

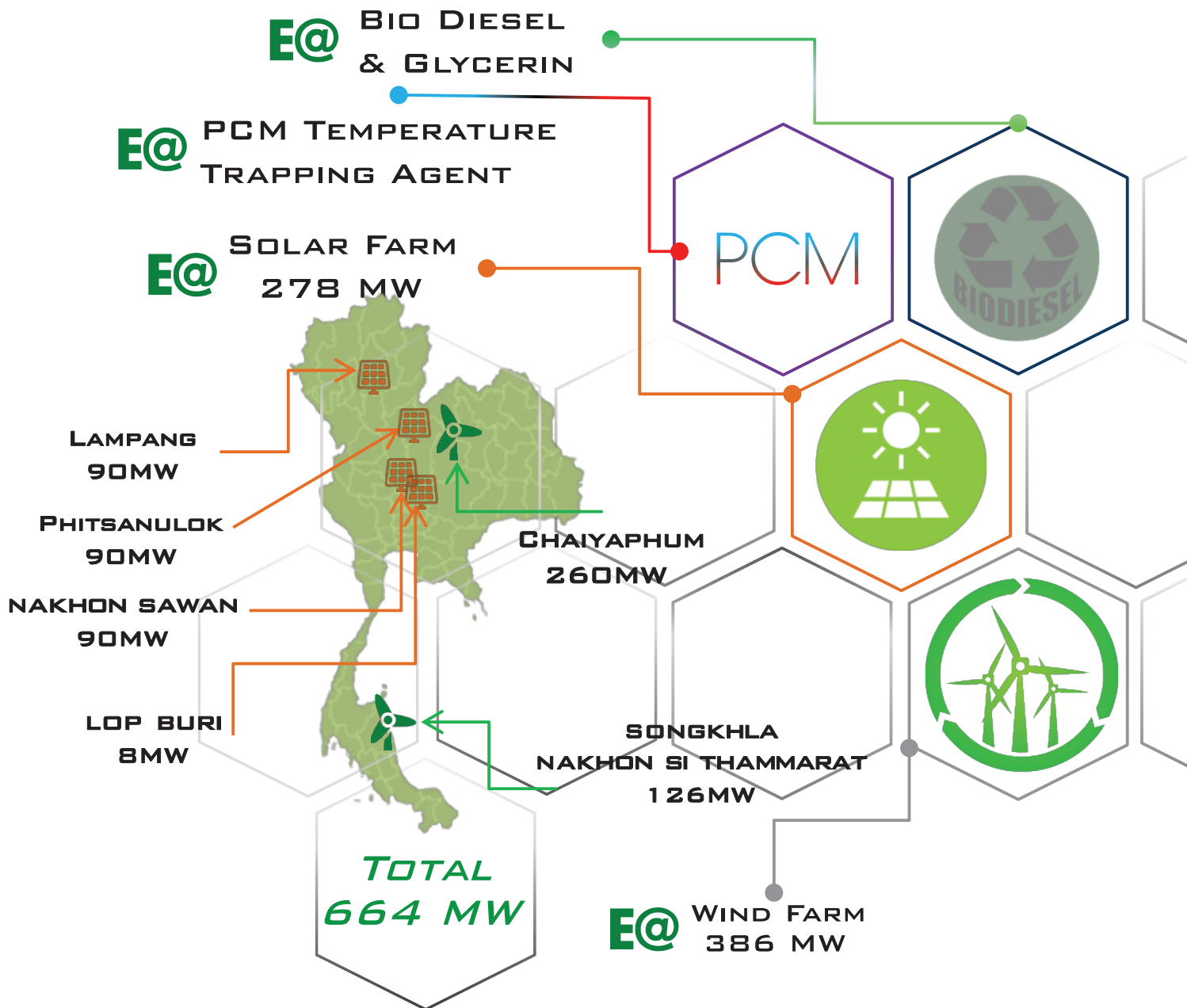
BEYOND ENERGY

Achievement of



XCELLENCE

ANNUAL REPORT
2018



THE STRUCTURE

E@ GREEN DIESEL PROJECT



Amita Technologies, Inc.

**GIGA FACTORY
50Gwh
MULTI TYPES BATTERY**



**DESIGN
DEVELOP
ENGINEER
PRODUCE
VARIOUS TYPES OF EV.**



**CHARGING STATION TARGETING AT
MINIMUM 1,000 DC CHARGING
STATIONS**

**FUTURE
PROJECT**



**ELECTRIC FERRY
IN-HOUSE DESIGN & TECHNOLOGIES
54 UNITS FOR CHAO PRAYA RIVER**

Content

	Message from Chairman of the Board	9
	Message from the CEO	11
	Board of Directors	14
	General and other important information	43
	Important Financial Information	51
	Policy and Business Overview	54
	Nature of business	73
	Risk Factors	92
	Information of securities and shareholders	101
	Dividend Payment Policy	104
	Management Structure	105
	Report of the Audit Committee	113
	Report of the Nomination Committee	115
	Report of the Remuneration Committee	116
	Report of the Risk Management Committee	117
	Report from the Corporate Governance Committee	119
	Corporate Governance	120
	Responsibilities to Society and Environment	163
	Internal Control and f Management	177
	Connected Transactions	179
	Management Discussion and Analysis: MD&A	186
	Report of the Board of Directors'	199
	Responsibilities for the Financial Report	
	Financial Statement	200

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 corps 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

FIRST



F

Friend

Friend to all stakeholders



I

Integrity

Conduct business in line with integrity and reliability



R

Resourcefulness

Efficiently use the resources



S

Security

Stability the energy resource



T

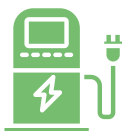
Transparency

Operating business with transparency and under good corporate governance

Milestone 2018

January

Collaborate with Metropolitan Electricity Authority to roll out EV charging stations in Bangkok and greater Bangkok with the total target of 1,000 stations for the nationwide



March

Launched prototype electric vehicle under brand “MINE Mobility” in Bangkok international Motor Show 2018

May

- Organized blade lifting ceremony of hanuman Project
- Started to design Battery Factory Phase 1 with 1 GWh production capacity

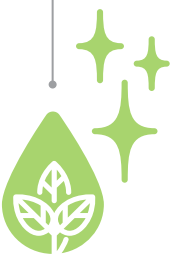
July

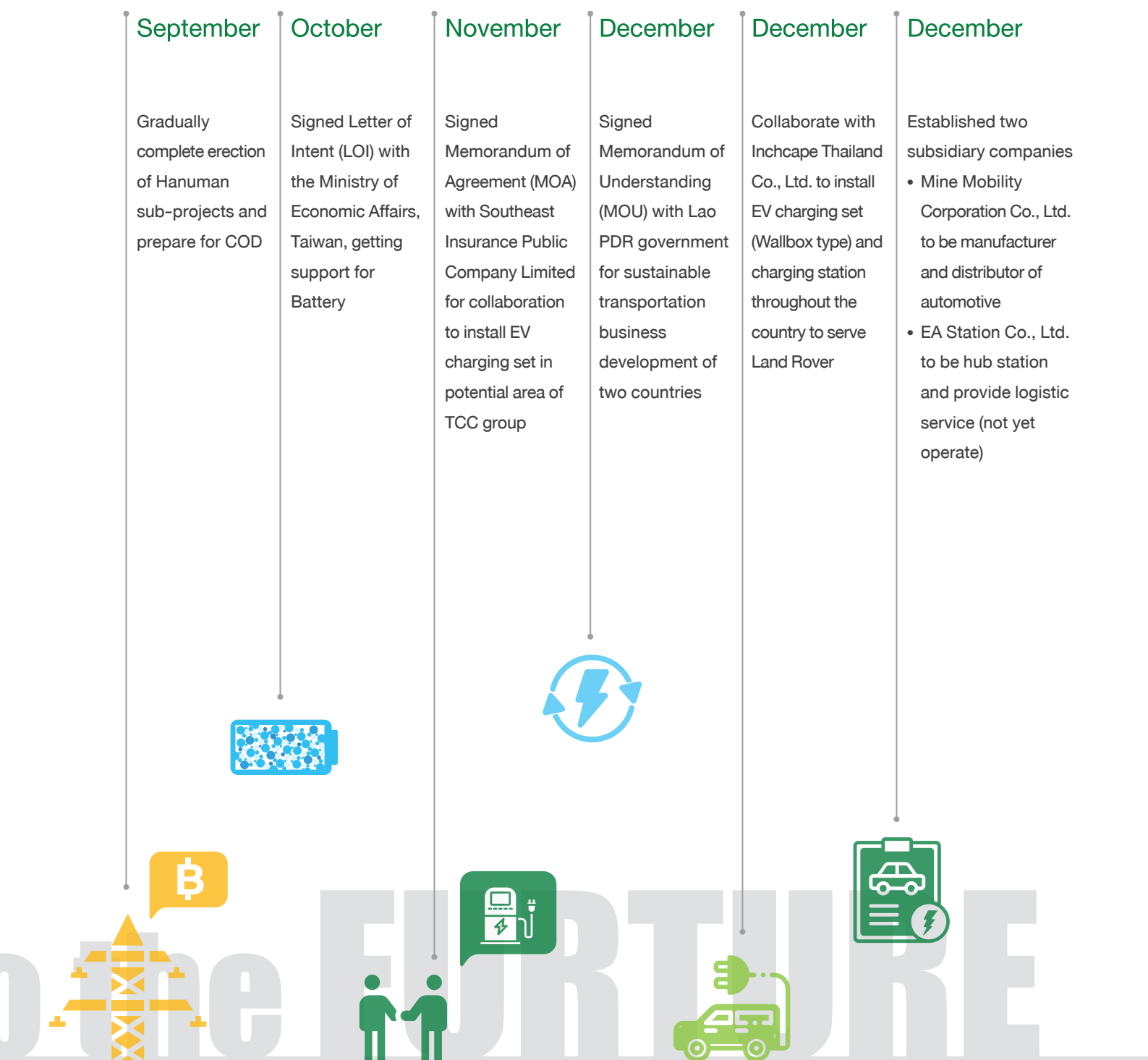
- Introduced EV charging service along driving route From Bangkok to Hua Hin to support tourism
- The achievement of testing the producing GC and PCM
- Signed the MOU between KEPCO KDN & ILJIN POWER



August

- Present advance technology of EA group in Thailand Industry Expo 2018 including
- Battery Lithium-ion with STOBA
 - Green Diesel and Phase Change Material
 - Electric Vehicle, “MINE Mobility”
 - EV charging, quick charge type







“

Energy is a vital part that drives the economy. The Company Group therefore concentrates on business expansion to comfort to the energy demand in the future to create a cost-effective use of energy as well as the highest benefits, the clean energy right from nature. Utilizing current innovation to carry on business to leverage product quality, which enhancing our competitiveness in regional scale.

”

(Mr. Somchainuk Engrakul)
Chairman of the Board
of Directors

Message from Chairman of the Board

Dear All Shareholders

In the past year, the Company Group have performed excellent business growth. The business lines and projects are proceeded according to the work frame set forth. The Company Group generates the highest revenue and net profit of Baht 12,490 million and 4,975 million respectively, marking the highest record. The main income of the Company Group relies on revenue from the electricity business, representing 62 percent and revenue from the biodiesel business, serving 28 percent of total revenue. The wind power plants are implemented in line with the work frame and gradually generate income and cash flow to the Company Group. The return from the project will be allocated for investment in new projects 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. such as, the electric charging station under the brand "EA Anywhere", the electric automobile business under the brand "MINE Mobility", battery and energy storage system business due 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.

For corporate governance, the Company continuously improve the corporate governance work. In recent years, the Company has been ranked Excellent for the listed companies, reflecting the company with 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 my appreciation got the Management and all employees for your dedication, effort and being the important part in achieving success and business growth. My 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.



Year 2018, total
revenue

12,490

Million baht

Net profit

4,975

Million baht



“According to the policy of environmental-friendly business operation based on the advanced technology as a driving force, the Company has strictly adhered to and will carry on with long term plan, and the great support from all related parties such as government and the private sector in country and overseas. Since 2018 onwards, it has marked the significant progress of the Company from surging in another business using more advanced technology and will create stable growth and sustainability of the Company.”

(Mr. Somphote Ahunai)
Chief Executive Officers

Message from the CEO

Dear Shareholders,

The year 2018 considered as a significant brink and a challenging year of Energy Absolute Public Company Limited. The year where the Company carries out biodiesel and renewable energy power plant business to more advanced technologies and step toward the world of more extensive competition, from the nation to region and the world scale. According to the long term strategic plan of the Company, it is our determination to become a leader of the energy business and related business by using the cutting edge technology which is harmless to the environment.

Throughout recent years, the proportion of biodiesel consumption is set at a fixed level 7 percent. The Company's production and distribution of biodiesel and glycerin and generating electricity from solar and wind power plans with a total production capacity of 404 megawatts, and the group of company can generate total revenue of Baht 12,490 million and a net profit of Baht 4,975 million.

In addition, the success of improving efficiency and production process of biodiesel and glycerin, the Company has accomplished the research and development of advanced biodiesel or the Green Diesel (GD) and the Phase Change Material (PCM). These two products will generate products based on crude palm oil to more advance technology. is likely to drop continuously. The development of GD and PCM for the production and distribution in domestic and overseas markets and are on high demand currently. These are an innovation that adds value and enhance the business opportunity for the Company and business partners in the supply chain. By the way for taking crude palm oil from the palm agriculturists and feed to the production process. The idea will generate a positive outcome where the agriculturists can grow together with the Company, following the Share Value concept. The Company has installed machinery for testing the product. Meanwhile, the marketing campaign is started in June 2018 and receive useful feedback. Accordingly, the Company has prepared a work plan and budget for construction of a new plant.

Regarding the renewable energy power plant, Hanuman Project, the wind power plant 260 megawatts located in Chaiyaphum province, with the project value approximately Baht 20,000 million. With collaboration between the executives and employees, the construction is partially completed in December 2018 and approximately completed in the early of 2019. The Hanuman projects generate electricity from wind power and transmit to the transmission line of the Electricity Generating Authority and Provincial Electricity Authority feeding over 200,000 households, and reducing the dependency on fossil energy that causes pollution to the environment.

The advanced electrical innovation that the Company has continuously operated since 2017 according to the long-term business plan is applying energy storage technology to build energy security and to create energy security and to increase the use of renewable energy in a proportion that is environmentally friendly. Following the plan to develop the energy storage industry, the Company joins the investment with Amita Technologies Inc., Taiwan and gradually increases its proportion of shareholding. On 31st December 2018, the Company holds 77.21 percent of shares. The Company plans to build a manufacturing plant of lithium-ion batteries in Thailand, with a total production capacity of 50 GWh per year. The lithium-ion batteries are used for electricity storage for the electrical power industry and electrical automotive industry. Since the Taiwanese Government sees the determination and intention of the Company to apply the technology for the highest benefits and to enhance competitiveness in international level, On 8th October 2018, the Minister of Economic Affairs, Taiwan has signed his name affirming the intention to

support the Company with information, problem-solving and assistance in business operation as the Company will need. The assistance also includes an introduction to business opportunity, facilitating the technical and business term between the Company and other entities in Taiwan. Furthermore, the Company receives technology support from the Industrial Technology Research Institute or ITRI Taiwan, which highlight the readiness and confidence of the Company. The battery production in Thailand during the first phase has a capacity of 1 GWh per year. For the next phase, the Company will expand the facilities to reach 50 GWh per year.

With the vision of the Board of Directors seeing that the battery is the most significant driving force to create energy security and to move forward to a modern and pollution-free automotive industry, the Board of Directors supports researches and development of electrical automotive which is designed and developed by a Thai team. Eventually, the Company launches the introduction for MINE Mobility, the first and genuine Thai electric car in Bangkok International Motor Show 2018. The path of automotive business through the transformation of technology from oil fuel and natural gas (fossil energy) to electric power which is much more save. The electric power reduces pollutions cause to soil-water-air and the global warming issue, bringing back the livelihood for society and our nation in the sustainable future. The Company Plans to produce the lithium-Ion battery and prepares to install electric charging station-EA Anywhere throughout Bangkok Metropolis, vicinity and nationwide, creating a proper ecosystem. This will leverage Thai society to become a pollution free society in the near future.

Besides, the Company prepares the readiness in other parts to support the growth in the long term covering the economy, society and environment coupling with the study, research and development, intensively passing on technology knowledge to personnel in various business lines. The preparation includes the implementation of the Succession Planning, by recruiting new people to join the business development, providing training courses to existing personnel in all levels, managing risk by preparing important work system, preparing financial structure and structure of the Company Group, seeking for new investment opportunity regarding renewable energy abroad, developing communities in terms of education to allow the communities becoming a part of EA Group, promoting careers and well-being of surrounding communities through projects.

According to the policy of environmental-friendly business operation based on the advanced technology as a driving force, the Company has strictly adhered to and will carry on with long term plan, and the great support from all related parties such as government and the private sector in country and overseas. Since 2018 onwards, it has marked the significant progress of the Company from surging in another business using more advanced technology and will create stable growth and sustainability of the Company. On this occasion, I would like to thank you, shareholders, Board of Directors, employees, customers, vendors and business alliances, financial institutions, government agency and state enterprise, communities as well as all stakeholders who considered the vital part of our business success, the creation of innovation and the progress to achieve long term goal of the Company.

The Company is committed to becoming a leader of alternative energy by using advance and environmental-friendly technology for the highest benefits returning to shareholders, trading partners and employees with fairness. This is the target to create sustainable growth for the Company following the Company's motto "Energy Absolute, Energy for FUTURE."

WARD

of the

EXCELLENT



Most of our Pride

We strive and develop the potential of the organization to create new innovations under the challenge of the global changing. The awards from country and international institutions are given as the results of our success. We aim to bring the organization to the top level with stability and sustainability.



Board of Directors



01

Mr. Somchainuk Engtrakul

- Chairman of the Board of Directors
- Independent Director

02

Mr. Somphote Ahunai

- Director (Authorized Signatory Director)
- Chairman of the Executive Committee
- Risk Management Committee
- CEO
- Acting Vice President Power Business Supervision Department

03

Mr. Amorn Saphaweeikul

- Director (Authorized Signatory Director)
- Executive Committee
- Remuneration Committee
- Risk Management Committee
- Deputy CEO
- Acting Vice President – Quality Department
- Acting Vice President – Strategy Development and Investment Planning Department

04

Mr. Wutthilerd Chiannilkulchai

- Director (Authorized Signatory Director)
- Executive Committee
- Risk Management Committee

05

Mr. Sutham Songsiri

- Director
- Executive Committee
- Remuneration Committee
- Corporate Governance Committee



06

ACM. Chainan Thumasujarit

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

07

Mr. Chaiwat Pongpisitsakul

- Independent Director
- Audit Committee
- Chairman of Remuneration Committee
- Chairman of Corporate Governance Committee
- Nomination Committee

08

M.R. Bravochat Chatchai

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

09

POL. GEN Phatcharavat Wongsuwan

- Independent Director
- Risk Management Committee

10

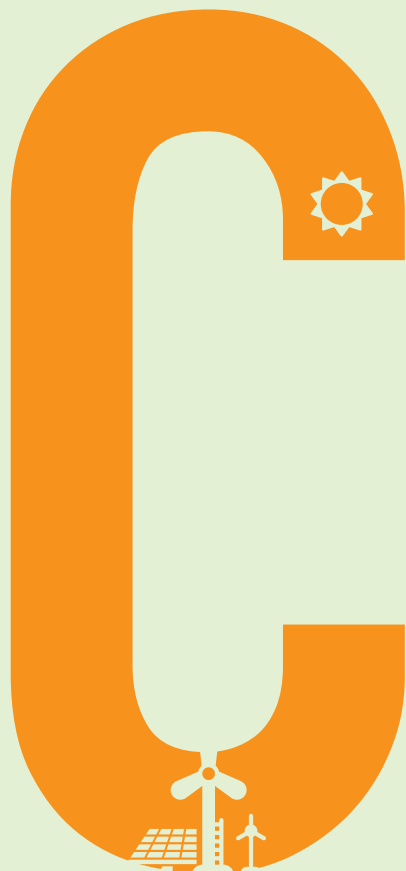
Mr. Somboon Ahunai

- Director
- Executive Committee

11

Mr. Amornsuk Noparumpa

- Independent Director

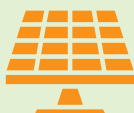


CONTINUITY of ACHIEVING to the EXCELLENCE

Committed to Continuous Improvement



We committed to moving forward. Growing together with all sectors, as a part of the business of producing electricity from renewable energy, both solar and wind energy to sell to the government sector. We also are under building a Lithium-ion battery factory with capacity of 50 GWh per year as the key to creating stability of renewable energy power plants and increase efficiency in the electrical industry as well as driving the modern automotive industry



Soar Power Plants

- Lob Buri (8 MW)
- Nakhon Sawan (90 MW)
- Lamphang (90 MW)
- Phisanulok (90 MW)

Total capacity

278 MW



Wind Power Plants

Hadkangkan project

(Nakhon Si Thammarat, Songkhla)

- Hadkangkan 1 (36 MW)
- Hadkangkan 2 (45 MW)
- Hadkangkan 3 (45 MW)

Total capacity

386 MW

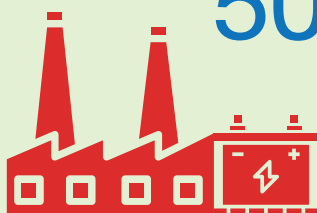
Hanuman project

(Chaiyaphum)

- Hanuman 1 (45 MW)
- Hanuman 5 (48 MW)
- Hanuman 8 (45 MW)
- Hanuman 9 (42 MW)
- Hanuman 10 (80 MW)

Lithium-ion battery factory

Total capacity 50 per year
GWh



Profile of Directors

Profile of Directors: As at end of the year 2018

Mr. Somchainuk Engtrakul

74 years

Chairman of the Board of Directors

Independent Director

Date of Appointment as Director : 12 March 2008

Details of Share held in the Company

(include share held by spouse and minor child)

No. of Share held as of the year end 2017 : -Nil-

No. of Share held as of the year end 2018 : -Nil-

Share Increase / (decrease) during the year : -Nil-

Education

- Ph.D. (Honorary Degree) in Public Administration from Sripatum University
- Bachelor of Laws from Sripatum University
- B.A. (Economics) from UPSALA College New Jersey, U.S.A.

Training

- The Role of Chairman Program Class 9/2006 held by Thai Institute of Directors (IOD)
- Directors Accreditation Program Class 98/2012 held by Thai Institute of Directors (IOD)
- Certificate from National Defense College of Thailand (Class 35)

Work Experience during 5 years

- 2008 – Present Chairman of the Board of Directors
Independent Director (2017-Present)
Energy Absolute PCL (EA)
- Manufacturing and distributing Biodiesel product (B100), Pure glycerin and byproduct
 - Generating and distributing electricity from renewable Energy (via subsidiaries)
 - Development and Manufacturing of Battery (via subsidiaries)
 - Electric charging station business and gas stations and other fuels for all types of automotive vehicles, Including retail in general retail stores, convenience stores and shopping center business along with logistics and electronic transaction services (via subsidiaries)
 - Research and Development Business (via subsidiaries)
- 2008 – Present Chairman of the Board of Directors
Vejthani PCL
- Hospital
- 2008 – Present Director
Siam Piwat Co.,Ltd.
- Rent and Providing utility services

- 2004 – Present Chairman of the Board of Directors
Independent Director
Major Cineplex Group PCL
- Core business in cinema, bowling, karaoke and retails space
- 2000 – Present Director
Siam Piwat Holding Co.,Ltd.
- Investment in Bank institute and others
- 1995 – Present Chairman of the Board of Directors
Chairman of the Executive Board of Directors
Chairman of the Independent Directors
Dhipaya Insurance PCL
- Operating Non-Life Insurance

Directorship held in other Listed Company / Non-Listed Company / Subsidiary of EA

- Other Listed Company** 2 listed companies, i.e.
1. Dhipaya Insurance PCL Chairman of the Board of Directors
Chairman of the Executive Directors
Chairman of the Independent Directors
 2. Major Cineplex Group PCL Chairman of the Board of Directors
Independent Director

Other Non-Listed Company / Other Organization

- 3 companies, i.e.
1. Vejthani PCL Chairman of the Board of Directors
 2. Siam Piwat Holding Co.,Ltd Director
 3. Siam Piwat Co.,Ltd. Director

Subsidiary of EA -Nil-

Family relationship with other Directors and Management

-Nil-

Number of Attendance / Total meeting held in the year 2018

Board of Directors Meeting : 6/7 meetings

Mr. Somphote Ahunai

51 years

Director (Authorized Signatory Director)

Chairman of Executive Committee

Risk Management Committee

Chief Executive Officer

Acting Vice President –Power Business Supervision
Department

Date of appointment as Director : 12 March 2008

Details of Share held in the Company

(include share held by spouse and minor child)

• No. of Share held as of the year end 2017 :

Total Shares	1,524,143,793 shares (40.862%)
Held by himself	869,160,186 shares (23.302%)
Held by trustee	630,000,000 shares (16.890%)
Held by spouse	24,983,607 shares (0.670%)

• No. of Share held as of the year end 2018 :

Total Shares	1,531,419,993 shares (41.057%)
Held by himself	876,436,386 shares (23.497%)
Held by trustee	630,000,000 shares (16.890%)

(Please refer to "Securities and Shareholders Information")

Held by spouse	24,983,607 shares (0.670%)
----------------	----------------------------

• Share Increase / (decrease) during the year :

Total Shares	7,276,200 shares (0.195%)
In porting of himself	7,276,000 shares (0.195%)
In porting of trustee	-Nil-
In porting of spouse	-Nil-

- Manufacturing and distributing Biodiesel product (B100), Pure glycerin and byproduct
- Generating and distributing electricity from renewable Energy (via subsidiaries)
- Development and Manufacturing of Battery (via subsidiaries)
- Electric charging station business and gas stations and other fuels for all types of automotive vehicles, Including retail in general retail stores, convenience stores and shopping center business along with logistics and electronic transaction services (via subsidiaries)
- Research and Development Business (via subsidiaries)

Education

- MBA from University of Pittsburgh, USA
- Bachelor of Engineering from Chulalongkorn University

Training

- Director Accreditation Program class 60/2006 held by Thai Institute of Directors (IOD)
- Executive Management with Business Development and Investment, Class 2, held by Institute of Business and Industrial Development (IBID)
- ULTRA WEAL TH – INVEST LIKE A MASTER class 1 held by The Economic Association Chulalongkorn University
- Executive Program in Energy Literacy for a Sustainable Future (TEA), Class9, held by Thailand Energy Academy

Work Experience during 5 years

Present	Director (2008 – Present) Chairman of Executive Committee (2008 – Present) Risk Management Committee (2014 – Present) Chief Executive Officer (2009 – Present) Acting Vice President Power Business Supervision Department (2015 – Present)
---------	--

2018 – Present	Director AekYingKrit Holding Co., Ltd. Eternity Holding Co.,Ltd. Land Prosperity Holding Co., Ltd. SPBL Holding Co., Ltd. <ul style="list-style-type: none">• Real estate business• Management and support Business
2017 – Present	Director Wattanapiboon Land Co., Ltd. <ul style="list-style-type: none">• Real estate business• Management and support Business
2009 – Present	Director Watabak Wind Co., Ltd <ul style="list-style-type: none">• Energy generation and distribution



Directorship held in other Listed Company / Non-Listed Company / Subsidiary of EA

Other Listed Company -Nil-

Other Non-Listed Company / Other Organization

6 Companies : hold Director position of the following companies

- Watabak Wind Co., Ltd.
- AekYingkrit Holding Co., Ltd.
- Eternity Holding Co., Ltd.
- Land Prosperity Holding Co., Ltd.
- SPBL Holding Co., Ltd.
- Wattanapiboon Land Co., Ltd.

Subsidiary of EA 26 Subsidiaries

(Subsidiaries No. 1-5, 8-17, 19-25 and 30-33 of juristic person which the company holds shares from 10% up in this report)

Family relationship with other Directors and Management

- Brother of Mr. Somboon Ahunai
(Director and Executive Committee)
- Brother of Ms. Supaporn Ahunai
(Vice President - Finance Department)

Number of Attendance / Total meeting held in the year 2018

- Board of Directors Meeting : 6/7 meetings
- Executive Committee Meeting : 4/12 meetings
- Risk Management Committee Meeting : 5/5 meetings



Mr. Amorn Saphaweeikul

44 years

Director (Authorized Signatory Director)

Executive Committee

Remuneration Committee

Risk Management Committee

Deputy CEO

Acting Vice President – Quality Control Department

Acting Vice President – Strategy Development and Investment Planning Department

Date of appointment as Director : 30 March 2012

Details of Share held in the Company

(include share held by spouse and minor child)

• No. of Share held as of the year end 2017 :

Total Shares	119,101,103 shares (3.193%)
Held by himself	96,868,316 shares (2.597%)
Held by spouse	22,232,787 shares (0.596%)

• No. of Share held as of the year end 2018 :

Total Shares	123,201,103 shares (3.303 %)
Held by himself	96,868,316 shares (2.59 %)
Held by spouse	22,232,787 shares (0.60%)

• Share Increase / (decrease) during the year :

Total Shares	4,100,000 shares (0.110%)
In porting of himself	3,100,000 shares (0.083%)
In porting of spouse	1,000,000 shares (0.027%)

Education

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

Training

- Director Accreditation Program Class 98/2012 held by Thai Institute of Directors (IOD)
- Executive Management with Business Development and Investment, Class 3, held by Institute of Business and Industrial Development (IBID)

Work Experience during 5 years

Present	Director (2012 – Present)
	Executive Committee (2012 – Present)
	Remuneration Committee (2014 – Present)
	Risk Management Committee (2014 – Present)
	Deputy CEO (2014 – Present)
	Acting Vice President
	Quality Control Department (2015 – Present)
	Acting Vice President
	Strategy Development and Investment Planning Department (2015 – Present)
	Energy Absolute PCL. (EA)
	<ul style="list-style-type: none"> • Manufacturing and distributing Biodiesel product (B100), Pure glycerin and byproduct • Generating and distributing electricity from renewable Energy (via subsidiaries) • Development and Manufacturing of Battery (via subsidiaries)

- Electric charging station business and gas stations and other fuels for all types of automotive vehicles, Including retail in general retail stores, convenience stores and shopping center business along with logistics and electronic transaction services (via subsidiaries)
- Research and Development Business (via subsidiaries)

Present

Director

Watabak Wind Co., Ltd.

- Energy generation and distribution

Directorship held in other Listed Company / Non-Listed Company / Subsidiary of EA

Other Listed Company –Nil–

Other Non-Listed Company / Other Organization

1 company, i.e.

- Watabak Wind Co., Ltd – Director

Subsidiary of EA

27 subsidiaries

(Subsidiaries No. 1-4, 6, 8-17, 19-24, 27-28 and 30-33 of juristic person which the company holds shares from 10% up in this report)

Family relationship with other Directors and Management

–Nil–

Number of Attendance / Total meeting held in the year 2018

- Board of Directors Meeting : 5/7 meetings
- Executive Committee Meeting : 10/12 meetings
- Remuneration Committee Meeting : 2/3 meetings
- Risk Management Committee Meeting : 4/5 meetings

Mr. Wutthilerd Chiannilkulchai

48 years

Director (Authorized Signatory Director)

Executive Committee

Risk Management Committee

Date of appointment as Director : 12 March 2008

Details of Share held in the Company

(include share held by spouse and minor child)

- **No. of Share held as of the year end 2017 :**

Total Shares 16,032,849 shares (0.430%)
Held by himself 16,032,849 shares (0.430%)
Held by spouse -Nil-

- **No. of Share held as of the year end 2018 :**

Total Shares 15,632,849 shares (0.419 %)
Held by himself 15,632,849 shares (0.419 %)
Held by spouse -Nil-

- **Share Increase / (decrease) during the year :**

Total Shares (400,000) shares (0.011%)
In porting of himself (400,000) shares (0.011%)
In porting of spouse -Nil-

Education

- Master of Science Major Computer and Engineering Management from Assumption University
- Bachelor of Accountings from Chulalongkorn University

Training

- Director Accreditation Program class 71/2008 held by Thai Institute of Directors (IOD)

Work Experience during 5 years

Present Director (2008 - Present)
Executive Committee (2008 - Present)
Risk Management Committee (2014 - Present)
Energy Absolute PCL. (EA)

- Manufacturing and distributing Biodiesel product (B100), Pure glycerin and byproduct
- Generating and distributing electricity from renewable Energy (via subsidiaries)
- Development and Manufacturing of Battery (via subsidiaries)
- Electric charging station business and gas stations and other fuels for all types of automotive vehicles, Including retail in general retail stores, convenience stores and shopping center business along with logistics and electronic transaction services (via subsidiaries)
- Research and Development Business (via subsidiaries)

2004 - Present Director
Perfect Oil Co., Ltd.

- Wholesale of fuel oil

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

- Wholesale of fuel oil
- Mith-Siam Oil Co., Ltd.
- Whole sale of Petroleum Product

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

- Wholesale of fuel oil

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

- Wholesale of fuel oil

Directorship held in other Listed Company / Non-Listed Company / Subsidiary of EA

Other Listed Company -Nil-

Other Non-Listed Company / Other Organization

11 companies, i.e.

As Director of

- Perfect Oil Co., Ltd.
- Power 10 Co., Ltd.
- Double 10 Co., Ltd.
- Famous 10 Co., Ltd.
- Chalee Trading Co., Ltd.
- Ma Jarearn Co., Ltd.
- Sueb Nueng Karn Kha Co., Ltd.
- Two Plus One Oil Co., Ltd.
- Malee Oil Co., Ltd.
- C.C. Oil Co., Ltd.
- Mith-Siam Oil Co., Ltd.

Subsidiary of EA 17 subsidiaries
(Subsidiaries No.2, 4, 7-9, 11-14, 19-24, 26 and 29 of juristic person which the company holds shares from 10% up in this report)

Family relationship with other Directors and Management

-Nil-

Number of Attendance / Total meeting held in the year 2018

- Board of Directors Meeting : 5/7 meetings
- Executive Committee Meeting : 8/12 meetings
- Risk Management Committee Meeting : 4/5 meetings

Mr. Sutham Songsiri

80 years

Director

Executive Committee

Remuneration Committee

Corporate Governance Committee

Date of appointment as Director : 12 March 2009

Details of Share held in the Company

(include share held by spouse and minor child)

• No. of Share held as of the year end 2017 :

Total Shares	1,750,000 shares (0.047%)
Held by himself	1,750,000 shares (0.047%)
Held by spouse	-Nil-

• No. of Share held as of the year end 2018 :

Total Shares	1,650,000 shares (0.044 %)
Held by himself	1,650,000 shares (0.044 %)
Held by spouse	-Nil-

• Share Increase / (decrease) during the year :

Total Shares	(100,000) shares (0.003%)
In porting of himself	(100,000) shares (0.003%)
In porting of spouse	-Nil-

Education

- Master of Economics from San Francisco State University
- Bachelor of Economics from Lincoln University
- Change Management Course at M. I. T. USA, 2009
- Strategy Formulation and Execution at Columbia University, USA, 2010
- Kaplan -Norton Master Class to Mastering New Management System. Boston, USA, 2010

Training

- Directors Certification Program class 97/2007 held by Thai Institute of Directors (IOD)
- The Role of Chairman Program class 22/2009 held by Thai Institute of Directors (IOD)
- Role of the Nomination and Governance Committee class 1/2001 held by Thai Institute of Directors (IOD)
- Internal control and risk management / Value adding and strategy support management, organized held by Energy Absolute Public Company Limited

Work Experience during 5 years

Present	Director (2008 - Present)
	Executive Committee (2008 - Present)
	Remuneration Committee (2014 - Present)
	Corporate Governance Committee (2015 - Present)
	Energy Absolute PCL.(EA)

- Manufacturing and distributing Biodiesel product (B100), Pure glycerin and byproduct
- Generating and distributing electricity from renewable Energy (via subsidiaries)
- Development and Manufacturing of Battery (via subsidiaries)
- Electric charging station business and gas stations and other fuels for all types of automotive vehicles, Including retail in general retail stores, convenience stores and shopping center business along with logistics and electronic transaction services (via subsidiaries)
- Research and Development Business (via subsidiaries)

Directorship held in other Listed Company / Non-Listed Company / Subsidiary of EA
Other Listed Company -Nil-

Other Non-Listed Company / Other Organization
-Nil-

Subsidiary of EA 7 subsidiaries
(Subsidiaries No. 4, 8 and 20-24 of juristic person which the company holds shares from 10% up in this report)

Family relationship with other Directors and Management
-Nil-

Number of Attendance / Total meeting held in the year 2018

• Board of Directors Meeting	: 7/7 meetings
• Executive Committee Meeting	: 11/12 meetings
• Remuneration Committee Meeting	: 3/3 meetings
• Corporate Governance Committee Meeting	: 3/4 meetings

ACM. Chainan Thumasujarit

68 years

Independent Director

Chairman of Audit Committee

Chairman of Risk Management Committee

Remuneration Committee

Nomination Committee

Corporate Governance Committee

Date of appointment as Director : 7 August 2012

Details of Share held in the Company

(include share held by spouse and minor child)

No. of Share held as of the year end 2017 : -Nil-

No. of Share held as of the year end 2018 : -Nil-

Share Increase / (decrease) during the year : -Nil-

Education

- Bachelor of Engineering (the 2nd Class Honors) from Chulalongkorn University
- Bachelor of Arts in Political Science from Ramkhamhaeng University
- Bachelor of Business Administration (General Managements) from Ramkhamhaeng University
- Bachelor of Business Administration (General Managements) (the 1st Class Honors) from Sukhothai Thammathirat Open University
- Thailand National Defence College Group (B.E. 2546)
- Royal Thai Navy Staff College from 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

- Director Accreditation Program class 67/2007 held by Thai Institute of Directors (IOD)
- Audit Committee Program class 22/2008 held by Thai Institute of Directors (IOD)
- Monitoring of the Quality of Financial Reporting class 16/2012 held by Thai Institute of Directors (IOD)
- Seminar 'Drafting, Negotiating & Managing' Successful Construction Contracts Summit 2015 held by Omega World Class Research Institute
- AC HOT UPDATE - Prepare for Next Generation CG for 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.
- Risk Management Program for Corporate Leader (RCL) class 13/2018 held by Thai Institute of Directors (IOD)

- Intelligent City and Information Center / organized by Institute of Electrical and Electronics Engineers of Thailand
- Internal control and risk management / Value adding and strategy support management, organized held by Energy Absolute Public Company Limited

Work Experience during 5 years

- | | |
|---------|--|
| Present | Independent Director (2012 - Present) |
| | Chairman of Audit Committee (2014 - Present) |
| | Audit Committee (2012 - Present) |
| | Chairman of Risk Management Committee (2014 - Present) |
| | Nomination Committee (2014 - Present) |
| | Corporate Governance Committee (2015 - Present) |
| | Remuneration Committee (2016 - Present) |
| | Energy Absolute PCL. (EA) |
| | • Manufacturing and distributing Biodiesel product (B100), Pure glycerin and byproduct |
| | • Generating and distributing electricity from renewable Energy (via subsidiaries) |
| | • Development and Manufacturing of Battery (via subsidiaries) |
| | • Electric charging station business and gas stations and other fuels for all types of automotive vehicles, Including retail in general retail stores, convenience stores and shopping center business along with logistics and electronic transaction services (via subsidiaries) |
| | • Research and Development Business (via subsidiaries) |



2007 – Present Chairman of Audit Committee
Independent Director
Hydrotek PCL

- Operating the construction and environmental engineering management business as follows;
 1. Water Treatment Plant
 2. Wastewater Treatment Plant
 3. Solid Waste Treatment Plant
 4. Waste to Energy

Present Retired Government Official
(2006 – Present)
Freelance Structural Engineer
(1974 – Present)
Office of the Permanent Secretary
for Defence

- Government Organization

Directorship held in other Listed Company / Non-Listed Company / Subsidiary of EA

Other Listed Company 1 listed company, i.e.

- Hydrotek PCL : Chairman of Audit Committee
Independent Director

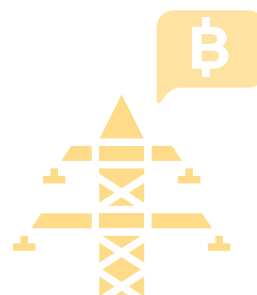
Other Non-Listed Company / Other Organization
-Nil-

Subsidiary of EA -Nil-

**Family relationship with other Directors and
Management**
-Nil-

Number of Attendance / Total meeting held in the year 2018

• Board of Directors Meeting	: 7/7	meetings
• Audit Committee Meeting	: 10/10	meetings
• Remuneration Committee Meeting	: 3/3	meetings
• Nomination Committee Meeting	: 3/3	meetings
• Corporate Governance Committee Meeting	: 4/4	meetings
• Risk Management Committee Meeting	: 5/5	meetings



Mr. Chaiwat Pongpisitsakul

72 years

Independent Director

Audit Committee (who has accounting knowledge and experience to review creditability of financial statements)

Chairman of Corporate Governance Committee

Chairman of Remuneration Committee

Nomination Committee

Date of appointment as Director : 12 March 2008

Details of Share held in the Company

(include share held by spouse and minor child)

No. of Share held as of the year end 2017 : -Nil-

No. of Share held as of the year end 2018 : -Nil-

Share Increase / (decrease) during the year : -Nil-

Education

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

Training

- Director Accreditation Program Class 32/2005 held by Thai Institute of Directors (IOD)
- Audit Committee Program Class 41/2012 held by Thai Institute of Directors (IOD)
- Seminar '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 for Sustainability held by Federation of Accounting Professions Under The Royal Patronage of His Majesty The King
- Board Nomination & Compensation Program Class 1/2017 held by Thai Institute of Directors (IOD)

Work Experience during 5 years

Present Independent Director (2008 - Present)
Audit Committee (2014 - Present)
(Audit Committee who has accounting knowledge and experience to review creditability of financial statements)
Chairman of Remuneration Committee (2016 - Present)
Nomination Committee (2014 - Present)
Chairman of Corporate Governance Committee (2015 - Present)

- | | |
|----------------|---|
| 2008-2014 | Chairman of Audit Committee |
| 2014-2016 | Remuneration Committee |
| | Energy Absolute PCL. (EA) |
| | <ul style="list-style-type: none"> • Manufacturing and distributing Biodiesel product (B100), Pure glycerin and byproduct • Generating and distributing electricity from renewable Energy (via subsidiaries) • Development and Manufacturing of Battery (via subsidiaries) • Electric charging station business and gas stations and other fuels for all types of automotive vehicles, Including retail in general retail stores, convenience stores and shopping center business along with logistics and electronic transaction services (via subsidiaries) • Research and Development Business (via subsidiaries) |
| 2009 - Present | Manager / Auditor |
| | Chaiwat Auditing Office |
| | <ul style="list-style-type: none"> • Provide auditing service |

Directorship held in other Listed Company /

Non-Listed Company / Subsidiary of EA

Other Listed Company -Nil-

Other Non-Listed Company / Other Organization

-Nil-

Subsidiary of EA -Nil-

Family relationship with other Directors and Management

-Nil-

Number of Attendance / Total meeting held in the year 2018

- | | | |
|--|---------|----------|
| • Board of Directors Meeting | : 7/7 | meetings |
| • Audit Committee Meeting | : 10/10 | meetings |
| • Remuneration Committee Meeting | : 3/3 | meetings |
| • Nomination Committee Meeting | : 5/5 | meetings |
| • Corporate Governance Committee Meeting | : 4/4 | meetings |

M.R. Bravochat Chatchai

58 years

Independent Director

Audit Committee

Chairman of Nomination Committee

Risk Management Committee

Corporate Governance Committee

Remuneration Committee

Date of appointment as Director : 26 November 2010

Details of Share held in the Company

(include share held by spouse and minor child)

No. of Share held as of the year end 2017 : -Nil-

No. of Share held as of the year end 2018 : -Nil-

Share Increase / (decrease) during the year : -Nil-

Education

- Master of Arts from Pranakhon Pajabhat University
- Bachelor of Laws from Ramkhamhaeng University

Training

- Director Accreditation Program class 98/2012 held by Thai Institute of Directors (IOD)
- Audit Committee Program class 41/2012 held by Thai Institute of Directors (IOD)
- Role of Nomination and Governance Committee - RNG Class 7/2015 held by Thai Institute of Director (IOD)
- AC HOT UPDATE : Prepare for Next Generation CG for 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.
- Risk Management Program for Corporate Leader (RCL) class 13/2018 held by Thai Institute of Directors (IOD)
- Internal control and risk management / Value adding and strategy support management, organized held by Energy Absolute Public Company Limited

Work Experience during 5 years

Present Independent Director (2010 - Present)
 Audit Committee (2010 - Present)
 Chairman of Nomination Committee (2014 - Present)
 Risk Management Committee (2014 - Present)
 Corporate Governance Committee (2015 - Present)
 Remuneration Committee (2016 - Present)
 Energy Absolute PCL.(EA)

- Manufacturing and distributing Biodiesel product (B100), Pure glycerin and byproduct
- Generating and distributing electricity from renewable Energy (via subsidiaries)

- Development and Manufacturing of Battery (via subsidiaries)
- Electric charging station business and gas stations and other fuels for all types of automotive vehicles, Including retail in general retail stores, convenience stores and shopping center business along with logistics and electronic transaction services (via subsidiaries)
- Research and Development Business

1999 - Present Director

M.R. Bravochat Laws Office

- Providing Legal consultant

Directorship held in other Listed Company / Non-Listed Company / Subsidiary of EA

Other Listed Company -Nil-

Other Non-Listed Company / Other Organization

-Nil-

Subsidiary of EA

-Nil-

Family relationship with other Directors and Management

-Nil-

Number of Attendance / Total meeting held in the year 2018

- Board of Directors Meeting : 7/7 meetings
- Audit Committee Meeting : 10/10 meetings
- Remuneration Committee Meeting : 3/3 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

69 years

Independent Director

Risk Management Committee

Date of appointment as Director : 18 April 2014

Details of Share held in the Company

(include share held by spouse and minor child)

- **No. of Share held as of the year end 2017 :**

Total Shares 1,140,000 shares (0.030%)
Held by himself 1,140,000 shares (0.030%)
Held by spouse -Nil-

- **No. of Share held as of the year end 2018 :**

Total Shares 1,140,000 shares (0.030%)
Held by himself 1,140,000 shares (0.030 %)
Held by spouse -Nil-

- **Share Increase / (decrease) during the year :**
-Nil-

Education

- Master of Arts from Kasetsart University
- Royal Police Cadet Academy
- Armed Forces Academies Preparatory School
- St. Gabriel's College

Training

-Nil-

Work Experience during 5 years

Present Independent Director (2014 - Present)
Risk Management Committee
(2014 - Present)
Energy Absolute PCL.(EA)

- Manufacturing and distributing Biodiesel product (B100), Pure glycerin and byproduct
- Generating and distributing electricity from renewable Energy (via subsidiaries)
- Development and Manufacturing of Battery (via subsidiaries)
- Electric charging station business and gas stations and other fuels for all types of automotive vehicles, Including retail in general retail stores, convenience stores and shopping center business along with logistics and electronic transaction services (via subsidiaries)
- Research and Development Business (via subsidiaries)

Present

Independent Director

CP ALL PCL.

- Convenient Store under the trademark of 7-Eleven and Entitle other retailers to operate business in Thailand, Invest in supporting business.
- Convenient Store Business including investment in wholesaler store business with cash payment and self-service style under the name of "Makro"

Directorship held in other Listed Company / Non-Listed Company / Subsidiary of EA

Other Listed Company -Nil-

Other Non-Listed Company / Other Organization
-Nil-

Subsidiary of EA -Nil-

Family relationship with other Directors and Management

-Nil-

Number of Attendance / Total meeting held in the year 2018

- Board of Directors Meeting : -/7 meetings
- Risk Management Committee Meeting : -/5 meetings

Mr. Somboon Ahunai

63 years

Executive Director

Executive Committee

Date of appointment as Director : 22 April 2015

Details of Share held in the Company

(include share held by spouse and minor child)

• No. of Share held as of the year end 2017 :

Total Shares	9,813,951 shares (0.263%)
Held by himself	9,813,951 shares (0.263%)
Held by spouse	-Nil-

• No. of Share held as of the year end 2018 :

Total Shares	10,043,951 shares (0.269 %)
Held by himself	10,043,951 shares (0.269 %)
Held by spouse	-Nil-

• Share Increase / (decrease) during the year :

Total Shares	230,000 shares (0.006%)
In porting of himself	230,000 shares (0.006%)
In porting of spouse	-Nil-

Education

- Master of Business Jacksonville State University
- Bachelor of Science in Chemical Engineering (Cum Laude) from University of Alabama

Training

- Directors Accreditation Program (DAP) Class 47/2005 held by Thai Institute of Directors (IOD)
- Audit Committee Program (ACP) Class 12/2006 held by Thai Institute of Directors (IOD)
- Internal control and risk management / Value adding and strategy support management, organized held by Energy Absolute Public Company Limited

Work Experience during 5 years

Present	Executive Committee (2017 - Present)
	Director (2015 - Present)
	Advisor (2011 - Present)
	Energy Absolute PCL.(EA)
	<ul style="list-style-type: none">• Manufacturing and distributing Biodiesel product (B100), Pure glycerin and byproduct• Generating and distributing electricity from renewable Energy (via subsidiaries)• Development and Manufacturing of Battery

- Electric charging station business and gas stations and other fuels for all types of automotive vehicles, Including retail in general retail stores, convenience stores and shopping center business along with logistics and electronic transaction services (via subsidiaries)

- Research and Development Business (via subsidiaries)

2004 - 2015 Executive Vice President (Director) Small and Medium Enterprise Development Bank of Thailand

- Bank

Present Director (Authorized Signatory Director) Ruammit Panich Co., Ltd.

- Hotel, Resort and Apartment

Present Director (Authorized Signatory Director) Songphon Co., Ltd.

- Real Estate

Directorship held in other Listed Company / Non-Listed Company / Subsidiary of EA

Other Listed Company -Nil-

Other Non-Listed Company / Other Organization

2 companies, i.e.

1. Ruammit Panich Co., Ltd. - Director (Authorized Signatory Director)
2. Songphon Co., Ltd. - Director (Authorized Signatory Director)

Subsidiary of EA -Nil-

Family relationship with other Directors and Management

- Brother of Mr. Somphote Ahunai (Director, Chairman of Executive Committee , Risk Management Committee, and CEO)
- Brother of Ms. Supaporn Ahunai (Vice President - Finance Department)

Number of Attendance / Total meeting held in the year 2018

- Board of Directors Meeting : 5/7 meetings
- Executive Committee Meeting : 12/12 meetings

Mr. Amornsuk Noparumpa

72 years

Independent Director

Date of appointment as Director : 27 April 2017

Details of Share held in the Company

(include share held by spouse and minor child)

No. of Share held as of the year end 2017 : -Nil-

No. of Share held as of the year end 2018 : -Nil-

Share Increase / (decrease) during the year : -Nil-

Education

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

Training

- Director Certification Program (DCP) Class 30/2003 held by Thai Institute of Directors (IOD)
- Audit Committee Program (ACP) Class 23/2008 held by Thai Institute of Directors (IOD)
- Role of Compensation Committee Program Class 9/2009 held by Thai Institute of Directors (IOD)
- Role of the Chairman Program (RCP 36/2015) held by Thai Institute of Directors (IOD)
- Security Psychology Program, Class 31
- Senior Management Program, Class 7

Work Experience during 5 years

27 April 2017 Independent Director

- Present Energy Absolute PCL.(EA)
- Manufacturing and distributing Biodiesel product (B100), Pure glycerin and byproduct
 - Generating and distributing electricity from renewable Energy (via subsidiaries)
 - Development and Manufacturing of Battery (via subsidiaries)
 - Electric charging station business and gas stations and other fuels for all types of automotive vehicles, Including retail in general retail stores, convenience stores and shopping center business along with logistics and electronic transaction services (via subsidiaries)
 - Research and Development Business (via subsidiaries)

- 2005 - Present Chairman of the Board of Directors
Independent Director
- Real Estate Developer Business in integrated sale and rent style.
- 2010 - Present Advisor of Executive Committee
- Airline Business
- 1998 - Present Independent Director
Chairman of the Audit Committee
Nomination and Remuneration Committee Member
Regional Container Lines PCL.
- Thai-based container shipping line.

Directorship held in other Listed Company / Non-Listed Company / Subsidiary of EA

Other Listed Company 2 Companies, i.e.

1. L.P.N. Development PCL.
 - Chairman of the Board of Directors, Independent Director
2. Regional container Lines PCL.
 - Independent Director / Chairman of the Audit Committee

Other Non-Listed Company / Other Organization
-Nil-

Subsidiary of EA -Nil-

Family relationship with other Directors and Management

-Nil-

Number of Attendance / Total meeting held in the year 2018

- Board of Directors Meeting : 5/7 meetings

Details of Executives and Corporate Secretary

Profile of Executives (As of 31 December 2018)

1. Mr. Somphote Ahunai (Refer profile from "Profiles of Directors" No. 2, Page 18-19)
2. Mr. Amorn Sapthaweeikul (Refer profile from "Profiles of Directors" No. 3, Page 20)

Mrs. Dujdao Luksanaviwat

49 years

Special Assistant to CEO

Vice President — ISO Quality, Standard for Occupational Safety and Environment Department
Date of appointment: 16 February 2010

Details of Share held in the Company

(include share held by spouse and minor child)

No. of Share held as of the year end 2017 : -Nil-

No. of Share held as of the year end 2018 : -Nil-

Share Increase / (decrease) during the year : -Nil-

Education

- Master of Business Administration, Khon Kaen University
- Certificate "Human Resource and Organization Development " from the National Institute of Development Administration (NIDA)

Training

- The Business & Leadership Management Program from Bangor University
- "Knowledge-Based Economy in the 21st Century" from Llandrillo Menai International, UK
- Training course "Leader As Coach" organized by Energy Absolute Public Company Limited
- Internal control and risk management / Value adding and strategy support management, organized by Energy Absolute Public Company Limited

Work Experience during 5 years

Present	Special Assistant to CEO (2014 – Present) Vice President – ISO Quality, Standard for Occupational, Safety and Environment Department (2015 – Present)
2016 – 2017	Acting Vice President – Human Resource and Administration Department
2012 – 2017	Executive Committee Director
2014 – 2015	Deputy GM (Factory) Energy Absolute PCL (EA) • Manufacturing and distributing Biodiesel products (B100), Pure glycerin and by product

- Generating and distributing electricity from Renewable Energy (via subsidiaries)
- Development and Manufacturing of Battery (via subsidiaries)
- Electric charging station business and gas stations and other fuels for all types of automotive vehicles, Including retail in general retail stores, convenience stores and shopping center business along with logistics and electronic transaction services (via subsidiaries)
- Research and Development Business (via subsidiaries)

Directorship held in other Listed Company / Non-Listed Company / Subsidiary of EA

Other Listed Company

-Nil-

Other Non-Listed Company / Other Organization

-Nil-

Subsidiary of EA

3 Subsidiaries (As Director in direct subsidiary No. 18, and the Authorized Director in indirect subsidiaries No. 26, 33 of juristic person which the company holds shares from 10% up in this report,)

Family relationship with other Directors and Management

-Nil-

Mr. Borvorn Pienpongpanich

50 years

Head of Accounting and Finance Departments

Date of appointment: 1 February 2017

Details of Share held in the Company

(include share held by spouse and minor child)

No. of Share held as of the year end 2017 : -Nil-

No. of Share held as of the year end 2018 : -Nil-

Share Increase / (decrease) during the year : -Nil-

Education

- MBA, University of Central Oklahoma, USA
- Bachelor of Business Administration, Major Marketing, University of Thai Chamber of Commerce

Training

- | | |
|--|-------------|
| • TLCA Executive Development Program (EDP), Class 5 | 2016 – 2017 |
| • Directors Certification Program, Class 116/2015, organized by Thai Institute of Directors | |
| • Chief Financial Officer Certification Program, Class 19/2015 organized by Federation of Accounting Professions under Royal Patronage of his Majesty the King | 2015-2016 |
| • Strategic Financial Leadership Program (SFLP) organized by Thai Listed Companies Association | 2006-2015 |
| • Training course "Leader As Coach" organized by Energy Absolute Public Company Limited | |
| • Internal control and risk management / Value adding and strategy support management, organized by Energy Absolute Public Company Limited | |

Work Experience during 5 years

- | | |
|---------|---|
| Present | Head of Accounting and Finance Departments (2017-Present) |
| | Energy Absolute PCL (EA) |
| | <ul style="list-style-type: none"> • Manufacturing and distributing Biodiesel products (B100), Pure glycerin and by product • Generating and distributing electricity from Renewable Energy (via subsidiaries) • Development and Manufacturing of Battery (via subsidiaries) |

- Electric charging station business and gas stations and other fuels for all types of automotive vehicles, Including retail in general retail stores, convenience stores and shopping center business along with logistics and electronic transaction services (via subsidiaries)
 - Research and Development Business (via subsidiaries)
- Head of Accounting and Finance Departments
National Power Supply PCL
- Manufacturing and distributing electricity
- Deputy Chief Financial Officer
Zen Corporation Group Co., Ltd.
- Japanese Restaurant Business
- Director of Fund Raising & Financial Restructuring Department
Premier Fission Capital Co., Ltd
- Holding Company

Directorship held in other Listed Company / Non-Listed Company / Subsidiary of EA

Other Listed Company

-Nil-

Other Non-Listed Company / Other Organization

-Nil-

Subsidiary of EA

-Nil-

Family relationship with other Directors and Management

-Nil-

Ms. Supaporn Ahunai

42 years

Vice President — Finance Department

Date of Appointment: 1 January 2008

Details of Share held in the Company

(include share held by spouse and minor child)

• No. of Share held as of the year end 2017 :

Total Shares	24,197,049 shares (0.649%)
Held by herself	24,197,049 shares (0.649%)
Held by spouse	- Nil-

• No. of Share held as of the year end 2018 :

Total Shares	25,217,049 shares (0.676%)
Held by herself	24,217,049 shares (0.649%)
Held by spouse	1,000,000 shares (0.027%)

• Share Increase / (decrease) during the year :

Total Shares	1,020,000 shares (0.027%)
Held by herself	20,000 shares (0.000%)
Held by spouse	1,000,000 shares (0.027 %)

Education

- Master of Science Information System, the Pennsylvania State University
- Bachelor's degree from faculty of Commerce and Accountancy, Thammasat University
- Certificate "AFPT" (Associate Financial Planner Thailand : AFPT)
- Complex Type 1 Investment Consultant, held by SEC
- Investment Planner, held by SEC

Training

- Directors Certification Program 71/2008 held by Thai Institute of Directors (IOD)
- Investment Consultant Program, held by SEC
- Expertised Investor, Class 15 held by Thai Investors Association
- Complex Products : Derivatives from ATI-Asco Training Institute
- Foundation of Financial & Tax Planning from ThaiPFA
- Investment Planner, from ThaiPFA
- Training course "Leader As Coach" organized by Energy Absolute Public Company Limited
- Internal control and risk management / Value adding and strategy support management, organized by Energy Absolute Public Company Limited

Work Experience during 5 years

Present

Vice President — Finance

Department (2008 - Present)

Energy Absolute PCL (EA)

- Manufacturing and distributing Biodiesel products (B100), Pure glycerin and by product
- Generating and distributing electricity from Renewable Energy (via subsidiaries)
- Development and Manufacturing of Battery (via subsidiaries)
- Electric charging station business and gas stations and other fuels for all types of automotive vehicles, Including retail in general retail stores, convenience stores and shopping center business along with logistics and electronic transaction services (via subsidiaries)
- Research and Development Business (via subsidiaries)

Directorship held in other Listed Company / Non-Listed Company / Subsidiary of EA

Other Listed Company

-Nil-

Other Non-Listed Company / Other Organization

-Nil-

Subsidiary of EA

1 subsidiary (the Authorized Director in direct subsidiary No. 1, of juristic person which the company holds shares from 10% up in this report,)

Family relationship with other Directors and Management

- Younger Sister of Mr. Somphote Ahunai (Director, Chairman of Executive Committee, Risk Management Committee and CEO)
- Younger Sister of Mr. Somboon Ahunai (Director, Executive Committee Member)

Mr. Patipat Sakdawongsiwimol

45 years

Vice President – Sales and Marketing Department

Acting Vice President – Factory Department (Production Division)

Date of Appointment : 16 August 2012

Details of Share held in the Company

(include share held by spouse and minor child)

No. of Share held as of the year end 2017 : -Nil-

No. of Share held as of the year end 2018 : -Nil-

Share Increase / (decrease) during the year : -Nil-

Education

- Master of Business Administration, Khon Kaen University
- Bachelor of Science in Biology Mahidol University

Training

- Training course "Leader As Coach" organized by Energy Absolute Public Company Limited

Work Experience during 5 years

- Present
- Vice President — Sales and Marketing Department (2012–Present)
- Acting Vice President – Factory Dept – Production Division (18 Apr 2017 – Present)
- Energy Absolute PCL (EA)
- Manufacturing and distributing Biodiesel products (B100), Pure glycerin and by product
 - Generating and distributing electricity from Renewable Energy (via subsidiaries)
 - Development and Manufacturing of Battery (via subsidiaries)
 - Electric charging station business and gas stations and other fuels for all types of automotive vehicles, Including retail in general retail stores, convenience stores and shopping center business along with logistics and electronic transaction services (via subsidiaries)
 - Research and Development Business (via subsidiaries)

Directorship held in other Listed Company / Non-Listed Company / Subsidiary of EA

Other Listed Company

-Nil-

Other Non-Listed Company / Other Organization

-Nil-

Subsidiary of EA

-Nil-

Family relationship with other Directors and Management

-Nil-

Ms. Yaowalug Pukpikul

51 years

Corporate Secretary

Secretary of the Board of Directors

Secretary of the Executive Committee

Secretary of the Risk Management Committee

Secretary of the Corporate Governance Committee

Vice President – Corporate Secretary, Compliance and Contract Management Department

Date of Appointment: 14 November 2013

Details of Share held in the Company

(include share held by spouse and minor child)

No. of Share held as of the year end 2017 : -Nil-

No. of Share held as of the year end 2018 : -Nil-

Share Increase / (decrease) during the year : -Nil-

Education

- Bachelor of Laws, Thammasat University
- Certificate "Merchant Marine Management" from Chulalongkorn University
- Certificate "Marine Insurance" from Singapore National Shipping Association, Republic of Singapore

Training

- Company Secretary Program (CSP) Class 56/2014 held by Thai Institute of Directors (IOD)
- Training course "Principle of Life Coaching" organized by Energy Absolute Public Company Limited
- Training course "Leader As Coach" organized by Energy Absolute Public Company Limited
- Internal control and risk management / Value adding and strategy support management, organized by Energy Absolute Public Company Limited

Work Experience during 5 years

Present	Corporate Secretary (2013 – Present) Secretary of the Board of Director (2013 – Present) Secretary of Executive Director Committee (2013 – Present) Secretary of Risk Management Committee (2014 – Present) Secretary of Corporate Governance Committee (2015 – Present) Vice President – Corporate Secretary, Compliance and Contract Management Department (2015 – Present) Energy Absolute PCL (EA)
---------	---

- Manufacturing and distributing Biodiesel products (B100), Pure glycerin and by product
- Generating and distributing electricity from Renewable Energy (via subsidiaries)
- Development and Manufacturing of Battery (via subsidiaries)
- Electric charging station business and gas stations and other fuels for all types of automotive vehicles, Including retail in general retail stores, convenience stores and shopping center business along with logistics and electronic transaction services (via subsidiaries)
- Research and Development Business (via subsidiaries)

Directorship held in other Listed Company / Non-Listed Company / Subsidiary of EA

Other Listed Company

-Nil-

Other Non-Listed Company / Other Organization

-Nil-

Subsidiary of EA

1 subsidiary (the Director in direct subsidiary No. 18, of juristic person which the company holds shares from 10% up in this report)

Family relationship with other Directors and Management

-Nil-

Ms. Omsin Siri

51 years

Vice President — Corporate Communication Department

Date of Appointment: 1 September 2014

Details of Share held in the Company

(include share held by spouse and minor child)

No. of Share held as of the year end 2017 : -Nil-

No. of Share held as of the year end 2018 : -Nil-

Share Increase / (decrease) during the year : -Nil-

Education

- Master of Business Administration, Chulalongkorn University
- Bachelor of Accountancy, Chulalongkorn University

Training

- Directors Certification Program class 140/2011 held by Thai Institute of Directors (IOD)
- Capital Market Academy, Class 2 (CMA 2)
- TLCA Executive Development Program, Class 5 (EDP 5)
- Training course "Leader As Coach" organized by Energy Absolute Public Company Limited
- Internal control and risk management / Value adding and strategy support management, organized by Energy Absolute Public Company Limited

2018 – Present

- Electric charging station business and gas stations and other fuels for all types of automotive vehicles, Including retail in general retail stores, convenience stores and shopping center business along with logistics and electronic transaction services (via subsidiaries)
- Research and Development Business (via subsidiaries)

Independent Director, Audit Committee Member The Signature Brand Co.,Ltd.

- Electrical appliance and Kitchenware

2013 – 2014

Deputy Chief Executive Office SPCG PCL

- Holding Company (Energy)

Directorship held in other Listed Company / Non-Listed Company / Subsidiary of EA

Other Listed Company

-Nil-

Other Non-Listed Company / Other Organization

1 Company : Independent Director, Audit Committee Member of the Signature Brand Co.,Ltd.

Subsidiary of EA

-Nil-

Family relationship with other Directors and Management

-Nil-

Work Experience during 5 years

Present	Vice President – Corporate Communication Department (2016– Present)
2014 – 8 Dec. 2016	Secretary of Remuneration Committee
2014 – 1 Jun. 2016	Vice President – Human Resource and Administration Department <ul style="list-style-type: none">• Manufacturing and distributing Biodiesel products (B100), Pure glycerin and by product• Generating and distributing electricity from Renewable Energy (via subsidiaries)• Development and Manufacturing of Battery (via subsidiaries)

Mr. Pramote Lertpiyayowong

52 years

Vice President – Factory Department (Production Division)

Acting Vice President – Factory Department (Engineering Division)

Date of Appointment : 13 July 2015

Details of Share held in the Company

(include share held by spouse and minor child)

No. of Share held as of the year end 2017 : -Nil-

No. of Share held as of the year end 2018 : -Nil-

Share Increase / (decrease) during the year : -Nil-

Education

- Bachelor of Engineering (Department of Electrical Engineering) from King Monkut's University of Technology

Training

- Training course "Leader As Coach" organized by Energy Absolute Public Company Limited
- Internal control and risk management / Value adding and strategy support management, organized by Energy Absolute Public Company Limited

Work Experience during 5 years

Present	Vice President – Factory Department (Engineering Division) (July 2015 – Present)
2017 – Apr 2018	Acting Vice President – Factory Department (Production Division) Energy Absolute PCL (EA) <ul style="list-style-type: none"> • Manufacturing and distributing Biodiesel products (B100), Pure glycerin and by product • Generating and distributing electricity from Renewable Energy (via subsidiaries) • Development and Manufacturing of Battery (via subsidiaries)

- Electric charging station business and gas stations and other fuels for all types of automotive vehicles, Including retail in general retail stores, convenience stores and shopping center business along with logistics and electronic transaction services (via subsidiaries)
- Research and Development Division Manager – Production / Engineering Division B.N. Brothers Co., Ltd.
- Manufacturing and distributing of color paints

Directorship held in other Listed Company / Non-Listed Company / Subsidiary of EA

Other Listed Company

-Nil-

Other Non-Listed Company / Other Organization

-Nil-

Subsidiary of EA

-Nil-

Family relationship with other Directors and Management

-Nil-

Ms. Wimolmas Wongmakornpan

38 years

Vice President – Social Enterprise Department

Date of Appointment: 1 June 2016

Details of Share held in the Company

(include share held by spouse and minor child)

- **No. of Share held as of the year end 2017 :**

Total Shares	27,600 shares (0.001%)
Held by herself	27,600 shares (0.001%)
Held by spouse	- Nil-

- **No. of Share held as of the year end 2018 :**

Total Shares	27,600 shares (0.001%)
Held by herself	27,600 shares (0.001%)
Held by spouse	-Nil-

- **Share Increase / (decrease) during the year :**

-Nil-

Education

- International MBA, Asian Institute of Technology, Thailand
- Master in Management Science, ESCP-EAP, France

Training

- Strategic CFO in Capital Markets Program held by Stock Exchange of Thailand
- Training course "Leader As Coach" organized by Energy Absolute Public Company Limited
- Internal control and risk management / Value adding and strategy support management, organized by Energy Absolute Public Company Limited

Work Experience during 5 years

Present	Vice President – Social Enterprise Department (2016 – Present)
2012 – 30 May 2016	Deputy Vice President – Strategy Development and Investment Planning Energy Absolute PCL (EA) <ul style="list-style-type: none">• Manufacturing and distributing Biodiesel products (B100), Pure glycerin and by product• Generating and distributing electricity from Renewable Energy (via subsidiaries)• Development and Manufacturing of Battery (via subsidiaries)• Electric charging station business and gas stations and other fuels for all types of automotive vehicles, Including retail in general retail stores, convenience stores and shopping center business along with logistics and electronic transaction services (via subsidiaries)• Research and Development Business (via subsidiaries)

Directorship held in other Listed Company / Non-Listed Company / Subsidiary of EA

Other Listed Company

-Nil-

Other Non-Listed Company / Other Organization

-Nil-

Subsidiary of EA

-Nil-

Family relationship with other Directors and Management

-Nil-

Mr. Manop Oulandsiripong

50 years

Vice President — Information Technology and System Development Department

Date of Appointment: 1 November 2016

Details of Share held in the Company

(include share held by spouse and minor child)

• No. of Share held as of the year end 2017 :

Total Shares - Nil-

• No. of Share held as of the year end 2018 :

Total Shares - Nil-

Held by herself 3,700 shares (0.000%)

Held by spouse -Nil-

• Share Increase / (decrease) during the year :

Total Shares 3,700 shares (0.000%)

Held by herself 3,700 shares (0.000%)

Held by spouse -Nil-

Education

- Electronic Engineering, Sripatum University, Thailand

Training

- Training course "Leader As Coach" organized by Energy Absolute Public Company Limited

Work Experience during 5 years

Nov. 2016 - Present Vice President - Information Technology and System Development Department Energy Absolute PCL (EA)

- Manufacturing and distributing Biodiesel products (B100), Pure glycerin and by product
- Generating and distributing electricity from Renewable Energy (via subsidiaries)
- Development and Manufacturing of Battery (via subsidiaries)
- Electric charging station business and gas stations and other fuels for all types of automotive vehicles, Including retail in general retail stores, convenience stores and shopping center business along with logistics and electronic transaction services (via subsidiaries)
- Research and Development

2010 - 2015

Division Manager -Production / Engineering Division

B.N. Brothers Co., Ltd.

- Manufacturing and distributing of color paints

2013 - Oct. 2016

Head of Technology Management and Support Department

CIMB Thai Bank PCL

- Bank

Directorship held in other Listed Company / Non-Listed Company / Subsidiary of EA

Other Listed Company

-Nil-

Other Non-Listed Company / Other Organization

-Nil-

Subsidiary of EA

1 subsidiary (the Authorized Director in direct subsidiary No 1, of juristic person which the company holds shares from 10% up in this report)

Family relationship with other Directors and Management

-Nil-

Mrs. Pornthip Saengchan

50 years

Vice President, Human Resource and Administration Department

Secretary of the Remuneration Committee

Date of Appointment: 1 June 2017

Details of Share held in the Company

(include share held by spouse and minor child)

No. of Share held as of the year end 2017 : -Nil-

No. of Share held as of the year end 2018 : -Nil-

Share Increase / (decrease) during the year : -Nil-

Education

- Master of Education Program in Educational Measurement and Evaluation, Srinakharinwirot University
- Bachelor of Education Program in Mathematics, Srinakharinwirot University

Training

- Leadership Development Program held by Slingshot Group Co., Ltd.
- 7 Habits of Highly Effective People held by PacRim Group
- The 4 Discipline of Execution (4DX) held by PacRim Group
- Coaching & Feedback for the highest performance held by P&P Consultants Co., Ltd.
- Training course "Leader As Coach" organized by Energy Absolute Public Company Limited
- Internal control and risk management / Value adding and strategy support management, organized by Energy Absolute Public Company Limited

2010 – 2015

2015 – 2017

- Development and Manufacturing of Battery (via subsidiaries)
- Electric charging station business and gas stations and other fuels for all types of automotive vehicles, Including retail in general retail stores, convenience stores and shopping center business along with logistics and electronic transaction services (via subsidiaries)
- Research and Development Division Manager – Production / Engineering Division B.N. Brothers Co., Ltd.
- Manufacturing and distributing of color paints Business (via subsidiaries)
- Vice President, Human Resource Potentiality Management Department Premier Group
- Manufacturing and Distributing consumer products, Environmental Management Business, Real Estate and Hotel Group Business, Financial Service Business
- Executive, Human Resource Department Thai City Electric Co., Ltd.
- Distributor of Electrical Appliances

Work Experience during 5 years

Present Vice President, Human Resource and Administration Department (June 2017 – Present)
Secretary of the Remuneration Committee (June 2016 – Present)
Energy Absolute PCL (EA)
• Manufacturing and distributing Biodiesel products (B100), Pure glycerin and by product
• Generating and distributing electricity from Renewable Energy (via subsidiaries)

2013 – 2015

Directorship held in other Listed Company / Non-Listed Company / Subsidiary of EA

Other Listed Company

-Nil-

Other Non-Listed Company / Other Organization

-Nil-

Family relationship with other Directors and Management

-Nil-

Ms. Kamaporn Tumpipat

38 years

Vice President, Account Department

Date of Appointment: 5 July 2018

Date of Resignation : 11 March 2019

Details of Share held in the Company

(include share held by spouse and minor child)

No. of Share held as of 5 July 2018 : -Nil-

No. of Share held as of the year end 2018 : -Nil-

Share Increase / (decrease) during the year : -Nil-

Education

- Bachelor of Accountancy, Chulalongkorn University
- Master of General Management, National Institute of Development Administration (NIDA)

Training (In year 2018)

- Accounting Standards effective in 2019 and 2020 (TFRS 15, TFRS 16, TFRS 9) KPMG Training Centers
- TFRS 9 held by Federation of Accounting Professions
- Internal control and risk management / Value adding and strategy support management, organized by Energy Absolute Public Company Limited

Work Experience during 5 years

- 5 July 2018 – Vice President, Account
11 Mar 2019 Department
Energy Absolute PCL (EA)
- Manufacturing and distributing Biodiesel products (B100), Pure glycerin and by product
 - Generating and distributing electricity from Renewable Energy (via subsidiaries)
 - Development and Manufacturing of Battery (via subsidiaries)
 - Electric charging station business and gas stations and other fuels for all types of automotive vehicles, Including retail in general retail stores, convenience stores and shopping center business along with logistics and electronic transaction services (via subsidiaries)

- Research and Development Business (via subsidiaries)
Assistant to Vice President, Account Department
One Bangkok Holdings Co., Ltd. (Fraser's Property Group)
- Real estate Development
Financial Controller
Vet Recommended Co., Ltd
- Import and distribution of animal food

Directorship held in other Listed Company / Non-Listed Company / Subsidiary of EA

Other Listed Company

-Nil-

Other Non-Listed Company / Other Organization

-Nil-

Subsidiary of EA

-Nil-

Family relationship with other Directors and Management

-Nil-

Mr. Meitee Sae Gang

48 years

Vice President, Purchase and Logistic Department

Date of Appointment : 1 August 2018

Date of Resignation : 16 March 2019

Details of Share held in the Company

(include share held by spouse and minor child)

No. of Share held as of 1 August, 2018 : -Nil-

No. of Share held as of the year end 2018 : -Nil-

Share Increase / (decrease) during the year : -Nil-

Education

- Bachelor's Degree in Chemical Engineer, Chemical Institute of Dalian University of Technology

Training

- Internal control and risk management / Value adding and strategy support management, organized by Energy Absolute Public Company Limited

Work Experience during 5 years

18 Aug 2018 -	Vice President, Purchase and
16 Mar 2019	Logistic Department
	Energy Absolute PCL (EA)
	<ul style="list-style-type: none"> • Manufacturing and distributing Biodiesel products (B100), Pure glycerin and by product • Generating and distributing electricity from Renewable Energy (via subsidiaries) • Development and Manufacturing of Battery (via subsidiaries) • Electric charging station business and gas stations and other fuels for all types of automotive vehicles, Including retail in general retail stores, convenience stores and shopping center business along with logistics and electronic transaction services (via subsidiaries) • Research and Development Business (via subsidiaries)

2017 - 2018

Provisioning leader
(Head of Purchase Department)
Solvay Asia Pacific Co.,Ltd.

- Produce and distribution of chemical and special material from Belgium

2004 - 2017

Manager, Purchase Department
General Manager, Shanghai factory (SMD)
Shera PLC

- Produce fiber cement

Directorship held in other Listed Company / Non-Listed Company / Subsidiary of EA

Other Listed Company

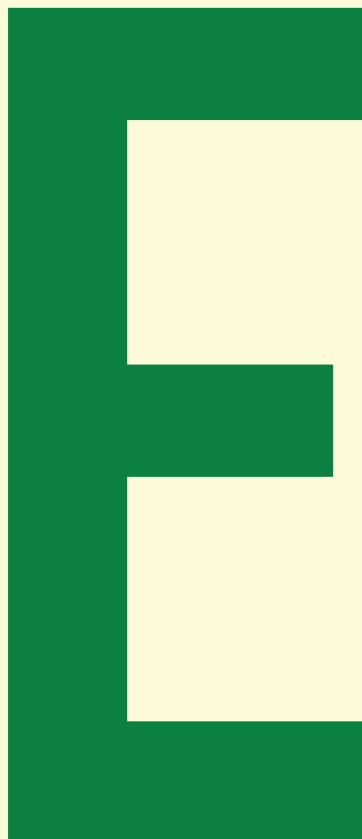
-Nil-

Other Non-Listed Company / Other Organization

-Nil-

Family relationship with other Directors and Management

-Nil-



VOLUTION of PRODUCT

EXCELLENCE

Endless development

Our main business is the production and distribution of Biodiesel, Glycerin including Byproducts which is the raw based of medical products, food industry, cosmetics. We also research and develop the Green diesel, and Bio - Phase Change material (PCM)



Biodiesel (B100)

Products derived from crude palm oil refining until biodiesel oil to reduce the use of crude oil is a natural product. That enhance the reduce palm oil over supply



Pure glycerin

- medical supplies
- Food industry
- cosmetics



Green Diesel



Testing the production of "Green Diesel" products developed from biodiesel which specification is equal of diesel oil but higher efficient with clean from natural



Phase Change Material (PCM)

Trial production

"Bio Phase Change Mateial (PCM)", the thermal of heat-resistant substances that maintain unstable temperature by changing from solid to liquid and it can be

- use in textile and 
- construnctor industries 

General and other important information

General information

Name of the Company	: Energy Absolute Public Company Limited
Stock Symbol	: EA
Company Registration No.	: 0107551000061
Nature of business	: 1) Production and distribution of B100 biodiesel, purified glycerin and by-products 2) Generating and distributing electricity from renewable energy (through subsidiaries) 3) Battery development and manufacturing (through subsidiaries) 4) EV Charging Stations and Electronic Transaction, petrol station and other fuels, retail of products for general retail shops, convenient stores and department store business, logistics services (through subsidiaries) 5) Research and development (through subsidiaries)
Authorized capital/paid-up capital	: Baht 373,000,000.-
Authorized shares	: 3,730,000,000 ordinary shares with a par value of Baht 0.10 per share (ten satang)
Head office	: No. 89 AIA Capital Center Building, 16th Floor, Ratchadapisek Road, Din Daeng Sub-district, Din Daeng District, Bangkok 10400 Tel : 0 2248 2488-92, 0 2002 3667-9 Fax: 0 2248 2493 Website : www.energyabsolute.co.th : Corporate Communications Tel : 0 2248 2488-92, 0 2002 3667-9 Ext. 19531 Fax: 0 2248 2493 E-mail : ir@energyabsolute.co.th

Plant location/project offices

1) Biodiesel production and distribution business

- **Project located** : No. 507, Village No. 9, Soi 7, Kabinburi Industrial Estate, Kabin Buri – Nakhon Ratchasima Road, Km. 12, Nong Ki Sub – district, Kabin Buri District, Prachin Buri Province 25110

2) Electricity – renewable energy generation and distribution business

- **Solar power plant project 8 megawatts / Lopburi Province**
Project office and project location : Located at 188, 188/2 Village No. 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 and project location : No. 99/9, 99/10 Village No. 1, Baan Takhli – Baan Huawai Rural Road, Huawai Sub-District, Takhli district, Nakhon Sawan 60140
- **Solar Power Plant 90 megawatts / Lampang province**
Project office : No. 333, Village No. 1, Ban-uam Sub-district, Mueang Lampang District, Lampang province 52100
Projects : Located at Ban-uam sub-district, Mueang Lampang district and Nonglom sub-district, Hangchat district, Lampang province.
- **Solar Power Plant 90 megawatts / Phitsanulok province**
Project office and project location : Located at No. 88, Village No. 11, Matong Sub-district, Phrom Phiram District, Phitsanulok province 65180
- **Wind Power Plant 126 megawatts/Nakhon Sithammarat – Songkhla province**
Project office : No. 212, Village No. 2, Hua Sai sub-district, Hua Sai district, Nakhon Si Thammarat province 80170
Projects : Located at Pak Phanang district, Hua Sai district, Nakhon Si Thammarat province and Ranot district, Songkhla province
- **Wind Power Plant 260 megawatts/Chaiyaphum province**
Project office : No. 8/8, Village No. 8, Tako Thong sub-district, Sap Yai district, Chaiyaphum province 36130
Projects : Located in Thep Sathit district, Nong Bua Rawe district and Bamnet Narong district, Chaiyaphum province

Information of companies which EA holds more than 10 percent of total shares sold.

Name of subsidiaries	(Abbreviation)	Type of business	Registered capital (Baht)	Number of shares sold (shares)	Par value (Baht)	Number of shares held (shares)	Shareholding (%)	Office location
Subsidiaries (direct)								
1. Energy Solution Management Co., Ltd.	ESM	Consultant for electrical power and contractor for power plants	110,000,000	1,100,000	100	1,099,995	99.99	121/46 RS Tower, 11 th Floor, Ratchadapisek Road, Din Daeng sub-district, Din Daeng district, Bangkok 10400 Tel : 0 2642 2233 Fax : 0 2652 2232
2. Surachai (1997) Co., Ltd.	SR (1997)	Investing in generation and distribution of electricity from solar power	190,500,000	190,500	1,000	190,300	99.90	No. 89 AIA Capital Center Building, 16 th Floor, Ratchadapisek Road, Din Daeng Sub-district, Bangkok 10400 Tel : 0 2248 2488-92, 0 2002 3667-9 Fax : 0 2248 2493
3. EA Solar Nakhon Sawan Co., Ltd.	ESN	Production and distribution of electricity from solar power	5,590,000,000	559,000,000	10	558,999,998	99.99	
4. EA Renewable Holding Co., Ltd.	ERH	Investing in generation and distribution of electricity from solar power and wind power	7,429,200,000	742,920,000	10	742,919,997	99.99	
5. Wind Nayaengklak Co., Ltd.	WNYK	Investing in generation of electricity from wind power	1,879,500,000	187,950,000	10	187,949,997	99.99	
6. Wind Progressive Co., Ltd.	WPGS		1,879,500,000	187,950,000	10	187,949,997	99.99	
7. Wind Tossaphum Co., Ltd.	WTSP		1,670,000,000	167,000,000	10	166,999,997	99.99	
8. Thebsathit Wind Farm Co., Ltd.	TWF	Production and distribution of electricity from wind power	2,000,000	20,000	100	19,998	99.99	

Information of companies which EA holds more than 10 percent of total shares sold.

Name of subsidiaries	(abbrev iation)	Type of business	Registered capital (Baht)	Number of shares sold (shares)	Par value (Baht)	Number of shares held (shares)	Shareholding (%)	Office location
Subsidiaries (direct) (continued)								
9. EA Solar Co., Ltd.	EA SOLAR	Production and distribution of electricity from solar power	550,000,000	ordinary shares 4,480,000 preferred shares 1,020,000	ordinary shares 100 preferred shares 100	Hold by SR (1997) SOLAR Ordinary shares : 1,785,000 Preferred shares : 1,020,000	Direct hold : 49.00 Held by a subsidiary : 51.00	No. 89 AIA Capital Center Building, 16th Floor, Ratchadapisek Road, Din Daeng Sub-district Din Daeng District, Bangkok 10400 Tel : 0 2248 2488-92, 0 2002 3667-9 Fax : 0 2248 2493
10. Emma Corporation Co., Ltd.	EMMA	Research and development of electrical equipment	100,000	1,000	100	500	50.00	
11. Green Technology Research Co., Ltd.	GTR	Research and development of biodiesel oil	112,000,000	11,200,000	10	11,199,997	99.99	
12. Mine Mobility Research Co., Ltd.	MMR	Research and development	100,000,000	10,000,000	10	9,999,997	99.99	
13. Energy Beyond Research Co., Ltd.	EBR	Research and development	20,000,000	2,000,000	10	1,999,997	99.99	
14. EA Bio Innovation Co., Ltd.	EBI	Production and distribution of biodiesel products	400,100,000	40,010,000	10	40,009,997	99.99	
15. Mine Mobility Corporation Co., Ltd.	MMC	Assembly, production and distribution of electric vehicles	400,000,000	40,000,000	10	39,999,997	99.99	

Information of companies which EA holds more than 10 percent of total shares sold.

Name of subsidiaries	(abbrev iation)	Type of business	Registered capital (Baht)	Number of shares sold (shares)	Par value (Baht)	Number of shares held (shares)	Shareholding (%)	Office location
Subsidiaries (direct) (continued)								
16. Energy Mahanakhon Co., Ltd.	EMN	Service provider for installation and electrical charging station	200,000,000	20,000,000	10	Hold by EA : 9,999,997 Hold by EBI 422,222	Direct : 50.00 Hold by subsidiary (s) : 2.11	Building No. 518, 15 th Floor, Ratchadapisek Road, Samsen Nok sub-district, Huai Khwang district, Bangkok 10310 Tel : 0 2087 6300, 0 2087 6311
17. Amita Technologies Inc.	Amita (Taiwan)	Development and manufacturing Lithium – Ion Polymer batteries	1,000,000,000	98,577,500	10 TWD	Hold by EA : 76,109,821	77.21	No.6, Chazhuan Rd., Gueishan, Taoyuan County 33349, Taiwan Tel : +886-3-2631212 #133 Fax : +886-3-3-3200638 Website : www.amitatech.com
18. EA CON DAO (SG) PTD. LTD.	EA Con Dao	Conducting and investing in renewable energy business	10,000	10,000	1 SGD	Hold by EA : 9,500	95.00	No. 8 MARINA BOULEVARD #05 – 02 MARINA BAY FINANCIAL CENTRE SINGAPORE (018981)

Information of companies which EA holds more than 10 percent of total shares sold.

Name of subsidiaries	(abbrev iation)	Type of business	Registered capital (Baht)	Number of shares sold (shares)	Par value (Baht)	Number of shares held (shares)	Shareholding (%)	Office location
Subsidiaries (indirect)								
19. Surachai (1997) Solar Co., Ltd.	SR (1997) SOLAR	Investment in electricity generation from solar power	179,500,000	179,500	1,000	held by SR (1997) : 179,498	99.99	No. 89 AIA Capital Center Building, 16 th Floor, Ratchadapisek Road, Din Daeng Sub-district, Bangkok 10400 Tel : 0 2248 2488-92, 0 2002 3667-9 Fax : 0 2248 2493
20. EA Solar Lampang Co., Ltd.	ESL	Production and distribution of electricity from solar power	2,125,000,000	212,500,000	10	held by ERH : 212,499,997	99.98	
21. EA Sola Phitsanulok Co., Ltd.	ESP		2,125,000,000	212,500,000	10	held by ERH : 212,499,997	99.98	
22. EA Wind Hadkunghan 1 Co., Ltd.	EWHK 1	Production and distribution of electricity from wind power	98,470,000	9,847,000	10	held by ERH : 9,846,997	99.98	
23. EA Wind Hadkunghan 2 Co., Ltd.	EWHK 2		123,065,000	12,306,500	10	held by ERH : 12,306,497	99.98	
24. EA Wind Hadkunghan 3 Co., Ltd.	EWHK 3		3,120,000,000	312,000,000	10	held by ERH : 311,999,997	99.98	
25. Nayangkla Development Co., Ltd.	NYKD		939,000,000	93,900,000	10	held by WNYK : 93,899,997	99.96	
26. Nayangkla Wind Power Co., Ltd.	NWP		939,000,000	93,900,000	10	held by WNYK : 93,899,997	99.96	
27. Benjarat Development Co., Ltd.	BJRD		876,000,000	87,600,000	10	held by WPGS : 87,599,997	99.96	
28. Pongnok Development Co., Ltd.	PND		1,002,000,000	100,200,000	10	held by WPGS : 100,199,997	99.96	
29. Ban Chuan Development Co., Ltd.	BCD		1,699,000,000	166,900,000	10	held by WTSP : 166,899,997	99.96	

Information of companies which EA holds more than 10 percent of total shares sold.

Name of subsidiaries	(abbrev iation)	Type of business	Registered capital (Baht)	Number of shares sold (shares)	Par value (Baht)	Number of shares held (shares)	Shareholding (%)	Office location
Subsidiaries (indirect) (continued)								
30. Paypop Co., Ltd.	POP	Electronic financial transactions (E - Money)	100,000	10,000	10	Held by EMN : 9,997	51.58	Building No. 518, 5th Floor, Ratchadapisek Road, Samsen Nok sub - district, Huai Khwang district, Bangkok 10310 Tel : 0 2087 6300, : 0 2087 6311
31. AMITA NEW TECHNOLOGY PTE. LTD.	Amita - SG	An investing and holding company	1,600,000 USD	1,600,000	1 USD	Held by Amita (Taiwan) : 1,600,000	77.21	No.1 Robinson Road #17 - 00 AIA Tower Singapore (048542)
32. Amita Technology (Thailand) Co., Ltd.	Amita - TH	Manufacturer and distributor of lithium batteries and high capacity storage system for electricity	50,000,000	5,000,000	10	Held by Amita-SG : 4,999,997	77.21	No. 89 AIA Capital Center Building, 16 th Floor, Ratchadapisek Road, Din Daeng Sub - district, Bangkok 10400 Tel : 0 2248 2488-92, : 0 2002 3667-9 Fax : 0 2248 2493
33. EA Station Co., Ltd.	EA Station	Hub station and logistics (not commercially opened yet)	500,000	50,000	10	Held by EMN : 49,970	52.07	
Joint venture								
34. Shenzhen Growatt Power Technology Co., Ltd.	Growatt Power	Distributor of equipment, machinery and other related products	600,000 USD	600,000	1 USD	Held by EA : 264,000	44.00	Room 203, 2 nd Floor, Building 5, Jiayu Industry Park, No. 28, Guangming, Xibianling, Shangwu Village, Shiyan Street, Baoan District, Shenzhen, China

Other references

Securities registrar

Thailand Securities Depository Co., Ltd.

The Stock Exchange of Thailand Building,
93 Ratchadaphisek Road, Din Daeng district, Bangkok 10400
Phone : 0 2009 9999 Fax: 0 2009 9991
SET Contact Center : 0 2009 9999
Websit : www.set.or.th/tsd/th/tsd.html
E-mail : SETContactCenter@set.or.th

Debenture registrar

Siam Commercial Bank PCL., (Head Office)

Located at 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
Phone : 0 2256 2329 Fax: 0 2256 2406
Website : <http://www.scb.co.th/th/home>

Representative

Bank of Ayudhya Public Company Limited(Head Office) of debenture's holder

Located at No. 1222, Rama 3 Road Bang Phongphang sub-district, Yan Nawa district, Bangkok 10120
Phone : 0 2296 3582 Fax: 0 2683 1298
Website : <https://www.krungsri.com/bank/th/home.html>

Certified Public Accountant

1. Miss Amornrat Permpoonwattanasook Certified Public Accountant
Registration No. 4599
2. Mr. Prashit Yerngsrikul Certified Public Accountant
Registration No. 4174
3. Mr. Pongtawee Rattanagosate Certified Public Accountant
Registration No. 7795

PricewaterhouseCoopers ABAS Ltd.

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 Co., Ltd.

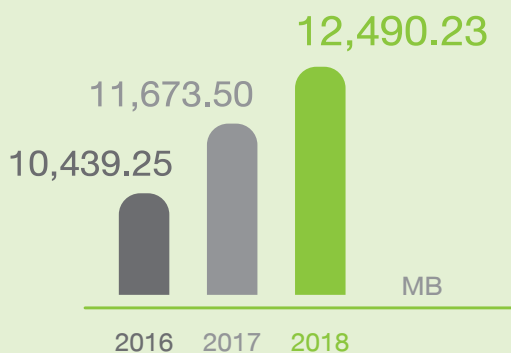
90/42, 16th Floor, Sathorn Thani Building, North Sathorn Road, Silom sub-district, Bangrak district, Bangkok 10500
Phone: 0 2696 9696-97 Fax: 0 2696 9698

Other important information

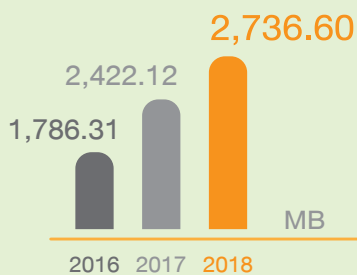
The Company has been granted by the Securities and Exchange Commission for issuance and offering the debentures (Please refer to "Securities and Shareholders Information").



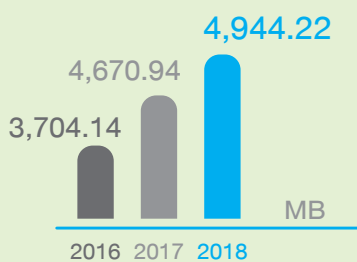
Comparison : 3 years total income



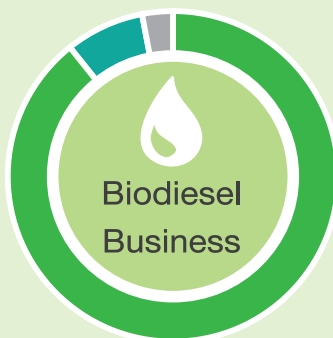
Solar and Wind Power Plants



Adders



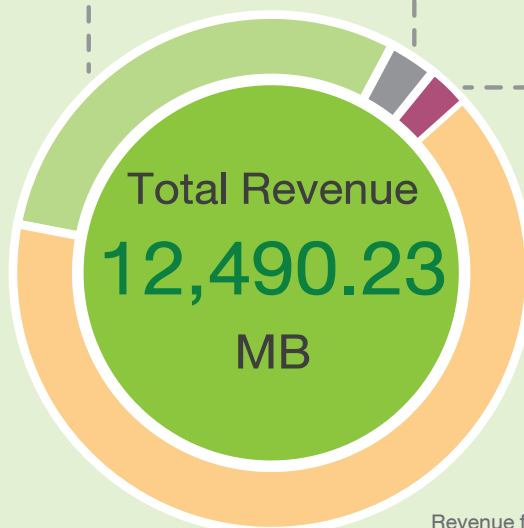
Revenue from Biodiesel Business



3,511.15 MB

Accounting gain on Business Combination

938.27 MB

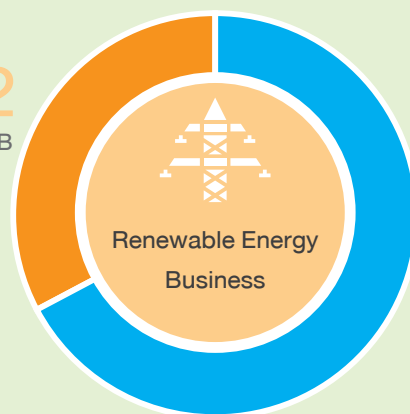


Revenue from other business

359.99 MB

Revenue from Renewable Power Plants

7,680.82 MB



Important financial information

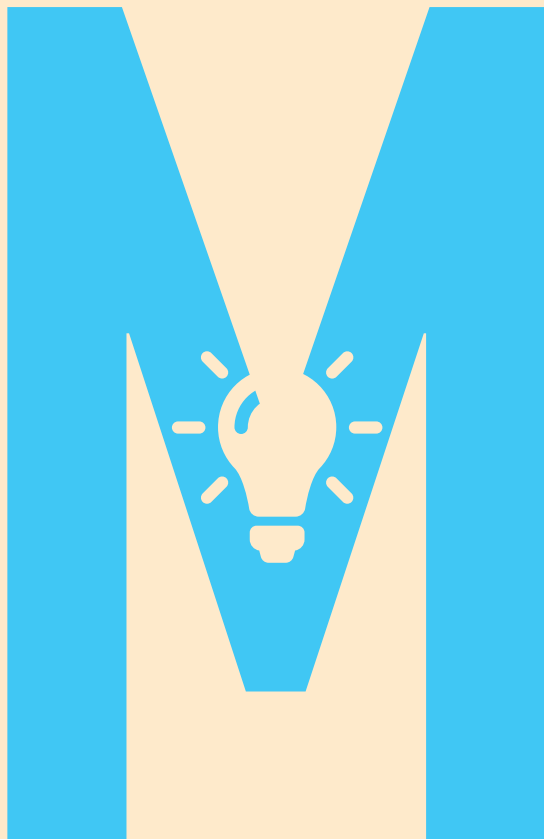
Revenue type	Year 2016		Year 2017		Year 2018	
	MB	%	MB	%	MB	%
Biodiesel business						
1. Biodiesel	4,721.13	45.23	4,205.23	36.02	3,194.23	25.57
2. Purified glycerin	169.49	1.62	267.07	2.29	296.16	2.37
3. Byproducts	11.32	0.11	14.16	0.12	20.76	0.17
	4,901.94	46.96	4,486.46	38.43	3,511.15	28.11
Renewable Energy Power Plant						
4. Electricity from Solar Power Plant	1,786.31	17.11	1,933.05	16.56	1,934.12	15.49
5. Electricity from Wind Power Plant	-	-	489.07	4.19	802.48	6.43
6. Revenue from Adder Purchase price of electricity	3,704.14	35.48	4,670.94	40.01	4,944.22	39.58
	5,490.45	52.59	7,093.06	60.76	7,680.82	61.50
Other business groups						
7. Revenue from other businesses	-	-	-	-	359.99	2.88
Total revenue from sales and services	10,392.39	99.55	11,579.52	99.19	11,551.96	92.49
8. Accounting profit arising from business merging	-	-	-	-	894.58	7.16
9. Other income	46.86	0.45	93.98	0.81	43.69	0.35
Total incomes	10,439.25	100.00	11,673.50	100.00	12,490.23	100.00
Share of profit (loss) from investments in associates and interests in the joint venture	-		(62.27)		(6.31)	

Table summarizing the financial position and business performance (Consolidated Financial Statements)

Statement of Comprehensive Income	Audited and Consolidated Financial Statements					
	Year 2016		Year 2017		Year 2018	
	MB	%	MB	%	MB	%
Total revenues from sales	10,392.39	100.00	11,579.52	100.00	11,551.95	100.00
Gross profit	4,801.96	46.21	5,627.93	48.60	6,821.93	59.05
Profit before income tax expense	3,246.98	31.24	3,837.44	33.14	5,067.04	43.86
Net profit for the year	3,252.48	31.30	3,817.47	32.97	5,061.38	43.81
Total comprehensive income for the year	3,255.48	31.30	3,803.66	32.85	4,966.44	42.99
Profit attributable to Owners of the parent company	3,251.51	31.29	3,803.65	32.85	4,848.59	41.97

Total Assets	Audited and Consolidated Financial Statements					
	Year 2016		Year 2017		Year 2018	
	MB	%	MB	%	MB	%
Total Assets	41,507.39	100.00	44,530.42	100.00	59,207.59	100.00
Total liabilities	30,117.94	72.56	29,786.80	66.89	39,689.67	67.03
Total equity	11,389.45	27.44	14,743.62	33.11	19,517.63	32.96
Issued and paid-up share capital	373.00	0.90	373.00	0.84	373.00	0.63

Significant Financial Ratio		Year 2016	Year 2017	Year 2018
Liquidity Ratio				
	time	1.73	2.71	0.65
Quick Ratio	time	1.13	2.40	0.57
Cash Flow Current Ratio	time	1.23	2.03	0.95
Receivable Current Ratio	time	8.77	7.65	6.88
Avg. Debt Collection Period	day	41.06	47.04	52.32
Inventory Turnover Period	time	178.29	262.03	82.62
Avg. Selling Period	day	2.02	1.37	4.36
Payable current ratio	time	74.69	79.00	46.92
Loan Repayment Period	day	4.82	4.56	7.67
Cash Cycle	day	38.26	43.86	40.29
Profitability ratio				
Gross Profit Margin	%	45.76	47.79	50.93
Operating Profit Margin	%	40.82	43.37	45.78
Cash ratio per profitability	%	116.73	123.89	136.00
Net Profit Margin	%	31.15	32.70	40.52
Return on Equity (ROE)	%	32.70	29.31	30.33
Efficiency ratio				
Return on Assets	%	8.72	8.87	9.76
Return on Fixed Assets	%	14.09	15.08	16.40
Asset Turnover	time	0.28	0.27	0.24
Financial Policy Ratios				
Debt to Equity Ratio	time	2.64	2.02	2.03
Interest Coverage Ratio	time	4.97	5.22	6.65
Dividend Pay Out Ratio	%	26.60	18.58	21.40



MOVING



Ahead Strategy

to the EXCELLENCE

High vision and Modernism

The Company holds 77.21% of shares in Amita Technologies Inc. Taiwan to develop and manufacture lithium-ion polymer battery STOBA technology for use in vehicle industry, UPS-Bicycle. We commenced construction of a battery factory in the Eastern of Thailand and operated by the subsidiary of the Company to produce and sell lithium battery and high capacity power storage systems

Holding shares of

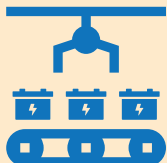
77.21%

Amita Technologies Inc.

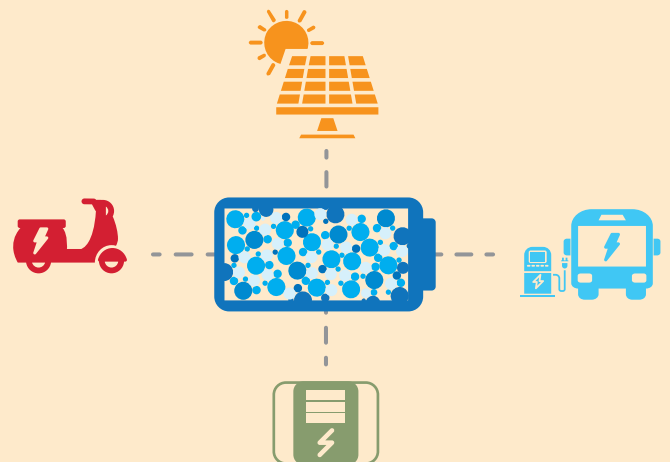


1

Phase1
GWh



Commenced construction of a battery factory **Phase 1** at at Eastern Economic Corridor (EEC)



Lithium-ion polymer battery STOBA technology for use in vehicle industry, UPS-Bicycle.

Policy and Business Overview

History

Energy Absolute Public Company Limited ("**the Company**" or "**EA**") was first incorporated on 6th March 2006 in original name Suntech Palm Oil Co., Ltd., with registered capital of THB 50 million. In 2008, the Company was converted into a public limited company and renamed as Energy Absolute Public Company Limited. The registered capital were added from THB 50 to 250, 360, 373 million in 2008, 2009 and 2012 respectively.

In the early of 2013, the Company listed 3,730 million shares, at the par value of Baht 0.10 (ten Satang), worth Baht 373 million to the "Market for Alternative Investment (mai)". Later in the end of 2016, the Company submitted are quest to the Stock Exchange of Thailand to approve the trading of EA's securities in the Stock Exchange of Thailand (SET) (from maito SET). Accordingly, the Stock Exchange of Thailand approved the trading of 3,730 million shares of the Company at the parvalue of Baht 0.10 (ten Satang), total value of Baht 373 million in the Stock Exchange of Thailand. The ordinary shares were allocated in the Resource Category, Energy and Public Utility. The abbreviation for securities trading remained "EA" as before since 6th January 2017 onwards.

As for the current business operation, the Company has its core business for producing and distributing biodiesel (B100), high speed diesel, purified glycerin and the byproducts from the said production. The Company obtained a license to operate fuel under Section 7 of the Fuel Trade Act B.E. 2543 by the Ministry of Energy.

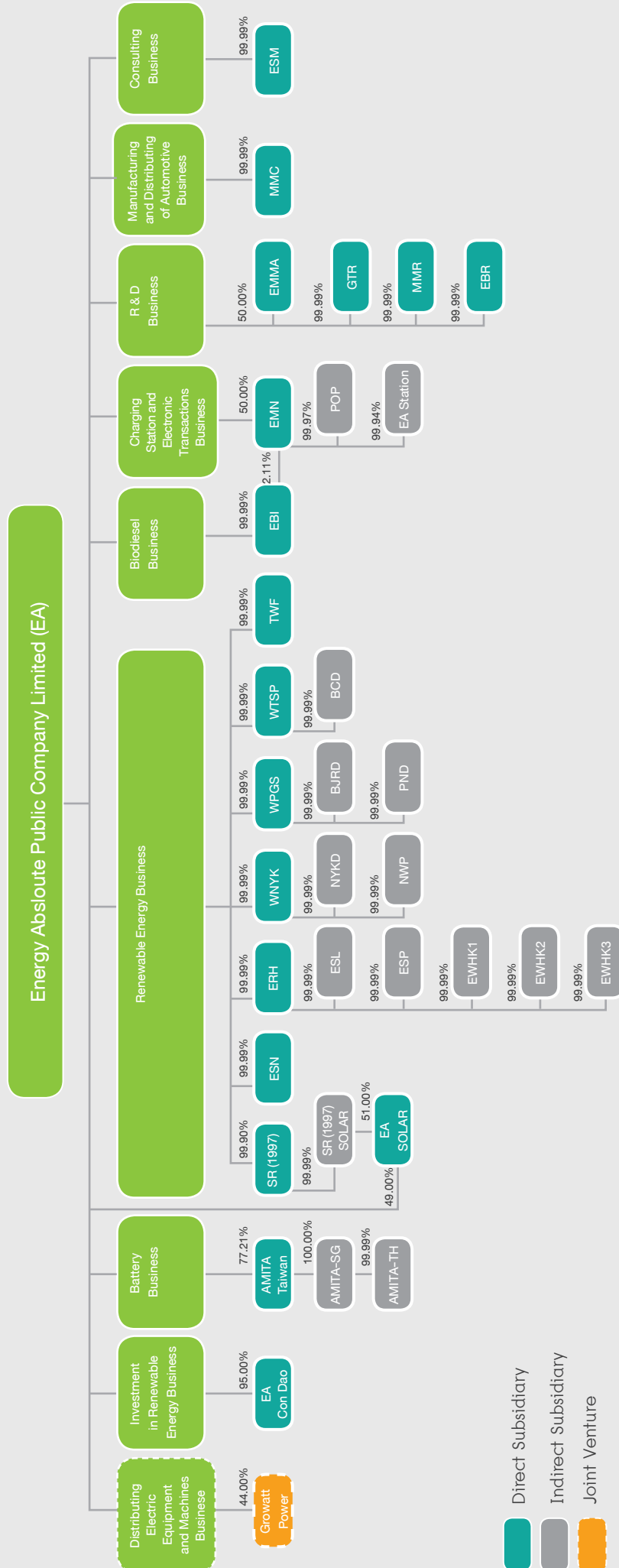
Furthermore, the Company has expanded the business scope to power generating, starting from solar power plants and wind power plants respectively. Mainly, the electricity is distributed to the Electricity Generating Authority of Thailand ("EGAT") and the Provincial Electricity Authority ("PEA") under the management of the subsidiaries.

At present, the Company has 4 solar power plants with total production capacity 278 megawatts, and 8 wind power plants including the projects which are still listed in the work plan, total production capacity 386 megawatts.

The Company has expanded its business operation to development and manufacturing of Lithium-Ion Polymer batteries. Initially, the Company invested 35.20 percent of the ordinary shares is sued 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 in conformity with the business policy that thrive for environmental-friendly concept. Between year 2017 and 2018, the Company increased its investment in Amita-Taiwan by acquiring capital shares from existing shareholders and capital increase shares of Amita-Taiwan total 76,109,821 shares or 77.21 percent of the ordinary shares is sued and sold in Amita-Taiwan.

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 on charging station, the Company continues operation to other business segments through its subsidiaries. In 2018, the Company has established a subsidiary to expand the operation to 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. However, at present, the said business are not operated commercially yet.

The business operation structure of the Company and the group Company are divided as follows.



Growatt Power	: Shenzhen Growatt Power Technology Co., Ltd.	ERH	: EA Renewable Holding Co., Ltd.	WPGS	: Wind Progress Co., Ltd.	EA Station	: EA Station Co., Ltd.
EA Con Dao	: EA Con Dao (SG) PTE. LTD.	ESL	: EA Solar Lampang Co., Ltd.	BJRD	: Benjarat Development Co., Ltd.	EMMA	: Emma Corporation Co., Ltd.
AMITA-Taiwan	: AMITA TECHNOLOGIES INC.	ESP	: EA Sola Phitsanulok Co., Ltd.	PND	: Pongnok Development Co., Ltd.	GTR	: Green Technology Research Co., Ltd.
AMITA-SG	: AMITA NEW TECHNOLOGY PTE. LTD..	EWHK1	: EA wind Hadkunganhan 1 Ltd.	WTSP	: Wind Tossaphum Co., Ltd.	MMR	: Mine Mobility Research Co., Ltd.
AMITA-TH	: Amita Technology (Thailand) Co., Ltd.	EWHK2	: EA wind Hadkunganhan 2 Ltd.	BCD	: Ban Chuan Development Co., Ltd.	EBR	: Energy Beyond Research Co., Ltd.
SR (1997)	: Surachai (1997) Co., Ltd.	EWHK3	: EA wind Hadkunganhan 3 Ltd.	TWF	: Thebsathit Wind Farm Co., Ltd.	MMC	: Mine Mobility Corporation Co., Ltd.
SR (1997) SOLAR	: Surachai (1997) Solar Co., Ltd.	WNYK	: Wind Nayangklak Co., Ltd.	EBI	: EA Bio Innovation Co., Ltd.	ESM	: Energy Solution Management Co., Ltd.
EA SOLAR	: EA Solar Co., Ltd.	NYKD	: Nayangklak Development Co., Ltd.	EMN	: Energy Mahandkhon Co., Ltd.		
ESN	: EA Solar Nakhon Sawan Co., Ltd.	NWP	: Nayangklak Wind Power Co., Ltd.	POP	: Paypop Co., Ltd.		

Vision and the Business Goal of EA and the Company Group. *

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

Values

F = Friend	Friends of our stakeholders
I = Integrity	Conduct business in line with integrity and reliability
R = Resourcefulness	Efficiently use the acquired resources.
S = Security	Build energy security
T = Transparency	Operate business with transparency and corporate governance

Strategy/Measure

Goal, Determination	Increase efficiency	Enhance production capacity
Complete pipeline project and the manage the cost and return on investment to be in line with estimation	Develop the relating systems	Enhance the Production Capacity, Reduce Bottleneck Increase customer base and increase sales volume of existing customers
Study the feasibility and look for opportunity for new investment	Manage cash flow by using financial instrument taking into account the costs, return and risks.	Improve the recruitment procedures, take care and develop potential personnel properly.
Be prepared for the relating parts	Improve work procedures to enhance efficiency, reduce steps, the loss and time/cost-effectively use the resources.	Transfer knowledge and skills including the Know-How between personnel of the Company, prepare the succession plan.

Remarks :

*Approved by the Board of Directors' meeting No. 2/2017 on 12 May 2017.

The Major Changes and Development during the past 5 years

Controlling power of the Company, changes of shareholding structure and the management:

Shareholder Structure

Since the incorporation of the Company Mr. Somphote Ahunai is the number one major shareholder, holding, as of 31st December 2018 (exclude the shares in EA held by his spouse) 40.3 percent of total registered shares. During the year 2016, Mr. Somphote Ahunai disposed 630 million shares (16.89%) in EA to Sotus and Faith #1 Limited ("Sotus") to establish the trust. Eventually, he 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 that 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 changes 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

Major development regarding registered capital and paid-up capital

The shareholders' meeting held on 25th April 2012 passes a resolution to approve the Company to reduce its registered-capital from Baht 360,000,000 to Baht 305,000,000 (the par value of Baht 0.10(ten Satang)) by deleting the shares registered which are unable to be disposed or offered. The shareholders' meeting also passed a resolution to increase the registered capital by Baht 68,000,000 from Baht 305,000,000 to reach Baht 373,000,000 by issuance of new 680,000,000 ordinary shares at the par value of Baht 0.10 and proceed the right offering (RO) for 120,000,000 shares at the par value of Baht 1.50. The initial public offering (IPO) was proceeded for 560,000,000 shares during 21st - 23rd January 2013 at the par value of Baht 5.50. As a result, the paid-up capital of the Company increased to Baht 373,000,000. Furthermore, the Stock Exchange of Thailand approved the listing and trading of the Company's securities in the MAI since 30 January 2013 and transferred from MAI to SET on 6th January 2017. The significant changes and development about the registered and paid-up capital within the past 5 years are as follows.

Year 2014

- ★ The Company established the subsidiaries as follows.
 - EA Renewable Holding Co., Ltd. ("ERH") was established with registered and paid-up capital of Baht 1,000,000, dividing into 100,000 ordinary shares, at the par value of Baht 10. Currently, the Company holds 99.99 percent of shares. The purpose of ERH is to invest in the subsidiary that generates and distributes the electricity from solar power and wind power.
 - EA Solar Phitsanulok Co., Ltd. ("ESP") was established with registered and paid-up capital of Baht 100,000 dividing into 10,000 ordinary shares, at the par value of Baht 10. ERH holds 99.99 percent of shares. The purpose of ESP is to invest in the subsidiary that generates and distributes the electricity from solar power with production capacity 90 megawatts in Phitsanulok.
 - EA Wind Hadkanghan 1 Co., Ltd. ("EWHK1") was established with registered and paid-up capital of Baht

100,000, dividing into 10,000 ordinary shares, at the par value of Baht 10. ERH holds 99.99 percent of shares. The purpose of EWHK1 is to invest in the subsidiary that Generate and distributes the electricity from solar power with production capacity 36 megawatts in Songkhla.

- EA Wind Hadkanghan 2 Co., Ltd. ("EWHK2") was established with registered and paid-up capital of Baht 100,000, dividing into 10,000 ordinary shares, at the par value of Baht 10. ERH holds 99.99 percent of shares. The purpose of EWHK2 is to invest in the subsidiary that generates and distributes the electricity from wind power with production capacity 45 megawatts in Nakhon Si Thammarat.
- EA Wind Hadkanghan 3 Co., Ltd. ("EWHK3") was established with registered and paid-up capital of Baht 100,000, dividing into 10,000 ordinary shares, at the par value of Baht 10. ERH holds 99.99 percent of shares. The purpose of EWHK3 is to invest in the subsidiary that generates and distributes the electricity from wind power with production capacity 45 megawatts in Nakhon Si Thammarat.
- Wind Nayangklak Co., Ltd. ("WNYK") was established with registered and paid-up capital of Baht 300,000, dividing into 30,000 ordinary shares, at the par value of Baht 10. Currently, the Company holds 99.99 percent of shares. The purpose of WNYK is to invest in the subsidiary that generates and distributes the electricity from wind power in Chaiyaphum.
- Wind Progressive Co., Ltd. ("WPGS") was established with registered and paid-up capital of Baht 300,000, dividing into 30,000 ordinary shares, at the par value of Baht 10. Currently, the Company holds 99.99 percent of shares. The purpose of WPGS is to invest in the subsidiary that generates and distributes the electricity from wind power in Chaiyaphum.
 - Wind Tossaphum Co., Ltd. ("WTSP") was established with registered and paid-up capital of Baht 200,000, dividing into 20,000 ordinary shares, at the par value of Baht 10. Currently, the Company holds 99.99 percent of shares. The purpose of WTSP is to invest in the subsidiary that generates and distributes the electricity from wind power in Chaiyaphum.
- Wind Nayangklak Development Co., Ltd. ("NYKD") was established with registered and paid-up capital of Baht 100,000, dividing into 10,000 ordinary shares, at the par value of Baht 10. Currently, WNYK holds

99.99 percent of shares. The purpose of NYKD is to generate and distribute the electricity from wind power in Chaiyaphum.

- Nayangklak Wind Power Co., Ltd. ("NWP") was established with registered and paid-up capital of Baht 100,000, dividing into 10,000 ordinary shares, at the par value of Baht 10. Currently, WNYK holds 99.99 percent of shares. The purpose of NWP is to generate and distribute the electricity from wind power in Chaiyaphum.
- Benjarat Development Co., Ltd. ("BJRD") was established with registered and paid-up capital of Baht 100,000, dividing into 10,000 ordinary shares, at the par value of Baht 10. Currently, WPGS holds 99.99 percent of shares. The purpose of BJRD is to generate and distribute the electricity from wind power in Chaiyaphum.
- Pongnok Development Co., Ltd. ("PND") was established with registered and paid-up capital of Baht 100,000, dividing into 10,000 ordinary shares, at the par value of Baht 10. Currently, WPGS holds 99.99 percent of shares. The purpose of PND is to generate and distribute the electricity from wind power in Chaiyaphum.
- Banchuan Development Co., Ltd. ("BCD") was established with registered and paid-up capital of Baht 100,000, dividing into 10,000 ordinary shares, at the par value of Baht 10. Currently, WTSP holds 99.99 percent of shares. The purpose of BCD is to generate and distribute the electricity from wind power in Chaiyaphum.

✦ The Company reconstructed the shareholding within the subsidiary company by disposing 199,999,997 shares or 99.99% in EA Solar Lampang Co., Ltd. ("ESL") which was held by the Company to EA Renewable Holding Co., Ltd., ("ERH").

✦ The capital increase of the Company's subsidiaries are as follows.

- Capital increase of EA Solar Lampang Co., Ltd., ("ESL") was made from Baht 2,000,000 to Baht 2,000,000,000 by issuance of 199,800,000 new ordinary shares. Subsequent capital increase was Baht 2,125,000,000 by issuance of 12,500,000 new ordinary shares at the par value of Baht 10.

- Capital increase of EA Renewable Holding Co., Ltd., ("ERH") was made from Baht 1,000,000 to Baht 2,130,000,000 by issuance of 212,900,000 new ordinary shares. Subsequent capital increase was Baht 2,630,000,000 by issuance of 50,000,000 new ordinary shares at the par value of Baht 10.
- Capital increase of EA Solar Phitsanulok Co., Ltd., ("ESP") was made from Baht 100,000 to Baht 155,800,000 by issuance of 15,570,000 new ordinary shares at the par value of Baht 10.
- Capital increase of EA Wind Hadkanghan 1 Co., Ltd., ("EWHK1") was made from Baht 100,000 to Baht 98,470,000 by issuance of 9,837,000 new ordinary shares at the par value of Baht 10.
- Capital increase of EA Wind Hadkanghan 2 Co., Ltd., ("EWHK2") was made from Baht 100,000 to Baht 123,065,000 by issuance of 12,296,500 new ordinary shares at the par value of Baht 10.
- Capital increase of EA Wind Hadkanghan 3 Co., Ltd., ("EWHK3") was made from Baht 100,000 to Baht 123,065,000 by issuance of 12,296,500 new ordinary shares at the par value of Baht 10.
- Capital increase of Wind Tossaphum Co., Ltd., ("WTSP") was made from Baht 200,000 to Baht 36,200,000 by issuance of 3,600,000 new ordinary shares at the par value of Baht 10.
- Capital increase of Nayangklak Development Co., Ltd., ("NYKD") was made from Baht 100,000 to Baht 20,100,000 by issuance of 2,000,000 new ordinary shares at the par value of Baht 10.
- Capital increase of Nayangklak Wind Power Co., Ltd., ("NWP") was made from Baht 100,000 to Baht 20,100,000 by issuance of 2,000,000 new ordinary shares at the par value of Baht 10.
- Capital increase of Benjarat Development Co., Ltd., ("BJRD") was made from Baht 100,000 to Baht 22,100,000 by issuance of 2,200,000 new ordinary shares at the par value of Baht 10.
- Capital increase of Pongnok Development Co., Ltd., ("PND") was made from Baht 100,000 to Baht 24,100,000 by issuance of 2,400,000 new ordinary shares at the par value of Baht 10.
- Capital increase of Banchuan Development Co., Ltd., ("BCD") was made from Baht 100,000 to Baht 32,100,000 by issuance of 3,200,000 new ordinary shares at the par value of Baht 10.

Year 2015

★ The capital increase of the Company's subsidiaries are as follows.

- Capital increase of EA Renewable Holding Co., Ltd., ("ERH") was made from Baht 2,630,000,000 to Baht 3,929,200,000 by issuance of 129,920,000 new ordinary shares. Subsequent capital increase was Baht 7,429,200,000 by issuance of 350,000,000 new ordinary shares at the par value of Baht 10.
- Capital increase of EA Solar Phitsanulok Co., Ltd., ("ESP") was made from Baht 155,800,000 to Baht 2,125,000,000 by issuance of 196,920,000 new ordinary shares at the par value of Baht 10.
- Capital increase of EA Wind Hadkanghan 3 Co., Ltd., ("EWHK3") was made from Baht 123,065,000 to Baht 2,457,065,000 by issuance of 233,400,000 new ordinary shares at the par value of Baht 10.
- Capital increase of Wind Nayangklak Co., Ltd., ("WNYK") was made from Baht 300,000 to Baht 44,300,000 by issuance of 4,400,000 new ordinary shares at the par value of Baht 10.
- Capital increase of Wind Progressive Co., Ltd., ("WPGS") was made from Baht 300,000 to Baht 50,300,000 by issuance of 5,000,000 new ordinary shares at the par value of Baht 10.

Year 2016

★ The Company invested in Emma Corporation Co., Ltd. ("EMMA") by acquiring 50 percent of the registered and paid-up capital. The investment was Baht 100,000, dividing into 1,000 ordinary shares, at the par value of Baht 100. The purpose of this investment is to conduct business about research and development of power generation.

★ The capital increase of the Company's subsidiaries are as follows.

- Capital increase of Surachai (1997) Co., Ltd., ("SR (1997)") was made from Baht 12,000,000 to Baht 190,500,000 by issuance of 178,500 new ordinary shares at the par value of Baht 1,000.
- Capital increase of Surachai (1997) Solar Co., Ltd., ("SR (1997) SOLAR") was made from Baht 1,000,000 to Baht 179,500,000 by issuance of 178,500 new ordinary shares at the par value of Baht 1,000.
- Capital increase of EA Solar Co., Ltd., ("EA SOLAR") was made from Baht 200,000,000 to Baht 550,000,000 by issuance of 3,500,000 new ordinary shares at the par value of Baht 100.

- Capital increase of EA Solar Nakhon Sawan Co., Ltd., ("ESN") was made from Baht 1,690,000,000 to Baht 5,590,000,000 by issuance of 390,000,000 new ordinary shares at the par value of Baht 10.
- Capital increase of Wind Progressive Co., Ltd., ("WPGS") was made from Baht 50,300,000 to Baht 1,879,500,000 by issuance of 182,920,000 new ordinary shares at the par value of Baht 10.
- Capital increase of Wind Tossaphum Co., Ltd., ("WTSP") was made from Baht 36,200,000 to Baht 1,670,000,000 by issuance of 163,380,000 new ordinary shares at the par value of Baht 10.
- Capital increase of Benjarat Development Co., Ltd., ("BJRD") was made from Baht 22,100,000 to Baht 876,000,000 by issuance of 85,390,000 new ordinary shares at the par value of Baht 10.
- Capital increase of Pongnok Development Co., Ltd., ("PND") was made from Baht 24,100,000 to Baht 1,002,000,000 by issuance of 97,790,000 new ordinary shares at the par value of Baht 10.
- Capital increase of Banchuan Development Co., Ltd., ("BCD") was made from Baht 32,100,000 to Baht 1,669,000,000 by issuance of 163,690,000 new ordinary shares at the par value of Baht 10.
- Capital increase of Wind Nayangklak Co., Ltd., ("WNYK") was made from Baht 44,300,000 to Baht 1,879,500,000 by issuance of 183,520,000 new ordinary shares at the par value of Baht 10.
- Capital increase of Nayangklak Development Co., Ltd., ("NYKD") was made from Baht 20,100,000 to Baht 939,000,000 by issuance of 91,890,000 new ordinary shares at the par value of Baht 10.
- Capital increase of Nayangklak Wind Power Co., Ltd., ("NWP") was made from Baht 20,100,000 to Baht 939,000,000 by issuance of 91,890,000 new ordinary shares at the par value of Baht 10.

✦ The meeting of shareholders passed a resolution to issue and offer the debenture stock within the amount not exceeding Baht 10,000 million in order to repay the loan acquired for solar power plant project and for the investment in the wind power plant.

The debentures are any types and classes (secured or unsecured). The offer for sale can be made once or more or in the form of project or revolving to the public or private offering or institution investors in the same or different time but not exceeding 10 years from the

date of each issuance (please see the information of debenture issuance in issuance of other securities page 102

✦ The Company expanded its business by investing in Amita Technologies Inc. ("Amita-Taiwan"). Amita-Taiwan is the developer and manufacturer of batteries. 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 Company acquired 35.20 percent of the issued and sold shares in Amita-Taiwan, with total investment worth TWD 618,915,115.

✦ 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, total value of Baht 373 million in the Stock Exchange of Thailand. The securities were allocated in the Resource Category, Energy and Public Utility. The abbreviation for securities trading remained "EA" as before since 6th January 2017 onwards.

Year 2017

✦ The Company established new subsidiaries (direct and indirect) as follows.

- Energy Mahanakorn Co., Ltd. ("EMN") was established with registered and paid-up capital of Baht 10,000,000, dividing into 1,00,000 ordinary shares, at the par value of Baht 10. The Company holds 99.99 percent of shares. The purpose of EMN is to provide installation service and provide electric charging station for all types of vehicles.
- Green Technology Research Co., Ltd. ("GRT") was established with registered and paid-up capital of Baht 40,000,000, dividing into 4,000,000 ordinary shares, at the par value of Baht 10. The Company holds 99.99 percent of shares. The purpose of GRT is to conduct the research and development of Oleochemical.
- MINE Mobility Research Co., Ltd. ("MMR") was established with registered capital of Baht 10,000,000 and paid-up capital of Baht 2,500,000, dividing into 1,000,000 ordinary shares, at the par value of Baht

10. The Company holds 99.99 percent of shares. The purpose of MMR is to conduct the research and development about the related business of the affiliated company.

- PayPop Co., Ltd. ("POP") was established with registered and paid-up capital of Baht 100,000, dividing into 10,000 ordinary shares, at the par value of Baht 10. Energy Mahanakorn Co., Ltd., the Company's subsidiary holds 99.99 percent of shares. The purpose of POP is to provide electronic financial transaction (E-Money).
- Energy Beyond Research Co., Ltd. ("EBR") was established with registered and paid-up capital of Baht 100,000, dividing into 10,000 ordinary shares, at the par value of Baht 10. The Company holds 99.99 percent of shares. The purpose of EBR 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, dividing into 10,000 ordinary shares, at the par value of Baht 10. The Company holds 99.99 percent of shares. The purpose of EBI is to produce and distribute biodiesel (B100) and the by-products.

★ The Company invested 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 capital increase of the Company's subsidiaries (direct and indirect) are as follows.

- Capital increase of Energy Mahanakorn Co., Ltd., ("EMN") was made from Baht 10,000,000 to Baht 150,000,000 by issuance of 14,000,000 new ordinary shares at the par value of Baht 10. The Company held 66.67 percent while Online Asset Co., Ltd. held 33.33 percent. This capital increase, the Company reduced

the shareholding proportion in EMN from 99.99 percent to 66.67 percent.

- Capital increase of Energy Solution Management Co., Ltd., ("ESM") was made from Baht 10,000,000 to Baht 110,000,000 by issuance of 1,000,000 new ordinary shares at the par value of Baht 100. The Company held 99.99 percent of shares.

Year 2018

★ The Company acquired more ordinary shares in Amita Technologies Inc. ("Amita-Taiwan"). After the acquisition, the Company held total 76,109,821, representing 77.21 percent of the issued and paid-up ordinary shares in Amita-Taiwan. Hence, at present, Amita-Taiwan have become 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** (exchange rate 24.478 Baht/1 SGD as of 21st August 2018). The Company held 95 percent of shares. The purpose of EA Con Dao 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 52,527,680.00 (exchange rate 32.8298 Baht/1USD as of 16th October 2018). The direct subsidiary - Amita Technologies Inc. ("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, dividing into 10,000 ordinary shares, at the par value of Baht 10. The Company's subsidiary - Amita New Technology Pte. Ltd. ("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 by Baht 49,990,000 to reach 50,000,000 by issuing 4,999,000 of new ordinary shares, at the par value of Baht 10. However, 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, dividing into 10,000 ordinary shares, at the par value of Baht 10. The Company held 99.94 percent of shares. The purpose of MMC is to produce and distribute electric vehicle. Subsequently, the Company increased registered capital of MMC by Baht 399,900,000 to reach Baht 400,000 by issuance of 39,990,000 new ordinary shares at the par value of Baht 10. At present, the Company holds 99.94 percent of shares.
- EA Station Co., Ltd. ("EA Station") was established with registered and paid-up capital of Baht 500,000 dividing into 50,000 ordinary shares, at the par value of Baht 10. The Company's subsidiary – Energy Mahanakorn Co., Ltd. held 99.94 percent of shares. The purpose of EA Station is to become a hub station and logistics.

✦ The capital increase of the Company's subsidiaries (direct and indirect) are as follows.

- Capital increase of Green Technology Research Co., Ltd., ("GTR") was made from Baht 40,000,000 to Baht 112,000,000 by issuance of 7,200,000 new ordinary shares at the par value of Baht 10.
- Capital increase of MINE Mobility Research Co., Ltd., ("MMR") was made from Baht 10,000,000 to Baht 100,000,000 by issuance of 9,000,000 new ordinary shares at the par value of Baht 10.
- Capital increase of EA Bio Innovation Co., Ltd., ("EBI") was made from Baht 100,000 to Baht 400,100,000 by issuance of 40,000,000 new ordinary shares at the par value of Baht 10.

Major developments of biodiesel

Year 2014

✦ The Company changed the certification company that certify Roundtable on Sustainable Palm Oil (RSPO) from PT.TUV NORD INDONESIA to TUV NORD INTEGRA bvba. However, the Company still adhered to the standard objective to support the sustainable production of palm oil that covering the management and legal proceed, economic feasibility, environment compatibility and the benefits to the society under the the international RSPO.

✦ The Company started operating production of Glycerolysis which changes PFAD from refinery palm oil process into crude palm oil (CPO).

Year 2015

✦ The Company improved production process of Gly-Trans which changed PFAD from refinery palm oil process into crude palm oil (CPO). The production was started in the fourth quarter of 2015.

Year 2016

✦ The Company started distribution of biodiesel (B100/ Mass Balance : MB) which passed the certification of RSPO Standard. Total operating result of the Company was reported through RSPO IT Platform after the first distribution in the second quarter of 2016.

✦ The Company applied for the standard certification of (OH&S) ISO 14001: 2015 & OHSAS 18001: 2007 (Environmental & Occupational Health and Safety Management System) which expected to complete during the first quarter of 2017.

✦ The Company maintained its standard of Roundtable on Sustainable Palm Oil: RSPO, ISO 9001: 2008 (Quality Management Systems) and Kosher accredited from certifying company throughout the year 2016.

Year 2017

✦ In the first quarter of 2017, the Company was certified by URS Thailand (United Registrar of Systems (Thailand) Ltd.) for Environmental Management System) ISO 14001 : 2015, Occupational Health and Safety Management System) OHSAS 18001 : 2007, Certificate Number : 79935/A/0001/UK/EN (ISO 14001 : 2015), and Certificate Number : 75535/B/0001/UK/En (OHSAS 18001 : 2007) which is the certification 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, creating positive image for the organization as well.

✦ 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 is classified as a plant/controlled building (TSIC-ID 20299 -1005) in first quarter of 2017.

✦ The Company was certified for the Green System Level 3 (GI3) 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 and
3. Social Responsibility both inside and outside the Organization (throughout the supply chain)

The Company monitored and reviewed the development on continual basis as per certification no. 3-6471/2561 (for the factory register no. Khor3-47(2)-2/52 PorJor.) and 3-6472/2561 (for the factory register no. Khor 3-7(1)-1/44 PorJor.)

✦ The Company maintained its standard of Roundtable on Sustainable Palm Oil: RSPO, ISO 9001: 2008 (Quality Management Systems) and Kosher accredited from the certifier throughout the year 2017.

✦ The Company applied for the certification of Quality Management System ISO : 9001: 2015 and expected to receive the certification during the second quarter of 2018.

Year 2018

✦ Throughout the year 2018, the Company maintained its management system as follows.

- Roundtable on Sustainable Palm Oil: RSPO, License No. 87153 (on 7 June 2017 – 6 June 2022)
- International Quality Management System ISO 9001:2015 – the international standard system that the Company emphasized the importance to achieve

quality excellence and the efficiency of the operation within the organization. The standard mentioned above is improved based on ISO 9001 : 2008 with an additional understanding on the need and expectation of stakeholders in order to manage risks and opportunities as well as other requirement. These are the foundation that assists the Company to achieve the sustainable development for ISO 9001: 2015, with the License No. 3866/A/0002/UK/En (on 9th November 2018 – 14th September 2021).

- The Company stresses the importance of the Environmental Management System) ISO 14001 : 2015 which was improved based on ISO 14001 : 2004 with an additional understanding on the need and expectation of stakeholders in order to manage risks and opportunities as well as other requirement. These are the foundation that assists the Company to achieve the sustainable development. For ISO 14001 : 2015, the Company receives the License No. 79935/A/0001/UK/En.
- Occupational Health and Safety Management System- OHSAS 18001 : 2007, License No. 79935/B/0001/UK/En.
- Green System Industry Level 3, Accreditation No. 3-6472/2561 (Factor Register No. Khor.3-7(1)-1/44 PorJor.), and the Accreditation No. 3-6471/2561 (Factory Khor.3-47(2)-2/52 PorJor.) by the Ministry of Industry.
- Kosher Standard certification regarding glycerin which affirms that the Jew can use the products in food industry.

✦ The Company received a certification for the operating premise that meet the environment governance criteria (Factory Register Khor.3-71/44 PorJor.) 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 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 for the year 2018 leverage efficiency of the boiler that use liquid as a thermal conductivity in the industry.

Major developments of solar power plants

Year 2014

★ The Company signed the Power Purchase Agreement (PPA) with the Electricity Generating Authority of Thailand (EGAT) for solar power plant in Lampang to assign all duties and rights under the PPA to its subsidiary — EA Solar Lampang Co.,Ltd.

★ The Company transferred all BOI privileges in respect of the 90-megawatts solar power plant in Lampang to EA Solar Lampang Co.,Ltd. The privileges are as per terms and conditions of BOI Promotion certificate No. 2632(1)/2556

Year 2015

★ The 90 megawatts solar power plant in Lampang started its commercial operation date (COD) to the Electricity Generating Authority of Thailand (EGAT) on 17 February 2015 and recognized the revenue on the same day.

★ The Company signed the Power Purchase Agreement (PPA) with the Electricity Generating Authority of Thailand (EGAT) for solar power plant in Phitsanulok to assign all duties and rights under the PPA to its subsidiary — EA Solar Phitsanulok Co.,Ltd.

★ The Company's subsidiary – EA Solar Phitsanulok was approved for the investment promotion by the Board of Investment regarding the 90 megawatts solar power plant in Phitsanulok.

The promotion approved was Class 7.1 : Public Utility and Basic Service. EA Solar Phitsanulok was granted the rights and benefits as per Investment Promotion Act b.E. 2520, for example, the promotion granted exemption on income tax incurred from the net profit generated from the business operation for a period of 8 years from the date of earning income. After 8 years, the company would be exempted 50% income tax incurred from the net profit for a period of 5 years.

★ The Company's subsidiary – EA Solar Nakhon Sawan was certified for ISO 9001 : 2008 (Quality Management Systems) regarding the Quality and Environmental Management System by URS Thailand (United Registrar of Systems (Thailand) Ltd.

- Quality Management System ISO 9001: 2008 (License No. 70995/A/0001/UK/En) is the international standard system that the Company emphasizes the importance to achieve quality excellence and the efficiency of the operation within the organization.
- The Environmental Management System ISO 14001 : 2004 (License No. 70995/B/0001/UK/En) emphasizes the importance of environmental management, waste reduction and energy consumption. The company must show its transparency by complying with the legal requirement which will result in environmental development coupling with business development.

Year 2016

★ The Company's subsidiary – EA Solar Co., Ltd. is certified by URS Thailand (United Registrar of Systems (Thailand) Ltd. regarding the Quality and Environmental Management System as follows.

- Quality Management System ISO 9001:2008 (License No. 73337/B/0001/UK/En) is the international standard system that the Company emphasizes the importance to achieve quality excellence and the efficiency of the operation within the organization.
- Environmental Management System ISO 14001 : 2004 (License No. 73337/A/0001/UK/En) was the international standard system that the Company emphasizes the importance to progress and to be recognized commercially and socially. The aim is to focus on the environmental and pollution management that results as the environmental development and business development together.

★ The 90 megawatts solar power plant in Phitsanulok started its commercial operation date (COD) to the Electricity Generating Authority of Thailand (EGAT) on 1st April 2016 and recognized the revenue on the same day.

Year 2017

★ The Company has been approved for listing in the Thailand Voluntary Emission Reduction Program : 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 green house gas on a voluntary basis. The amount of the green house gas reduced or known as 'Carbon Credit' under T-VER or "TVERs" can be traded to the local voluntary carbon market.

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

1. Project Name: Solar Farm at Nokhonsawan, Thailand of the subsidiary – EA Solar Nakhon Sawan Co., Ltd. The Sub-Committee of TGO has certified that

the amount of greenhouse has reduced during December 2015 to November 2016 is 106,148 tons of carbon dioxide equivalent (tCO_2e).

2. Project Name: Solar Farm at Lampang, Thailand of EA Solar Lampang Co., Ltd. The Sub-Committee of TGO has certified that the amount of greenhouse has reduced during December 2015 to November 2016 is 111,104 tons of carbon dioxide equivalent (tCO_2e).
3. Project Name: Solar Farm at Pisanulok, Thailand – EA Solar Phitsanulok Co., Ltd. The Sub-Committee of TGO has certified that the amount of greenhouse has reduced during April 2016 to September 2016 is 63,178 tons of carbon dioxide equivalent (tCO_2e).

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

Year 2018

★ The Company's subsidiary – EA Solar Phitsanulok ("ESP") receives a certificate for the operating premise that passes the Environmental Governance (Factory Register 3-88 (1)-37/58 PorLor) 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) Ltd. for its Quality Management and Environmental Management System as follow.

- International Quality Management System ISO 9001: 2015 – the international standard system that the Company emphasizes the importance to achieve quality excellence and the efficiency of the operation within the organization, the understanding on the need and expectation of stakeholders in order to manage risks and opportunities as well as other requirement. These are the foundation that assists the Company to achieve the sustainable development for ISO 9001:2015, with the License No. 70995/B/0002/UK/En (on 9th February 2018 – 8th February 2021).
- The Environmental Management System ISO 14001 : 2015 is the international standard that the organization prioritizes to enhance environmental potentiality within and to accomplish the environmental sustainability, and to understand the need and expectation of stakeholders in order

to manage risks and opportunities as well as other requirement. These are the foundation that assists the Company to achieve the sustainable development. For ISO 14001 : 2015, the Company receives the License No. 70995/A/0002/UK/En (from 8th February – 7th February 2021.)

★ The Company's subsidiary – EA Solar Lampang Co., Ltd. is certified by URS Thailand (United Registrar of Systems (Thailand) Ltd. for the Quality and Environmental Management System. Details are as follows.

- International Quality Management System ISO 9001: 2015 is the international standard system that the Company emphasizes the importance to achieve quality excellence and the efficiency of the operation within the organization, the understanding on the need and expectation of stakeholders in order to manage risks and opportunities as well as other requirement. These are the foundation that assists the Company to achieve the sustainable development for ISO 9001: 2015, with the License No. 70995/B/0003/UK/En (from 9th February 2018 – 8th February 2021).
- The Environmental Management System ISO 14001 : 2015 is the international standard that the organization prioritizes to enhance environmental potentiality within and to accomplish the environmental sustainability, and to understand the need and expectation of stakeholders in order to manage risks and opportunities as well as other requirement. These are the foundation that assists the Company to achieve the sustainable development. For ISO 14001 : 2015, the Company receives the License No. 70995/A/0003/UK/En (from 8th February 2018 – 7th February 2021.) The System emphasizes the importance of environmental management, waste reduction and energy consumption. The Company must show its transparency by complying with the legal requirement which will result in environmental development coupling with business development.

★ The Company's subsidiary – EA Solar Co., Ltd. and EA Solar Nakhon Sawan Co., Ltd. maintain the management system including the work operation and environment certified by URS Thailand (United Registrar of Systems (Thailand) Ltd. regarding the Quality and

Environmental Management System throughout the year 2018 as follows.

- The Company's subsidiary – EA Solar Co., Ltd. is certified the International Quality Management System ISO 9001:2015 – which has been improved from ISO 9001 : 2008 with an additional understanding on the need and expectation of stakeholders in order to manage risks and opportunities as well as other requirement. These are the foundation that assists the Company to achieve the sustainable development for ISO 9001: 2015, with the License No. 70995/B/0004/UK/En (from 9th February 2018 – 8th February 2021). Another certification is the Environmental Management System ISO 14001 : 2015 which has been improved from ISO 14001 : 2004 with an additional understanding on the need and expectation of stakeholders in order to manage risks and opportunities as well as other requirement. These are the foundation that assists the Company to achieve the sustainable development for ISO 14001 : 2015, with the License No. 70995/A/0004/UK/En (from 8th February 2018 – 7th February 2021).
- The Company's subsidiary – EA Solar Nakhon Sawan Co., Ltd. is certified the International Quality Management System ISO 9001:2015 – which has been improved from ISO 9001 : 2008 with an additional understanding on the need and expectation of stakeholders in order to manage risks and opportunities as well as other requirement. These are the foundation that assists the Company to achieve the sustainable development for ISO 9001: 2015, with the License No. 70995/D/0001/UK/En (from 9th February 2018 – 8th February 2021). Another certification is the Environmental Management System ISO 14001 : 2015 which has been improved from ISO 14001 : 2004 with an additional understanding on the need and expectation of stakeholders in order to manage risks and opportunities as well as other requirement. These are the foundation that assists the Company to achieve the sustainable development for ISO 14001 : 2015, with the License No. 70995/C/0001/UK/EN (from 8th February 2018 – 7th February 2021).

★ The Sub-Committee of TGO has certified that the amount of greenhouse has reduced during as Follows:

- Solar Farm at Nokhonsawan, Thailand, December 2016 to November 2017 is 104,543 tons of carbon dioxide equivalent (tCO_2e)
- Solar Farm at Lampang, Thailand, December 2016 to November 2017 is 112,548 tons of carbon dioxide equivalent (tCO_2e).
- Solar Farm at Pisanulok, Thailand, October 2016 to September 2017 is 126,713 tons of carbon dioxide equivalent (tCO_2e).

Major Developments of the Wind Power Plants

Year 2014

★ The Company entered into Power Production Agreement (PPA) with the Electricity Generating Authority of Thailand (EGAT) to generate and sell electricity from Hadkanghan 1 – 3 with total production capacity 126 megawatts to EGAT.

Year 2015

★ The Company's subsidiary – EA Wind Hadkanghan 3 Co., Ltd. was approved the investment promotion by the Board of Investment (BOI) for the wind power plant in Songkhla and Nakhon Si Thammarat namely below.

- Wind Power Plant (Hadkanghan Project 1) with production capacity 36 megawatts.
- Wind Power Plant (Hadkanghan Project 2) with production capacity 45 megawatts.
- Wind Power Plant (Hadkanghan Project 3) with production capacity 45 megawatts.

The promotion approved was Class 7.1 : Public Utility and Basic Service with the rights and benefits as per Investment Promotion Act B.E. 2520, for example, the promotion granted exemption on income tax incurred from the net profit generated from the business operation for a period of 8 years from the date of earning income. After 8 years, the Company would be exempted 50 percent income tax incurred from the net profit for a period of 5 years.

★ The Company was approved the investment promotion by the Board of Investment (BOI) for five wind power plants in Chaiyaphum namely below.

- Wind Power Plant (Hanuman Project 1) with production capacity 45 megawatts.
- Wind Power Plant (Hanuman Project 5) with production capacity 48 megawatts.
- Wind Power Plant (Hanuman Project 8) with production capacity 45 megawatts.
- Wind Power Plant (Hanuman Project 9) with production capacity 42 megawatts.
- Wind Power Plant (Hanuman Project 10) with production capacity 80 megawatts.

The promotion approved was Class 7.1: Public Utility and Basic Service with the rights and benefits as per Investment Promotion Act B.E. 2007 and the amendment (vol. 3) B.E. 2001, for example, the promotion granted exemption on income tax incurred from the net profit generated from the business operation for a period of 8 years from the date of earning income. After 8 years, the Company would be exempted 50 percent income tax incurred from the net profit for a period of 5 years.

★ The Company and EGAT The Company signed the Power Purchase Agreement (PPA) with the Electricity Generating Authority of Thailand (EGAT) for the wind power plant (Hadkanghan Project 1 – 3) to assign all duties and rights under the PPA to its subsidiary – EA Wind Hadkanghan 3 Co.,Ltd.

★ The Company entered into Power Production Agreement (PPA) to generate and sell electricity from Hanuman Project 1, 5, 8, 9, 10 with total production capacity 260 megawatts to EGAT.

Year 2016

★ The Company started the construction for the wind power plant–Hadkanghan Project 1 – 3 and prepared to start the construction of the Wind Power Plant Hanuman Project 1, 5, 8, 9, 10

Year 2017

★ The Wind Power Plants (Hadkanghan Project 1 – 3) started its commercial operation date (COD) as follows.

- The Wind Power Plants (Hadkanghan Project 1) with total production capacity of 36 megawatts in Songkhla started its commercial operation date

(COD) to the EGAT on 3rd March 2017, 12.00 hrs. The project start recognizing the revenue in the same date and time as well.

- The Wind Power Plants (Hadjkanghan Project 2) with total production capacity of 45 megawatts in Nakhon Si Thammarat started its commercial operation date (COD) to the EGAT on 10th June 2017, 12.00 hrs. The project start recognizing the revenue in the same date and time as well.
- The Wind Power Plants (Hadjkanghan Project 3) with total production capacity of 45 megawatts in Nakhon Si Thammarat started its commercial operation date (COD) to the EGAT on 23rd June 2017, 12.00 hrs. The project start recognizing the revenue in the same date and time as well.

✦ Since the Company was approved the investment promotion by the Board of Investment (BOI) for 5 wind power plants in Chaiyaphum (in the Company's name), by virtue of the Investment Promotion Act B.E. 2520, the Board of Investment has issued the Promotional Certificate to the affiliated companies as follows.

- Indirect subsidiary – Nayangklak Development Co., Ltd. Wind Power Plant (Hanuman Project 1) with production capacity 45 megawatts.
- Indirect subsidiary – Pongnok Development Co., Ltd. Wind Power Plant (Hanuman Project 5) with production capacity 48 megawatts.
- Indirect subsidiary – Nayangklak Wind Power Co., Ltd. Wind Power Plant (Hanuman Project 8) with production capacity 45 megawatts.
- Indirect subsidiary – Benjarat Development Co., Ltd. Wind Power Plant (Hanuman Project 9) with production capacity 42 megawatts.
- Indirect subsidiary – Banchuan Development Co., Ltd. Wind Power Plant (Hanuman Project 10) with production capacity 80 megawatts.

The said five 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. 2550 and the amendment (vol. 3) B.E. 2544.

For example, the promotion granted exemption on income tax incurred from the net profit generated from the business operation for a period of 8 years from the date of earning income. After 8 years, the Company would be exempted 50 percent income tax incurred from the net profit for a period of 5 years.

Year 2018

✦ Wind Power plant (5 Hanuman Projects): the construction progress of Hanuman 1, 5, 8, 9 is 100 percent completed, the engineering and civil installation works is 92.28 percent completed. The foundation, installation of the wind turbine and transmission line is 100 percent completed. For the construction progress of Hanuman 10, the foundation is 100 percent completed while the installation of wind turbine and transmission line is under progress. At present, there are 7 remaining wind turbines for installation. The said 5 Hanuman Projects is tentative to start commercial Operation (COD) to EGAT in 2019.

- Direct subsidiary – EA Wind Hadkunghan 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 (tCO₂e).
- The Company develops the projects to promote and support all sectors to take part in reducing the greenhouse on a voluntary basis with the Thailand Greenhouse Gas Management Organization (public organization) or TGO through its Company group, Hanuman Wind Farm Project 1, 5, 8, 9 and 10. The Sub-Committee of TGO has passed a resolution to approve the foregoing projects for listing under the voluntary greenhouse reduction project that meet the standard of Thailand on 25th April 2018. The credit term is from 1st January 2019 – 31st December 2025.

Major Developments in the Electric Charging Station Business

✦ The Electric Charging Station (for electric cars) under the trademark "EA Anywhere" is under operation of the direct subsidiary company – Energy Mahanakorn Co., Ltd. ("EMN"). The major developments in the previous years are as follows.

Year 2017

★ The Company signed the MOU with the Metropolitan Electricity Authority (MEA) to carry on the Electric Charging Station for Electric Automobiles" 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, Siam Center Department Store, GB floor.

Year 2018

★ 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.

★ The launch of "Smart Move", the platform for hiring service of electric automobiles 100 percent on 12th 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.

★ On 4th-5th July 2018, 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.

★ Energy Mahanakorn Co., Ltd. and Inch Cape (Thailand) Co., Ltd., the importer and the sole official dealers of Land Rovers in Thailand signed the MOU on 20 September 2018 to allow Energy Mahanakorn Co., Ltd. to become the formal 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.

Other Developments

Year 2014

★ The Company was awarded in the second year of the "Best Popular Stock Award 2014" MAI by the Khaohun Turakit Newspaper and the Stock Exchange of Thailand, MAI, University of the Chamber of Commerce and Asset Pro Management Co., Ltd.

★ The Company was voted in the year 2014 by members of the European Magazine as the "Renewable Energy Company of the Year - Asia" while the Chief Executive Officer - Mr. Somphote Ahunai was selected as the "Energy CEO of the Year - Asia".

★ IAA Awards for Listed Companies 2014 announced the honor and recognition the executive of the listed companies regarding the prominent knowledge, skills of management and communication of the Company. In addition, the Company was widely recognized among analysts for the outstanding executives namely below.

- Mr. Somphote Ahunai was awarded "Excellent CEO" MAI.
- Mr. Amorn Saphaweeikul was awarded "Excellent CFO" MAI

Year 2015

- ✦ The Company received excellent award in year 2015 of MAI "Money & Banking Awards 2015" by Money and Banking Magazine.
- ✦ The Company was awarded in the third year of the "Best Popular Stock Award 2015" MAI by the Khaohun Turakit Newspaper and the Stock Exchange of Thailand, MAI.

Year 2016

- ✦ The Company received "Thailand Top Company Awards 2016 Fast-growing Company Award" as a company that achieved highest success in Thailand and as the Company having an outstanding operating result with rapid growth of turnover and profit, by the University of Thai Chamber of Commerce (The Faculty of Business Management) in collaboration with Business Magazine.
- ✦ The Company was awarded in the forth consecutive year of the "Best Popular Stock Award" MAI by the Khaohun Turakit Newspaper and the Stock Exchange of Thailand, MAI.
- ✦ The Company was awarded MONEY & BANKING AWARDS 2016, category "Excellent MAI Company of 2016" for 2 consecutive years, by the Money and Banking Magazine.
- ✦ The Company was awarded "THE BIZZ 2016 World Business Leader" and Mr. Somphote Ahunai, the Chief Executive Officer was awarded "THE BIZZ 2016 World Leader Businessperson" as a leader who applied innovation, knowledge and work systematically leading the company to the great success. The award is launched by the World Confederation of Businesses.
- ✦ The Company was awarded "Outstanding Investor Relations Awards" and "Best Investor Relations Awards" in SET Awards 2016 launched by the Stock Exchange of Thailand and the Money and Banking Magazine.
- ✦ In the "APEA 2016" Award, Mr. Amorn Saphthaweekul, the director and Deputy CEO of the Company was awarded for The Asia Pacific Entrepreneurship Awards 2016 – Most Promising Category by Enterprise Asia as the executive who is determined, with vision and lead

the company to reach the growth as targeted. Enterprise Asia is a Regional non – governmental organization (NGO) and the plays crucial role in connecting leading companies in the Asia Pacific.

Year 2017

- ✦ The Stock Exchange of Thailand approved the transfer of the Company's securities from MAI to the SET from 6th January 2017 onwards. In addition, the Company's securities was considered to be included in SET50 Index from 1st July 2017 and in FTSE SET Large Cap since 18th December 2017.
- ✦ The Company received "Thailand Top Company Awards 2017 Top Business Strategy Award" as a company that having prominent performance, recognized for creative business strategy. The award is launched by Business Plus and University of Thai Chamber of Commerce (Faculty of Business Management).
- ✦ The Company was awarded in the five consecutive year of the "Best Popular Stock Award" MAI by the Khaohun Turakit Newspaper and the Stock Exchange of Thailand, MAI.

- ✦ The Company was awarded "Outstanding Investor Relations Awards" and "Best Investor Relations Awards" in SET Awards 2017 launched by the Stock Exchange of Thailand and the Money and Banking Magazine.

- ✦ The Company was awarded by the Thailand Greenhouse Gas Management Organization (Public Organization :TGO), dividing into three honorable plaques and three certificates for the solar power plants in Nakhon Sawan, Lampang and Phitsanulok and the one honorable plaque for the wind power plant (Hadrangan Project) in Songkhla and Nakhon Si Thammarat.

Year 2018

- ✦ Mr. Somphote Ahunai, the Chief Executive Officer was awarded the "Entrepreneur of The Year Award" (Mining & Energy Industry in Asia Pacific Entrepreneurship Awards 2018, Thailand by Enterprise Asia

✦ The Company was awarded "International Finance Magazine" Singapore, in total 3 awards namely below.

- Fastest Growing Renewable Energy Company, Thailand 2017
- Most Social Responsible Energy Company, Thailand 2018
- Most Innovative Renewable Energy Company, Thailand 2018

✦ The Company was awarded "The BIZZ Awards 2018", category Inspirational Company by the World Confederation of Businesses, USA.

✦ The Company was awarded "Social Empowerment Award" in AREA Asia Responsible Enterprise Awards by Enterprise Asia

✦ The Company received Global Banking and Finance, London as follows.

- Best Energy Solutions Provider Thailand 2018
- Best Green Project (Energy) Thailand 2018

✦ The Company and Mr. Somphote Ahunai, Chief Executive Officer of the Company received the award from International Business Magazine, UAE as follows.

- Best Renewable Energy Company Thailand 2018
- Energy Company CEO of the Year Thailand 2018

✦ According to the survey on the Corporate Governance Report of Thai Listed Companies 2018 by the Thai Institute of Directors (IOD) and the Stock Exchange of Thailand, the Company was rated Excellent CG (5 Stars) for the first time. The score increased from the previous year at Very Good level (4 Stars) for two consecutive years.

✦ The Company received "Thailand Top Company Awards 2018", for Energy Industry based on the excellent rating of performance in the Energy Industry and the outstanding business operation. The award is prepared by the University of Thailand Chamber of Commerce and the Business Plus.

✦ The Company received "Thailand Corporate Excellence Awards 2018", for the Corporate Management Excellence by the Thailand Business Management Association and the Sasin Graduate Institute of Business Administration of Chulalongkorn University.

✦ The Company received "Thailand's Top Corporate Brand" from Thailand Corporate Excellence Awards 2018 arranged by Chulalongkorn University.

✦ The Company received "Thailand Sustainability Investment (THSI)" from SET Sustainability Awards 2018 and was selected for Sustainable Stock, by the Stock Exchange of Thailand.

✦ The Company was honored for the operating premise that operate under the environmental governance criteria in terms of biodiesel plant and solar power plant, Phitsanulok, launched by the Ministry of Industry.

✦ The Company received "CSR-DIW" award from the project that promote the industrial factories to take social responsibility and to live in harmony with the communities, launched by the Department of Industrial Works, Ministry of Industry.

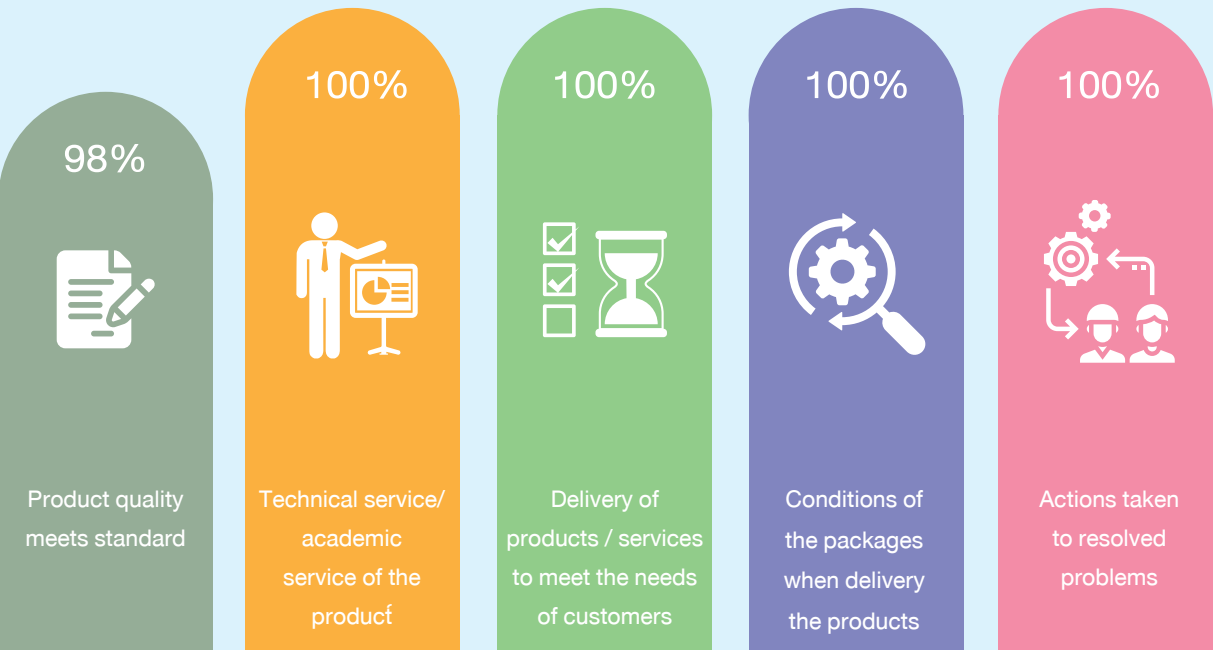
✦ The wind power plants, total 5 Hanuman Projects passed the assessment and listed in the Thailand Voluntary Emission Reduction: T-VER). Subsequently, the Company received the honorable plaque under the T-VER project in the "Hundreds of Heart to Reduce the Global Warming" for the year 2018. The event was launched by the Thailand Greenhouse Gas Management Organization (Public Organization : TGO).

Company performance indicators: Customer satisfaction level

Service for the year 2018



Product quality for the year 2018



Nature of business

The Company and its subsidiaries have revenue from sales of products. Revenue from biodiesel business accounts for 28.11 percent of total revenue where the primary products are biodiesel, Purified Glycerin, and the by-products. Renewable energy power plant business generates 61.50 percent of revenue. The primary products are electricity

from solar power, electricity from wind power and the contribution from Adder. Revenue from other business accounts 2.88 percent while the accounting profit from merging and other revenue accounts 7.51 percent. Details are as follows.

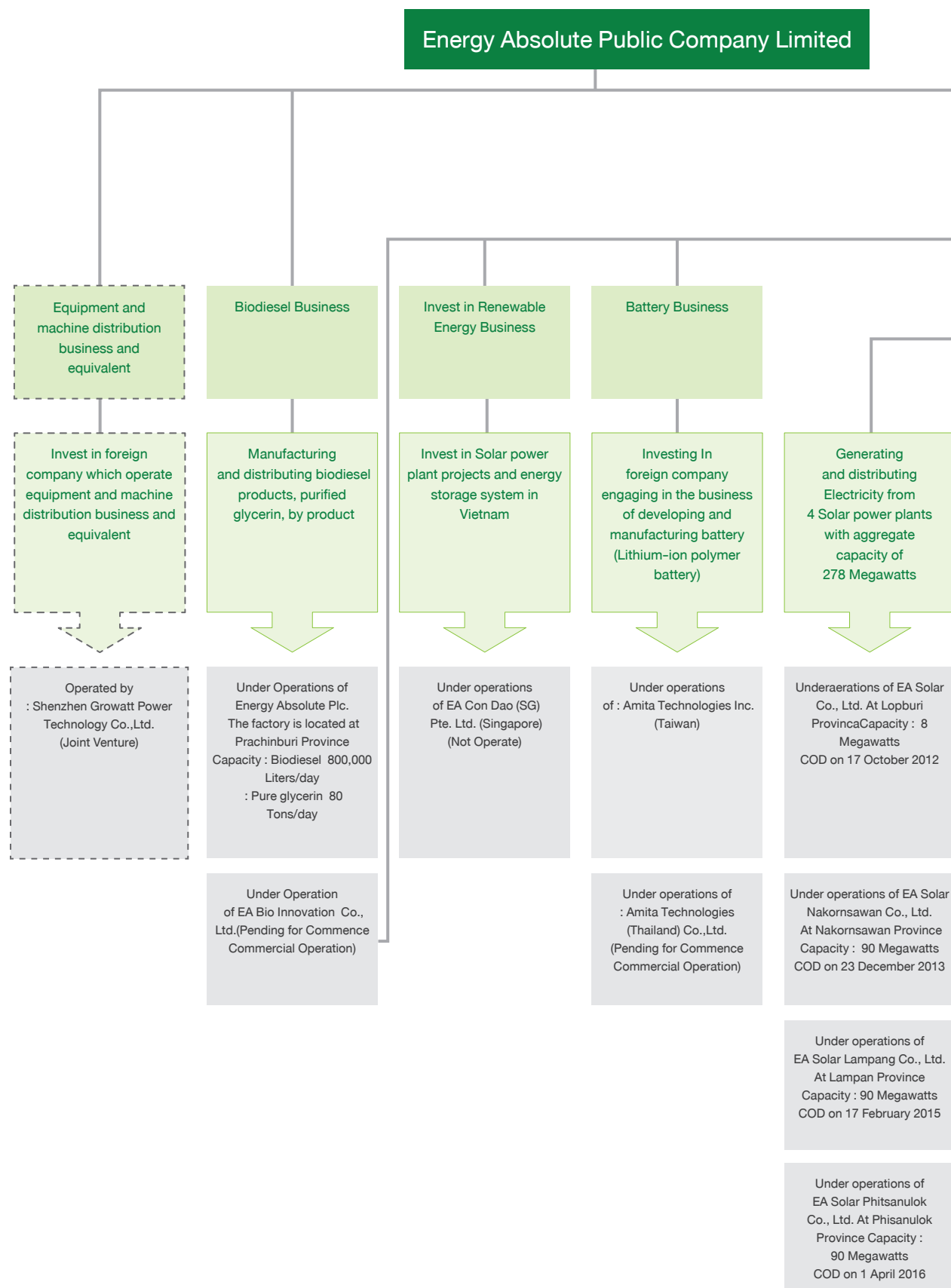
Income Structure

Revenue type	Operated by/ Shareholding (%) of the Company	Year 2016		Year 2017		Year 2018	
		MB	Percentage	MB	Percentage	MB	Percentage
Biodiesel							
1. Biodiesel oil	EA	4,721.13	45.23	4,205.23	36.02	3,194.23	25.57
2. Purified glycerin	EA	169.49	1.62	267.07	2.29	296.16	2.37
3. Byproducts	EA	11.32	0.11	14.16	0.12	20.76	0.17
		4,901.94	46.96	4,486.46	38.43	3,511.15	28.11
Renewable Energy Power Plant							
4. Electricity from Solar Power Plant	EA SOLAR ESN ESL ESP	1,786.31	17.11	1,933.05	16.56	1,934.12	15.49
5. Electricity from Wind Power Plant	EWHK3/ ^e	-	-	489.07	4.19	802.48	6.42
6. Revenue from Adder Purchase price of electricity	EA SOLAR, ESN, ESL, ESP, EWHK3	3,704.14	35.48	4,670.94	40.01	4,944.22	39.58
		5,490.45	52.59	7,093.06	60.76	7,680.82	61.49
Other business groups							
7. Revenue from other businesses		-	-	-	-	359.99	2.88
Total revenue from sales and services		10,392.39	99.55	11,579.52	99.19	11,551.96	92.49
8. Accounting profit arising from business merging		-	-	-	-	894.58	7.16
9. Other income		46.86	0.45	93.98	0.81	43.69	0.35
Total incomes		10,439.25	100.00	11,673.50	100.00	12,490.23	100.00
Share of profit (loss) from investments in associates and interests in the joint venture		-		(62.27)		(6.31)	

Remarks:

EA Solar Co., Ltd:	: The Company holds (direct) 49 percent and 51 percent (indirect)
EA Solar Nakhonsawan Co., Ltd (ESN)	: The Company holds 99.99 percent of shares (indirectly)
EA Solar Lampang Co., Ltd (ESL)	: The Company holds 99.99 percent of shares (indirectly)
EA Solar Phitsanulok Co., Ltd (ESP)	: The Company holds 99.99 percent of shares (indirectly)
EA Wind Hadkanghan 3 Co., Ltd. (EWHK3)	: The Company holds 99.99 percent of shares (indirectly)

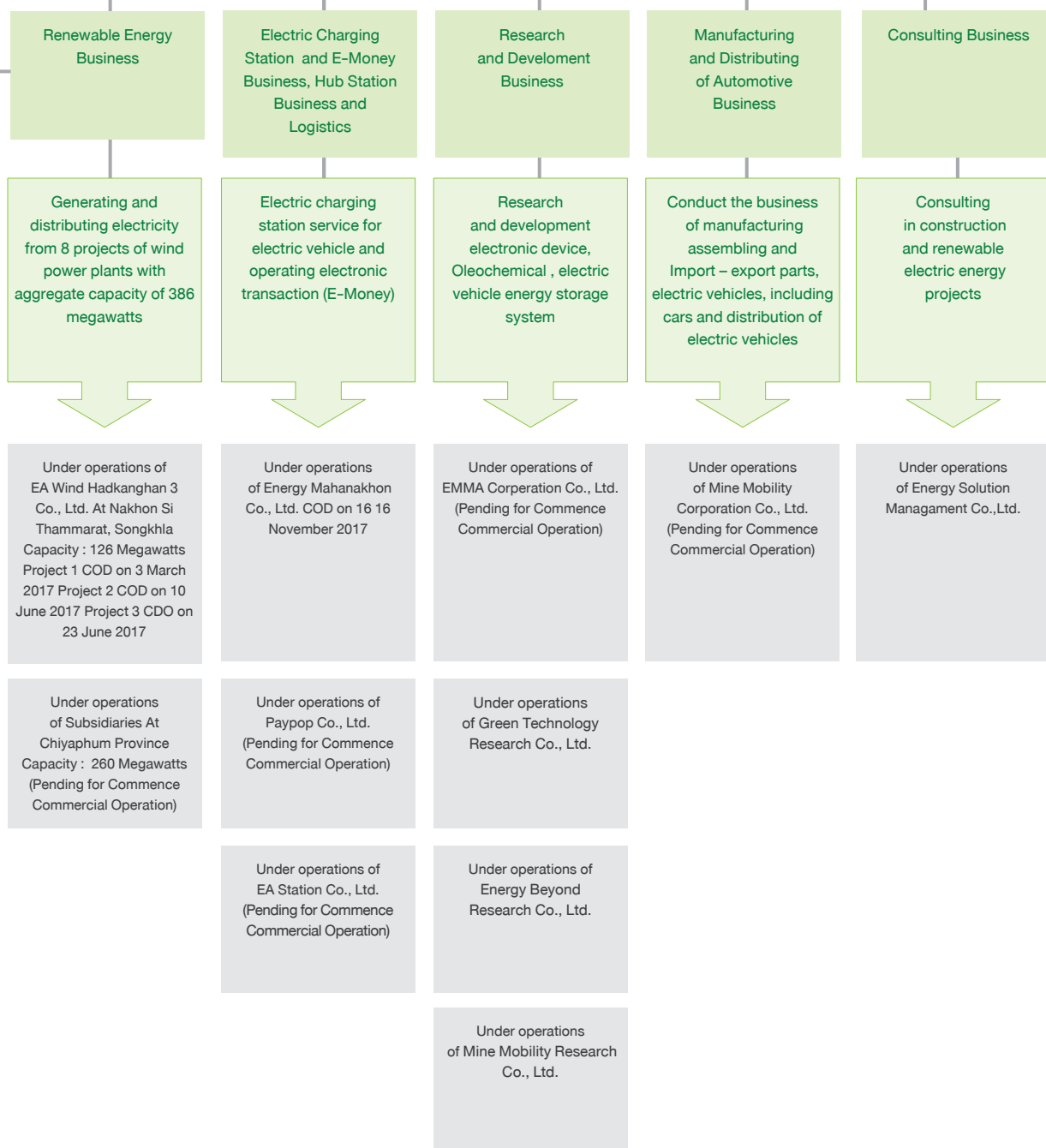
Business structure of the Company and its subsidiaries



Joint Venture

Information as of December 31, 2018

Conduct Business Through Subsidiaries (Direct Subsidiaries and Indirect Subsidiaries)



Biodiesel

Energy Absolute Public Company Limited is a producer and distributor of biodiesel (B100), purified glycerin and byproduct. The Company 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.)

Our products

1. Biodiesel (B100):

Biodiesel (B100) is liquid fuel produced from vegetable oil and animal fat such as crude palm oil, refined bleached deodorized palm oil, stearine engaging in a chemical reaction called transesterification 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, generators in vessels. Due to the fluctuation of crude oil price, the high-speed diesel marketing operation is suspended. However, the Company carries on a good relationship with existing customers and continuously monitors the situations.

2. 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.

3. 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 results from the palm oil extraction includes Palm Fatty Acid Distillate : PFAD which become solid at the room temperature, similar to a candle.



Biodiesel Business Group



Renewable Energy Business Group



Battery Development and Production Business Group



EV Charging Stations (for Electrical Automobile) and Electronic Transaction Business



Research and Development Business Group

Rights and benefits from the promotion granted by the Board of Investment (BOI)

The Company has been granted privileges from the Board of Investment pursuant to the Investment Promotion Act as follows.

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 ton/year	12 May 2008
	2037(2)/2554 / ¹	124,800 ton/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	1889(2)/2554	178,200 tons per year	24 November 2017

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

Incentives of promotional privilege are:

Biodiesel : The rights and benefits granted are as follows.

- Exemption of import duties on machinery as approved by the BOI
- 8- year corporate income tax exemption, the date of first revenue derived from the promoted activity.
- Exemption in dividend received without being subject to income tax until the promoted period
- 50 percent reduction of corporate income tax on net profit derived from the promoted activity for 5- years after the corporate income tax exemption period expires, as per article 2.
- Double deduction for transportation, electricity and water costs for 10 years from the date of first revenue derived from the promoted activity
- Deduction from net profit of 25 percent of the project's infrastructure installation or construction costs shall be granted in addition to normal depreciation.
- 8- year corporate income tax exemption, not more than 100 percent percent of investment (excluding cost of land and working capital), the date of first revenue derived from the promoted activity.
- Exemption in dividend received without being subject to income tax until the promoted period
- 50 percent reduction of corporate income tax on net profit derived from the promoted activity for 5- years after the corporate income tax exemption period expires, as per article 3.
- Double deduction for transportation, electricity and water costs for 10 years from the date of first revenue derived from the promoted activity
- Deduction from net profit of 25 percent of the project's infrastructure installation or construction costs shall be granted in addition to normal depreciation.
- 5-year exemption of import duties for raw or essential materials used in production for export from the date of first import
- 5-year exemption of import duties for raw or essential materials from the date of first import

Pure glycerin : The rights and benefits granted are as follows.

- Exemption of import duties on machinery as approved by the BOI
- 75 percent reduction of import duties for raw or essential materials for 1- year from the date of first import, as per determination of the BOI.

Refined Bleached Deodorized Palm:

1. Exemption of import duties on machinery as approved by the BOI
2. 8- year corporate income tax exemption, not more than 100 percent of investment (excluding cost of land and working capital), the date of first revenue derived from the promoted activity.
3. Exemption in dividend received without being subject to income tax until the promoted period
4. 50 percent reduction of corporate income tax on net profit derived from the promoted activity for 5- years after the corporate income tax exemption period expires as per article 2.
5. Double deduction for transportation, electricity and water costs for 10 years from the date of first revenue derived from the promoted activity
6. Deduction from net profit of 25 percent of the project's infrastructure installation or construction costs shall be granted in addition to normal depreciation.

The Company is certified for Quality Management Systems ISO 9001: 2015, Roundtable on Sustainable Palm Oil : RSPO by Kosher standard, Environmental Management Systems ISO 14001 : 2015, Occupational Health and Safety Management Systems (OHSAS) 18001 : 2007, Energy Management and the Green Industry Level 3 (GI3), Systematic Environmental Management. The Company strives 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, environmental responsibility that covering inside and out of the organization, creating a positive image for the organization as well.

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, continues 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 the long run and the product development that create added value to the products.

Raw materials are examined by collecting a sample from all production tanks for quality control where any materials which is not in line with our standard will re process. 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 by types of products 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—a standard price for chemical supplies and energy in the world market. The Company has set the policy of selling price of purified glycerin 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 approval from the Executive Committee's meeting.

3. Byproducts

The policy on sales of byproducts are set to meet the reasonable market price and quality.

3. The strategy of sale channel (place)

The sale of biodiesel fuel is made directly to big oil distributors by Sale 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). The customers of purified glycerin are companies using glycerin as a raw material in their production process or the distributors of chemical supplies, consumer goods. The purified glycerin is distributed to oversea market to reduce risk from dependent on the local market only.

4. Marketing and publicity strategy (promotion)

Our marketing and publicity strategy is performed by maintaining production quality that meets the standard, building a good relationship with customers to retain existing customer base, including continuing the operation development, 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, date and time of delivery to ensure that our service is performed to meet customers' requirement. In addition, being punctual with service supports workflow of our internal production and procurement.

5. Target groups

Target groups of the Company are divided by product types 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 1 year. Over 99 percent of the biodiesel sale is made with the large oil traders in Thailand.

2. Purified glycerin

Purified glycerin can be divided into different grades based on the purity level. The Company produces glycerin at the purity level of 99.50 – 99.85 percent (the purity of more than 99.50 percent is categorized in Pharmaceutical Grade). Approximately 77 percent of customers are within the country and 23 percent are customers from other countries i.e. 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 producers and distributors of chemical supplies both in Thailand and overseas.

Industry Competition

As of December 2018, the Department of Energy Business, Ministry of Energy has announced the list of biodiesel producers (fatty acid ethyl ester) approved for sales or possession for sale, namely below.

Company	Capacity (liter/day)	Date of Approval	Expiry Date of Li- cense
Global Green Chemicals Plc.	1,028,600	14 May 2016	17 Feb 2019
	693,642	13 Nov 2018	12 Nov 2021
Energy Absolute Plc.	800,000	27 May 2016	6 Jun 2019
Patum Vegetable Oil Co., Ltd	1,400,000	1 Jun 2016	6 Jun 2019
GI Green Power Co., Ltd.	200,000	6 Jun 2016	14 Jun 2019
AI Energy Plc.	500,000	6 Jun 2016	14 Jun 2019
Verasuwan Co., Ltd	200,000	1 Jun 2016	14 Jun 2019
New Biodiesel Co., Ltd.	1,000,000	25 Jul 2017	31 Jul 2020
Trang Oil Palm Co., Ltd.	100,000	23 Aug 2017	22 Aug 2020
Absolute Power P Co., Ltd.	300,000	29 Sep 2018	25 Sep 2020
PPP Green Complex Co., Ltd.	500,000	9 Apl 2018	8 Apl 2021
Bio Synergy Co., Ltd.	30,000	24 Sep 2018	24 Sept 2021
Bangchak Biofuel Co., Ltd.	930,000	28 Nov 2018	18 Dec 2021
Total	7,682,242		

Remark: Reference from <http://www.doeb.go.th/info/data/dataoil/SaleB100.pdf> As of the end year 2018

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 which currently provides biodiesel 800,000 liters/day and glycerin 80 ton/day. The Board of Directors' Meeting No. 2/2012 held on 30 March 2012 passed a resolution to appoint the board of procurement which comprised of representatives from production, procurement and sale department under the supervision of the Executive Committee. The procurement board 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. The procedures of raw material procurement for biodiesel production are as follows.

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

The crude palm oil, stearine and RBD are the main raw materials used in the production of biodiesel. These materials are supplied to the Company directly by regular suppliers. The Company chooses suppliers from different regions i.e. south, east, central in order to prevent the risk of insufficient supplies. In order to prevent risks in the case that the output in each region is not sufficient to meet the demand or not meet the seasonality. At present, the local producers of crude palm oil comprise of more than 100 palm pressing factories. 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, advanced sale plan, the risk of the cost of raw materials, the situation in the market as well as 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, supplied by local chemical supplies distributors.

Backlog

- None -

Renewable Energy Business Group

In responding to the government policy that promotes the production of electricity from renewable energy, the Company expands its business to production and distribution of electricity generated from renewable energy. The aim is to maximize the utilization of resources within the country, reducing the dependence on import of energy and to stabilize the energy security. The renewable energy business of the Company Group includes 1. production and distribution of electricity from solar power plant - 4 projects with total capacity 278 megawatts 2. production and distribution of wind power plant (including the projects listed in work plan as of 31 December 2018) - 8 projects with total capacity of 386 megawatts.

Product and service characteristics

The Company's business is the production and distribution of electricity generated from renewable energy, solar power, and wind power. The electricity is sold to the government sector which includes the Electricity Authority (PEA) and the Electricity Generating Authority of Thailand (EGAT).

Solar Power Plant

The Company Group is a producer and distributor of electricity generated from solar power plants. There are 4 projects commercially operated with total production capacity of 278 megawatts. Details are as follows.

Projects	Production capacity	Status/procedure
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
Total production capacity	278 megawatts	

1. Solar Power plant, 8 megawatt production capacity, located in Lopburi

- This is the first solar power plant of the Company Group, under the management of EA Solar Co., Ltd., a direct subsidiary company classified as a Very Small Power Producer (VSPP). The project is located at No. 188, 188/2, Moo 3, Koktoom-Pasak River road (Highway No. 3333) km. 21, Pattnanikom sub-district, Pattananikom district, Lopburi in the area approximately 315 Rais.
- EA Solar Co., Ltd. made 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.
- Commercial operation date on 17 October 2012
- 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 megawatt production capacity, Nakhon Sawan

- The power plant is under the management of EA Solar Nakhonsawan Co., Ltd., a direct subsidiary company classified as a Small Power Producer (SPP). The project is located at No. 99/9, 99/10 Moo 11, Highway of Rural Takhli - Banhuawai Village Huawai Sub-District, Takhli District, Nakhon Sawan Province, on the area of approx. 1,810 Rais.
- EA Solar Nakhonsawan Co., Ltd. made a power purchase agreement (PPA) with the Electricity Generating Authority of Thailand ("EGAT") for 5 years. Each default renewal is valid for 5 years under a condition that the part wishes to renew the agreement must inform in writing to another party at least 30 days before the expiration date of the agreement.
- Commercial operation date on 23 December 2013
- The EA Solar Phitsanulok was 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 megawatt, Lampang

- The power plant is under the management of EA Solar Lampang Co., Ltd., an indirect subsidiary company classified as a Small Power Producer (SPP). The project is located at No. 333 Moo 1, Ban Uam Sub-District, Ban Pao Sub-District, Mueang Lampang District, including an area in Nonglom Sub-district, Hang Chat District, Lampang in the area of approximately 2,477 Rais.
- EA Solar Lampang Co., Ltd made the power purchase agreement with EGAT for 5 years. Each default renewal is valid for 5 years under the condition that the part wishes to renew the agreement must inform in writing to another party at least 30 days before the expiration date of the agreement.
- Commercial operation date on 17 February 2015
- The EA Solar Phitsanulok was 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 megawatt capacity, Phitsanulok

- The power plant is under the management of EA Solar Phitsanulok Co., Ltd., an indirect subsidiary company classified as a Small Power Producer (SPP). The project is located at No. 88 Moo 11, Ban Klongkla, Matong Sub-District, Prompiram District, Phitsanulok province in an area approximately 2,230 Rais.
- EA Solar Phitsanulok Co., Ltd made the power purchase agreement with EGAT for 5 years. Each default renewal is valid for 5 years under the condition that the part wishes to renew the agreement must inform in writing to another party at least 30 days before the expiration date of the agreement.
- Commercial operation date on 1 April 2016
- The EA Solar Phitsanulok was 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.

Rights and benefits from the promotion granted by the Board of Investment (BOI)

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 2556
3. Solar Power Plant Business	2076(1)/๑./2557	90 megawatts	3 September 2014
4. Solar Power Plant Business	58-2034-0-00-2-0	90 megawatts	10 July 2015

Rights and benefits granted from the investment promotion for solar power plant business, class 7.1 Public Utility and Primary Services are as follows.

1. Exemption of import duties on machinery as approved by the BOI
2. 8- year corporate income tax exemption, not more than 100 percent of investment (excluding cost of land and working capital), the date of first revenue derived from the promoted activity.
3. Exemption in dividend received without being subject to income tax until the promoted period
4. 50 percent reduction of corporate income tax on net profit derived from the promoted activity for 5- years after the corporate income tax exemption period expires as per article 2.
5. Double deduction for transportation, electricity and water costs for 10 years from the date of first revenue derived from the promoted activity
6. Deduction from net profit of 25 percent of the project's infrastructure installation or construction costs shall be granted in addition to normal depreciation.

Wind power plant

The Company Group is a producer and distributor of electricity generated from wind power. There are 8 projects commercially operated with total production capacity of 386 megawatts.

1. Wind power plant (Hadjkanghan 1-3), total 3 projects, the total production capacity of 126 megawatts in Songkhla and Nakhon Si Thammarat

- The power plants are under the management of EA Wind Hadkanghan 3 Co., Ltd., an indirect subsidiary company located at Huasai district, Pak Panang district, Nakhon Si Thammarat to Ranod, Songkhla. These power plants are classified as a small power producer (SPP).
- EA Wind Hadkanghan 3 Co., Ltd made the power purchase agreement with EGAT for 5 years. Each default renewal is valid for 5 years under the condition that the part wishes to renew the agreement must inform in writing to another party at least 30 days before the expiration date of the agreement.
- The Company is granted tax benefits from the promotion by the Board of Investment (BOI) 8 years corporate income tax and 50% reduction of corporate income tax on net profit desired from the promoted activity for 5 years after the corporate income tax exemption period expires.
- EA Wind Hadkanghan was granted Adder privilege in the rate 3.50 Baht per kilowatt per hour for 10 years from the COD.
- Commercial operation date of each project are as follows.

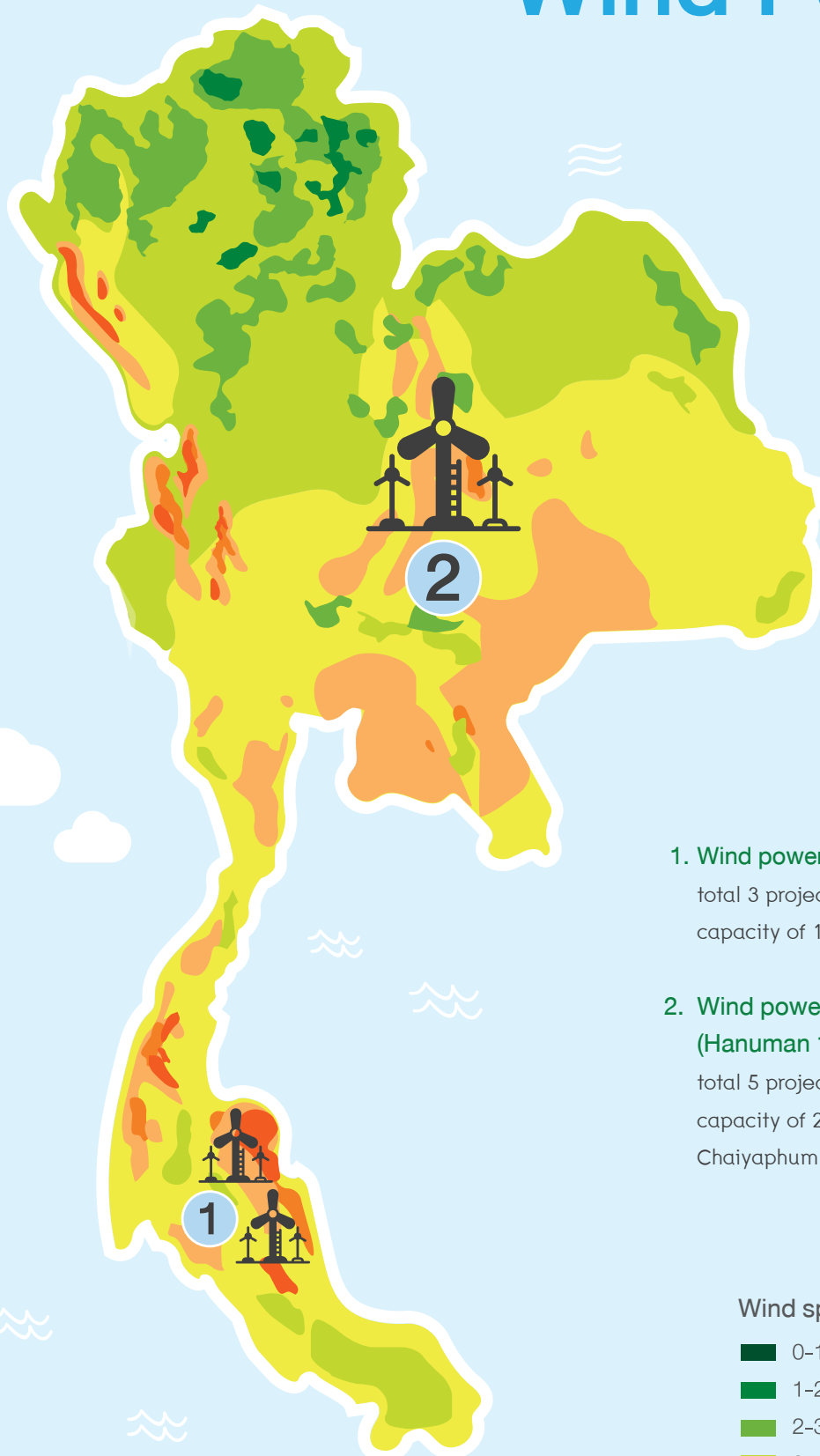
Project name	Production capacity	Started commercial operation on 3 June 2017
Hadjkanghan 1 Ranode District, Songkhla	36 megawatts	Started commercial operation on 3 June 2017
Hadjkanghan 2 Husai District, Nakhon Si Thammarat	45 megawatts	Started commercial operation on 10 June 2017
Hadjkanghan 3 Pakphanang District, Nakhon Si Thammarat	45 megawatts	Started commercial operation on 23 June 2017
Total production capacity	126 megawatts	

2. Wind power plant (Hanuman 1, 5, 8, 9, 10), total 5 projects, the total capacity of 260 megawatts, Chaiyaphum

- The power plants are under the management of an indirect subsidiary company located Thep Sathit district, Nong Bua Rawe district and Bamnet Narong district, Chaiyaphum. The power plants are classified as Small Power Producer (SPP).
- The subsidiary company made power purchase agreement (PPA) with the EGAT for 5 years. Each default renewal is valid for 5 years under condition that the part wishes to renew the agreement must inform in writing to another party at least 30 days before the expiration date of the agreement.
- The company was 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 promotion by the Board of Investment (BOI), 8 years corporate income tax and 50% reduction of corporate income tax on net profit derived from the promoted activity for 5 years after the corporate income tax exemption period expires.
- As for project progress, the installation of the wind turbine, high-voltage electric posts are completed. The connection to the Electricity Generating Authority of Thailand (EGAT) is commissioned. The commercial operation date (COD) is expected to release for EGAT in the early of 2019. The projects which started COD on 25 January 2019 are Hanuman 1 – 45 megawatts and Hanuman 8 – 45 megawatts, total 90 megawatts. Hanuman 5, 9, 10 with total capacity is 170 megawatts and expected to start COD in March–April 2019.

Project name	Production capacity	Started commercial operation on 3 June 2017
Hanuman 1 Thep Sathit District, Chaiyaphum	45 megawatts	Started commercial operation on 25 January 2019 (12.00 hrs.)
Hanuman 5 Thep Sathit District, Chaiyaphum	48 megawatts	The commercial operation date (COD) is expected to be within March – April 2019.
Hanuman 8 Thep Sathit District, Chaiyaphum	45 megawatts	Started commercial operation on 25 January 2019 (12.00 hrs.)
Hanuman 9 Thep Sathit District, Nong Bua Rawe District, Chaiyaphum	42 megawatts	The commercial operation date (COD) is expected to be within March – April 2019.
Hanuman 10 Bamnet Narong district, Chaiyaphum	80 megawatts	The commercial operation date (COD) is expected to be within March – April 2019.
Total production capacity	260 megawatts	

Location of Wind Power Plants



1. Wind power plant (Hadhkangan 1-3)

total 3 projects, total production
capacity of 126 megawatts in

2. Wind power plant (Hanuman 1, 5, 8, 9, 10)

total 5 projects , production
capacity of 260 megawatts,
Chaiyaphum

Wind speed (MW/Second)

0-1	5-6
1-2	6-7
2-3	7-8
3-4	8-9
4-5	9-10
	10-15

Rights and benefits from the promotion granted by the Board of Investment (BOI)

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

Rights and benefits granted from the investment promotion for wind power plant business, class 7.1 Public Utility and Primary Services are as follows.

1. Exemption of import duties on machinery as approved by the BOI
2. 8-year corporate income tax exemption without being subject to a corporate income tax exemption cap, from the date of having income
3. Exemption in dividend received without being subject to income tax until the promoted period
4. 50 percent reduction of corporate income tax on net profit derived from the promoted activity for 5- years after the corporate income tax exemption period expires as per article 2.
5. Double deduction for transportation, electricity and water costs for 10 years from the date of first revenue derived from the promoted activity
6. Deduction from net profit of 25 percent of the project's infrastructure installation or construction costs shall be granted in addition to normal depreciation.

Marketing and Competition

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

The Ministry of Energy has set the framework for National Energy Integration Plan which focusing on three parts namely:

1. Energy Security: To accommodate the energy demand which is supportive to the economic growth, population increase and the expansion of urban area, as well as to balance the distribution proportion of energy.
2. Economy : It is vital to consider the optimized energy costs while not causing obstacles to economic and social development in the long-term, as well as to promote the cost-effective use of energy.
3. Ecology : To increase of use of renewable energy within the country by applying high-efficiency production technology to reduce the impacts on the environment and community.

The "Alternative Energy Development Plan : AEDP2015 2015-2036" is an integral part of the National Energy Integration Plan, where the operating duration is between 2015-2036. The Alternative Energy Development Plan : AEDP2015 emphasizes on the promotion of energy

generation from local materials at fullest potentiality, enhance production capacity by using the right technology and development of alternative energy for mutual benefit in social, environmental and community aspects.

A table showing the target of each alternative energy in the year 2036 (under the Master Plan of Alternative Energy Development Plan (AEDP) 2015-2036.

Energy Source	MW - megawatts
Hydropower	3,282.40
Wind power	3,002.00
Waste to Energy	500.00
Biogas	600.00
Biomass	5,570.00
Solar PV	6,000.00
Others	680.00
Total	19,634.40

Source : Energy Policy and Planning Office, Ministry of Energy

Marketing policy

Marketing strategy

Since all the productions are distributed to the state authorities which are the Provincial Electricity Authority (PEA), Electricity Generating Authority of Thailand (EGAT) based on the sale contracts (PPA), the Company has no direct competitors in term of marketing. 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/Sales

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; Provincial Electricity Authority (PEA) 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. To support the government policy which aims to increase the production capacity of electricity from renewable energy, to reduce importing energy for the long-term, the projects under the management of the Company are as follows.

Power plant project	Production capacity	Parties
1. Solar power plant, Lopburi	8 megawatts	Provincial Electricity Authority
2. Solar power plant, Nakhon Sawan	90 megawatts	Electricity Generating Authority of Thailand
3. Solar power plant, Lampang	90 megawatts	Electricity Generating Authority of Thailand Electricity Generating Authority of Thailand
4. Solar power plant, Phitsanulok	90 megawatts	Electricity Generating Authority of Thailand
5. Wind power plant, Hadkunghan 1, 2, 3 Nakhon Si Thammarat Province, Songkhla	126 megawatts	Electricity Generating Authority of Thailand
6. Wind power plant, Hanuman project 1, 5, 8, 9, 10 Chaiyaphum	260 megawatts	Electricity Generating Authority of Thailand
Total	664 megawatts	

Backlog

- None -

Battery Development and Production Business Group

On 7 December 2016, the Company acquired shares in Amita Technologies Inc. (Amita-Taiwan) representing 35.20 percent of total shares. Being 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, Amita-Taiwan is the developer and manufacturer of Lithium-Ion batteries with total production capacity approximately 80 megawatts per year. The said investment aims to expand and enhance the competitiveness of the Company including to be in conformity with the business policy that thrives for the environmental-friendly concept. Between 2017-2018, the Company acquired more ordinary shares in Amita-Taiwan. After the acquisition, the Company held total 76,109,821, representing 77.21 percent of the issued and paid-up ordinary shares in Amita-Taiwan.

Products

Amita Technologies Inc. Amita Technologies Inc. is the manufacturer of Lithium Ion Polymer batteries which include Lithium Nickel Manganese, Lithium Iron Phosphate (LFP) and Lithium Titanate (LTO) for use in electric automobiles, electric motorbikes, electric bicycles, UPS and energy storage.

The customer base of Amita Technologies Inc. is from Taiwan and other countries such as Japan, China, and Germany.

Backlog

- None -

EV Charging Stations (for Electrical Automobile) and Electronic Transaction Business

The Company has broadened the scope of operation by establishing an electric charging station for electric vehicles under the trademark "EA Everywhere" operated by a subsidiary - Energy Mahanakorn Co., Ltd. The aim is to utilize the clean energy in the automotive industry and to reduce the emission of carbon dioxide gas and to promote the use of environmental-friendly energy. The expansion of business to the EV charging station is to become a part of the infrastructure development to accommodate the electric vehicles or next-generation automotive.

Products

- The EV Charging Station is the station that provides the charging of electric automobile which includes 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 kilowatts/hour, depending on the onboard charger of each automotive model. Meanwhile, the direct current charger can charge up to 150 kilowatts/hour.

- Initially, the targeted locations are in the public area which can accommodate the parking of electric vehicles for at least 1-3 hours, for example, department stores, hotels, restaurants, hospitals, parking facilities in business districts, stop points on the main route including inside the petrol stations.

The selection of location is considered by the feasibility of having electric vehicles passing by or not. For example, an area where a lot of customers or tourists come with the vehicles or stop to rest and continue the journey within Bangkok and the vicinity and the regional area.

In 2018, 486 dispensers were installed in the EV station, dividing into 366 dispensers for AC (alternating current) and 120 dispensers for DC (direct current).

- To use the EV station, the customer can walk-in for immediate use or book the charging station and the machine in advance through Application "EA Anywhere" and make a payment via 2C2P Payment Gateway. The system is available for online payment including credit card, debit card for convenient, fast and safe spending of digital consumers. Customers can download the application via App Store for iOS or Playstore for Android.

Backlog

- None -



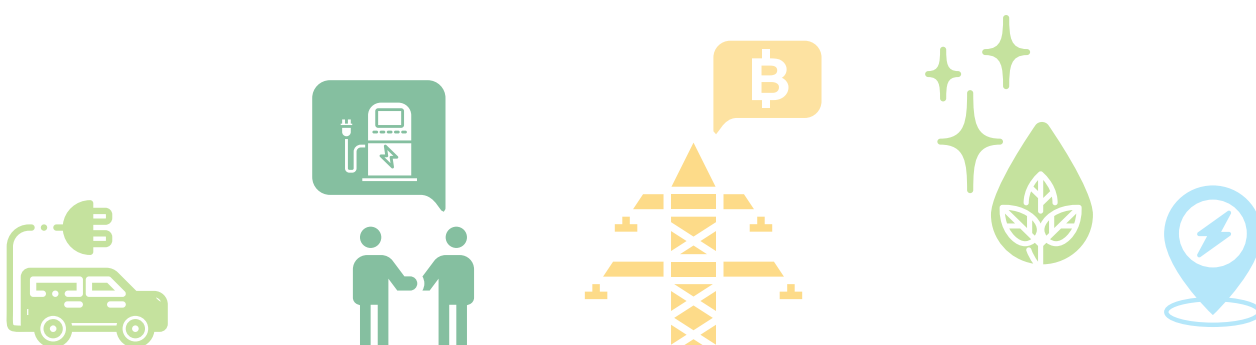
Research and Development Business Group

The Company has established a subsidiary – Green Technology Research Co., Ltd., Energy Beyond Research Co., Ltd. and MINE Mobility Research Co., Ltd. to research and develop products related to palm oil, lithium batteries, and electric vehicles respectively. The purpose of these three new subsidiaries is to continue the development and creation of new products, to improve potentiality and product quality, and to enhance the competitiveness of the Company Group to be sustainable in the long run.

Products

The subsidiaries established for research and development as follows.

1. Green Technology Research Co., Ltd : established to develop and conduct researches on innovation to continue and add value to agricultural products in Thailand. The products or services of the Company is the production process related to raw materials from the palm. The research and development are aimed to add value to the products where the invention can be registered for the patent. The target groups are affiliated companies.
2. Energy Beyond Research Co., Ltd. : established to conduct research and develop the innovation for lithium batteries and energy storage system. The products and services are the production process of lithium batteries and battery control system and other innovation-related. The innovation invented can be registered for the patent. The target groups is affiliated companies.
3. MINE Mobility Research Co., Ltd.: established to conduct research and development for electric vehicles to carry on the electric automotive that truly meet the need of users under the concept Mission No Emission. The company target is to create a vehicle that does not generate pollution, eco-friendly, cost-saving and safe, easy to maintain, providing the cost-effective in the long run. The Thai people will have high-quality electric automobiles and Thailand will become an innovative city free of pollution. Mentioned previously is the origin of the concept of development and invention of electric vehicles. The next step is to manufacture and distribute Thai electric automobiles under the brand "MINE Mobility" to the market in the future.



Risk Factors

Risk to the business operation of the Company and the Company Group

1. Risks from Business Operation

1.1 Risk from dependency on major customers

The Company is a producer and distributor of biodiesel (B100) for using as fuel. Additionally, the Company produces and distributes purified glycerin including the by-products. As for the sale of biodiesel, the Company relies on 6-7 major customers who purchase the product through sale agreement. The sale volume for each customer account not over 30 percent of total revenue. Selling products to major oil distributors in Thailand is an advantage to the Company since they are financially reliable. Nonetheless, the trading proportion may decrease following the demand in each period. Moreover, the Company believes that there is very little chance of losing major customers since presently, the trade is made through sales agreement with duration 3 months each and maximum duration 3 years. Through the sales agreement, the Company also gives discount on biodiesel from the prices announced by a government agency. When the sales agreement is nearly expire, the Company will make an offer for the next contract regarding biodiesel with discount from the price announced by the government agency. In other word, the sale is made continuously through contract renewal. Furthermore, the government stipulates that the large fuel traders pursuant to Section 7 (Fuel Trade Act B.E. 2543 : A fuel trader under Section 7 refers to any person who is a fuel trader having trade volume, for each type or for all types together, from one hundred thousand metric tons per year or approximately one hundred twenty million liters, must use biodiesel (B100) as a mixture in distribution of high speed diesel. Accordingly, the demand for biodiesel (B100) is increased, following the increase of automobiles that using high speed diesel and the mixture proportion of biodiesel in diesel oil.

1.2 Risks from fluctuations of biodiesel price

Since biodiesel oil is one of the alternative energy promoted by the government in maintaining stability of agricultural products (oil palm and palm oil) while the "Alternative Energy Development Plan and Alternative Energy 25% in 10 years 2012-2021)" sets direction to use palm oil for producing biodiesel to B10, agriculturalists increase the palm plantation resulting in oversupply of palm oil and oil palm. Consequently, price of palm oil is dropped, reflecting the decrease in costs of raw material of biodiesel production. Hence, the price of biodiesel announced by the Committee on Energy Policy Administration (CEPA) is also dropped.



Risks from Business Operation



Risks related to products and procurement



Risks from the management



Risks of completion of power plant projects



Risks from delay in project completion



Strategic Risk



Emerging Risk

In year 2017 – 2018, the Department of Energy Business announced the impose of the 'Properties and Quality of Diesel Oil' as follows:

- Notification of the Department of Energy Business on Properties and Quality of Diesel (Volume 10) B.E. 2017, effective from 8th May 2017 – 7th November 2018. Details are as follows.

Item	Specification	Rate	Diesel	
			High speed	Low speed
17	Methyl Ester of Fatty Acids, % vol.	Not lower and not higher than	6.5 7	-

- Notification of the Department of Energy Business on Properties and Quality of Diesel (Volume 11) B.E. 2018, effective from 8th November 2018 onwards. Details are as follows.

Item	Specification	Rate	Diesel	
			High speed	Low speed
17	Methyl Ester of Fatty Acids, % vol.	Not lower and not higher than	6.6 7	-

During the year 2014 – 2018, the area of palm oil plantation was increased by 6.06 percent while the product increased by 5.95percent per year. In year 2018, productive area is 5.09 million rai, yielding 15.39 million tons, an output per rai is 3,024 kg., when compared with a productive area 4.83 million rai, yielding 14.10 million tons and an output per rai 2,918 kg.In year 2017, the result is 5.38, 9.15 and 3.63 percent respectively. The growth is a result of more productive area and rainfall. In

addition, the volume of palm seeds age 7–16 years is up, and the palms entering the high-yielding age, therefore, an average output per rai is higher. The reference: Report on "The Situation and Trends of Important Agricultural Products in 2019" issued by the Bureau of Agricultural Economic Research, Office of Agricultural Economics). Therefore, the price of palm oil is dropped, as well as the price of biodiesel.

Item	2018	2017	%
Productive area (million rai)	5.09	4.83	5.38
Productivity (million ton)	15.39	14.10	9.15
Productivity per rai (kg.)	3,024	2,918	3.63

1.3 Financial Risk

Risk from changes in rate to purchase the electricity from automatic tariff adjustments or Ft for which the Energy Regulatory Commission ("ERC") usually announce the adjustment for every 4 months based on fuel costs in production the electricity that is uncontrolled, i.e. fuel cost, inflation, rate of exchange, therefore, the revenue from

the sale of electricity of the group Company is variable according to Ft's change as well. However, the Ft rate does not significantly affect the overall of the sales rate of electricity, therefore the Company is only slightly affected and affected in both of positive and negative impact, resulting both of increase and decrease revenue

1.4 Marketing Risk

The expansion of the domestic electricity business by acquiring a new Power Purchase Agreement (PPA) is more difficult as compared to the existing PPA. This is due to the limitations and government's policy to increase the country's electricity production capacity. According to government's the policy, even though the private sector is encouraged to invest in the construction of each type of renewable energy power plant, but the opportunity for private investors to invest, depends on the consideration of the Energy Regulatory Commission (ERC) that they shall announce from time to time. And from more private investors participated in investing in renewable energy power business resulting in high competition which the ERC allow private sector bidding, as well as drawing lots in order to obtain the PPA. Consequently, the rate of return on investment is reduced. The Company aware of such situation and the business' opportunity of energy storage technology development. Therefore, the Company strives to studying and leading to the investment in electricity storage business or battery. Besides that, it will be able to use in the electrical industry in both domestically and internationally as well as to use in a variety of modern electric vehicles.

1.5 Risks from competition in the industry

Since the production expansion of existing producers and merging producers are increase, the competition of production and distribution of biodiesel is likely to be more intense. Hence, the Company experiences the risk of more intense competition in local market. For instance, more discount from selling price of biodiesel according to the notification from the government agency. However, with awareness toward severe competition, the Company has developed its production process to reduce the cost per unit while maintaining product quality to meet standard to get advantages over other competitors, especially during the intense competition in the market.

1.6 Risks from changes of government policies

According to the information from year 2016 to present, the Ministry of Energy has adjusted the portion of biodiesel (B100) in diesel oil to be consistent with demand and supply during the particular time as follows:

Period	Portion of B100 biodiesel (B100)
	to diesel oil (percent) High speed diesel
3 rd August 2015 – 24 th July 2016	Not lower than 6.5% Not higher than 7%
25 th July 2016 – 24 th August 2016	Not lower than 5.0% Not higher than 7%
25 th August 2016 – 24 th November 2016	Not lower than 3.0% Not higher than 7%
25 th November 2016 – 31 st December 2016	Not lower than 5.0% Not higher than 7%
8 th May 2017 – 7 th November 2018	Not lower than 6.5% Not higher than 7%
8 th November 2018 – onwards	Not lower than 6.6% Not higher than 7%

Source : Notification of the Department of Energy Business

The changes in policy of the government agency is imposed to optimize to the palm supply within the country. It is deemed to be the external factor which is beyond control of the Company. However, for overview in mid-term and long-term, the government has continued to promote the use of biodiesel.

2. Risks related to products and procurement

2.1 Risks from procurement of raw materials

Since Crude Palm Oil (CPO), Stearine and Refined Bleached Deodorized Palm Oil (RBD Palm Oil) are the main raw materials for biodiesel production. Meanwhile, the government sector is responsible for considering to reserve volume of the palm oil to be sufficient for domestic demand and supply. This will be used as a supplementary information for determining policy to use palm oil for biodiesel production. Also, the government will promote the use of biodiesel oil with portion of biodiesel as a high speed biodiesel based on the available supply to allow production and commercial distribution nationwide.

The remaining volume of crude palm oil surveyed around 35 provinces during 24-26 December 2018 was 558,708 tonnes (the domestic buffer stock = 250,000 tonnes) (refer to crude palm oil stock as at December 2018 of Department of internal trade : <https://agri.dit.go.th>) The Agricultural Trade Promotion Division regarding the stock crude palm oil as of December 2018, the committee has surveyed the remaining crude palm oil of province during 24-26 December 2018) whereas, trend in the price of palm oil is likely to decrease continuously due to the pressure from domestic stock remaining.

At present, the Company procures raw materials based on individual agreement per each purchase. The raw material is ordered from vegetables oil producers and palm oil refinery plants (suppliers of primary raw materials for the Company) without long-term purchase contract. Such method may have a risk in case producers is unable to produce or distribute raw materials to the Company within the time and conditions agreed. Alternatively, in case the distributors decide to invest in producing biodiesel and stop supplying raw materials to the Company, it may affect the Company's business operation.

Hence, the Company has prepared the plan to prevent and mitigate the impact from such risk by contacting and maintain good relationship with producers and distributors of raw materials. Additionally, the Company also sets policy to diversify the procurement of raw materials from various producers across the regions within the country. For example, the Company purchases crude palm oil from palm oil refinery plant in the southern region and north eastern. The RBD palm oil and Stearin are purchased from large vegetable factory in the central and eastern region to prevent risk when some region may experience events or disaster that cause the shortage or insufficient productivity.

The Company conducts researches and development its production process to use crude palm oil grade B (CPO-B) which is cheaper than CPO-A in the portion higher than other producers (production using CPO-B generates fatty acid more than CPO-A). The advantage of the said production process is that the palm fatty acid distillate (PFAD) which is a byproduct from the production process, can be reused in another production of biodiesel. Eventually, the Company believes that the risk that may emerge from procurement of raw material will reduce. In the past, the Company has never experience such problem.

However, the company's biodiesel plant located in Prachinburi, which is quite far from the source of raw material. However, the cost of transportation is in the affordable rate and does not cause adverse impact comparing to other biodiesel producers. The Company also takes into account other possible positive factors comprises to increase competition performance i.e. implementation of new technology into production process to reduce cost of production, using coal which is cheap as a heating substance, improving machine performance to be compatible with more portion of CPO-B, a cheap raw material etc. Since presently, the palm plantation area is expanding to eastern and northeastern region and the Company forecasts that the limitation on location is less and less. This will bring about benefit to the Company in the long term.

2.2 Risks from fluctuation of raw material price following the variance of the world market

The Company may encounter the risk from the fluctuation of cost of raw materials. The primary raw materials for biodiesel (B100) production include crude palm oil (CPO), Stearin and refined bleached deodorized palm oil (RBD palm oil) are subject to the price volatility, depending on the demand and supply in the market.

The Company realizes the potential risks from volatility of the price of raw materials. To minimize risks from price uncertainty, the Company purchases raw materials in the amount as necessary and within the time frame that consistent to the advance product distribution in order to minimize the risks from the cost of inventory. Purchasing material in proper amount also lower risk of raw material price which could change any time. In addition, to manage price risks, the group is engaged in hedging through forward contract with business partners. Previously, the Company has conducted research and development the production process and enhance capacity of the biodiesel plant to be able to use various raw materials. For example, the reuse of PFAD and FFA, a byproduct from the production process into the biodiesel process to reduce the risk in case the price of one of the raw materials is dramatically fluctuated. The Company appointed Procurement Committee to review, select, negotiate purchasing of raw materials in term of quality, quantity and price to be appropriate and adequate. The purchasing process will eventually be proceeded timely to support continuity of production process as set forth in the Company's policy.

3. Risks from the management

3.1 Risks from dependency on the executives

The Company's energy business operation has been developed and grown under management of major shareholders and main executives namely Mr. Somphote Ahunai, Mr. Amorn Sapthaweeikul and Mr. Wutthilerd Chiannikulchai who are an authorized directors to sign on behalf of the Company, executive directors, senior executives and major shareholders. The three persons above are competent in deep knowledge, expertise and experience in term of planning, development of technology and production process, procurement program, expansion of sale channel, development of biodiesel

quality to meet the requirements of customers or business partners. Their scope of work also covers control and management of commercial operated solar power plants, development of new renewable energy projects which includes the study, planning, design, construction supervision and fund management to be completed in line with the approved plan by the Board of Directors. The three executives visions to expand business to generate return and growth of the Company continuously. Hence, the Company's business management depends on them.

However, realizing on the risk of dependency on key executives, the management structure is adjusted into more systematic and professional way by decentralizing some parts of the daily management tasks. Duties and responsibility of the key executives are allocated explicitly to other executives and employees. The Company sets the internal control system, proper information storage and data base. Any necessary information and news related are exchanged between executives and employees regularly. The Company also develops its personnel by sending them to training courses to improve knowledge and skills related to working and leadership. As a result, the Company's personnel gain more knowledge and have better understanding their roles and duties. Additionally, the Company has in place the policy to recruit more personnel with adequate skills and competence in response to the business expansion plan and to create the stable growth to the organization in the long term.

3.2 Risks from documents related to power plant projects

At present, the Company and its subsidiaries have made Power Purchase Agreement (PPA) with the Provincial Electricity Authority (PEA) for one solar power plant in Lopburi, Power Purchase Agreement (PPA) with the Electricity Generating Authority of Thailand (EGAT) for the 90 megawatt solar power plants in Nakhon Sawan, Lampang and Phitsanulok province (3 projects), as well as wind power plant (Hadjkunghan project 1,2,3) with total capacity 126 megawatts, the wind power plant (Hanuman 1,5,8,9,10) with total capacity 260 megawatts. Hence, there is no risk for not having power purchase agreement for the Company's power plants. However, the Company is still encountering the risks of obtaining

related licenses. Failure to proceed within the specified period, the Company may not be able to produce and distribute the power as set out in the PPA made with the Electricity Generating Authority of Thailand (EGAT).

However, with efficient contract management under close supervision of the responsible department, the Company is able to monitor progress of license application with government agencies, including review the renewal of contracts before expiry date. The efficiency in contract management will minimize the risk of documents required for implementation of power plant projects.

3.3 Risks from acquisition of funds for power plant projects

The wind power plant (Hanuman project 1, 5, 8, 9, 10) require high budget. Hence, it is risk that the Company may not be able to find the fund including capital and loans acquired from financial institutions to expend in implementation of power plant project in timely manner. The delay in progress may eventually affect the Company's operating result and variation of business operation. To minimize the risk, the Company seeks advice from financial advisor to acquire loan and coordinate project finance to support the projects of the Company and its subsidiaries. The Company plans to acquire fund from local financial institutions 75 percent and investment from shareholders' equity 25 percent for construction of the wind power plants (Hanuman Project) with debt per equity ratio of 3:1 (D/E Ratio). The source shareholders' equity is from cash flow of the Company and cash flow or dividend from its affiliated company. Currently, the Company contacts financial institution from Thailand and abroad to make a financial close plan to timely acquire the budget for the projects. Meanwhile, a part of the fund is added to its subsidiaries (operating company). Hence, the risk from delay in funding or insufficient fund is reduced.

3.4 Financial risks from implementation of power plant projects

According to the loans acquired from financial institutions to support the construction, the debt to equity of the solar power plants in Lopburi, Nakhon Sawan and Lampang and Phitsanulok and wind power plant of both Hadkunghan

and Hanuman are 3:1 and 2.33:1 respectively. Meanwhile, the debt-to-equity of the Hadkunghan and Hanuman wind Power Plant Project are 2.33 : 1 and 3 : 1 respectively. As a result, the Company will bear higher debt burden in the future. It is necessary that the Company must manage its operation and cash flow to repay debt on schedule. Realizing on such risk, the Company has established Investment Planning Unit to be responsible for planning the spending of cash flow to ensure the compliance, reducing financial risk for each project and for the Company.

3.5 Risks from yield upon investment which may not be on expected level

The cost of construction is considered as a factor that has major impact to the yield upon investment of each project. Construction of both solar and wind power plants requires many necessary equipment and tools imported from abroad such as solar panels or wind turbines. As the cost of such equipment and tools has high value comparing to the overall construction cost, the Company is inevitably encountering the risk from fluctuation of the equipment prices. To eliminate the risk of equipment price fluctuation, each project is executed with contractor under fixed agreement. Additionally, since the said equipment payment is to be made in foreign currency, the Company may be affected by the changes of exchange rate. The Company has a policy to manage risk from exchange rate by using financial instrument such as Foreign Currencies Exchange Forward Contract (FX Forward) to conform with the payment schedule for the imported equipment. Also, the Company has a policy to manage risk from interest rate which is likely to increase by using financial instrument to convert from floating rate to fixed rate (Interest Rate Swap).

Furthermore, as the cost of production of each project is varied, depending on various factors such as locations and engineer design, the total cost of production as well as yield upon investment for each project is different. In case the return on investment is not in line with the forecast, some factors may significantly affect the revenue i.e. reduction of electricity rate, variance solar light intensity which causes different electricity yield or even natural phenomena may have domino effect to the overall revenue.

According to the risks mentioned above, the Company evaluates that the risk of volatile electricity rate and solar light intensity are ranked at minimal level, while the risk from natural disasters, can be eliminated by applying for insurance to cover the costs of potential damages.

3.6 Operating Risk

Risk from lack of expert employee, especially in areas that require knowledge and expertise of new technology and innovation in both of energy business, and related businesses which need to develop continuously in order to update. It is also more complex and hardly to learn and change rapidly, especially the electricity storage business, i.e. lithium-ion batteries which is advanced technology and being used in related businesses. In this regard, the Company set up team to learning and develops knowledge from the initial investment period, and arranges technology training, know-how transfer from the owner, including the signing agreement with network, government sector and educational institutions in order to develop and train new generation to enter to the modern automotive and the electric power storage industries. In addition, the Executive Trainee Program is set to select new generation employees who have high potential to join the group for knowledge transfer.

4. Risks of completion of power plant projects

Solar power plan and wind power plant business in Thailand mainly depend on technology. Furthermore, the Company is in the initial phase of development and commercial production. It is vital to find personnel with adequate knowledge and skills to operate the business, to manage efficiently the power plants.

The personnel must have proper understanding on the technology used, preparing plans to prevent risks that could occur in the future to assure the success of power plant project operation.

In regard to the solar power plant in Lopburi province, which started its commercial operation in October 2012, the Company has hired independent advisor who is competent in alternative energy business to study the initial possibility of the project. The Company discussed with the contractor to ensure the quantity of electricity

produced from the solar power plant for a period of 10 years, to ensure the stability of work and to reduce risk from volatility of the Company's revenue. Additionally, the Company applies for allrisk insurance for construction contractors, covering the construction phase to operation phase for another 1 year.

In regard to the solar power plant in Nakhon Sawan province which started its operation in December 2013, the Company has hired consultants for project and insurance as well as contractor with experience and skills for Operation and Maintenance Service (O&M) in power plants. The Company selects solar panels from reputable manufacturers from China, with offering of power output guarantee from the factory for a period of 25 years with 10 years product guarantee. The Company selects inverter which is produced in Italy with 5 years product guarantee. Furthermore, Energy Solution Management Co., Ltd., (the Company's subsidiary) is responsible for the design, construct and maintain solar power plant to ensure that the Company have competent personnel with experience and expertise in civil work and installation of solar power plant for the long term.

For the the solar power plant in Lampang and Phitsanulok province which started its commercial operation in already, the Company has hired consultants for project insurance and hired ESM as the Operation and Maintenance Service (O&M) in the power plants. The Company selects solar panels from reputable manufacturers from China, with offering of power output guarantee from the factory for a period of 25 years and 10 year product guarantee. The inverters are purchased from Italy and China with with product warranty for 5 years.

For wind power plants (Hadjkanghan 1,2,3) in Songkhla and Nakhon Si Thammarat which started commercial operation already, the Company hires insurance advisory and ESM as the Operation and Maintenance Service (O&M). The Company also hires Vestas, the turbine manufacturer to manage the Wind Turbine Generator Operation and Maintenance Service. The turbines are purchased from well-known manufacturers in Denmark with product warranty for 5 years.

In regard to the wind power plants, Hanuman 1,5,8,9,10 which are under construction, the Company has hired advisor for project insurance, hired Energy Solution Management Co., Ltd. (ESM), as a project manager (Operation and Maintenance Service: O&M). For the wind turbine towers, the Company hires the wind turbine manufacturer to manage Wind Turbine Generator Operation and Maintenance Service.

5. Risks from delay in project completion

The Company may have a risk that the wind power plant project will be delayed from the forecast due to various factors. For example, the delay in acquisition of land or funding, delay in construction caused by weather condition such as rain, flood, technical issues. Subsequently, the Company may not be able to start its commercial operation as stated in the Scheduled Commercial Operation Date (SCOD). The delay in starting of schedule commercial operation of the project will cause delay in realization of revenue derived from the project as well. The commercial operation period with the Electricity Generating Authority of Thailand (EGAT) can be requested for extension of no more than 12 months. Upon approval on extension from EGAT, the Company will not breach the PPA. However, the Company must provide reasons and report progress of the construction of power plant to EGAT regularly.

6. Strategic Risk

The strategy of the Company is to be the pioneer in business and project. The modern technology is key factor of strategy, resulting the Company is always be in business of both in domestic and other country in order to generate the higher return on investment than general investment. Under such circumstances, the Company comes across the instability of various environment factors. Nevertheless, the Company manages risk by studying the feasibility and evaluation the investment under various scenario analyses and initially invests with small size investment. The risk control has to be ensured, thereafter, the expansion of business is conducted until achieve the goal. During the operations, the committee and management team are set from

related unit. The regularly meeting is conducted in order to report the development and the issue of the project to the Executive Committee of the Company. Such pattern is the same as the Company operate the solar and wind power plants which commence from the small to large size investment.

7. Emerging Risk

The Company aware of 2 new emerging risks, i.e. the technology risk and the employees risk

7.1 Technology Risk

The Company has continued to grow and expand its business in the advanced electrical energy innovation since 2017 onwards according to the long-term business plan that energy storage technology is key factor of energy stability and to increase the portion of renewable energy that is environmentally friendly. The Company also aware of the emerging risks that may be caused by the development of new technology which is under studying to replace the existing technology. The electricity can be trade freely in both of domestic and international level, causing the cheaper of price and this is putting downward pressure against the expansion of the electricity storage. As such, the Company realize of the changes occur in various forms. Therefore, the Company strives to stabilize the business in parallel with to search the new opportunity and well as learning and development the advanced technology

7.2 Risk from issuing new regulations of environment

Due to the large investment of the Company and many modern machine and equipment, such as solar cells, wind turbine, lithium battery, etc. are used. When the useful life of machine and equipment are completed, they will be returned to the manufacturer for the proper elimination. However, there is a potential that the domestic and international regulations to control the disposal shall be announced in the future. In this regard, the Company monitors the development of technology. The employees are aware of maintenance measure in order to extend the useful life of machine and equipment.



INNOVATION and TECHNOLOGY EXCELLENCE

Sustainable Creation

From continuous research and development to create a prototype of electricity vehicle under "MINE Mobility" brand in order to gain interest in the subsidiaries to develop new products to increase competitiveness in long term



Mine Mobility Corporation Co.,Ltd. (MMC)

for manufacturing and distribution of electricity vehicle

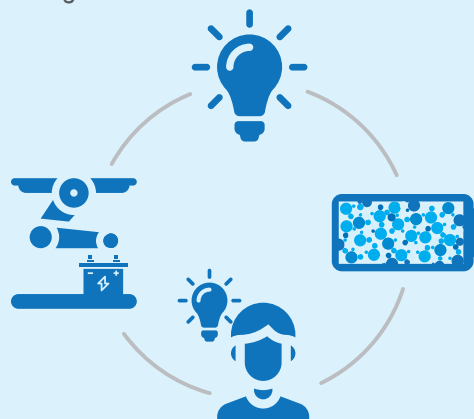
Green Technology Research Co.,Ltd.

for research innovation to develop and value add to the agricultural products of the country



Energy Beyond Research Co., Ltd.

for research and develop the electrical equipment, **oleochemical** and energy storage



Information of securities and shareholders

1. Number of registered capital and paid-up capital

EA is a listed Company in SET, as at 31st December 2018, has registered and paid-up capital of Baht 373,000,000, dividing into 3,730,000,000 ordinary shares, with a par value of Baht 0.10 (ten satang).

2. Structure

List of the top 10 Major Shareholders

Major Shareholders							
List of Shareholders	As of year ended 2018		As of year ended 2017		No. of Shares		
	No. of Shares	% of Total Shares	No. of Shares	% of Total Shares	Increase/ (Decrease)	% of shares Increase/ (Decrease)	
1. Group of Ahunai	1,627,116,330	43.622	1,621,510,230	43.472	5,606,100	0.156	
1.1 Mr. Somphote Ahunai	876,436,386	23.497	869,160,186	23.302	2,276,200	0.195	
1.2 Custodian "UBS AG SINGAPORE BRANCH" holds shares of Trustee* set up by Mr. Somphote Ahunai	430,000,000	11.528	630,000,000	16.890	(200,000,000)	(5.36)	
1.3 Custodian "THE HONGKONG AND SHANGHAI BANKING CORPORATION LIMITED, SINGAPORE BRANCH" holds shares of Trustee* set up by Mr. Somphote Ahunai	200,000,000	5.362	-	-	200,000,000	5.362	
1.4 Mrs. Blanca Shulan Huang	24,983,607	0.670	24,983,607	0.670	-	-	
1.5 Mr. Somboon Ahunai	10,043,951	0.269	9,813,951	0.263	230,000	0.006	
1.6 Ms. Supaporn Ahunai	24,217,049	0.649	24,197,049	0.649	20,000	0.000	
1.7 Mr. Julin Ahunai	16,800,000	0.450	16,500,000	0.442	300,000	0.008	
1.8 Mrs. Wilai Ahunai	6,600,000	0.177	9,000,000	0.241	(2,400,000)	(0.06)	
1.9 Mr. Pholsith Ahunai	19,137,237	0.513	19,137,237	0.513	-	-	
1.10 Mr. Peeraphol Ahunai	18,898,100	0.507	18,718,200	0.502	179,900	0.005	
2. UBS AG SINGAPORE BRANCH (excluded share held by Trustee as per 1.2)	471,293,593	12.635	470,998,593	12.627	295,000	0.008	
3. Group of Chiannikulchai	183,373,892	4.916	184,685,992	4.951	(1,312,100)	(0.03)	
3.1 Mrs. Mukda Boonsieng	167,741,043	4.497	168,653,143	4.522	(912,100)	(0.03)	
3.2 Mr. Wutthilerd Chiannikulchai	15,632,849	0.419	16,032,849	0.430	(400,000)	(0.01)	
4. Group of Saphaweekul	153,592,809	4.118	147,597,809	3.957	5,995,000	0.161	
4.1 Mr. Amom Saphaweekul	99,968,316	2.680	96,868,316	2.597	3,100,000	0.083	
4.2 Mr. Anat Saphaweekul	30,391,706	0.815	28,496,706	0.764	1,895,000	0.051	
4.3 Mrs. Wassa Rimchala	23,232,787	0.623	22,323,787	0.596	1,000,000	0.027	
5. Mr. Luchai Phukhuan-Anadha	145,632,408	3.904	143,972,408	3.860	1,660,000	0.044	
6. Thai NVDR Co., Ltd.	170,080,815	4.560	138,540,279	3.714	31,540,536	0.846	
7. Group of Nopparumpa	85,743,100	2.299	92,343,300	2.476	(6,600,200)	(0.177)	
7.1 Ms. Ploysongsang Nopparumpa	68,970,700	1.849	70,970,900	1.903	(2,000,200)	(0.054)	
7.2 Mr. Tirapol Nopparumpa	10,500,000	0.282	14,500,000	0.389	(4,000,000)	(0.107)	
7.3 Mr. Tim Nopparumpa	6,272,400	0.168	6,872,400	0.184	(600,000)	(0.016)	
8. Mr. Somkiet Thanatchalernkul	56,573,800	1.517	55,973,800	1.501	600,000	0.016	
9. SOUTH EAST ASIA UK (TYPE C) NOMINEES LIMITED	54,394,050	1.458	411,575	0.011	53,982,475	1.447	
10. STATE STREET EUROPE LIMITED	37,893,561	1.016	44,608,176	1.196	(6,714,615)	(0.180)	
11. Other shareholders	744,305,642	19.955	829,357,838	22.235	(85,052,196)	(2.280)	
Total Shares	3,730,000,000	100.000	3,730,000,000	100.000			
Total Shareholders	18,925 persons		8,917 persons				

3. Issuance of other securities

The Company has been granted by the Securities and Exchange Commission for issuance and offering the debentures. The details are summarized below

Important information			
Type of Debenture	1. Tranche 1 : Name-Registered, Unsubordinated and Secured Debentures with Debenture Holders' Representative.		
	2. Tranche 2 & Tranche 3 : Named-Registered, Unsubordinated, Secured with Debenture Holders' Representative and the issuer has right to redeem prior to the maturity date		
Currency	Thai Baht		
Offering Type	<input checked="" type="checkbox"/> PP (II&HNW)		
Value/Amount of offered Debentures	Value of offered Debentures		Amount of offered Debentures
	Tranche 1	Not exceeding Baht 1,000,000,000.- (one billion)	Not exceeding 1,000,000.- (one million) units
	Tranche 2	Not exceeding Baht 3,000,000,000.- (three billion)	Not exceeding 3,000,000.- (three million) units
	Tranche 3	Not exceeding Baht 4,000,000,000.- (four billion)	Not exceeding 4,000,000.- (four million) units
	The aggregate value of offered Debenture is not exceeding Baht 8,000,000,000.- (eight billion).		The aggregate units of offered Debentures are not exceeding 8,000,000.- (eight million) units.
Par Value	Baht 1,000.-	Offering price per unit	Baht 1,000.-
Interest rate	<input checked="" type="checkbox"/> Fixed rate 1. Tranche 1 : Fixed rate of Interest at 2.36% per annum 2. Tranche 2 : Fixed rate of Interest at 2.22% per annum 3. Tranche 3 : Fixed rate of Interest at 2.37% per annum The interest of the Debentures shall be calculated on the outstanding principal on the basis of 365 days per year and the actual number of days elapsed in each relevant period of interest. The calculation shall be made from (including) the issuing date of the Debenture or the preceding interest payment date (as the case may be) unit (but not excluding) the interest payment date in that period or the maturity date or the due date for redemption of Debenture or the redemption of Debenture prior to the maturity date (as the case may be).		
Redemption prior to the maturity date	1. Tranche 1 : Nil 2. Tranche 2 & 3 : The right to redeem Debenture tranche 2 and /or tranche 3 prior to the maturity date is for issuer only. The issuer has right to redeem Debenture tranche 2 and / or tranche 3 in partial or as the total at the anniversary 3 (three) years from the date of issuance or any date of payment of interest thereafter according to the guideline of Debenture holder. Debenture holder has no right to request issuance to redeem the Debenture prior to the maturity date.		

Important information (continued)

Issuing date	22 July 2016	Date to offer	21 July 2016
Maturity Date / Term of Debenture	(1) Tranche 1 : 22 nd July 2019 / 3 years (2) Tranche 2 : 22 nd July 2020 / 4 years (3) Tranche 3 : 22 nd July 2021 / 5 years		
Periodic coupon payments	Debenture issuer is obligated to pay periodic coupon payment of every 6 (six) months at 22 nd January and 22 nd July of every year until maturity.		
The first payment of interest	22 nd January 2017		
Guarantor	The Siam Commercial Bank Public Company Limited		
Underwriter	The Siam Commercial Bank Public Company Limited		
Debenture registrar	The Siam Commercial Bank Public Company Limited or any person who shall be appointed to perform the duty of registrar of Debenture		
The representative of debenture's holder	Bank of Ayudhya Public Company Limited or any person who shall be appointed to perform the duty of Debenture Holders' Representative		
Restriction of transfer	Due to Debenture issuer has offered the new issued Debenture to Institution and/or major investors according to the notification of the Securities and Exchange Commission in respect of filling for approval and the approval for offering the new issued Debenture. Therefore, Debenture issuer and/or Debenture Registrar shall not register the transfer of Debentures to anyone who is not II or HNW except the heritage transfer.		
Requirements to maintain financial ratio (if any)	Debenture Issuer has to maintain Net Debt to Equity Ratio according to the Consolidated Financial Statement which reviewed or audited by the auditor at ratio: (A) Not exceeding 3.5 : 1 as of the end of the period closing account of the Debenture Issuer for the year 2016, the year 2017 and year 2018; and (B) Not exceeding 3 : 1 as of the end of the period closing account of the Debenture Issuer for the year 2019, the year 2020 and year 2021.		

Dividend Payment Policy

Dividend Payment Policy of the Company

The Company has a policy to pay dividends to shareholders annually at least 30 percent of net profit after deduction of all income tax and reserves as required by the articles of association and the laws. However, the dividend payment may be subject to change depending on the cash flow, investment plan, conditions and requirement in contracts that the Company has made, including legal limitations, necessity and other appropriateness in the future.

The resolution of the Board of Directors which approving the dividend payment must be proposed to the shareholders' meeting for approval. Unless, the Board of Directors has authority to approve the interim dividend payment and accordingly report to the next shareholders' meeting for acknowledgment.

The table showing dividend payment for the year 2014 to 2017 of Energy Absolute Public Company Limited

Ratio	2014	2015 (Adjusted)	2016	2017
Net profit per share (Baht: share)	0.35	0.62	0.56	1.08
Dividend rate per share (Baht: ordinary shares)	0.02	0.10	0.15	0.20
Dividend payment ratio per net profit (%)	5.75	16.23	26.60	18.58

Notes : Separate financial statements

Dividend payment Policy of subsidiaries

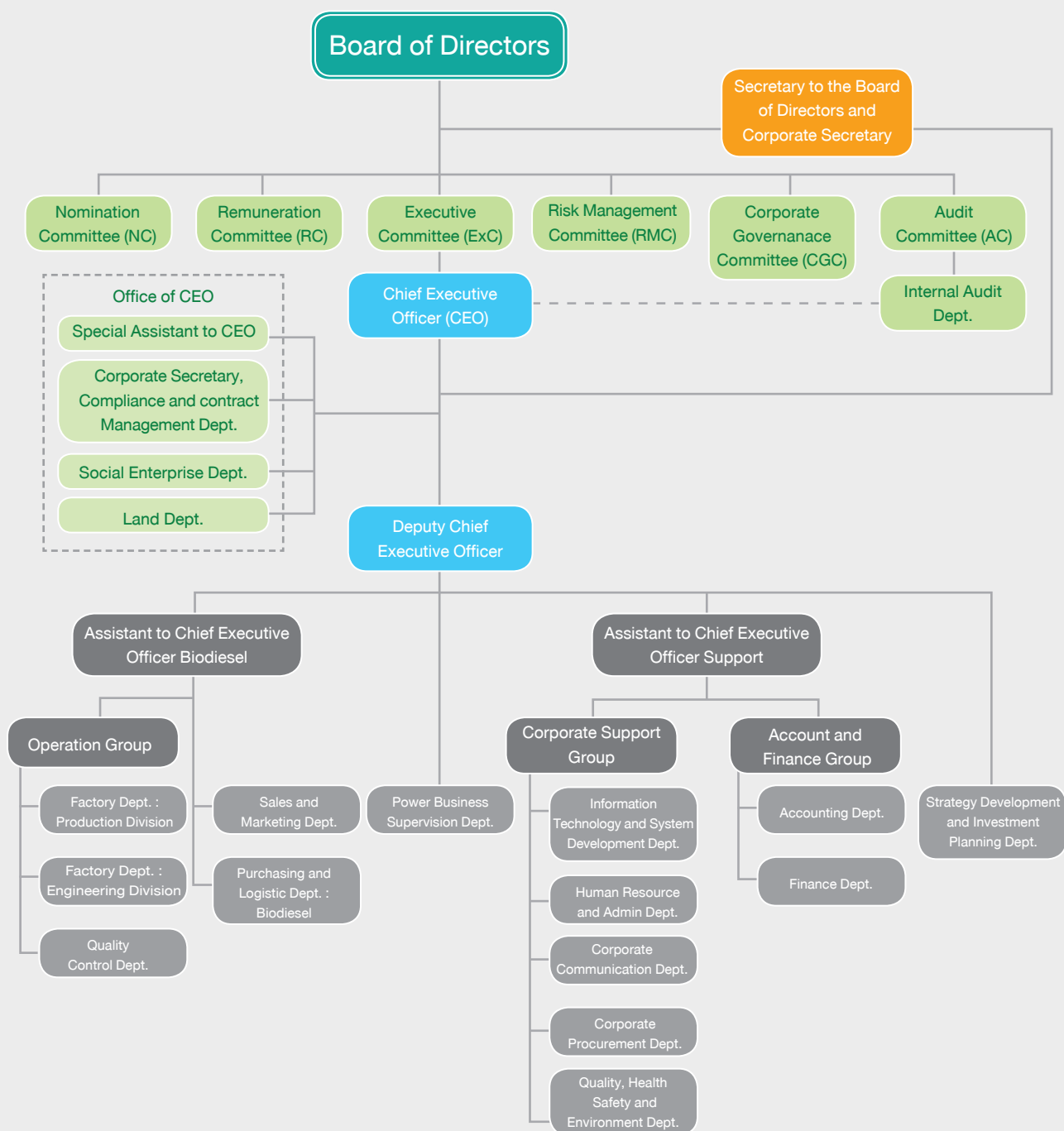
The dividend payment of subsidiaries is according to the articles of association and as stipulated by law. Regarding the subsidiaries established for conducting solar power plant business, the consideration must base on conditions of the loan contract, debt service coverage ratio (DSCR).

Management Structure

Organizational Structure

The management structure of Energy Absolute PCL. as at 31st December 2018 consists of the Board of Directors and 6 sub-committees namely below :

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



Board of Directors

1. Composition of the Board of Directors

As at 31st December 2018, the Board of Directors is comprised of 11 members as follows :

- Nine non-executive directors (six independent directors)
- Two executive directors

Name of directors / Position	Date of appointment as a director	The attendance of the Directors / the number of the meetings
1. Mr. Somchainuk Engrakul <ul style="list-style-type: none"> • Chairman of the Board of Directors • Independent Director /* 	12 March 2008	6/7
2. Mr. Somphote Ahunai <ul style="list-style-type: none"> • Director (Authorized signatory director) • Executive Director (Chief Executive Officer : CEO) 	12 March 2008	6/7
3. Mr. Amorn Sapthaweeikul <ul style="list-style-type: none"> • Director (Authorized signatory director) • Executive Director (Deputy Chief Executive Officer : Deputy CEO) 	30 March 2012	5/7
4. Mr. Wutthilerd Chiannikulchai <ul style="list-style-type: none"> • Director (Authorized signatory director) 	12 March 2008	5/7
5. Mr. Suratham Songsiri <ul style="list-style-type: none"> • Director 	12 March 2008	7/7
6. ACM. Chainan Thumasujarit <ul style="list-style-type: none"> • Independent Director 	7 August 2012	7/7
7. Mr. Chaiwat Pongpisitsakul <ul style="list-style-type: none"> • Independent Director 	12 March 2008	7/7
8. M.R. Bravochat Chatchai <ul style="list-style-type: none"> • Independent Director 	26 November 2010	7/7
9. Pol.Gen. Patcharawat Wongsuwan <ul style="list-style-type: none"> • Independent Director 	18 April 2014	-/7
10. Mr. Somboon Ahunai <ul style="list-style-type: none"> • Director 	22 April 2015	5/7
11. Mr. Amornsuk Noparumpa <ul style="list-style-type: none"> • Independent Director 	27 April 2017	5/7
Ms. Yaowalug Pukpikul Corporate Secretary and Secretary of the Board of Directors		

Remarks : /* Qualified as an independent director in 2017

2. Authorized signatory director

Mr. Somphote Ahunai / Mr. Wutthilerd Chiannikulchai / Mr. Amorn Sapthaweeikul, any two of these directors jointly sign with the Company's seal affixed.

Executives

1. Name of executives (according to the notification of the SEC)

At present, (as at 31st December 2018), the Company has 14 executives namely as follows :

Name of executives	Position
1. Mr. Somphote Ahunai	<ul style="list-style-type: none"> Chief Executive Officer Acting VP of Power Business Supervision Department
2. Mr. Amorn Sapthaweekul	<ul style="list-style-type: none"> Deputy Chief Executive Officer Acting VP of Quality Control Department Acting VP of Strategy Development and Investment Planning Department
3. Mrs. Dujdao Luksanaviwat	<ul style="list-style-type: none"> Special Assistant to CEO VP of ISO Quality, Safety and Environment Department
4. Mr. Borvorn Pienpongpanich	<ul style="list-style-type: none"> Head of Accounting and Finance
5. Ms. Supaporn Ahunai	<ul style="list-style-type: none"> VP of Finance Department
6. Mr. Patipat Sakdawongsiwimol	<ul style="list-style-type: none"> VP of Sales and Marketing Department Acting Director Factory Department : Production Division
7. Ms. Yaowalag Pukpikul	<ul style="list-style-type: none"> VP of Corporate Secretary, Compliance and Contract Management Department Corporate Secretary Secretary of the Board of Directors Secretary of the Executive Committee Secretary of the Risk Management Committee Secretary of the Corporate Governance Committee
8. Ms. Omsin Siri	<ul style="list-style-type: none"> VP of Corporate Communication Department
9. Mr. Pramote Lertpiyayowong	<ul style="list-style-type: none"> VP of Factory Department – Engineering Division
10. Ms. Wimolmas Wongmakornpan	<ul style="list-style-type: none"> VP of Social Enterprise Department
11. Mr. Manop Oulansiripong	<ul style="list-style-type: none"> VP of Information Technology and Systems Development
12. Ms. Porntip Saengchan	<ul style="list-style-type: none"> VP of Human Resource and Administration Department
13. Mrs. Khamaporn Thampipith	<ul style="list-style-type: none"> VP of Accounting Department
14. Mr. Methee Sae-kang	<ul style="list-style-type: none"> VP of Purchasing and Shipping Department
Executives who retired from office during the year	
1. Mr. Weerasin Sattayapakdeewong	<ul style="list-style-type: none"> VP of Accounting Department

Remarks :

- Mrs. Khamaporn Thampipith (13th executive) : Holding VP of Accounting Department, effective since 5th July 2018
- Mr. Methee Sae-kang (14th executive) : Holding VP of Purchasing and Shipping Department, effective from 1st August 2018
- Mr. Weerasin Sattayapakdeewong : Retired from the VP of Accounting Department, effective from 1st August 2018

2. Corporate Secretary

The Board of Directors appoints the Corporate Secretary pursuant to Section 89/15 of the Securities and Exchange Act. B.E. 2535 and the amendment, to prepare and maintain important documents of the Company which are Registration of the Board of Directors, Invitation to the Board of Directors' meeting, minutes of the Board of Directors' meeting, Company's Annual Reports, Invitation to the shareholders' meeting, minutes of the shareholders' meeting, report of interest by the directors or executives, including any other matters as notified by the SEC regarding the applicable law of Securities and Stock Exchange.

The Board of Directors' meeting No. 7/2013 held on 14th November 2013 had unanimously resolution to appoint Ms. Yaowalug Pukpikul as a Corporate Secretary and

Secretary of the Board of Directors, being effective on 14th November 2013 onwards (please see further details of the Corporate Secretary in page 33).

3. Remuneration of the directors and executives

The Company's policy regarding the remuneration payment for directors is subject to resolution of shareholders' meeting. The appropriate for remuneration 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 director remuneration approved from the General Annual Meeting of shareholders 2018 (held on 27th April 2018) are as follows :

Description	Year 2018
Monthly Remuneration for the directors	
• Chairman of the Board of Directors	50,000 Baht/month
• Directors	40,000 Baht/person/month
Bonus for directors	
• Chairman of the Board of Directors	Maximum 2,000,000 Baht/year
• Directors	Maximum 1,500,000 Baht/person/year
Attendance fee for the sub-committees	
• Executive Committee	20,000 Baht/person/meeting (for the director who attending the meeting only and for those who do not receive fixed salary as an executive or consultant).
• Audit Committee	Paid to only directors who attending the meeting, maximum 680,000 Baht/year in total.
• Remuneration Committee	Paid to only directors who attending the meeting, maximum 170,000 Baht/year in total.
• Nomination Committee	Paid to only directors who attending the meeting, maximum 170,000 Baht/year in total.
• Risk Management Committee	Paid to only directors who attending the meeting, maximum 750,000 Baht/year in total.
• Corporate Governance Committee	Paid to only directors who attending the meeting, maximum 420,000 Baht/year in total.

1. Remuneration (money)

1) Remuneration for directors consists of: bonus, monthly salary, and attendance fee.

Name of Director	Bonus for the year 2017 (Paid in 2018)	Salary of directors	Directors' remuneration (Baht)						
			Audit Committee	Executive Committee	Remuneration Committee	Nomination Committee	Corporate Governance Committee	Risk Management Committee	Total (Baht)
1. Mr. Somchainuk Engrakul	⊗ 2,000,000	600,000							2,600,000
2. Mr. Somphote Ahunai	✓ 1,500,000	480,000		⊗ -				✓ 100,000	2,080,000
3. Mr. Amorn Saphaweekul	✓ 1,500,000	480,000		✓ -	✓ 40,000			✓ 80,000	2,100,000
4. Mr. Wuthilerd Chianikulchai	✓ 1,500,000	480,000		✓ -				✓ 60,000	2,040,000
5. Mr. Suratham Songsiri	✓ 1,500,000	480,000		✓ -	✓ 40,000		✓ 60,000		2,080,000
6. ACM. Chainan Thumasutjarit	✓ 1,500,000	480,000	⊗ 200,000		✓ 40,000	✓ 40,000	✓ 80,000	⊗ 125,000	2,465,000
7. Mr. Chaiwat Pongpitsitsakul	✓ 1,500,000	480,000	✓ 160,000	⊗	50,000	✓ 40,000	⊗ 100,000		2,330,000
8. M.R. Bravochat Chatchai	✓ 1,500,000	480,000	✓ 160,000	✓	40,000	⊗ 50,000	✓ 80,000	✓ 100,000	2,410,000
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	✓ 1,023,300	480,000							1,503,300

Remark : ⊗ = Chairman

✓ = Director, Sub-committee member

2. Remuneration of the executives

In year 2018, the Company paid remuneration for 14 executives which included salary, bonus, amounted to Baht 132.94 million.

3. Other remuneration

1. Other remuneration of directors

- None -

2. Other remuneration of the executives

• Social security fund

The Company deducts 5 percent of employees' salary to contribute to the social security fund (but not exceeding 750 Baht/person). In year 2018, the Company paid in total Baht 117,000 to the social security fund for 14 executives.

• Provident Fund

The Company provides provident fund to executives at the rate 4, 6, 8 and 10 percent of their salary. In year 2018, the Company paid in total Baht 4.96 million to the Provident Fund for 14 executives.

Personnel

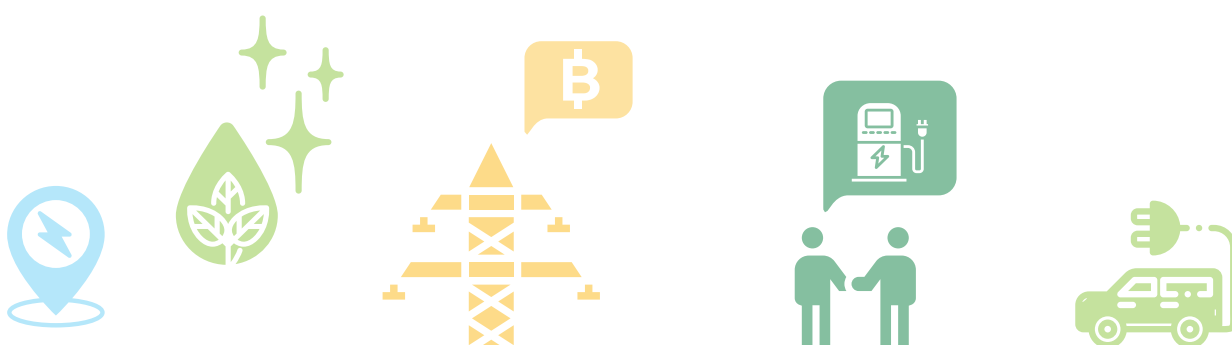
1. Number of staffs, remuneration and form of remuneration

The Company has total 269 employees (not include executives, directors and consultants). In 2018, the Company pays in total Baht 142.54 million for employees' compensation which include salary, bonus, over-time, contribution to the social security fund and provident fund*.

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 which include medical expenses covering in and out patient case, marriage contribution, funeral contribution.

Remarks :

* The Company has set up the Provident Fund provided by K Master Pooled Fund, Kasikorn Thai Asset Management Co., Ltd., on 15th October 2010 as an additional welfare for employees 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.



There are total 269 employees (exclude executives).

Number of employees as at 31st December 2018	Daily / Temporary (person)	Full-time (person)	Total (person)
1. Secretary of Compliance and Contract Management	-	3	3
2. Social Enterprise	-	2	2
3. Land	-	3	3
4. Internal Audit	-	1	1
5. Accounting	-	9	9
6. Finance	-	5	5
7. Strategy Development and Investment Planning	-	6	6
8. Information Technology and System	-	4	4
9. Human Resources and Administration	-	20	20
10. Corporate Communications	-	2	2
11. ISO Quality, Health, Safety and Environment	-	5	5
12. Power Business Supervision	(under operation of employees from subsidiary)		
13. Sales and Marketing Planning	-	3	3
14. Purchasing and Shipping of Biodiesel Business	-	7	7
15. Plant-Production Line	9	111	120
16. Plant - Engineering Line	-	22	22
17. Quality Control	2	7	9
18. Special Project	-	48	48
Total	11	258	269

Remark : The Company hires Dharmniti Auditing Co., Ltd. to perform an internal audit of the Company and its subsidiaries

- Energy Absolute PCL. has total 33 subsidiaries. The subsidiaries have 169 employees (the compensation payments in the same form as the Company's employees). Total Baht 105.36 million of compensation is paid to subsidiaries' employees.

Number of executives/employees of the subsidiaries As at 31 st December 2018,	Daily/Temporary (person)	Full-time (person)	Total (person)
Executives	-	6	6
Operating staff	-	163	163
Total	-	169	169

2. Significant labor dispute in the past 3 years

- None -

3. Hygiene and Environment at work

Realizing the importance of maintaining an 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 2017 and 2018 are as follows:

	2018 (person)	2017 (person)
Accident from work	1	4
Illness from work (stop working more than 3 days)	2	3
Sick leave	246	350

4. Personnel Development Policy

The Company has in place, policy to develop personnel in the Company Group to be competent and having skills at profession level, having positive behavior at work including good attitude toward their work, being a valuable employee of the organization, of the society and of the nation. Personnel Development Plan of the Company concentrates on performance efficiency in each position. In year 2018, the Company Group emphasizes the improvement of performance assessment to be more systematic based on Key Performance Indicator or KPI and the 360 degree-behavior and capacity assessment with an aim to stimulate its employees to adjust themselves to meet the modern working era and to support the teamwork character. The performance assessment is quarterly or 4 times a year. The assessment result is linked to individual remuneration consideration to create incentive and to improve their potentiality through the efficient work result. The final goal is to lead the organization forward to meet vision and work plan of executives and to support the business growth of the Company Group continuously. The Company also encourage to have more challenging working environment by arranging EA Inside EA or the seeking for EA Talents through presentation of the value added work, improving work efficiency including development of innovation to support business growth of the Company Group in the future. Meanwhile, the Company prepares the readiness of executives by setting the Individual Development Plan or IDP, executive potentiality development plan to promote management skills, to enhance competitiveness and to lead the team to achieve the goal and success, to conform with the organization direction. Additionally, through its Executive Program, the Company strives to become an international company in the future by preparing a new generation of executives to meet the needs and to accommodate the business expansion.

The Company sees that training is an approach that enhance working capacity to its personnels, creating potentiality to work efficiently and in line with the Company's requirement. Besides, the training is a way to pass on one's experience to next generation. The Company

arranges both in-house training and public training hosted by government and private organization. In year 2018, the employees from the Company and subsidiaries who are attended the 42 training session in total 2,427 hours, average 10.11 hours per person.

The training session cover leadership, management skill, environmental work, energy conservation and others as follows:

Leadership and management skills

- Management Development Program for the Department Director and higher positions, the course starting from Leader as coach.
- The Supervisory Skill for Department Manager
- Work like a Pro - for employees
- Internal Control and Risk Management/Management to create value added and to support strategy

Environmental course

- Environmental care projects
- "New Health and Safety Standards ISO 45001:2018"
- "Environmental Manager" course

Energy conservation course

- "Examining, Analyzing and Improving Energy Efficiency" course
- "Solar Power" course
- "Assessment of energy conservation potential (workshop)" course

The management course that the Company applies

- "Enhance your advantages over competitors easily with human costs and ISO 45001:2018 Occupational Health System and Safety (OHSMS)" course,
- "High quality biodiesel from palm oil resulted from transesterification process and partial hydrogenation process".
- "Accounting and accurate accounting record for accountants" course
- "Knowing Important Standard of Financial Report and Understand the Auditor's Report" course
- "The Supervisor - the Manager and the Art of Proactive Developing Human Resources" course

Report of the Audit Committee

To Shareholders,

The Audit Committee of Energy Absolute Public Co., Ltd. comprises of three Independent Directors, and one of them must be competent and experienced to audit the reliability of the financial statement.

Therefore, the overall structure of the Audit Committee is qualified and duly meet all requirements as stipulated by the Stock Exchange of Thailand. The Audit Committee is independent to perform its duties in accordance with the charter of the Audit Committee.

The Audit Committee comprises of

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

In 2018, 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, including inviting the internal audit officer, certified public accountant to attend the meeting to clarify the facts, report the audit result and supporting evidence for each quarter. In the meetings, the Audit Committee strictly complied with the Audit Committee Charter approved by the Board of Directors strictly. The minutes of the meeting is summarized with suggestions as a guideline for the Management and reported to the Board of Directors. The material content is summarized below.

1. The quarterly and annual financial statements for the year 2018 of Energy Absolute PCL. and consolidated financial statements were reviewed and audited by the auditors before submitting to the Board of Directors for approval. 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 the accuracy, adequacy, correction of important accounting items that affect the financial statements and to present the observations of the auditors. After consideration, the Audit Committee reviewed that the Company's financial statements were prepared following the generally accepted accounting principles and accurate based on the reasonable policy.

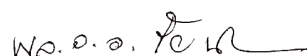
The Audit Committee arranged one meeting with the certified public accountant without the attendance of the Management. The meeting discussed significant information and internal control system related to accounting and preparation of financial reports and other matters, including obstacles occurred during work. It was considered that the auditors received good coordination from the Management and that the auditors were independent when performing work. The auditors had knowledge, experience, and code of practicing the auditing work that suitable for the auditor position.

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 material defects and the Internal Audit Unit was independent. The Audit Committee has approved the Internal Audit Plan for the year 2019 which focuses on the operation that results in the efficiency, effectiveness and the continual development of the internal audit system to ensure the good internal control system of the Company.
3. The Audit Committee reviewed the compliance with securities and stock exchange law of Thailand, regulations of the Stock Exchange of Thailand and the laws related to the business of the Company. The Audit Committee considered that the Company has appropriately complied with the laws.
4. Review of 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, 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 Commission. The related transactions were proceeded with the reasonable ground, taking into account the highest benefits of the Company and has been disclosed in the notes to the financial statements.
5. The Audit Committee selected, proposed for an appointment and the auditing fee based on transparency, independence and good corporate governance, including the performance of the auditor in the previous year. Additionally, the Audit Committee analyzed the reputation, reliability, the ability to perform the auditing and the timely certification on financial statements of the auditor. In 2018, the Audit Committee considered and appointed the auditor and proposed the auditor's compensation to the Board of Directors for approval of the Annual General Meeting of Shareholders for the year 2018. The details are as follows.
 - To appoint the auditor, Pricewaterhousecoopers ABAS Co., Ltd. namely as below.

Miss Amornrat Permpoonwattanasook	License No. 4599
	(an auditor of the Company in the year 2016) and/or
Mr. Prashit Yerngsrikul	License No. 4174 and/or
Mr. Pongtawee Rattanagosate	License No. 7795

 as an auditor of the Company and its subsidiaries in Thailand. These auditors are independence, skilled and approved by the Securities and Exchange Commission, Thailand.
6. 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 the good corporate governance.
7. Self-assessment and the board assessment of the Audit Committee: The Audit Committee took the performance assessment for individual and for the entire board in the year 2018. The assessment result of the whole board was 98.65 percent, and personal assessment was 97.92 percent.

Energy Absolute Public Co., Ltd.



(ACM) (Chainan Thumasutjarit)
Chairman of Audit Committee

Report of the Nomination Committee

To Shareholders,

The Nomination Committee of Energy Absolute PCL. consists of three 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 three members namely below:

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

In 2018, the Nomination Committee performed their duties as assigned by the Board of Directors. Five meetings were held to consider and proceed with the following matters.

1. To nominate and select persons to undertake director position in replacement of those who retired by rotation.
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 consider and review policy on directors' term of office of the Chief Executive Officer in other companies.
4. To review the Nomination Committee Charter to ensure compliance with the good corporate governance and the compatibility with current duties.
5. To arrange the performance assessment of the Nomination Committee for the year 2018 both assessment of the entire board and individual assessment. The score of the board and individual assessment were 97.37 and 98.48 percent.

Energy Absolute Public Co., Ltd.



(M.R. Bravochat Chatchai)

Chairman of the Nomination Committee

Report of the Remuneration Committee

To All 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 to directors, sub-committees and chief of executive officer of the Company and propose the same to the meeting of the Board of Directors for consider and further approval by the shareholders' meeting. The main objective is for consideration of remuneration with transparency, fair and be competitive with other company in the same size and industry to enable that the Company retain the qualified directors and high executive who have major roles in driving the business operation toward goal.

The Remuneration Committee comprises to :

- | | |
|-------------------------------|---|
| 1. Mr. Chaiwat Pongpisitsakul | Chairman of Remuneration Committee and Independent Director |
| 2. ACM Chainan Thammasujarit | Remuneration Committee and Independent Director |
| 3. M.R. Bravochat Chatchai | Remuneration Committee and Independent Director |
| 4. Mr. Sutham Songsiri | Remuneration Committee and Independent Director |
| 5. Mr. Amorn Saphaweekul | Remuneration Committee and Independent Director |

During the year 2018, the Remuneration Committee meeting is held tree as following:

1. To consider and propose the bonus for the performance of last year by referring to the result of the self-assessment compared with the business plan.
2. To consider and propose the remuneration of directors and sub-committees, then propose to the Board of Directors for considering and for further approval of the shareholders' meeting.
3. To consider the performance of Chief Executive Office and propose his increment and bonus for the year.
4. Set KPI of Chief Executive Office according to goal and planning of the Company. The criterial for evaluation the performance of CEO is as per SET's form.
5. In 2018, the Remuneration Committee set up to conduct Faculty evaluation form Both faculty and individual. The overall evaluation of the faculty has an average score of 96.25% and the individual assessment results are 98.64%

Energy Absolute Public Company Limited



(Mr. Chaiwat Pongpisitsakul)

Chairman of the Remuneration Committee

Report of the Risk Management Committee

Dear Shareholders

The Risk Management Committee of the Energy Absolute PCL. (the "Company") consists of 6 members from the Board of Directors, dividing into three independent directors and two members from Executive Management. 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 Thumasutjarit | Chairman of Risk Management Committee and Independent Director |
| 2. M.R. Bravochat Chatchai | The Risk Management Committee and Independent Director |
| 3. Pol.Gen. Patcharawat Wongsuwan | The Risk Management Committee and Independent Director |
| 4. Mr. Somphote Ahunai | The Risk Management Committee and Executive Management |
| 5. Mr. Amorn Sapthaweeul | The Risk Management Committee and Executive Management |
| 6. Mr. Wutthilerd Chiannikulchai | The Risk Management Committee |

The Risk Management Committee has performed its duties as assigned by the Board of Director and in accordance with the Risk Management Charter.

In year 2018, the Risk Management Committee held 5 meetings. The materiality 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, 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

The Risk Management Committee has added assessment topic "Strategic Risk and Emerging Risk" as the risk of type 6 – 7. The addition makes the risk assessment of the Company and the Company comprehensive (please see details in Risk Factors).

- 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 as follows.

Levels of the Likelihood or the Impact

Level	Likelihood	Impact
5	Very high	Severe impact/damage to the EA Group Qualitative : Affect the reputation/image/competitiveness of the Company Group severely Quantitative (monetary value) : $X > \text{Baht } 500,000$
4	High	Significantly affect/damage Qualitative : Affect the reputation/image/competitiveness of the Company Group significantly Quantitative (monetary value) : $\text{Baht } 100,000 < X \leq \text{Baht } 500,000$
3	Moderate	Affect/damage moderately Qualitative : Affect the reputation/image/competitiveness of the Company Group moderately Quantitative (monetary value) : $\text{Baht } 50,000 < X \leq \text{Baht } 100,000$
2	Little	Affect/damage very little, controllable Qualitative : Affect the reputation/image/competitiveness of the Company Group very little Quantitative (monetary value) : $\text{Baht } 10,000 < X \leq \text{Baht } 50,000$
1	Very little	Very little damage/does not affect the EA Group Qualitative : Does not affect the reputation/image/competitiveness of the Company Group Quantitative (monetary value) : $X \leq \text{Baht } 10,000$

Risk Assessment Matrix



- In year 2018, the risk Management Committee prepared the assessment for the entire board and individual. The assessment result of the entire board was 99.68 percent and individual assessment was 99.54 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 Co., Ltd.

W.D. O. O. P. O. O.

(AGM.Chainan Thumasutjarit)

Chairman of the Risk Management Committee

Report from the Corporate Governance Committee

To Shareholders,

The Corporate Governance Committee of Energy Absolute PCL. 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 four members (three of them are independent directors) namely below.

- | | |
|-------------------------------|---|
| 1. Mr. Chaiwat Pongpisitsakul | Chairman of the Corporate Governance Committee and Independent Director |
| 2. ACM. Chainan Thumasutjarit | Governance Committee and Independent Director |
| 3. M.R. Bravochat Chatchai | Corporate Governance Committee and Independent Director |
| 4. Mr. Suratham Songsiri | Corporate Governance Committee |

In 2018, the Corporate Governance Committee performed its duties as assigned by the Board of Directors. Total four 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 2018, 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 2018) scored 90 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 91 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 for the Listed Company 2017 (CG Code) to the Company.
3. To review and amend the Corporate Governance Committee Charter to be at the current state and consistent with the responsibility of the Corporate Governance.
4. To review and conduct self-assessment for individual and for the entire board. As for the assessment of the entire board, the average score was 98.26 percent while an individual assessment had an average score of 98.87 percent.

Energy Absolute Public Co., Ltd.



(Mr. Chaiwat Pongpisitsakul)

Chairman of the Corporate Governance Committee

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"¹ 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

Good Corporate Governance can be divided into 5 sections as following details:

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;
- Right to propose a person as a director of the Company in the shareholders' meeting.

Section 1



Rights of shareholders

Section 2



Equal treatment to shareholders

Section 3



Roles of stakeholders

Section 4



Information disclosure and transparency

Section 5



Responsibilities of the Board of Directors

¹ Approved by the meeting of the Board of Directors No. 2/2019 on 15th may, 2019

Reviewed and approved by the meeting of the Board of Directors No. 1/2019

2. Shareholder's 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:

- 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 notification of the shareholders' meeting as well as supporting details to be available 30 days prior to the date of the meeting by publishing on the Company website: www.energyabsolute.co.th
- Rules and regulations of the shareholder's meeting as well as voting procedure to be clearly stated in the notice of the meeting;
- The Company allows shareholders to send their questions as well as name and contact details to the company prior to the meeting date through following methods:

Energy Absolute Public Co., Ltd.

Attention: Company Secretary

16th Floor, AIA Capital Center Building,

89 Ratchadaphisek Road, Dindaeng, Bangkok 10400

Tel: 0 2248 2488-92,

0 2002 3667-9 (Ext.191313, 19133)

Fax: 0 2248 2493

- 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 must be clearly specified.
- Shareholders to be allowed to vote in election of qualified director to undertake responsibilities of maintaining benefit of the shareholders.
- 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 advantage of answering questions of the shareholders.
- 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 purchase-sale the securities for their own interest.

- **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 purchase-sale securities of the Company. However, to prevent conflict of interest, directors, executives and employees including their spouse and minor child are prohibited to purchase-sale securities of the Company 1 month prior to the date of disclosure of the financial statement to the public. Any acquisition-disposition-transfer-receive of the Company's securities held in their account must be reported and disclosed to the related authority. Besides the above, The Company also reports the changes in securities holding of the directors in quarterly to the Board of Directors. Incompliance with the use of internal information aforesaid shall be deemed as default of the Company's regulations. In addition, if such default is considered violation of Section 241², the violator may be subjected to Section 242³.

2. Conflict of interest

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.

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.

² The main point of Section 241 is to prohibit any person, whether directly or indirectly, to purchase or sell, offer to purchase or sell or invite any other person to purchase, sell or offer to purchase or sell securities which are listed in the Securities Exchange or traded in an over-the-counter center in such a way as to take advantage of other persons by using information material to changes in the prices of securities which has not yet been disclosed to the public and to which information he has access by virtue of his office or position, and whether or not such act is done for his own or another person's benefit, or to disclose such information so that he will receive consideration from the person who engages in the aforesaid acts.

³ The main point of Section 242 is that the SEC Office shall have the right to call on the person who violates the Section 241 to deliver the benefit which he has gained from such trading of securities or from the disclosure of information within a six-month period from the date on which he gained access to such information. Such person shall deliver the benefit as claimed by the SEC Office within the time specified by the SEC Office. The benefit claimable under the Section 241 shall be vested in the SEC Office.

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.
- **Partners:** The Company treats trading partners with fairness based on shared benefit, develops and maintains long term relationship, as well as creates trust between each other and strictly complies with the procurement regulations.
- **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, 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.

- **Community and Society:** 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.

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. Whistle-blowing Policy

In order to encourage and support all stakeholders both inside and outside the organization to take part in corporate governance, the Company has set whistleblowing policy for receiving claim of any incompliance, illegal actions. All information or claim can be reported directly to the Chairman of the Audit Committee.

- Conditions and consideration on complaints
 1. The complaint must be true and clear and contain enough information to conduct an investigation.
 2. To protect whistle-blower, he/she may choose not reveal their name.
 3. The information received by the Chairman of the Audit Committee is kept as confidential and disclosed as deemed necessary, as the safety of whistle-blower is the main concern.
 4. Upon fact-finding and investigation process, the complaint will be reported to the Board of Directors for appropriate execution.
 5. The whistle-blower will be equally protected whether he/she is an employee or the third party.

Implementation⁴

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

⁴ Approved by the meeting of the Board of Directors No. 1/2017 on 23rd February, 2017

6. 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 through different channels i.e. 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.

2. Auditor and quality of financial reports

The financial reports of the Company and its subsidiaries to be reviewed and audited by an independent auditor with knowledge and qualifications approved by SEC to ensure accuracy to the Board of Directors and shareholders. The financial statement of the company and subsidiaries present the financial status and operating result accuracy.

Nevertheless, the Company has policy to change independent auditor on 5 years basis where new auditor from the same accounting firm may be appointed. The same auditor may be re-appointed after at least, 2 years after his last **audit completion**⁵

The Board of Directors places importance and responsibility on the financial statement 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 regularly 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.

5 The Notification of the Securities and Exchange Commission (SEC) No. Gor.Jor. 40/2540 Re: Rules, Conditions and Procedures for Reporting the Disclosure of Information Concerning the Financial Status and Performance of the Issuing Company, Clause 5(6) in the fiscal accounting year beginning on or after 1 January 2006 onward prescribed that the company issuing the securities which is the listed company must rotate auditors. If the former auditor is responsible for reviewing or auditing and expressing opinions on the company's financial statements for 5 consecutive fiscal years, except for a listed company and Auditor General of Thailand. The rotation of auditors under the 1st paragraph shall be in accordance with the following rules:

- a) The Company may appoint a new auditor under the same auditing firm as the previous auditor.
- b) The Company will appoint an auditor to vacate office since the rotation of the auditors is the company's auditor after at least two fiscal accounting years from the date on which the auditor ceased from his / her duties.

Section 5. Responsibilities of the Board of Directors

1. 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.

2. 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** are as follows:
 1. Holding no more than 1 percent⁶ 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**⁷ of such independent director.
 2. not being or having been an executive **director**⁸, employee, staff, advisor earning regular monthly salary or the controlling person of the Company, its parent company, subsidiary, associate company, **same-level subsidiary**⁹, major shareholder or controlling person, unless the foregoing status has ended for at least two years prior appointment. 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.

6 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 following regulations; (a) holding no more than one percent of the total voting shares of the applicant, parent company, subsidiary, associate company, major shareholder or controlling person of the applicant, including shares held by the connected persons of such independent director.

7 The "Connected persons" means the persons according to Section 258 of the Securities and Exchange Act

8 "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

9 Notification of the Securities and Exchange Commission No. Kor Chor. 17/2551 Re: Determination of Definitions in Notifications relating to Issuance and Offer for Sale of Securities, Clause 1 definitions (12) "same level subsidiary company" means two or more subsidiary companies under the same parent company regardless of being in which level

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**¹⁰ 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 appointment.
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 two years prior appointment.
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 appointment.
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.

3. 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

10 The business relationship under Paragraph 1 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, mutatis mutandis. In any case, the consideration of such indebtedness shall include the indebtedness incurred during the period of one year to the date of establishing the business relationship with the related person business relationship with the related person

4. 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.

5. The Board of Directors' Duties and Responsibilities (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, be respective to the law and regulations of the Company, as well as full benefit of all shareholders.

- To determine policy and business direction of the Company, control and monitor whether the management's performance is effectively and efficiently conducted in line with regulations and policies in order to maximize economic value to the shareholders and achieve the sustainable growth.
- 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 for reporting the responsibilities of the Board of Directors in preparing financial reports 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 internal control system, 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 on 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.

6. Role 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.

7. 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.
- To approve the organization structure of the Company.
- To elect 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.

8. Scope of duties 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 (Organization Chart) 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, regulations, orders and resolutions of the Board of Directors.
- 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. (As defined in the Notification of the Securities and Exchange Commission) has an interest or may have conflicts of interest with the Company Or subsidiary Except for 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 other persons that the Chief Executive Officer deems appropriate 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 with the interests of 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.

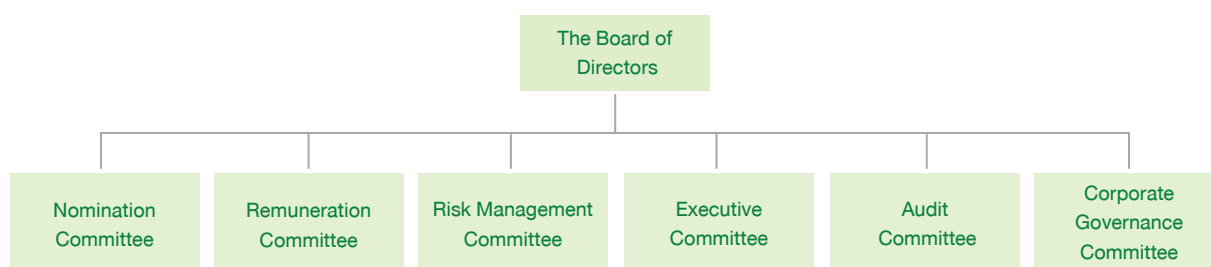
Sub-Committees

Appointment of Sub-Committees

The Board of Directors appointed sub-committees to oversee and filter 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.

- **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. To review the code of conduct, handbooks for different departments to ensure compliance with the regulations stipulated by related government authority.
4. 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.

5. 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.
6. To consider and approve work procedures as assigned by the Board of Directors.
7. 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.
8. To consider and approve budget for normal transaction of the Company, which maximum value is 250 Million Baht.
9. 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, unless the Nomination and Remuneration has been appointed.
10. 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.

As of 31st December 2018: The Executive Committee consists of 5 members as follows

Name	Position	No. of attendance / total meeting
1 Mr. Somphote Ahunai	Chairman of the Executive Committee	4/12
2 Mr. Amorn Sapthaweeikul	Executive Committee	10/12
3 Mr. Wutthilerd Chiannilkulchai	Executive Committee	8/12
4 Mr. Sutham Songsiri	Executive Committee	11/12
5 Mr. Somboon Ahunai	Executive Committee	12/12
Ms. Yaowalug Pukpikul	Secretary of the Executive Committee	

- **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.

- **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 of the Audit Committee:

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

3. Internal Audit

- To review and approve annual internal audit plan, as well as personnel and resources required;
- To 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;
- To review efficiency of the Internal Audit performance to ensure that the internal audit standard has been implemented.

4. Control the compliance with law and regulations

- To regularly consider changes of law, regulations proposed by the Internal Audit which have impact to the business operation of the Company;
- To review the facts found by controlling authority, follow up, improve, as well as report to the Board of Directors;

- To 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. Risk Management

- To review to ensure efficiency of control on policy and duties related to risk management of the Company and its group;
- To review the efficiency of risk management system of the Company and its group.

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

7. Select, propose, appoint and consider remuneration of the Auditors.

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

8. 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.

9. 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.

10. Other responsibilities

- Otherwise act as assigned by the Board of Directors;
- To 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;
- To 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.

As of 31st December 2018: the Audit Committee consists of 3 Independent Directors as following details:

	Name	Position	No. of attendance / total meeting
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
	Ms. Pimvara Laemsuwanchuen	Secretary of the Audit Committee	

The performance of the Audit Committee is described in the report of sub-committees for the year 2018.

● 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**¹¹ 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 three directors and all of them are independent directors. The Nomination Committee meeting shall elect one member as the Chairman of the Nomination Committee.

Duties of the Nomination Committee:

- 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;
- To review and assess the work performance of the directors and executives;
- 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;
- 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
- Encourage to allow shareholders to propose names of persons to be nominated as directors.
- 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;
- 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;
- Considering and reviewing the Charter of the Nomination Committee;
- regularly perform other duties assigned by the Board of Directors;

¹¹ 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.

As of 31st December 2018: The Nomination Committee consists of 3 Independent Directors as following details:

	Name	Position	No. of attendance / total meeting
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	Secretary of the Nomination Committee	

The performance of the Nomination Committee is described in the report of sub-committees for the year 2018.

● 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.

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 from the shareholders' meeting.

The criteria to determine the remuneration are as follows:

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.

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.

As of 31st December 2018: The Remuneration Committee consists of 5 Directors and more than half of them are Independent Directors (3 Independent Directors) as following details:

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

The performance of the Remuneration Committee is described in the report of sub-committees for the year 2018

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.

The duties of the Risk Management Committee are as follows:

1. To determine and measure the 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:

As of 31st December 2018: The Risk Management Committee consists of 6 Directors (half of them are Independent Directors) as following details:

	Name	Position	No. of attendance / total meeting
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	5/5
5	Mr. Amorn Saphthaweekul	Risk Management Committee	4/5
6	Mr. Wutthilerd Chiannilkulchai	Risk Management Committee	3/5
	Ms. Yaowalug Pukpikul	Secretary of the Risk Management Committee	

The performance of the The Risk Management Committee is described in the report of sub-committees for the year 2018

- **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.

- **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.
 - Shareholders
 - Employees
 - Social
 - Trading Partner
 - Creditor, and
 - 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

As of 31st December 2018: The Corporate Governance Committee consists of 4 Directors, more than half of them are Independent Directors as following details:

	Name	Position	No. of attendance / total meeting
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	Secretary of the Corporate Governance Committee	

The performance of the Corporate Governance Committee for the year is described in the report of sub-committees for the year 2018

Evaluation of the Board of Directors' performance

The Board of Directors considers and determines the criteria and evaluates their self-assessment as the entire Board and the individual assessment on the annual basis. The results shall be considered to improve the work processes.

The criteria of self-assessment form for the entire Board of Directors is comprised with 6 topics:

1. Structure and qualifications of the Board of Directors.
2. Roles, duties and responsibilities of the Board of Directors.
3. The meeting of the Board.
4. Performance of Directors' duties.
5. Relationship with the management.
6. Self-development of directors and executive development

Directors' remuneration

The remuneration committee has duty to determine and set criteria of directors' remuneration as well as proposes to the Board of further propose to the shareholders, approval. The remuneration of each year is considered with transparency, appropriateness and consistent to the responsibility and benefit from each director.

Training and Development Course for Directors

Newly appointed director will be given information, regulations and business information crucial 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, enable that the directors to understand the business of the Company and related regulations.

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

Succession Plan

The Board of Directors formulates the succession plan of CEO of Directors and top executives to ensure confidence among shareholder, investors, organizations and employees of continued performances. The succession plan is reviewed on annual basis.

Succession Plan Policy

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

1. Chairman of the Executive Committee or equal position

Once the Chairman of the Executive Committee or equal position becomes vacant or unable to perform his 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 his 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 employee, or recruited for replacement.
- Formulate recruitment program, employee training and development prior to the retirement or early resignation.
- Determine competencies which mean 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 analysis their competency.
- Specify the successor based on the evaluation, analysis of competency and performance, as well as to give notice to the applicant in advance to be prepared and acknowledge the position details, and to specify the alternative successor.
- Develop and evaluate the potential successor from his development and achievement. The potential successors who not meet the requirement will be replaced.

Nomination and appointment of the directors and top executive

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 Limited 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 retire by rotation. In case the number of retire directors cannot be proceed, the similar amount to one-third of the directors to retire during the first year. In second year after retiring of the company, the ballot papers will be provided for seeking director to resign. Later years, the directors who hold longest term shall be retire. The retiring directors may be re-elected.
3. Shareholders' meeting to elect directors According to the following rules and procedure
 - 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 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 he replaced.
5. By resolution, 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 total shares hold by the attending shareholders in the meeting.

12 The Company's executive means the executive in the level of Chief Executive Office or a person holding equivalent position with different position title of Energy Absolute Public Company Limited and its subsidiaries.

Nomination / and Qualifications of the Sub-Committees

- **Audit Committee:**

The Audit Committee consists of directors from the Board of Directors, appointed by the Board of Directors, with qualifications as stated by 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.

- **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.

- **Nomination Committee:**

The Board of Directors appoints the Nomination Committee to support the Board of Directors in determination of policy, criteria and procedures in seeking qualified person to undertake the directorship, 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:

At least 3 independent directors 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 Nomination Committee.

- **Risk Management Committee:**

The Board of Directors appoints Risk Management Committee to support the Board in determination if risk management policy covers whole 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. Half of members are Independent Committee. At least half of the members must 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.

- **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 associated

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 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 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.

Compensation for Auditors

• Audit Fees

For the annual audit fee of the year 2018, the Company and the group paid compensation, the auditing the financial statements for the fiscal year 2018 for the Company's auditor and affiliated companies as follows:

Audit fees for the year 2018

Company Name	Audit fees for the year 2018
1 Energy Absolute PLC	2,327,600.00
2 Subsidiaries	6,484,460.00
3. Subsidiaries setup during the year	105,000.00
Total	8,917,060.00

Notes: In 2018: there are 33 subsidiaries (direct and indirect)

• Non-audit fee

The Company and its subsidiaries pay remuneration for other services to the audit firm of auditors, person or business involved in the auditor and the audit firm for the Auditor's Report to propose to the Board of Investment (BOI) in the past year at Baht 450,000.-

Company Name	Non-audit fee
1. Energy Absolute PLC	100,000.00
2. Subsidiaries	350,000.00
Total	450,000.00

Good Corporate Governance Practice

In business operation, the Company realizes that all shareholders are an owner of the Company. Hence, to assure and confide the shareholders that their investment made with is worthy, by having policy that retains the basic rights of shareholders on fair basis as stipulated by law and to be compliance with the good corporate governance for the listed companies for the year 2006 notified by the Stock Exchange of Thailand. The Company has applied 5 principles as a guideline for code of conduct which are rights of shareholders, fair treatment to shareholders, roles of stakeholders, disclosure of information and transparency and responsibilities of the board of directors to facilitate the effectiveness, transparency and audibility of its management system, which will create confidence and assurance among shareholders, investors, stakeholders and all related parties. The main subjects of the corporate governance operation are as follows:

Section 1: Rights of Shareholders

The Company facilitated all shareholders to receive basic rights both as an investor of securities and owner of the Company under the acceptable and reliable approach and standards by entitling right to acquire, dispose, transfer securities hold freely, receive share of profit from the Company in accordance with the policy approved by the shareholders' meeting, attend the shareholders' meeting, submit the questions prior to the meeting date, freely express their opinion in the meeting, participate in decision making toward important matters of the Company such as election of directors, amendment of the articles and memorandum of association. However, all shareholders are entitled to vote in accordance with the portion of shares hold where one share represents one vote; all shares are equal.

In addition to all basic rights aforesaid, the Company has provided additional matters to support and facilitate right exercise of shareholders as follow:

1. Provide important and necessary information to shareholders related to business operation clearly via the communication of the Stock Exchange of Thailand and the Company's website;
2. All shareholders received supplementary information for meeting agenda one month prior to the shareholders' meeting date on the Company website. The Company sent related document in 7 days for normal agenda and 14 days for agenda which requires extraordinary resolution in advance. Furthermore, the rights of shareholders in the meeting and rights to vote of shareholders are clarified clearly in the document sent to shareholders;
3. The annual general meeting of shareholders 2018 did not contain any agenda that requires extraordinary resolution. However, the Company sent the invitation letter 22 days prior to the date of meeting to provide shareholders an opportunity to study the key information within sufficient length of time.
4. In the event that the shareholder is unable to attend the meeting, the Company has provided an alternative for shareholders to propose an independent director or any person to attend the meeting through Proxy form A, B and C which sent together with the invitation letter. The Proxy form B allows shareholders to determine their vote direction as stipulated by the Ministry of Commerce.
5. In year 2018, the annual general meeting of shareholders was held on Thursday 27 April 2018, attended by the Board of Directors, Chairman of the Audit Committee and Chairman of the Executive Committee and Chairman of sub-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 Committee, including Chief of Executive Officer in order to answered and provided information to shareholders.

6. In the meeting date, the registration is performed through Barcode system to facilitate shareholders at best convenience. The Company Secretary explained rules and methods of voting for each agenda where the vote of each agenda is collected through ballot of shareholders which disagree and abstain to deduct from total votes. For agenda which related to re-election of the director who resign due to their term, the Company encourages to consider an election by person where ballot is given to each shareholder represented the vote as agree, disagree and abstain.
7. In the Annual General Meeting of Shareholders for the year 2018, there are 1 out of 3 directors due to retire by rotation. In the agenda of election of directors has determined the election of directors individually by separating the ballot cards individually and collecting all ballots, both of agreeing, disagreeing and abstaining. During the meeting, shareholders were allowed to express their opinions and raise their questions in each agenda before setting resolution to enhance shareholders of sufficient information in relation to the particular matters.
8. In the shareholders' meeting, the shareholders are given the opportunity to express their opinions, suggestions or ask questions in various agendas before voting on any agenda So that the shareholders have sufficient information.
9. The Company stipulates an agenda regarding the remuneration of directors in order to notify shareholders of the type of remuneration that each committee receives annually.
10. In the shareholders' meeting in 2018, the company considered the order in the agenda specified in the invitation letter sent to the shareholders in advance. Without changing the order of the said agenda and without adding any other agenda

Section 2: Equitable Treatment of Shareholders

Equitable treatment among all groups of shareholders whether minor or major shareholders, institution investors or foreign investors is the issue which the Company takes into account and put its best effort to create true fairness especially to the minor shareholders. During year 2018, the Company has supported the equitable treatment of shareholders as follow:

1. Provide information prior to the meeting of shareholders

- The Company notified the meeting schedule as well as its agenda, opinion of the board of directors to the Stock Exchange of Thailand and publicized on the Company's website at least 1 month prior to the annual meeting of shareholders.
- During the previous meetings of shareholders, the Company has provided information in the invitation letter to shareholders in Thai and English language and publicized/sent the invitation letters in both languages to the shareholders 22 days in advance and published via the Company website 30 days before the meeting date. The detail pertaining to the invitation letter are as follow:
Articles of association related to the shareholders' meeting, practice guides, regulations and rules applied to the meeting, procedure of voting and resolution, including voting right to the shares in the annual general meeting of shareholders;
- Document and evidence showing right to attend the meeting;
- Proxy and procedures/ Proxy form A, B, C;
- Voting and counting procedures / procedures of attending the general meeting of shareholders
- Information of the Independent Committee of whom the shareholders may elect as his proxy holder
- Map and location of the shareholders' meeting

2. Protection of rights of minor shareholders

- The Company stipulates the criteria to enable shareholders to propose additional 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 2018, the Company had invited shareholders to propose agenda in advance and propose the qualified person to be elected as director of the Company from 28 September 2017 to 31 December 2017 (for the Annual General Meeting of Shareholder 2019, the Company determined to be proposed of name list for consideration from 2 October 2018 – 15 January 2019) for the purpose of transparency and fairness.
- The Company determines criteria and pattern to enable minor shareholders to propose a list of candidates for 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 invited shareholders to send their questions related to the general meeting of shareholders 3 months prior to the date of the shareholders' meeting
- In the 2018 Annual General Meeting of Shareholders, there was no additional agenda which had not been informed to the shareholders in advance.
- In the 2018 Annual General Meeting of Shareholders, in regard to the agenda concerned election of the director, the Company supported individual election, and the ballot is used to vote for each candidate.

3. Control of internal information

The Board of Directors has stipulated the measures to prevent misconduct of internal information (Insider Trading) of related person which included the Board of Directors, executives and employees whose duties involved with the information thereof, as well as their spouses and minor child of such person, as following:

- Related person is exempted from buying and selling securities of the Company within 1 month prior to the disclosure of quarterly and annual financial statement, and at least one day after the date of such disclosure.
- In case the related person has access to information of which has not been disclosed which may affect the securities price of the Company, he/she must not buy, sell the securities of the Company until such information will be disclosed to the public domain completely.
- The Company's directors must quarterly report their possession of securities to the Board of the Company.
- The securities under possession of the directors and executives are disclosed in the annual report of the Company.

4. 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.

Section 3: Roles of Stakeholders

The Company conducts its business adhering to responsibilities to all stakeholders. The Board of Directors controls over the management system to ensure that such right have been protected and treated equally and strictly. During the previous year, the Company has reviewed and improved, as well as determined policy on treatment to stakeholders as a practice guideline for good corporate governance as following:

1. Treatment to stakeholders

- **Stakeholders** of the Company are categorized as follows:

Shareholder: The Company determines to create quality and stable business growth for the full and sustainable benefit of the shareholder, respect to rights of shareholders by providing necessary information fairly, while disclosing accurate information, conduct business with honesty, integrity, transparency and justice.

- **Customer:** The Company continues its mission to provide excellent service system to ensure that all customers receive appropriate response and treatment, and complete- accurate information as required without distortion. 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

- **Creditor:** The Company strictly complies with the conditions agreed with creditors and manages to return loans plus interest in timely manner, as well as to duly comply with the loan conditions.
- **Trading partner:** The Company continues to treat its trading partners whom deemed as business partner with equity and based on the mutual benefit, develop and maintain long-term relationship with trading partners, 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 (trading 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
- **Employees:** The Company carries on to take care and treat its employees with fairness and appropriateness in respect to opportunity, compensation, appointment, relocation, skill development, including control and management of working environment to be safe for life and properties of employees in all levels with justice and equity. The Company also listens to all comments and suggestions from employees and treats all levels of employees 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 actions that violate intellectual property or other person or its competitors. 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 applicable regulations, regularly coordinates with government authorities, ensures that business operation will not cause any damage to life quality of community, society and environment, supports and develop society in terms of life quality development, education support, energy saving and environmental care with fairness to the community as a whole. 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. **Policy on non-violation on information, IT and intellectual property**

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.

3. 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.

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

The Company has the intention and determination to conduct business with morality. By adhering to social responsibility and all stakeholders in accordance with the principles of good corporate governance and ethics in order to express the intent and commitment of anti-corruption in all forms and to ensure that the Company has a policy of defining responsibility Guidelines and requirements for appropriate actions to prevent corruption with every business activity of the

Company and to make decisions as well as business operations that may have a risk of corruption has been considered and practiced carefully. Therefore the Company has established a "Anti-Corruption Policy" in writing as the clear guideline for conducting business and develop into a sustainable organization.

Practice guideline to support anti-corruption

1. The Board of Directors, executives and employees shall comply with anti-corruption policy and the Company ethics without interfering with corruption directly or indirectly.
2. Employees shall not ignore or negligent to any action which may lead to corruption related to the Company. Such issue must be informed to the head of chief or person of responsibilities for acknowledgement. Employee shall coordinate in investigation of facts upon doubts or questions, discuss with head or chief of department or person of responsibilities for monitoring of compliance of the ethics set forth in different channels.
3. The Company shall provide justice and protection to the employee who refuses or inform of the corruption related to the Company by using Whistleblower Protection Policy or any person coordinating in reporting of corruption as set forth by the Company in Whistleblower Policy.
4. Any employee commits corruption is deemed as breaching the Company's ethics and will receive penalty as prescribed in the regulation as well as subject to the legal penalty if such action is included as a legal offence.
5. The Company is aware of the importance in dissemination, distribution of knowledge and understanding with other person who performing their duties, which related to the Company or may affect the Company in respect to the compliance with the anti-corruption policy.
6. The Company determines to create and reserve organization culture which adhere and against the corruption, including transactions executed with public and private sectors.

Procedure for handling

1. The Anti-Corruption Policy shall cover human resource management from nomination or recruiting of personnel, promotion, training, performance evaluation and remuneration by supervising head or chief of all levels communicate and assure the understanding among employees in order to conduct the business activities under their own responsibilities and control effectively.
2. Any conducts under Anti-Corruption Policy shall be in line with practice guidelines set forth in the ethic manual The Corporate Governance Manual of the Company, policy and practice guideline to all stakeholders, including regulations, and related business operation manual of the Company and any other practice guide lines which will be further formulated by the Company.
3. For transparency operation which contain high possibility of corruption, the Board of Directors, executives and employees of all levels shall be careful in the matter as follows:
 - Gift, banquet, expense for giving-deliver or accepting of gift shall be as stipulated in the Ethics.
 - The money donated for charity or supporting or receipt of donation or supporting fund must be given with transparency and in line with law and assure that such donation or supporting fund will not be used as a reference for bribing.
 - Business relationship and procurement made with public sector shall be prohibited from offering or accepting bribe in all business operation. In addition, business conduct of the Company and connection with public sector must be executed with transparency and in compliance with applicable laws.

The Company has supported the Anti-Corruption Policy by formulating policy which enables investigation and indication of the cause and policy on receiving report in order to enhance reporting channels to all stakeholders both internal and external. Any doubts or questions, or finding of action which may contain corruption, violation or incompliance with the law, regulations or business ethics can be reported or informed together with submission of evidence to the Chairman of the Audit Committee. The conditions and consideration on the report are stipulated as follows:

- The complaint must be true and contain enough information to conduct an investigation.
- To protect whistle-blower, he/she may choose not reveal their name.
- The information received by the Chairman of the Audit Committee is kept as confidential and disclosed as deemed necessary, as the safety of whistle-blower is the main concern.
- Upon fact-finding and investigation process, the complaint will be reported to the Board of Directors for appropriate execution.
- The whistle-blower will be equally protected whether he is an employee or the third party. The complaint channels that complaints can be submitted to the Chairman of the Audit Committee via email at chairman.audit.com@energyabsolute.co.th

Section 4: Disclosure and Transparency

The Company places importance on the disclosure of information since it has influence to the decision making of investors and stakeholders. Therefore, the Company has determined to control and formulated measures in disclosure of both financial and nonfinancial information with accuracy as stipulated by law, sufficient details, reliable within timely manner. The information disclosure is conducted in both Thai and English language and is disseminated on SET Community Portal of the Stock Exchange of Thailand and on the Company's website by strict adherence and compliance with related laws, regulations as stipulated by the Securities and Stock Exchange of Thailand and the Stock Exchange of Thailand and other public agencies. The Company also follows changes or amendment of any rules, regulations related regularly to ensure that the Company complies with the accurate and current regulations imposed and to assure shareholders of transparent business operation.

1. 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 person's 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. 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"¹² 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

- 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.
- 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.

¹² Approved by the meeting of the Board of Director No 2/2014, 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.
- 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 to not be damaged, lost, degraded and utilize the intellectual property for the best interests of the Company and maintains proper confidentiality of information by defining as **"Non-Violence Policy on information, information technology and intellectual property"**¹³ as follows:

1. Works resulting from the fulfillment of duties is considered as the intellectual property of the Company.
2. Upon termination of employment, that employee must return the intellectual properties including the invention works whether it be stored in any form.
3. The use of software and computer programs must be approved by the copyright owner and the Company will allow the necessity of the use of the company's copyright only.
4. The use of works or information, which is the copyright of third parties to be used within the Company, is required to check to ensure that it does not infringe on intellectual property.

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)

- Specify criteria for selecting trading partners, considering the parties that comply with the EA Business Partners Code of Conduct and operate business with fair, responsibility to society and the environment with respect to 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.
- Proceed 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.

13 Approved by the meeting of the Board of Directors No 6/2014 14 December 2014

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 are summarized as follow:

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.

5. Be responsible for stakeholders which are shareholders/customers/trading partners/ creditors/ employees/ competitors/communities and societies

- **Shareholders** : The Company is committed to creating high quality and stable growth to provide shareholders with sustainable returns from efficient work and the good performance of the Company, equally respect the rights of shareholders to receive the information they need and disclose factual information, carry out business with honesty, transparency and fairness.
- **Customers** : The Company is committed to providing a customer-oriented service system to provide good service by appropriately treating all customers, providing accurate, up-to-date and accurate information about the service, and also providing a customer satisfaction survey to continuously improve the service.
- **Trading partner** : The Company is committed to working with trading partners with equality and mutual interest, developing and maintaining lasting relationships with partners, and creating trust to each other. The Company adheres to the procurement regulations which the procedures and practices are clearly defined.
- **Creditors** : The Company strictly adheres to the creditors' conditions, controls the repayment of the loan and interest to all types of debtors, fully meets the terms and conditions of the loan agreement in full.
- **Employees** : The Company is committed to fairly and appropriately taking care and treat employees in terms of opportunities, returns, appointments, transfer, potentiality development as well as to control the working environment to be safe for employees' life and property. The Company opens to listen to feedback and suggestions from employees and treats employees at all levels with fairness and equality.
- **Competitors** : The Company is committed to operating in a fair competition framework, to not seek for confidential information from your competitors in dishonest or inappropriate manner and not conduct any action that violates the intellectual property of others or competitors.

- **Community and Society** : The Company is committed to maintaining a good society in compliance with applicable laws and / or regulations and to regularly cooperate with the government, to prevent the operation of the company which will cause the damage to the quality of life of the community, society and environment, to promote and support the society in developing the quality of life, promoting education, saving energy and protect environment for the prosperity of society.

Risk Management Policy

The Board of Directors has appointed Risk Management Committee to formulate risk management policy which is concluded as follows:

1. Employees of all levels are responsibility to be aware of risk containing in work operation within department or organization, and to place importance on lowering risks in appropriate and acceptable level.
2. To implement risk management procedures which is in line with international standards in order to effectively create manage risk which may impact business operation of the Company; to create development and performance which covers risk management through the whole organization by applying risk management system as supporting factor for decision making , strategic planning, targets, working plan and business operation direction of the Company, including to put emphasis on moving forward to achieve objectives, targets, visions, missions and imposed strategies to create excellent work performance as well as confidence among stakeholders.
3. To define measures on prevention and minimize risks from business operation in order to avoid potential damage or loss, as well as to regularly monitor and assess the risk management result. In the meeting, Risk Management Committee has clearly determined risk management framework, classified risks, risks levels/opportunities, impacts and damages level. to use as guide line for evaluation of risk level and risk management.

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 2018, 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

1. Disclose important and necessary information to make investment decisions accurately, adequately, timely.
2. Do not use internal information for personal gain.

For investor relations activities of the company in 2018 are as follows:

Investors Relations Activities	Total News	Additional information
1. Publishing News: 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	34 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 prior to the trading on the next business day.
2. Presenting information: the number of times to present information of the Company through various activities.		
2.1 "Opportunity Day" organized by SET	4 times with about 120 audience	<ol style="list-style-type: none"> 1. Financial Statements for the year ended 2017 2. Financial Statements for Q1 of 2018 3. Financial Statements for Q2 of 2018 4. Financial Statements for Q3 of 2018
2.2 "Analyst Group Meeting"	5 times	Number of participating company No. 1: 27 companies No. 2: 14 companies No. 3: 17 companies No. 4: 12 companies
2.3 "Analysts site visit" at Hanuman Wind Power Project (during construction) and Hadkanghan Wind Power Project	2 times	Number of participant No. 1 : 8 participants No. 2 : 4 participants
2.4 "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	39 times	Divided into Q1/2018 : Total 19 times Q2/2018 : Total 10 times Q3/2018 : Total 5 times Q4/2018 : Total 5 times
2.5 "Road Show" in domestic and aboard	8 times	Divided into <ul style="list-style-type: none"> ● Domestic : 7 times ● Aboard : 1 time

Investors Relations Activities	Total News	Additional information
3. 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	13 times	Divided into <ul style="list-style-type: none"> • Domestic : 12 times • Aboard : 1 time
4. Other Stakeholders site visit at <ul style="list-style-type: none"> • Biodiesel factory at Prachin-Buri province • 3 Solar Power Plants at Nakhorsawan, Lampang, and Phisanulok provinces • Wind Power Plant at Songkla and Nakornsithammarat provinces 	5 times	

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
16th 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

Section 5: Board Responsibilities

The Board of Directors plays an important role in corporate governance for the best interests of the company. The Board is accountable to shareholders and independent of management.

1. Structure of the Board of Directors

- As of year ended 20187, the Company has 11 directors who possessing diversified qualifications in respect of skill, experience, specific professional expertise which bring advantages to the Company such as director who has knowledge and experience related to engineering, accounting, finance, banking, legal and management.
- The Board of Directors consists of number of Independent Directors to provide their opinion on work performance of the Management independently in accordance with the number of them as stipulated by SEC.
- According to the Company's articles of association, the term of services of director is determined in accordance with the Public Limited Company Act. At each Annual General Meeting of Shareholders, one-third of the positions on the Board become vacant. If the portion cannot be divided into exact one-third, the number of directors resign shall be based on the closest amount to one-third. However, a director whose term of office is longest shall resign and may be re-elected for another term of office.
- The Company has set forth the qualifications of a person to undertake position of "Independent Director" to ensure the true independency of the directors, fit in with the specific business nature of the Company, and possess independency as stipulated by the Securities and Exchange Commission and the Stock Exchange of Thailand.

- The Chairman of the Board and Chief Executive Officer has different responsibilities. Their duties and responsibilities are divided, classified and determined clearly. The Board of Directors is responsible for formulate control and management policy of the Management in respect of policy while the Management performs their managerial tasks in accordance with the policy stipulated. Therefore, the Chairman of the Board of Directors and the Chief Executive Officer is separated and a different person. The Chairman of the Board of Directors is a non-executive director and not a chairman or member of any sub-committee to ensure that the duties of sub-committee will be carried out independently without interfering with the managerial part of the Company. In addition, the Chairman of the Board has no authority to sign binding the Company in order to clearly separate duties between overall control over policy and the Management.
- Determination of the number of directors to hold directorship in listed companies: The Board of directors is well aware of good corporate governance in respect to number of listed companies where directors will hold directorship in to ensure the Company receive highest benefit as a result of the director dedication on their performance effectively. There is no director of the Company holds directorship in more than other 4 listed companies.
- The Board of Directors appoints Nomination Committee to select directors and top executives through procedures, process, criteria, definition, regulations of the Company and related provisions.
- The Board of Directors appoints the Company Secretary who possessing legally knowledge and experience, undergoing Company Secretary Program from the Thai Institute of Directors.

2. Sub-Committees

In addition to Audit Committee which shall be composited in accordance with the regulations of the Stock Exchange of Thailand, the Board of Directors has formed another 5 sub-committees to ensure the good corporate governance as following:

1. The Executive Committee:

- As of 31 December 2018, the Executive Committee consists of 5 directors, the Executive Committee is mainly responsible to consider, monitor, and review direction of business operation, business plan and strategy for approval of the Board of Directors and 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, to report result to the Board of Directors for consideration and to review the code of conduct, handbooks for different departments to ensure compliance with the regulations stipulated by related government authority.

2. The Remuneration Committee:

- As of 31 December 2018, the Remuneration Committee consists of 5 directors where 3 members are Independent Directors. The Chairman of Remuneration Committee is an Independent Director.
- The Remuneration Committee is responsible for considering criteria of payment and forms of remuneration for directors and top executives in order to propose to the Board of Directors. Remuneration of the top executives is approved by the Board of Directors while the remuneration of the Board of directors is approved by meeting of shareholders.

3. The Nomination Committee:

- As of 31 December 2018, the Nomination Committee consists of 3 Independent Directors.
- The Nomination Committee is responsible for considering criteria and procedures of selecting a person who is qualified for directorship and top executive position; selecting candidates and propose to the Board of Directors which will bring the matter to the shareholders' meeting for appointment; formulate the succession plan in order to propose to the Board of Directors.

- During 2018, the Company determined criteria and form to enable minor shareholders to propose a list of candidates for director position 3 months prior to the date of the shareholders' meeting. The Nomination Committee will consider for proposing list of the qualified candidates for director position for shareholders election.

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:
 - 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.
 - Having competent knowledge, good professional background, independent, performing duties with honesty, morality, ethics and regularly attend the Board of Directors' meeting.
 - 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.
 - Neither holds directorship in more than 4 listed companies nor any position in the competitors' company.

- A fully qualified shareholder shall fill in the form in the "Directors Candidate Proposal Form" and submit to the Company within the prescribed period of time. For the 2018 Annual General Meeting of Shareholders, the proposal was specified to submit between 28 September 2017 – 31 December 2017 (for the 2019 Annual General Meeting of Shareholders, the Company scheduled to accept the proposal for consideration from 2 October 2018 – 15 January 2019).

4. The Corporate Governance Committee:

- As of 31th December 2018, the Corporate Governance Committee consists of 4 Directors which 3 of them are Independent Directors; the Chairman of Corporate Governance Committee is Independent Director.
- Responsibilities of the Corporate Governance Committee are to formulate and review policy, regulations and method of operation to be in compliance with good corporate governance; determine policy and plan related to social responsibility activities including necessary suggestions and support; perform internal assessment based on corporate governance principles to address the matters that require improvement.

5. The Risk Management Committee:

- As of 31th December 2018, the Risk Management Committee consists of 3 Independent Directors and 3 Executive Directors and the Chairman of the Risk Management Committee is an Independent Director.
- The responsibilities of the Risk Management Committee are to formulate risk management policy maintain risk at acceptable level; monitor the policy implementation, review the report of risk management; perform its duties to ensure the appropriateness and sufficiency of the risk management; ensure the risk management remain in the acceptable level, and that the risk management has been performed on regular basis; report their work performance directly to the Board of Directors.

3. Meeting of the Board of Directors

- Meeting schedule and agenda of the Board of Directors and Committee held during the years are determined and sent notification to each director in advance to allow time management and attendance.
- The Board of Directors' meeting is held regularly to acknowledge and making decision in regard to the business operation of the Company. The meeting agenda is determined in advance clearly, and extra meeting might be held in order to consider the urgent matter. During year 2018, there were 7 meetings of the Board of Directors which consists of 4 quarterly meeting and other 3 extra ordinary meetings. During each meeting the Board of Directors spent and allocated time sufficient for the Management and related parties to propose information and discuss the important matters carefully. In each meeting of the Board of Directors, the Chairman of the Board would ask all directors to analyze carefully before speak out, while encouraging them to express their opinion freely. The resolution is based on majority votes where each director has one vote. In case of equal votes from both sides, the Chairman would express his vote as a final decision. During each meeting, the Company sent supporting document related to meeting agenda to the Board of Directors in advance to provide opportunity to study information in relation to the meeting. The Chairman of the Board of Directors who chairing the meeting provided opportunity to the Board of Directors to consider submitting matter into the meeting agenda.

The Board of Directors also held meeting without executive directors and management attending the meeting (Board of Directors Meeting No. 4/2018 on 9 November 2018) discussing the business issues. The summary of the suggestion was records for management to implement to the related operations

- The Chief Executive Officer (CEO) or Deputy CEO proposed the matter to the Chairman of the Board of Directors for approval as the meeting agenda.
- The Board of Directors provided opportunity and top executives to attend the meeting in order to provide additional information as a person involving directly to the information and to have opportunity to meet top executives for reference of creating succession plan.
- It is determined by the Board of Directors that the Audit Committee, which all members are Independent Directors, shall hold the meeting at least once a year for discussion related to the managerial frame which the committee concentrates on. The meeting shall be without attendance of the Management and minutes of the meeting shall be reported to the Chief Executive Officer for acknowledgement.

4. Self-Evaluation of the Board of Directors and Sub-committees

- The Board of Director and Sub-committees consist of
 1. Audit Committee;
 2. Nomination Committee;
 3. Remuneration Committee;
 4. Risk Management Committee;
 5. Corporate Governance Committee;They have their self-assessment every year to apply the result of assessment to jointly consider and improve as well as develop their own duties to be more effective and efficient.
- The evaluation is conducted by the Board of Directors and Sub-committees related to the good corporate governance in accordance with the self-evaluation form issued by the Stock Exchange of Thailand. The evaluation is conducted by individual director and all board at least once a year in order to jointly consider their performance and problems occurred to seek for further solution and improvement.

The criteria for scoring at each level are as follows.

- Excellent : 90-100 percent.
- Very Good : 80-89 percent.
- Good : 70-79 percent.
- Fair : below 69 percent.
- The assessment of the entire Board of Directors The assessment form is divided into 6 topics as follows: 1) Structure and qualifications of the Board of Directors 2) Roles, duties and responsibilities of the Board of Directors 3) Board of Directors meeting 4) Directors' duties 5) Relationship with the management 6) Self-development of directors and executive development
- Assessment of sub-committees such as the Executive Committee, the Audit Committee, the Nomination Committee, the Corporate Governance Committee, the Remuneration Committee, and the Risk

Management Committee have arranged the assessment of the across the boards divided into 3 topics as follows: 1) Structure and qualifications of sub-committee 2) the meeting 3) Roles and responsibilities of the sub-committee member. And for the evaluation form of the Audit Committee has adopted the assessment form according to the SEC's Audit Committee manual, which is added to the overall duties of the Audit Committee and the specific duties of the Audit Committee.

Assessment of the Board of Directors and sub-committees individually is divided into 3 topics: Structure and qualifications of the Board of Directors. Roles, duties and responsibilities of the Board of Directors. Board meeting

For 2018, the result of self-assessment of the Board of Directors and Sub-committees are as follows:

Board of Directors and Sub-committees	Board's Self-Assessment (%)	Director(individual)'s Self-Assessment (%)
Board of Directors	98.02	98.41
Audit Committee	98.65	97.92
Nomination Committee	97.37	98.48
Remuneration Committee	96.25	98.64
Risk Management Committee	99.68	99.54
Corporate Governance Committee	98.26	98.87
Executive Committee	95.71	96.50

- The evaluation is conducted by directors express their own opinion on work performance of the Board of Directors as a whole. The evaluation criterion is based on the example of evaluation issued by the Corporate Governance Center, the Stock Exchange of Thailand.

5. Remuneration

- With the accountability and responsibility, in addition to the remuneration of the Board of Directors, the Company also takes into account additional responsibility from additional sub-committees. The Board of Directors has proposed to the shareholders' meeting for approval on the remuneration of the sub- committees.

- The determination of remuneration of the Chairman of the Executive Officer contain procedures which require consideration from the Remuneration Committee in order of propose to the Board of Director for approval.

6. Development of the directors and executives

The Company recognizes the importance of developing directors and executives to be continuously knowledgeable and experienced in serving as directors and sub – committee members.

In 2018, directors and executives had been trained in following courses:

Director Name	Detail of training
ACM. Chainan Thumasujarit	<ul style="list-style-type: none"> • "Forensic Data Analytics course: Fighting Fraud with Big Data" organized by PricewaterhouseCoopers ABAS Ltd. • Risk Management for Corporate Leader (RCL), Class 13/2561 organized by Thai Institute of Directors (IOD) • Smart City & Data Center organized by IEEE power & Energy Association, Thailand • Internal control and risk management courses / Management to creating value to support the strategy, organized by the Company
M.R. Bravocha Chatchai	<ul style="list-style-type: none"> • "Forensic Data Analytics course: Fighting Fraud with Big Data" organized by PricewaterhouseCoopers ABAS Ltd. • Risk Management for Corporate Leader (RCL) Class 13/2018, organized by Thai Institute of Directors (IOD) • Internal control and risk management courses / Management to creating value to support the strategy, organized by the Company
Mr. Sutham Songsiri	<ul style="list-style-type: none"> • Internal control and risk management courses / Management to creating value to support the strategy, organized by the Company
Mr. Somboon Ahunai	<ul style="list-style-type: none"> • Internal control and risk management courses / Management to creating value to support the strategy, organized by the Company

Compliance with the Principles of Good Corporate Governance

According to the survey conducted by the Corporate Governance Report of Thai Listed Companies 2018, 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 2018, 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 process:

CGR Principles under process	Reasons
1. The company should set the policy of term of service holding the position of independent director for no more than 9 years.	<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>
2. The Company should provide external consultants with guidance and advice on performance evaluation of the Board at least every 3 years and disclose such activities in the Annual Report.	<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 considering that they are necessary for the Company.</p>
3. All directors should attend not less than 75% of the total number of Board meetings held during the year	<p>In 2017, since some directors are not available due to urgent business then they cannot attend every meeting, 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 meeting, the Company prepares the annual meeting schedule in advance to be in line with the mission of the board as most as possible.</p>
4. The Board of Directors to vote at the meeting should have directors not less than two-third of the total number of directors.	<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 2018.</p>

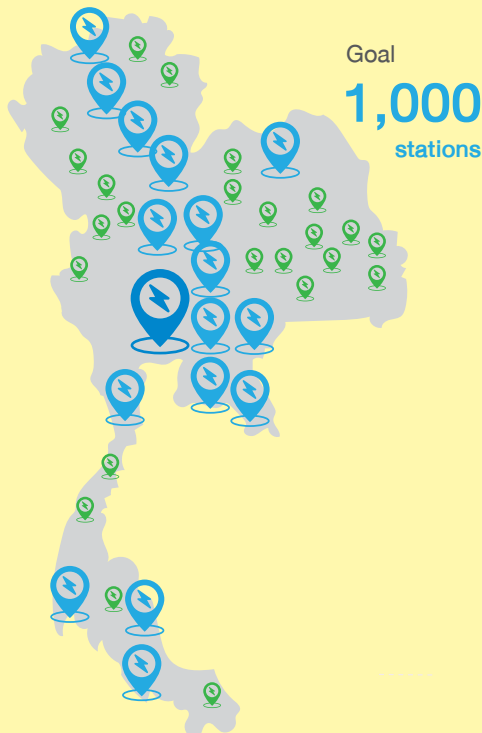
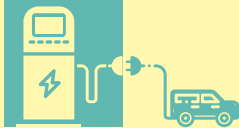


INCREASE COVERAGE for BETTER LIVING

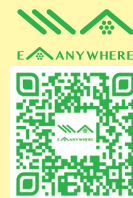


Cover all Aspects

Energy Mahanakorn Co.,Ltd., the service provider of electric charging stations under "EA Anywhere" extends the electric charging station for electric vehicles covering Bangkok metropolitan area and the major city with the goal of 1,000 stations. This objective will lean to use the clean energy to the automotive industry and to reduce the emission of carbon dioxide to enhance the utility of environmentally friendly energy. As such the new subsidiary (EA Station Co., Ltd.) was established for Hub station and logistic



- Electric Charging Station
EA Anywhere
www.eaanywhere.com
"Convenience and safety"
" through the application



EA Station Co.,Ltd.
(EA Station) for Hub
station and logistic



Responsibilities to Society and Environment

The Company produces clean energy and thrives for new innovation with an expectation to become a part that create 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. Hence, the Company has determined

social activities under the good corporate governance policy to ensure the responsibility covers the stakeholders, employees, customers and shareholders. The Company aims to generate benefits and develop communities in order that the Company Group will apply the social and environment responsibility as a part of our business management.

Corporate Social Responsibility Policy

Principle 1 : Good Corporate Governance

Principle 2 : Conduct Business with Fairness

Principle 3 : Human Rights and Treatment to Employees

Principle 4 : Responsibility to Consumers

Principle 5 : Environment and Safety

Principle 6 : Participation in Development of Community and Society

Principle 7 : Development and Dissemination of Innovation from Social Responsibility

The Company to stakeholders

Stakeholders	Requirement/expectation	The Company's actions
1. Shareholders	<ul style="list-style-type: none"> Receive secured and consistent return on investment both in short and long term. Receive sufficient information for decision making Ability to exercise rights as stipulated by law Being equally facilitated among other shareholders 	<ul style="list-style-type: none"> Conduct business with determination, systematic planning, taking into account the return on investment and risks. The Company conducts alternative energy business which covers the production and distribution of biodiesel and solar and wind power plants. Additionally, the Company expands its business to development and manufacturing of batteries and electric charging stations. The Company discloses information completely, adequately, timely with transparency through documents and publicizes on the Company's website. The news is released through press media occasionally. Compliance with relevant laws, especially the exercise of rights of shareholders Facilitate shareholders equally and properly to enable convenience during the meeting and provide visiting trip to the Company. The Company adds an application (please see manual for the application in http://www.energyabsolute.co.th/agm_manual.php) for shareholders to watch the live broadcast of the meeting of shareholders. This way, shareholders will be able to make a decision on the vote through proxy holders more efficiently.

Stakeholders	Requirement/expectation	The Company's actions
2. Customers	<ul style="list-style-type: none"> Product quality is in accordance with standards, at reasonable price, excellent service The production process is available for examination to assure the confidence of consumers Open for suggestions, opinions in order to be a guideline for improvement on product and service quality Determine terms of the fair trading and supports long-term business relationship 	<ul style="list-style-type: none"> The Company sets procedures for strict quality control of products and services with regular improvement. For power generating business, the Company implements procedures to control quality and safety of generating system and distributing system. All equipment, machinery and tools are maintained in good condition always. Sales and Marketing Department conducts survey on customers' satisfactory as well as prepares sale plan and delivery schedule to customer closely. Research and development on production process are conducted continuously Determine terms of trading with fairness and flexibility as considered necessary to allow mutual benefit of both parties
3. Trading partners	<ul style="list-style-type: none"> Determine trading terms clearly, fairly and appropriately The procurement procedure is fair, transparent, without a conflict of interest of transfer of interest No violation on intellectual property or disclosure of the trade secret which may cause damages to trading partners 	<ul style="list-style-type: none"> Adhere to fair treatment to trading partner; determine procurement terms clearly with all trading partners Open an auction in case of procurement of equipment and tools or investment where the value is high to receive terms and conditions that meet requirement of the Company, and is acceptable by the trading partners. Comply with agreement pertaining to contract and business ethics strictly Implement internal control system and ethic of business conduct to prevent any person from disclosing or using information of the Company for other benefit than business operation of the Company
4. Creditors	<ul style="list-style-type: none"> Comply with the conditions and terms stated in the contract strictly. Implement reporting, controlling, managing system and risk management which is appropriate and in line with acceptable standards 	<ul style="list-style-type: none"> The Company sets up Investment Plan Department and Finance Department to coordinate with creditors from financial institutions and other account payables in order to support business operation of the Company to be consistent with working plan and terms and conditions stated in the related contracts. The Company assigns the Risk Management Committee to supervise, control, monitor, oversee to ensure the appropriate risk management of the Company arrange a meeting with creditors and related teams on regular basis to follow the progress and coordinate, jointly plan, discuss closely with good relationship.

Stakeholders	Requirement/expectation	The Company's actions
5. Employees	<ul style="list-style-type: none"> • Receive fair and appropriate compensation and welfare paid in form of money and other form of incentive which attract the employees • Have an opportunity to grow, to progress and develop their knowledge and skill equally and regularly • Have good working environment, hygiene and safe 	<ul style="list-style-type: none"> • Treat employees with fairness, determine compensation rate and work performance assessment which can be linked to assessment result. • Provide sufficient welfare not lower than stipulated by law • Consider human rights, hygiene and safety at work • Provide skill training courses for employees both internal and external courses in order to increase knowledge and skill of employees as well as to relocate the potential employees to work in the area that fit in with their skill which will enhance the possibility of their growth. • Provide channel for complaint in case of receiving unfair treatment where investigation procedure is undertaken prior to further actions
6. Competitors	<ul style="list-style-type: none"> • Conduct business with morality, transparency. Compete with fairness and in accordance with related law. 	<ul style="list-style-type: none"> • The Company determines ethic of business conduct in respect to treatment of the competitors with good morality and in accordance with related laws.
7. Control Unit and Government Sector	<ul style="list-style-type: none"> • Comply with related regulations, refrain from violation, negligence, in compliance with the criteria and provisions which may cause severe damages 	<ul style="list-style-type: none"> • Assign person to be responsible for monitoring compliance of all related parties to be in accordance with related agencies • The Company has its own Internal Audit Unit and hires Dharmanithi Internal Audit Co., Ltd., an independent external company that providing internal audit service, to inspect the compliance with regulations on a regular basis.

The Company Group operates by adding economic value to conform with vision and mission of the Company which concentrates on the development of alternative energy that is harmless to environment and creating sustainability to the Company and its subsidiaries. Besides, the Company Group also focuses on product development, paving personnel foundation and support community development.

The beginning of 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 importance 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. The Company understands the requirement and expectations of stakeholders and refer such information to manage risks and opportunity. the Company also comprehends other requirements which is a foundation that will assist the Company toward the sustainable development.

- 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 that passes the Environmental Governance Criteria (Plant Registration Khor 3-7(1)-1/44 PorJor.). 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 for the year 2018 leverage efficiency of the boiler that use liquid as a thermal conductivity in the industry.

With priority on the safety of employees who work in the plants, the Company addresses the importance in the safety of employees, compliance with the law related to safety strictly. The Company arranges training courses annually and the performance must be reported directly to the Executive Committee.

The Company arranges many training courses, provides tools, equipment to ensure the safety of employees who work in the plants (Prachinburi). In year 2018, the Company arranged a training course about safety at work. Details are as follows.

- "Enhance your Advantages over Competitors Easily with Human Costs and ISO 45001:2018 Occupational Health System and Safety (OHSMS)" course,
- "Starting Motor for Highest Safety and Efficiency under IEC Standard"
- Drills on control and emergency response regarding hazardous chemicals, boilers and fire drill and annual fire evacuation.

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 Group in the Annual Inspection Report. The objectives of the inspection, plant visits and projects is to ensure that work operations of the Company are performed in accordance

with standards, regulations, rules and vision and mission of the Company.

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, which is an international standard system that the organization underlines to enhance environmental performance within and for the environmental sustainability. The Company makes its understanding on the need and expectation of stakeholders to manage with risks and opportunities, and also other regulations which is a foundation that drive the Company toward the sustainable development.
- The Company receives a certification that indicating the operating premise that passes the Environmental Governance Criteria (Factory Registration 3-88(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 the reduction of greenhouse gas

The Company has been approved for listing in the Thailand Voluntary Emission Reduction Program: 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' under T-VER or "TVERs" 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.

The Company decided to join the project with TGO through its subsidiaries for the following projects/

1. Project Name: Solar Farm at Nokhonsawan, Thailand of the subsidiary – EA Solar NakhonSawan Co., Ltd. The Sub-Committee of TGO has certified that the amount of greenhouse has reduced during as Follows:
 - December 2015 to November 2016 is 106,148 tons of carbon dioxide equivalent (tCO_2e).
 - December 2016 to November 2017 is 104,543 tons of carbon dioxide equivalent (tCO_2e).
2. Project Name: Solar Farm at Lampang, Thailand of EA Solar Lampang Co., Ltd. The Sub-Committee of TGO has certified that the amount of greenhouse has reduced during as Follows:
 - December 2015 to November 2016 is 111,104 tons of carbon dioxide equivalent (tCO_2e).
 - December 2016 to November 2017 is 112,548 tons of carbon dioxide equivalent (tCO_2e).
3. Project Name: Solar Farm at Pisanulok, Thailand –EA Solar Phitsanulok Co., Ltd. The Sub-Committee of TGO has certified that the amount of greenhouse has reduced during as Follows:
 - April 2016 to September 2016 is 63,178 tons of carbon dioxide equivalent (tCO_2e).
 - October 2016 to September 2017 is 126,713 tons of carbon dioxide equivalent (tCO_2e).
4. Project Name: Wind Farm at Songkla and Nakhon Si Thammarat, Thailand – direct subsidiary EA Wind Hadkunghan 3 Co., Ltd. The Sub-Committee of TGO has certified that the amount of greenhouse has reduced during as Follows:
 - March 2017 to September 2017 is 63,907 tons of carbon dioxide equivalent (tCO_2e).
5. Project Name: HNM 1, 5, 8, 9, 10 Hanuman Wind Farm Project – 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 meet the standard of Thailand on 25th April 2018. The credit term is from 1st January 2019 to 31st December 2025, the expected amount of greenhouse will be reduced is 300,000 ton of carbon dioxide equivalent.

In addition to the promotion on Thailand Voluntary Emission Reduction Program: T-VER regarding the emission of greenhouse gas within Thailand which is the

cause of the global warming. The Company Group also stores the greenhouse gas continuously. Meanwhile, 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. The Company Group is 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". The Company Group 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".

Anti-corruption Policy

Anti- Corruption:Energy Absolute Public Company Limited and its affiliated companies determine and thrive to conduct business with fairness, adhering to social and stakeholder responsibility under the good corporate governance and the business ethics as well as policy and practice guideline for all stakeholders of the Company Group. The Company has in place the policy that defines the responsibility and regulations in appropriate operation to prevent corruption in all corporate activities. Besides, the ensure that the decisions and business operation that may have a risk of corruption will be considered and rectified prudently, the company has prepared the "Anti-Corruption Policy"¹⁴ in written form as a clear practice guidance in business operation and to achieve the sustainable development.

• Definition of Anti-Corruption Policy

Corruption is defined as any types of bribery by means of offering, promising or soliciting of money, assets or other advantages which are considered inappropriate for government agencies, private agencies or or the particular person whether directly or indirectly in order for them to act or refrain such person from acting or omitting one's duty to acquire any other benefits which are not appropriate for the business unless the laws, rules, announcements, regulations and local customs or business practices have allowed so.

¹⁴ Approved by the Board of Director' meeting No.1/2014 on 23rd February 2014

- **Anti-Corruption Policy**

All directors, executives and employees of the Company are prohibited from doing or accepting any type of corruption whether directly or indirectly covering every business and concerned sectors. This also includes their regular examinations on the Anti-Corruption Policies as well as their reviews and revisions of guidelines and procedural requirements which are in compliance with business changes, rules, regulations, and stipulations of laws.

- **Scope and Responsibilities**

1. **The Board of Directors:**

The Board of Directors has duties and responsibilities to determine policies and oversee the effective Anti-Corruption policy, to ensure that the management is aware of and realizes the importance of anti-corruption and cultivate into corporate culture.

2. **Audit Committee:**

The Audit Committee has duties and responsibilities to review the Company's financial and accounting reports, internal control system, and internal audit function and risk management system to ensure that they are concise, appropriate, updated, and efficient.

3. **Executive Committee and Executives:**

Their duties and responsibilities is to establish the anti-corruption system, to promote and support the Anti-Corruption policy. Then communicate to employees and all related parties. Moreover, the Executive Committee and Executives also have to review the adequacy of systems and measures to be in conformity with the changes of business, rules, regulations and law provisions

4. **Internal Auditor:**

The Internal Auditors are responsible for auditing and reviewing to ensure business operation is proceeded accurately in line with the policy, code of conduct, authority, practice guideline, law and regulations. The conformity with these requirements is to reflect that the Company's control system is adequate and sufficient to the risks of corruption that may occur. After reviewing and auditing, the Internal Auditors must report the result to the Audit Committee.

- **Guidelines**

1. The Board of Directors, executives and employees must comply with the Anti-Corruption policy and the Company's Code of Conduct without interfering with corruption whether directly or indirectly.
2. Employees must not ignore or negligent to any actions which may lead to corruption related to the Company. Such issue must be informed to the head or chief or person of responsibilities for acknowledgement. Employees must coordinate in an investigation. In case of any doubts or questions, an employee should discuss with his/her supervisor or the responsible person assigned for monitoring the compliance of code of conducts, through various channels provided.
3. According to the **Whistleblower Policy**¹⁵ set forth, the Company will treat with fairness and protect the employee who refuses or report the corruption issue related to the Company or the person who reporting the corruption issue.
4. The person commits corruption is deemed as breaching the Company's Code of Conduct and is subject to the discipline penalty as prescribed in the regulation as well as subject to the legal penalty if such action is judged as a legal offence.
5. The Company is aware of the importance of dissemination, distribution of knowledge and understanding other persons who performing their duties related to the Company or that may affect the Company in respect to the complaints with the anti-corruption policy.
6. The Company persists in creating and reserving the corporate culture, denying corruption in transactions made with government and private sector.

- **Regulations on operation**

- 1.) This Anti-Corruption policy shall cover the procedures of human resource management from recruitment or selection, promotion, training, performance assessment for employees, compensation. The supervisors in all levels must communicate and create the understanding among employees to ensure the business transaction under his/her responsibility and the supervision on compliance is efficient.

¹⁵ Approved by the Board of Director' meeting No.6/2014 on 14th November 2014

- 2.) Any actions under Anti-Corruption Policy shall be conducted in accordance with the guidance set forth in the Code of Conduct, Corporate Governance guideline, policy and practice guideline to all stakeholders, including regulations, and related business operation manual of the Company and any other practice guidelines which will be formulated by the Company in the future.
- 3.) For clear operation in the matter that has high possibility of corruption, the Board of Directors, executives and employees of all levels shall be careful in the following matters.
 - Gift, banquet, expense for giving-deliver or accepting of gift shall be as stipulated in the Code of Conduct.
 - The money donated for charity or supporting or receipt of donation or supporting fund must be given with transparency and in line with law. The person must assure that such donation or supporting fund will not be used as a reference for bribing.
 - Business relationship and procurement made with the government sector are prohibited from offering or accepting bribe in all business operations. In addition, the business operation and contact with the government agencies must be executed with transparency and honesty and in compliance with applicable laws.

Procedures about Anti-Corruption Policy

To support the operations related to Anti-Corruption policy, the Company has formulated policy on filing complaints and other relevant regulations as a guideline for considerations and practice as following:

- The Board of Directors has approved the policy on receiving complaints to accept complaints made from within and out of the organization. Details are as following:

Policy on Handling Complaint

To encourage and support all stakeholders both within and out of the organization to take part in corporate governance, the Company has the policy to accommodate the event when stakeholders have doubts or questions or witness the act that is suspicious to be violating or in compliance with the law, rules, regulations or the code of business conduct. The person who has a question, doubt or witness the latter mentioned can report the clue or file a complaint together with evidence with the Chairman of the Audit Committee.

Conditions and Consideration of Receiving Complaints

- 1.) The complaint must be true, explicit and contain sufficient information to conduct an investigation.
- 2.) To protect complainant, he/she may choose not to reveal his name.
- 3.) The information received by the Chairman of the Audit Committee is kept as confidential and disclosed as deemed necessary, as the safety of whistle-blower is the main concern.
- 4.) Upon fact-finding and investigation process, the complaint will be reported to the Board of Directors for consideration and issuance of appropriate measure.
- 5.) The person filing complaint will be equally protected whether he/she is an employee or the third party.

Procedures¹⁶

- 1.) Report the progress/consideration result to the complainant who provides his/her name. Address.
 - 2.) The Company reserves the right not to disclose the information about an investigation or discipline penalty which may affect personal information and confidentiality.
- In addition to complaint filing by mail directly to the Chairman of the Board of Directors, the Company has provided another channel to report grievance directly by sending e-mail to Chairman of Audit Committee which shown on the Company's website. In year 2018, the Company did not have any complainant about corruption, non-observance with the Code of Conduct of internal personnel and the third party.

¹⁶ Approved by the Board of Director' meeting No.1/2017 on 23rd February 2017



Dissemination of Knowledge to the Community

After Process

The Company conducts its business coupling with taking care and addressing the importance of the community and society surrounding the projects. Continuously, the Company 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 the to create positive impact which follows the sustainable development direction.

Guideline for Engagement in Development of the Communities around the Power Plants

Since year 2012 onwards, the Company has paced into a developer of renewable power plant starting from 4 solar power plants with capacity as stated in the contract totaling of 278 megawatts. The Company carries on its business by establishing eight wind power plants with capacity stated in the contract totaling of 386 megawatts. All of these power plants are operated under the Company's subsidiaries. The Company and its subsidiaries thrive to conduct business while placing the importance on environment 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 projects, promoting safety to the health of producers, consumers and environment. The Company Group also 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 the Company Group, 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. In this regard, the Company arranges activities, allowing students, community leaders and interested public, analysts, government agency, state enterprise including all mass media to visit the solar power plants in NakhonSawan, Lampang and Phitsanulok, the wind power plants in Nakhon Si Thammarat and Songkhla. The Company also takes part in displaying information in various exhibitions to share knowledge to the interested public about procedures of generating electricity from renewable energy and to visualize the more actual process. Furthermore, the Company has disseminated the knowledge on organic agriculture to students in schools and villagers from the communities near the solar power plants. The beginning is at solar power plants in NakhonSawan where the education is passed on in the classroom plus workshop in the power plants and in the school. The students will experience the growing of vegetables themselves and harvest to cook for lunch. Some parts of the vegetables is sold to the community under the organic products, bringing about the income to the project.



Lo Yai Afforestation



Relieve public disaster
Pabuk Depression



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 larger 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.

The Company arranges projects to help farmers who do not own any land to have an area for plantation during farming and off-farming season. This project is continued from 2016–2018 with an aim to utilize the highest benefits of the resources to stakeholders

Moreover, in year 2018, the Company Group has supported funds and taken part in local activity related to religion, culture, tradition, sport event, reforestation campaign and to relieve the public

disasters, promote the career training courses continuously in all project locations. For instance,

- Attending the Royal Kathin Robe Offering Ceremony arranged by the Energy Policy and Planning Office. The Company participated in an activity with other organization to promote the important religious day.
- Joining the Ramadan month by providing date palms to the local mosque near the projects in order to create positive relationship with the local.
- 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.
- Training course on Solar Cell to students from Chiang Mai University. The Company also donated solar panels to encourage the applying of knowledge into real practice and their education.
- Relieve public disaster – Pabuk Depression, Nakhon Sri Thammarat

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 (through contractor) should be around thousands of positions 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.

To 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 NakhonSawan.
- **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 NakhonSawan, Lampang and Phitsanulok. The Company took part in promoting the organic agriculture by initiating the experiment plots

in solar power plant in NakhonSawan and Phitsanulok. The experiment plots has been certified standard for organic plantation (Organic Thailand) from the Department of Agriculture (NakhonSawan), Organic Agriculture Standard from the organization of Northern Organic Agriculture Standard (Phitsanulok).

- **Development of management system from farm to consumers, 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, the project summarizes knowledge and procedures and prepares into a handbook for agriculturists. Another concern is to stress out the management that taking into account the quality and safety of the vegetables. The project's vegetable screening house in Phitsanulok receives standard certification from the Food and Drug Administration (FDA). 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, for example,
 - providing workshop about growing organic vegetable, making sugarcane juice, introducing to basic knowledge about raising goats and sheep in NakhonSawan to the local who are interested. The workshop receives well feedback from the communities.
 - Support the growth of agriculturists by establishing "Green Market Chemical-Free Vegetables, Safety Food" to disseminate knowledge on growing organic vegetables in Phitsanulok.
 - The Company promotes organic vegetables through Children's Day activity annually to cultivate knowledge on organic vegetables that free of chemicals to the children and surrounding communities in Phitsanulok. The Company promotes Ease Organic brand and expands customer base for agriculturists from the Ease Organic Project, creating shared value and impact to the society and community as follows.

Ease Organic Project

Sustainability



- **The Higher Income.** The project generates income and careers to agriculturists who joining the Ease Organic. The aim is to promote sustainable work for them. The local farmers earn an average income 1,500 Baht/rai in case of not experiencing loss from the down of the rice price (paddy price 6,000 Baht/ton, yield 815 kg./rai, an information from the farmer who join the project). When compare to the farmers who join the Ease Organic project, to earn the same rate of income, the farmers that not attending the project must grow rice for 30 rai/year (grow twice/year), to earn the equal rate of income. The reason is that the organic vegetables has shorter time for growing and harvest while giving higher price due to high demand in the market.
- **Better Quality Life:** The renewable powerplants of the Company Group is a power plant that does not cause pollution to communities. Meanwhile, the Company Groupsupport the agriculturists, reduce the use of chemical for safety in their life and health. As a result, the community is able to stand on themselves on a sustainable basis that bring about benefitsto all stakeholders. The products are safe foragriculturists, consumers and eco-friendly which all deemed the core value of the Company.

In year 2018, the Company has taken a survey on the Good Corporate Citizen and survey the

opinions from the local communities around the power plants where the Company has established agriculture development projects inNakhonSawan and Phitsanulok. According to the result, the satisfaction score on the social corporate governance is 88 percent. Furthermore, the community has specified their interest in variety of agriculturists such as growing vegetables, rice plantation, raising pigs and fish farm.

- **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 environmentincluding the eco system in the plantation area.

The production process is certified for organic standard by the Organization of Northern Organic Agriculture Standard (Phitsanulok) and the project's vegetable screening house in Phitsanulok receives standard certification from the Food and Drug Administration (FDA). In year 2018, the project releases an organic product to the market which includes fresh vegetable and organic rice in total over 8.6 tons, 4,213 bottles of sugarcane-pandanus juice, representing 23,356 consumption units* The products are distributed to the surrounding communities in NakhonSawan and Phitsanulok, consumer markets, supermarkets, restaurants and major distributors of vegetables and fruits in Bangkok and Phitsanulok.

Social Impact to the stakeholders

Social Enterprise and creating shared values (CSV)

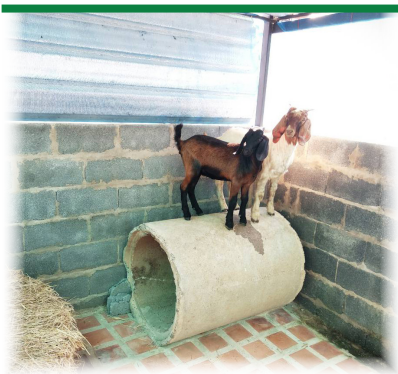


- **Leverage Collaboration:** The Ease Organic Project is an expansion of collaboration of the project to the Company Group, institutions, and other organizations in order to create value and develop the sustainable business in the long term. The major parts are as follows.
- **Backhaul Logistic Collaboration:** After receiving cooperation and support from Food PassionCo., Ltd., a restaurant operator locally and internationally, there are many restaurant brands under management of the Company namely BBQ Plaza, JumZaap Hut, Chama and Space Q. Food Passion has its core policy to support and promote projects that contribute to the sustainability of Happy Supply Chain within the country covering upstream, midstream and downstream. Hence, Passion Food is willing to support Energy Absolute PCL. by providing refrigerator truck service on the return trip to Bangkok to transport the organic products from the project farm to the Head Office (Bangkok). This project is initiated in 2017 until present, with an aim to facilitate the Company Group and agriculturists in an affordable price. Furthermore, to make a trading partner, the Company delivers a part of organic products to Food Passion as a food welfare for its

employees. Such is considered as Collaboration for Win-Win-Win Business X Society X Environment, saving costs for agriculturists, saving costs for energy consumed in transportation and to reduce pollution emitted to the environment. The Company considers the cost-effective consumption of the world resources and the utmost benefits to all parties.

- **Market Collaboration for Long Term Customer Base:** concentrates on developing customer base for the long-term. To achieve this, the Company coordinates with the wholesale market and major collectors and distributors to expand the organic products to the market in order to reach wider ranges of customers, easy access for consumers at an affordable price. This includes retail markets, supermarkets and restaurants within the project areas and Bangkok. For example, CT Fresh Co., Ltd., Villa Market, Krua Mueang We and Sara DD Restaurant, Phitsanulok. Sara DD Restaurant has recently changed the order from hydroponic vegetables to be non-chemical and organic vegetables since the restaurant understands the importance of the health of producers, consumers and environment.

*consumption of vegetables and fruits 400 g./day/person as per recommendation of the World Health Organization or WHO



The supported from Mahidol University, Nakhonsawan



Asia Responsible Entrepreneurship Awards (AREA)

- Farm R&D Collaboration:** Placing the attention to the research and development, the Company carries on the creation of sustainable shared value to communities and societies in wide ranges that connected to the business. The Company joins hand with universities, government agencies such as Farm R&D Synergy. the Company Group stresses the importance on the agricultural research which is conducted in collaboration with the Faculty of Agricultural Resources and Environment, Naresuan University, Phitsanulok. In the previous year, the Company has researched and developed the precision agriculture to study the factors concerning plants, soil structure, the proper amount of water and fertilizer provided to plants, factors contributed to the growth of the sample plants.

The research consists of plant biology, microorganism and disease examination processed in the laboratory with the advice, knowledge and experience from the university lecturers passed on to agriculturists. The Company also plans to develop the area of over 200 rai below the solar panels at solar power plant in Phitsanulok by growing alternative plants to diversify and create the sustainability. The Company and its partners applying a technology to resolve agriculture issue such as Data Technology plus Blockchain Technology to accommodate the increase of agriculturists and consumers in the long term. In addition to the attention on the organic agriculture, the Company Group also receive support from Mahidol University, NakhonSawan Campus led by a team of veterinarian to supervise, identify the disease, give advisory opinion about raising and treatment of the diseases in goats, sheep and solar power plants, NakhonSawan.

The raising of goats and sheep is considered as another choice of career for the communities. At present, the agriculturists have improved their knowledge and skills in raising goats, sheep. The Company gives goats as a part of contribution to support the practice of the students and to promote the career to the students and agriculturists in the nearby locations. The Company supports the Bachelor of Sciences, Smart Farmer Major and One Health Animal Clinic of the university. The clinic provides animal health service to those who own or raise animals or agriculturists in the surrounding area.

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

The award is a proof that the implementation of Ease Organic is successful. In other words, 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.

Internal Control and f Management

1. Internal Control

The Board of Directors appoints the Audit Committee which comprised of three Independent Directors. Each member is not an employee of the Company. 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, the transactions that may have a conflict of interest among shareholders, directors and executives of the Company.

The Board of Directors, Audit Committee and the Management outlines the importance of the 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.



Internal Control



Notations from the auditors
on internal control



Head of the Internal Audit Unit

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 that its 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 that 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 organization 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 Report. 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 Shareholders' Meeting No. 1/2019 held on 27 February 2019, 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 2018 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.

2. Auditor's remarks on internal control

PricewaterhouseCooper ABAS Co., Ltd., the auditor of the Company 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 2018, ended on 31 December 2018.

3. Head of the Internal Audit Unit

The Company uses outsource company to perform the internal audit which is Dharmniti Internal Auditing Co., Ltd since 2008. The person assigned from Dharmniti Internal Audit Co., Ltd. is Miss Somjaree Kaewkhomadee, the executive director and manager of the Internal Audit Department. Her responsibility is to supervise the Internal Control of the Company and its subsidiaries. After consideration on qualifications, education, experience and training courses of Ms. Somjaree Kaewkhomadee, the Audit Committee reviewed that the said factors suit and adequate to performing such duties, since she is independent, having experience on internal audit in the same industry as the Company Group. At present, the consideration and approval, appointment, dismissal, relocation and the consideration on performance assessment and compensation of the Head of Internal Audit Unit of the Company must be approved by the Audit Committee.

Furthermore, the Company has established the Internal Audit Division under the direct management of the Audit Committee and supervision of the Secretary of the Board of Directors. Ms. Pimwara Laemsuwannachuen is the coordinator with the Dharmniti Internal Audit Co., Ltd., to bring forward the internal audit result to the meeting with the executives before preparing the report. The Report of Internal Audit is presented to the Audit Committee for acknowledgment and to receive suggestions of the Audit Committee, in order to improve and enhance the effectiveness of the audit work as a whole system. The internal audit result for the year 2018 showed that the Company Group's internal control system was adequate and appropriate. The Audit Committee expressed its opinions that the Internal Auditor performed work completely and covering all departments.

Connected Transactions

The Company had the connected transactions between juristic person and an individual that may have conflict of interest during the accounting year 2017 and 2018 which are summarized of its relationship as follows:

Company/person that may have conflict of interest	Details of relationship	Connected Transactions (Yes = ✓, No = ⊗)	
		Year 2017 Ended 31 Dec 2017	Year 2018 Ended 31 Dec 2018

**Subsidiaries which have related parties
to the Company holding shares of not more than 10% : -None-**

Related Parties of the Company or subsidiaries: :

<ul style="list-style-type: none"> Dhipaya Insurance PLC (TIP) Business: Insurance 	<ul style="list-style-type: none"> Mr. Somchainuk Engtrakul is Chairman of the Board of Directors and Chairman of the Executive Committee of TIP Mr. Somchainuk Engtrakul is Chairman of the Board of Directors of EA 	✓	✓
---	---	---	---



The related transactions between the Company and person who may have conflict of interest during fiscal accounting year 2017 and 2018 are as follows:

The person who may have conflict of interest	Details of transaction	Value of the related transactions		Necessity and reason
		Year 2017 and as of 31 Dec 2017	Year 2018 and as of 31 Dec 2018	
1.Dhipaya Insurance PLC.	<ul style="list-style-type: none"> The Company applied the insurance of "Property Risk" to cover its biodiesel factory with Nam Seng Insurance PLC. under the joint 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 1. One year insured period (from 19 Oct 2016 – 19 Oct 2017) with sum insured of Baht 1,050.- million 2. One year insured period (from 19 Oct 2017– 19 Oct 2018) with sum insured of Baht 1,050.- million 3. One year insured period (from 19 Oct 2018– 19 Oct 2019) with sum insured of Baht 1,125.- million 	Baht 0.99 million	Baht 0.58 million	The insurance is made with external party which is not related to the Company. However, the condition of joint-insurance concerns related company at market capitalization price. The Audit Committee expressed their opinion that such transaction is necessary, reasonable and utilize to the Company's benefit worth insurance premium (including flood insurance)
	<ul style="list-style-type: none"> The Company has insured "Third Party Liability" of biodiesel plants with Nam Seng Insurance PLC under the joint-insurance between Nam Seng Insurance PLC at 50%, and Dhipaya Insurance PLC at 50% of total sum insured 1. One year insured period (from 19 Oct 2016 – 19 Oct 2017) with sum insured of Baht 50.- million 2. One year insured period (from 19 Oct 2017– 19 Oct 2018) with sum insured of Baht 50.- million 3. One year insured period (from 19 Oct 2018 – 19 Oct 2019) with sum insured of Baht 50.- million The Company has prepaid premiums of the above transactions at the end of the accounting period and recorded the premiums as sales' cost (production's expense) 	Baht 0.04 million	Baht 0.04 million	
		Baht 0.73 million	Baht 0.49 million	

The person who may have conflict of interest	Details of transaction	Value of the related transactions		Necessity and reason
		Year 2017 and as of 31 Dec 2017	Year 2018 and as of 31 Dec 2018	
<ul style="list-style-type: none"> EA Solar Co., Ltd.(a subsidiary) has insured the assets of the solar power plant with Dhipaya Insurance PLC., under the terms of the joint insurance between Dhipaya Insurance PLC at 55%, Nam Seng Insurance PLC at 25%, and Chubb Samaggi Insurance PLC at 20% of sum insured 1. One year insured period (from 17 Oct 2016-17 Oct 2017) with sum insured of Baht 500,000,000.- 2. One year insured period (from 17 Oct 2017 - 17 Oct 2018) with sum insured of Baht 500,000,000.- 3. One year insured period (from 17 Oct 2018 -17 Oct 2019) with sum insured of Baht 500,000,000.- EA Solar Co., Ltd. (a subsidiary) has prepaid premiums of the above transactions at the end of accounting year (and the premium was recorded the premiums as sales' cost) 		Baht 0.54 million	Baht 0.43 million	The Company has arranged insurance to cover damage of property. The selection of insurer has been conducted appropriately from the independent brokers
		Baht 0.38 million	Baht 0.34 million	
<ul style="list-style-type: none"> EA Solar Nakornsawan Co., Ltd. (a subsidiary)insured the assets of the solar power plant with Dhipaya Insurance PLC under the terms of the joint insurance between Dhipaya Insurance PLC at 50%, Nam Seng Insurance PLC at 35% and Safety Insurance PLC at 15% of sum insured 1. One year insured period (from 23 Dec 2016- 22 Dec 2017) with sum insured of USD 200,000,000.- 2. One year insured period (from 23 Dec 2017 - 22 Dec 2018) with sum insured of USD 200,000,000.- 3. One year insured period (from 23 Dec 2018 - 22 Dec 2019) with sum insured of USD 200,000,000.- EA Solar Nakornsawan Co., Ltd. (a subsidiary) has prepaid premiums of the above transactions at the end of the accounting period and recorded the premiums as sales' cost 		Baht 7.73 million	Baht 5.70 million	The Company has arranged insurance to cover damage of property. The selection of insurer has been conducted appropriately from the independent brokers
		Baht 7.53 million	Baht 5.56 million	

The person who may have conflict of interest	Details of transaction	Value of the related transactions		Necessity and reason
		Year 2017 and as of 31 Dec 2017	Year 2018 and as of 31 Dec 2018	
	<ul style="list-style-type: none"> EA Solar Phisanulok Co., Ltd. (Indirect subsidiary) has insured the assets of the solar power plant with Dhipaya Insurance PLC under the terms of the joint 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"> One year insured period (from 1 Apr 2016 – 22 Dec 2017) with sum insured of USD 220,469,000 One year insured period (from 23 Dec 2017 – 22 Dec 2018) with sum insured of USD 220,469,000 One year insured period (from 23 Dec 2018 – 22 Dec 2019) with sum insured of USD 220,469,000 EA Solar Phisanulok Co., Ltd. (a subsidiary) has prepaid premiums of the above transactions at the end of the accounting period and recorded the premiums as sales' cost 	Baht 6.62 million	Baht 6.29 million	The Company has complied with loan agreements to have an insurance brokers providing the insurance cover in order to prevent the risk of potential damage. The insurer has been selected by an independent brokers properly.
	<ul style="list-style-type: none"> EA Solar Lampang Co., Ltd. (an indirect subsidiary) insured the assets of the solar power plant with Dhiphaya Insurance PLC under the terms of the joint insurance between Dhiphaya 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"> One year insured period (from 23 Dec 2016 – 22 Dec 2017) with sum insured of USD 227,500,000.- One year insured period (from 23 Dec 2017 – 22 Dec 2018) with sum insured of USD 220,500,000.- One year insured period (from 23 Dec 2018 – 22 Dec 2019) with sum insured of USD 228,790,000.- <p>For term of joint insurance of item (2.) above, the portion is Dhiphaya Insurance PLC at 60% and Nam Seng Insurance PLC at 40% of sum insured.</p> <ul style="list-style-type: none"> EA Solar Lampang Co., Ltd. (an indirect subsidiary) incurred the advance insurance premium of the aforesaid transaction as of end of the accounting period (and such advance insurance premium was recorded as sales cost) 	Baht 9.06 million	Baht 6.45 million	The Company has complied with the loan agreement which stipulates that the Company has to have insurance agent to select insurance companies to cover risk and damage. However, the selection of the insurer has been appropriately selected from independent agents.
		Baht 8.83 million	Baht 6.29 million	

The person who may have conflict of interest	Details of transaction	Value of the related transactions		Necessity and reason
		Year 2017 and as of 31 Dec 2017	Year 2018 and as of 31 Dec 2018	
<ul style="list-style-type: none"> EA Wind Hadkanghan 3 Co.,Ltd. (Indirect subsidiary) hired Jardine Lloyd Thompson as the third party who has been recognized by financial institutions as a lender to the company as a lender agent for the insurance company, by Jardine Lloyd Thompson. Limited selection of companies Dhipaya Insurance PLC at the 25%, Nam Seng Insurance PLC at 25% and Safety Insurance PLC at 50%. This is to insure the asset of solar power plant during construction. 	<ol style="list-style-type: none"> Insurance Period from 5 July 2016 to 20 July 2017, with sum insured of USD 272,341,000 (the premium is included in the cost of a power plant) 	Baht 3.97 million	-	<p>The Company has complied with loan agreement to have an insurance brokers providing the insurance cover risk of potential damage. The insurer has be selected by the independent brokers</p>
	<ul style="list-style-type: none"> EA Wind Hadkanghan 3 Co., Ltd. (Indirect subsidiary) has insured the assets of the solar power plant with Dhipaya Insurance PLC under the joint policy, between Dhipaya Insurance PLC at 51%, Nam Seng Insurance PLC at 40%, and Safety Insurance PLC at 9% of the sum insured. <ol style="list-style-type: none"> Insurance Period from 21 Jul 2017 – 25 Dec 2017, with sum insured of USD 266,294,000 Insurance Period from 26 Dec 2017 – 25 Dec 2018, with sum insured of USD 266,294,000 Insurance Period from 26 Dec2018 – 25 Dec 2019, with sum insured of USD 266,294,000 <p>For the join insurance under item 1 above, the portion of Dipaya Insurance PLC will be at 25% and Nam Seng Insurance PLC will be 50 % of sum insured</p>	USD 0.19 million	Baht 7.6 million	
<ul style="list-style-type: none"> EA Wind Hadkanghan 3 Co., Ltd. (Indirect subsidiary) has prepaid premiums of the above transactions at the end of the accounting period (and recorded the premiums as sales' cost) 		USD 0.18 million	USD 7.47 million	

The person who may have conflict of interest	Details of transaction	Value of the related transactions		Necessity and reason
		Year 2017 and as of Ent Dec 2017	Year 2018 and as of Ent Dec 2018	
	<ul style="list-style-type: none"> Navangklak Development Co., Ltd. (Indirect subsidiary) hired Jardine Lloyd Thompson Co., Ltd., a third party, and has been accepted by the financial institution as the lender to represent the Company in provision of insurance company. Jardine Lloyd Thompson Co., Ltd. has selected Dhipaya Insurance PCL. to cover at 51%, Nam Seng Insurance PCL. at 40%, and Safety Insurance PCL. at 9% of the sum insured, for the property insurance of the power plant assets during the construction. 1. Insurance period from 23 Dec 2017 – 22 Dec 2018, with sum insured of USD 100,593,853(the premium is included as the cost of power plant) 	USD 0.08 million	USD 0.08 million ^{/1}	The Company has arranged insurance to cover potential damage and the insurance was selected by the independent brokers properly
	<ul style="list-style-type: none"> Pongnok Development Co.,Ltd. (Indirect subsidiary) has hired Jardine Lloyd Thompson Co., Ltd., (JLT)a third party, and has been accepted by the financial institution as the lender to represent the Company in provision of Insurance for which JLT has select Dhipaya Insurance PLC to cover at 51%, Nam Seng Insurance PLC. at 40%, and Safety Insurance PLC at 51% of sum insured, for the property insurance of the power plants assets during the construction 1. Insurance period from 23 Dec2017 – 22 Dec2018, with sum insured of USD 105,158,777 (the premium is included as the cost of power plant) 	USD 0.08 million	USD 0.08 million ^{/1}	The Company has arranged insurance to cover potential damage and the insurance was selected by the independent brokers properly

/1 At the end of the year, these subsidiaries have extended the period of insurance with the same team and condition. However, the value of sum insured may be adjusted once the project are completed.

The person who may have conflict of interest	Details of transaction	Value of the related transactions		Necessity and reason
		Year 2017 and as of 31 Dec 2017	Year 2018 and as of 31 Dec 2018	
<ul style="list-style-type: none"> Navangklak Wind Power Co.,Ltd. (Indirect subsidiary) hired Jardine Lloyd Thompson Co., Ltd., a third party, and has been accepted by the financial institution as the lender to represent the Company in provision of insurance company. Jardine Lloyd Thompson Co., Ltd. has selected Dhipaya Insurance PCL. To cover at 51%, Nam Seng Insurance PCL. at 40%, and Safety Insurance PCL. at 9% of the sum insured, for the property insurance of the power plant assets during the construction. 1. Insurance period from 23 Dec2017- 22 Dec2018, with sum insured of USD 102,489,878((the premium is included as the cost of power plant) 	<ul style="list-style-type: none"> Benjarat Development Co.,Ltd. (Indirect subsidiary) has hired Jardine Lloyd Thompson Co., Ltd., a third party, and has been accepted by the financial institution as the lender to represent the Company in provision of Insurance company. Jardine Lloyd Thompson Co., Ltd. has selected Dhipaya Insurance PCL at 51%, and Nam Seng Insurance PCL. at 40%, and Safety Insurance PCL at 9% of the sum insured, for the property insurance of the power plant assets during the construction. 1. the insurance period from 23 Dec2017- 22 Dec2018 with the sum insured of USD 89,389,541(the premium is included as the cost of the power plant) 	USD 0.08 million	USD 0.08 million/ ¹	The Company has arranged insurance to cover potential damage and the insurance was selected by the independent brokers properly
		USD 0.07 million	USD 0.07 million/ ¹	
<ul style="list-style-type: none"> Banchuan Development Co.,Ltd.(Indirect subsidiary) hired Jardine Lloyd Thompson Co., Ltd., a third party, and has been accepted by the financial institution as the lender to represent the Company in provision of Insurance Company. Jardine Lloyd Thompson Co., Ltd. has selected Dhipaya Insurance PCL. at 51%, Nam Seng Insurance PCL. at 40% of the sum insured, and Safety Insurance PCL. at 9% of the sum insured, for the property insurance of the power plant assets during the construction. 1. the insurance period from 23 Dec2017- 22 Dec2018, with sum insured of USD 183,125,443 (the premium is included as the cost of the power plant) 	<ul style="list-style-type: none"> Banchuan Development Co.,Ltd.(Indirect subsidiary) hired Jardine Lloyd Thompson Co., Ltd., a third party, and has been accepted by the financial institution as the lender to represent the Company in provision of Insurance Company. Jardine Lloyd Thompson Co., Ltd. has selected Dhipaya Insurance PCL. at 51%, Nam Seng Insurance PCL. at 40% of the sum insured, and Safety Insurance PCL. at 9% of the sum insured, for the property insurance of the power plant assets during the construction. 1. the insurance period from 23 Dec2017- 22 Dec2018, with sum insured of USD 183,125,443 (the premium is included as the cost of the power plant) 	USD 0.14 million	USD 0.14 million/ ¹	The Company has arranged insurance to cover potential damage and the insurance was selected by the independent brokers properly
		USD 0.14 million	USD 0.14 million/ ¹	

/1 the end of the year, these subsidiaries have extended period of insurance with the same term and condition however, the value of sum insured may be adjusted once the projects are completed.

Management Discussion and Analysis: MD&A

Overview of the operational performance of last year

Energy Absolute Public Company Limited is the Company operating the business of alternative energy with the use of modern technology friendly to the environment and beneficially for the users. At present, the core business of the Company is manufacturer and distributor of biodiesel (B100), purified glycerin and by products. The Company has been granted to be the oil trader according to Section 7 of the Fuel Trade Act B.E.2543 by Ministry of Energy (on 14th October 2009). In addition, the Company has expanded the business to generate and distribute the electricity from alternative energy, i.e. solar and wind energy in accordance with the Power Development Plan (PDP) (B.E.2553 – B.E.2557) that government has promoted the generation of electricity from renewable energy along with environmental protection. This is not only to realize the importance of renewable energy, however, the Company also recognizes the importance of energy reserves for the use in various industries. On 7th December 2016, the Company invested in the foreign company (Amita Technologies Inc.) for operating and developing the battery (lithium-ion polymer) which will enhance the existing renewable energy business of the Company.

At the end of 2017, the revenue from all 4 solar power plants (aggregate capacity of 278 MW) and 3 wind power plants (aggregate capacity of 126 MW) were recorded. For 5 Hanuman-wind power projects with aggregate capacity of 260MW, 2 of them (with aggregate capacity of 90 MW) have commenced commercial operation since 25th January 2019 and the less of 3 projects (with aggregate capacity of 170 MW) are expected to commence the commercial operation around nearly end of Q1/2019 – early of Q2/2019.

The operating results during the past 3 years, the Company and subsidiaries incurred revenue from 7 products/types as follows:

1. Revenue from sales of biodiesel
2. Revenue from sales of purified glycerin
3. Revenue from sales of byproducts

4. Revenue from sales of electricity from solar power plants
5. Revenue from sales of electricity from wind power plants
6. Revenue from subsidy for adders
7. Revenue from other business

Total revenue from sales of 7 categories in year 2016, 2017 and 2018 were THB 11,579.52 million and THB 11,551.95 million, respectively. These revenues included incentive income (Adder) from Provincial Electricity Authority (PEA), at the rate of Baht 8 per kWh for 8-MW Solar power plant in Lopburi, from the Electricity Generating Authority of Thailand (EGAT) at the rate of Baht 6.50 per kWh for 90-MW Solar power plant in Nakhonsawan, 90-MW Solar power plant in Lampang, and 90-MW Solar power plant in Phitsanulok, and at rate of THB 3.50 per kWh for 126-MW Wind power plant for a period of 10 years, starting from the commercial operation date.

Analysis of operating results of 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 2016, 2017 and 2018 were THB 10,392.39 million, THB 11,579.52 million, and THB 11,551.95 million respectively (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 for a period of 10 years, starting from the commercial operation date) This resulted in the total revenue of the Company and subsidiaries increase continually.

In 2017, the total revenue increased from 2016 for THB 1,234.25 million representing 11.82 % from THB 10,439.25 million to THB 11,673.50 million, and in 2018, the total revenue was THB 12,490.00 million increasing from 2017 for THB 816.72 million representing 7.00%.

Total Revenue

Type of Revenue	Conducted by / % of share held by the Company	Year 2016		Year 2017		Year 2018	
		THB (million)	%	THB (million)	%	THB (million)	%
Group of Biodiesel							
1. Biodiesel oil	EA	4,721.13	45.23	4,205.23	36.02	3,194.23	25.57
2. purified glycerin	EA	169.49	1.62	267.07	2.29	296.16	2.37
3. byproducts	EA	11.32	0.11	14.16	0.12	20.76	0.17
		4,901.94	46.96	4,486.46	38.43	3,511.15	28.11
Group of Power Plant from Renewable Energy							
4. Electricity from Solar Power Plants	EA SOLAR ESN ESL ESP	1,786.31	17.11	1,933.05	16.56	1,934.12	15.49
5. Electricity from Wind Power Plants	EWHK3	-	-	489.07	4.19	802.48	6.43
6. Revenue from subsidy for adders	EA SOLAR, ESN, ESL, ESP, EWHK3	3,704.14	35.48	4,670.94	40.01	4,944.22	39.58
		5,490.45	52.59	7,093.06	60.76	7,680.82	61.50
Other business							
7. Revenue from other business		-	-	-	-	359.99	2.88
Total from sales and Services		10,392.39	99.55	11,579.52	99.19	11,551.96	92.49
8. Accounting gain on a business combination		-	-	-	-	894.58	7.16
9. Other income		46.86	0.45	93.98	0.81	43.69	0.35
Total revenue		10,439.25	100.00	11,673.50	100.00	12,490.23	100.00
Share of gain (loss) from investment in an associate and a joint venture		-		(62.27)		(6.31)	

Notes

EA Solar Co., Ltd. (EA SOLAR)	: The Company holds direct shares of 49% and indirect shares of 51%
EA Solar Nakorn Sawan Co., Ltd. (ESN)	: The Company holds indirect shares of 99.99%
EA Solar Lampang Co., Ltd. (ESL)	: The Company holds indirect shares of 99.99%
EA Solar Phisanulok Co., Ltd. (ESP)	: The Company holds indirect shares of 99.99%
EA Wind Hadkanghan Co., Ltd. (EWHK3)	: The Company holds indirect shares of 99.99%

Having considered the proportion of revenue from the sales during 2016 2017, and 2018 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 45.23%, 36.02%, and 25.57% of total revenue respectively. While, the sales revenue from electricity and adder which increased were 52.59%, 60.76%, and 61.49% of the total revenue respectively. In the year 2018 the Company and subsidiaries incurred the sale revenue of THB 11,55.95 million, representing the decrease of 0.24% as compared to 2017. In proportion, sales revenue from biodiesel accounted 25.57%, Purified glycerin accounted 2.37%, byproducts accounted 0.17%. and for revenue from solar and wind power plant business, sale revenue from solar and wind power plant were 21.91% and revenue from adder was 39.581% of total revenue.

Revenue from sales of biodiesel in 2018 decreased by THB 1,010.97 million or 24.04% from 2016 as a result of the decrease of sales volume from 173.94 million liters in 2017 to 158.36 million liters in 2018, representing the decrease of sales volume of 8.96%. Nevertheless, due to the decreased of raw material price which is the factor to pricing the distribution, affected to the value from sales of biodiesel in 2018 was decreased.

The revenue from solar and wind power plants of the Company and subsidiaries' in 2016, 2017, and 2018 were THB 5,490.45 million, THB 7,093.09 million, and THB 7,680.81 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 2018, the major revenue was due to the recognition of income in the AMITA segment in the consolidated financial statements. Due to AMITA's reclassification of this associate to be a subsidiary. AMITA has revenue from sales for the year 2018 in the amount of THB 247.97 million and revenue from crane rental as well as renewable energy consulting income of ESM amounting of THB109.48 million.

Account gain on a business combination

On 11st January 2018, the Company had the substantive rights under the Law of the Republic of China (Taiwan) to call a shareholders' extraordinary meeting to appoint additional directors for Amita in order to have the number of director equals to 54.55% of the total number of directors of Amita, and major voting rights in Amita shareholders' meetings. The management therefore considers that the Company has control over Amita, and has presented an investment in Amita as an investment in the subsidiary on that date. Reclassification of investment in Amita from an associate to be a subsidiary is considered to be a business combination achieved in accordance with Thai Financial Reporting Standard 3 "Business Combination". Therefore, the Company measured previously held equity interest in Amita to fair value as at the date of obtaining control, and recognised any gains or losses arising from such re-measured in profit or loss, and the reversal of currency translation previously recognised in the other comprehensive income as expenses in the consolidated statement of comprehensive income for the year ended 31st December 2018 as details below:

At the date on which the Company obtained control	
(THB)	
Fair value of equity interest held before the date on which the Company obtained control (proportion of 50.69%)	1,821,694,841
Book value of equity interest held before the date on which the Company obtained control (proportion of 50.69%)	911,134,445
Accounting gain on a business combination achieved	910,560,396
Less Currency exchange losses on the reversal of currency translation differences	(15,983,407)
Accounting gain on a business combination achieved, net	894,576,989

Cost of sales and gross profit

Sales cost of the Company and subsidiaries during year 2016, 2017 and 2018 were THB 5,637.29 million, THB 6,045.57 million, and THB 5,668.29 million respectively, or approximately 54.24%, 52.21% and 49.07% of sales revenue respectively. Proportion of the sales cost 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 as compared to biodiesel business of which the revenue decreased and decreased ratio of sales cost to revenue.

Gross profit of the Company and subsidiaries during year 2016, 2017 and 2018 were THB 4,755.10 million, THB 5,533.95 million and THB 5,883.66 million collectively, or approximately 45.76%, 47.79%, and 50.94% of sales revenue respectively. The gross profit of the

Company is likely to increase significantly due to the revenue recognitions, commercial operations from distribution of electricity business and increment of solar power plant 1 project each year. 90 MW solar power plant during the fourth quarter of 2013 in Nakhon Sawan, 90 MW solar power plant in Lampang on the First quarter of 2015 and 90 MW solar power plant in Phitsanulok on second quarter of 2016, 126 MW Wind power plant in Nakhon Si Thammarat and Songkhla during 2017 which included income from distribution of electricity and the adder. As such the gross profit of the Company was higher.

Furthermore, to categorize revenue, sales cost of the Company and subsidiaries into 3 types of business which are 1) Production and distribution of biodiesel oil and glycerin 2) Generating and distribution of electricity captured from solar and wind energy and 3) Other business. Details are shown as follows:

ประเภทรายได้	2016		2017		2018	
	THB (million)	%	THB (million)	%	THB (million)	%
Production and distribution of biodiesel and glycerin (Including byproducts)						
• Sales revenue	4,901.94	47.17	4,486.43	38.75	3,511.15	30.39
• Cost of sales	4,486.26	43.17	4,273.76	36.91	3,299.44	28.56
• Gross profit	415.68	4.00	212.67	1.83	211.71	1.83
Distribution of electricity captured from solar and wind energy (included Adder) Distribution of electricity captured from solar and wind energy (included Adder)						
• Sales revenue	5,490.45	52.83	7,093.09	61.25	7,680.82	66.49
• Cost of sales	1,151.03	11.08	1,771.81	15.31	1,793.27	15.52
• Gross profit	4,339.42	41.75	5,321.28	45.94	5,887.55	50.97
Revenue type						
• Revenue from sales and services	-	-	-	-	359.99	3.12
• Cost of sales	-	-	-	-	575.58	4.98
• Gross profit	-	-	-	-	(215.60)	(1.87)
Total revenue *	10,392.39	100.00	11,579.52	100.00	11,551.96	100.00

Note : Total revenue * (Revenue generated from business operations excluding other income and accounting profit arising from business combination)

Sales revenue and sale cost, categorized by type of product during year 2016-2018

Products	2016			Gross profit margin (%)
	Revenue	Sales costs	Gross profit	
Biodiesel	4,721,130,409	4,386,286,539	334,843,870	7.09
Purified glycerin	169,492,163	80,406,265	89,085,898	52.56
Byproducts/ ¹	11,322,943	19,568,537	(8,245,594)	(72.82)
Electricity from solar power plants (included adders)	5,490,449,151	1,151,031,301	4,339,417,850	79.04

Note : /¹ During the improvement of production (Ration B100) which is reproduce raw material and by product to be main products, however, due to the lack of storage the product needed to sell as byproduct price.

Products	2017			Gross profit margin (%)
	Revenue	Sales costs	Gross profit	
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	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 (included adders)	1,115,304,379	431,472,998	683,831,381	61.31

Products	2018			Gross profit margin (%)
	Revenue	Sales costs	Gross profit	
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	20,760,799	30,924,619	(10,163,820)	(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

Sales expenses

The sale expenses of the Company and subsidiaries for the years 2016, 2017, and 2018 were THB 47.67 million, THB 58.61 million, and THB 69.19 million respectively, or 0.46%, 0.51% and 0.60% of total revenues, respectively.

In 2018, the sale expenses increased by THB 10.58 million (or 18.05%) mainly as compared with the year 2017 mainly due to 1) Recognition of selling expenses of AMITA of consolidated financial statements Due to AMITA's reclassification of this associate to be a subsidiary, while AMITA's incurred sales expenses for the year 2018 in the amount of THB 8.60 million and 2) Increase in selling expenses from the production and distribution of biodiesel.

Administrative expense

Administrative expense of the Company and subsidiaries in 2016, 2017, and 2018 were THB 410.24 million, THB 608.42 million, and THB 735.35 million representing 3.95%, 5.25%, and 6.37% of total revenue consecutively. The increase of administrative cost

1. The increase in employee expenses and remuneration of directors and executives which was increased by THB 109.59 million as compared to the same period last year due to the increase of employees and executives of EA and its subsidiaries in accordance with the investment expansion plan to new business
2. The increase in research and development (R&D) costs, including advertising and public relations expenses and activities, totaled THB 117.51 million, compared to the same period last year. Most of them are research and development (R&D) and new business promotion activities, especially the battery manufacturing business, charging stations and electric vehicles according to the Company's strategic plan. (Expenses of EA and its subsidiaries was THB 47.02 million, and AMITA was THB 70.49 million)
3. In addition, during the year 2018, some expenses of the Company were decreased from the previous year. This is due to during 2017, the subsidiary received restructuring and amended conditions of long-term loans with financial institutions in order to support investment in new projects. Therefore, expenses of the aforesaid activities incurred during 2017 and no such expenses incur during 2018

Earnings (loss) on exchange currency

On 31st December 2018, the Company and subsidiaries recorded the gain from the net exchange of THB 166.08 million, resulting the profit increased by THB 105.22 million compared to the same period of last year which incurred the net foreign exchange gain of THB 60.86 million. The significant increase 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 are some construction payables that traded in foreign currencies and the group Company received credit terms from the seller. However, at the end of the accounting period, the value of Thai Baht currency has been greatly appreciated resulting gain in foreign exchange.

Financial cost

During year 2016, 2017, and 2018, the financial cost of the Company and subsidiaries were THB 994.89 million, THB 1,184.32 million, and THB 1,086.43 million respectively, or 9.57%, 10.23% and 9.40% of total revenue respectively.

The decreasing in financial cost during 2018, as compared to the same period of last year, was due to the Company has negotiated to amend the key terms and condition of long-term loan agreement with the financial institution by reducing the interest rates from the floating rate of 3.78% – 4.23% to the fixed rate of 3.3% – 4.37%

Net profit and rate of net profit

Net profit (refer to the portion of the Company) of the Company and subsidiaries earned in 2016, 2017 and 2018 were THB 3,251.51 million, THB 3,817.45 million, and THB 4,975.21 million, representing or representing the net profit of 31.30%, 32.97%, and 43.81% of total revenue respectively. The continual growth of the net profit of the Company and subsidiaries were results of greater efficiency according to the policy of business expansion to focus on business which will generate high income, such as the production and distribution of electricity for which the group Company incurred the increase of revenue continuously from 90-MW solar power plant in Lampang in 2015 and 90-MW Phitsanulok in 2016, and 126-MW wind power plants in Nakhon Si Thammarat and Songkhla in the year 2017 respectively. And in 2018, the Company incurred accounting gain on a business combination due to reclassification of AMITA from an associate to be a subsidiary in the amount of THB 894.58 million

Return rate per shareholder

Return on equity of the Company and subsidiaries in year 2016, 2017 and 2018 were 32.68%, 29.22% and 29.55% respectively. Shareholder's equity (in part of the parent company) was THB 11,383.45million, THB 14,667.60 million, and THB 18,138.66 million respectively. The paid-up ordinary shares were THB 373 million, the premium on share were THB 3,680.22 million as are sult from listing in the MAI during the first quarter of 2013.

Financial status of the

Assets

Total assets of the Company and subsidiaries as of 31st December 2016, 2017 and 2018 were THB41,507.39 million, THB 44,530.42 million, and THB 59,207.59 million respectively. Details of significant assets are as follows:

- Deposit at financial institution used as collateral
As at 31 December of 2016, 2017, and 2018 deposits at financial institutions of the Company and subsidiaries amounting to THB 1,790.07 million, THB 100.97 million and THB 173.69 million respectively. In 2018, the deposits at financial institutions used as collateral was increased by THB 72.72 million or 72.03%. The significant increase was from deposits at financial institutions used as collateral amount in current assets was THB 43.99 million which was under AMITA that the Company just take the control in 2018, consequently, the aforesaid was in the consolidated financial statements.
- Trade accounts receivable and allowance for doubtful receivables
As at 31 December 2016, 2017 and 2018 the Company and subsidiaries had trade accounts receivable of THB 1,319.15 million, THB 1,706.91 million, and THB 1650.85 million or representing 3.18%, 3.83% and 2.79% of total assets respectively. In 2018, the trade account receivable has decreased due to the decrease of trade account receivable from business of producing and distributing of Biodiesel which was the result of sales price and sale volumes, were reduced.

However, if calculating the average collection period in 2016, 2017 and 2018, which was equal to 41.06 days, 47.04 days and 52.32 days, respectively, the debt collection period in 2018 was increased as a result from:

1. the consolidation of AMITA's accounts receivable into the consolidated financial statements, which AMITA has an average collection period of 81.09 days due to some AMITA's revenue generated from turnkey project, which normally has period to receive longer than the selling products
2. 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, while the short-term credit, such as revenues from sales of biodiesel which usually has a credit term of 15-30 days, was likely to decrease and impact to the average collection period, was higher.

• Other accounts receivable

Other account receivables of the Company and subsidiaries as of 31 December 2016, 2017 and 2018 were THB 585.26 million, THB 679.58 million, and THB 644.07 million respectively. Other account receivables included Revenue Department receivable, incoming purchase tax, goods deposit, advanced expenses, etc. The increase of other receivables as of 31 December 2018 was due to

1. The decrease the advance deposit of product. This was the result that the Company paid the advance payment for raw material of Biodiesel amounting of THB 68.20 million in order to avoid the fluctuation of raw material for producing
2. The decrease of other account receivable due to in 2017, the affiliated companies have outstanding accounts receivable of THB 95.66 million, which was due to the change of the contract to manage the wind power plant project which has already been called for payment in the year. The increase of the Revenue Department receivable of THB 118.96 million due to the purchase tax arising from the construction of the wind power project in Chaiyaphum which has not been commenced.

- **Inventories**

As of 31 December 2016, 2017 and 2018, the inventory of the Company and subsidiaries were THB 187.02 million, THB 127.94 million, and THB 329.96 million, representing 0.45%, 0.29%, and 0.56% of total assets respectively. The significant increase in inventories in 2018 was due to the consolidation of AMITA amount of THB 185.51 million into the consolidated financial statements due to reclassification of AMITA from an associate to be a subsidiary and reversal of fees for the reduction of the value of slow-moving products of raw materials in the amount of THB 6.49 million because of the Company used those products in production.

- **Property, plant and equipment, net**

As of 31 December 2016, the property, plant and equipment, net of Company and subsidiaries were THB 33,485.32 million or 80.67% of total assets. The continued to grow to THB 35,219.56 million in 2017 (31 December 2017) or 79.09%, and increase to THB 47,587.21 million in 2018 (31 December 2018) or 80.37% of total assets respectively, which summarized as follow:

Unit :THB million

Property, plant, and equipment	As of 31 Dec 2017	As of 31 Dec 2018
Property	1,077.92	1,083.44
Building / Buildings improvement	602.22	585.40
Machines, equipment, and instruments in the plants	973.66	1,184.77
Equipment and decorations of office and vehicle	79.84	63.65
Assets to be installed	1,981.81	15,569.72
Power plant of power supply and instruments used for power generation	30,504.11	29,100.23
Total	35,219.56	47,587.21

For the year 2018, the property, plant and equipment-net of the Company has increased by THB 12,367.65 million or 35.12%, mainly due to an increase in assets from the investment in a new wind power plant project at Chaiyaphum (Hanuman Project) under construction.

- **Net - intangible assets**

The intangible assets of the Company and subsidiaries as of 31 December 2016, 2017, and 2018 were THB 665.89 million, THB 977.16 million, and THB 1,941.13 million or 1.60%, 2.19%, and 3.28% of total asset respectively which consist of:

Type of Assets	As of 31 Dec 2017	As of 31 Dec 2018
Right to power purchase agreement	33.61	31.92
Right to use transmission line and substations		
• Solar Power plant in Lop Buri	11.77	11.17
• Solar Power plant in NakhonSawan	163.17	155.40
• Solar Power plant in Lampang	166.57	159.04
• Solar Power plant in Phitsanulok	251.66	240.82
• Wind power plant in Nakhon Si Thammarat continued to Songkla	339.35	325.44
Computer software	11.03	14.67
Patent	-	745.12
Brand	-	257.54
Total	977.16	1,941.13

In 2018, intangible assets – net, compared with the same period of the previous year, increased by THB 963.96 million or 98.65%, mainly due to the increase of patents and brand due to reclassification of AMITA from an associate to be a subsidiary on 11 January 2018, the Company had the substantive rights under the Law of the Republic of China (Taiwan) to call a shareholders' extraordinary meeting to appoint additional directors for Amita in order to have the number of director equals to 54.55% of the total number of directors of Amita, and major voting rights in Amita shareholders' meetings. The management therefore considers that the Company has control over Amita, and has presented an investment in Amita as an investment in the subsidiary on that date. Reclassification of investment in Amita from an associate to be a subsidiary is considered to be a business combination achieved without the transfer of consideration, in accordance with Thai Financial Reporting Standard 3 "Business Combination". Therefore, the Company measured previously held equity interest in Amita to fair value as at the date of obtaining control, and recognised any gains or losses arising from such re-measured in profit or loss, and the reversal of currency translation previously recognised in the other comprehensive income as expenses in the consolidated statement of comprehensive income for the year ended 31 December 2018.

• Goodwill

As of 31 December 2018, the goodwill of the group Company was THB 936.52 million or 1.58% of total assets due to reclassification of AMITA from an associate to a subsidiary

Liquidity

As of December 31, 2017 and 2018, the current assets of the Company and subsidiaries was THB7,022.28 million, and THB 8,150.13 million, representing 15.77% and 13.77% of total assets, respectively. The major current assets as of 31 December 2017 and 2018 are high quality and liquid assets, including cash and cash equivalents amounting to THB 4,505.65 million, and THB 5,478.57 million or 64.16%, and 67.22% of current assets, respectively, trade accounts receivable of THB 1,706.91 million, and THB 1,650.85 million, or 24.31%, and 20.26% of current assets respectively and the inventories of THB 127.94 million, and THB 329.96 million, representing 1.82% and 4.05% 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 of proportion of current assets against the proportion of current assets that will increase compared to the total assets.

As at 31 December of 2017 and 2018, the Company and its subsidiaries incurred the current liabilities of THB 2,587.01 million, and THB 12,502.57 million, representing 5.81% and 21.12% of total assets, respectively. The current liabilities of the Company in 2018 compared to the same period of the previous year increased by THB 9,915.56 million. The main reason was due to the increased assets payable for the wind power plant project under construction in the amount of THB 8,608.69 million and short-term loans in the form of bills of exchange increased by THB 935.00 million which was used as working capital of the Company as equity and financing for wind power plant projects that are under construction. This affected the proportion of current liabilities to total liabilities that increase from 8.69% in 2017 to 31.50% in 2018.

As above mention of the current assets and current liabilities, it effected to the Company the liquidity ratio was 1.73 times in 2016, 2.71 times in 2017, and 0.65 times in 2018. Liquidity ratios in 2018 was significantly decreased due to 1). The classification of debentures that will be due in 2019 amounting of THB 999.78 million was recorded as non-current liabilities, and 2). Payables for construction and purchase of assets increased by THB 8,608.69 million for the construction of wind power plant projects under construction causing short-term debt liabilities and affected to the increase of proportion of current liabilities to total liabilities.

Source of fund

Liabilities

Total liabilities of the Company and subsidiaries as of 31 December of 2016, 2017 and 2018, the Company and subsidiaries incurred total liabilities of THB 30,117.94 million, THB 29,786.80 million, and THB 39,689.97 million, representing 72.56%, 66.89% and 67.04% of total assets respectively. The details of liabilities, important items as follows:

● Short-term loan from the financial institutions

As of 31 December of 2016, 2017 and 2018, the Company and subsidiaries incurred the short-term loans from financial institutions equal to THB 946.49 million, THB 882.01 million, and THB 1,817.01 million, respectively, or equivalent to 2.28%, 1.98% and 3.07% of total assets, respectively. As of 31 December 2018, the short-term loans from financial institutions was increased due to the essential for working capital to be used as equity and financing for wind power plant projects in Chaiyaphum payables for purchase of assets.

As of 31 December of 2016, 2017 and 2018, the Company and subsidiaries incurred the assets payable of THB 135.65 million, THB 172.78 million, and THB 8,781.47 million, representing 0.33%, 0.39% and 14.83% of total assets, respectively. The value of assets payable as of 31 December 2018 was significantly increased from 2017 due to the increase in assets payable of wind power plant project under construction.

● Long-term loan from the financial institution

As of December 31, 2016, 2017 and 2018, the long-term loans from financial institutions (including the portion due within 1 year) of the Company and subsidiaries were THB 19,432.08 million, THB 18,818.59 million, and THB 19,406.52 million, or 46.81%, 42.27% and 32.78% of total assets, respectively.

● Retention for Constructions

As of 31 December of year 2017 and 2018, the retention for constructions of the Company and subsidiaries, both of short-term and long-term, were THB 522.31 million, and THB 5.43 million, representing 1.17%, and 0.01% of total assets. In the year 2018, the subsidiary company paid the said the retention to the creditors under the contract resulting the amount of retention for construction decreased significantly.

Shareholders' equity

As of 31 December 2016, 2017 and 2018, shareholder's equity of the Company and subsidiaries steadily increased to THB 11,389.45 million, THB 14,743.62 million, and THB 19,517.63 million, representing 25.74%, 27.44% and 33.11% of total asset respectively. The reasons is due to the increase of profit, consequently, the retained earnings of the Company has increased comparing to net profit of each year.

In 2016, the Annual General Meeting of Shareholders approved the payment of dividends to shareholders at the rate of THB 0.10 per share, totaling THB 373,000,000.00, paid from the operating results for the year 2015 from businesses under BOI privilege: at the rate of THB 0.05 per share and – Non- BOI businesses: at the rate of THB 0.05 per share

In 2016, the Annual General Meeting of Shareholders approved the payment of dividends to shareholders at the rate of THB 0.10 per share, totaling THB 373,000,000.00, paid from the operating results for the year 2015 from businesses under BOI privilege at the rate of THB 0.05 per share and Non – BOI businesses at the rate of THB 0.05 per share. In 2017, the Annual General Meeting of Shareholders resolved to approve the dividend payment to shareholders at the rate of THB 0.15 per share, totaling THB 559,500,000.00, paid from the operating results for the year 2016 from BOI businesses at a rate of THB 0.075 per share and from Non-BOI businesses at the rate of THB 0.075 per share. And in the year 2018, the general meeting of shareholders passed a resolution to approve the dividend payment to shareholders at the rate of THB 0.20 per share, totaling THB 746,000,000.00, paid from the retained earnings of Non-BOI businesses at the rate of THB 0.20 per share. Shareholders' equity as of 31 December of 2017 and 2018 present in other components of the equity equals to minus THB 20.75 million and minus THB 778.79 million respectively with details in each item as follows:

- In 2017, the Company paid the capital increased in a direct subsidiary, i.e. Energy Mahanakorn Co., Ltd., (EMN) a subsidiary (direct), with other investors acquiring the remaining shares in the amount of 5,000,000 shares at the price of THB 22 per share, or a total of THB 110 million (with a share premium of THB 12 per share, totaling THB 60 million). Such capital contributed to the Company's shareholding in EMN decreased from 99.99% of registered and paid-up capital to 66.67% of registered and paid-up capital. The Company recognized an increase in non-controlling interests of THB 20 million and recognized the premium of the said change in the investment amount THB 40 million in the list of other components of shareholders' equity
- During the year 2017 from investing in foreign companies, including the purchase of new shares and the purchase of additional shares from existing shareholders of AmitaTechnologies Inc. (a company listed on Emerging Stock Exchange of the Republic of China (Taiwan and the establishment of a joint venture Shenzhen Growatt Power Technology Co., td. in China, and recognized the share of other comprehensive loss from the conversion of financial statements in investments in associates and joint ventures totaling THB 13.80 million.

Year 2018

- There is an excess from the change in the shareholding proportion in the subsidiary resulting from the change in the shareholding proportion in the company EMN – a direct subsidiary. The the shareholders' meeting of EMN has approved the capital increase from the amount of THB 150 million – THB 200 million. The Company unsubscribed such shares and other shareholders as well as a subsidiary of the Company have subscribed 5,000,000 shares at a price between THB 45 – THB 100 per share, totaling THB 390 million (with the share premium during THB 35 and THB 90 per shares, respectively, totaling THB 340 million) The increase in the share capital of the Company in

EMN decreased from 66.67% of the registered and paid-up capital or 52.10% and 50.00% of registered and paid-up capital respectively. The group Company recognizes the increase in non-controlling interests of THB 196.20 million and recognizes premium from changing the proportion of such investment of THB 174.80 million in other components of shareholders' equity.

- There is a decrease from the portion of shareholding in subsidiary resulting from the investment in Amita Technologies Inc. on 18 April 2018, the Company paid for shares of Amita by proposing Voluntary Tender Offer of 9,698,020 ordinary shares at Taiwan Dollar 80 per share, totalling 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. The difference between the paid-up share value and the book value of approximately THB 693.90 million was recorded in the list of other components of shareholders' equity

On 29 November 2018, the Company paid for shares of Amita from the unsubscribed portion of non-controlling interest of 11,203,956 shares at Taiwan Dollar 28 per share, totalling Taiwan Dollar 313.71 million or equivalent to Baht 340.69 million. As a result, the Company's shareholding percentage increased from 69.19% to 77.21% of total registered and paid-up share capital of Amita. The difference between the value of the shares paid and the book value of approximately THB 175.79 million was recorded in the list of other components of the shareholders' equity

- Recognition of comprehensive loss from re-measurement of contingent liabilities, net of deferred tax, employee benefits of the group Company recognized other components of shareholders' equity of approximately THB 15 million

- From investments in subsidiary and foreign joint ventures (AmitaTechnonologies Inc. and Shenzhen Growatt Power Technology Co., Ltd), the Company has to recognize other comprehensive income from joint ventures and the difference of exchange rates from the conversion of financial statements during the year to a total of THB 47.55 million

For debt to equity ratio of the Company subsidiaries as at 31 December of 2015, 2016 and 2017, equal to 2.88 times, 2.64 times and 2.02 times, respectively. The changes in debt to equity ratio shareholders in the year 2016 and 2017 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 2016 and for the power plants that have been commercially operational with the gradual loan's principal payment, causing the overall debt liability to decrease, while the Company incurred profit continuously, resulting in increased retained earnings and shareholders' equity. Consequently, the debt to equity ratio decrease continuously from 2016 to 2017.

Cash flow

The Company and its subsidiaries incurred net cash flows from operating activities in the fiscal year 2016, 2017 and 2018, equal to THB 4,951.46 million, THB 6,221.38 million and THB 7,192.71 million respectively. The increase in cash flows from operating activities was a result from continuous growth which is the result of the sale of electricity in the part of solar power plants and wind power plants.

For the net cash flow derived (used) for investment in the fiscal year 2016, 2017 and 2018, the amount used was THB 7,834.94 million, THB 2,122.80 million, THB5,566.72 million respectively. The amount spent for investment in year 2017 was significantly reduced from 2016 due to during the year 2016, the group Company was in the process of construction of a solar power plant project in Phitsanulok and wind power plant projects Nakhon Si Thammarat and Songkhla. Therefore, there is a large amount of cash flow for investment in assets of the aforesaid power plant projects which the construction of the solar power plant project in Phitsanulok was completed in 2016 and the wind power plant project Nakhon Si Thammarat and Songkhla was completed in

2017 and by the end of 2017, until 2018, the group Company has invested in the construction of a new wind power plant project in Chaiyaphum. (Hanuman Project) resulting in increased cash flow for investment in 2018 For financing activities in fiscal year 2017 and 2018, cash flow from financing is equal to (THB 2,265.67 million) and (THB 598.33 million. Cash flow from financing activities used in 2018 is repay principal, long-term loan of the subsidiary and annual dividend payment The cash flow from various activities for the year ended 31 December of 2017 and 2018 can be summarized as follows:

Unit : THB million

Cash flows from financing activities	2017	2018
Net cash received from (used in) operating activities	6,221.38	7,192.71
Net cash received from (used in) operating activities	(2,122.80)	(5,566.72)
Cash ow received from (used in) operating activities	(2,265.67)	(598.33)
Increase (decrease) of net cash	1,832.91	1,027.66
Cash and cash equivalents at beginning of year	2,672.74	4,505.65
Exchange rate impact	-	(54.74)
Cash and cash equivalents at ending of year	4,505.65	5,478.57

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 2018 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 Co., Ltd.



Mr. Somchainuk Engrakul
Chairman of the Board of Directors
27 February 2019

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 2018, 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 2018;
- 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 matters

Key audit matters are those matters that, in my professional judgment, were of most significance in my audit of the consolidated and separate financial statements of the current period. I determine these key audit matters. 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.

Business combination achieved without the transfer of consideration

Refer to note 12.2 - Investment in subsidiaries

The Company had the substantive rights under the Law of the Republic of China (Taiwan) to call a shareholders' extraordinary meeting to appoint additional directors of Amita in order to have the number of directors based on the Company's shareholding percentage and also have major voting rights in Amita shareholders' meetings. The management therefore considered that the Company has control over Amita, and has presented an investment in Amita as an investment in a subsidiary. Reclassification of an investment in Amita from an associate to be a subsidiary is a business combination achieved without the transfer of consideration in accordance with Thai Financial Reporting Standard 3 "Business Combination". This accounting standard required the management to measure the carrying value of previously held equity interest in Amita to fair value as at the date of obtaining control and recognised any gains or losses arising from such re-measured in profit or loss. The management is also required to determine fair value of net identifiable assets acquired.

The management determined that the fair value of previously held equity interest in Amita is Baht 1,821.69 million which resulted in an accounting gain on a business combination achieved without the transfer of consideration of Baht 894.58 million and the fair value of the net identifiable assets acquired as of the date of obtaining control is Baht 1,694.91 million, which mainly comprised Baht 805.78 million relating to patents and Baht 277.87 million relating to the brand. The fair value of the liabilities assumed is Baht 370.13 million. The valuation of net identifiable assets acquired was performed as a part of the purchase price allocation. This resulted in goodwill of Baht 962.55 million.

I performed the following procedures to obtain evidence of the management's determination of the fair value of previously held equity interest in Amita based on its fair value as at the date of obtaining control and fair value of net identifiable assets acquired:

- Reviewed management's assessment that the change in classification of investment in Amita should be accounted for as an investment in a subsidiary from a business combination achieved without the transfer of consideration.
- Assessed the appropriateness of the determination of fair value of previously held equity interest in Amita based on its fair value as at the date of obtaining control and tested the calculation of accounting gain on a business combination achieved without the transfer of consideration.
- Assessed the appropriateness of the identifiable assets acquired and the liabilities assumed at the date of obtaining control and evaluated the management's procedures for determining the fair values of the net identifiable assets acquired.
- Tested the calculation of fair values of the patents and brand and also challenged management's judgement in relation to the following:
 - the assumptions used in the fair value estimation of the patents and brand which comprised revenue growth rates and royalty rates, and also compared these assumptions to the available public information, and
 - the discounted rate by assessing the model of the cost of capital and other inputs into the model.
- Assessed the appropriateness of and tested the calculation of goodwill.

Key audit matter	How my audit addressed the key audit matter
<p>I focused on the determination of fair value of previously held equity interest in Amita, the accounting gain on a business combination achieved without the transfer of consideration, the fair value of patent and brand and goodwill balance because the valuation methodology and assumptions used in the financial model involved significant judgment made by the management. Key assumptions used for the valuation of patents and brand included revenue growth rates, royalty rates and discounted rates.</p>	<p>As a result, I determined that the assessment of the classification of the investment was appropriately performed in accordance with the definition and requirement set out in Thai Financial Reporting Standard 3. The methodologies and assumptions used to identify the fair values of previously held equity interest in Amita, patents and brand and the calculation of accounting gain on a business combination achieved without the transfer of consideration and goodwill were reasonable and in accordance with the accounting practices for the purchase price allocation.</p>
<p>Impairment assessments of goodwill</p> <p>Refer to note 4 - Critical accounting estimates, assumption and judgements and Note 15 - Goodwill.</p> <p>As at 31 December 2018, the Group has goodwill of Baht 936.52 million, which represents 1.58% 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 2018 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"> • Assessed the appropriateness of management's identification of the Group's CGUs. • 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. • 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. • Assessed the reasonableness of the business plan by comparing the plans of 2018 and 2017 with actual results. • 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. • 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. <p>As a result, I determined that the key assumptions used by the management are within a reasonable range and none of the items noted above resulted in a change to the impairment testing by the management.</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
 27 February 2019

Energy Absolute Public Company Limited
Statement of Financial Position
As at 31 December 2018

	Notes	Consolidated		Separate	
		2018	2017	2018	2017
		Baht	Baht	Baht	Baht
Assets					
Current assets					
Cash and cash equivalents	7	5,478,570,449	4,505,653,829	544,675,310	1,241,254,489
Deposits at financial institutions used as collateral	8	43,993,427	-	-	-
Trade accounts receivable, net	9	1,650,849,986	1,706,908,038	190,695,815	312,092,298
Other accounts receivable	10	644,064,022	679,584,496	313,274,817	358,470,976
Short-term loans to other parties and related parties	35.4	2,692,550	2,192,550	2,234,142,550	1,319,842,550
Inventories, net	11	329,962,040	127,943,304	127,114,652	125,029,587
Total current assets		8,150,132,474	7,022,282,217	3,409,903,144	3,356,689,900
Non-current assets					
Deposits at financial institutions used as collateral	8	129,701,454	100,968,715	100,770,954	100,968,715
Advance payment for purchase of investment in a joint venture	12.4	34,531,200	-	34,531,200	-
Investments in subsidiaries	12	1	1	22,538,018,916	16,647,816,001
Investment in an associate	12	-	916,481,064	-	987,180,248
Investment in a joint venture	12	-	3,379,988	8,754,240	8,754,240
Long-term loans to other parties and related parties	35.4	4,846,250	-	-	66,900,000
Investment property	13	32,604,967	34,705,517	1,034,895,232	1,034,525,795
Property, plant and equipment, net	14	47,587,211,932	35,219,562,610	422,987,591	504,337,627
Goodwill	15	936,523,595	-	-	-
Intangible assets, net	16	1,941,126,718	977,162,453	10,707,132	10,180,387
Deferred tax assets, net	17	64,706,542	68,776,389	8,602,469	3,962,898
Other non-current assets	18	326,208,268	187,100,008	21,289,682	16,247,665
Total non-current assets		51,057,460,927	37,508,136,745	24,180,557,416	19,380,873,576
Total assets		59,207,593,401	44,530,418,962	27,590,460,560	22,737,563,476

The notes to the consolidated and separate financial statements on pages 15 to 81 are an integral part of these financial statements.

Energy Absolute Public Company Limited
Statement of Financial Position
As at 31 December 2018

	Notes	Consolidated		Separate	
		2018	2017	2018	2017
		Baht	Baht	Baht	Baht
Liabilities and equity					
Current liabilities					
Short-term loans from financial institutions	19	1,817,015,028	882,009,880	1,814,602,635	882,009,880
Trade accounts payable		150,180,319	91,431,745	71,819,649	91,418,977
Other accounts payable	20	460,548,765	491,684,090	143,096,418	151,702,890
Construction payables and payables for purchase of assets		8,781,472,635	172,784,081	-	8,463,700
Short-term loans from related parties	35.5	-	-	494,000,000	54,000,000
Current portion of long-term loans from financial institutions, net	21	264,048,006	429,750,000	-	-
Current portion of finance lease liabilities, net		622,074	835,590	-	-
Current portion of debenture, net	22	999,777,628	-	999,777,628	-
Income tax payable		28,647,591	71,469	-	-
Retention for constructions		258,365	518,439,046	-	-
Total current liabilities		12,502,570,411	2,587,005,901	3,523,296,330	1,187,595,447
Non-current liabilities					
Long-term loans from financial institutions, net	21	19,142,473,951	18,388,840,056	789,875,817	-
Debentures, net	22	6,996,144,829	7,993,663,630	6,996,144,829	7,993,663,630
Retention for constructions		5,165,508	3,868,469	-	-
Finance lease liabilities, net		6,401,676	3,811,434	-	-
Deferred tax liabilities, net	17	200,531,424	-	-	-
Retirement benefit obligations		33,888,357	7,711,625	30,913,050	5,054,877
Advance receipts for land rental	35.6	-	-	546,158,723	573,012,298
Provision for decommissioning costs	23	799,685,112	801,897,106	1,592,750	1,592,750
Other non-current liabilities		3,106,747	-	1,546,401	-
Total non-current liabilities		27,187,397,604	27,199,792,320	8,366,231,570	8,573,323,555
Total liabilities		39,689,968,015	29,786,798,221	11,889,527,900	9,760,919,002

The notes to the consolidated and separate financial statements on pages 15 to 81 are an integral part of these financial statements.

Energy Absolute Public Company Limited
Statement of Financial Position
As at 31 December 2018

	Note	Consolidated		Separate	
		2018	2017	2018	2017
		Baht	Baht	Baht	Baht
Liabilities and equity (continued)					
Equity					
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		14,826,639,938	10,597,429,043	11,626,023,769	8,885,728,474
Other components of equity		(778,892,873)	(20,746,219)	(16,007,109)	-
Equity attributable to owners					
of the parent		18,138,663,065	14,667,598,824	15,700,932,660	12,976,644,474
Non-controlling interests		1,378,962,321	76,021,917	-	-
Total equity		19,517,625,386	14,743,620,741	15,700,932,660	12,976,644,474
Total liabilities and equity		59,207,593,401	44,530,418,962	27,590,460,560	22,737,563,476

The notes to the consolidated and separate financial statements on pages 15 to 81 are an integral part of these financial statements.

Energy Absolute Public Company Limited
Statement of Comprehensive Income
For the year ended 31 December 2018

		Consolidated		Separate	
		2018	2017	2018	2017
	Notes	Baht	Baht	Baht	Baht
Revenue from sales and services	25	6,607,725,110	6,908,581,366	3,511,078,025	4,486,429,993
Revenue from subsidy for adders	26	4,944,224,099	4,670,936,269	-	-
Dividend income	12.2	-	-	3,934,463,266	4,386,628,505
Other income	27	43,693,177	93,983,851	125,192,598	112,611,172
Accounting gain on a business combination achieved without the transfer of consideration, net	12.1.1	894,576,989	-	-	-
Total revenue		12,490,219,375	11,673,501,486	7,570,733,889	8,985,669,670
Cost of sales and services		(5,668,289,723)	(6,045,566,707)	(3,299,443,226)	(4,273,759,855)
Selling expenses		(69,194,642)	(58,610,100)	(54,645,427)	(58,610,100)
Administrative expenses		(735,345,044)	(608,422,006)	(402,196,332)	(347,349,417)
Currency exchange gains (losses), net		166,076,971	60,859,420	(7,910,701)	1,684,389
Finance costs	28	(1,086,431,430)	(1,184,324,105)	(320,880,701)	(294,003,986)
Total expense		(7,393,183,868)	(7,836,063,498)	(4,085,076,387)	(4,972,038,969)
Share of loss from investments in an associate and a joint venture	12	(6,306,673)	(62,272,139)	-	-
Profit before income tax		5,090,728,834	3,775,165,849	3,485,657,502	4,013,630,701
Income tax	30	(29,352,467)	42,300,429	637,793	1,718,981
Profit for the year		5,061,376,367	3,817,466,278	3,486,295,295	4,015,349,682
Other comprehensive income (expense)					
Item that will not be reclassified to profit or loss					
- Remeasurements of post-employment benefit obligations		(19,622,933)	-	(20,008,887)	-
- Income tax on items that will not be reclassified subsequently to profit or loss		3,758,242	-	4,001,778	-
Total items that will not be reclassified subsequently to profit or loss		(15,864,691)	-	(16,007,109)	-
Item that will be reclassified to profit or loss					
- Share of other comprehensive expense of an associate and a joint venture accounted for using the equity method	12	-	(13,801,297)	-	-
- Currency transaction differences		(95,051,482)	-	-	-
- Reclassification of currency transaction differences to profit and loss	12.1.1	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		(79,068,075)	(13,801,297)	-	-
Other comprehensive expense for the period, net of tax		(94,932,766)	(13,801,297)	(16,007,109)	-
Total comprehensive income for the year		4,966,443,601	3,803,664,981	3,470,288,186	4,015,349,682
Profit attributable to:					
- Owners of the parent		4,975,210,895	3,817,450,120	3,486,295,295	4,015,349,682
- Non-controlling interests		86,165,472	16,158	-	-
		5,061,376,367	3,817,466,278	3,486,295,295	4,015,349,682
Total comprehensive income attributable to:					
- Owners of the parent		4,848,755,528	3,803,648,823	3,470,288,186	4,015,349,682
- Non-controlling interests		117,688,073	16,158	-	-
		4,966,443,601	3,803,664,981	3,470,288,186	4,015,349,682
Earnings per share					
Basic earnings per share	31	1.33	1.02	0.93	1.08

The notes to the consolidated and separate financial statements on pages 15 to 81 are an integral part of these financial statements.

Energy Absolute Public Company Limited

Statement of Changes in Equity

For the year ended 31 December 2018

Attributable to owners of the parent														Consolidated
Note	Retained earnings				Other components of equity									
	Issued and paid-up share capital	Premium on share capital	Legal reserve	Unappropriated	Surplus (Discount) from changes in shareholding interests in subsidiaries	Other comprehensive income (expense)			Total other components of equity	Total owners of the parent	Non-controlling interests	Total equity		
						Baht	Baht	Baht					Baht	
Opening balance as at 1 January 2017	373,000,000	3,680,616,000	37,300,000	7,339,478,923	(46,944,910)	-	-	-	-	(46,944,910)	11,383,450,013	6,005,567	11,389,455,580	
Changes in equity for the year														
Share issued to non-controlling interests in a subsidiary	-	-	-	-	-	-	-	-	-	-	-	70,000,192	70,000,192	
Dividend paid	-	-	-	(559,500,000)	-	-	-	-	-	-	(559,500,000)	-	(559,500,000)	
Surplus from changes in portion of shares held by the Company in subsidiaries	-	-	-	-	39,999,988	-	-	-	-	39,999,988	39,999,988	-	39,999,988	
Total comprehensive income (expense) for the year	-	-	-	3,817,450,120	-	-	-	-	(13,801,297)	(13,801,297)	3,803,648,823	16,158	3,803,664,981	
Closing balance as at 31 December 2017	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	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	
Changes in equity for the year														
Changes in shareholding interests in subsidiaries	12.1.1	-	-	-	(519,105,409)	-	-	-	-	(519,105,409)	(519,105,409)	45,989,758	(473,115,651)	
Dividend paid	32	-	-	(746,000,000)	-	-	-	-	-	-	(746,000,000)	-	(746,000,000)	
Increased capital of subsidiaries	12.1.1	-	-	-	(175,796,662)	-	-	-	-	(175,796,662)	(175,796,662)	345,902,850	170,106,188	
Share issued to non-controlling interests in a subsidiary	-	-	-	-	-	-	-	-	-	-	-	20,810,949	20,810,949	
Reclassification of investment on a business combination achieved without the transfer of consideration, net	-	-	-	-	-	-	-	-	-	-	-	-	-	
Total comprehensive income (expense) for the year	-	-	-	4,975,210,895	-	(15,699,109)	(63,358,100)	15,812,626	-	(63,244,583)	4,911,966,312	54,477,289	835,759,558	
Closing balance as at 31 December 2018	373,000,000	3,680,616,000	37,300,000	14,826,639,938	(701,846,993)	(15,699,109)	(63,358,100)	2,011,329	(778,892,873)	18,138,663,065	1,378,962,321	19,517,625,386	4,966,443,601	

The notes to the consolidated and separate financial statements on pages 15 to 81 are an integral part of these financial statements.

Energy Absolute Public Company Limited
Statement of Changes in Equity
For the year ended 31 December 2018

Separate											
	Note	Retained earnings			Other components of equity				Total equity		
		Issued and paid-up share capital	Premium on share capital	Legal reserve	Unappropriated	Other comprehensive expense		Total other components of equity			
						Baht	Baht			Baht	Baht
Opening balance as at 1 January 2017		373,000,000	3,680,616,000	37,300,000	5,429,878,792	-	-	-	9,520,794,792		
Changes in equity for the year											
Dividend paid	32	-	-	-	(559,500,000)	-	-	-	(559,500,000)		
Total comprehensive income for the year		-	-	-	4,015,349,682	-	-	-	4,015,349,682		
Closing balance as at 31 December 2017		373,000,000	3,680,616,000	37,300,000	8,885,728,474	-	-	-	12,976,644,474		
Opening balance as at 1 January 2018		373,000,000	3,680,616,000	37,300,000	8,885,728,474	-	-	-	12,976,644,474		
Changes in equity for the year											
Dividend paid	32	-	-	-	(746,000,000)	-	-	-	(746,000,000)		
Total comprehensive income (expense) for the year		-	-	-	3,486,295,295	(16,007,109)	(16,007,109)	(16,007,109)	3,470,288,186		
Closing balance as at 31 December 2018		373,000,000	3,680,616,000	37,300,000	11,626,023,769	(16,007,109)	(16,007,109)	(16,007,109)	15,700,932,660		

The notes to the consolidated and separate financial statements on pages 15 to 81 are an integral part of these financial statements.

Energy Absolute Public Company Limited
Statement of Cash Flows
For the year ended 31 December 2018

	Notes	Consolidated		Separate	
		2018	2017	2018	2017
		Baht	Baht	Baht	Baht
Cash flows from operating activities					
Profit before income tax for the year		5,090,728,834	3,775,165,849	3,485,657,502	4,013,630,701
Adjustments to reconcile profit before income tax to net cash provided by operations:					
- Depreciation and amortisation		1,833,043,368	1,527,806,340	98,930,903	96,198,063
- Allowance for doubtful receivables		5,229,556	-	-	-
- Interest income		(17,527,632)	(19,105,674)	(3,828,935)	(41,961,302)
- Dividend income	12.2	-	-	(3,934,463,266)	(4,386,628,505)
- Finance costs		1,086,431,430	1,184,324,105	320,880,701	294,003,986
- Retirement benefit expenses		10,705,852	1,199,587	9,851,064	869,510
- Share-based payments		13,587	-	-	-
- Share of loss from investments in an associate and a joint venture	12.1	6,306,673	62,272,139	-	-
- Accounting gains on a business combination achieved without the transfer of consideration, net	12.1.1	(894,576,989)	-	-	-
- Gains on disposal of investment property		-	-	(100,000)	-
- Losses (gains) on disposal of land and equipment		807,080	95,976	-	(969,819)
- Losses on write-off of equipment		43,679,309	-	-	-
- Losses on exchange of assets		3,383,536	-	-	-
- (Reversal) allowance for decrease in value of inventories	11	(4,173,370)	15,450,791	(6,495,147)	15,450,791
- Unrealised losses (gains) on exchange rates		(132,580,665)	22,872,687	369,568	-
- Amortisation of advance receipts for land rental from related parties	35.6	-	-	(26,853,575)	(56,733,306)
Cash flows before changes in operating assets and liabilities		7,031,470,569	6,570,081,800	(56,051,185)	(66,139,881)
Change in operating assets and liabilities:					
- Trade accounts receivable		90,775,766	(387,757,624)	121,396,483	(41,223,674)
- Other accounts receivable		276,356,976	(94,267,088)	45,188,283	(54,762,720)
- Inventories		(109,571,905)	43,628,946	4,410,082	37,197,173
- Other non-current assets		(35,057,799)	(35,868,688)	165,124	111,974
- Trade accounts payable		10,703,808	29,814,044	(19,599,328)	30,052,200
- Other accounts payable		(29,426,065)	104,613,391	(17,192,366)	3,839,571
- Other non-current liabilities		1,546,401	-	1,546,401	-
Cash generated from (used in) operations		7,236,797,751	6,230,244,781	79,863,494	(90,925,357)
- Income tax paid		(44,083,210)	(8,861,609)	(9,208,919)	-
Net cash receipts from (payments in) operating activities		7,192,714,541	6,221,383,172	70,654,575	(90,925,357)

The notes to the consolidated and separate financial statements on pages 15 to 81 are an integral part of these financial statements.

Energy Absolute Public Company Limited
Statement of Cash Flows
For the year ended 31 December 2018

	Notes	Consolidated		Separate	
		2018	2017	2018	2017
		Baht	Baht	Baht	Baht
Cash flows from investing activities					
Deposits at financial institutions used as collateral		(72,726,166)	1,689,097,298	197,761	(110,035)
Proceeds from short-term loans to related parties	35.4	-	-	957,500,000	361,500,000
Payments for short-term loans to related parties	35.4	-	-	(1,839,900,000)	(1,080,150,000)
Payment for short-term loans to other party		(500,000)	-	-	
Proceeds from long-term loans to related parties	35.4	-	-	35,000,000	4,500,000
Payments for long-term loans to third party		(4,846,250)	-	-	-
Proceeds from a business combination achieved without the transfer of consideration, net	12.1.1	305,617,991	-	-	-
Payments for investments in subsidiaries	12.1	-	-	(4,903,022,667)	(1,664,136,650)
Payments for investment in an associate		-	(301,271,509)	-	(301,271,509)
Payments for investment in a joint venture		-	(8,754,240)	-	(8,754,240)
Advance payment for purchase of investment in a joint venture	12.4	(34,531,200)	-	(34,531,200)	-
Payments for purchase of investment property		-	(241,072)	(5,519,987)	(76,152,457)
Proceeds from disposals of investment property		-	-	3,150,000	-
Payments for purchase of property, plant and equipment		(5,698,716,984)	(3,378,788,874)	(22,464,624)	(38,861,940)
Proceeds from disposals of property, plant and equipment		1,775,701	3,289,627	-	3,952,728
Payments for purchase of intangible assets		(4,719,790)	(4,358,430)	(2,006,138)	(1,744,058)
Proceeds from dividend income		-	-	3,934,463,266	4,386,628,505
Proceeds from interest income		17,586,192	19,046,492	3,828,935	11,354,782
Interest paid capitalised in property, plant and equipment		(75,657,872)	(140,818,834)	-	-
Net cash receipts from (payments in) investing activities		(5,566,718,378)	(2,122,799,542)	(1,873,304,654)	1,596,755,126
Cash flows from financing activities					
Proceeds from short-term loans from financial institutions		5,522,037,770	3,138,460,872	5,522,037,770	3,138,460,872
Payments for short-term loans from financial institutions		(4,628,246,402)	(3,202,941,864)	(4,589,445,015)	(3,202,941,864)
Proceeds from long-term loans from financial institutions	21.1	802,445,924	247,088,876	789,534,800	-
Payments for long-term loans from financial institutions	21.1	(264,434,986)	(916,761,646)	-	-
Proceeds from short-term loans from related parties		-	-	1,190,000,000	-
Payments for short-term loans from related parties		-	-	(750,000,000)	-
Payments for finance leases liabilities		(13,190,789)	(7,196,180)	-	(1,723,092)
Proceeds from paid-up common shares of a subsidiary from non-controlling interest		596,244,695	110,000,180	-	-
Payment for paid-up common shares of a subsidiary from non-controlling interest	12.1.1	(844,115,661)	-	-	-
Dividend paid		(745,950,202)	(558,907,052)	(745,950,202)	(558,907,052)
Interest paid		(1,023,124,278)	(1,075,415,063)	(309,744,761)	(292,026,949)
Net cash receipts from (payments in) financing activities		(598,333,929)	(2,265,671,877)	1,106,432,592	(917,138,085)

The notes to the consolidated and separate financial statements on pages 15 to 81 are an integral part of these financial statements.

Energy Absolute Public Company Limited
Statement of Cash Flows
For the year ended 31 December 2018

	Note	Consolidated		Separate	
		2018	2017	2018	2017
		Baht	Baht	Baht	Baht
Net increase in cash and cash equivalents		1,027,662,234	1,832,911,753	(696,217,487)	588,691,684
Beginning balance		4,505,653,829	2,672,742,076	1,241,254,489	652,562,805
Currency transaction differences on cash and cash equivalents		(54,745,614)	-	(361,692)	-
Ending balance		5,478,570,449	4,505,653,829	544,675,310	1,241,254,489
Cash and cash equivalents are made up as follows:					
- Cash on hand and deposits at financial institutions - maturities within three months	7	5,478,570,449	4,505,653,829	544,675,310	1,241,254,489
		5,478,570,449	4,505,653,829	544,675,310	1,241,254,489
Non-cash transactions					
- Changes in construction payables and payables for purchase of assets (including retention for constructions)		8,091,804,912	(421,677,828)	(8,463,700)	5,693,285
- Purchase of property, plant and equipment under finance lease agreements		-	3,734,300	-	-
- Decommissioning costs		507,298	480,457,180	-	-
- Transfer cost of construction of high voltage station to right to use transmission line		-	345,594,827	-	-
- Acquisition of assets from exchanges		62,822,258	-	-	-
- Reclassification of advance payment for purchase of investment to be investment in an associate		-	685,908,739	-	685,908,739
- 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 81 are an integral part of these financial statements.

Energy Absolute Public Company Limited

Notes to the Consolidated and Separate Financial Statements

For the year ended 31 December 2018

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 and operating renewable power plants, and developing, manufacturing and distributing battery.

These consolidated and separate financial statements were authorised for issue by the Board of Directors on 27 February 2019.

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 generally accepted accounting principles under the Accounting Act B.E. 2543, being those Thai Accounting Standards issued under the Accounting Profession Act B.E. 2547, and the financial reporting requirements of the Securities and Exchange Commission 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 accounting policies below.

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 and to disclose the areas involving a higher degree of judgement or complexity, or areas where assumptions and estimates are significant to the financial statements as disclosed in Note 4.

An English version of the consolidated and separate financial statements has 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 Revised financial reporting standards and accounting standards and related interpretations (collectively “the accounting standards”)

2.2.1 The accounting standards are effective for accounting periods beginning on or after 1 January 2018

The Group adopted the accounting standards, which are effective for accounting period beginning on or after 1 January 2018 and relevant to the Group. There is no significant impact to the financial statements being present from the adoption of those standards by the Group.

2.2.2 New financial reporting standard is effective for annual periods beginning on or after 1 January 2019. The Group has not yet adopted this standard.

Thai Financial Reporting Standard (TFRS) 15 “Revenue from contracts with customers” provides the requirements for the recognition of revenue. This standard will supersede the following standards:

TAS 11 (revised 2017)	Construction Contracts
TAS 18 (revised 2017)	Revenue
TSIC 31 (revised 2017)	Revenue - Barter Transactions Involving Advertising Services
TFRIC 13 (revised 2017)	Customer Loyalty Programmes
TFRIC 15 (revised 2017)	Agreements for the Construction of Real Estate
TFRIC 18 (revised 2017)	Transfers of Assets from Customers

2 Accounting policies (continued)

2.2 Revised financial reporting standards and accounting standards and related interpretations (collectively “the accounting standards”) (continued)

2.2.2 New financial reporting standard is effective for annual periods beginning on or after 1 January 2019. The Group has not yet adopted this standard. (continued)

The new standard is based on the principle that revenue is recognised when control of a good or service transfers to a customer, so the notion of control replaces the existing notion of risks and rewards.

An entity recognises revenue in accordance with that core principle by applying the following steps:

- 1) Identify the contract(s) with a customer
- 2) Identify the performance obligations in the contract
- 3) Determine the transaction price
- 4) Allocate the transaction price to the performance obligations in the contract
- 5) Recognise revenue when (or as) the entity satisfies a performance obligation

Key changes to current practice are:

- Any bundled goods or services that are distinct must be separately recognised, and any discounts or rebates on the contract price must generally be allocated to the separate elements
- Revenue may be recognised earlier than under current standards if the consideration varies for any reasons (such as for incentives, rebates, performance fees, royalties, success of an outcome etc) - minimum amounts must be recognised if they are not at significant risk of reversal
- The point at which revenue is able to be recognised may shift: some revenue which is currently recognised at a point in time at the end of a contract may have to be recognised over the contract term and vice versa
- There are new specific rules on licenses, warranties, non-refundable upfront fees and, consignment arrangements
- As with any new standard, there are also increased disclosures.

The Group will have the choice to apply this standard retrospectively in accordance with TAS 8 ‘Accounting Policies’, Changes in Accounting Estimates and Errors, subject to the expedients or retrospectively with the cumulative effect recognised as an adjustment to the opening balance of retained earnings of the annual reporting period, which includes the date of initial application with additional disclosures. The Group’s management is currently assessing the impact of initial adoption of this standard.

2.2.3 Revised financial reporting standards are effect for annual periods beginning on or after 1 January 2019 and are relevant to the Group. The Group has not yet adopt these standards.

TFRS 2 (revised 2018)	Share-based Payment
TFRS 4 (revised 2018)	Insurance Contracts
TAS 28 (revised 2018)	Investments in Associates and Joint Ventures
TAS 40 (revised 2018)	Investment Property
TFRIC 22	Foreign Currency Transactions and Advance Consideration

TFRS 2 (revised 2018) “Share-based Payment”, the amendments clarify;

- The measurement basis for cash-settled share-based payments, vesting conditions, other than market conditions, shall not be taken into account when estimating the fair value of the cash-settled share-based payment at the measurement date. Instead, vesting conditions, other than market conditions, shall be taken into account by adjusting the number of awards included in the measurement of the liability arising from the transaction.
- Where an employer is obliged to withhold an amount for the employee’s tax obligation associated with a share-based payment and pay that amount to the tax authority, the whole award will be treated as if it was equity-settled provided it would have been equity-settled without the net settlement feature, and
- The accounting for modifications that change an award from cash-settled to equity-settled.

TFRS 4 has been amended to provide insurance companies an optional exemption from compliance with TFRS 9 and TFRS 7. The exemption is temporarily effective and not mandatory. Entities who choose to use the exemption must follow the ‘financial instruments and disclosure for insurance companies’ accounting guidelines to be issued by the Federation of Accounting Professions (upon announcement) until TFRS 17 becomes effective.

2 Accounting policies (continued)

2.2 Revised financial reporting standards and accounting standards and related interpretations (collectively “the accounting standards”) (continued)

2.2.3 Revised financial reporting standards are effect for annual periods beginning on or after 1 January 2019 and are relevant to the Group. The Group has not yet adopt these standards. (continued)

TAS 28 (revised 2018) “Investments in Associates and Joint Ventures”, the amendment clarifies that the election by venture capital organisations, mutual funds, unit trusts and similar entities to measure investments in associates or joint ventures at fair value through profit or loss should be made separately for each associate or joint venture at initial recognition.

TAS 40 (revised 2018) “Investment Property”, the amendments clarify that transfers to, or from, investment property can only be made if there has been a change in use that is supported by evidence. A change in use occurs when the property meets, or ceases to meet, the definition of investment property. A change in intention alone is not sufficient to support a transfer.

The TFRIC 22 interpretation provides guidance for determining the exchange rate to be used on the initial recognition of a related asset, expense or income where an entity pays or receives an advance consideration in a foreign currency. The interpretation requires an entity to use the exchange rate at the date on which an entity recognises the non-monetary assets, such as prepayments and advances, or non-monetary liability, such as deferred income arising from the advance consideration. If there are multiple advance payments or receipts of payments, the exchange rate is to be used on the date when each non-monetary asset or liability is recognised.

The Group’s management is currently assessing the impact of initial adoption of these standards.

2.2.4 The Group of financial instruments reporting standards are effective for annual periods beginning on or after 1 January 2020. The Group has not yet adopted these standards.

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

The above new standards and interpretations will supersede the following standards:

TAS 101	Bad and Doubtful Debts
TAS 103	Disclosures in the Financial Statements of Bank and Similar Financial Institutions
TAS 104	Accounting for Troubled Debt Restructuring
TAS 105	Accounting for Investment in Debts and Equity securities
TAS 106	Accounting for Investment Companies
TAS 107	Financial Instruments: Disclosure and Presentation

TAS 32 “Financial Instruments: Presentation”, provides the requirements for the presentation financial instruments as liabilities or equity and for offsetting financial assets and financial liabilities. It applies to the classification of financial instruments, from the perspective of the issuer, into financial assets, financial liabilities and equity instruments; the classification of related interest, dividends, losses and gains; and the circumstances in which financial assets and financial liabilities should be offset.

TFRS 7 “Financial Instruments: Disclosures”, provides the requirements for the disclosure that are intended to enable users to evaluate the significance of financial instruments for an entity’s financial position and performance, and to understand the nature and extent of risks arising from those financial instruments to which the entity is exposed during the period and at the end of the reporting period, and how the entity manages those risks.

2.2 Revised financial reporting standards and accounting standards and related interpretations (collectively “the accounting standards”) (continued)

2.2.4 The Group of financial instruments reporting standards are effective for annual periods beginning on or after 1 January 2020. The Group has not yet adopted these standards.

TFRS 9 “Financial Instruments”, establishes principles for the classification, measurement and derecognition of financial assets and financial liabilities, impairment requirement and hedge accounting as follow:

- Classification and measurement:
 - The classification and measurement of debt instrument financial assets has three classification categories, which are amortised cost, fair value through profit or loss and fair value through other comprehensive income. Classification of debt assets will be driven by the entity’s business model for managing the financial assets and contractual cash flows characteristics of the financial assets.
 - Equity instrument financial assets shall be measured at fair value through profit or loss. An entity can make an irrevocable election to recognise the fair value change in other comprehensive income without subsequent recycling to profit or loss
 - Financial liabilities are classified and measured at amortised cost, except for financial liabilities that are measured at fair value to profit or loss. An entity can choose to measure a liability at fair value through profit or loss when the conditions are met.
 - Derivatives are classified and measured at fair value through profit or loss.
- The impairment requirements relating to the accounting for an entity’s expected credit losses on its financial assets measured at amortised cost, investments in debt instruments measured at fair value through other comprehensive income, lease receivables, loan commitments and financial guarantee contracts. It is no longer necessary for a credit event to have occurred before credit losses are recognised. The entity always accounts for expected credit losses which involves a three stage approach. The stage dictates how the entity measures impairment losses and applies the effective interest rate method. Except for trade receivables and contractual assets which apply in TFRS 15 and have no significant financial components and lease receivables, they are permitted to measure by simplified approach for credit impaired consideration.
- The objective of hedge accounting is to represent, in the financial statements, the effect of an entity’s risk management activities that use financial instruments to manage exposures arising from particular risks that could affect profit or loss (or other comprehensive income, in the case of investments in equity instruments for which an entity has elected to present changes in fair value in other comprehensive income). This approach aims to convey the context of hedging instruments for which hedge accounting is applied in order to allow insight into their purpose and effect.

TFRIC 16 “Hedges of a Net Investment in a Foreign Operation”, clarifies the accounting treatment in respect of net investment hedging, provides guidance on identifying the foreign currency risks that qualify as a hedged risk. Clarifying that hedging instruments that are hedges of a net investment in a foreign operation may be held anywhere in the group not only by the parent. This includes the guidance on how an entity should determine the amount to be reclassified from equity to profit or loss for both the hedging instrument and the hedged item.

TFRIC 19 “Extinguishing Financial Liabilities with Equity Instruments”, provides the requirements for accounting treatment when the entity issues equity instruments to a creditor to extinguish all or part of a financial liability. The equity instruments issued shall be measured at fair value. The entity shall remove a financial liability (or part of a financial liability) from its statement of financial position when it is extinguished in accordance with TFRS 9. The difference between the carrying amount of the financial liability (or part of a financial liability) extinguished and the fair value of equity instruments issued shall be recognised in profit or loss.

The Group’s management is currently assessing the impact of initial adoption of these standards.

2.3 Group accounting - investments in subsidiaries and associates and in joint arrangements**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-measured 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 recognised 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 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 Transaction 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 Accounting policies (continued)

2.3 Group accounting - investments in subsidiaries and associates and in joint arrangements (continued)

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, generally accompanying a shareholding of between 20% and 50% of the voting rights. In the consolidated financial statements, investments in associates are accounted for using the equity method of accounting.

A list of the Group's a principal associate 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 Group accounting - investments in subsidiaries and associates and in joint arrangements (continued)**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 and joint ventures includes goodwill identified on acquisition.

If the ownership interest in 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 reduction of the ownership interest in an associate and joint ventures is recognised in profit or loss.

The Group's share of its associates and joint ventures' 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 or 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 ventures are impaired. If this 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 for 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 Accounting policies (continued)

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. 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 the profit or loss.

2.4.3 Group companies

The results and financial position of all 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 of each statement of comprehensive income are translated at average exchange rates; and
- All resulting exchange differences are recognised as other comprehensive income in the statement of 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 in hand, deposits held at call with banks, other short-term highly liquid investments with original maturities of three months or less 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 Construction contracts

A construction contract is a contract specifically negotiated for the construction of an asset or a combination of assets that are closely interrelated or interdependent in terms of their design, technology and functions or their ultimate purpose or use.

When the outcome of a construction contract cannot be estimated reliably, contract revenue is recognised to the extent of contract costs incurred where it is probable those costs will be recoverable. Contract costs are recognised as expenses in the period in which they are incurred.

When the outcome of a construction contract can be estimated reliably and it is probable that the contract will be profitable, contract revenue is recognised over the period of the contract. When it is probable that total contract costs will exceed total contract revenue, the expected loss is recognised as an expense immediately.

Costs incurred in the year in connection with future activity on a contract are excluded from contract costs in determining the stage of completion. They are presented as inventories, prepayments or other assets, depending on their nature.

The Group presents as an asset the gross amount due from customers for contract work for all contracts in progress and for which costs incurred plus recognised profits (less recognised losses) exceed progress billings. Progress billings not yet paid by customers and retention are included within 'other accounts receivables'. The Group presents as a liability the gross amount due to customers for contract work for all contracts in progress for which progress billings exceed costs incurred plus recognised profits (less recognised losses).

2.9 Other investments

Investments other than investments in subsidiaries, associates and joint ventures are classified into the following four categories: (1) trading investments; (2) held-to-maturity investments; (3) available-for-sale investments; and (4) general investments. The classification is dependent on the purpose for which the investments were acquired. Management determines the appropriate classification of its investments at the time of the purchase and re-evaluates such designation on a regular basis.

- (1) Investments that are acquired principally for the purpose of generating a profit from short-term fluctuations in price are classified as trading investments and included in current assets.
- (2) Investments with fixed maturity that the management has the intent and ability to hold to maturity are classified as held-to-maturity.
- (3) Investments intended to be held for an indefinite period of time, which may be sold in response to liquidity needs or changes in interest rates, are classified as available-for-sale.
- (4) Investments in non-marketable equity securities are classified as general investments.

2 Accounting policies (continued)

2.9 Other investments (continued)

All categories of investments are initially recognised at cost, which is equal to the fair value of consideration paid plus transaction cost.

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.

Held-to-maturity investments are carried at amortised cost using the effective yield method less impairment loss.

General investments are carried at cost less impairment loss.

A test for impairment is carried out when there is a factor indicating that an investment might be impaired. If the carrying value of the investment is higher than its recoverable amount, impairment loss is charged to profit or loss.

On disposal of an investment, the difference between the net disposal proceeds and the carrying amount is charged or credited to the profit or loss. When disposing of part of the Group's 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.

2.10 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 related transaction 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.

2.11 Property, plant and equipment

All property, plant and equipment are initially recorded at cost. Subsequently all plant and equipment are stated at historical cost less accumulated depreciation and 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.

2 Accounting policies (continued)

2.11 Property, plant and equipment (continued)

Land is not calculated depreciation, for others, depreciation is calculated using the straight-line method to write off the cost of each asset over its estimated useful life, 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 and losses on disposals of assets are determined by comparing proceeds with the carrying amount and are recognised net profit or loss in the profit or loss.

2.12 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 annually for impairment and 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.

2.13 Intangible assets

2.13.1 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.

2.13.2 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.

2.13.3 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 Accounting policies (continued)

2.13 Intangible assets (continued)

2.13.4 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.

2.13.5 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.

2.14 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.

2.15 Long-term lease

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 Group 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 finance 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.

2.16 Borrowing

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 or loss over the period of the borrowings using the effective yield method.

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.

2.17 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.

2.17 Current and deferred income taxes (continued)

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.

2.18 Employee benefits

The Group operate post-employment benefits schemes, which are defined contribution and defined benefit plans.

2.18.1 Defined contribution

The Group operates a provident fund that is a defined contribution plan funded by payments from employees and by 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 employee service in the current and prior periods. The Group recognises the contributions as employee benefit expense when they are due.

2.18.2 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.

2.19 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 Accounting policies (continued)

2.20 Provision

2.20.1 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 a reliable estimate of the amount can be made.

2.20.2 Provision for decommissioning costs

The Group recognises provision for decommissioning costs which are provided at the onset of completion of the contract, for the estimate of the eventual costs that relate to the removal of the assets. The recognised provision 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 relevant assets.

2.21 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 compensation 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.

2.22 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.

2.23 Revenue recognition

Revenue from sales of goods is recognised when significant risks and rewards of ownership of the goods are transferred to the buyer.

Sales of electricity is shown net of value added tax and discounts. Sales under the Power Purchase Agreements (PPA) comprise Energy Payments. Energy Payments are calculated based on electricity delivered.

Revenue from rendering services is based on the stage of completion determined by references to services performed to date as a percentage of total services to be performed. (See accounting policy stated in Note 2.8 on construction contracts).

Interest income is recognised on an accrual basis unless collectability is in doubt.

Dividend income is recognised when the shareholder's right to receive payment is established.

2.24 Dividend distribution

Dividend distribution to the Group's shareholders is recognised as a liability in the financial statements in the period in which the dividends are approved by the shareholders. Interim dividend is recognised when it is approved by the board of directors.

2 Accounting policies (continued)

2.25 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 Board of Directors that makes strategic decisions.

3 Financial risk management

3.1 Financial risk

The principal financial risks faced by the Group are interest rate, fixed rate and exchange rate risks. The Group borrows to finance its operations, which involve payments in floating and fixed rates of interest and purchase of fixed assets, which involved payments in foreign currency.

The objectives of using derivative financial instruments are to reduce the uncertainty over future cash flows arising from movements in interest rates and exchange rate and to manage the liquidity of cash resources. Interest rate exposure is managed through interest rate swap contracts. Exchange rate exposure is managed through foreign currency forward contracts.

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 borrows at floating rates and uses interest rate swaps as cash flow hedges of future interest payments, which has the economic effect of converting borrowings from floating rates to fixed rates. The interest rate swaps allow the Group to raise long-term borrowings at floating rates and swap them into fixed rates that are lower than those available if the Group borrowed at fixed rates directly.

Under the interest rate swaps, the Group agrees with the other parties to exchange, at specified intervals (generally quarterly), the difference between fixed contract rates and floating rate interest amounts calculated by reference to the agreed notional principal amounts. Any differential to be paid or received on an interest rate swap agreement is recognised as a component of finance cost over the period of the agreement. Gains and losses on early termination of interest rate swaps or on repayment of the borrowing are taken to profit or loss.

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 Financial risk management (continued)

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 foreign currency forward contracts and interest rate swap agreements. 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, assumption 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 2018, 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 fair values related the business combination achieved without the transfer of consideration

During January 2018, the Company has obtained control of an associate without the transfer of consideration, which results to reclassification of this associate to be a subsidiary. Such reclassification is the business combination achieved without the transfer of consideration in accordance with Thai Financial Reporting Standard 3 "Business Combination". Therefore, the Company shall measure the carrying value of previously held equity interest in the associate to fair value as at the date of obtaining control and determine fair value of net identifiable assets acquired as disclosed in Note 12.1.1.

The determination of fair values of previously held equity interest and of net identifiable assets acquired are based on valuation methodology and assumptions involved significant judgement made by the management, which are revenues growth rates, royalty rates and discounted rates. The management also makes assumptions regarding the useful lives of the patents and brand.

Estimated impairment of goodwill

The Group tests impairment of goodwill annually in accordance with the accounting policy stated in Note 2.12. 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 0.5% per annum, there is no impairment of goodwill recorded in the consolidated financial statements for the year ended 31 December 2018.

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 return capital to shareholders, issue new shares, or sell assets to reduce debt.

The Group has five segments report which comprises of manufacturing and distributing methyl ester biodiesel products, manufacturing and distributing high speed diesel oil, 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]

The Group generates revenue from sales and services by utilising the assets located in Thailand and overseas, and majority of the Group's revenues is originated in Thailand.

For the year ended 31 December 2018, 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 10,747 million (2017: 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 10,784 million).

7 Cash and cash equivalents

	Consolidated		Separate	
	2018 Baht	2017 Baht	2018 Baht	2017 Baht
Cash on hand	676,123	286,467	34,956	41,770
Cash at banks in current accounts	141,953,328	125,943,972	37,811,633	34,216,896
Cash at banks in savings accounts	5,335,940,998	4,379,423,390	506,828,721	1,206,995,823
Total Cash and cash equivalents	5,478,570,449	4,505,653,829	544,675,310	1,241,254,489

As at 31 December 2018 and 2017, cash and cash equivalents mainly comprised cash at savings accounts with the banks. The interest rates were 0.05% - 0.50% per annum (2017: 0.13% - 0.75% per annum).

8 Deposits at financial institutions used as collateral

As at 31 December 2018, deposits at financial institutions of the Group and the Company amounting to Baht 129.70 million and Baht 100.77 million (2017: Baht 100.97 million) are pledged as collateral for long-term loans from financial institutions and for issuing the letters of guarantee by domestic commercial banks and deposits at financial institutions of the Group and the Company amounting to Baht 43.99 million (2017: none) are pledged as collateral for short-term loans from financial institutions. The interest rates were 0.10% - 0.38% per annum (2017: 0.30% - 0.50% per annum).

9 Trade accounts receivable, net

Outstanding net trade accounts receivable as at 31 December are trade accounts receivable from third parties which can be analysed as follow:

	Consolidated		Separate	
	2018 Baht	2017 Baht	2018 Baht	2017 Baht
Not due	1,650,657,913	1,706,908,038	190,695,815	312,092,298
Overdue below 3 months	192,073	-	-	-
Overdue 3 - 6 months	1,384,415	-	-	-
Overdue 6 - 12 months	-	-	-	-
Overdue more than 12 months	5,737,603	-	-	-
<u>Less</u> Allowance for doubtful receivables	(7,122,018)	-	-	-
Total trade accounts receivable, net	1,650,849,986	1,706,908,038	190,695,815	312,092,298

10 Other accounts receivable

	Consolidated		Separate	
	2018 Baht	2017 Baht	2018 Baht	2017 Baht
Other accounts receivable				
- third parties	26,333,620	138,432,703	18,102,275	1,878,546
- related parties (Note 35.3)	-	-	163,865,368	212,752,698
Accrued service income	-	53,315,921	-	-
Prepaid expenses	72,279,370	26,050,649	51,184,401	17,754,765
Revenue department receivables	472,644,976	372,810,893	-	-
Undue input tax	31,467,452	12,343,073	789,272	720,085
Deposits for goods	223,426	68,770,041	-	68,196,788
Power plant development cost	-	-	55,754,999	54,679,099
Advance payment	24,350,717	7,515,647	23,174,373	2,143,426
Other	16,764,461	345,569	404,129	345,569
Total other accounts receivable	644,064,022	679,584,496	313,274,817	358,470,976

11 Inventories, net

	Consolidated		Separate	
	2018 Baht	2017 Baht	2018 Baht	2017 Baht
Raw materials	75,128,957	94,737,977	44,010,628	94,737,977
Work in process	125,741,046	35,919,830	50,143,331	35,919,830
Finished goods	126,016,737	6,136,541	36,050,575	6,136,541
Spare parts and supplies	29,733,683	13,633,969	12,899,984	10,720,252
	356,620,423	150,428,317	143,104,518	147,514,600
<u>Less</u> Allowance for decrease in value of raw materials	(21,077,750)	(22,485,013)	(15,989,866)	(22,485,013)
Allowance for decrease in value of works in process	(1,376,850)	-	-	-
Allowance for decrease in value of finished goods	(4,203,783)	-	-	-
Inventories, net	329,962,040	127,943,304	127,114,652	125,029,587

The cost of inventories recognised as expense and included in cost of sales of the Group amounting to Baht 5,668.29 million and of the Company amounting to Baht 3,299.44 million (2017: cost of sales of the Group amounting to Baht 6,045.57 million and of the Company amounting to Baht 4,273.76 million).

The Group recognised allowance for net realisable value of raw materials, work in process and finished goods amounting to Baht 2.32 million and reversed Baht 6.50 million of a previous raw material write-down because such raw material was used to produce finished goods which were sold to other companies (2017: The Group recognised allowance for net realisable value of raw materials amounting to Baht 15.45 million.). The amount of recognised and reversed allowance has been included in cost of sales in the consolidated statement of comprehensive income.

The Company reversed Baht 6.50 million of a previous raw material write-down because such raw material was used to produce finished goods which were sold to other companies (2017: The Company recognised allowance for net realisable value of raw materials amounting to Baht 15.45 million.). The amount of recognised and reversed allowance has been included in cost of sales in the separate statement of comprehensive income.

Inventory of the Group and the Company amounting to Baht 203.76 million and Baht 18.25 million, respectively (2017: inventory of the Group and the Company amounting to Baht 44.46 million) is carried at net realisable value, this being lower than cost.

12 Investments in subsidiaries, an associate and a joint venture

	Consolidated		Separate	
	2018 Baht	2017 Baht	2018 Baht	2017 Baht
Investments in subsidiaries (Note 12.2)	1	1	22,538,018,916	16,647,816,001
Investment in an associate (Note 12.3)	-	916,481,064	-	987,180,248
Investment in a joint venture (Note 12.4)	-	3,379,988	8,754,240	8,754,240
Total investments in subsidiaries, an associate and a joint venture	1	919,861,053	22,546,773,156	17,643,750,489

12 Investments in subsidiaries, an associate and a joint venture (continued)

12.1 The movement of the investments in subsidiaries, an associate and a joint venture can be analysed as follows:

	Consolidated	
	2018 Baht	2017 Baht
For the years ended 31 December		
Opening net book value	919,861,053	1
Additional investments in an associate and a joint venture	-	995,934,488
Reclassification of investment in an associate to be a subsidiary (Note 12.1.1)	(911,134,445)	-
Share of loss from investments in an associate and a joint venture	(6,306,673)	(62,272,139)
Share of other comprehensive expense from investments in an associate and a joint venture	(2,419,934)	(13,801,297)
Closing net book value	1	919,861,053
	Separate	
	2018 Baht	2017 Baht
For the years ended 31 December		
Opening net book value	17,643,750,489	14,983,679,351
Additional investment in a subsidiary	950,475,860	1,513,936,800
Increase in share capital and called for additional paid-up share capital of subsidiaries	3,952,546,807	150,199,850
Acquisitions of investments in an associate and a joint venture	-	995,934,488
Closing net book value	22,546,773,156	17,643,750,489

12.1.1 The movement of the investments in subsidiaries during the year ended 31 December 2018 are as follows:

Direct subsidiaries

EA Bio Innovation Co., Ltd.

On 3 January 2018, at the Extraordinary Shareholders' Meeting of EA Bio Innovation Co., Ltd., the shareholders passed a resolution increasing in the authorised share capital from Baht 0.10 million to Baht 400.10 million by issuing new ordinary share of 40,000,000 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 100 million and the Company made a payment on 4 January 2018. EA Bio Innovation Co., Ltd. registered the increase in share capital with the Ministry of Commerce on 4 January 2018.

Wind Progressive Co., Ltd.

On 22 February 2018, at the Board of Directors' Meeting of Wind Progressive Co., Ltd., the Board of Directors passed a resolution calling for additional paid-up share capital at Baht 1.10 per share. The Company made a payment for additional paid-up share capital of 182,920,000 shares, totalling Baht 201.21 million on 23 February 2018.

On 12 April 2018, at the Board of Directors' Meeting of Wind Progressive Co., Ltd., the Board of Directors passed a resolution calling for additional paid-up share capital at Baht 0.78 per share. The Company made a payment for additional paid-up share capital of 182,920,000 shares, totalling Baht 142.68 million on 24 April 2018.

On 13 June 2018, at the Board of Directors' Meeting of Wind Progressive Co., Ltd., the Board of Directors passed a resolution calling for additional paid-up share capital at Baht 0.63 per share. The Company made a payment for additional paid-up share capital of 182,920,000 shares, totalling Baht 115.24 million on 18 June 2018.

12 Investments in subsidiaries, an associate and a joint venture (continued)

12.1 The movement of the investments in subsidiaries, an associate and a joint venture can be analysed as follows: (continued)

12.1.1 The movement of the investments in subsidiaries during the year ended 31 December 2018 are as follows: (continued)

Direct subsidiaries (continued)

Wind Progressive Co., Ltd. (continued)

On 20 July 2018, at the Board of Directors' Meeting of Wind Progressive Co., Ltd., the Board of Directors passed a resolution calling for additional paid-up share capital at Baht 0.61 per share. The Company made a payment for additional paid-up share capital of 182,920,000 shares, totalling Baht 111.58 million on 24 July 2018.

On 24 August 2018, at the Board of Directors' Meeting of Wind Progressive Co., Ltd., the Board of Directors passed a resolution calling for additional paid-up share capital at Baht 1.13 per share. The Company made a payment for additional paid-up share capital of 182,920,000 shares, totalling Baht 206.70 million on 27 August 2018.

On 24 September 2018, at the Board of Directors' Meeting of Wind Progressive Co., Ltd., the Board of Directors passed a resolution calling for additional paid-up share capital at Baht 1.19 per share. The Company made a payment for additional paid-up share capital of 182,920,000 shares, totalling Baht 217.68 million on 25 September 2018.

On 29 October 2018, at the Board of Directors' Meeting of Wind Progressive Co., Ltd., the Board of Directors passed a resolution calling for additional paid-up share capital at Baht 0.52 per share. The Company made a payment for additional paid-up share capital of 182,920,000 shares, totalling Baht 95.12 million on 30 October 2018.

Wind Tossaphum Co., Ltd.

On 22 February 2018, at the Board of Directors' Meeting of Wind Tossaphum Co., Ltd., the Board of Directors passed a resolution calling for additional paid-up share capital at Baht 0.26 per share. The Company made a payment for additional paid-up share capital of 163,380,000 shares, totalling Baht 42.48 million on 23 February 2018.

On 12 April 2018, at the Board of Directors' Meeting of Wind Tossaphum Co., Ltd., the Board of Directors passed a resolution calling for additional paid-up share capital at Baht 1.51 per share. The Company made a payment for additional paid-up share capital of 163,380,000 shares, totalling Baht 246.70 million on 24 April 2018.

On 14 June 2018, at the Board of Directors' Meeting of Wind Tossaphum Co., Ltd., the Board of Directors passed a resolution calling for additional paid-up share capital at Baht 0.56 per share. The Company made a payment for additional paid-up share capital of 163,380,000 shares, totalling Baht 91.49 million on 18 June 2018.

On 20 July 2018, at the Board of Directors' Meeting of Wind Tossaphum Co., Ltd., the Board of Directors passed a resolution calling for additional paid-up share capital at Baht 0.61 per share. The Company made a payment for additional paid-up share capital of 163,380,000 shares, totalling Baht 99.66 million on 24 July 2018.

Wind Nayangklak Co., Ltd.

On 23 February 2018, at the Board of Directors' Meeting of Wind Nayangklak Co., Ltd., the Board of Directors passed a resolution calling for additional paid-up share capital at Baht 0.96 per share. The Company made a payment for additional paid-up share capital of 183,520,000 shares, totalling Baht 176.18 million on 26 February 2018.

On 12 April 2018, at the Board of Directors' Meeting of Wind Nayangklak Co., Ltd., the Board of Directors passed a resolution calling for additional paid-up share capital at Baht 1.21 per share. The Company made a payment for additional paid-up share capital of 183,520,000 shares, totalling Baht 222.06 million on 24 April 2018.

12 Investments in subsidiaries, an associate and a joint venture (continued)

12.1 The movement of the investments in subsidiaries, an associate and a joint venture can be analysed as follows: (continued)

12.1.1 The movement of the investments in subsidiaries during the year ended 31 December 2018 are as follows: (continued)

Direct subsidiaries (continued)

Wind Nayangklak Co., Ltd. (continued)

On 14 June 2018, at the Board of Directors' Meeting of Wind Nayangklak Co., Ltd., the Board of Directors passed a resolution calling for additional paid-up share capital at Baht 2.43 per share. The Company made a payment for additional paid-up share capital of 183,520,000 shares, totalling Baht 445.95 million on 18 June 2018.

On 27 August 2018, at the Board of Directors' Meeting of Wind Nayangklak Co., Ltd., the Board of Directors passed a resolution calling for additional paid-up share capital at Baht 0.20 per share. The Company made a payment for additional paid-up share capital of 183,520,000 shares, totalling Baht 36.70 million on 28 August 2018.

On 21 September 2018, at the Board of Directors' Meeting of Wind Nayangklak Co., Ltd., the Board of Directors passed a resolution calling for additional paid-up share capital at Baht 0.09 per share. The Company made a payment for additional paid-up share capital of 183,520,000 shares, totalling Baht 16.52 million on 24 September 2018.

On 29 October 2018, at the Board of Directors' Meeting of Wind Nayangklak Co., Ltd., the Board of Directors passed a resolution calling for additional paid-up share capital at Baht 0.15 per share. The Company made a payment for additional paid-up share capital of 183,520,000 shares, totalling Baht 27.53 million on 30 October 2018.

Energy Beyond Research Co., Ltd.

On 27 March 2018, at the Extraordinary Shareholders' Meeting of Energy Beyond Research Co., Ltd., the shareholders passed a resolution increasing in the authorised share capital from Baht 0.10 million to Baht 20 million by issuing new ordinary share of 1,990,000 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 4.98 million and the Company made a payment on 28 March 2018. Energy Beyond Research Co., Ltd. registered the increase in share capital with the Ministry of Commerce on 28 March 2018.

Mine Mobility Research Co., Ltd.

On 27 March 2018, at the Extraordinary Shareholders' Meeting of Mine Mobility Research Co., Ltd., the shareholders passed a resolution increasing in the authorised share capital from Baht 10 million to Baht 100 million by issuing new ordinary share of 9,000,000 shares with a par value of Baht 10 per share. The subsidiary called for paid-up share capital at Baht 4.44 per share, totalling Baht 39.96 million and the Company made a payment on 28 March 2018. Mine Mobility Research Co., Ltd. registered the increase in share capital with the Ministry of Commerce on 28 March 2018.

On 5 November 2018, at the Board of Directors' Meeting of Mine Mobility Research Co., Ltd., the Board of Directors passed a resolution calling for additional paid-up share capital at Baht 4.45 per share. The Company made a payment for additional paid-up share capital of 9,000,000 shares, totalling Baht 40.05 million on 12 November 2018.

Green Technology Research Co., Ltd.

On 3 July 2018, at the Extraordinary Shareholders' Meeting of Green Technology Research Co., Ltd., the shareholders passed a resolution increasing in the authorised share capital from Baht 40 million to Baht 112 million by issuing new ordinary share of 7,200,000 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 18 million and the Company made a payment on 4 July 2018. Green Technology Research Co., Ltd. registered the increase in share capital with the Ministry of Commerce on 4 July 2018.

12 Investments in subsidiaries, an associate and a joint venture (continued)

12.1 The movement of the investments in subsidiaries, an associate and a joint venture can be analysed as follows:
(continued)

12.1.1 The movement of the investments in subsidiaries during the year ended 31 December 2018 are as follows:
(continued)

Direct subsidiaries (continued)

Energy Mahanakorn Co., Ltd.

On 15 June 2018, at the Extraordinary General Shareholders' Meeting of Energy Mahanakorn Co., Ltd., the shareholders approved an increase in the authorised share capital from Baht 150 million to Baht 200 million by issuing new ordinary share of 5,000,000 shares at a par of Baht 10 per share. The Company did not exercise right to purchase the increased shares. Other investors and a subsidiary of the Company purchased the said share of 5,000,000 shares at the price between Baht 45 and 100 per share, totalling Baht 390 million (premium from share capital between Baht 35 and 90 per share, respectively, totalling Baht 340 million). Energy Mahanakorn Co., Ltd., registered the increase in share capital with the Ministry of Commerce on 28 June 2018. As a result, the shareholding interests of the Group and of the Company in Energy Mahanakorn Co., Ltd. decreased from 66.67% of registered and paid-up share capital to 52.10% and 50.00% of registered and paid-up share capital, respectively. The Group recognised the increase in non-controlling interests of Baht 196.20 million and the surplus from changes in shareholding interests in subsidiaries of Baht 174.80 million in the consolidated statement of changes in shareholders' equity for the ended 31 December 2018.

The effect of changes in the ownership interest of Energy Mahanakorn Co., Ltd. on the equity attributable to owner of the Company during the year ended 31 December 2018 is summarised as follows:

	<u>Baht</u>
Carrying amount of the Parent's ownership of interest from diluted portion of share capital in a subsidiary which do not result in losing control of the subsidiary	(196,202,698)
Consideration received from non-controlling interests	<u>371,000,010</u>
Increase in Parent's equity	<u>174,797,312</u>

There were no transactions with non-controlling interests in 2017.

Mine Mobility Corporation Co., Ltd.

On 13 November 2018, Mine Mobility Corporation Co., Ltd., was incorporated in Thailand with the registered share capital of 10,000 shares at par value of Baht 10 per share. The Company holds 99.97% ordinary shares of the said company. The Company made payment for 9,997 shares at 25% of par value, which is equivalent to Baht 2.50 per share, totalling Baht 24,992.50.

On 16 November 2018, at the Board of Directors' Meeting of Mine Mobility Corporation Co., Ltd. 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 9,997 shares, totalling Baht 74,977.50 on 30 November 2018.

On 3 December 2018, at the Extraordinary Shareholders' Meeting of Mine Mobility Corporation Co., Ltd., the shareholders passed a resolution increasing in the authorised share capital from Baht 0.10 million to Baht 400 million by issuing new ordinary share of 39,990,000 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 99.98 million and the Company made a payment on 4 December 2018. Mine Mobility Corporation Co., Ltd. registered the increase in share capital with the Ministry of Commerce on 4 December 2018.

12 Investments in subsidiaries, an associate and a joint venture (continued)

12.1 The movement of the investments in subsidiaries, an associate and a joint venture can be analysed as follows:
(continued)

12.1.1 The movement of the investments in subsidiaries during the year ended 31 December 2018 are as follows:
(continued)

Direct subsidiaries (continued)

Amita Technologies Inc.

On 11 January 2018, the Company had the substantive rights under the Law of the Republic of China (Taiwan) to call a shareholders' extraordinary meeting to appoint additional directors for Amita in order to have the number of director equals to 54.55% of the total number of directors of Amita, and major voting rights in Amita shareholders' meetings. The management therefore considers that the Company has control over Amita, and has presented an investment in Amita as an investment in the subsidiary on that date. Reclassification of investment in Amita from an associate to be a subsidiary is considered to be a business combination achieved without the transfer of consideration, in accordance with Thai Financial Reporting Standard 3 "Business Combination". Therefore, the Company measured previously held equity interest in Amita to fair value as at the date of obtaining control, and recognised any gains or losses arising from such re-measured in profit or loss, and the reversal of currency translation previously recognised in the other comprehensive income as expenses in the consolidated statement of comprehensive income for the year ended 31 December 2018 as details below:

	Consolidated At the date on which the Company obtained control Baht
Fair value of equity interest held before the date on which the Company obtained control (proportion of 50.69%)	1,821,694,841
Book value of equity interest held before the date on which the Company obtained control (proportion of 50.69%)	911,134,445
Accounting gain on a business combination achieved without the transfer of consideration	910,560,396
<u>Less</u> Currency exchange losses on the reversal of currency translation differences	(15,983,407)
Accounting gain on a business combination achieved without the transfer of consideration, net	894,576,989

Details of the net assets acquired at the date on which the Company obtained control, as well as the fair value at the same date of the non-controlling interests in Amita are as follow:

	Consolidated At the date on which the Company obtained control Baht
Recognised amount of identifiable assets acquired and liabilities assumed (proportion of 100%)	
Cash and cash equivalents	305,617,991
Trade accounts receivable	198,151,635
Inventories	92,375,908
Other current and non-current assets	199,874,192
Property, plant and equipment	181,598,434
Patents	805,776,301
Brand	277,869,390
Computer software	3,778,531
Trade accounts payable	(40,188,781)
Short-term loans	(41,700,598)
Long-term loans	(10,567,047)
Other liabilities	(60,947,959)
Deferred tax liabilities	(216,729,138)
Fair value of net assets	1,694,908,859
Non-controlling interests (proportion of 49.31%)	(835,759,558)
Goodwill	962,545,540
Fair value of equity interest held by the Group in proportion of 50.69%	1,821,694,841

12 Investments in subsidiaries, an associate and a joint venture (continued)

12.1 The movement of the investments in subsidiaries, an associate and a joint venture can be analysed as follows:
(continued)

12.1.1 The movement of the investments in subsidiaries during the year ended 31 December 2018 are as follows:
(continued)

Direct subsidiaries (continued)

Amita Technologies Inc. (continued)

The non-controlling interests were recognised by using the non-controlling interests' proportionate share of the acquiree's (Amita) net assets.

The patents and brand are amortised based on their estimated useful lives which are 20 years. Goodwill is not amortised but is tested for impairment annually.

Subsequently, on 18 April 2018, the Company paid for shares of Amita by proposing Voluntary Tender Offer of 9,698,020 ordinary shares at Taiwan Dollar 80 per share, totalling Taiwan Dollar 775.84 million or equivalent to Baht 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. The additional acquired shares were transferred to the Company on 25 April 2018.

The effect of change in the ownership interest of Amita Technologies Inc. on the equity attributable to owners of the Company during the year ended 31 December 2018 is summarised as follows:

	Baht
Carrying amount of non-controlling interests acquired	150,212,940
Consideration paid to non-controlling interests	<u>(844,115,661)</u>
Exceed of consideration paid recognised in Parent's equity	<u>(693,902,721)</u>

Subsequently, in October 2018, Amita called for additional paid-up for newly issued share capital from the authorised shares of 47,756,663 shares at Taiwan Dollar 28 per share from existing shareholders based on shareholding percentage. The Company paid for such shares based on Company's shareholding percentage of 29,740,556 shares at Taiwan Dollar 28 per share, totalling Taiwan Dollar 832.74 million or equivalent to Baht 913.32 million on 31 October and 1 November 2018

Subsequently, on 29 November 2018, the Company paid for shares of Amita from the unsubscribed portion of non-controlling interest of 11,203,956 shares at Taiwan Dollar 28 per share, totalling Taiwan Dollar 313.71 million or equivalent to Baht 340.69 million. As a result, the Company's shareholding percentage increased from 69.19% to 77.21% of total registered and paid-up share capital of Amita. The additional acquired shares were entitled to the Company on 5 December 2018.

The effect of change in the ownership interest of Amita Technologies Inc. on the equity attributable to owners of the Company during the year ended 31 December 2018 is summarised as follows:

	Baht
Carrying amount of ownership of non-controlling interest received	164,893,232
Consideration paid to non-controlling interests	<u>(340,689,894)</u>
Exceed of consideration paid recognised in Parent's equity	<u>(175,796,662)</u>

Revenue from sale and service and net loss of Amita since the acquisition date included in the consolidated statement of comprehensive income for year ended 31 December 2018 were Baht 247.97 million and Baht 167.57 million, respectively. (2017: None) Acquisition-related costs of Baht 6.35 million have been charged to administrative expenses in the consolidated statement of comprehensive income for the year ended 31 December 2018.

EA Con Dao (SG) Pte. Ltd.

On 21 August 2018, EA Con Dao (SG) Pte. Ltd. was incorporated in Singapore by the Company with the registered share capital of 10,000 shares at par value of Singapore Dollar 1 per share. The Company holds 95% ordinary shares of the said company.

12 Investments in subsidiaries, an associate and a joint venture (continued)

12.2 Investments in subsidiaries

The details of direct subsidiaries incorporated in Thailand are as follows:

	Business	Portion of ordinary shares held by the Company				Portion of ordinary shares held by the Group				Cost Method				Dividend for the year		Separate
		2018		2017		2018		2017		2018		2017		2018		
		%	%	%	%	%	%	%	%	Baht'000	Baht'000	Baht'000	Baht'000	Baht'000	Baht'000	
Surachai (1997) Co., Ltd.	Investing in manufacturing and distributing electricity from solar energy	99.90	99.90	-	-	-	-	-	-	231,550	231,550	231,550	-	-	-	-
EA Solar Co., Ltd.	Manufacturing and distributing electricity from solar energy	49.00	49.00	51.00	51.00	51.00	51.00	51.00	51.00	313,030	313,030	313,030	313,030	51,474	22,342	-
EA Solar Nakhonsawan Co., Ltd.	Manufacturing and distributing electricity from solar energy	99.99	99.99	-	-	-	-	-	-	5,590,000	5,590,000	5,590,000	5,590,000	1,196,260	1,397,500	-
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	109,999	-	-	-	-
EA Renewable Holding Co., Ltd.	Investing in manufacturing group of electricity energy	99.99	99.99	-	-	-	-	-	-	7,383,700	7,383,700	7,383,700	7,383,700	2,686,729	2,966,787	-
Wind Nayangklaik Co., Ltd.	Investing in manufacturing group of electricity energy	99.99	99.99	-	-	-	-	-	-	1,815,268	890,326	890,326	-	-	-	-
Wind Progressive Co., Ltd.	Investing in manufacturing group of electricity energy	99.99	99.99	-	-	-	-	-	-	1,879,500	789,297	789,297	-	-	-	-
Wind Tossaphum Co., Ltd.	Investing in manufacturing group of electricity energy	99.99	99.99	-	-	-	-	-	-	1,670,000	1,189,663	1,189,663	-	-	-	-
Emma Corporation Co., Ltd.	Research and development of electricity equipment (not commercial operations yet)	50.00	50.00	-	-	-	-	-	-	50	50	50	-	-	-	-
Thepsathit Wind Farm Co.,Ltd.	Manufacturing and distributing electricity from wind power (not commercial operations yet)	99.99	99.99	-	-	-	-	-	-	1	1	1	-	-	-	-
Energy Mahanakhon Co., Ltd.	Charging station	50.00	66.67	2.11	-	-	-	-	-	100,000	100,000	100,000	-	-	-	-
Green Technology Research Co., Ltd.	Research and Development of biodiesel	99.99	99.99	-	-	-	-	-	-	58,000	40,000	40,000	-	-	-	-
Mine Mobility Research Co., Ltd.	Research and Development of electricity vehicle	99.99	99.99	-	-	-	-	-	-	90,010	10,000	10,000	-	-	-	-
Energy Beyond Research Co., Ltd.	Research and Development of battery	99.99	99.99	-	-	-	-	-	-	5,075	100	100	-	-	-	-
EA Bio Innovation Co., Ltd.	Manufacturing and distributing biodiesel	99.99	99.99	-	-	-	-	-	-	100,100	100	100	-	-	-	-
Mine Mobility Corporation Co., Ltd.	Manufacturing and distributing electricity vehicle (not commercial operations yet)	99.99	-	-	-	-	-	-	-	100,074	-	-	-	-	-	-
Total										19,446,357	16,647,816		3,934,463		4,386,629	

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 2018 and 2017 since such company's financial statements are not material to the Group.

12 Investments in subsidiaries, an associate and a joint venture (continued)

12.2 Investments in subsidiaries (continued)

The details of direct subsidiaries incorporated in other countries are as follows:

	Business	Portion of ordinary shares held by the Company		Portion of ordinary shares held by the Group		Cost Method		Dividend for the year		Separate
		2018 %	2017 %	2018 %	2017 %	2018 Baht'000	2017 Baht'000	2018 Baht'000	2017 Baht'000	
Amita Technologies Inc. (Incorporated in the Republic of China (Taiwan))	Developing, manufacturing and distributing battery	77.21	-	-	-	3,091,662	-	-	-	-
EA Con Dao (SG) Pte. Ltd. (Incorporated in Singapore)	Investing in manufacturing of electricity energy business (not commercial operations yet)	95.00	-	-	-	-	-	-	-	-
Total						3,091,662	-	-	-	-
Total investments and dividend in subsidiaries						22,538,019	16,647,816	3,934,463	4,386,629	

12 Investments in subsidiaries, an associate and a joint venture (continued)

12.2 Investments in subsidiaries (continued)

The details of indirect subsidiaries incorporated in Thailand are as follows:

Business	Portion of ordinary shares held by the Company		Portion of ordinary shares held by the Group		Cost Method		Dividend for the year		Separate
	2018 %	2017 %	2018 %	2017 %	2018 Baht'000	2017 Baht'000	2018 Baht'000	2017 Baht'000	
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	99.99	-	-	-	-	-
Amita Technology (Thailand) Co., Ltd	-	-	99.99	-	-	-	-	-	-
EA Station Co., Ltd.	-	-	99.94	-	-	-	-	-	-

12 Investments in subsidiaries, an associate and a joint venture (continued)

12.2 Investments in subsidiaries (continued)

The details of indirect subsidiaries incorporated in other countries are as follows:

	Business	Portion of ordinary shares held by the Company		Portion of ordinary shares held by the Group		Cost Method		Dividend for the year		Separate
		2018	2017	2018	2017	2018	2017	2018	2017	
		%	%	%	%	Baht'000	Baht'000	Baht'000	Baht'000	
Amila New Technologies Pte. Ltd. (Incorporated in Singapore)	Investing in developing, manufacturing and distributing battery	-	-	100	-	-	-	-	-	-
Sunfield Investments Co., Ltd. (Incorporated in Samoa)	Investing in battery business	-	-	100	-	-	-	-	-	-

12 Investments in subsidiaries, an associate and a joint venture (continued)

12.2 Investments in subsidiaries (continued)

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	
	2018 Baht	2017(*) Baht	2018 Baht	2017 Baht	2018 Baht	2017 Baht
As at 31 December						
Current assets	1,875,678,658	-	404,004,853	194,759,087	2,279,683,511	194,759,087
Current liabilities	(101,305,842)	-	(4,667,493)	(5,133,339)	(105,973,335)	(5,133,339)
Total current net assets	1,774,372,816	-	399,337,360	189,625,748	2,173,710,176	189,625,748
Non-current assets	302,535,162	-	177,748,169	16,291,648	480,283,331	16,291,648
Non-current liabilities	(6,685,527)	-	(1,244,889)	-	(7,930,416)	-
Total non-current net assets	295,849,635	-	176,503,280	16,291,648	472,352,915	16,291,648
Net assets	2,070,222,451	-	575,840,640	205,917,396	2,646,063,091	205,917,396
Accumulated NCI	109,425,163	-	10,105,756	(480,794)	119,530,919	(480,794)

* As at 31 December 2017, Amita Technologies Inc. was an associate of the Group.

Summarised statement of comprehensive income

	Amita Technologies Inc.		Energy Mahanakorn Co., Ltd.		Total	
	2018 Baht	2017(*) Baht	2018 Baht	2017 Baht	2018 Baht	2017 Baht
For the periods ended 31 December						
Revenue	270,655,277	-	3,679,281	282,863	274,334,558	282,863
Loss	(168,399,941)	-	(19,782,462)	(4,082,604)	(188,182,403)	(4,082,604)
Other comprehensive expense	(38,666,599)	-	(294,294)	-	(38,960,893)	-
Total comprehensive expense	(207,066,540)	-	(20,076,756)	(4,082,604)	(227,143,296)	(4,082,604)
Loss allocated to non-controlling interests	(109,425,163)	-	(9,624,962)	(480,794)	(119,050,125)	(480,794)
Dividends paid to non-controlling interests	-	-	-	-	-	-

* During the year 2017, Amita Technologies Inc. was an associate of the Group.

12 Investments in subsidiaries, an associate and a joint venture (continued)

12.2 Investments in subsidiaries (continued)

Summarised financial information on subsidiaries with material non-controlling interests (continued)

Summarised statement of cash flows

	Amita Technologies Inc.		Energy Mahanakorn Co., Ltd.			Total
	2018 Baht	2017(*) Baht	2018 Baht	2017 Baht	2018 Baht	2017 Baht
For the periods ended 31 December						
Net cash payment in from operating activities	(44,688,582)	-	(44,456,154)	(5,661,510)	(89,144,736)	(5,661,510)
Net cash payment in investing activities	(83,776,691)	-	(149,885,866)	(12,268,456)	(233,662,557)	(12,268,456)
Net cash receipts from financing activities	1,399,752,037	-	390,000,000	210,000,000	1,789,752,037	210,000,000
Net increase in cash and cash equivalents	1,271,286,764	-	195,657,980	192,070,034	1,466,944,744	192,070,034
Cash and cash equivalents at beginning of year	305,619,217	-	192,070,034	-	497,689,251	-
Exchange losses on cash and cash equivalents	(29,599,279)	-	-	-	(29,599,279)	-
Cash and cash equivalents at end of year	1,547,306,702	-	387,728,014	192,070,034	1,935,034,716	192,070,034

* During the year 2017, Amita Technologies Inc. was an associate of 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 Chaiyaphum 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 Chaiyaphum Province, which approved the identification of area at Baanrai Sub-District, Thepsathit District, Chaiyaphum 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 Chaiyaphum for a wind farm power plant project. Based on the court judgement, the Company has no additional significant commitments.

12 Investments in subsidiaries, an associate and a joint venture (continued)

12.3 Investment in an associate

The details of the investment in an associate are as follow:

	Business	Portion of ordinary shares held by the Group		Cost method		Equity method		Dividend for the period	
		2018	2017	2018	2017	2018	2017	2018	2017
		%	%	Baht'000	Baht'000	Baht'000	Baht'000	Baht'000	Baht'000
An associate incorporated in the Republic of China (Taiwan)									
Amita Technologies Inc.	Developing, manufacturing and distributing battery	-	50.69	-	987,180	-	916,481	-	-
Total				-	987,180	-	916,481	-	-

The management of the Company considered that the Company has control over Amita Technologies Inc. since 11 January 2018. Therefore, the Company classified its investment in Amita from an associate to be a subsidiary (Note 12.1.1). As at 31 December 2018, the Company did not have investment in an associate.

There are no contingent liabilities relating to the Group's interest in the associate.

12 Investments in subsidiaries, an associate and a joint venture (continued)

12.3 Investment in an associate (continued)

12.3.1 Summarised financial information for an associate

Set out below are the summarised financial information for an associate that is material to the Group. The information disclosed reflects the amounting presented in the financial statements of the relevant associate (not the Group's shares of those amounts). They have been amended to reflect adjustments made using the equity method, including fair value adjustments and modifications for differences in accounting policy.

Summarised statement of financial position

	Amita Technologies Inc.
	2017
	Baht
As at 31 December	
Current assets	717,995,442
Non-current assets	1,376,363,013
Total assets	2,094,358,455
Current liabilities	146,173,706
Non-current liabilities	196,285,445
Total liabilities	342,459,151
Net assets	1,751,899,304

Summarised statement of comprehensive income

	Amita Technologies Inc.
	2017
	Baht
For the year ended 31 December	
Revenue from sales of goods and services rendered	284,519,164
Loss from operations	(185,289,401)
Income tax expense	(4,629,580)
Post-tax loss from operations	(189,918,981)
Other comprehensive expense	(9,785,768)
Total comprehensive expense	(199,704,749)
Dividends received from associate	-

12 Investments in subsidiaries, an associate and a joint venture (continued)

12.3 Investment in an associate (continued)

12.3.1 Summarised financial information for associate (continued)

Reconciliation of the summarised financial information presented to the carrying amount of its interest in an associate.

	Amita Technologies Inc.
	2017
	Baht
Opening net assets as at 11 January 2017	1,886,610,650
Increasing in fair value of net assets	89,728,659
Loss for the period	(189,918,981)
Other comprehensive expense for the period	(14,521,024)
Closing net assets	1,751,899,304
Interest in an associate (%)	50.69*
Interest in an associate, net	867,221,625
Goodwill	49,259,439
Carrying value	916,481,064

* The Group recognised interest in Amita Technologies Inc. in proportion of its initial investment portion, which is 35.20%, for the period from 11 January 2017 to 3 November 2017. After that date, the Group recognised interest in Amita Technologies Inc. at 50.69%

12 Investments in subsidiaries, an associate and a joint venture (continued)

12.4 Investment in a joint venture

The details of the investment in a joint venture are as follow:

Business	Portion of ordinary shares held by the Group		Cost method		Equity method		Dividend for the year	
	2018	2017	2018	2017	2018	2017	2018	2017
	%	%	Baht'000	Baht'000	Baht'000	Baht'000	Baht'000	Baht'000
Business								
A joint venture incorporated in the People's Republic of China								
Shenzhen Growatt Power Technology Co., Ltd. Distributing electric equipments and machines	44.00	44.00	8,754	8,754	-	3,380	-	-
Total			8,754	8,754	-	3,380	-	-

Shenzhen Growatt Power Technology Co., Ltd. is a private company and there is no quoted market price available for its shares.

Under terms of shareholder agreement, the Company has commitments to provide loan to Growatt in the event that Growatt cannot generate net profit within 2 years after the registration date of a joint venture.

There are no contingent liabilities relating to the Group's interest in the joint venture.

On 26 December 2018, the Company paid to Shenzhen Growatt New Energy Technology Co., Ltd. for 1.06 million newly-issued ordinary shares as portion of held ordinary share of 44% at US Dollar 1 per share, totalling US Dollars 1.06 million or equivalent to Baht 34.53 million. As at 31 December 2018, Shenzhen Growatt New Energy Technology Co., Ltd. is on process to register the aforementioned shares. Therefore, the Company presented these payments as advance payment for purchase of investments in the consolidated and separate statement of financial position.

13 Investment property

	Consolidated		
	Land Baht	Buildings and building improvements Baht	Total Baht
As at 1 January 2017			
Cost	-	38,258,042	38,258,042
<u>Less</u> Accumulated depreciation	-	(5,274,949)	(5,274,949)
Net book value	-	32,983,093	32,983,093
For the year ended 31 December 2017			
Opening net book value	-	32,983,093	32,983,093
Additions	-	241,072	241,072
Transfer from property, plant and equipment, net (Note 14)	-	3,548,112	3,548,112
Depreciation charge	-	(2,066,760)	(2,066,760)
Closing net book value	-	34,705,517	34,705,517
As at 31 December 2017			
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
For the year ended 31 December 2018			
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	1,034,895,232
As at 31 December 2018			
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

13 Investment property (continued)

	Buildings and building improvements		Separate
	Land Baht	Baht	Total Baht
As at 1 January 2017			
Cost	923,908,893	38,258,042	962,166,935
<u>Less</u> Accumulated depreciation	-	(5,274,949)	(5,274,949)
Net book value	<u>923,908,893</u>	<u>32,983,093</u>	<u>956,891,986</u>
For the year ended 31 December 2017			
Opening net book value	923,908,893	32,983,093	956,891,986
Additions	75,911,385	241,072	76,152,457
Transfer from property, plant and equipment, net (Note 14)	-	3,548,112	3,548,112
Disposals	-	(2,066,760)	(2,066,760)
Closing net book value	<u>999,820,278</u>	<u>34,705,517</u>	<u>1,034,525,795</u>
As at 31 December 2017			
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	<u>999,820,278</u>	<u>34,705,517</u>	<u>1,034,525,795</u>
Fair value	<u>1,018,143,881</u>	<u>38,990,000</u>	<u>1,057,133,881</u>
For the year ended 31 December 2018			
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	<u>1,002,290,265</u>	<u>32,604,967</u>	<u>1,034,895,232</u>
As at 31 December 2018			
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	<u>1,002,290,265</u>	<u>32,604,967</u>	<u>1,034,895,232</u>
Fair value	<u>1,122,171,831</u>	<u>38,990,000</u>	<u>1,161,161,831</u>

As at 31 December 2018 and 2017, 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 2018, the Company had no investment property mortgaged as collateral for credit facilities with financial institutions (31 December 2017: the Company had no obligation regarding the above pledge and mortgage but are in process of release and discharge those undertaking investment property).

Amount recognised in profit and loss that are related to investment property are as follows:

	Consolidated		Separate	
	2018 Baht	2017 Baht	2018 Baht	2017 Baht
Rental income	924,020	802,340	58,462,517	57,535,646

14 Property, plant and equipment, net

	Consolidated						
	Land Baht	Buildings and improvement buildings 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	Total Baht
At 1 January 2017							
Cost	1,012,405,717	650,067,447	1,798,541,607	22,219,350,827	120,194,469	10,239,251,616	36,039,811,683
Less Accumulated depreciation	-	(109,597,190)	(626,978,091)	(1,769,891,027)	(48,026,610)	-	(2,554,492,918)
Net book value	1,012,405,717	540,470,257	1,171,563,516	20,449,459,800	72,167,859	10,239,251,616	33,485,318,765
For the year ended 31 December 2017							
Opening net book value	1,012,405,717	540,470,257	1,171,563,516	20,449,459,800	72,167,859	10,239,251,616	33,485,318,765
Additions	75,911,383	6,074,600	26,183,789	113,221,062	37,059,601	3,316,022,385	3,574,472,820
Transfer from the construction cost of high voltage power station, net (Note 16)	(10,400,000)	-	-	-	-	(335,194,827)	(345,594,827)
Disposals, net	-	-	(1,364,264)	-	(8,010,259)	(39,582)	(9,414,105)
Transfer	-	88,965,040	8,798,895	11,144,940,731	911,216	(11,238,229,755)	5,386,127
Transfer to investment property (Note 13)	-	(3,548,112)	-	-	-	-	(3,548,112)
Depreciation charge	-	(29,745,082)	(231,517,020)	(1,203,509,518)	(22,286,438)	-	(1,487,058,058)
Closing net book value	1,077,917,100	602,216,703	973,664,916	30,504,112,075	79,841,979	1,981,809,837	35,219,562,610
At 31 December 2017							
Cost	1,077,917,100	740,096,162	1,829,431,792	33,477,512,619	143,624,147	1,981,809,837	39,250,391,657
Less Accumulated depreciation	-	(137,879,459)	(855,766,876)	(2,973,400,544)	(63,782,168)	-	(4,030,829,047)
Net book value	1,077,917,100	602,216,703	973,664,916	30,504,112,075	79,841,979	1,981,809,837	35,219,562,610

14 Property, plant and equipment, net (continued)

	Consolidated						
	Land Baht	Buildings and 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	Total Baht
At 1 January 2018							
Cost	1,077,917,100	740,096,162	1,829,431,792	33,477,512,619	143,624,147	1,981,809,837	39,250,391,657
Less Accumulated depreciation	-	(137,879,459)	(855,766,876)	(2,973,400,544)	(63,782,168)	-	(4,030,829,047)
Net book value	1,077,917,100	602,216,703	973,664,916	30,504,112,075	79,841,979	1,981,809,837	35,219,562,610
For the year ended 31 December 2018							
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	35,219,562,610
Additions	5,519,989	2,063,618	101,329,917	6,307,558	7,294,077	13,940,230,528	14,062,745,687
Increase from reclassification of investment in an associate to be a subsidiary (Note 12.1.1)	-	13,549,158	82,094,478	-	5,191,996	80,762,802	181,598,434
Reverse provision for decommissioning costs	-	-	507,298	(27,625,712)	-	-	(27,118,414)
Disposals, net	-	-	-	-	(2,582,781)	-	(2,582,781)
Write off, net	-	(2)	(70,532,646)	(34,565,537)	(6,919)	(4,780,000)	(109,885,104)
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)	-	(1,732,088,176)
Currency translation differences	-	(327,231)	(2,087,220)	-	(146,047)	(2,459,826)	(5,020,324)
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	47,587,211,932
At 31 December 2018							
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

14 Property, plant and equipment, net (continued)

	Separate					
	Land Baht	Buildings and buildings improvement Baht	Machines and equipment Baht	Office equipment, computers and motor vehicles Baht	Construction in progress Baht	Total Baht
At 1 January 2017						
Cost	55,788,998	155,935,113	887,016,083	34,654,520	9,918,987	1,143,313,701
Less Accumulated depreciation	-	(70,402,871)	(495,085,142)	(18,709,041)	-	(584,197,054)
Net book value	55,788,998	85,532,242	391,930,941	15,945,479	9,918,987	559,116,647
For the year ended 31 December 2017						
Opening net book value	55,788,998	85,532,242	391,930,941	15,945,479	9,918,987	559,116,647
Additions	-	2,470,367	19,388,657	18,339,845	4,356,356	44,555,225
Disposals, net	-	-	(2)	(2,982,907)	-	(2,982,909)
Transfer	-	3,548,112	2,093,296	-	(5,641,408)	-
Transfer to investment property (Note 13)	-	(3,548,112)	-	-	-	(3,548,112)
Depreciation charge	-	(8,000,629)	(79,045,253)	(5,757,342)	-	(92,803,224)
Closing net book value	55,788,998	80,001,980	334,367,639	25,545,075	8,633,935	504,337,627
At 31 December 2017						
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

14 Property, plant and equipment, net (continued)

	Office equipment, furniture, computers and motor vehicles					Separate
	Buildings and buildings improvement Baht	Machines and equipment Baht	Construction in progress Baht	Total Baht		
At 1 January 2018						
Cost	55,788,998	158,405,480	908,002,536	44,018,436	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	504,337,627	
For the year ended 31 December 2018						
Opening net book value	55,788,998	80,001,980	334,367,639	25,545,075	504,337,627	
Additions	-	-	514,047	2,331,474	14,000,924	
Transfer	-	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	422,987,591	
At 31 December 2018						
Cost	55,788,998	158,598,142	908,516,583	46,349,910	1,188,850,309	
Less Accumulated depreciation	-	(86,369,232)	(654,854,717)	(24,638,770)	(765,862,718)	
Net book value	55,788,998	72,228,911	253,661,866	21,711,140	422,987,591	

14 Property, plant and equipment, net (continued)

For the year ended 31 December 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 3.28% in the calculation of which the rate referred from borrowing cost for the construction project. (2017: borrowing costs of the Group amounting to Baht 145.20 million, arising from financing specifically entered into for the construction of a new power plant, were capitalised and were included in additions during the period in the consolidated financial statement)

As at 31 December 2018, property, plant and equipment with net book value amounting to Baht 814.85 million were mortgaged and pledged as collateral for credit facilities with a financial institution (2017: Baht 714.86 million).

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	
	2018 Baht	2017 Baht	2018 Baht	2017 Baht
Cost - leased assets	125,841,905	8,135,530	-	-
<u>Less</u> Accumulated depreciation	(107,276,879)	(2,446,430)	-	-
Currency translation differences	(1,475,946)	-	-	-
Net book value	17,089,080	5,689,100	-	-

15 Goodwill

	Consolidated		Separate	
	2018 Baht	2017 Baht	2018 Baht	2017 Baht
At 1 January				
Cost	-	-	-	-
<u>Less</u> Provision for impairment	-	-	-	-
Net book value	-	-	-	-
For the year ended 31 December				
Opening net book value	-	-	-	-
Acquisition of subsidiary (Note 12.1.1)	962,545,540	-	-	-
Currency translation differences	(26,021,945)	-	-	-
Closing net book value	936,523,595	-	-	-
At 31 December				
Cost	936,523,595	-	-	-
<u>Less</u> Provision for impairment	-	-	-	-
Net book value	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	6.15%

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
					Total Baht
As at 1 January 2017					
Cost	-	-	668,133,427	42,461,197	13,593,360
Less Accumulated amortisation	-	-	(48,245,280)	(7,146,475)	(2,905,511)
Net book value	-	-	619,888,147	35,314,722	10,687,849
For the year ended 31 December 2017					
Opening net book value	-	-	619,888,147	35,314,722	10,687,849
Additions	-	-	2,277,923	-	2,080,507
Transfer from the construction cost of high voltage power station (Note 14)	-	-	345,594,827	-	-
Amortisation	-	-	(35,251,543)	(1,698,447)	(1,731,532)
Closing net book value	-	-	932,509,354	33,616,275	11,036,824
As at 31 December 2017					
Cost	-	-	1,016,006,177	42,461,197	15,673,867
Less Accumulated amortisation	-	-	(83,496,823)	(8,844,922)	(4,637,043)
Net book value	-	-	932,509,354	33,616,275	11,036,824

16 Intangible assets, net (continued)

	Consolidated				
	Patents Baht	Brand Baht	Right to use transmission line Baht	Right to power purchase agreement Baht	Computer software Baht
					Total Baht
As at 1 January 2018					
Cost	-	-	1,016,006,177	42,461,197	1,074,141,241
Less Accumulated amortisation	-	-	(83,496,823)	(8,844,922)	(96,978,788)
Net book value	-	-	932,509,354	33,616,275	977,162,453
For the year ended 31 December 2018					
Opening net book value	-	-	932,509,354	33,616,275	977,162,453
Additions	-	-	-	-	4,719,790
Increase from reclassification of investment in an associate to be a subsidiary (Note 12.1.1)	805,776,301	277,869,390	-	-	1,087,424,222
Amortisation	(39,043,957)	(13,464,184)	(40,632,054)	(1,698,448)	(98,854,642)
Currency translation differences	(21,614,021)	(6,866,409)	-	-	(29,325,105)
Closing net book value	745,118,323	257,538,797	891,877,300	31,917,827	1,941,126,718
As at 31 December 2018					
Cost	784,162,280	271,002,981	1,016,006,177	42,461,197	2,138,770,963
Less Accumulated amortisation	(39,043,957)	(13,464,184)	(124,128,877)	(10,543,370)	(197,644,245)
Net book value	745,118,323	257,538,797	891,877,300	31,917,827	1,941,126,718

For the year ended 31 December 2018, amortisation were included in cost of sales and administrative expense amounting to Baht 94,956,070 and Baht 3,898,572, respectively. (2017: Baht 37,401,002 and Baht 1,280,520, respectively)

16 Intangible assets, net (continued)

	Separate				
	Patents Baht	Brand Baht	Right to use transmission line Baht	Right to power purchase agreement Baht	Computer software Baht
					Total Baht
As at 1 January 2017					
Cost	-	-	-	-	11,565,756
<u>Less</u> Accumulated amortisation	-	-	-	-	(1,801,348)
Net book value	-	-	-	-	9,764,408
For the year ended 31 December 2017					
Opening net book value	-	-	-	-	9,764,408
Additions	-	-	-	-	1,744,058
Amortisation	-	-	-	-	(1,328,079)
Closing net book value	-	-	-	-	10,180,387
As at 31 December 2017					
Cost	-	-	-	-	13,309,814
<u>Less</u> Accumulated amortisation	-	-	-	-	(3,129,427)
Net book value	-	-	-	-	10,180,387

16 Intangible assets, net (continued)

	Separate				
	Patents Baht	Brand Baht	Right to use transmission line Baht	Right to power purchase agreement Baht	Computer software Baht
As at 1 January 2018					
Cost	-	-	-	-	13,309,814
Less Accumulated amortisation	-	-	-	-	(3,129,427)
Net book value	-	-	-	-	10,180,387
For the year ended 31 December 2018					
Opening net book value	-	-	-	-	10,180,387
Additions	-	-	-	-	2,006,138
Amortisation	-	-	-	-	(1,479,393)
Closing net book value	-	-	-	-	10,707,132
As at 31 December 2018					
Cost	-	-	-	-	15,315,951
Less Accumulated amortisation	-	-	-	-	(4,608,819)
Net book value	-	-	-	-	10,707,132

17 Deferred income taxes

The analysis of deferred tax assets and deferred tax liabilities are as follows:

	Consolidated		Separate	
	2018 Baht	2017 Baht	2018 Baht	2017 Baht
Deferred tax assets:				
Deferred tax assets to be recovered within 12 months	2,419,859	2,951,923	2,419,859	2,951,923
Deferred tax assets to be recovered after more than 12 months	62,286,683	65,824,466	6,182,610	1,010,975
	<u>64,706,542</u>	<u>68,776,389</u>	<u>8,602,469</u>	<u>3,962,898</u>
Deferred tax liabilities:				
Deferred tax liabilities to be settled within 12 months	(10,649,494)	-	-	-
Deferred tax liability to be settled after more than 12 months	(189,881,930)	-	-	-
	<u>(200,531,424)</u>	<u>-</u>	<u>-</u>	<u>-</u>
Deferred income taxes, net	<u>(135,824,882)</u>	<u>68,776,389</u>	<u>8,602,469</u>	<u>3,962,898</u>

The movement of the deferred income tax account is as follows:

	Consolidated		Separate	
	2018 Baht	2017 Baht	2018 Baht	2017 Baht
At 1 January	68,776,389	23,813,014	3,962,898	2,243,917
Fair value uplift from the business combination achieved without the transfer of consideration (Note 12.1.1)	(216,729,138)	-	-	-
Tax credited to profit or loss	2,673,539	44,963,375	637,793	1,718,981
Tax credited directly to other comprehensive income	3,758,242	-	4,001,778	-
Currency translation differences	5,696,086	-	-	-
At 31 December	<u>(135,824,882)</u>	<u>68,776,389</u>	<u>8,602,469</u>	<u>3,962,898</u>

17 Deferred income taxes (continued)

The movement of the deferred income tax assets and liabilities are as follows: (continued)

	Consolidated							
	Allowance for slow-moving inventories Baht	Retirement benefit obligations Baht	Property, plant and equipment Baht	Right to use transmission line Baht	Provision for decommissioning costs Baht	Finance lease liabilities Baht	Loss Carry forward Baht	Total Baht
Deferred tax assets								
At 1 January 2017	1,406,844	1,302,408	17,230,085	69,471	3,804,206	-	-	23,813,014
(Charged) credited to profit or loss	1,545,079	239,956	(1,316,981)	-	9,438,860	-	35,056,461	44,963,375
Tax (charged) credited directly to other comprehensive income	-	-	-	-	-	-	-	-
At 31 December 2017	2,951,923	1,542,364	15,913,104	69,471	13,243,066	-	35,056,461	68,776,389
At 1 January 2018	2,951,923	1,542,364	15,913,104	69,471	13,243,066	-	35,056,461	68,776,389
(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
At 31 December 2018	2,419,859	6,630,153	30,789,058	69,471	24,878,337	(80,336)	-	64,706,542

17 Deferred income taxes (continued)

The movement of the deferred income tax account is as follows: (continued)

	Consolidated		
	Patent Baht	Brand Baht	Total Baht
Deferred tax liabilities			
At 1 January 2017	-	-	-
Tax charged (credited) to profit or loss	-	-	-
Tax charged (credited) directly to other comprehensive income	-	-	-
At 31 December 2017	-	-	-
At 1 January 2018	-	-	-
Fair value uplift from the business combination achieved without the transfer of consideration (Note 12.1.1)	161,155,260	55,573,878	216,729,138
Tax credited to profit or loss	(7,808,791)	(2,692,837)	(10,501,628)
Tax credited directly to other comprehensive income	-	-	-
Currency translation differences	(4,322,804)	(1,373,282)	(5,696,086)
At 31 December 2018	149,023,665	51,507,759	200,531,424
	Separate		
	Allowance for inventories Baht	Retirement benefit obligations Baht	Total Baht
Deferred tax assets			
At 1 January 2017	1,406,844	837,073	2,243,917
Tax credited to profit or loss	1,545,079	173,902	1,718,981
Tax credited (charged) directly to other comprehensive income	-	-	-
At 31 December 2017	2,951,923	1,010,975	3,962,898
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
At 31 December 2018	2,419,859	6,182,610	8,602,469

18 Other non-current assets

	Consolidated		Separate	
	2018 Baht	2017 Baht	2018 Baht	2017 Baht
Withholding tax	57,739,762	37,287,798	6,468,851	10,771,625
Advance payment for equipment and assets purchase	164,158,104	90,074,222	1,434,061	2,770,415
Deposits	22,369,062	24,224,782	-	-
Long-term deposits	31,384,397	15,068,474	2,870,372	2,495,625
Prepaid for land leasehold right	19,263,949	16,255,827	-	-
Others	31,292,994	4,188,905	10,516,398	210,000
Total other non-current assets	326,208,268	187,100,008	21,289,682	16,247,665

19 Short-term loans from financial institutions

The short-term loans from financial institutions are as follows:

	Consolidated		Separate	
	2018 Baht	2017 Baht	2018 Baht	2017 Baht
Promissory note	387,412,393	210,500,000	385,000,000	210,500,000
Trust receipts	332,480,413	273,042,755	332,480,413	273,042,755
Bill of exchange	1,097,122,222	398,467,125	1,097,122,222	398,467,125
Total short-term loans from financial institutions	1,817,015,028	882,009,880	1,814,602,635	882,009,880

As at 31 December 2018, short-term loans from promissory notes were promissory notes of 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. (31 December 2017: short-term loans from promissory notes of Baht 210.50 million and from trust receipts of Baht 273.04 million bore interest at the rate of 2.03% - 2.13% per annum and bill of exchange of Baht 398.47 million bore interest at the rates of 2.35% per annum). The loans are secured by fixed deposit of the subsidiary operating overseas, machinery and shareholder of the Company.

As at 31 December 2018, the Group and the Company had available credit facilities of promissory notes of Baht 1,211 million and Taiwan Dollar 17 million (31 December 2017: Baht 1,386 million) and of trust receipts of Baht 1,361 million (31 December 2017: Baht 442 million).

The movement of short-term loans from financial institutions can be analysed as follow:

	Consolidated		Separate	
	2018 Baht	2017 Baht	2018 Baht	2017 Baht
For the year ended 31 December				
Opening balance	882,009,880	946,490,872	882,009,880	946,490,872
Cash flows:				
Additional loans during the period	5,522,037,770	3,138,460,872	5,522,037,770	3,138,460,872
Loan repayments during the period	(4,628,246,402)	(3,202,941,864)	(4,589,445,015)	(3,202,941,864)
Other non-cash movements:				
Increase from reclassification of investment in an associate to be a subsidiary (Note 12.1.1)	41,700,598	-	-	-
Currency translation differences	(486,818)	-	-	-
Closing balance	1,817,015,028	882,009,880	1,814,602,635	882,009,880

20 Other accounts payable

	Consolidated		Separate	
	2018 Baht	2017 Baht	2018 Baht	2017 Baht
Other accounts payable				
- third parties	49,934,998	120,931,193	28,938,814	44,079,638
- related parties (Note 35.3)	-	-	6,582,879	2,050,790
Undue output tax	93,260,675	102,061,052	1,392,481	1,373,231
Revenue department payable	61,012,550	68,269,315	16,702,249	18,471,126
Accrued expenses	126,442,587	84,958,435	4,281,598	3,223,573
Interest payable	111,671,503	115,054,821	85,145,205	82,109,588
Deferred revenue	16,131,712	-	-	-
Others	2,094,740	409,274	53,192	394,944
Total other accounts payable	460,548,765	491,684,090	143,096,418	151,702,890

21 Long-term loans from financial institutions, net

21.1 The long-term loans from financial institutions are as follows:

	Consolidated		Separate	
	2018 Baht	2017 Baht	2018 Baht	2017 Baht
Long-term loans from financial institutions	19,662,332,869	19,103,460,876	800,000,000	-
<u>Less</u> Deferred financing fee	(255,810,912)	(284,870,820)	(10,124,183)	-
	19,406,521,957	18,818,590,056	789,875,817	-
<u>Less</u> Current portion of long-term loans from financial institutions, net	(264,048,006)	(429,750,000)	-	-
Total long-term loans from financial institutions, net	19,142,473,951	18,388,840,056	789,875,817	-

The movement of long-term loans from financial institutions can be analysed as follow:

	Consolidated		Separate	
	2018 Baht	2017 Baht	2018 Baht	2017 Baht
For the year ended 31 December				
Opening balance	18,818,590,056	19,432,081,969	-	-
Cash flows:				
Additional loans during the period	802,445,924	247,088,876	789,534,800	-
Loan repayments during the period	(264,434,986)	(916,761,646)	-	-
Other non-cash movements:				
Amortisation of deferred financing fee	39,525,108	56,180,857	341,017	-
Increase from reclassification of investment in an associate to be a subsidiary (Note 12.1.1)	10,567,047	-	-	-
Currency translation differences	(171,192)	-	-	-
	19,406,521,957	18,818,590,056	789,875,817	-
<u>Less</u> Current portion of long-term loans from financial institutions, net	(264,048,006)	(429,750,000)	-	-
Closing balance	19,142,473,951	18,388,840,056	789,875,817	-

21 Long-term loans from financial institutions, net (continued)

21.1 The long-term loans from financial institutions are as follows: (continued)

As at 31 December, Long-term loans from financial institutions of the Company and subsidiaries are as follow:

Loan of the Company

Number	2018 (Million Baht)	2017 (Million Baht)	Interest rate	Principal repayment term	Interest payment period
1	800	-	Fixed interest rate per annum at 2.77% - 3.80%	Repayment every six months from December 2020	Payment every six months
Total	800	-			

Long-term loans denominated in Thai Baht no.1 is an 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	2018 (Million Baht)	2017 (Million Baht)	Interest rate	Principal repayment term	Interest payment period
1	372	617	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
Total	18,858	19,103			

Number	2018 (Million TWD)	2017 (Million TWD)	Interest rate	Principal repayment term	Interest payment period
1	3	-	Fixed interest rate per annum at 3.345%	Repayment every three months from July 2015	Payment every month
2	-	-	Fixed interest rate per annum at 1.995%	Repayment every three months from September 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 Taiwan Dollar no. 1 and 2 are unsecured long-term loans of a subsidiary incorporated in other country. The subsidiary has no obligation to comply with any procedures and conditions in long-term loan agreements with financial institutions in foreign country.

21 Long-term loans from financial institutions, net (continued)

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 after taking account of interest rate swap contracts is as follows:

	Consolidated		Separate	
	2018 Baht	2017 Baht	2018 Baht	2017 Baht
Long-term loans from financial institutions, net				
- at fixed rates	19,286,372,000	18,486,372,000	800,000,000	-
- at floating rates	375,960,869	617,088,876	-	-
Total long-term loans from financial institutions, net	<u>19,662,332,869</u>	<u>19,103,460,876</u>	<u>800,000,000</u>	<u>-</u>

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 3.35% - 5.62% per annum (2017: 3.68% - 5.84% per annum).

21.3 Maturity of long-term loans are as follows:

	Consolidated		Separate	
	2018 Baht	2017 Baht	2018 Baht	2017 Baht
Within 1 year	264,048,006	430,000,000	-	-
Later than 1 year and not later than 5 years	9,888,917,513	6,024,339,926	600,000,000	-
Later than 5 years	9,509,367,350	12,649,120,950	200,000,000	-
Total long-term loans, net	<u>19,662,332,869</u>	<u>19,103,460,876</u>	<u>800,000,000</u>	<u>-</u>

21.4 Credit facilities

As at 31 December 2018, Both the Group and the Company had available credit facilities from financial institutions amount Baht 1,900 million (2017: Baht 1,993 million).

22 Debenture, net

The details of debenture can be analysed as follows:

	Consolidated		Separate	
	2018 Baht	2017 Baht	2018 Baht	2017 Baht
Debenture	8,000,000,000	8,000,000,000	8,000,000,000	8,000,000,000
<u>Less</u> Deferred financing fee	<u>(4,077,543)</u>	<u>(6,336,370)</u>	<u>(4,077,543)</u>	<u>(6,336,370)</u>
	7,995,922,457	7,993,663,630	7,995,922,457	7,993,663,630
<u>Less</u> Current portion of Debentures, net	<u>(999,777,628)</u>	<u>-</u>	<u>(999,777,628)</u>	<u>-</u>
Debenture, net	<u>6,996,144,829</u>	<u>7,993,663,630</u>	<u>6,996,144,829</u>	<u>7,993,663,630</u>

On 21 July 2016, the Company issued debentures of Baht 8,000 million in three tranches:

Tranche 1: The Company's partial secured debentures of Baht 1,000 million, term of debentures 3 years, maturity in 2019, fixed interest rate 2.36% per annum with semi-annually interest payment.

Tranche 2: The Company's secured debentures of Baht 3,000 million, term of debentures 4 years, maturity in 2020, fixed interest rate 2.22% per annum with semi-annually interest payment.

Tranche 3: The Company's secured debentures of Baht 4,000 million, term of debentures 5 years, maturity in 2021, fixed interest rate 2.37% per annum with semi-annually interest payment.

The Company is required to comply with certain procedure and conditions; for example, maintaining debt to equity ratio at the level as specified in the contract.

The movement of debenture can be analysed as follow:

	Consolidated Baht	Separate Baht
For the year ended 31 December 2018		
Opening balance	7,993,663,630	7,993,663,630
Non-cash movements:		
Amortisation of deferred financing fee	<u>2,258,827</u>	<u>2,258,827</u>
Closing balance	<u>7,995,922,457</u>	<u>7,995,922,457</u>

23 Provision for decommissioning costs

	Consolidated		Separate	
	2018 Baht	2017 Baht	2018 Baht	2017 Baht
Opening balance	801,897,106	299,361,436	1,592,750	1,592,750
Increase (decrease) in provision	(27,118,414)	480,457,180	-	-
Finance costs	<u>24,906,420</u>	<u>22,078,490</u>	<u>-</u>	<u>-</u>
Closing balance	<u>799,685,112</u>	<u>801,897,106</u>	<u>1,592,750</u>	<u>1,592,750</u>

24 Legal reserve

	Consolidated		Separate	
	2018 Baht	2017 Baht	2018 Baht	2017 Baht
Opening balance	37,300,000	37,300,000	37,300,000	37,300,000
Appropriation during the year	-	-	-	-
Closing balance	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	
For the years ended 31 December	2018 Baht	2017 Baht	2018 Baht	2017 Baht
Sales of biodiesel	3,194,227,727	4,205,199,192	3,194,161,644	4,205,199,192
Sales of glycerine	296,155,581	267,068,146	296,155,581	267,068,146
Sales of by-products	20,760,800	14,162,655	20,760,800	14,162,655
Sales of electricity (a)	2,736,592,951	2,422,151,373	-	-
Sales of services	109,823,906	-	-	-
Sales of battery and EV Charging station	250,164,145	-	-	-
Total revenue from sales and services	6,607,725,110	6,908,581,366	3,511,078,025	4,486,429,993

- (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	
For the years ended 31 December	2018 Baht	2017 Baht	2018 Baht	2017 Baht
Land rental income (Note 35.1)	-	-	57,178,497	56,733,306
Interest income	17,527,632	19,105,674	50,687,809	41,961,302
Insurance claim income	-	70,128,794	-	-
Research project grant	11,387,392	-	-	-
Others	14,778,153	4,749,383	17,326,292	13,916,564
Total other income	43,693,177	93,983,851	125,192,598	112,611,172

28 Finance costs

	Consolidated		Separate	
	2018 Baht	2017 Baht	2018 Baht	2017 Baht
For the years ended 31 December				
Interest from loans from financial institutions	1,081,615,748	1,183,666,329	309,946,317	293,178,458
Interest from loans from related parties	-	-	10,934,384	675,000
Other finance costs	4,815,682	657,776	-	150,528
Total finance costs	1,086,431,430	1,184,324,105	320,880,701	294,003,986

29 Expense by nature

The following expenditure items have been charged in arriving at net profit:

	Consolidated		Separate	
	2018 Baht	2017 Baht	2018 Baht	2017 Baht
For the year ended 31 December				
Changes in inventories of finished goods and work in process	(209,701,412)	76,082,063	(44,137,535)	76,082,063
Raw material and consumables used	345,983,668	3,963,046,739	345,770,609	3,963,046,739
Staff costs	300,251,217	218,048,586	126,341,463	152,931,035
Directors and management compensation	164,610,633	104,945,790	147,010,311	91,634,936
Depreciation	1,734,188,726	1,487,058,058	97,451,510	92,803,224
Amortisation	98,854,642	38,681,522	1,479,393	1,328,079
Loss from (Reversal of) provision for inventories	(4,173,370)	15,450,791	(6,495,147)	15,450,791
Finance costs	1,086,431,430	1,184,324,105	320,880,701	294,003,986
Delivery and export expenses	52,368,456	55,367,020	52,110,668	55,367,020

30 Income tax

The Group calculated income tax for the year ended 31 December 2018 and 2017 from net taxable profit of which not includes share from investments in an associate by using tax rate as follows:

	2018	2017
Thailand	20%	20%
Republic of China (Taiwan)	20%	- (*)

* During the year 2017, Amita Technologies Inc. was an associate of the Group.

	Consolidated		Separate	
	2018 Baht	2017 Baht	2018 Baht	2017 Baht
Current tax	32,026,006	22,513,061	-	-
Deferred tax	(2,673,539)	(64,813,490)	(637,793)	(1,718,981)
Total income tax	29,352,467	(42,300,429)	(637,793)	(1,718,981)

30 Income tax (continued)

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:

	Consolidated		Separate	
	2018	2017	2018	2017
	Million Baht	Million Baht	Million Baht	Million Baht
Profit before tax	5,091	3,775	3,486	4,014
Tax calculated at a tax rate of	20%	20%	20%	20%
The result of the accounting profit multiplied by the income tax rate	1,018	755	697	803
Tax effect of :				
Income not subject to tax	(767)	(774)	(680)	(794)
Expenses not deductible for tax purpose	(198)	(3)	1	9
Revenues that are granted income tax exemption or expenses that are deductible at a greater amount	(24)	(20)	(19)	(20)
Income tax	(29)	42	1	2

The weighted average applicable tax rate for the Group and the Company were -0.50% and 0.13%, respectively (2017: - 0.18% and -0.04%, 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 in issue during the year.

	Consolidated		Separate	
	2018	2017	2018	2017
Basic earnings per share				
Net profit attributable to ordinary shareholders of the parent (Million Baht)	4,975	3,817	3,486	4,015
Weighted average number of ordinary shares outstanding (Million Shares)	3,730	3,730	3,730	3,730
Basic earnings per share (Baht per share)	1.33	1.02	0.93	1.08

There are no dilutive potential ordinary shares in issue during the periods presented, so no diluted earnings per share are presented.

32 Dividend

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.

On 27 April 2017, at the Annual General Shareholders' Meeting, the shareholders approved annual dividend payments from net profit from BOI operating results and non-BOI operating results for the year ended 31 December 2016 of Baht 0.075 per share and Baht 0.075 per share, respectively, totalling Baht 559.50 million. The Company paid the dividend to shareholders in May 2017.

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 five 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 (Baht Million)		Fixed interest rate per annum	
	2018	2017	2018	2017
Outstanding contract amount	12,013	13,716	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 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. (2017: the Group did not enter into foreign exchange forward contracts for accounts payable denominated in foreign currency).

35 Related party transactions

Enterprises and individuals that directly, or indirectly through one or more intermediaries, control, or are controlled by, or are under ordinary control with, the Company, including holding companies, subsidiaries and fellow subsidiaries are related parties of the Company. Associates and individuals owning, directly or indirectly, an interest in the voting power of the Company that gives them significant influence over the enterprise, key management personnel, including directors and officers of the Company and close members of the family of these individuals and companies associated with these individuals also constitute related parties.

In considering each possible related party relationship, attention is directed to the substance of the relationship, and not merely the legal form.

As at 31 December 2018, the major shareholders of the Company are UBS AG Singapore Branch and Mr. Somphote Ahunai who held ordinary shares portion of 29.52% and 23.44%, respectively. The remaining portion of ordinary shares were held by others.

Details of subsidiaries and an associate are disclosed in Note 12.

35 Related party transactions (continued)

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

Transactions	Pricing policies
Management fees	Agreed price
Vehicle rental income	Agreed price
Land rental income	Cost of acquiring the land plus operating fee 3% per annum
Interest income	At rates as the Company borrowing from financial institutions plus 0.25% per annum
Dividend income	Approval from the shareholders
Power plant development cost	Agreed price
Interest expense	At rates as the lender borrowing from financial institutions plus 0.25% per annum
Directors and management benefit expenses represent salary, bonus, meeting allowance and others	Approval from the Company's directors and Shareholders

The following material transactions are carried out with related parties:

35.1 Revenue from sales and services

	Consolidated		Separate	
	2018 Baht	2017 Baht	2018 Baht	2017 Baht
For the year ended 31 December				
Revenue from management fees				
- Subsidiaries	-	-	11,850,000	9,450,000
Revenue from rental				
- Subsidiaries	-	-	59,117,634	56,733,306

35.2 Other income and expenses

	Consolidated		Separate	
	2018 Baht	2017 Baht	2018 Baht	2017 Baht
For the year ended 31 December				
Interest income				
- Subsidiaries	-	-	46,858,874	36,911,853

35.3 Other receivables from and other payables to related parties

	Consolidated		Separate	
	2018 Baht	2017 Baht	2018 Baht	2017 Baht
Other receivables (including interest receivable (Note 35.4))				
- Subsidiaries	-	-	163,865,368	212,752,698
Other payables (including interest payable (Note 35.5))				
- Subsidiaries	-	-	6,582,879	2,050,790

35 Related party transactions (continued)

The following material transactions are carried out with related parties: (continued)

35.4 Short-term loans and long-term loan to related parties and related interests

As at 31 December 2018, the Company had short-term loans to related parties amounting to Baht 2,233.75 million. (2017: Baht 1,319.45 million).

As at 31 December 2018, the Company had no long-term loans to related parties. (2017: Baht 66.90 million)

The movement of short-term loans to related parties can be analysed as follows:

	Consolidated		Separate	
	2018 Baht	2017 Baht	2018 Baht	2017 Baht
For the year ended 31 December				
Opening balance	-	-	1,319,450,000	600,800,000
Additions during the year	-	-	1,839,900,000	1,080,150,000
Repayments during the year	-	-	(957,500,000)	(361,500,000)
Reclassifications from long-term loans	-	-	31,900,000	-
Closing balance	-	-	2,233,750,000	1,319,450,000

The movement of long-term loan to a related party can be analysed as follows:

	Consolidated		Separate	
	2018 Baht	2017 Baht	2018 Baht	2017 Baht
For the year ended 31 December				
Opening balance	-	-	66,900,000	71,400,000
Additions during the year	-	-	-	-
Repayments during the year	-	-	(35,000,000)	(4,500,000)
Reclassifications to short-term loans	-	-	(31,900,000)	-
Closing balance	-	-	-	66,900,000

	Consolidated		Separate	
	2018 Baht	2017 Baht	2018 Baht	2017 Baht
Interest receivable				
- Subsidiaries	-	-	135,031,133	116,195,880
	-	-	135,031,133	116,195,880

	Consolidated		Separate	
	2018 Baht	2017 Baht	2018 Baht	2017 Baht
For the year ended 31 December				
Interest income				
- Subsidiaries	-	-	46,858,874	36,911,853
	-	-	46,858,874	36,911,853

35 Related party transactions (continued)

The following material transactions are carried out with related parties: (continued)

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	
	2018 Baht	2017 Baht	2018 Baht	2017 Baht
For the year ended 31 December				
Opening balance	-	-	54,000,000	54,000,000
Additions during the year	-	-	1,190,000,000	-
Repayments during the year	-	-	(750,000,000)	-
Closing balance	-	-	494,000,000	54,000,000
	Consolidated		Separate	
	2018 Baht	2017 Baht	2018 Baht	2017 Baht
Interest payables				
- Subsidiaries	-	-	5,500,479	1,912,192
	-	-	5,500,479	1,912,192
	Consolidated		Separate	
	2018 Baht	2017 Baht	2018 Baht	2017 Baht
For the year ended 31 December				
Interest expenses				
- Subsidiaries	-	-	10,934,384	675,000
	-	-	10,934,384	675,000

35.6 Advance receipts for land rental from related parties

	Consolidated		Separate	
	2018 Baht	2017 Baht	2018 Baht	2017 Baht
For the year ended 31 December				
Opening balance	-	-	573,012,298	599,285,020
Increase during the year	-	-	-	30,460,584
Decrease during the year	-	-	(26,853,575)	(56,733,306)
Closing balance	-	-	546,158,723	573,012,298

35.7 Dividend income

	Consolidated		Separate	
	2018 Baht	2017 Baht	2018 Baht	2017 Baht
For the year ended 31 December				
Dividend income				
- Subsidiaries	-	-	3,934,463,266	4,386,628,505
	-	-	3,934,463,266	4,386,628,505

35 Related party transactions (continued)

The following material transactions are carried out with related parties: (continued)

35.8 Key management compensation

	Consolidated		Separate	
	2018 Baht	2017 Baht	2018 Baht	2017 Baht
For the year ended 31 December				
Short-term employee benefits	161,349,898	104,342,842	144,411,364	91,170,500
Post retirement benefits	3,260,735	602,948	2,598,947	464,436
Total key management compensation	164,610,633	104,945,790	147,010,311	91,634,936

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 related parties and related interests, trade receivables and payables, amounts due from and due to related parties, other receivables and payables, and short-term loans due to the short maturities of these instruments.

(a) Long-term loan to related party, long-term loans from financial institutions and debenture

The fair values of long-term loan to a related party and debenture 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 loan to a related party, long-term loans from financial institutions and debenture are as below

	Consolidated		Separate	
	Carrying amounts Million Baht	Fair values Million Baht	Carrying amounts Million Baht	Fair values Million Baht
As at 31 December 2017				
Long-term loan to a related party	-	-	-	-
Long-term loans from financial institutions	19,661	19,043	800	800
Debenture	8,000	8,176	8,000	8,176
As at 31 December 2016				
Long-term loan to a related party	-	-	67	67
Long-term loans from financial institutions	19,103	19,103	-	-
Debenture	8,000	7,985	8,000	7,985

36 Fair value (continued)

36.2 Financial assets and liabilities that are not measured at fair value (continued)

(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:

	Consolidated		Separate	
	2018	2017	2018	2017
	Million Baht	Million Baht	Million Baht	Million Baht
Asset				
Foreign currency forward contracts	11,915	-	-	-
Liability				
Interest rate swap contracts	11,850	361	-	-

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							
	2018				2017			
	Million TWD	Million SGD	Million USD	Million Baht	Million TWD	Million SGD	Million USD	Million Baht
Land purchase agreement	-	-	-	116	-	-	-	1
Building and machine under installation	63	2	1	63	-	-	1	12
Project design consultant and other service fees	-	-	-	68	-	-	-	-
Wind power plant consultant fee and construction in progress	-	-	116	1,096	-	-	406	4,629
Research and development consultant fee	-	-	-	54	-	-	-	-
	<u>63</u>	<u>2</u>	<u>117</u>	<u>1,397</u>	<u>-</u>	<u>-</u>	<u>407</u>	<u>4,642</u>
					Separate			
					2018 Million Baht	2017 Million Baht		
Land purchase agreement					-	1		
Machine under installation					-	2		
					-	3		

37 Commitments and contingent liabilities (continued)

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:

	2018			Consolidated 2017		
	Million TWD	Million Euro	Million Baht	Million TWD	Million Euro	Million Baht
Payable within:						
Less than 1 year	11	4	36	-	4	46
More than 1 to 5 years	45	9	102	-	13	88
More than 5 years	20	-	398	-	-	420
	<u>76</u>	<u>13</u>	<u>536</u>	<u>-</u>	<u>17</u>	<u>554</u>

Future minimum lease payments required under these non-cancellable operating leases contracts and service contracts are as follows: (continued)

	Separate	
	2018 Million Baht	2017 Million Baht
Payable within:		
Less than 1 year	29	20
More than 1 to 5 years	83	70
More than 5 years	317	334
	<u>429</u>	<u>424</u>

37.3 Bank guarantee

As at 31 December 2018, the Group and the Company had outstanding letters of guarantee issued by government sector and private sector of Baht 12,845 million and US Dollar 305 million and Baht 9,875 million and US Dollar 305 million, respectively. (2017: Baht 10,646 million and US Dollar 301 million and Baht 7,781 million and US Dollar 301 million, respectively.).

38 Events after the reporting period

- 1) On 28 December 2018, at the Board of Directors' Meeting of Wind Nayangklak Co., Ltd., the Board of Directors passed a resolution calling for additional paid-up share capital at Baht 0.17 per share. The Company made a payment for additional paid-up share capital of 183,520,000 shares, totalling Baht 31.2 million on 7 January 2019.
- 2) On 18 January 2019, at the Board of Directors' Meeting of Green Technology Research Co., Ltd., the Board of Directors passed a resolution calling for additional paid-up share capital at Baht 1.50 per share. The Company made a payment for additional paid-up share capital of 7,200,000 shares, totalling Baht 10.80 million on 22 January 2019.
- 3) On 22 January 2019, at the Board of Directors' Meeting of Wind Nayangklak Co., Ltd., the Board of Directors passed a resolution calling for additional paid-up share capital at Baht 0.18 per share. The Company made a payment for additional paid-up share capital of 183,520,000 shares, totalling Baht 33.03 million on 1 February 2019.

- 4) On 23 January 2019, at the Board of Directors' Meeting of Mine Mobility Research Co., Ltd., the Board of Directors passed a resolution calling for additional paid-up share capital at Baht 1.11 per share. The Company made a payment for additional paid-up share capital of 9,000,000 shares, totalling Baht 9.99 million on 29 January 2019.
- 5) On 6 February 2019, at the Board of Directors' Meeting of EA Bio Innovation Co., Ltd., the Board of Directors passed a resolution calling for additional paid-up share capital at Baht 5.00 per share. The Company made a payment for additional paid-up share capital of 40,000,000 shares, totalling Baht 200.00 million on 8 February 2019.
- 6) On 22 January 2019, at the Board of Directors' Meeting of Amita Technology (Thailand) Co., Ltd., the Board of Directors passed a resolution to enter into a long-term loan agreement with a financial institution for credit facilities as follows;
 - 6.1) Thai Baht short-term loans not exceeding Baht 3,000 million within the period no later than 31 March 2020; and
 - 6.2) US Dollar short-term loans not exceeding US Dollar 12.5 million within the period no later than 31 March 2020; and
 - 6.3) Thai Baht long-term loan not exceeding Baht 2,700 million within the period between 31 March 2020 and 31 December 2022; and
 - 6.4) Interest swap rate agreement not exceeding credit facility of the said Thai Baht long-term loan
- 7) 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 par value of US Dollar 10. The Company holds 100% ordinary share of the said company.



Energy Absolute Public Company Limited

16th Floor, AIA Capital Center Building, 89 Ratchadaphisek Road,
Dindaeng, Bangkok 10400

Tel. 0-2248-2488-92, 0-2002-3667-9 Fax. 0-2554-9243

www.energyabsolute.co.th

