 August 2019, the Directors passed a resolution to change the company name from Shenzhen Growatt Power Technology Co., Ltd. to Shenzhen Ateess Power Technology Co., Ltd. (Ateess). The articles of association of the joint venture was modified on the same date.

## 12.2 Investments in subsidiaries

	Business	Portion of ordinary shares held by the Company				Portion of ordinary shares held by the Group				Cost Method		Dividend for the year		Separate	
		2019		2018		2019		2018		2019		2018			
		%	%	%	%	%	%	Baht'000	Baht'000	Baht'000	Baht'000	Baht'000	Baht'000		
The details of direct subsidiaries incorporated in Thailand															
Surachai (1997) Co., Ltd.	Investing in manufacturing and distributing electricity from solar energy	99.90	99.90	-	-	-	-	231,550	231,550	-	-	-	-	-	
EA Solar Co., Ltd.	Manufacturing and distributing electricity from solar energy	49.00	49.00	51.00	51.00	-	-	313,030	313,030	69,450	69,450	51,474	51,474	-	
EA Solar Nakhonsawan Co., Ltd.	Manufacturing and distributing electricity from solar energy	99.99	99.99	-	-	-	-	5,590,000	5,590,000	1,302,470	1,302,470	1,196,260	1,196,260	-	
Energy Solution Management Co., Ltd.	Consulting in the project regarding electric energy from solar and wind power	99.99	99.99	-	-	-	-	109,999	109,999	-	-	-	-	-	
EA Renewable Holding Co., Ltd.	Investing in manufacturing group of electricity energy	99.99	99.99	-	-	-	-	7,383,700	7,383,700	3,373,445	3,373,445	2,686,729	2,686,729	-	
Wind Nayaengklaok Co., Ltd.	Investing in manufacturing group of electricity energy	99.99	99.99	-	-	-	-	1,879,500	1,815,268	-	-	-	-	-	
Wind Progressive Co., Ltd.	Investing in manufacturing group of electricity energy	99.99	99.99	-	-	-	-	1,879,500	1,879,500	-	-	-	-	-	
Wind Tossaphum Co., Ltd.	Investing in manufacturing group of electricity energy	99.99	99.99	-	-	-	-	1,670,000	1,670,000	-	-	-	-	-	
Emma Corporation Co., Ltd.	Research and development of electricity equipment (not commercial operations yet)	50.00	50.00	-	-	-	-	50	50	-	-	-	-	-	
Thepsathit Wind Farm Co., Ltd.	Manufacturing and distributing electricity from wind power (not commercial operations yet)	99.99	99.99	-	-	-	-	1	1	-	-	-	-	-	
Energy Mahanakhon Co., Ltd.	Charging station	50.00	50.00	2.11	2.11	-	-	100,000	100,000	-	-	-	-	-	
Green Technology Research Co., Ltd.	Research and Development of biodiesel	99.99	99.99	-	-	-	-	99,040	58,000	-	-	-	-	-	
Mine Mobility Research Co., Ltd.	Research and Development of electricity vehicle	99.99	99.99	-	-	-	-	230,000	90,010	-	-	-	-	-	
Energy Beyond Research Co., Ltd.	Research and Development of battery	99.99	99.99	-	-	-	-	5,075	5,075	-	-	-	-	-	
EA Bio Innovation Co., Ltd.	Manufacturing and distributing biodiesel	99.99	99.99	-	-	-	-	400,100	100,100	-	-	-	-	-	
Mine Mobility Corporation Co., Ltd.	Manufacturing and distributing electricity vehicle (not commercial operations yet)	99.99	99.99	-	-	-	-	437,500	100,074	-	-	-	-	-	
E Smart Transport Co., Ltd.	Service of ferry transportation and tourism (not commercial operations yet)	99.99	-	-	-	-	-	250	-	-	-	-	-	-	
Smart Waste Management Co., Ltd.	Service of waste management (not commercial operations yet)	99.99	-	-	-	-	-	10,000	-	-	-	-	-	-	
EV Now Co., Ltd.	Manufacturing and distributing electricity vehicle and public transportation (not commercial operations yet)	74.99	-	-	-	-	-	37,495	-	-	-	-	-	-	
Total								20,376,790	19,446,357	4,745,365	4,745,365	3,934,463	3,934,463		

Business	Portion of ordinary shares held by the Company				Portion of ordinary shares held by the Group				Cost Method		Dividend for the year		Separate
	2019		2018		2019		2018		2019		2018		Baht'000
	%	%	%	%	%	%	%	%	Baht'000	Baht'000	Baht'000	Baht'000	
The details of direct subsidiaries incorporated in other countries													
Amita Technologies Inc. (Incorporated in the Republic of China (Taiwan))	65.61	77.21	9.10	-	-	-	-	-	3,680,012	3,091,662	-	-	-
EA Con Dao (SG) Pte. Ltd. (Incorporated in Singapore)	95.00	95.00	-	-	-	-	-	-	-	-	-	-	-
EA BVI Holding Limited (Incorporated in British Virgin Islands)	100.00	-	-	-	-	-	-	-	16,035	-	-	-	-
Total									3,696,047	3,091,662	-	-	-
Total investments and dividend form subsidiaries									24,072,837	22,538,019	4,745,365	3,934,463	

Investment in Thepsathit Wind Farm Co., Ltd., a subsidiary of the Company, amounting to Baht 1 is recorded by using cost method and is not consolidated to the consolidated financial statements as at 31 December 2019 and 2018 since such company's financial statements are not material to the Group.

#### Investment in Thepsathit Wind Farm Co., Ltd.

On 11 September 2012, the Company paid for the purchase of 19,998 ordinary shares of Thepsathit Wind Farm Co., Ltd at Baht 0.00005 per share, totalling Baht 1 (Purchase Price) from former shareholders who held ordinary shares comprising 99.99% of the authorised share capital. The said company engages in the business of manufacturing and distributing electricity generated from wind power. The share purchase agreement between the Company and the former shareholders dated 31 August 2012 specifies an additional share payment at the revised purchase price if Thepsathit Wind Farm Co., Ltd. satisfies the following conditions:

- 1) Thepsathit Wind Farm Co., Ltd. must be able to use land leased from the Agricultural Land Reform Office of Chaiphum Province for a wind farm power plant project.
- 2) Thepsathit Wind Farm Co., Ltd. must successfully source funds for the wind farm power plant construction project. Under the revised purchase price, compensation of Baht 90 million less the liabilities of Thepsathit Wind Farm Co., Ltd. will be paid to the former shareholders, Pro Ventum International GmbH (PVI) and Pro Ventum International (Thailand) Co., Ltd. on the share purchase date.

If Thepsathit Wind Farm Co., Ltd. cannot satisfy the share purchase agreement conditions, the Company has no contractual commitment to pay any additional share payment or liabilities due to PVI and Pro Ventum International (Thailand) Co., Ltd.

On 26 January 2017, the Supreme Court read the court judgement dated 26 August 2016 to withdraw the resolution of the Agricultural Land Reform Office of Chaiphum Province, which approved the identification of area at Baanrai Sub-District, Thepsathit District, Chaiphum Province, which is land reform and river basin area 1B in accordance with the resolution of the cabinet, as area that can be used for the business of manufacturing and distributing electricity generated from wind power and approved the use of this area by Thepsathit Wind Farm Co., Ltd. under a land lease to install wind turbines for electricity generation. Consequently, Thepsathit Wind Farm Co., Ltd. cannot use the land leased from the Agricultural Land Reform Office of Chaiphum for a wind farm power plant project. Based on the court judgement, the Company has no additional significant commitments.

	Portion of ordinary shares held by the Company				Portion of ordinary shares held by the Group		Cost Method		Dividend for the year		Separate
	2019		2018		2019		2018		2019		
	%	%	%	%	Baht'000	Baht'000	Baht'000	Baht'000	Baht'000	Baht'000	
Business											
The details of indirect subsidiaries incorporated in Thailand											
Surachai (1997) Solar Co., Ltd.	-	-	99.99	99.99	-	-	-	-	-	-	-
EA Solar Phitsanulok Co., Ltd.	-	-	99.99	99.99	-	-	-	-	-	-	-
EA Wind Hadkanghan 1 Co., Ltd.	-	-	99.99	99.99	-	-	-	-	-	-	-
EA Wind Hadkanghan 2 Co., Ltd.	-	-	99.99	99.99	-	-	-	-	-	-	-
EA Wind Hadkanghan 3 Co., Ltd.	-	-	99.99	99.99	-	-	-	-	-	-	-
EA Solar Lampang Co., Ltd.	-	-	99.99	99.99	-	-	-	-	-	-	-
Nayangklak Development Co., Ltd.	-	-	99.99	99.99	-	-	-	-	-	-	-
Nayangklak Wind Power Co., Ltd.	-	-	99.99	99.99	-	-	-	-	-	-	-
Benjarat Development Co., Ltd.	-	-	99.99	99.99	-	-	-	-	-	-	-
Pongnok Development Co., Ltd.	-	-	99.99	99.99	-	-	-	-	-	-	-
Banchuan Development Co., Ltd.	-	-	99.99	99.99	-	-	-	-	-	-	-
Paypop Co., Ltd.	-	-	99.97	99.97	-	-	-	-	-	-	-
Amita Technology (Thailand) Co., Ltd	-	-	99.99	99.99	-	-	-	-	-	-	-
EA Station Co., Ltd.	-	-	99.94	99.94	-	-	-	-	-	-	-



	Separate									
	Portion of ordinary shares held by the Company					Portion of ordinary shares held by the Group				
	2019	2018	2019	2018	2018	2019	2018	2019	2018	2018
Business	%	%	%	%	%	%	%	Baht'000	Baht'000	Baht'000
The details of indirect subsidiaries incorporated in other countries										
Amita New Technologies Pte. Ltd. (Incorporated in Singapore)	-	-	100	100	100	-	-	-	-	-
Sun Field Investments Co., Ltd. (Incorporated in Samoa)	-	-	100	100	100	-	-	-	-	-
EA (BVI) 1 Limited (Incorporated in British Virgin Islands)	-	-	100	100	-	-	-	-	-	-
EA (BVI) 2 Limited (Incorporated in British Virgin Islands)	-	-	100	100	-	-	-	-	-	-

## Summarised financial information on subsidiaries with material non-controlling interests

Set out below are the summarised financial information for each subsidiary that has non-controlling interests that are material to the Group. The amounts disclosed for each subsidiary are before inter-company eliminations.

### Summarised statement of financial position

	Amita Technologies Inc.		Energy Mahanakorn Co., Ltd.		Total	
	2019	2018	2019	2018	2019	2018
	Baht	Baht	Baht	Baht	Baht	Baht
<b>As at 31 December</b>						
Current assets	2,286,173,860	1,875,678,658	235,052,200	404,004,853	2,521,226,060	2,279,683,511
Current liabilities	123,239,502	101,305,842	2,602,791	4,667,493	125,842,293	105,973,335
Total current net assets	2,162,934,358	1,774,372,816	232,449,409	399,337,360	2,395,383,767	2,173,710,176
Non-current assets	1,083,158,562	302,535,162	319,742,985	177,748,169	1,402,901,547	480,283,331
Non-current liabilities	18,973,862	6,685,527	2,410,846	1,244,889	21,384,708	7,930,416
Total non-current net assets	1,064,184,700	295,849,635	317,332,139	176,503,280	1,381,516,839	472,352,915
Net assets	3,227,119,058	2,070,222,451	549,781,548	575,840,640	3,776,900,606	2,646,063,091
Non-controlling interests	1,237,244,596	961,437,494	244,046,878	256,577,927	1,481,291,474	1,218,015,421

### Summarised statement of comprehensive income

	Amita Technologies Inc.		Energy Mahanakorn Co., Ltd.		Total	
	2019	2018	2019	2018	2019	2018
	Baht	Baht	Baht	Baht	Baht	Baht
<b>For the years ended 31 December</b>						
Revenue	210,296,485	270,655,277	4,179,608	3,679,281	214,676,093	274,334,558
Loss	(146,657,544)	(168,399,941)	(26,149,589)	(19,782,462)	(172,807,133)	(188,182,403)
Other comprehensive income (expense)	(42,992,219)	(38,666,599)	90,497	(294,294)	(42,901,722)	(38,960,893)
Total comprehensive expense	(189,649,763)	(207,066,540)	(26,059,092)	(20,076,756)	(215,708,855)	(227,143,296)
Loss allocated to non-controlling interests	(101,397,979)	(109,425,163)	(12,531,050)	(9,624,962)	(113,929,029)	(119,050,125)
Dividends paid to non-controlling interests	-	-	-	-	-	-

## Summarised statement of cash flows

	Amita Technologies Inc.		Energy Mahanakorn Co., Ltd.		Total	
	2019 Baht	2018 Baht	2019 Baht	2018 Baht	2019 Baht	2018 Baht
<b>For the years ended 31 December</b>						
Net cash payment in from operating activities	(251,085,089)	(44,688,582)	(41,280,889)	(44,456,154)	(292,365,978)	(89,144,736)
Net cash payment in investing activities	(811,423,145)	(83,776,691)	(139,377,710)	(149,885,866)	(950,800,855)	(233,662,557)
Net cash receipts from financing activities	1,390,592,171	1,399,752,037	-	390,000,000	1,390,592,171	1,789,752,037
Net increase (decrease) in cash and cash equivalents	328,083,937	1,271,286,764	(180,658,599)	195,657,980	147,425,338	1,466,944,744
Cash and cash equivalents at beginning of year	1,547,306,702	305,619,217	387,728,014	192,070,034	1,935,034,716	497,689,251
Exchange losses on cash and cash equivalents	(43,714,324)	(29,599,279)	-	-	(43,714,324)	(29,599,279)
Cash and cash equivalents at end of year	1,831,676,315	1,547,306,702	207,069,415	387,728,014	2,038,745,730	1,935,034,716

### 12.3 Investments in associates

	Business	Portion of ordinary shares held by the Group						Consolidated			
		2019		2018		Cost method		Equity method		Dividend for the period	
		%		%		2019	2018	2019	2018	2019	2018
						Baht'000	Baht'000	Baht'000	Baht'000	Baht'000	Baht'000
The details of the investments in associates											
Indirect associates incorporated in Thailand											
TF Tech Co., Ltd.	Manufacturing electricity generated from floating and rooftop solar power (not commercial operations yet)	40.00		-		20,000	-	20,000	-	-	-
Indirect associates incorporated in the Republic of China (Taiwan)											
Zept Inc.	Developing, designing and manufacturing electric vehicle	45.28		-		10,163	-	13,540	-	-	-
Wan Meng Automatic Precision Co., Ltd.	Distributing electric equipment and machinery	36.04		-		39,988	-	35,990	-	-	-
Total						70,151	-	69,530	-	-	-

The associates are private companies and there are no quoted market prices available for their shares.

There are no contingent liabilities relating to the Group's interest in the associates.

### 12.4 Investments in a joint venture

	Business	Portion of contribution by the Group						Consolidated			
		2019		2018		Cost method		Equity method		Dividend for the year	
		%		%		2019	2018	2019	2018	2019	2018
						Baht'000	Baht'000	Baht'000	Baht'000	Baht'000	Baht'000
The details of the investment in a joint venture											
A joint venture incorporated in the People's Republic of China											
Shenzhen Atess Power Technology Co., Ltd. (Former: Shenzhen Growatt Power Technology Co., Ltd)	Distributing electric equipment and machines	36.67	44.00			43,285	8,754	30,666	-	-	-
Total						43,285	8,754	30,666	-	-	-

Shenzhen Atess Power Technology Co., Ltd. is a private company and there is no quoted market price available for its shares.

There are no contingent liabilities relating to the Group's interest in the joint venture.

### 13 Investment property, net

	Consolidated		
	Land Baht	Buildings and building improvements Baht	Total Baht
<b>As at 1 January 2018</b>			
Cost	-	42,047,226	42,047,226
<u>Less</u> Accumulated depreciation	-	(7,341,709)	(7,341,709)
Net book value	-	34,705,517	34,705,517
Fair value	-	38,990,000	38,990,000
<b>For the year ended 31 December 2018</b>			
Opening net book value	-	34,705,517	34,705,517
Depreciation charge	-	(2,100,550)	(2,100,550)
Closing net book value	-	32,604,967	32,604,967
<b>As at 31 December 2018</b>			
Cost	-	42,047,226	42,047,226
<u>Less</u> Accumulated depreciation	-	(9,442,259)	(9,442,259)
Net book value	-	32,604,967	32,604,967
Fair value	-	38,990,000	38,990,000
<b>For the year ended 31 December 2019</b>			
Opening net book value	-	32,604,967	32,604,967
Addition	38,790,830	-	38,790,830
Depreciation charge	-	(2,100,553)	(2,100,553)
Closing net book value	38,790,830	30,504,414	69,295,244
<b>As at 31 December 2019</b>			
Cost	38,790,830	42,047,226	80,838,056
<u>Less</u> Accumulated depreciation	-	(11,542,812)	(11,542,812)
Net book value	38,790,830	30,504,414	69,295,244
Fair value	52,265,790	38,990,000	91,255,790



	<b>Buildings and building improvements</b>		<b>Separate</b>
	<b>Land Baht</b>	<b>Baht</b>	<b>Total Baht</b>
<b>As at 1 January 2018</b>			
Cost	999,820,278	42,047,226	1,041,867,504
<u>Less</u> Accumulated depreciation	-	(7,341,709)	(7,341,709)
Net book value	999,820,278	34,705,517	1,034,525,795
Fair value	1,018,143,881	38,990,000	1,057,133,881
<b>For the year ended 31 December 2018</b>			
Opening net book value	999,820,278	34,705,517	1,034,525,795
Additions	5,519,987	-	5,519,987
Disposals, net	(3,050,000)	-	(3,050,000)
Depreciation charge	-	(2,100,550)	(2,100,550)
Closing net book value	1,002,290,265	32,604,967	1,034,895,232
<b>As at 31 December 2018</b>			
Cost	1,002,290,265	42,047,226	1,044,337,491
<u>Less</u> Accumulated depreciation	-	(9,442,259)	(9,442,259)
Net book value	1,002,290,265	32,604,967	1,034,895,232
Fair value	1,122,171,831	38,990,000	1,161,161,831
<b>For the year ended 31 December 2019</b>			
Opening net book value	1,002,290,265	32,604,967	1,034,895,232
Additions	8,472,839	-	8,472,839
Disposals, net	(322,438)	-	(322,438)
Depreciation charge	-	(2,100,553)	(2,100,553)
Closing net book value	1,010,440,666	30,504,414	1,040,945,080
<b>As at 31 December 2019</b>			
Cost	1,010,440,666	42,047,226	1,052,487,892
<u>Less</u> Accumulated depreciation	-	(11,542,812)	(11,542,812)
Net book value	1,010,440,666	30,504,414	1,040,945,080
Fair value	1,130,644,670	38,990,000	1,169,634,670

As at 31 December 2019 and 2018, investment property of the Company represented land leased to its subsidiaries for the operations of solar power plant and wind farm and the commercial buildings leased to its subsidiaries and external parties for purpose of office building.

As at 31 December 2019, investment property of the Group represented land held for undetermined future use and the commercial buildings leased to external parties for purpose of office building.

As at 31 December 2019 and 2018, the Company had no investment property mortgaged as collateral for credit facilities with financial institutions.

Amount recognised in profit and loss that are related to investment property are as follows:

	<b>Consolidated</b>		<b>Separate</b>
	<b>2019 Baht</b>	<b>2018 Baht</b>	<b>2019 Baht</b>
Rental income	720,000	924,020	58,336,279
			58,462,517

## 14 Property, plant and equipment, net

	Consolidated					
	Land Baht	Buildings and buildings improvement Baht	Machines and equipment Baht	Power plants, substation, transmission system and components Baht	Office equipment, furniture, computers and motor vehicles Baht	Construction in progress Baht
<b>As at 1 January 2018</b>						
Cost	1,077,917,100	740,096,162	1,829,431,792	33,477,512,619	143,624,147	1,981,809,837
Less Accumulated depreciation	-	(137,879,459)	(855,766,876)	(2,973,400,544)	(63,782,168)	-
Net book value	1,077,917,100	602,216,703	973,664,916	30,504,112,075	79,841,979	1,981,809,837
<b>For the year ended 31 December 2018</b>						
Opening net book value	1,077,917,100	602,216,703	973,664,916	30,504,112,075	79,841,979	1,981,809,837
Additions	5,519,989	2,063,618	101,329,917	6,307,558	7,294,077	13,940,230,528
Increase from reclassification of investment in an associate to be a subsidiary	-	13,549,158	82,094,478	-	5,191,996	80,762,802
Revise provision for decommissioning costs	-	-	507,298	(27,625,712)	-	-
Disposals, net	-	-	-	-	(2,582,781)	-
Write off, net	-	(2)	(70,532,646)	(34,565,537)	(6,919)	(4,780,000)
Transfer	-	913,750	397,588,474	27,086,107	251,084	(425,839,415)
Depreciation charge	-	(33,019,228)	(297,796,916)	(1,375,081,664)	(26,190,368)	-
Currency translation differences	-	(327,231)	(2,087,220)	-	(146,047)	(2,459,826)
Closing net book value	1,083,437,089	585,396,768	1,184,768,301	29,100,232,827	63,653,021	15,569,723,926
<b>As at 31 December 2018</b>						
Cost	1,083,437,089	789,789,891	2,592,001,962	33,437,407,728	173,959,074	15,569,723,926
Less Accumulated depreciation	-	(204,393,123)	(1,407,233,661)	(4,337,174,901)	(110,306,053)	-
Net book value	1,083,437,089	585,396,768	1,184,768,301	29,100,232,827	63,653,021	15,569,723,926
						47,587,211,932

**As at 1 January 2019**

Cost	1,083,437,089	789,789,891	2,592,001,962	33,437,407,728	173,959,074	15,569,723,926	53,646,319,670
Less Accumulated depreciation	-	(204,393,123)	(1,407,233,661)	(4,337,174,901)	(110,306,053)	-	(6,059,107,738)
Net book value	1,083,437,089	585,396,768	1,184,768,301	29,100,232,827	63,653,021	15,569,723,926	47,587,211,932

**For the year ended 31 December 2019**

Opening net book value	1,083,437,089	585,396,768	1,184,768,301	29,100,232,827	63,653,021	15,569,723,926	47,587,211,932
Additions	150,702,953	9,265,145	129,109,963	86,665,851	30,969,464	5,458,697,174	5,865,410,550
Transfer the construction cost of high voltage power station to right to use transmission line, net (Note 16)	-	-	-	-	-	(893,021,349)	(893,021,349)
Revised provision for decommissioning costs	-	-	698,688	1,214,111,593	-	-	1,214,810,281
Disposals, net	-	-	(13,943)	-	-	-	(13,943)
Write off, net	(322,438)	(505,923)	(373,093)	(2,637,237)	(98,662)	-	(3,937,353)
Transfer	236,087	102,978,840	255,334,111	18,549,498,578	11,184,300	(18,919,231,916)	-
Depreciation charge	-	(40,559,961)	(323,130,233)	(1,997,223,217)	(27,706,001)	-	(2,388,619,412)
Currency translation differences	-	(545,090)	(3,528,271)	-	(330,376)	(6,342,082)	(10,745,819)
Closing net book value	1,234,053,691	656,029,779	1,242,865,523	46,950,648,395	77,671,746	1,209,825,753	51,371,094,887

**As at 31 December 2019**

Cost	1,234,053,691	892,965,228	2,985,427,782	53,284,452,401	212,488,541	1,209,825,753	59,819,213,396
Less Accumulated depreciation	-	(236,935,449)	(1,742,562,259)	(6,333,804,006)	(134,816,795)	-	(8,448,118,509)
Net book value	1,234,053,691	656,029,779	1,242,865,523	46,950,648,395	77,671,746	1,209,825,753	51,371,094,887

	Office					Separate
	Land Baht	Buildings and improvement Baht	Machines and equipment Baht	computers and motor vehicles Baht	Construction in progress Baht	Total Baht
<b>As at 1 January 2018</b>						
Cost	55,788,998	158,405,480	908,002,536	44,018,436	8,633,935	1,174,849,385
Less Accumulated depreciation	-	(78,403,500)	(573,634,897)	(18,473,361)	-	(670,511,758)
Net book value	55,788,998	80,001,980	334,367,639	25,545,075	8,633,935	504,337,627
<b>For the year ended 31 December 2018</b>						
Opening net book value	55,788,998	80,001,980	334,367,639	25,545,075	8,633,935	504,337,627
Additions	-	-	514,047	2,331,474	11,155,403	14,000,924
Transfer	-	192,662	-	-	(192,662)	-
Depreciation charge	-	(7,965,731)	(81,219,820)	(6,165,409)	-	(95,350,960)
Closing net book value	55,788,998	72,228,911	253,661,866	21,711,140	19,596,676	422,987,591
<b>As at 31 December 2018</b>						
Cost	55,788,998	158,598,142	908,516,583	46,349,910	19,596,676	1,188,850,309
Less Accumulated depreciation	-	(86,369,231)	(654,854,717)	(24,638,770)	-	(765,862,718)
Net book value	55,788,998	72,228,911	253,661,866	21,711,140	19,596,676	422,987,591

#### As at 1 January 2018

Cost  
Less Accumulated depreciation  
Net book value

#### For the year ended 31 December 2018

Opening net book value  
Additions  
Transfer  
Depreciation charge  
Closing net book value

#### As at 31 December 2018

Cost  
Less Accumulated depreciation  
Net book value

Separate						
	Office					
	Buildings and improvement	Machines and equipment	computers and motor vehicles	Construction in progress	Total	
Land Baht	Baht	Baht	Baht	Baht	Baht	
55,788,998	158,598,142 (86,369,232)	908,516,583 (654,854,717)	46,349,910 (24,638,770)	19,596,676	1,188,850,309 (765,862,718)	
55,788,998	72,228,911	253,661,866	21,711,140	19,596,676	422,987,591	
55,788,998	72,228,911	253,661,866	21,711,140	19,596,676	422,987,591	
-	2,847,271	2,154,921 (8,046)	23,232,838	15,552,899	43,787,929 (8,046)	
-	-	70,785	-	-	-	
-	9,860,296 (8,423,124)	(70,445,128)	1,910,510 (8,647,583)	(11,841,591)	- (87,515,835)	
-	-	-	-	-	-	
55,788,998	76,513,354	185,434,398	38,206,905	23,307,984	379,251,639	
55,788,998	171,305,709 (94,792,355)	910,712,989 (725,278,591)	71,493,258 (33,286,353)	23,307,984	1,232,608,938 (853,357,299)	
-	-	-	-	-	-	
55,788,998	76,513,354	185,434,398	38,206,905	23,307,984	379,251,639	

**As at 1 January 2019**  
Cost  
Less Accumulated depreciation  
Net book value

**For the year ended 31 December 2019**  
Opening net book value  
Additions  
Disposals, net  
Transfer  
Depreciation charge  
Closing net book value

**As at 31 December 2019**  
Cost  
Less Accumulated depreciation  
Net book value



For the year ended 31 December 2019, borrowing costs of the Group amounting to Baht 26.17 million (2018: borrowing costs of the Group amounting to Baht 75.66 million) arising from general financing were capitalised and included in additions of property, plants and equipment during the period in the consolidated financial statement. The Group used capitalised rate at 0.66% (2018: 3.28%) in the calculation of which the rate referred from borrowing cost for the construction project.

As at 31 December 2019, property, plant and equipment with net book value amounting to Baht 762.69 million were mortgaged and pledged as collateral for credit facilities with a financial institution (2018: Baht 814.85 million) (Note 21.1).

As at 31 December, leased assets included above where the Group is a lessee comprise vehicles leased from third parties under finance leases are as follow:

	Consolidated		Separate	
	2019 Baht	2018 Baht	2019 Baht	2018 Baht
Cost - leased assets	4,685,530	125,841,905	-	-
<u>Less</u> Accumulated depreciation	(2,108,783)	(107,276,879)	-	-
Currency translation differences	-	(1,475,946)	-	-
Net book value	2,576,747	17,089,080	-	-

## 15 Goodwill

	Consolidated		Separate	
	2019 Baht	2018 Baht	2019 Baht	2018 Baht
<b>As at 1 January</b>				
Cost	936,523,595	-	-	-
<u>Less</u> Provision for impairment	-	-	-	-
Net book value	936,523,595	-	-	-
<b>For the year ended 31 December</b>				
Opening net book value	936,523,595	-	-	-
Acquisition of subsidiary	-	962,545,540	-	-
Currency translation differences	(46,715,165)	(26,021,945)	-	-
Closing net book value	889,808,430	936,523,595	-	-
<b>As at 31 December</b>				
Cost	889,808,430	936,523,595	-	-
<u>Less</u> Provision for impairment	-	-	-	-
Net book value	889,808,430	936,523,595	-	-

The Group determined that cash-generating unit (CGU) is developing, manufacturing and distributing battery business.

The Group tested impairment of goodwill annually by comparing net book value of goodwill with the recoverable amount of a CGU, which is determined based on value-in-use calculations. These calculations use cash flow projections based on financial budgets covering a seven-year period. The financial budgets are approved by the management. Cash flows beyond the seven-year period are extrapolated using the estimated growth rates stated below. The growth rate does not exceed average the long-term growth rate for the business in which the CGU operates.

The key assumptions used for value-in-use calculations are as follows:

Growth rate	2%
Discount rate	10.14%

Management determined that the weighted average growth rates used are consistent with the forecasts included in industry reports. The discount rates used reflect specific risks which is a characteristic that is related to the cash generating unit.

16 Intangible assets, net

	Consolidated						
	Patents Baht	Brand Baht	Right to use transmission line Baht	Right to power purchase agreement Baht	Computer software Baht	Intangible assets under development Baht	Total Baht
<b>As at 1 January 2018</b>							
Cost	-	-	1,016,006,177	42,461,197	15,673,867	-	1,074,141,241
Less Accumulated amortisation	-	-	(83,496,823)	(8,844,922)	(4,637,043)	-	(96,978,788)
Net book value	-	-	932,509,354	33,616,275	11,036,824	-	977,162,453
<b>For the year ended 31 December 2018</b>							
Opening net book value	-	-	932,509,354	33,616,275	11,036,824	-	977,162,453
Additions	-	-	-	-	4,719,790	-	4,719,790
Increase from reclassification of investment in an associate to be a subsidiary	805,776,301	277,869,390	-	-	3,778,531	-	1,087,424,222
Amortisation	(39,043,957)	(13,464,184)	(40,632,054)	(1,698,448)	(4,015,999)	-	(98,854,642)
Currency translation differences	(21,614,021)	(6,866,409)	-	-	(844,675)	-	(29,325,105)
Closing net book value	745,118,323	257,538,797	891,877,300	31,917,827	14,674,471	-	1,941,126,718
<b>As at 31 December 2018</b>							
Cost	784,162,280	271,002,981	1,016,006,177	42,461,197	25,138,328	-	2,138,770,963
Less Accumulated amortisation	(39,043,957)	(13,464,184)	(124,128,877)	(10,543,370)	(10,463,857)	-	(197,644,245)
Net book value	745,118,323	257,538,797	891,877,300	31,917,827	14,674,471	-	1,941,126,718

	Consolidated					
	Patents Baht	Brand Baht	Right to use transmission line Baht	Right to power purchase agreement Baht	Computer software Baht	Intangible assets under development Baht
<b>As at 1 January 2019</b>						
Cost	784,162,280	271,002,981	1,016,006,177	42,461,197	25,138,328	-
Less Accumulated amortisation	(39,043,957)	(13,464,184)	(124,128,877)	(10,543,370)	(10,463,857)	-
Net book value	745,118,323	257,538,797	891,877,300	31,917,827	14,674,471	-
<b>For the year ended 31 December 2019</b>						
Opening net book value	745,118,323	257,538,797	891,877,300	31,917,827	14,674,471	-
Additions	-	-	-	-	24,686,078	114,750,511
Transfer the construction cost of high voltage power station to right to use transmission line, net (Note 14)	-	-	893,021,349	-	-	-
Disposals, net	-	-	-	-	(1,056,075)	-
Amortisation	(37,722,703)	(13,008,554)	(69,967,443)	(1,698,448)	(6,435,078)	-
Currency translation differences	(37,327,585)	(13,459,415)	-	-	(125,302)	-
Closing net book value	670,068,035	231,070,828	1,714,931,206	30,219,379	31,744,094	114,750,511
<b>As at 31 December 2019</b>						
Cost	750,163,093	258,741,336	1,909,027,526	42,461,197	48,643,029	114,750,511
Less Accumulated amortisation	(80,095,058)	(27,670,508)	(194,096,320)	(12,241,818)	(16,898,935)	-
Net book value	670,068,035	231,070,828	1,714,931,206	30,219,379	31,744,094	114,750,511

#### As at 1 January 2019

Cost  
Less Accumulated amortisation

Net book value

#### For the year ended 31 December 2019

Opening net book value  
Additions  
Transfer the construction cost of high voltage power station to right to use transmission line, net (Note 14)  
Disposals, net  
Amortisation  
Currency translation differences

Closing net book value

#### As at 31 December 2019

Cost  
Less Accumulated amortisation

Net book value

	<b>Separate Computer software Baht</b>
<b>As at 1 January 2018</b>	
Cost	13,309,814
<u>Less</u> Accumulated amortisation	<u>(3,129,427)</u>
Net book value	<u>10,180,387</u>
<b>For the year ended 31 December 2018</b>	
Opening net book value	10,180,387
Additions	2,006,138
Amortisation	<u>(1,479,393)</u>
Closing net book value	<u>10,707,132</u>
<b>As at 31 December 2018</b>	
Cost	15,315,951
<u>Less</u> Accumulated amortisation	<u>(4,608,819)</u>
Net book value	<u>10,707,132</u>
<b>For the year ended 31 December 2019</b>	
Opening net book value	10,707,132
Additions	3,120,640
Write off, net	(1,056,075)
Amortisation	<u>(1,639,462)</u>
Closing net book value	<u>11,132,235</u>
<b>As at 31 December 2019</b>	
Cost	17,380,517
<u>Less</u> Accumulated amortisation	<u>(6,248,282)</u>
Net book value	<u>11,132,235</u>



## 17 Deferred income taxes

The analysis of deferred tax assets and deferred tax liabilities are as follows:

	Consolidated		Separate	
	2019 Baht	2018 Baht	2019 Baht	2018 Baht
Deferred tax assets:				
Deferred tax assets to be recovered within 12 months	1,555,669	2,419,859	1,555,669	2,419,859
Deferred tax assets to be recovered after more than 12 months	74,140,447	62,286,683	6,182,610	6,182,610
	75,696,116	64,706,542	7,738,279	8,602,469
Deferred tax liabilities:				
Deferred tax liabilities to be settled within 12 months	(10,649,494)	(10,649,494)	-	-
Deferred tax liability to be settled after more than 12 months	(169,578,278)	(189,881,930)	-	-
	(180,227,772)	(200,531,424)	-	-
Deferred income taxes, net	(104,531,656)	(135,824,882)	7,738,279	8,602,469

The movement of the deferred income tax account is as follows:

	Consolidated		Separate	
	2019 Baht	2018 Baht	2019 Baht	2018 Baht
At 1 January	(135,824,882)	68,776,389	8,602,469	3,962,898
Fair value uplift from the business combination achieved without the transfer of consideration	-	(216,729,138)	-	-
Tax credited (charged) to profit or loss	21,135,826	2,673,539	(864,190)	637,793
Tax credited directly to other comprehensive income	-	3,758,242	-	4,001,778
Currency translation differences	10,157,400	5,696,086	-	-
At 31 December	(104,531,656)	(135,824,882)	7,738,279	8,602,469

	Consolidated									
	Allowance for slow- moving inventories Baht	Retirement benefit obligations Baht	Property, plant and equipment Baht	Right to use transmission line Baht	Provision for decommissioni ng costs Baht	Finance lease liabilities Baht	Loss Carry forward Baht	Total Baht		
<b>Deferred tax assets</b>										
As at 1 January 2018	2,951,923	1,542,364	15,913,104	69,471	13,243,066	-	35,056,461	68,776,389		
Tax (charged) credited to profit or loss	(532,064)	1,329,547	14,875,954	-	11,635,271	(80,336)	(35,056,461)	(7,828,089)		
Tax credited directly to other comprehensive income	-	3,758,242	-	-	-	-	-	3,758,242		
As at 31 December 2018	2,419,859	6,630,153	30,789,058	69,471	24,878,337	(80,336)	-	64,706,542		
As at 1 January 2019	2,419,859	6,630,153	30,789,058	69,471	24,878,337	(80,336)	-	64,706,542		
Tax (charged) credited to profit or loss	(864,190)	-	(7,199,666)	-	19,053,430	-	-	10,989,574		
As at 31 December 2019	1,555,669	6,630,153	23,589,392	69,471	43,931,767	(80,336)	-	75,696,116		

### Deferred tax liabilities

	Patent Baht	Brand Baht	Consolidated Total Baht
As at 1 January 2018	-	-	-
Fair value uplift from the business combination achieved without the transfer of consideration	161,155,260	55,573,878	216,729,138
Tax credited to profit or loss	(7,808,791)	(2,692,837)	(10,501,628)
Currency translation differences	(4,322,804)	(1,373,282)	(5,696,086)
As at 31 December 2018	149,023,665	51,507,759	200,531,424
As at 1 January 2019	149,023,665	51,507,759	200,531,424
Tax credited to profit or loss	(7,544,541)	(2,601,711)	(10,146,252)
Currency translation differences	(7,465,517)	(2,691,883)	(10,157,400)
As at 31 December 2018	134,013,607	46,214,165	180,227,772

### Deferred tax assets

	Allowance for inventories Baht	Retirement benefit obligations Baht	Separate Total Baht
As at 1 January 2018	2,951,923	1,010,975	3,962,898
Tax credited (charged) to profit or loss	(532,064)	1,169,857	637,793
Tax credited directly to other comprehensive income	-	4,001,778	4,001,778
As at 31 December 2018	2,419,859	6,182,610	8,602,469
As at 1 January 2019	2,419,859	6,182,610	8,602,469
Tax charged to profit or loss	(864,190)	-	(864,190)
As at 31 December 2019	1,555,669	6,182,610	7,738,279

## 18 Other non-current assets, net

	Consolidated		Separate	
	2019 Baht	2018 Baht	2019 Baht	2018 Baht
Withholding tax	76,436,496	57,739,762	25,257,533	6,468,851
Refundable input tax	23,804,731	-	-	-
Advance payment for equipment and assets purchase	486,094,812	164,158,104	11,491,998	1,434,061
Deposits	26,263,090	22,369,062	22,306,229	-
Long-term deposits	22,402,850	31,384,397	2,870,372	2,870,372
Prepaid for land leasehold right	7,659,727	19,263,949	7,659,727	-
Refundable import duty	19,625,222	-	-	-
Others	44,664,345	31,292,994	1,087,214	10,516,398
Less Allowance for impairment	(8,909,508)	-	(8,909,508)	-
Total other non-current assets	698,041,765	326,208,268	61,763,565	21,289,682

Allowance for an impairment of assets amounting to Baht 8.91 million is an allowance for advance payment for purchase of raw materials paid to a particular supplier who could not deliver raw materials and return such advance payment to the Company due to its financial difficulties.

## 19 Short-term loans from financial institutions

The short-term loans from financial institutions are as follows:

	Consolidated		Separate	
	2019 Baht	2018 Baht	2019 Baht	2018 Baht
Promissory note	-	387,412,393	-	385,000,000
Trust receipts	645,835,869	332,480,413	482,886,986	332,480,413
Bill of exchange	-	1,097,122,222	-	1,097,122,222
Letter of credit	14,026,600	-	-	-
Total short-term loans from financial institutions	659,862,469	1,817,015,028	482,886,986	1,814,602,635

As at 31 December 2019, short-term loans from trust receipts of Baht 645.84 million bore interest at the rate of 1.50% - 4.53% per annum and letter of credit of Taiwan Dollar 14 million which equivalent to Baht 14.03 million (31 December 2018: Baht 385 million, US Dollar 0.02 million which equivalent to Baht 0.57 million and Japanese Yen 6.21 million which equivalent to Baht 1.84 million and trust receipts of Baht 332.48 million bore interest at the rate of 1.90% - 2.11% per annum and bill of exchange of Baht 1,097.12 million bore interest at the rate of 1.86% - 1.95% per annum.). The loans are secured by fixed deposits of the overseas subsidiary, machinery of the Company and the ultimate parent.

As at 31 December 2019, the Group and the Company had available credit facilities from promissory note of Baht 1,596 million, letter of credit of Taiwan Dollar 6 million, trust receipts of Baht 1,155 million and combined trade finance facilities of Baht 3,062 million (31 December 2018: promissory note of Baht 1,211 million and Taiwan Dollar 17 million and trust receipts of Baht 1,361 million).

The movement of short-term loans from financial institutions can be analysed as follow:

	Consolidated		Separate	
	2019 Baht	2018 Baht	2019 Baht	2018 Baht
<b>For the years ended 31 December</b>				
Opening balance	1,817,015,028	882,009,880	1,814,602,635	882,009,880
Cash flows:				
Additional loans during the year	8,150,946,615	5,522,037,770	7,932,797,861	5,522,037,770
Loan repayments during the year	(9,307,937,046)	(4,628,246,402)	(9,264,513,510)	(4,589,445,015)
Other non-cash movements:				
Increase from reclassification of Investment in an associate to be subsidiary	-	41,700,598	-	-
Currency translation differences	(162,128)	(486,818)	-	-
Closing balance	659,862,469	1,817,015,028	482,886,986	1,814,602,635

## 20 Other accounts payable

	Consolidated		Separate	
	2019 Baht	2018 Baht	2019 Baht	2018 Baht
Other accounts payable				
- third parties	146,225,646	49,934,998	37,690,831	28,938,814
- related parties (Note 35.3)	-	-	58,936,114	6,582,879
Undue output tax	156,617,891	93,260,675	5,382,551	1,392,481
Revenue department payable	79,556,972	61,012,550	23,783,900	16,702,249
Accrued expenses	74,913,765	126,442,587	1,868,384	4,281,598
Interest payable	220,610,922	111,671,503	191,760,955	85,145,205
Deferred revenue	38,652,439	16,131,712	56,960,839	-
Others	19,163,674	2,094,740	229,200	53,192
Total other accounts payable	735,741,309	460,548,765	376,612,774	143,096,418

## 21 Long-term loans from financial institutions, net

### 21.1 The long-term loans from financial institutions are as follows:

	Consolidated		Separate	
	2019 Baht	2018 Baht	2019 Baht	2018 Baht
Long-term loans from financial institutions	24,521,957,306	19,662,332,869	5,700,000,000	800,000,000
<u>Less</u> Deferred financing fee	(228,280,184)	(255,810,912)	(22,529,812)	(10,124,183)
	24,293,677,122	19,406,521,957	5,677,470,188	789,875,817
<u>Less</u> Current portion of long-term loans from financial institutions, net	(1,307,686,226)	(264,048,006)	-	-
Total long-term loans from financial institutions, net	22,985,990,896	19,142,473,951	5,677,470,188	789,875,817



The movement of long-term loans from financial institutions can be analysed as follow:

	<b>Consolidated</b>			<b>Separate</b>
	<b>2019 Baht</b>	<b>2018 Baht</b>	<b>2019 Baht</b>	<b>2018 Baht</b>
<b>For the years ended 31 December</b>				
Opening balance	19,406,521,957	18,818,590,056	789,875,817	-
Cash flows:				
Additional loans during the year	5,125,585,306	812,911,124	4,900,000,000	800,000,000
Loan repayments during the year	(266,025,473)	(264,434,986)	-	-
Payment for deferred financing fee during the year	(24,937,500)	(10,465,200)	(24,000,000)	(10,465,200)
Other non-cash movements:				
Amortisation of deferred financing fee	52,468,228	39,525,108	11,594,371	341,017
Increase from reclassification of investment in an associate to be a subsidiary	-	10,567,047	-	-
Currency translation differences	64,604	(171,192)	-	-
	24,293,677,122	19,406,521,957	5,677,470,188	789,875,817
<u>Less</u> Current portion of long-term loans from financial institutions, net	(1,307,686,226)	(264,048,006)	-	-
Closing balance	22,985,990,896	19,142,473,951	5,677,470,188	789,875,817

As at 31 December, long-term loans from financial institutions of the Company and subsidiaries are as follow:

Loan of the Company

<b>Number</b>	<b>2019 (Million Baht)</b>	<b>2018 (Million Baht)</b>	<b>Interest rate</b>	<b>Principal repayment term</b>	<b>Interest payment period</b>
1	2,700	800	Fixed interest rate per annum at 2.77% - 3.80%	Repayment every six months from December 2020	Payment every six months
2	3,000	-	THBFIX six-month plus a certain margin per annum	Repayment within two years since the agreement date	Payment every three months
Total	5,700	800			

Long-term loans denominated in Thai Baht are unsecured long-term loans of the Company, the Company has to comply with certain procedures and conditions as specified in the long-term loan agreement with financial institution: for example, maintaining the debt to equity ratio and the debt service coverage ratio at the specified level.

## Loan of subsidiaries

Number	2019 (Million Baht)	2018 (Million Baht)	Interest rate	Principal repayment term	Interest payment period
1	110	372	THBFIX three-month plus a certain margin per annum	Repayment every three months from June 2016	Payment every three months
2	18,486	18,486	Fixed interest rate per annum at 3.30% - 4.37%	Repayment every year from December 2020	Payment every six months
3	226	-	Fixed interest rate per annum at 3.55%	Repayment every three months from September 2020	Payment every three months
Total	18,822	18,858			

Number	2019 (Million TWD)	2018 (Million TWD)	Interest rate	Principal repayment term	Interest payment period
1	-	3	Fixed interest rate per annum at 3.35%	Repayment every three months from July 2015	Payment every month
Total	-	3			

Long-term loan denominated in Thai Baht no.1 is the loan of a subsidiary, secured with the machinery and equipment of that subsidiary. The subsidiary has to comply with certain terms and conditions as specified in the long-term loan agreement with financial institutions: for example, by maintaining the debt to equity ratio and the debt service coverage ratio at the specified level.

Long-term loans denominated in Thai Baht no. 2 are unsecured long-term loans of three subsidiaries, the Group has to comply with certain procedures and conditions as specified in the long-term loan agreements with financial institutions: for example, maintaining the debt to equity ratio and the debt service coverage ratio at the specified level.

Long-term loans denominated in Thai Baht no. 3 are secured long-term loans of a subsidiary which has the subsidiary's land as the long-term loan collateral and is guarantee by the Company. The Group has to comply with certain procedures and conditions as specified in the long-term loan agreements with financial institutions: for example, maintaining the debt to equity ratio and the debt service coverage ratio at the specified level.

## 21.2 Interest rate risk management

The detail of interest rate swap contracts for long-term loans from financial institutions of the Group are shown in Note 34.

The interest rate exposure on the long-term loans from financial institutions of the Group before taking account of interest rate swap contracts is as follows:

	<b>Consolidated</b>		<b>Separate</b>	
	<b>2019 Baht</b>	<b>2018 Baht</b>	<b>2019 Baht</b>	<b>2018 Baht</b>
Long-term loans from financial institutions				
- at fixed rates	21,411,957,306	19,286,372,000	2,700,000,000	800,000,000
- at floating rates	3,110,000,000	375,960,869	3,000,000,000	-
Total long-term loans from financial institutions	24,521,957,306	19,662,332,869	5,700,000,000	800,000,000

After taking account of interest rate swaps, the weighted average effective interest rates of the long-term loans from financial institutions of the Group were 1.09 % - 4.82% per annum (2018: 3.35% - 5.62% per annum).

## 21.3 Maturity of long-term loans are as follows:

	<b>Consolidated</b>		<b>Separate</b>	
	<b>2019 Baht</b>	<b>2018 Baht</b>	<b>2019 Baht</b>	<b>2018 Baht</b>
Within 1 year	1,307,686,226	264,048,006	-	-
Later than 1 year and not later than 5 years	19,753,627,830	9,888,917,513	5,700,000,000	600,000,000
Later than 5 years	3,460,643,250	9,509,367,350	-	200,000,000
Total long-term loans	24,521,957,306	19,662,332,869	5,700,000,000	800,000,000

## 21.4 Credit facilities

As at 31 December 2019, the Group had available credit facilities from financial institutions amount Baht 3,230.48 million (2018: the Group and the Company had amount Baht 1,900 million).

## 22 Debentures, net

The details of debentures can be analysed as follows:

	Consolidated		Separate	
	2019 Baht	2018 Baht	2019 Baht	2018 Baht
Debentures	17,000,000,000	8,000,000,000	17,000,000,000	8,000,000,000
<u>Less</u> Deferred financing fee	(9,138,638)	(4,077,543)	(9,138,638)	(4,077,543)
	16,990,861,362	7,995,922,457	16,990,861,362	7,995,922,457
<u>Less</u> Current portion of debentures, net	(2,999,498,444)	(999,777,628)	(2,999,498,444)	(999,777,628)
Debentures, net	13,991,362,918	6,996,144,829	13,991,362,918	6,996,144,829

The movement of debentures can be analysed as follow:

	Consolidated Baht	Separate Baht
<b>For the year ended 31 December 2019</b>		
Opening balance	7,995,922,457	7,995,922,457
Cash flow:		
Issuance of debentures during the year	10,000,000,000	10,000,000,000
Repayment of a debentures during the year	(1,000,000,000)	(1,000,000,000)
Payment for deferred financing fee during the year	(7,700,000)	(7,700,000)
Non-cash movements:		
Amortisation of deferred financing fee	2,638,905	2,638,905
Closing balance	16,990,861,362	16,990,861,362

Debentures of Baht 7,000 million are secured by letters of guarantee issued by a financial institution and the remaining debentures of Baht 10,000 million are unsecured. The Company is required to comply with certain terms and conditions as specified; for example, maintaining debt to equity ratio as specified in the agreement.

As at 31 December, the debentures of the Company are as follows:

	Consolidated		Separate	
	2019 Baht	2018 Baht	2019 Baht	2018 Baht
- at fixed rates	17,000,000,000	8,000,000,000	17,000,000,000	8,000,000,000
- at floating rates	-	-	-	-
Total debentures	17,000,000,000	8,000,000,000	17,000,000,000	8,000,000,000

The weighted average effective interest rates of the debentures of the Company were 2.09 % - 3.15% per annum (2018: 2.16% - 2.34% per annum).

Maturity of long-term loans are as follows:

	Consolidated		Separate	
	2019 Baht	2018 Baht	2019 Baht	2018 Baht
Within 1 year	3,000,000,000	1,000,000,000	3,000,000,000	1,000,000,000
Later than 1 year and not later than 5 years	5,500,000,000	7,000,000,000	5,500,000,000	7,000,000,000
Later than 5 years	8,500,000,000	-	8,500,000,000	-
Total debentures, net	17,000,000,000	8,000,000,000	17,000,000,000	8,000,000,000

## 23 Provision for decommissioning costs

	Consolidated		Separate	
	2019 Baht	2018 Baht	2019 Baht	2018 Baht
Opening balance	799,685,112	801,897,106	1,592,750	1,592,750
Increase (decrease) in provision	1,214,810,281	(27,118,414)	-	-
Finance costs	41,513,273	24,906,420	-	-
Closing balance	2,056,008,666	799,685,112	1,592,750	1,592,750

## 24 Legal reserve

	Consolidated		Separate	
	2019 Baht	2018 Baht	2019 Baht	2018 Baht
As at 31 January	37,300,000	37,300,000	37,300,000	37,300,000
Appropriation during the year	-	-	-	-
As at 31 December	37,300,000	37,300,000	37,300,000	37,300,000

Under the Public Companies Act B.E. 2535, the Company is required to set aside as a legal reserve at least 5% of its net profit after accumulated deficit brought forward (if any) until the reserve is not less than 10% of the registered capital. The legal reserve is non-distributable.

## 25 Revenue from sales and services

	Consolidated		Separate	
	2019 Baht	2018 Baht	2019 Baht	2018 Baht
<b>For the years ended 31 December</b>				
Sales of biodiesel	3,423,241,100	3,194,227,727	3,418,227,238	3,194,161,644
Sales of glycerine	228,932,711	296,155,581	228,932,711	296,155,581
Sales of by-products	25,509,932	20,760,800	25,509,932	20,760,800
Sales of electricity (a)	4,209,923,697	2,736,592,951	-	-
Sales of services	24,919,998	109,823,906	-	-
Sales of battery and EV charging station	209,985,946	250,164,145	-	-
Total revenue from sales and services	8,122,513,384	6,607,725,110	3,672,669,881	3,511,078,025

- (a) The Group has entered into eleven and one power purchase agreements with Electricity Generating Authority of Thailand (EGAT) and Provincial Electricity Authority (PEA), respectively. The agreement is effective for a period of 5 years commencing from agreement effective date and the Group has the right to extend the term for consecutive periods of 5 years each. Such agreement will be effective until the Group notifies the termination of sales of electricity by voluntary termination or any party did not comply with the agreements. The sales quantity and its price must be complied with the agreements.



## 26 Revenue from subsidy for adders

Revenue from subsidy for adders represented income received from Provincial Electricity Authority from sales of solar electricity at Thai Baht 8 per kilowatt-hour and Electricity Generating Authority of Thailand from sales of solar electricity and wind power at Thai Baht 6.5 per kilowatt-hour and Thai Baht 3.5 per kilowatt-hour, respective for the period of 10 years since commercial operation date. The Group recognised such adders as revenue at whole amount according to the actual electricity production.

## 27 Other income

	Consolidated		Separate	
	2019 Baht	2018 Baht	2019 Baht	2018 Baht
<b>For the years ended 31 December</b>				
Land rental income	-	-	56,960,839	57,178,497
Interest income	41,920,480	17,527,632	312,676,969	50,687,809
Research project grant	4,442,679	11,387,392	-	-
Others	21,310,616	14,778,153	24,302,998	17,326,292
<b>Total other income</b>	<b>67,673,775</b>	<b>43,693,177</b>	<b>393,940,806</b>	<b>125,192,598</b>

## 28 Finance costs

	Consolidated		Separate	
	2019 Baht	2018 Baht	2019 Baht	2018 Baht
<b>For the years ended 31 December</b>				
Interest paid to third parties	1,111,397,306	771,467,563	516,599,318	220,861,605
Interest paid to related parties	-	-	54,589,032	10,934,384
Letter guarantee fee amortisation	82,029,247	86,484,876	82,029,247	86,484,876
Loss from Interest rate swap contracts	95,144,207	159,231,782	-	-
Other finance costs	97,695,118	69,247,209	14,770,871	2,599,836
<b>Total finance costs</b>	<b>1,386,265,878</b>	<b>1,086,431,430</b>	<b>667,988,468</b>	<b>320,880,701</b>

## 29 Expense by nature

The following expenditure items have been charged in arriving at net profit:

	Consolidated		Separate	
	2019 Baht	2018 Baht	2019 Baht	2018 Baht
<b>For the years ended 31 December</b>				
Changes in inventories of finished goods and work in process	(353,130,144)	(209,701,412)	(63,567,623)	(44,137,535)
Raw material and consumables used	3,504,707,198	3,161,632,553	3,485,259,293	3,130,017,138
Staff costs	453,837,411	300,251,217	179,673,972	126,341,463
Directors and management compensation	189,737,435	164,610,633	172,419,033	147,010,311
Depreciation	2,388,819,142	1,734,188,726	89,616,388	97,451,510
Amortisation	128,832,226	98,854,642	1,639,462	1,479,393
Loss from (reversal of) provision for inventories	6,848,215	(4,173,370)	(5,939,934)	(6,495,147)
Finance costs	1,391,375,416	1,086,431,430	667,988,468	320,880,701
Delivery and export expenses	63,344,329	52,368,456	61,620,355	52,110,668

## 30 Income tax

The Group calculated income tax for the year ended 31 December 2019 and 2018 from net taxable profit of which not includes share from investments in associates and a joint venture by using tax rate as follows:

	2019	2018
Thailand	20%	20%
Republic of China (Taiwan)	20%	20%
Republic of Singapore	17%	17%

	Consolidated		Separate	
	2019 Baht	2018 Baht	2019 Baht	2018 Baht
Current tax	10,383,307	32,026,006	-	-
Deferred tax	(21,135,826)	(2,673,539)	864,190	(637,793)
Total income tax	(10,752,519)	29,352,467	864,190	(637,793)

The tax on the Group's profit before tax differs from the theoretical amount that would arise using the basic tax rate of the home country of the parent company as follows:

	<b>Consolidated</b>		<b>Separate</b>	
	<b>2019 Baht</b>	<b>2018 Baht</b>	<b>2019 Baht</b>	<b>2018 Baht</b>
Profit before tax	6,012	5,091	3,909	3,486
Tax calculated at a tax rate of 20% (2018: 20%)				
The result of the accounting profit multiplied by the income tax rate	(1,202)	(1,018)	(782)	(697)
Tax effect of :				
Income not subject to tax	1,169	767	765	680
Expenses not deductible for tax purpose	14	198	(6)	(1)
Revenues that are granted income tax exemption or expenses that are deductible at a greater amount	30	24	22	19
Income tax	11	(29)	(1)	1

The weighted average applicable tax rate for the Group and the Company were 0.18% and 0.02%, respectively (2018: 0.50% and 0.13%, respectively).

### 31 Earnings per share

Basic earnings per share is calculated by dividing the net profit attributable to shareholders of the Company by the weighted average number of ordinary shares.

	<b>Consolidated</b>		<b>Separate</b>	
	<b>2019</b>	<b>2018</b>	<b>2019</b>	<b>2018</b>
<b>Basic earnings per share</b>				
Net profit attributable to ordinary shareholders of the parent (Million Baht)	6,082	5,148	3,908	3,486
Weighted average number of ordinary shares outstanding (Million Shares)	3,730	3,730	3,730	3,730
Basic earnings per share (Baht per share)	1.63	1.33	1.05	0.93

There are no dilutive potential ordinary shares in issue during the periods presented, so no diluted earnings per share are presented.

### 32 Dividend

On 25 April 2019, at the Annual General Shareholders' Meeting, the shareholders approved annual dividend payments from non-BOI retained earnings as at 31 December 2018 at Baht 0.25 per share, totalling Baht 932.50 million. The Company paid the dividend to shareholders in May 2019.

On 27 April 2018, at the Annual General Shareholders' Meeting, the shareholders approved annual dividend payments from non-BOI retained earnings as at 31 December 2017 at Baht 0.20 per share, totalling Baht 746 million. The Company paid the dividend to shareholders in May 2018.

### 33 Promotional privileges

The Group has been granted promotional privileges by the Office of the Board of Investment under promotion certificates in respect of manufacturing of biodiesel, oil and fat produced from plant or animal and electricity. The Company and twelve subsidiaries have been granted exemption from certain taxes and duties as detailed in the certificates including exemption from corporate income tax for a period of eight years from the date of first revenue. As promoted entities, these subsidiaries are required to comply with the terms and conditions specified in the promotion certificates.

### 34 Financial instruments

In order to manage risks arising from fluctuations in interest rates and currency exchange rates, the Group uses the following derivative financial instruments.

#### *Interest rate swap contracts*

Interest rate swap contracts are entered into to manage exposure to fluctuations in interest rates. The five subsidiaries of the Company entered into interest rate swap contracts by converting floating rates to fixed rate. As at 31 December, fixed interest rate under interest rate swap contracts are as follow:

	Amount (Million Baht)		Fixed interest rate per annum	
	2019	2018	2019	2018
Outstanding contract amount	8,188	12,013	5.25 - 6.25	5.25 - 6.25

#### *Foreign currency forward contracts*

Foreign currency forward contracts are entered into to manage exposure to fluctuations in exchange rates. As at 31 December 2019, the Group did not enter into foreign exchange forward contracts for accounts payable denominated in foreign currency. (2018: the Group entered into foreign exchange forward contracts for accounts payable denominated in foreign currency at the amount of US Dollar 373 million which equivalent to Baht 11,892 million).

### 35 Related party transactions

As at 31 December 2019, the major shareholders of the Company are UBS AG Singapore Branch and Mr. Somphote Ahunai who held ordinary shares portion of 24.16% and 23.50%, respectively. The remaining portion of ordinary shares were held by others.

Details of subsidiaries are disclosed in Note 12.

The following material transactions are carried out with related parties:

#### 35.1 Revenue from sales and services

	Consolidated		Separate	
	2019 Baht	2018 Baht	2019 Baht	2018 Baht
<b>For the years ended 31 December</b>				
Revenue from management fees				
- Subsidiaries	-	-	16,450,000	11,850,000
Revenue from rental				
- Subsidiaries	-	-	60,161,618	59,117,634

## 35.2 Other income and expenses

	Consolidated		Separate
	2019 Baht	2018 Baht	2019 Baht
<b>For the years ended 31 December</b>			
Interest income			
- Subsidiaries	-	-	292,671,009
			46,858,874

## 35.3 Other receivables from and other payables to related parties

	Consolidated		Separate
	2019 Baht	2018 Baht	2019 Baht
Other receivables (including interest receivable (Note 35.4))			
- Subsidiaries	-	-	209,009,715
			163,865,368
Other payables (including interest payable (Note 35.5))			
- Subsidiaries	-	-	58,936,114
			6,582,879

## 35.4 Short-term loans and long-term loans to related parties and related interests

As at 31 December 2019, the Company had short-term loans to related parties amounting to Baht 1,013.42 million. (2018: Baht 2,233.75 million).

As at 31 December 2019, the Company had long-term loans to related parties amounting to Baht 13,000 million (2018: Nil).

The movement of short-term loans to related parties can be analysed as follows:

	Consolidated		Separate
	2019 Baht	2018 Baht	2019 Baht
<b>For the years ended 31 December</b>			
Opening balance	-	-	2,233,750,000
Cash flows:			1,319,450,000
Additions during the year	-	-	12,128,346,000
Repayments during the year	-	-	(341,799,000)
Other non-cash movements:			(957,500,000)
Unrealised loss on exchange rate	-	-	(6,872,010)
Reclassification	-	-	(13,000,000,000)
			31,900,000
Closing balance	-	-	1,013,424,990
			2,233,750,000



The movement of long-term loans to related parties can be analysed as follows:

	Consolidated		Separate	
	2019 Baht	2018 Baht	2019 Baht	2018 Baht
<b>For the years ended 31 December</b>				
Opening balance	-	-	-	66,900,000
Cash flows:				
Additions during the year	-	-	-	-
Repayments during the year	-	-	-	(35,000,000)
Reclassification	-	-	13,000,000,000	(31,900,000)
Closing balance	-	-	13,000,000,000	-

On 25 December 2019, five subsidiaries and the Company agreed to amend the terms and conditions of short-term loan agreements to change schedules of principal payment and interest repayment from repayment at call to repayment based on specified schedules and change interest rate from fixed interest to fixed and float interest rates. The loans have been separated into seven tranches as follows:

Tranches	Principal (Million Baht)	Interest rate per annum	Principal repayment date	Interest payment period
1	3,000	2.86%	23 June 2021	Payment every six months
2	1,000	2.75%	6 July 2022	Payment every six months
3	500	2.55%	10 August 2022	Payment every six months
4	1,500	3.24%	10 August 2024	Payment every six months
5	3,000	THBFIX six-month plus a certain margin	11 October 2026	Payment every three months
6	2,000	3.73%	6 July 2029	Payment every six months
7	2,000	3.70%	10 August 2029	Payment every six months
Total	13,000			

As at 31 December 2019, the Company classified the amendment loans to long-term loans to related parties.

	Consolidated		Separate	
	2019 Baht	2018 Baht	2019 Baht	2018 Baht
Interest receivable				
- Subsidiaries	-	-	122,222,244	135,031,133
	-	-	122,222,244	135,031,133
	Consolidated		Separate	
	2019 Baht	2018 Baht	2019 Baht	2018 Baht
<b>For the years ended 31 December</b>				
Interest income				
- Subsidiaries	-	-	292,671,009	46,858,874
	-	-	292,671,009	46,858,874

### 35.5 Short-term loans from related parties and related interests

The movement of short-term loans from related parties can be analysed as follows:

	Consolidated		Separate	
	2019 Baht	2018 Baht	2019 Baht	2018 Baht
<b>For the years ended 31 December</b>				
Opening balance	-	-	494,000,000	54,000,000
Cash flows:				
Additions during the year	-	-	2,051,000,000	1,190,000,000
Repayments during the year	-	-	(8,290,000)	(750,000,000)
Closing balance	-	-	2,536,710,000	494,000,000
	Consolidated		Separate	
	2019 Baht	2018 Baht	2019 Baht	2018 Baht
Interest payables				
- Subsidiaries	-	-	58,867,936	5,500,479
	-	-	58,867,936	5,500,479
	Consolidated		Separate	
	2019 Baht	2018 Baht	2019 Baht	2018 Baht
<b>For the years ended 31 December</b>				
Interest expenses				
- Subsidiaries	-	-	54,589,032	10,934,384
	-	-	54,589,032	10,934,384

### 35.6 Advance receipts for land rental from related parties

	Consolidated		Separate	
	2019 Baht	2018 Baht	2019 Baht	2018 Baht
<b>For the years ended 31 December</b>				
Opening balance	-	-	546,158,723	573,012,298
Increase during the year	-	-	296,512,976	-
Decrease during the year	-	-	(52,142,084)	(26,853,575)
Reclassification	-	-	(56,960,838)	-
Closing balance	-	-	733,568,777	546,158,723

### 35.7 Dividend income

	Consolidated		Separate	
	2019 Baht	2018 Baht	2019 Baht	2018 Baht
<b>For the years ended 31 December</b>				
Dividend income from subsidiaries	-	-	4,745,364,506	3,934,463,266
	-	-	4,745,364,506	3,934,463,266

### 35.8 Key management compensation

	Consolidated		Separate	
	2019 Baht	2018 Baht	2019 Baht	2018 Baht
<b>For the years ended 31 December</b>				
Short-term employee benefits	184,925,225	161,349,898	169,147,610	144,411,364
Post-retirement benefits	4,812,210	3,260,735	3,271,423	2,598,947
Total key management compensation	189,737,435	164,610,633	172,419,033	147,010,311

## 36 Fair value

### 36.1 Fair value estimation

The table below analyses financial assets and liabilities carried at fair value, by valuation method. The different levels have been defined as follows:

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

### 36.2 Financial assets and liabilities that are not measured at fair value

The carrying amounts of the following financial assets and financial liabilities approximate their fair values: cash and cash equivalents, deposits at financial institutions used as collateral, short-term loans to other parties and related parties, trade receivables and payables, amounts due from and due to related parties, other receivables and payables, and short-term loans from financial institutions and related parties due to the short maturities of these instruments.

- (a) Long-term loan to related party, long-term loans from financial institutions and debentures

The fair values of long-term loan to a related party, long-term loans from financial institutions with fixed interest rates and debentures with fixed interest rates have been calculated by level 2. The fair values have been calculated from the net present value of future cash flows discounted by market interest rates using rates at the date of financial statements. The fair values of long-term loans from financial institutions with floating interest rates approximate their carrying amounts.

The net fair value of long-term loans to related parties, long-term loans from financial institutions and debentures are as below:

	<b>Consolidated</b>		<b>Separate</b>	
	<b>Carrying amounts</b>	<b>Fair values</b>	<b>Carrying amounts</b>	<b>Fair values</b>
	<b>Million Baht</b>	<b>Million Baht</b>	<b>Million Baht</b>	<b>Million Baht</b>
<b>As at 31 December 2019</b>				
Long-term loans to related parties	-	-	13,000	13,116
Long-term loans from financial institutions	24,522	24,448	5,700	5,787
Debentures	17,000	17,185	17,000	17,185
<b>As at 31 December 2018</b>				
Long-term loans from financial institutions	19,661	19,043	800	800
Debentures	8,000	8,176	8,000	8,176

(b) Derivatives financial instruments

The fair values of the derivatives financial instruments have been calculated by level 2. The fair values of interest rate swap contracts and foreign currency forward contracts have been calculated using rates quoted by the Group's counterparties to terminate the contracts at the date of financial statements.

The fair values of the derivatives financial instruments at the date of financial statements are as follows:

	<b>Consolidated</b>		<b>Separate</b>	
	<b>2019 Million Baht</b>	<b>2018 Million Baht</b>	<b>2019 Million Baht</b>	<b>2018 Million Baht</b>
<b>Asset</b>				
Foreign currency forward contracts	-	11,915	-	-
<b>Liability</b>				
Interest rate swap contracts	8,106	11,850	-	-

### 37 Commitments and contingent liabilities

#### 37.1 Capital expenditure obligations

Capital expenditure contracted as at the statement of financial position date but not recognised in the financial statements is as follows:

	Consolidated										
	2019						2018				
	Million CNY	Million JPY	Million TWD	Million SGD	Million USD	Million Baht	Million CNY	Million JPY	Million TWD	Million SGD	Million USD Million Baht
Land purchase agreement	-	-	-	-	-	-	-	-	-	-	-
Building and machine under installation	37	257	21	2	17	439	-	-	63	2	1
Project design consultant and other service fees	-	-	-	-	-	45	-	-	-	-	-
Wind power plant consultant fee	-	-	-	-	-	-	-	-	-	-	1,096
Research and development consultant fee	-	-	-	-	-	7	-	-	-	-	54
	37	257	21	2	17	491	-	-	63	2	117
											1,397



Machine under installation

	2019	Separate 2018
	Million Baht	Million Baht
	13	-

### 37.2 Operating lease commitments and service agreements

Future minimum lease payments required under these non-cancellable operating leases contracts and service contracts are as follows:

	2019				Consolidated 2018			
	Million Euro	Million TWD	Million USD	Million Baht	Million Euro	Million TWD	Million USD	Million Baht
Payable within:								
Less than 1 year	4	16	4	46	4	11	-	36
More than 1 to 5 years	6	52	15	119	9	45	-	102
More than 5 years	-	13	-	352	-	20	-	398
	10	81	19	517	13	76	-	536

	Separate			
	2019		2018	
	Million TWD	Million Baht	Million TWD	Million Baht
Payable within:				
Less than 1 year	1	34	-	29
More than 1 to 5 years	3	97	-	83
More than 5 years	5	281	-	317
	9	412	-	429

### 37.3 Bank guarantee

As at 31 December 2019, the Group and the Company had outstanding letters of guarantee issued by government sector and private sector of Baht 677.05 million and Baht 7,085.30 million, respectively. (2018: Baht 12,845 million and US Dollar 305 million and Baht 9,875 million and US Dollar 305 million, respectively).

## 38 Events after the reporting period

- At the Extraordinary Shareholders' Meeting of Energy Solution Management Co., Ltd. on 27 December 2019, the shareholders passed a resolution increasing in the authorised share capital from Baht 110 million to Baht 530 million by issuing new ordinary share of 4,200,000 shares with a par value of Baht 100 per share. The Company made a payment for these new shares on 7 January 2020, and Energy Solution Management Co., Ltd. registered the increase in share capital with the Ministry of Commerce on 7 January 2020.
- At the Board of Directors' Meeting of Mine Mobility Research Co., Ltd. on 10 January 2020, the Board of Directors passed a resolution calling for additional paid-up share capital at Baht 3.50 per share. The Company made a payment for additional paid-up share capital of 20,000,000 shares, totalling Baht 70 million on 14 January 2020.

- 3 At the Board of Directors' Meeting of Mine Mobility Corporation Co., Ltd. on 23 January 2020, the Board of Directors passed a resolution calling for additional paid-up share capital at Baht 7.50 per share. The Company made a payment for additional paid-up share capital of 15,000,000 shares, totalling Baht 112.50 million on 28 January 2020.
- 4 On 24 January 2020, a subsidiary of the Group acquired an investment in Sub Yai Wind Farm (1) Co., Ltd. by entering into a share purchase agreement with the former shareholder to acquire 19,997 ordinary shares at Baht 250 per share, totalling Baht 4.99 million. As a result, the subsidiary holds 99.99% of the issued and paid-up ordinary share capital of Sub Yai Wind Farm (1) Co., Ltd. which engages in the business of manufacturing and distributing electricity generated from wind power.
- 5 At the Extraordinary Shareholders' Meeting of Mine Mobility Research Co., Ltd. on 25 January 2020, the shareholders passed a resolution increasing in the authorised share capital from Baht 300 million to Baht 400 million by issuing new ordinary share of 10,000,000 shares with a par value of Baht 10 per share. The Company made a payment for these new shares on 27 January 2020, and Mine Mobility Research Co., Ltd. registered the increase in share capital with the Ministry of Commerce on 28 January 2020.
- 6 On 28 January 2020, EA Palm Network Co., Ltd. was incorporated in Thailand by the Company with the registered share capital of 20,000,000 shares at a par value of Baht 10 per share. The Company holds 99.99% ordinary share of the said company. The Company made payment for the said shares on 24 January 2020, and EA Palm Network Co., Ltd. registered the share capital with the Ministry of Commerce on 28 January 2020.
- 7 On 3 February 2020, a subsidiary of the Group acquired an investment in Larp Pakdee Palm Co., Ltd. by entering into a share purchase agreement and a shareholders agreement with the former shareholders to purchase 1,199,999 ordinary shares at Baht 31.25 per share, totalling Baht 37.50 million. As a result, the subsidiary holds 74.99% of the issued and paid-up ordinary share capital of Larp Pakdee Palm Co., Ltd. which engages in the business of palm crushing mills and electric power plant with methane capture biogas project.







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