



Thai Solar Energy Public Company Limited



Thai Solar Energy Public Company Limited



www.thaisolarenergy.com



Vision

To become a world-class regional leader
in providing renewable energy through
reliable technologies to serve both
commercial and social societies



Mission

To establish a solid footprint in Thailand
in the solar power industry and expand into
other renewable energies as well as developing
an international solar power business focusing
in Asia & Oceania regions



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TSE



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Message from Chairman



TSE 2019

Throughout the past period, Thai Solar Energy Public Company Limited (TSE) has invested in many different types of renewable energies and conducted business under the operational policy with integrity and transparency. We also endeavor to expand our business that generates and distributes electricity from solar power and other types of renewable energies in response to the country's demand for electric power which is on a continuously rising trend. Apart from that, the Company continues to seek overseas investment opportunities through our highly experienced and skilled personnel, business allies, and financial strength.

In the year 2019, trading of TSE has been moved from the Market for Alternative Investment (MAI) to the Stock Exchange of Thailand (SET) under Resources Group in Energy & Utilities Sector since May 14, 2019. At present, the Company has 40 projects operated both in Thailand and Japan with the total selling capacity of 313.92 megawatts (MW). Of the total, there are 32 domestic projects with the total selling capacity of 137.2 MW and 8 Japanese projects with the total selling capacity of 176.72 MW.

Regarding its investment plan, TSE plans to invest in the renewable power plants domestically and internationally with the targeted production capacity increase of 50-100 MW. Besides, the Company is interested in participating in an auction for community power plants - the biomass and solar power projects, which are under Thailand's Power Development Plan for 2018 - 2037 (PDP 2018).

Finally, on behalf of the Company's Board of Directors, Executives, Employees and Subsidiaries, we would like to thank all our shareholders, clients, partners, business allies to rely on us and support our business all along. In the meantime, the Board of Directors, Executives and Employees will devote our best efforts to carry out the duties under the good corporate governance principle and take part in developing society, community and environment so as to build up future solid growth.

Cathleen Maleenont, Ed.D.
Chairman of the Board



Message from Vice Chairman

Thai Solar Energy Public Company Limited (“TSE”) generates and distributes electricity from solar power and other renewable energies divided into 2 types: solar and biomass power plant businesses. The Company has adopted good corporate governance principles and provided business ethics, and code of conduct towards all stakeholders, as well as social corporate responsibility.

In the previous year, the Company showed continuous growth of performances as its various projects had been carried out as planned. In 2019, TSE had expanded more investments in the solar power plant business, which generated and distributed electricity as Commercial Operation Date (COD) totaling 3 projects with the total production capacity of 18 megawatts, enabling the Company to realize additional revenues immediately.

Lastly, I would like to thank all our shareholders, clients, business partners, various parties both the private and public sectors, and all stakeholders that are reliable and confident in our potential thoroughly, and I sincerely hope further continuing support from all of you.

Mr. Prommin Lertsuridej
Vice Chairman of the Board

TSE 2019





Report of the Audit Committee

The Audit Committee has been delegated by the Board of Directors to perform duties pursuant to the regulations of the Office of Securities and Exchange Commission and the notifications of the Stock Exchange of Thailand identified in the Audit Committee Charter as prescribed the Board of Directors.

The Audit Committee consists of the members who possess knowledge, abilities and are independent, namely Mrs. Siripen Sitasuwan, Mr. Prasan Chuapanich, and Mr. Pala Sukawesh. The Audit Committee regularly reports its performances to the Board of Directors for acknowledgement and consideration at least once in each quarter. In this regard, the Audit Committee discussed with the Management, the internal auditor, and the auditors to acknowledge, concur and share opinions in various matters which can be summarized as follows:

1. Reviewed the quarterly and yearly 2019 financial information of the Group to ensure that financial statements were prepared in accordance with the financial reporting standards and were adequate, complete and reliable as well as reviewed the Key Audit Matters or “KAMs” with respect to

Investments in the subsidiaries and business acquisition during the year 2019. The business group acquired investments in 3 companies engaged in the manufacture and distribution of electricity generated from solar energy in category of ground mounting, and paid total consideration for investments in the amount of Baht 786.97 million. To this, the Management of the business group assessed that the acquisition of investments was regarded as business combinations

under the Financial Reporting Standards No. 3 (amended 2018) Re: Business Combinations.

In addition, the Audit Committee had discussed with the auditors without the presence of the Company’s Management in relation to independence in performing duties and expressing an opinion of the auditors.

2. Reviewed the appropriateness of procedures for the entry into connected transactions and the disclosure of such information which was accurate, complete and in compliance with the notifications, regulations and guidelines relating to the Stock Exchange of Thailand and laws relevant to the business of the Company’s group.

3. Reviewed the report on the audit results conducted by the internal audit function and the auditors regarding assessment of the internal control system of the group of Company, provided necessary recommendations for monitoring and improving the performance of the Management as commented in relevant reports.

4. Considered, selected and compared the auditor’s remuneration proposed it to the Board of Directors for requesting the shareholders’ meeting to approve the appointment of the auditors of Pricewaterhouse Coopers Co., Ltd. as the Company’s auditor for the year 2020 for another term.

In conclusion, the Audit Committee is of the opinion that the Board of Directors and the Management of the Company have ethics and endeavor to carry out the duties to achieve the Company’s goals, and realize the importance of doing business under the corporate governance with effectiveness, transparency and reliability.



(Signature of Mrs. Siripen Sitasuwan)

(Mrs. Siripen Sitasuwan)
Chairman of the Audit
Committee



Report of the Nomination and Remuneration Committee



(Signature of Mr. Prasan Chuapanich)

(Mr. Prasan Chuapanich)
Chairman of the Nomination
and Remuneration Committee

The Nomination and Remuneration Committee comprises 3 members and is chaired by Mr. Prasan Chuapanich, an independent director. In 2019, the Nomination and Remuneration Committee convened 3 meetings and reported the Board on the results of the meetings regularly. Followings are some of important businesses conducted by the Nomination and Remuneration Committee.

1. Qualified persons to be appointed as director and subcommittees to replace those retired by rotation, based on the regulations of the Board of Directors and good corporate governance, considering the proportion and composition of directors. It also includes a variety of expertise and expertise related to the company’s business, to drive the business strategy to the most effective and effective.

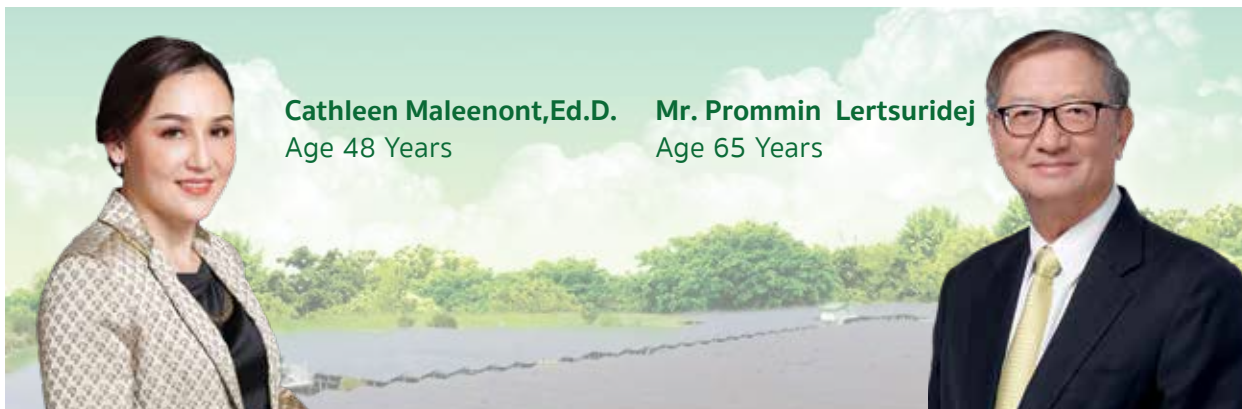
2. Considered and set remuneration for members of the Board of Directors and committees, based on suitability, duties and responsibilities, performance, business environment, economic conditions and by comparing with the remuneration of other companies in the same or similar business. The shareholders’ meeting approved the remuneration as proposed.

3. Considered the remuneration for top management, based on suitability company performance, individual performance, and inflation.

In realizing the importance of corporate good governance principle, the Nomination and Remuneration Committee has reviewed and monitored the operational progress of the management on regular basis and perform the duties with full ability, carefulness, transparency and independence, based on adequate and appropriate level of corporate good governance that should provide utmost benefit to all stakeholders.



The Board of Directors and Management



Cathleen Maleenont, Ed.D.
Age 48 Years

Mr. Prommin Lertsuridej
Age 65 Years

Chairman of Board of Directors, Chairman of the Board of Executive Directors, Chief Executive Officer, Nomination and Remuneration Committee, Acting Chief Financial Officer, (Authorized Director)

Vice Chairman and Independent Director

Education

- Ed.D. in Institutional Management, Pepperdine University
- M.S.A. in Multinational Commerce, Boston University
- B.A. in Mass Communication, Chulalongkorn University

Related Training Program held by Thai Institute of Directors Association

- Directors Accreditation Program (DAP) 9/2004
- Directors Certification Program (DCP) 150/2011

working experience

- 2017 - present Acting Chief Financial Officer, Thai Solar Energy Public Company Limited
- 2014 - present Chairman of Board of Directors, Chairman of the Board of Executive Directors, Chief Executive Officer, Nomination and Remuneration Committee Thai Solar Energy Public Company Limited
- 2011 - 2013 Chief Operating Officer, Thai Solar Energy Public Company Limited

Board member / Management in Listed Company - The Stock Exchange of Thailand

- 2014 - present Chairman of the Risk Management Committee, Wave Entertainment Public Company Limited
- 2006 - present Authorized Director, Wave Entertainment Public Company Limited
- 1999 - present Assistant to Senior Executive Vice President, BEC World Public Company Limited
- 2006 - 2014 Nomination and Remuneration Committee, Wave Entertainment Public Company Limited

Board member / Management in Non - Listed Company - The Stock Exchange of Thailand

- 2013 - present Authorized Director, Thai Solar Energy Group's Subsidiaries & Affiliates
- 2006 - present Authorized Director, Wave Entertainment Group's Subsidiaries & Affiliates

Shareholding (%) 8.72

Relation among Family with other Directors and Executives
None

Education

- National Health Administration, Japan (May - June 1992)
- Clinical Preventive Medicine, The Medical Council of Thailand
- Fellowship in Public Administration Ottawa University and Carleton University, Canada
- Doctor of Medicine (MD), The Faculty of Medicine Ramathibodi Hospital of Mahidol University
- Bachelor of Science Degree Program in Medical Science, Mahidol University

working experience

- 2014 - present Vice Chairman and Independent Director, Thai Solar Energy Public Company Limited

Board member / Management in Listed Company - The Stock Exchange of Thailand

None

Position in Other Organization / Institutions

- 2017 - present Advisory Board of Directors, Rama IX Hospital
- 2013 - present Vice President and Chairman of Board of Directors, Shinawatra University
- 2014 - 2017 Board of Directors and Board of Executive Directors, Rama IX Hospital
- 2013 - 2014 Advisor to Strategic Committee for Reconstruction and Future Development (SCRF) Government of Yingluck Shinawatra

Political Positions

- March 2005 - September 2006 Secretary- General to the Prime Minister
- February 2003 - March 2005 Ministry of Energy (Thailand)
- October 2002 - February 2003 Deputy prime minister
- February 2001 - October 2002 Secretary-General to the Prime Minister

Royal Thai Decoration

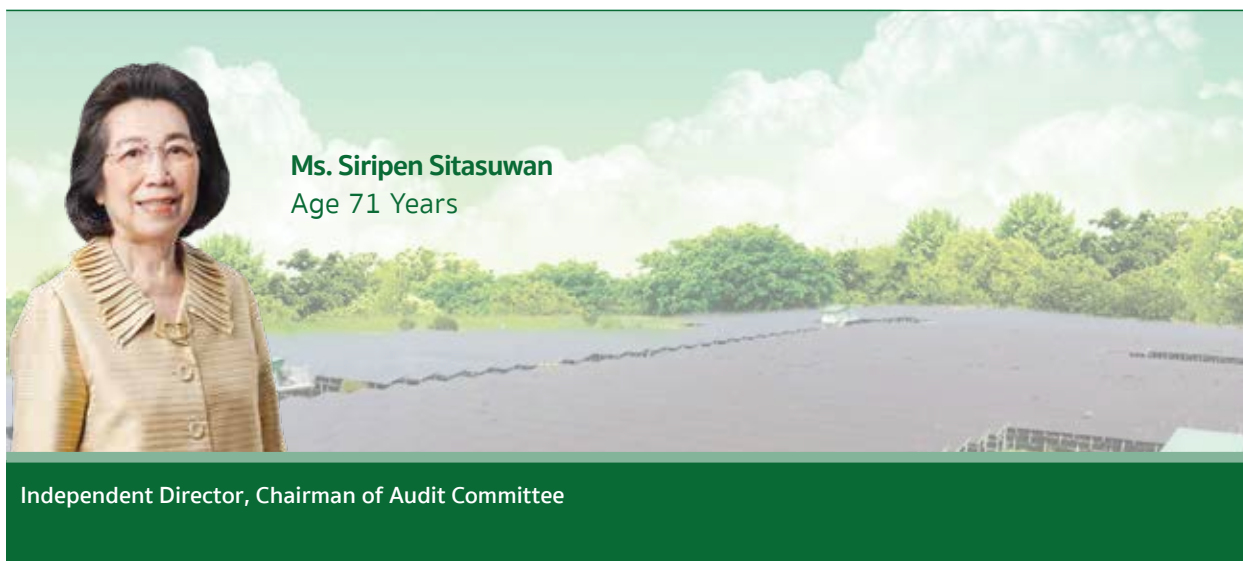
- 2003 Knight Grand Cordon (Special Class) of the Most Exalted Order of the White Elephant.
- 2002 Knight Grand Cordon (Special Class) of the Most Noble Order of the Crown of Thailand.
- 2001 Knight Grand Cross (First Class) of the Most Noble Order of the Crown of Thailand.

Other Royal Decoration

The Most Honourable Order of Seri Paduka Mahkota Brunei (3rd class) (S.M.B.)

Shareholding (%) None

Relation among Family with other Directors and Executives
None



Education

- Master of Business Administration (MBA), Wichita State University, Kansas, USA.
- Bachelor of Art (Commerce), Chulalongkorn University

Related Training Program held by Thai Institute of Directors Association

- Directors Certification Program (DCP) 33/2003
- Role of the compensation Committee (RCC) 4/2007
- Audit Committee Program (ACP) 32/2010

Certifications

- Listed Company Director Programme - Risk Management Essentials, Singapore, March 2018
- Listed Company Director Programme - Remuneration Committee Essentials, Singapore, March 2018
- Listed Company Director Programme - Audit Committee Essentials, Singapore, July 2016
- Listed Company Director Programme - Nominating Committee Essentials, Singapore, July 2016
- Listed Company Director Essential - Understanding the Regulatory Environment in Singapore : What Every Director Ought to Know, Singapore Institute of Directors, July 2013

Awards

- The best CFO in Thailand for the year 2002, according to the survey of 10 best CFOs in Asia conducted by Finance Asia magazine for the first year.

working experience

2014 - present Independent Director and Chairman of Audit Committee Thai Solar Energy Public Company Limited

Board member / Management in Listed Company - The Stock Exchange of Thailand

Present Independent Director, Chairman of Audit Committee, Member of the Nomination and Remuneration and Corporate Governance Committee Thanachart Capital Public Company Limited

Present Independent Director, Member of Audit Committee, Member of Sustainability and Risk Management Committee, Sermasuk Public Company Limited

1999 - 2007 President and Group CFO Shin Corporation Public Company Limited

Position in Other Organization / Institutions

Present Director, Chairman of the Board of Audit Committee, Nomination and Remuneration Committee, Fraser and Neave, Limited (Singapore)

Shareholding (%) None

Relation among Family with other Directors and Executives
None



Education

- Honorary Doctoral of Arts (Accounting), Kasem Bundit University
- Bachelor of Accounting (Second Class Honor), Chulalongkorn University
- Certified Public Accountant (Thailand) Chulalongkorn University
- Executive Management Program, Ivey School of Business, University of Western Ontario, Canada
- Leading Professional Services Firms Harvard Business School, Boston, U.S.A.

Related Training Program held by Thai Institute of Directors Association

- Director Certification Program (DCP) 119/2009
- Financial Institution Governance Program (FGP) 6/2013
- Board Matters and Trends (BMT) 2/2017

working experience

2014 - present Independent Director, Member Audit Committee, Chairman of Nomination and Remuneration Committee / Thai Solar Energy Public Company Limited

Board member / Management in Listed Company - The Stock Exchange of Thailand

2019 - present Director and Chairman of Audit Committee / Kerry Express (Thailand) Company Limited

2019 - present Commissioner, Audit Committee and Chairman of Subcommittee on Governance and Remuneration / The Securities and Exchange Commission

2017 - present Independent Director, Audit Committee and Sustainable Development Management Committee / Advanced Info Service Public Company Limited

2016 - 2019 Independent Director / Director to the Audit Committee / PTT Global Chemical Public Company Limited

2012 - present Independent Director and Chairman of the Audit Committee / The Siam Commercial Bank Public Company Limited

Position in Other Organization / Institutions

2017 - present Chairman of the Board of Directors, Thai Institute of Directors (IOD)

2017 - present Commission Member (Accounting) and Audit Committee, Office of Insurance Commission (OIC)

2014 - present Expert Member (Accounting) of the Committee on Dumping and Subsidy, Thailand

Shareholding (%) None

Relation among Family with other Directors and Executives None

Mr. Pala Sukawesh

Age 79 Years

Independent Director, Audit Committee

Education

- Honorary Doctorate of Engineering, Chulalongkorn University
- CERT. in Advanced Management Program (AMP), Harvard University U.S.A.
- Diploma, National Defence College, The Joint State - Private Sector Course Class 333
- M.S. Industrial Engineering (Operation Research) Oregon State University U.S.A.
- CERT. in System Analysis in Water Resource Planning, U.S. Army Corp. of Engineers, U.S.A.
- M.Eng. (2nd Class Honors) in Electrical Engineering, Chulalongkorn University

Related Training Program held by Thai Institute of Directors Association

- Directors Accreditation Program (DAP) 14/2004
- Role of the Chairman Program (RCP) 2/2001
- Role of the Compensation Committee (RCC) 3/2007

working experience

2019 - present Audit Committee / Thai Solar Energy Public Company Limited

2014 - present Independent Director / Thai Solar Energy Public Company Limited

Board member / Management in Listed Company - The Stock Exchange of Thailand

2012 - present Independent Director and Chairman of the Board, Union Petrochemical Public Company Limited

2001 - present Advisor, PTT Chemical Public Company Limited

2008 - Present Advisor, UNITHAI Public Company Limited

Position in Other Organization / Institutions

2011 - Present Advisor, Empire Asia Group Co.,Ltd.

2010 - Present Director, CUEL Co.,Ltd.

Chairman, Petroleum Institute of Thailand

2006 - Present Chairman Thai Resources and Environmental Management Foundation (TREM)

2005 - Present Director Thai Oil Power Co.,Ltd.

2002 - Present Chairman Bangkok Polyethylene Co.,Ltd

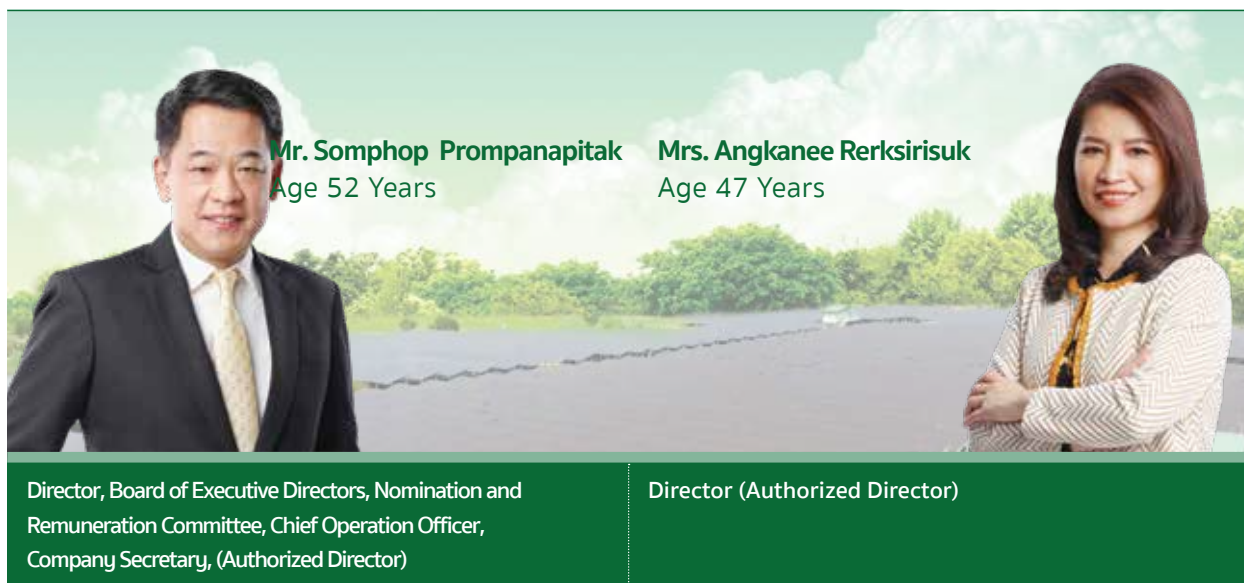
Royal Thai Decoration

1999 Knight Commander (Second Class) of the Most Noble Order of the Crown of Thailand.

2000 Grand Companion (Thrid Class, higher grade) of the Most Illustrious Order of Chula Chom Klao.

Shareholding (%) None

Relation among Family with other Directors and Executives None



Education

- Master of Business Administration (Management), Kasetsart University
- Master Business Administration (Finance), California State University
- Bachelor of Economics (International Program), Thammasat University

Related Training Program held by Thai Institute of Directors Association

- Thailand Energy Academy (TEA10)
- Director Certification Program (DCP) 106/2008
- Director Certification Program Update (DCPU) 1/2014
- Company Secretary Program (CSP) 31/2009
- Exam-Diploma Examinations 24/2009
- Executive Development Program

working experience

- 2014 - present Director, Board of Executive Directors, Nomination and Remuneration Committee, Chief Operation Officer / Thai Solar Energy Public Company Limited
- 2012 - 2013 Chief Financial Officer / Thai Solar Energy Company Limited

Board member / Management in Listed Company - The Stock Exchange of Thailand

None

Board member / Management in Non - Listed Company - The Stock Exchange of Thailand

- 2013 - present Director / Thai Solar Energy Group's Subsidiaries & Affiliates

Shareholding (%) None

Relation among Family with other Directors and Executives

None

Education

- Master Degree of Accountancy, Financial accounting, Chulalongkorn University
- Bachelor of Business Administration, Accounting, Burapha University

Related Training Program held by Thai Institute of Directors Association

- Directors Accreditation Program (DAP) 138/2017
- Strategic CFO in Capital Markets Batch 8 Year 2019 Orientation Accounting knowledge for 12 hours Organized by the Stock Exchange of Thailand
- Chief Financial Officer Certification Program 19/2015, organized by the Federation of Accounting Professions. Under the Royal Patronage of his Majesty the King
- Fundamental Practice for Corporate Secretary, organized by Thai Listed Companies Association

working experience

- 2017 - present Director, Thai Solar Energy Public Company Limited

Board member / Management in Listed Company - The Stock Exchange of Thailand

- 2013 - present Chief Financial Officer, WAVE Entertainment Public Company Limited
- 2000 - 2012 Vice President Business Development, GMM Grammy Public Company Limited

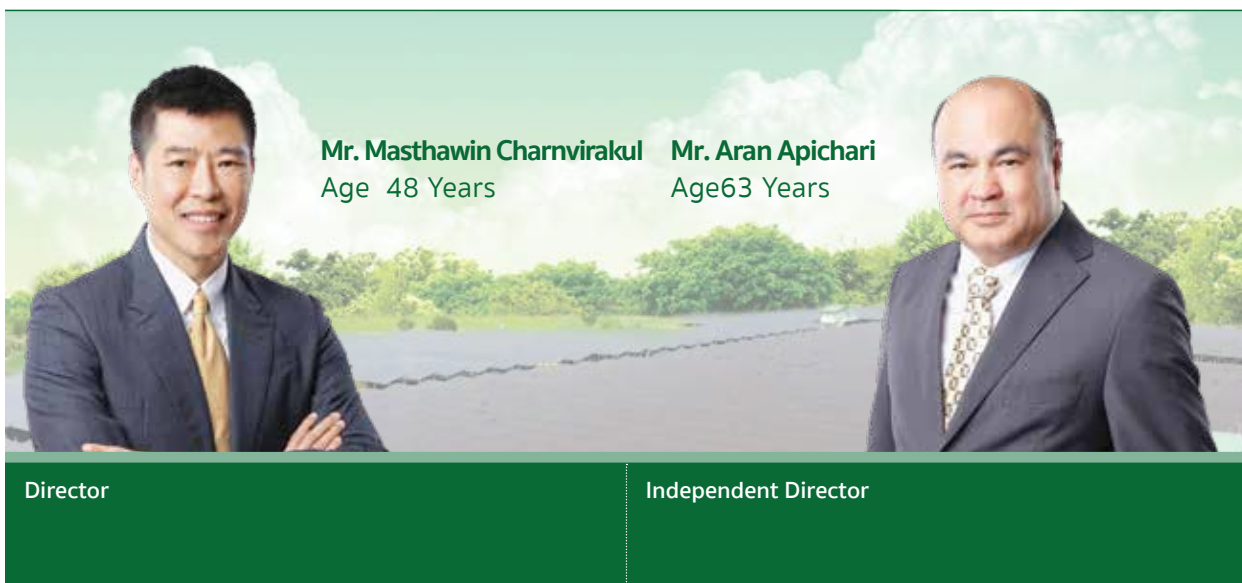
Board member / Management in Non - Listed Company - The Stock Exchange of Thailand

None

Shareholding (%) None

Relation among Family with other Directors and Executives

None



Education

- MBA (International Business), University of Southern California, USA
- B.A. (Marketing), Chulalongkorn University

Related Training Program held by Thai Institute of Directors Association

- Director Accreditation Program (DAP) 1/2003

Training courses

- Diploma Senior Executive Program (CMA Program), Class 11/2010, Capital Market Academy
- Ultra Wealth 2/2559, The Faculty of Economic Chulalongkorn University
- Academy of Business Creativity: ABC Class 7/2017, Academy of Business Creativity
- Top Executive Program in Commerce and Trade: TEPCoT Class 11/2018
- Advanced Master of Management Program, AMM No.4
- Top Executive Program for Creative & Amazing Thai Services (ToPCATS) No.1

working experience

2019 - present Director / Thai Solar Energy Public Company Limited

Board member / Management in Listed Company - The Stock Exchange of Thailand

1996 - present Director, Sino - Thai Engineering and Construction Public Company Limited

2002 - present Director/ Managing Director, STP&I Public Company Limited

Position in Other Organization / Institutions

Present Director/ Managing Director, STIT Co., Ltd.
Chairman, Fill Up Network Co., Ltd

Shareholding (%) None

Relation among Family with other Directors and Executives

None

Education

- Master of Public Administration (Public Administration), U.S.A.
- Bachelor of Public Administration (Criminology), U.S.A. PORTLAND STATE UNIVERSITY

Related Training Program held by Thai Institute of Directors Association

- Directors Certification Program (DCP) 149/2011

Training courses

- The course "Management of Public Economy executive" graduated 5. King Prajadhipok's Institute
- Course, "The executive Capital Academy "graduated 15 (CMA15)

working experience

April 2019 - present Independent Director / Thai Solar Energy Public Company Limited

Board member / Management in Listed Company - The Stock Exchange of Thailand

2012 - Present Chairman of Board of Directors, Chairman of the Board of Executive Directors / Three Sixty Five Pcl.

2007- 2010 Vice President Customer Business Department / Thai Airways International Pcl.

Position in Other Organization / Institutions

2012 Chairman Effect monopoly case seating system. (GDS) company between Thai - Amadeus Co., Ltd. and Thai Airways International Pcl.

2011 Director / The Transport Co., Ltd.

2011 Director / Bangkok Mass Transit Authority, BMTA

Royal Thai Decoration

2005 Companion (Fourth Class) of the Most Exalted Order of the White Elephant.

2000 Companion (Fourth Class) of the Most Noble Order of the Crown of Thailand.

1998 Member (Fifth Class) of the Most Exalted Order of the White Elephant.

Shareholding (%) None

Relation among Family with other Directors and Executives

None

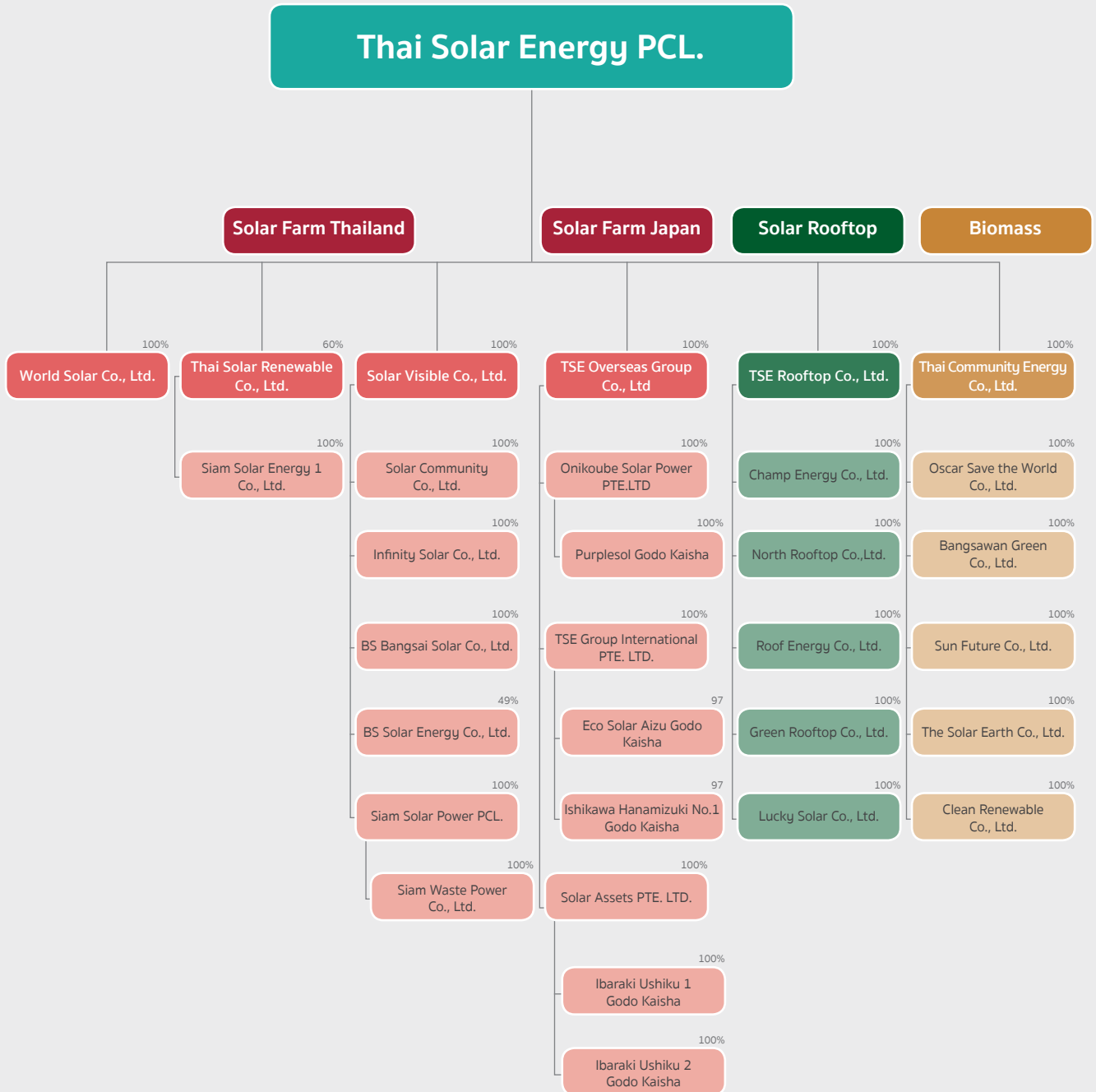


Mr. Kitiphong Thunnom Age 52 Years	
Chief Technical Officer	
Education	
<ul style="list-style-type: none"> Master Degree in Business Administration, Chulalongkorn University Bachelor degree in Electrical Engineering, Chulalongkorn University 	
working experience	
August 2017 - present	Chief Technical Officer / Thai Solar Energy Public Company Limited
Board member / Management in Listed Company - The Stock Exchange of Thailand	
2015 - 2017	Vice President Business Development / Glow Energy Public Company Limited
2005 - 2009	Chief Executive Officer / National Power Supply Public Company Limited
Position in Other Organization / Institutions	
present	Director / Thai Solar Energy Group's Subsidiaries & Affiliates
2010 - 2015	Chief Technology Officer / Italian-Thai Power Company Limited (IPC)
Shareholding (%)	None
Relation among Family with other Directors and Executives	
None	

Mr. Nivej Boonwichai Age 52 Years	
Vice President Engineering and Construction	
Education	
<ul style="list-style-type: none"> Bachelor of Engineering Program in Electrical Engineering, King Mongkut's University of Technology North Bangkok 	
working experience	
2015 - present	Vice President Engineering and Construction / Thai Solar Energy Public Company Limited
Board member / Management in Listed Company - The Stock Exchange of Thailand	
2008 - 2015	Vice President Engineering and Project Control / Gunkul Engineering Public Company Limited
2001 - 2007	Assistant General Manager, Engineering Department / Yuasa Battery (Thailand) Public Company Limited
Position in Other Organization / Institutions	
None	
Shareholding (%)	None
Relation among Family with other Directors and Executives	
None	



Shareholding Structure





Key Milestones and Development

The Company transformed into a public limited company under the name of Thai Solar Energy Public Company Limited on 18 February 2014 and is listed securities. Which started trading on the MAI on 30 October 2014, classified as medium-sized businesses Resource Industry Group, with the following significant changes and developments and has to be traded on SET since 14 May 2019 in the energy and utilities business category resources industry group, with the company having significant changes and developments as follows :

2014

Transform and prepare to be a listed company

- On 30 October 2014, the ordinary shares of the company became listed securities and traded on the MAI market under the medium-sized business category Industry Group “Resources”

On 31 December 2014, the Company Group had 1 Solar Thermal at total selling capacity of 4.5 MW, 10 Solar PV at total selling capacity of 80 MW and 5 Solar Rooftop at total selling capacity of 5 MW that distributed electricity as Commercial Operation Date (COD) for the Provincial Electricity Authority at a total selling capacity of 89.5 MW

2015

Expansion of Business to Asian Region

- Established a subsidiary, the TSE Group International PTE., LTD. (TSI) and Solar Assets PTE., LTD. in Singapore to support the Group’s plan to expand business operation to other countries in Asian region. The Company holds 100% of shares in these companies.
- The company expanded the solar power plant business in Japan.

On 31 December 2015, the Company Group had 1 Solar Thermal at total selling capacity of 4.5 MW, 11 Solar PV at total selling capacity of 80.5 MW and 14 Solar Rooftop at total selling capacity of 14 MW that distributed electricity as Commercial Operation Date (COD) for the Provincial Electricity Authority at a total selling capacity of 98.5 MW



2016

Recognition of additional income

- The Group began to recognize additional incomes from a project in Japan whose power distribution on Commercial Operation Date (COD) of 3 projects have begun in succession. The total production was 4.5 MW.
- The Group had power distribution on Commercial Operation Date (COD) of 1 project, which are projects for government agencies and agricultural cooperatives in 2015, Bang Saphan District of Prachuap Khiri Khan province, totalling 1 MW.
- The Group has invested in 3 biomass power plant business projects with total selling capacity of 22.2 MW in Nakhon Si Thammarat and Surat Thani Provinces.

As of December 31, 2016, the Group has a total of 36 projects under its operation in Thailand and Japan that comprise 1 solar thermal project, 18 solar PV projects (11 in Thailand and 7 in Japan), 14 solar rooftop and 3 biomass power plants with a total selling capacity of 143.68 MW. Of these, 30 projects have distributed electricity commercially, including the selling capacity in Thailand and Japan at the total capacity of 104.74 MW.



2017

Additional Expansion of Business Operation in Japan

- The Group recognized additional revenues from 1 more project in Japan. Total production capacity in Japan is now 6.99 MW.
- The Group made 1 additional investment in Onikoube project with production capacity of 154.98 MW.

As of December 31, 2017, the Group has a total of 37 projects under its operation in Thailand and Japan that comprise 1 solar thermal project, 19 solar PV projects (11 in Thailand and 8 in Japan), 14 solar rooftop and 3 biomass power plants with a total selling capacity of 298.42 MW. Of these, 31 projects have distributed electricity commercially, including the selling capacity in Thailand and Japan at the total capacity of 106.49 MW.

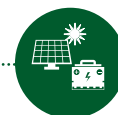


2018

Recognition of additional income and Adjust the structure according to the main business operations by holding shares

- The Group began to recognize additional incomes from a project in Japan whose power distribution on Commercial Operation Date (COD) of 1 project have begun in succession. The total production was 1.25 MW including the selling capacity in Japan 6 projects at the total capacity of 8.24 MW.
- Thai Solar Energy Public Company Limited has received the honorary award of “Asia’s Best Performing Companies” at “ACES AWARDS 2018” (The Asia Corporate Excellence & Sustainability Awards) organized by MORS GROUP in Singapore.
- TSE has implemented restructuring according to the holding company operation to support the operations of the subsidiary by focusing on participation in order to participate in management.
- The Group has invested in solar power plant project in Ang Thong Province 1 Project, operated by Infinite Solar Co., Ltd., which has distributed electricity commercially since 2015 with total selling capacity of 2 MW
- The Group has started Commercial Operation Distribution (COD) 3 biomass power plant business projects, with total selling capacity of 22.2 MW.

As of December 31, 2018, the Group has a total of 38 projects under its operation in Thailand and Japan that comprise 1 solar thermal project, 20 solar PV projects (12 in Thailand and 8 in Japan), 14 solar rooftop and 3 biomass power plants with a total selling capacity of 300.42 MW. Of these, 36 projects have distributed electricity commercially, including the selling capacity in Thailand and Japan at the total capacity of 131.94 MW.



2019

Recognition of additional income , Additional investment and Moving TSE from MAI to be traded on SET

- Hanamizuki Project in Japan selling capacity of 13.50 MW. Has been Commercial Operation Distribution (COD). Causing the group of companies Recognized revenue from 7 projects in Japan, totalling 21.74 MW. The selling capacity of 37 projects in Thailand and Japan at the total capacity of 131.94 MW.
- Stop operating the business of solar thermal power plants in the solar thermal system (Solar Thermal), with a selling capacity of 4.5 MW. because it is a project that cannot produce electricity to generate revenue for the company at full efficiency
- The Company’s ordinary shares have moved into the SET for trading under the Energy and Utilities Sector, Industry group “Resources”
- Thai Community Energy Company Limited (TCE) which is a subsidiary owned 100% enter into the additional investment in Oscar Save The World Company Limited (“OSW”) which currently operates biomass power plants, resulting in an increase in the investment proportion of the Group in that subsidiary from 75% to 100%.
- Solar Visible Company Limited (SV) which is a subsidiary owned 100% investment in BS Bangsai Solar Company Limited (“BSS”) which 1 operates the solar power plant projects in category of ground mounting with the installed capacity of 5 MW located at Phra Nakhon Si Ayutthaya Province.
- Solar Visible Company Limited which is a subsidiary owned 100% investment in BS Solar Energy Company Limited (“BSE”) which operates 1 solar power plant projects in category of ground mounting for government agencies and agricultural cooperatives with the installed capacity of 5 MW located at Udonthani Province.
- Solar Visible Company Limited which is a subsidiary owned 100% investment in Siam Solar Power Public Company Limited (“SSP”) which operates 1 solar power plant projects in category of ground mounting with the installed capacity of 8 MW located at Angthong Province.

As of December 31, 2019, the Group has a total of 40 projects under its operation in Thailand and Japan that comprise 23 solar PV projects (15 in Thailand and 8 in Japan), 14 solar rooftop and 3 biomass power plants with a total selling capacity of 313.92 MW. Of these, 39 projects have distributed electricity commercially, including the selling capacity in Thailand and Japan at the total capacity of 158.94 MW.



Nature of Business

Current the Group operates 2 types of solar energy generation and distribution business: Solar PV power plants and Biomass power plants.

1) Solar PV Power Plants Projects

Group's PV power plants generate and sell electricity using photovoltaic systems which can be categorized as follows

1.1 Solar PV Farm Projects

Domestic

The Group has 15 solar farm PV power plant projects with a total selling capacity of 101 MW and distributed electricity as Commercial Operation Date (COD) with the capacity of 101 MW.

Overseas

The Group has 8 solar power plants in Japan with total selling production capacity of 176.72 MW. So far, 7 of the projects have already distributed electricity as Commercial Operation Date (COD) with the capacity of 21.74 MW.

2 Solar Rooftop Project

The Group has 14 Solar Commercial Rooftop projects, the highest number in Thailand with a total selling capacity of 14 MW, all of which has been commercially distributed as Commercial Operation Date (COD) to the PEA and MEA.

2) Biomass Power Plants Project

The Group has invested in 3 biomass power plants through subsidiaries, i.e., Bang Sawan Green (BSW) in Surat Thani Provinces and Oscar Save the World (OSW) project 1 and project 2 in Nakhon Si Thammarat Provinces with total selling capacity of 22.2 MW. All three plants have been licensed to engage in biomass power plant business and have already entered into a contract to sell power supply to the Provincial Electricity Authority (PEA).

commercial power distribution projects

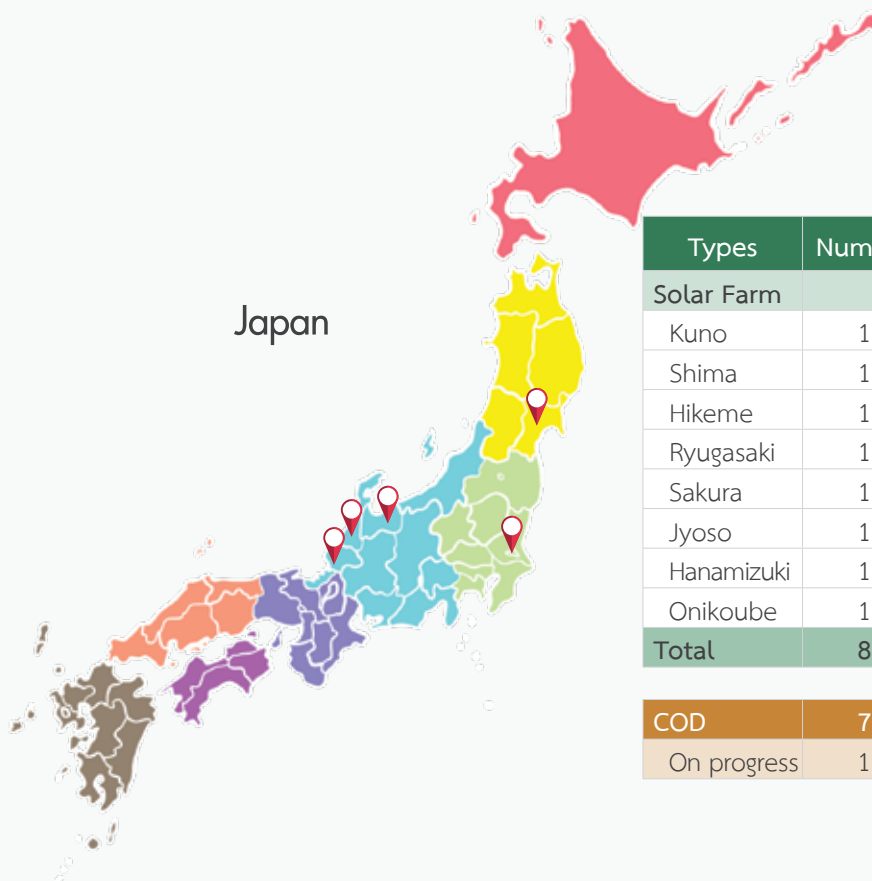
At the beginning of the year 2020 the Group had 40 projects. Divided into 32 projects in Thailand with a total capacity of 137.2 MW and 7 projects in Japan, with a total capacity of 176.72 megawatts, representing a total production capacity of 313.92 MW.

A total of 39 commercial power distribution projects are divided into 32 projects in Thailand, 7 projects in Japan, representing a total production capacity of 158.94 MW. Details are as follows:

Types	Number	Capacity	COD
Solar Farm			
SSE1	10	80 MW	2014
INS	1	2 MW	2015
SSP	1	8 MW	2013
Solar Farm (Co-Op)			
SLC	1	1 MW	2016
BSS	1	5 MW	2016
BSE	1	5 MW	2018
Solar Rooftop			
CE	4	4 MW	2015
NR	3	3 MW	2015
RE	3	3 MW	2015
GR	2	2 MW	2015
LS	2	2 MW	2015
Biomass			
BSW	1	4.6 MW	2018
OSW 1	1	8.8 MW	2018
OSW 2	1	8.8 MW	2018
Total	32	137.2 MW	

COD	32	137.2 MW	
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 Solar Farm
  Solar Rooftop
  Biomass



Types	Number	Capacity	COD
Solar Farm			
Kuno	1	0.50 MW	2015
Shima	1	1.25 MW	2016
Hikeme	1	1.50 MW	2016
Ryugasaki	1	1.75 MW	2016
Sakura	1	1.99 MW	2017
Jyoso	1	1. MW	2018
Hanamizuki	1	13.50 MW	2019
Onikoube	1	154.98 MW	Under - development
Total	8	176.72 MW	

COD	7	21.74 MW	
On progress	1	154.98 MW	

Projects in Thailand A total of 32 projects

for power supply to the commercial system, totaling 137.2 MW, can be divided into categories as follows:

1. Solar Farm Operated by

1.1 Siam Solar Energy 1 Co., Ltd. (or “SSE1 ”)

10 projects with a capacity of 8 MW for each project, totaling 80 MW



PV 01

Location : Bo Phloi
District,
Kanchanaburi
COD : September
2013



PV 02

Location : Don Chedi
District,
Suphan Buri
COD : July 2013



PV 03

Location : Nong Ya Sai
District,
Suphanburi
COD : October
2013



PV 04

Location : Doem Bang
Nang Buat
District,
Suphanburi
COD : November
2013



PV 05

Location : Doem Bang
Nang Buat
District,
Suphanburi
COD : November
2013



PV 06

Location : Dan Makham
Tia District,
Kanchanaburi
COD : June 2014



PV 07

Location : Tha Muang
District,
Kanchanaburi
COD : March 2014



PV 08

Location : Phanom Tuan
District,
Kanchanaburi
COD : June 2014



PV 09

Location : U Thong
District,
Suphanburi
COD : April 2014



PV 10

Location : Sam Chuk
District,
Suphanburi
COD : May 2014

1.2 Infinity Solar Co., Ltd. (or “ INS ”)

Selling capacity of 2 MW, located at Wiset Chai Chan District, Ang Thong and has linked the electrical system and commercial electricity distribution (Commercial Operation Date: COD) in December 2015



1.3 Siam Solar Power Public Company Limited (or “ SSP ”)

Selling capacity of 8 MW, located at Pho Thong District, Ang Thong and has linked the electrical system and commercial electricity distribution (Commercial Operation Date: COD) in March 2013



2. Solar Farm (Co-Op) Operated by

2.1 Solar Community Co., Ltd. (or “ SLC ”)

Selling capacity of 1 MW, located at Bang Saphan District, Prachuap Khiri Khan and has linked the electrical system and commercial electricity distribution (Commercial Operation Date: COD) in December 2015



2.2 BS Bangsai Solar Co., Ltd. (or “ BSS ”)

Selling capacity of 5 MW, located at Bangsai District, Phra Nakhon Si Ayutthaya Province and has linked the electrical system and commercial electricity distribution (Commercial Operation Date: COD) in December 2016



2.3 BS Solar Energy Co., Ltd. (or “ BSE ”)

Selling capacity of 5 MW, located at Sri Thart District, Udonthani Province and has linked the electrical system and commercial electricity distribution (Commercial Operation Date: COD) in December 2018



3. Solar Rooftop Operated by

3.1 Champ Energy Co., Ltd. (or “ CE ”)

4 projects with a capacity of 1 MW for each project, totaling 4 MW



Homepro

Chumphon

COD : September 2014



Homepro

Nakorn Sri Thammarat

COD : July 2015



Homepro
Surat thani
COD : December 2014



Homepro
Songklha
COD : October 2015

3.2 North Rooftop Cp., Ltd. (or “ NR ”)

3 projects with a capacity of 1 MW for each project, totaling 3 MW



Homepro
Lopburi
COD : September 2014



Homepro
Phrae
COD : February 2015



Homepro
Nakhon Sawan
COD : June 2015

3.3 Roof Energy Co., Ltd. (or “ RE ”)

3 projects with a capacity of 1 MW for each project, totaling 3 MW



The Mall Thapra
Bangkok
COD : July 2015



The Mall Bangkoki
Bangkok
COD : July 2015



The Mall Ngamwongwan
Bangkok
COD : August 2015

3.4 Green Rooftop Co., Ltd. (or “ GR ”)

2 projects with a capacity of 1 MW for each project, totaling 2 MW



Homepro

Ubon Ratchathani
COD : March 2015



Homepro

Nakhon Ratchasima
COD : November 2014

3.5 Lucky Solar Co., Ltd. (or “ LS ”)

2 projects with a capacity of 1 MW for each project, totaling 2 MW



Homepro

Ratchaphruek, Bangkok
COD : November 2014



Homepro

Ekamai-Raminthra, Bangkok
COD : February 2015

4. Biomass Operated by

4.1 Bangsawan Green Co., Ltd. (or “ BSW ”)

Selling capacity of 4.6 MW, located at Phrasaeng District, Surat Thani Province and has linked the electrical system and commercial electricity distribution (Commercial Operation Date: COD) in February 2018



4.2 Oscar Save the World Co., Ltd. (or “OSW”)

2 projects with a capacity of 8.8 MW for each project, a total of 17.6 MW, located at Chawang District, Surat Thani Province by Oscar Project 1 and Oscar Project 2 has linked the electrical system and commercial electricity distribution (Commercial Operation Date: COD) in August 2018 and October 2018 respectively.



projects in Japan 8 projects, operated by TSE Overseas Group Co., Ltd. (or “TSEO”), divided into 7 projects that have electricity into the commercial system, total 21.74 MW and are in the process of 1 project 154.98 MW, with the following details

1. Kuno Project

Selling capacity of 0.5 MW, located at Ibaraki, Japan and has linked the electrical system and commercial electricity distribution (Commercial Operation Date: COD) in August 2015



2. Shima Project

Selling capacity of 1.25 MW, located at Toyama, Japan and has linked the electrical system and commercial electricity distribution (Commercial Operation Date: COD) in March 2016



3. Hikeme Project

Selling capacity of 1.50 MW, located at Fukui, Japan and has linked the electrical system and commercial electricity distribution (Commercial Operation Date: COD) in April 2016



4. Ryugasaki Project

Selling capacity of 1.75 MW, located at Ibaraki, Japan and has linked the electrical system and commercial electricity distribution (Commercial Operation Date: COD) in September 2016



5. Sakura Project

Selling capacity of 1.99 MW, located at Toyama, Japan and has linked the electrical system and commercial electricity distribution (Commercial Operation Date: COD) in November 2017



6. Jyoso Project

Selling capacity of 1.25 MW, located at Ibaraki, Japan and has linked the electrical system and commercial electricity distribution (Commercial Operation Date: COD) in May 2018



7. Hanamizuki Project

Selling capacity of 13.50 MW, located at Ishikawa, Japan and has linked the electrical system and commercial electricity distribution (Commercial Operation Date: COD) in January 2019



8. Onikoube Project

Selling capacity of 154.98 MW, located at Miyaki, Japan. Which is currently under development of the project





Competitive Strategy

Efficient management by a team that has expertise in engineering and a long experience in energy and electricity generating, including knowledge and skills in all areas of cost management such as construction cost, administrative cost, and financial costs etc.

- 1) Strict process of EPC Contractors selection. The selected EPC Contractors must be trustworthy and have internationally-accepted professional record to ensure that each power plant is able to produce enough electricity according to the supply contracts that the Group has entered with the MEA and the PEA.
- 2) The EPC Contractors, hired by the Group shall have a world-class team of experts with experience and expertise in the field of civil engineering and installation of solar power plants, including the technical consultant to help in the process of checking and evaluating the projects during the construction process. This is to ensure that the efficiency and consistency of the Group's electricity generation capability is in high level.
- 3) Focusing on quality control of electricity generation process in order to ensure maximum efficiency in generating and delivering electricity supply as agreed upon in the contracts.
- 4) Earning stable and consistent revenue from electricity generation.
- 5) Establishing business relationship with allies that have good reputation, stable financial status and expertise in energy and related businesses.
- 6) Acquiring support in the form of loans for the projects from financial institutions.

Target Customers and Distribution Channels

Domestic

The Group's solar power plant projects are categorized as very small power producer or VSPP that provides electricity supply to Metropolitan Electricity Authority (MEA) and the Provincial Electricity Authority (PEA) according to the contracts, totaling 32 projects (Consisting of 29 solar power plant and 3 biomass power plants) Therefore, the Group's distribution channels are the electricity connection points from each project to the supply stations and electricity system of the MEA and PEA. The amount of power supply, distributed to MEA and PEA is calculated from the electricity units, passing through the meter at the power distribution point of each project. The MEA and PEA then distribute the electricity to the general public.

Overseas

The Group now has solar power plant projects in Japan that generate electricity supply for regional utility Group who oversees public utilities in each region in Japan according to the power supply contract. Therefore, the Group's distribution channels are the electricity connection points from each project to the supply stations and electricity system of each region. From there, the electricity supply is distributed to the general public.

Products and Services

1. Procurement of Project Location

As the production of electricity from solar energy will rely on solar radiation as the choice location of the power plant, so it is very important. Topography and climate as well as to contribute to the intensity of the light varies, the Group has studied the intensity of light from four primary sources is MeteoNorm, NASA, NEDO (New Energy and Industrial Technology Development Organization,. japan), and JMA (japan Meteorological Agency) before choosing the location of the power plant. In addition, the intensity of solar radiation which affects the capacity and revenue, and the company also has to consider other factors. That affect the cost of the Group. And payback period of the project.

The supply of PV Solar Farm project The main factors considered include company.

- 1) The distance from the main road. Distance from the associated electrical system of the PEA, which affects the cost of power lines. And the rate of loss of power from the distance used in electrical connection with the PEA.
- 2) The height of land which affect the likelihood of flooding.
- 3) Soil characteristics that are suitable for the construction of solar power plants, such as the hardness of the soil, which affects the structure and so on.
- 4) The shape and size of the land suitable for the construction of the power plant
- 5) Price and ownership rights of land ownership or ownership of such a company is a leasehold on the land, which will affect the stability and duration of the payback of the project.

he supply of roof space for the installation of Solar Rooftop PV projects key to the company are considered.

- 1) The lifetime of the roof The roof should last for not more than 10 years to reduce future risks to the roof to deteriorate before the end of the Power Purchase Agreement for 25 years The roof must have the appropriate engineering, the company is not required. additional investment to improve or enhance the strength of the roof.
- 2) The strength of the building structure Due to the weight of the solar panels.
- 3) The size and shape of the roof. The total area of the inverter device. To ensure that adequate measures for all projects put on hold.
- 4) The nature of the business and stability in the business of building owners. The roof is made for long-term lease of 25 years, the company is looking for partners who are strong in the business. The Company A partnership with two partners Mall and the Home Pro, the business is expanding steadily. Without a plan to come into power generation business is not a core business.
- 5) Rental rates which will affect the duration of the payback of the project.
- 6) The duration of the rent roof, which shall not be less than the duration of the PPA contracts to ensure that the company will be able to implement the project until the term of the PPAs.

2. Procurement of contractors

Domestic

» Solar PV

When hiring EPC Contractors, the Group has a strict process in selecting the contractors in order to ensure that the Group's power plants can efficiently, safely and cost-effectively produce electricity. In addition, for large-scale projects, the Group has hired the OWL technical consultant to provide consultancy from the beginning process of hiring contractors to the completion of the construction. The consultant's duty is to check the scope of work, investing fund and other conditions in the contracts to ensure that they conform to each project's objective and are reasonable. The consultant also needs to ensure that the contractors delivered each project and performed their works according to the contracts. The Group also hired the EPC Contractor who has expertise in designing and construction.

» Solar Rooftop

The Group procured essential supplies such as solar cells and power converters, etc., directly from suppliers by itself. The Group also hires sub-contractors with experience, skills and potential, appropriate for each location of the projects. Moreover, the Group hired a technical consultant, the Excellence Engineer International to provide the Group with consultancy on contractor's engineering construction design and quality control for the construction from the beginning until completion. This is to ensure that contractors deliver quality work according to the contracts.

» Biomass Power Plant

The Group has a strict process of EPC Contractors selection to ensure that its power plants will be able to produce electricity efficiently, safely and cost-effectively. For the 3 biomass power plant projects to be implemented at the same time in the country, the Group has hired the Engineering Evolution, JERA Power (Thailand), and Tractable as technical consultants to provide consulting services that ranges from the process of hiring sub-contractors to the construction of the projects until the completion. This is to ensure that the scope of work, investment fund and conditions in the contract are in consistent with the objectives of each project and the project will be completed according to the time frame, specified in the contract. The Group also hired the EPC Contractor who has expertise in designing and construction.

Overseas

» Solar PV

For overseas projects, the Group has hired MottMacDonald and VectorCautro to provide the technical consults. The Group also has legal and business consultants to provide consults since the process of applying for license and hiring the contractor and an ally, Prospec Holding Inc., who has expertise and experience in construction of solar power plant.

3. Procurement of Raw Materials

Solar Power Plant Projects

Main raw material

» Solar Farm

Solar energy is unlimited and depending on the weather and the terrain is. The main equipment used in power plants, the Group had discussions with contractors a comprehensive selection of core equipment critical.

» Solar Rooftop

As for Commercial Rooftop PV power plant projects, the Group procures the main equipment by itself by purchasing directly from manufacturers using experience gained from the construction of Solar Farm PV power plants.

Biomass Power Plant Projects

The main raw material for biomass power plant project is rubber wood slaps which are abundant in the South. In the case of a shortage in the supply of rubber wood slaps or an increase of their costs, the alternative raw material is the empty palm bunches which are also abundant in the southern regions. The price of rubber wood slaps is relative to the price of raw rubber latex. In the past few years, the price of raw rubber latex was low and thus, causing the price of rubber wood slaps to be low as well. Rubber planters would cut down the rubber trees when they provide lesser rubber latex which is when the trees are 20-25 years old. The price of rubber wood also varies according to the seasons. The price in summer would be relatively lower because it is easier for the planters to cut the tree and make delivery to the buyers than in rainy season. The important equipment, required for the power plant project was jointly selected by the group and the EPS Contractor.

4. Hiring of O&M Contractors

Solar Power Plant Projects

» Solar PV

In order to ensure the smooth and integrated operations, the Group hired O&M contractors and EPC contractors for the power plants at the same time. For big projects, the EPC contractors are also acting as O&M contractors for that particular project which allows easier management for the projects because they will have the expertise with their own technology. The scope of work operations and the contractors' qualifications are defined in the TOR which is part of the EPC contract.

» Solar Rooftop

As for Commercial Rooftop PV Power Plants, the Group shall take responsibility in the operations and maintenance management by itself, using experienced employees who undergone training for the said management from the EPC contractors.

Biomass Power Plant Projects

Since the production process of biomass project is much more complicated than the solar power project, the Group has, therefore, planned to contract out the management and maintenance works to a third party as a comprehensive package. The hiring will be made through a selection process whose detail has been included in the Term of Reference (TOR). The company to be selected must have expertise and experience in biomass project management.

Environment Impacts

The Group has adopted the standard of education about preventive measures. And the impact on the environment and safety. ("Environmental Safety Assessment" or "ESA"), which is the one that plays a role in controlling the impact on the environment from the operation, and must be completed before the start of construction of power plants, solar and standard operation. and control the environmental impact (Code of Practice) of biomass power plants. The strict implementation of measures to reduce the environmental impact. And measures to monitor environmental quality, and then report the results to the relevant authorities continues.

Moreover, the Group has been certified by the ISO certification agency in the world. For the preparation of the quality management system (ISO 9001: 2015) and environmental management (ISO 14001: 2015) standards. Regulations and practices in the field of the environment that is appropriate to the law and can be checked. And to ensure that the production of electricity from solar energy by the Group. Will not cause noise pollution, heat and air, which makes the overall environmental impact of both local and international. In addition to preparing for the development of a management system for occupational health and safety. (ISO45001: 2018) for biomass power plants as well.



Risk Factors

Risk factors related to the Group's operation that may have a significant impact on the Group, and its risks prevention guidelines are as follows:

1. Risk related to business operation

1.1 Risk from the lower-than-expected electricity output

Usually the electricity output of solar power plants may be affected by both external and internal factors. Significant internal factors include, for example, the efficiency and useful life span of equipment that ranges from solar collectors trough, solar modules, wind turbines, to transformers. Moreover, there are also the loss of output and the technical problems that could occur during the electricity generating process. The significant external factors include solar intensity, changes in climate, and natural disasters such as floods, storms and fire etc. These risk factors can cause the Group to be unable to generate electricity output that is less than expected and may pose a direct effect on the revenue and business performance of the Group and other operators in the industry.

Before commencing the construction of the solar PV power plant, the Group hired Owl Energy Limited ("OWL"), a technical consulting firm with extensive experience in solar power to conduct the feasibility study and to be a consultant for the process of selecting the EPC Contractor including the controlling and overseeing of the construction of the power plant to be in accordance with the construction drawings, time frame and agreement. In addition, the EPC Contractor provides an output performance guarantee to the Group for the period of 10 operating years and also provides warranty to major equipment to minimize this risk.

1.2 Risk from reliance of on EPC Contractor

In accordance with the construction of a power plant requires expertise both in technology. Construction experience Supply ability and operating personnel Which requires the work process to be coordinated to all parts. The company therefore hires a comprehensive contractor to be able to control the work efficiently. And allow the contractor to be flexible in achieving the goals

Thai Solar Energy Public Company Limited At present, the Group has an internal team that can handle basic repair and maintenance of the equipment. As for backup/replacement equipment, the Group is able to procure enough of them to maintain normal and uninterrupted operation.

The Group has put in place a stringent selection process for EPC Contractor and engages technical consultants with solar power plant experience to act as advisors in the selection and hiring of EPC contractor, including the monitoring and supervising of the construction of power plants to ensure that it is in accordance with the drawing plan and the agreement. In selecting the contractor, the Group initially focuses on each contractor's technical information such as qualifications (experience, expertise, technology know how, and financial status), efficiency and effectiveness of the equipment, warranty (electricity output and equipment), and services. After all of those factors have been considered, the Group, then, concentrates on pricing to ensure that it has hired a contractor of high quality at reasonable price.

1.3 Risk from changes in policy of the government or relevant agencies

If the government and government agencies have changed policies related to energy affairs of Thailand or Japan, including the terms and procedures Regarding the request for permission to buy or sell electricity or revise the conditions for purchasing electricity Such changes will affect the power purchase agreement of the Company. Which will affect the operating results and financial position.

The management team and the team with the knowledge, competence and experience have been following news about government policies and related agencies. Change in advance and use the information to create a business plan in the future. In addition, the company There is an internal meeting between the management. To analyze the operating policy always and can adjust business strategies and policies To be consistent with the situation of business and industry

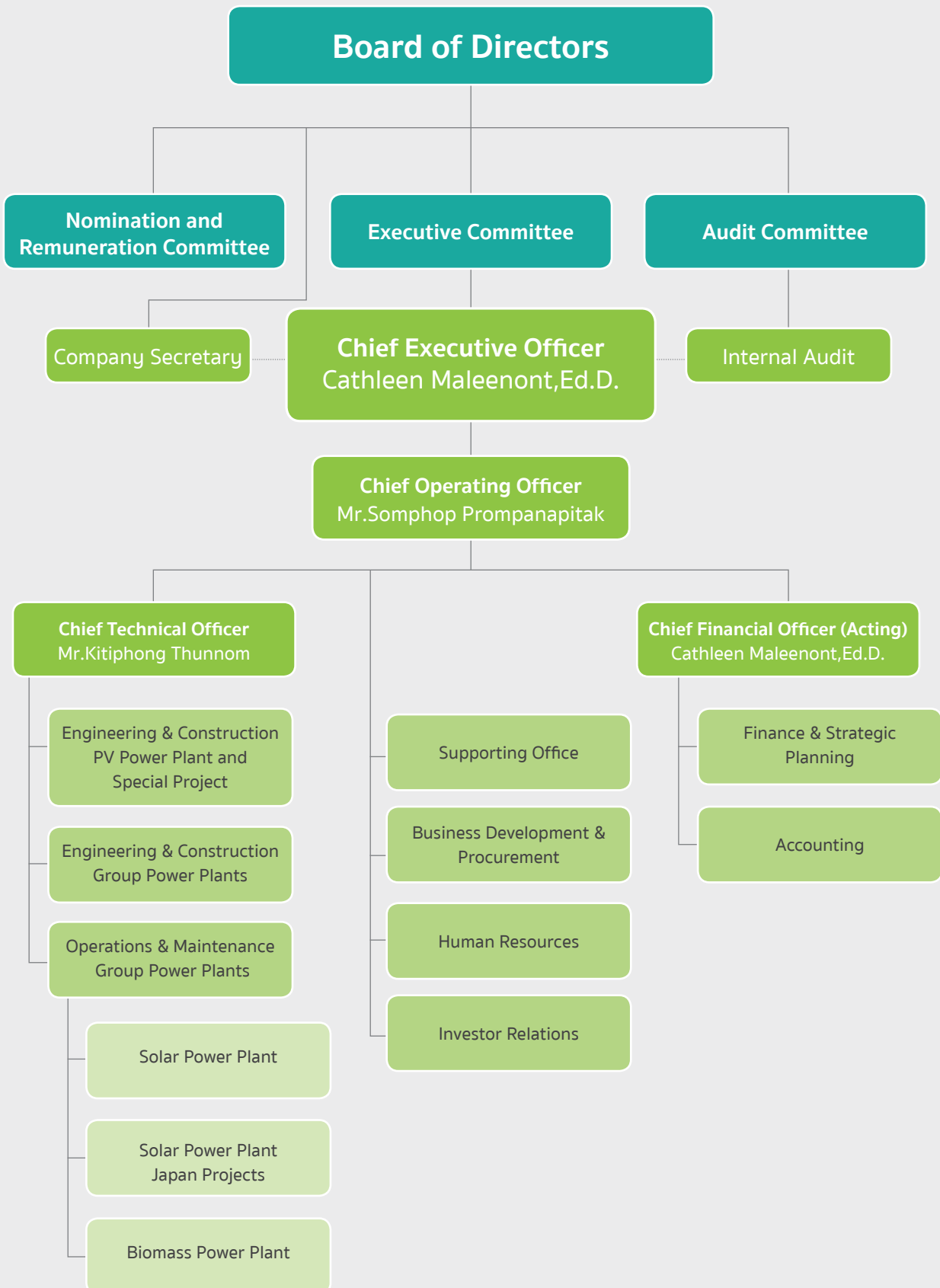
1.4 Exchange Rate Risk

In accordance with our expanding in capacity overseas, there are revenue, loan, investment costs and expenses in a foreign rate as a result having the Group an exchange rate risk. In conclusion, the foreign rate from overseas investments could affect the Group performance.

The Group has a main policy to managed the exchange rate risk by financing loan the same foreign rate as its income to minimize the effect of the risk (Natural Hedge). The Company also uses financial instruments to reduce the risk of fluctuations in foreign exchange rates and interest rates. The exchange rate will be used to receive repayment in foreign currency. Financial instruments comprise cross currency swap and forward contracts which help to hedge the risk of both interest rates and foreign exchange rates.



Organization Chart





Corporate Governance Policy

The Group operates the business under ethical principles and legal compliance and standard and code of good practices that the Group has laid out as policies for the Board members, executives and employees to comply with according to the corporate good governance and code of good practice guidance. The Group also posts these policies on its web site: www.thaisolarenergy.com under the topic: Investment Relation–Corporate Governance. Except for some of the principles that the Company has chosen, it is different from the SET's guidelines.

SET Guideline	The company' explanation
The Chairman of the Board should be an Independent director	Chairman of the Board is not an independent director <ul style="list-style-type: none"> ● The Chairman of the Board is a visionary, experienced, Knowledgeable in business and can provide independent Opinions.
The Chairman of the Board and the Chief Executive Officer should not be the same person	The Company has the same person who serves as the Chairman of the Board and the Chief Executive Officer <ul style="list-style-type: none"> ● Under the Board structure, more than half of the Board members are independent directors and the company has set a clear scope of authority, duties and responsibilities of the Board members and the Chief Executive Officer. Moreover, the approval process and operation of business are in accordance with the rules and regulations on approval process, reviewed and approved by the Board of Directors
The members of Nomination and Remuneration Committee should all be independent directors	The members of Nomination and Remuneration Committee are independent directors and members of Executive Director <ul style="list-style-type: none"> ● The Chairman of the Nomination and Remuneration is an independent director who is able to provide independent opinion

Guidelines for the practice of the company

Rights of Shareholders

Putting the rights of shareholders as the first priority, the Group conducts the business to assure the shareholders that they can fully exercise the following basic rights. Every shareholder is entitled to the rights and equitable treatment detailed below

- Right to purchase, sell, or transfer stocks and to be sufficiently information
- The right to an equitable dividend
- Right to receive sufficient information via the Company website or SET website or other channels indicated by the Company
- The right to propose meeting agenda in advance so that it can be included in the meeting agenda and the right to nominate a person to be member of the board at the annual general meeting of the shareholders.

In order to comply with the aforementioned guidelines, the Company has determined the policies related to the rights of shareholders as follows.

1) The Rights of Shareholders

- The Company respects the rights of shareholders and refrains from any action that limits shareholders' rights i.e. the right to trade or transfer shares, the right to receive profit sharing of the Company, the right to receive adequate news, the right to attend shareholders' meeting in order for determining the direction of the Company's operations through the board of directors or the right to make decisions on any matter that has a significant impact on the Company i.e. the appointment or withdrawal of directors, the appointment of auditors, appropriation of dividends, formulation of or amendments to the Company's Articles of Association or Memorandum of Association, capital decrease or capital increase and approval of special transactions, etc.
- The Company will encourage shareholders to exercise their rights at an annual general meeting of shareholders i.e. the right to propose meeting agenda for the shareholders' meeting in advance prior to the meeting, the right to nominate persons to be selected as the Company's directors in advance, the right to submit questions in advance prior to the meeting, the right to express opinions and ask questions at the shareholders' meeting, etc.
- The Company will refrain from any action which shall be considered wrongful acts or restriction of rights or eviction of shareholders to access the Company's information to be disclosed in compliance with related laws, regulations, provisions and notifications of supervisory authorities. In addition, the Company will abstain from any action which shall be wrongful acts or limitation of rights or eviction of shareholders to attend the shareholders' meeting, e.g. the Company does not present additional important materials promptly or not provide additional agenda items or change vital information without prior notice to shareholders except in case of urgent necessity and being undertaken for the Company's benefit.
- The Company has a duty to support and facilitate shareholders to exercise their rights i.e. providing up-to-date important information through the Company's website, etc.

2) Information Disclosure on Shareholders' Meeting

- The Company has a policy to provide information about date, time and place, agenda items of the shareholders' meeting, the board of directors' opinions and supporting information used for consideration of each agenda item, as well as all information relating to matters for shareholders' consideration of votes at the shareholders' meeting through the Company's website in advance adequately and in due course.
- For every shareholders meeting, the Company has a policy to provide shareholders the opportunity to study information in advance prior to the meeting through the Company's website. Such information shall be the same as materials submitted to the shareholders.
- Upon the end of the shareholders' meeting, "the minutes of the shareholders' meeting" shall be prepared accordingly with all information included details of each agenda items, resolutions, votes, questions and opinions of shareholders. Such minutes shall be publicized on the Company's website and submitted to the Stock Exchange of Thailand within 14 days from the meeting date pursuant to the notifications of the Office of Securities and Exchange Commission and the Stock Exchange of Thailand, whereas such minutes shall be delivered to the Department of Business Development as specified by laws.
- The Company promotes the exercise of shareholders' rights and abstains from restriction of their rights by disclosing information through the Company's website in advance.
- The Company provides shareholders the opportunity to regularly receive the Company's up-to-date news and information through the Company's website in advance.

3) Conduct of Meeting

- The Company has a policy to support and facilitate shareholders to fully exercise their rights to attend the shareholders' meeting and votes at the meeting.

- The Company will provide shareholders guidance and methods for attending the meeting in the notice of the shareholders' meeting. At the meeting, a moderator will again inform such guidance and voting procedures to shareholders. Furthermore, the guidance and voting procedures shall be contained in the minutes of each shareholders meeting.
- The Company will provide shareholders the opportunity to ask questions about the agenda items or relating to the Company and to express their opinions to the shareholders' meeting according to agenda items and proposed matters. The chairman of the meeting will be responsible for inquiring the meeting in each agenda item and ensuring all questions pertaining to agenda items or the Company and shareholders' opinions, as well as the board of directors and/or executives' clarifications to be noted in the minutes of each shareholders' meeting.
- The Company encourages all directors and executives of the Company to attend the shareholders' meeting in order to answer questions and listen to shareholders' opinions unless the Company's directors and executives are engaged.

Equitable Treatment of Shareholders

The Company shall equally and fairly treat all shareholders, including managerial, non-managerial, foreign and individual shareholders under the following principles:

- 1) The Company shall arrange to timely provide the information on date, time, venue and agenda of shareholders' meetings, opinions of the board and detail to support the review of each agenda, including all of the information related to the businesses that the shareholders must review and make a decision in the shareholders' meeting in the Company's website in advance with adequate preparation time. The information is the same as the documents sent to the shareholders who are entitled to attend the meeting and vote.
- 2) The Company shall grant the shareholders the right to propose agenda for the shareholders' meeting in advance of the meeting and to nominate a person to be selected as member of the Board and to submit any question to be responded by the meeting through the Company's website before the meeting.
- 3) The Company shall conduct the meeting according to the agenda, provided in the letter of invitation. The member of management team who are also the shareholders may not propose any unnecessary additional business to the meeting, especially the type of business that requires the shareholders to spend a lot of time to review it before making a decision.
- 4) Company shall facilitate small shareholders who want to nominate member of the Board of Directors by setting up a convenient channel to submit the nominee's background or letter of consent to the Selection and Remuneration Committee, according to the rules and procedures and steps, prescribed by the Company.
- 5) The company will encourage shareholders to use proxy forms in the form that shareholders can determine the direction of voting, agree, disagree and abstain. By appointing proxy forms A, B and C (proxy forms only for custodian) to shareholders
- 6) Company shall facilitate the shareholders who cannot attend the shareholders meeting in person but want to cast the vote through a proxy. For this purpose, Company shall have at least 1 independent director available as proxy to attend the meeting and cast the vote on behalf of the shareholder.
- 7) Company shall require that the voting on all agenda shall use the ballot and shall notify the meeting of how the ballots would be collected, especially on an important agenda such as the appointment of individual
- 8) The company has a policy to encourage shareholders to exercise the right to appoint directors of the company on an individual basis.

The shareholder's Meeting

The company's board convenes the ordinary shareholders' annual general meeting once within 4 months after the end of the accounting period and may call an extraordinary shareholders' meeting if it is necessary to propose urgent agenda on a special case basis. Such agenda must be one that affects the shareholders' interest or related to legal enforcement.

The Chairman of the Board, executives and auditor shall be present at the meeting to provide information and responses to inquiries related to the agenda. Before the meeting, the company shall inform the shareholders of their rights according to the company's Articles of Association, meeting procedures, voting method and the rights to express opinions or to raise questions in the meeting according to the agenda and proposed businesses.

After the meeting, the Group shall complete the minutes of the shareholders meeting within 14 days. The minutes shall include adequate information, including the questions and answers during the meeting. The shareholders who did not attend the meeting may read the minutes from the company's web site. Roles of Stakeholders

Roles of Stakeholders

The Group realizes the importance roles of stakeholder and equally treats all stakeholders including internal stakeholders such as employees, and external stakeholders such as customers, trading partners, creditors, competitors and the public. The group establishes policies and guidelines for dealing with each group of stakeholders as part of its corporate governance policy and ethics. The details are as follow;

- Shareholders

The Group shall equally treat all shareholders and shall provide related information that significantly benefits the shareholders. Moreover, the Group also realizes the importance of the shareholders' benefits and be responsible for them by operating the business with integrity, transparency and fairness.

- Employees

In realizing that the employees are the key factor that drives target achievement, the Company formulates the policies to fairly treat the employees in many aspects, including opportunity, remuneration, appointment, transfer, and capacity development. The Company offers the compensation, based on a fair and measurable assessment of performance under the regulations, prescribed by the Company. The remuneration and benefits of employees are examined and reviewed to ensure that they are in line with the industry's standard. The Company also promotes and develops its employees to be knowledgeable and capable on a regular basis by sending them to attend training in related work units.

- Customers

The Group adheres to the principles of good faith, credibility and mutual trust, focuses on the problems and needs of the customers, be responsible and cares for their maximum satisfaction and emphasizes a long-term relationship and cooperation with the customers.

- Creditors

The Group shall make an utmost effort to honor all the conditions that it has agreed with the creditors, based on good faith and strict compliance to contractual obligations. It also follows up on the related financial ratio in order to protect mutual benefits and success. In a case that the Group is unable to comply with any of the obligations, it shall inform the creditor in advance in order to jointly find a solution.

- Business Partners

The Group treats business partner in good faith and equal manner in order to ensure appropriate and fair business transaction, sustainable development and long-term partnership. The selection of our partner is based on conditions such as pricing, quality, environmental protection and prevention, technical and legal expertise, trust-worthiness, adherence on correctness and not detrimental to our company's reputation.

- Business Competitors

The Company treats the competitors under fair rules and refrains from violating secret or dishonestly or improperly seeking competitors' confidential information or slandering them.

- Communities and Society

The Company and employees adhere to the principle of conducting the business responsibly and for the benefits the society and communities. The Company also has the duty to cordially treat and support the local communities to improve their quality of life as well as to be responsible for a fair and equitable operation of its business. Moreover, the Company also uses green technology to promote sustainable development.

- Related Government Agencies

It is the Company's duty to comply with the related and enacted law and regulations and to support activities of the government agencies on appropriate occasions. The Company also adheres to conducting the business that is fair and in compliant with the related laws, rules, regulations and notifications in countries where the Company operates the business.

Responsibility towards Environment and Resources

The company has set policies regarding the environment and safety. And has been certified for the environmental management system (ISO 14001: 2015) since 2015, in the year 2020, the Group started to prepare for the certification of occupational Health and safety management system (ISO 45001: 2018), along with training to provide knowledge on the environment, safety so that employees are aware of look after the environment And efficient use of resources Like the project systematic waste management and participation in the green factory project of the department of factory including operations under various projects to be responsible for conducting business that is environmentally friendly. and achieve sustainable development

Disclosure and transparency

The Company has a policy to fully, accurately, promptly and transparently disclose the related and important information, either financial or non-financial information, and other information that may affect the stock prices or the investor's or stakeholders' decision in compliance with the standard of The Stock Exchange of Thailand or the Security and Exchange Commission. Therefore, all parties will equally receive the information through various channels, such as the report to The Stock Exchange of Thailand or the Security and Exchange Commission and the Company's website. The Company also has the investor relations officers to communicate with the investors or shareholders, including institutional and individual investors.

The Company has the policy to prevent and eliminate any potential conflicts of interest that may occur in the future and to review the connected transactions between the Company and/or subsidiaries and any potential conflicting individuals to ensure compliance with related laws, regulations and declarations.

In a case that board members, executives and/or major shareholders of the Group in a manner that may cause a conflict of interest with the Group and/or its subsidiaries, it must be reported to the Board.

The Group has a policy to restrain board members, executives and/or major shareholders from engaging in similar or competing business that may affect the competitiveness of the Group.

In a case that the board member, executive and/or major shareholder holds shares in other company whose business is similar to that of the Group or its subsidiaries, it must be reported to the audit committee to provide opinions and propose the case for a review by the Board.

Communication with Shareholders or Investors.

The Group has set up a channel to accept complaint cases and/or opinions and provided a direct access to senior executive through email address: info@thaisolarenergy.com The Group also set up the informant protection program that prevents disclosure of personal information of the informant and keeps them confidential. The internal control department of the Group is responsible for collection the complaint cases and submit them to the Audit Committee for further investigation. If the case affects the company, it shall be further submitted for review by the board.

Responsibilities of the Board

The Board of Directors is responsible for the shareholders by conducting and supervising the operation of the business to ensure that it is in compliance with the objectives, and guideline to maximize the benefits for the shareholders, by taking into account the benefits of all stakeholders, including compliance with the laws, objectives, articles of association of the Company and resolution of the shareholders meeting in good faith. The Board shall also protect the short-term and long-term interest of the stakeholders.

Board of Directors

As of 31 December 2019, Board of Directors consisted of the following 9 directors:

Name - Surname	Position	Date First Appointed
1. Cathleen Maleenont,Ed.D	Chairman of the Board of Directors Chairman of the Executive Committee Member of Nomination and Remuneration Committee	18 February 2014
2. Mr. Prommin Lertsuridej	Independent Director Vice Chairman of the Board of Directors	18 February 2014
3. Mr. Pala Sookawesh	Independent Director Member of the Audit Committee	18 February 2014 22 April 2019
4. Mrs. Siripen Sitasuwan	Independent Director Chairman of the Audit Committee	18 February 2014
5. Mr. Prasan Chuaphanich	Independent Director Member of the Audit Committee Chairman of Nomination and Remuneration Committee	18 February 2014
6. Mr. Somphop Prompanapitak	Director Member of the Executive Committee Member of Nomination and Remuneration Committee	18 February 2014
7. Mrs. Angkanee Rerksirisuk	Director	23 May 2017
8. Mr. Masthawin Charnvirakul	Director	27 February 2019
9. Mr. Aran Apichari	Independent Director	22 April 2019

Authorized Signatories

Ms.Cathleen Maleenont and Mr.Somphop Prompanapitak or Mrs. Angkanee Rerksirisuk have been designated as the Company's authorized signatories.

The roles and responsibilities of the Board

Board Authority

Authority of the Board shall comply with specified laws, objectives and articles of association as well as the shareholders meeting's resolution. The Board authority shall also include:

1. Appointing a chief executive officer, the Board Committees and a company secretary, whereas determining the Board Committees' remuneration (not exceeding the total amount approved by shareholders).
2. Considering and approving actions taken by the Company and its subsidiaries in accordance with the Company's Articles of Association of each company that cover the following matters:

- 2.1 Vision, mission, policy and strategic plan
- 2.2 Annual business plan
- 2.3 Annual budget plan
- 2.4 Quarterly and yearly financial statements
- 2.5 Interim dividend payment
- 2.7 Significant acquisition, disposition / transfer or suppression of assets or any business of the Company
- 2.8 Changes in any Board authority which assign other persons to act
3. Considering authorizing a sub-committee to perform some matters occasionally
4. Ensuring that the Company and its subsidiaries have proper and efficient accounting systems and provide reliable financial reports and auditing, adequate and suitable internal control and audit system.

Duties and Responsibilities

The Board's duties and responsibilities shall comply with specified laws, memorandum of association, articles of association and the shareholders meeting's resolution, including the following actions:

1. Define vision, mission, policy, strategy and financial goals of the Company and consider and approve policies and operational directions proposed by the management. Oversee and control the management to perform in accordance with vision, mission, policy, strategy and financial goals with the aim of increasing an economic value to the shareholders and all related stakeholders.
2. Set up the Company's structure and procedures to ensure compliance with those procedures, articles of association, the Board's resolution, the shareholders' resolution with honesty and caution.
3. Set up the Company's structure and procedures to ensure proper risk management, compliance and audit and internal control systems.
4. Oversee to ensure preparation of accounting and keeping accounting and related documents as well as proper information disclosure to the shareholders and general public.
5. Oversee to ensure that the Company shall comply with ethics as specified by the Board and define the Company's policy on good corporate governance and social responsibility.
6. Have the authority to appoint persons to be directors or executives of subsidiaries according to a proportion of shareholding in subsidiaries, at least. Clearly determine a scope of duties and responsibilities of appointed directors and executives. Control management to comply with the Company's policy and various transactions made correctly in accordance with laws, and disclose financial positions, operating results, related party transactions and significant acquisition and disposition of assets completely and accurately.

However, the delegation of authority and responsibilities shall not be made in the manner that the Board or other persons delegated or sub-delegated by the Board enable to approve transactions, which they or others may have stake in, or receive benefit, or have conflicts of interest (as defined in the notifications of the Securities and Exchange Commission ("SEC") or the Capital Market Supervisory Board) with the Company or subsidiaries, except for approval of transactions according to the policy and criteria approved by the shareholders meeting or the Board.

Composition of the Board

The Board consists of the number of directors determined by the shareholders meeting, but not less than five people. In addition, at least three Board members or one-third of the total number of directors (whichever it is higher) shall be independent directors.

Qualifications

1. All directors must have qualifications and possess no prohibited characteristics under the Public Limited Company Act. and the Securities and Exchange Commission Act. and have qualifications as prescribed in the Company's Articles of Association.

2. Having knowledge of the Company's businesses, devoting the sufficient time and using knowledge and ability to perform duties for the Company's benefits.
3. Directors shall be able to hold directorship in other companies listed in the Stock Exchange of Thailand ("SET"), but it shall not obstruct performing duties of the Company's director. Every director must not hold directorship of more than five listed companies. In the case that any director is necessary to hold directorship over the specified number, the Board shall be able to consider and approve on a case-by-case basis along with clarification of reasons and necessity and performances of such director in the checklist form (Form 56-1) and the annual report (Form 56-2) of the Company for the shareholders' acknowledgement.
4. Having qualifications as specified in the SET Notification and the Office of the Securities and Exchange Commission's Notification and notifications to be amended in the future.
 - The Company has determined the scope of authority and duties of the Board of Directors And the Chief Executive Officer clearly
 - The company requires the directors and top executives of the company Has a duty to report information on being a director, an executive, a controlling person in a limited company or other public company Being a managing partner in an ordinary partnership Or being a limited liability partner in a limited partnership for the company to know in accordance with the criteria and methods set by the board of directors
 - Each director is able to perform duties and use independent discretion in making decisions on various matters. Can ask questions Comment Or objecting in the event of a conflict of interest that affects the interests of shareholders or stakeholders Without being under the influence of any group of people
 - The company has a policy to appoint a company secretary. To perform various functions As required by law And perform other duties as assigned by the Board of Directors

Election of Directors

1. The Board shall select a qualified person pursuant to related procedures and laws as the Company's director replacing a vacant director seat, then propose such a nominated person for the shareholders' election.
2. Voting of shareholders for election of directors is as follows:
 - 2.1 Each shareholder shall have one vote for each share he/she holds.
 - 2.2 In the event that nominated persons to be directors exceed a required number of directors at that time, vote for each director individually shall be applied. Thus, in voting, each nominated person shall receive votes equal to the number of shares held by each shareholder. Such shareholder cannot allot his/her votes to each unequally. The persons receiving the highest votes in their respective order of the votes shall be eligible as directors at the number equal to the number of directors required at that time. In case of an equality of votes among the persons elected in order of respective high numbers of votes, which number exceeds the required number of directors of the Company at that time, the chairman of the meeting shall be entitled to a casting vote.

Board Tenure

At every annual ordinary meeting of shareholders, one-third of directors shall vacate office. If the number of directors cannot be divided exactly into three parts, directors in a number closest to one-third shall vacate office. However, directors vacating office may be re-elected. Except for independent directors, each of them shall hold a position of not more than nine consecutive years. In case for the existence of reasons and necessity and maximum benefits of the Company, the Board shall be able to consider extending term lengths for the independent director on an individual basis by proposing reasons and necessity for the shareholders meeting's approval.

The selection of new director must be screened and approved by the Nomination and Remuneration Committee.

The Reappointment of Retiring Board Member

The Nomination and Remuneration Committee shall consider many factors such as experience, expertise, time to devote to the duty, meeting attendance, etc. In the General Shareholders Meeting in 2019, has approved the appointment of a new director which is Mr. Aran Apichari and reappointed is Mr. Prommin Lertsuridej, Mrs. Angkanee Rerksirisuk to the serve one more term according to the opinions and reviewing process of the Nomination and Remuneration Committee.

The Board Meetings

The Company sets the rules and regulations for the Board meetings as follows:

1. At a meeting of the Board, the presence of not less than one half of the total number of directors is required to constitute a quorum.
2. The Board meetings shall be held at least four times in a year and at least once every three months. Directors must thus attend every Board meeting and an annual general meeting of shareholders, except in case of necessity.
3. The materials for the Board meeting shall be submitted to directors at least five days in advance prior to the meeting so that the directors have the sufficient time to study information, except in case of urgency.
4. The decisions at the meeting shall be by a majority of votes. Each director shall have one vote. In case of an equality of votes, the chairman of the meeting shall give a casting vote.

The reserve key matters for the Board

- Annual Business Plan and Investment
- Review the Company's investment project
- The spending of management spending budget
- Entering into important contract that contain general trading conditions.
- Borrowing and guarantee agreement with the bank
- Organizational structure and appointment of Chief Executive Officer and senior management
- Dividend and interim dividend payment

Enhancing the Directors' knowledge and business outlook

The Board focuses its endeavour on enhancing the directors' knowledge. Each director shall have a chance to attend training courses, hosted by various agencies to increase the knowledge and expand point of view.

Board's self-evaluation

The Company shall arrange self- evaluation for the Board members every year in order to allow them to evaluate their performance in the past year and to find a way to improve their efficiency for the following years.

Business Ethics

The Board of Directors operates the business under ethical principle and complies with standard laws and code of good practice as follows;

1. Operate the business by adhering to the principle of good faith, transparency and equity under the law, rules and regulations related to the business operation.
2. Perform duties with knowledge, skills, determination and cautiousness and strive to improve knowledge and fully apply the knowledge and skills to the management.
3. Disclose data and information completely, correctly and transparently according to the law, rules and regulations of corporate governance.
4. Treat the stakeholders such as shareholders, customers, competitors, partners, creditors, employees and the general public fairly and equally and correctly and completely disclose information to related parties.

5. Respect and adhere to the practices under the basic principle of human right and dignity without depriving or discriminating against the right of any individual.
6. Arrange to set up adequate and proper internal control system and develop a clear and effective system and mechanism for auditing, controlling and balancing the use of authority.
7. Adhere to business practices that are in compliance with the laws related to safety and health in the work place.
8. Promote and support activities that are beneficial to society, culture and tradition.
9. Set the rules to ensure that all employees have the duties and responsibilities to comply with the working rules and regulations of the Company and related laws.

* The company discloses detail on Business Ethics in the website: www.thaisolarenergy.com under the topic of “Investors Relations-Corporate Good Governance”.

Meeting Attendance

In 2019, the Board of Directors held 9 meetings.

Name - Surname		AGM 2019	BOD Meeting
1. Cathleen	Maleenont,Ed.D	attend	9/9
2. Mr. Prommin	Lertsuridej	attend	9/9
3. Mr .Pala	Sookawesh	attend	7/9
4. Mrs. Siripen	Sitasuwan	absent	9/9
5. Mr. Prasan	Chuaphanich	attend	5/9
6. Mr. Somphop	Prompanapitak	attend	9/9
7. Mrs. Angkanee	Rerksirisuk	attend	8/9
8. Mr. Masthawin ^{/1}	Charnvirakul	attend	7/9
9. Mr. Aran ^{/2}	Apichari	--	3/9

^{/1} Appointed as a Director on 27 February 2019

^{/2} Appointed as a Director on 22 April 2019

The Audit Committee

Review the Group’s financial reporting, the Group’s internal control system, risk management system, compliance, select a person to be the Group’s auditor, the connected transactions or the transactions that are required in the laws and regulations of the stock exchange or capital market in order to ensure that the disclosure of information by the Group and the report, prepared by the Audit Committee is correct and transparent.

As of 31 December 2019, the Audit Committee consists of 3 directors as follows:

Name - Surname		Position	Meeting Attended
1. Mrs. Siripen	Sitasuwan	Chairman of the Audit Committee	7/7
2. Mr. Prasan	Chuaphanich	Member of the Audit Committee	5/7
3. Mr. Pala ^{/1}	Sookawesh	Member of the Audit Committee	5/7

^{/1} Appointed as a Audit Committee on 22 April 2019

Ms. Nittaya Tuaksa as Secretary of Audit Committee

All three members of Audit Committee possess sufficient accounting and financial knowledge and experience to review the accuracy of the Company's financial statement.

1. Mrs. Siripen Sitasuwan is currently a Chairman of Audit Committee and Independent Director for other leading companies in Thailand and overseas. She received the Best CFO Award in 2002 from the Asia Best CFO survey conducted by Finance Asia magazine.
2. Mr. Prasan Chuapanich is currently the President of the Federation of Accounting Professions. He also serves as a member of Audit Committee and Independent Director for leading listed companies. He holds many key positions in various organizations in insurance business, education sector and associations. In addition, he used to serve as an Executive Chairman of Price Waterhouse Coopers, Thailand and Co-Executive Chairman of Price Waterhouse Coopers, Southeast Asia Peninsula Region.
3. Mr. Pala Sookawesh currently, he is the president of an important foundation in promoting resources and energy management in Thailand. Including independent directors and used to hold important positions in various departments in the famous energy industry group, such as the chairman and committee.

Scope of authority, duties and responsibilities of the Audit Committee

1. Review the financial reporting and ensure that it is accurate and adequate.
2. Review the internal control system, internal audit system and enterprise risk to ensure that they are suitable and effective. Ensure the independence of internal audit unit as well as to approve the appointment, transfer and dismissal of the chief of an internal audit unit or any other units in charge of an internal audit
3. Review the Company's compliance with the securities and exchange law, the regulations of the Stock Exchange of Thailand, and laws relating to the Company's business
4. Consider, select, and nominate an independent person to be the auditor, and to propose remuneration for the auditor.
5. Review the connected transactions or the transactions that may cause conflicts of interest to ensure that they are in compliance with the laws and regulations of the Stock Exchange of Thailand and that the transactions are reasonable and for the utmost benefit.
6. Perform other action, assigned by the Board of Directors with the consent of the Audit Committee.
7. In performing the duty, if it is found or suspected that the following transaction or action have been made and may pose significant impact on the financial and operational standing of the Group, the Audit Committee shall report to the Board of Directors to improve or make correction within a time frame, deemed appropriate by the Audit Committee.
 - (1) Transactions that may cause conflict of interest
 - (2) Corruption or irregularity or key weaknesses in the internal control
 - (3) Breach of the regulations of the securities and exchange law and regulations of the Stock Exchange of Thailand or other regulations related to its business operation

If the Board of Directors or management does not improve or rectify the situations within the above-specified period, one of the Audit Committee's members may report the matters to the Securities and Exchange Commission or the Stock Exchange of Thailand. In performing duties, the Audit Committee may seek advice from independent advisor or specialist of other professions as deemed appropriate under the expense of the Group and will be used as an input for the Audit Committee to make decision.

Nomination and Remuneration Committee

Consider and select a qualified person to be nominated as a new member of the Board or chief of staff, based on the selection criteria or methods that are appropriate and transparent to the board meeting or the shareholders meeting for approval. The committee also has a duty to review the direction and set the remuneration for members of the Board and chief executive officer, based on remuneration criteria and methods that are just, reasonable and approved by the board or shareholders meeting.

As of 31 December 2019, the Nomination and Remuneration Committee consisted of 3 members as follows:

Name - Surname		Position	Meeting Attended
1. Mr. Prasan	Chupanich	Chairman of Nomination and Remuneration	3/3
2. Cathleen	Maleenont,Ed.D	Member of Nomination and Remuneration Committee	3/3
3. Mr.Somphop	Prompanapitak	Member of Nomination and Remuneration Committee	3/3

Ms. Wannaporn Srinives as Secretary of Nomination and Remuneration Committee

Scope of authority, duties and responsibilities of the Nomination and Remuneration Committee

1.1 Selection

- 1.1.1 Consider the organization structure, qualifications of directors, chief executive officer and members of sub-committees appropriate to the Company's business.
- 1.1.2 Determine reliable and transparent criteria or methods for a selection and nomination of qualified persons to be new directors or chief executive officer of the Company and proposed for the Board of Directors and/or the shareholders meeting's further approval.

1.2 Remuneration

- 1.2.1 Consider a guideline on determination of remuneration and other benefits both cash and noncash to the Board of Directors, Executive Committee and Chief Executive Officer by setting up fair and reasonable criteria or methods for remuneration payments in accordance with operating results of the Company and other companies in the same industry and proposed for the Board of Directors and/or the shareholders meeting's approval.
- 1.2.2 Consider and approve the Company and its subsidiaries' overall annual remuneration policy.
- 1.2.3 Consider and approve the determination of rewards, salary increase, remuneration and special bonus other than annual bonus to the Company's top executives.

1.3 Others

Perform other tasks, as assigned by the Board of Directors, which are relevant to a selection and consideration of remuneration of the directors, executive committee and the chief executive officer of the Company.

The Executive Committee

Oversee the management and day-to-day business operation for the benefit of the Group and to ensure that they are in line with the policies, vision, mission, objectives, business plan, business strategies and budget agreed and approved by Board of Directors. In addition, Executive Committee is in charge of screening all the businesses before proposing them to Board of Directors for approval or consent.

As of 31 December 2019, the Executive Committee consisted of 3 directors as follows:

Name - Surname	Position	Meetings Attended
1. Cathleen Maleenont,Ed.D	Chairman of The Executive Committee	8/8
2. Mr.Somphop Prompanapitak	Member of Executive Committee	8/8
3. Mr.Kitiphong Thunnom	Member of Executive Committee	8/8

Ms. Nottaporn Thiengprathes as Secretary of Executive Committee

Scope of authority, duties and responsibilities of Executive Committee

1. Oversee the management and day-to-day business operation for the benefit of the Company and to ensure that they are in line with the policies, vision, mission, objectives, business plan, business strategies and budget agreed and approved by Board of Directors. In addition, Executive Committee is in charge of screening all the businesses before proposing them to Board of Directors for approval or consent
2. Oversee to ensure that there is internal control system and appropriate and careful risk control and management system which align with recommendations of Audit Committee.
3. Review business plan, budget, annual expenditure, investment plan, and corporate social responsibility (CSR) plan of the Group to be in line with the laid out policies and strategies and propose to Board of Directors for approval
4. Review the Company's operating performance summary report and present it to Board of Directors quarterly
5. Employ, appoint, transfer or dismiss top executive management
6. Determine overall annual remuneration policy of the Group in order to propose to Nomination and Remuneration Committee for approval
7. Determine reward, salary adjustment, remuneration and special bonus other than annual bonus for top executive management level in order to propose to Nomination and Remuneration Committee for approval
8. Negotiate and enter into the contract and/or any transactions, which are regarded as the normal business operation, within the budget limit per transaction and per year as authorized by the Board of Directors
9. Approve loan/ loan between Group and subsidiaries within credit limit per transaction and per year as authorized by Board of Directors
10. Approve the entering into loan contract between the Company and any commercial banks within credit limit per transaction and per year as authorized by Board of Directors
11. Order, issue rules, criteria, notification and internal memorandum concerning business operation to ensure that it is in line with the Company's policies and to the benefit as well as to maintain the well-regarded rules of the organization
12. The meeting of the Executive Committee to consider any operations under the scope of power, as prescribed in this order must consist of at least half of the Executive members to be considered as a quorum that can undertake any aforesaid businesses.
13. In casting the voting at Executive Committee meeting, each director has the right to give 1 vote. If the number of votes is equal, the Chairman of Executive Committee will exercise the right to give 1 vote and that will determine the final result.
14. Any resolution of Executive Committee requires a supporting vote of at least half of all the eligible voters in that particular meeting.
15. An Executive Committee Meeting should be called only when needed and deemed appropriate. Any of directors may call for special meeting other than regular one provided that he informs the agenda of the meeting well in advance to allow enough time for other directors to review the agenda

16. Executive Committee may appoint a working committee and/or any individuals to take charge of screening matters to be presented to Executive Committee or undertaking any tasks beneficial to the working of Executive Committee or to act on behalf as delegated by Executive Committee under its scope of authority and duties
17. Perform other tasks, assigned and authorized by Board of Directors
18. Issue sub-power of attorney and/or authorize other individual to undertake the tasks on behalf of Executive Committee. Such sub-power of attorney and/or authorization must be under the scope authority, stated in the Group's power of attorney and/ or regulations, rules or resolution of Board of Directors.

However, such authorization under the scope of authority of the Executive Committee must not be a granting of sub-power of attorney to any director or attorney who may have conflict of interest with the Group in any forms to approve the transactions. In such case, the Executive Committee shall not have the Directors meeting and /or shareholders meeting to evaluate and give consent except if that transaction is regarded as normal businesses of the Company and have the same criteria as when dealing with outside parties (arm's length transactions)

Management Team

As of 31 December 2019, The Company has 4 executives according to the definition of the “management” of the Office of the Securities as follows:

Name - Surname		Position
1. Cathleen	Maleenont,Ed.D	Chief Executive Officer Acting Chief Financial Officer
2. Mr. Somphop	Prompanapitak	Chief Operating Officer
3. Mr. Kitiphong	Thunnom	Chief Technical Officer
4. Mr. Nivej	Boonwichai	Vice President Engineering and Construction

Scope of authority, duties and responsibilities of Chief Executive Officer

1. Manage overall business, finance, marketing, human resources and other operations in pursuance to the policies and business plan as agreed and authorized by Executive Committee and/or Board of Directors
2. Consider to set up a working committee to assist in business operation or problem solving in pursuance to the policies of the Company
3. Approve all the expenses incurred in the plans which have been approved by Board of Directors and/or Executive Committee
4. Arrange to ensure that the Group has a suitable internal control system in pursuance to the directions given of the Audit Committee
5. Arrange to ensure that there is suitable risk management and control system that comply with the direction given by Executive Committee and/or Audit Committee
6. Carry out overall Management of human resource, oversee the tasks undertaken by the employees to ensure that they are in compliance with the policies and rules including the principle of corporate good governance and encourage the employees to acquire more knowledge, competency and capability in order to increase capability of the organization

7. Appoint and dismiss employee or staff in the position below Chief Executive Officer and to dismiss employees or staff, approved by Board of Directors or Executive Committee
8. Negotiate and enter into a contract and/or any transaction, regarded as normal business operation, within the budget limit per transaction and per year as authorized by Board of Directors
9. Approve the opening of the branch and/or new representative office and establish new subsidiary under relevant laws/rules and regulations
10. Approve a borrowing/ loan between Group and subsidiaries within credit limit per transaction and per year as authorized by Board of Directors
11. Approve the entering into a loan contract between Group and any commercial bank within credit limit per transaction and per year as authorized by Board of Directors
12. Approve the opening of bank account with any commercial bank
13. Making order, issue rules, criteria, notification and memorandum concerning business operation in pursuance to the policies and for the benefit of the Company
14. Summarize and report important transactions, undertaken within the scope of authority of Chief Executive Officer to Executive Committee and/or Board of Directors respectively.
15. Approve the connected transactions that are under normal business conditions, e.g., trading goods at market price and with the same conditions as general customers, under policies approved by Board of Directors and in pursuance with the regulations of Stock Exchange of Thailand
16. Perform other tasks as delegated and authorized by Executive Committee and/or the Board of Directors.
17. Issue sub-power of attorney and/or authorize other individual to undertake the tasks on behalf of Executive Committee. Such sub-power of attorney and/or authorization must be under the scope authority, stated in the Company's power of attorney and/ or regulations, rules or resolution of Board of Directors.

However, such authorization under the scope of authority of the Executive Committee must not be a granting of sub-power of attorney to any director or attorney who may have conflict of interest with the Group in any forms to approve the transactions. In such case, the Executive Committee shall not have the authority to approve the transactions. Instead, the committee needs to propose the transactions to Board of Directors meeting and/ or shareholders meeting to evaluate and give consent except if that transaction is regarded as normal businesses of the Group and have the same criteria as when dealing with outside parties (arm's length transactions)

Company Secretary

Mr. Sompop Prompapitak, Chief Operating Officer, acting as a company secretary, with the requirement of the Securities and Exchange Act, B.E. 2535 (and its amendment). Mr. Sompop Prompanapitak graduated with an MBA in Management from Kasetsart University, Master Business Administration (Finance) from California State University and a Bachelor Degree in Economics (English program) from Thammasat University. And has completed the 31/2009 Company Secretary Program, organized by the Institute of Directors (IOD).

Duties and responsibilities of the Company Secretary

1. report of the Company, notices of meeting appointment of shareholders, minutes of shareholders meeting
2. Keep the report relating to stakes holding, submitted by the directors or the management
3. Perform other businesses as prescribed by Capital Market Supervisory Board
4. Submit copy of stakes holding report as prescribed in Section 89/14 of the Securities and Exchange Commission Act B.E. 2535 (amended), prepared by directors, to Chairman of Audit Committee within 7 business days from the day the Company has received the report

5. Perform any other duties and responsibilities specified in the Securities and Exchange Commission Act B.E. 2535 (amended)

Connected transactions

The Company realizes the importance of conducting business transaction transparently and in a manner that is beneficial to the company. It, therefore, strives to prevent transaction that may cause a conflict of interest, connected transaction or inter-transaction by setting the following policies.

1. The management and employees shall comply with the Company's Ethical Guidelines which must be strictly adhered to so that the operation shall be credible and trustful by all stakeholders. The Company also publish the information to ensure that all employees comply with the guideline.
2. The directors and the management shall informed of the relations and connected transactions related to activities that may cause a conflict of interest.
3. The connected transactions shall be presented to be reviewed by the Audit Committee before further submitting to be approved by the Board of Directors in pursuance to the corporate good governance policy and the rules and regulations on supervision on corporate governance, prescribed by the Stock Exchange of Thailand and the Office of the Securities and Exchange Commission.

Internal Control

The Audit Committee, at its meeting on 14 November 2019, reviewed the adequacy of the Group's internal control system in pursuance to the concept of COSO1 (The Committee of Sponsoring Organization of the Treadway Commission) and the internal control adequacy assessment form, prepared by the Office of the Securities and Exchange Commission which comprises 5 components and 17 sub-principles. This has enabled the Group to lay out practical guidelines that are appropriate with the operation of the Group. The Group's Board of Directors viewed that the Group's internal control system is adequate and efficient and found no significant weakness in the internal control system. The Board also arranged to set up adequate and efficient monitoring system to follow up and control the operation of the Group and its subsidiaries.

Followings are the components of internal control system:

1. Control Environment

The Board of Directors is independent from the management team and has set a clear and appropriate scope of approval authority of board members, chief executive officer and the Group's personnel. The Board also developed organizational structure that includes a clear line of command and responsibility.

2. Risk Assessment

The Group operates its business under acceptable risk appetite in order to achieve the objectives and to respond to the expectation of all stakeholders.

3. Control Activities

The Group includes control activities in policies and operational steps at all level of operation in the organization and under the control environment that includes approval authority, reviewing and allocation of responsibilities.

4. Information & Communication

The Group supports the use of quality information and adequate disclosure of information to the connected parties both inside and outside of the organization.

5. Monitoring Activities

Monitoring and assessment activities are implemented on a regular basis in the Group by manager of each department. The Group has internal audit work unit that provides support to the Internal Audit Committee in the area of internal control supervision to ensure that the Group's internal control is adequately efficient and effective.

Recruiting and Appointing the Directors and Top Management

The Nomination and Remuneration Committee has a duty to review the expertise and qualifications of the director to be appointed by preferring person who has ability, experience, good career record, outstanding leadership, vision, good moral, ethics and positive attitude towards the organization and can contribute enough time to the operation of the business.

Criteria for the Nomination

1. Director

The Nomination and Remuneration Committee considers candidates for the position of director from the business-related knowledge or considers from among the major shareholders, whose experience can benefit the Group or from the shareholder who holds voting shares at a total of not less than 5% of the total number of voting shares of the Group on the date that the agenda is submitted or nominates a person who is qualified to be appointed as a director in advance. The person must be fully qualified as specified in the Public Limited Group Act, B. E. 2535, the Securities and Exchange Act, the notifications of the Securities and Exchange Commission, the notice of Capital Market Supervisory Board, and the related notifications, rules and/or regulations. However, the appointment of new director must be approved by the Board and/or the shareholders' meeting according to the Company's articles of associations.

2. Independent Director

The Nomination and Remuneration Committee shall select a person to serve as an independent director by considering his/her qualifications, stipulated in the Public Limited Companies Act B.E. 2535, the Securities and Exchange Act, the Notifications of the Securities and Exchange Commission, the notifications of the Capital Market Supervisory Board, and other related notifications, rules and/or regulations. The number of independent directors should be more than three or at least one third of total directors, depending on which one is higher.

The qualifications of independent directors

Independent directors must not own, take part in managing, or have benefit in the Group that may affect their independent decision. The Independent directors should have the following qualifications:

1. Holdings share not more than 1% of the total number of voting shares of the Company, its parent company, subsidiary, affiliate, major shareholder or controlling person including shares held by related persons of the independent director
2. Not be nor have been an executive director, officer, employee, controlling person or advisor who receives a salary, of the Company, subsidiary, affiliate, major shareholder or controlling person, unless the foregoing status ended not less than two years prior to the date of appointment. This restriction shall not apply to an independent director who has been a government officer or an advisor to a government authority that is a major shareholder or controlling person of the Company.
3. Not be a person related by blood or registration under law, such as a father, mother, spouse, sibling, or child, including spouses of children, executives, major shareholders, controlling persons, or persons to be nominated as executives or controlling persons of the Company or its subsidiaries
4. Not have nor have had a business relationship with the Company, subsidiary, affiliate, major shareholder or controlling person, in a manner which may interfere with his or her independent judgment, and neither

being nor having been a substantial shareholder or controlling person of any entity having business relationship with the Company, subsidiary, affiliate, major shareholder or controlling person who may have a conflict of interest unless the foregoing status ended not less than two years prior to the date of appointment. The term “business relationship” mentioned above includes any normal business transaction, rental or lease of immovable property, transaction relating to assets or services or grant or receipt of financial assistance through receiving or extending loans, guarantee, providing assets as collateral, including any other similar actions, which result in the Company or its counterparty being subject to indebtedness payable to the other party in the amount of three percent or more of the net tangible assets of the Company or twenty million baht or more, whichever is lower. The amount of such indebtedness shall be calculated according to the calculation method for the value of connected transactions under the Notification of the Capital Market Supervising Committee Re: Rules on Connected Transactions *mutatis mutandis*. The combination of such indebtedness shall include indebtedness occurring during the course of one year prior to the date on which the business relationship with the person commences.

5. Neither be nor have been an auditor of the Company, subsidiary, affiliate, major shareholder or controlling person nor be a substantial shareholder, controlling person or partner of an audit firm which employs auditors of the Company, subsidiary, affiliate, major shareholder or controlling person, unless the foregoing relationship ended not less than two years from the date of appointment.
6. Neither be nor have been any kind of professional advisor including a legal advisor or financial advisor who receives an annual service fee exceeding two million baht from the Company, subsidiary, affiliate, major shareholder or controlling person, and neither be nor have been a substantial shareholder, controlling person or partner of the professional advisor unless the foregoing relationship ended not less than two years from the date of appointment.
7. Not be appointed as a representative of the Company’s directors, the major shareholder or any other shareholder who is a related person to the major shareholder.
8. Not conduct any business which of the same nature as the Company’s or its subsidiaries’ businesses and is in competition with them in any material respect, nor be a substantial partner, shareholder holding more than one percent of the voting shares, director, employee, officer or advisor of any company whose business is of the same nature as the Company’s or its subsidiaries’ businesses, and is in competition with them in any material respect.
9. Not have any characteristics which make him or her incapable of expressing independent opinions with regard to the Company’s business affairs. The independent directors may be appointed by the Board to make a decision on the operation as the collective decision.

In case that the appointed independent directors have/had the business relations or provide/provided professional service whose fee is higher than that, specified in No 4 or No 6, the Board may provide leniency if it deems that the appointment does not affect the performance or independent judgment and the Company discloses the following information in the invitation letter to the shareholders’ meetings under the agenda for appointing the independent directors.

- A. The nature of business relations or professional service that disqualifies the nominees
- B. The reason and necessity for appointing that nominee as an independent director
- C. The Board’s opinion in nominating that particular person as an independent director

3. Audit Committee

The Audit Committee must be appointed by the Board of Directors and must be the Company’s directors. The Committee consists of at least three independent committee members and the Board appoints one Audit Committee member as the Chairman of Audit Committee. At least one member must know and have experience in accounting or finance to review the credibility of the financial report.

The Audit Committee's qualifications must meet the criteria of the Securities and Exchange Commission, the Office of the Securities and Exchange Commission, the Stock Exchange of Thailand, and other related laws.

The qualifications of the Audit Committee Members:

1. Appointed by the Board or shareholders' meetings as Audit Committee members
2. All of them must be the independent directors
3. Not being the director assigned by the Board to make a decision on the operation of the Company, subsidiary, affiliate, same-level subsidiary, major shareholder or person with management power.
4. Not being a director in the holding company, subsidiary, affiliate, same-level subsidiary (only listed company)
5. Having the same duties as prescribed in the notification of the stock exchange of Thailand, under the rule of Audit Committee's qualifications and scope of work
6. Having enough knowledge and experience to work as an Audit Committee members. However, at least one knowledgeable and experienced Audit Committee member must be able to review the credibility of financial report.
7. The Board appoints the Chairman of Audit Committee or allows all appointed Audit Committees members to elect the Chairman.

4. Executive Committee

The Board of Directors appoints the Executive Committee, based on knowledge, ability and experience related to the business.

5. Top Management

The Executive Committee shall consider and select persons to serve as top management, based on their knowledge, ability and experience related to the business.

Corporate Governance Policy for subsidiary, affiliate and Joint-Ventured

The Company supervises the operation of subsidiary, affiliate and joint-ventured as follows:

1. Assigning the qualified or experienced director or the management, approved by the Board, to serve as a representing director in a subsidiary, affiliate and joint-ventured in order to set the key policy in management and control the operation of those companies.
2. Supervising the subsidiary, affiliate and joint-ventured to formulate the connected transaction policy with the potential stakeholders or the parties with potential conflicts of interest. The policy must be in line and in compliance with the related laws, rules, regulations, notices and memos.
3. Supervising the subsidiary, affiliate and joint-ventured to prepare financial report that reflects the financial status and actual business performance, based on the accurate, comprehensive and sufficient accounting information that meets the generally accepted accounting standard. Also, the report on connected transactions between those companies and the potential stakeholders or the parties with potential conflicts of interest as well as report on acquisition and disposition assets should be prepared and presented to the Board of Directors for their acknowledgement at least twice a year.
4. Arranging for the subsidiary, affiliate and joint-ventured to request the internal audit unit or outsourced auditors to formulate and monitor the annual internal audit plan, approved by the Audit Committee and the report on audit outcome and suggestions on internal audit system to see how effective the Group's internal control is and how well the employees, management and directors comply with the internal control system. These findings are, then, submitted to the Board of subsidiary and affiliate on a case-by-case basis and in proper timeline.

Supervising on the Usage of Internal Information

To ensure the company's corporate good governance system, the Board considers and approves the good governance policy on the usage of inside information, as follows:

1. To educate the Board and the management, including the manager of accounting or finance department the change of securities holding to the Securities and Exchange Commission based on Section 59 and Penalty Section 257 of the Securities and Exchange Act B.E. 2535 (as amended). The company secretary must be informed every time in order to further inform the related parties.
2. To ensure that the directors, management, internal auditors and the management-level staff who are accounting or finance manager or higher prepare and submit the reports on their and their spouse's holding of the company's security, including the holding by their children under legal age, starting from the date they are appointed as the director and/or management. They must also report any changes in security holding to The Securities and Exchange Commission. Everything must be done within the indicated timeline or within 30 days after they are appointed as the director and/or management. The report on changing security holding must be made within three days, starting from the date of purchasing, selling, transferring, and receiving the stocks. The company's secretary must summarize and report the security holding and any changes to the Board Meeting within the proper time.
3. To ensure that the executive directors and the management-level staff who are accounting or finance manager or higher and related operators should be informed of the significant inside information that affects the change in stock price. They must suspend the company's stock trade before publicizing the financial report or status until the company discloses the information to the public. The company will inform the director and management in writing, including the management-level staff who are accounting or finance manager or higher, to stop trading the stocks at least 30 days before disclosing the information to the public and another 24 hours at least after the disclosure. Furthermore, they are not allowed to disclose the significant information to other parties.
4. To ensure that the Board, management, employees and workers shall maintain internal information confidential unless when using that information for managing the company's business or for complying with the related law.
5. The Board, management, employees and workers will neither directly or indirectly disclose the inside information nor use its title to bring inside information or significant information that they have learned during the operation but has not been publicly disclosed to illegally seek the benefits or disclose the information to outside parties for their own benefits and the related parties'. They must do it without any regards for the return or their own benefits.
6. To ensure that the Board, management, employees and workers will not sell, purchase, transfer or receive the company's stocks by using its confidential and/or inside information and/or will not do any transactions by using the confidential and/or inside information in the way that may either directly or indirectly damage the company. This includes the spouse and children under legal age of the Board, management, employees and workers. Anyone who violates this rule is considered serious misconduct.
7. To lay down the guideline on ethics in using the company's information technology and internal communication are set to control and maintain the information safety in the information technology system and/or prevent the outsiders from accessing the information. In additional, the access level is set for each level of employees and workers to suit their titles, roles and responsibilities
8. Set the penalty measures according to the company's regulations when the management, employees, workers or related parties use the internal information to act in the way that may damage the company. The penalty is based on the intention and severity of that misconduct

Compliance Unit

The Company has established a Compliance Department headed by Ms. Nottaporn Thiengprathes. Her main responsibility is to ensure that the Company complies with the Securities & Exchange Act and all related regulations

Corporate Social Responsibility

The Company Group have the policy to operate the business under the principle Corporate Social Responsibility (CSR) with an awareness and realization on the importance of promoting activities for the benefits of surrounding communities and for protection of environment on a continuing basis. It is our intention to collaborate with those concerned and to foster good relationship that is the result of mutual acceptance and trust, including the realization on the impacts on those stakeholders such as shareholders, employees, local community, customers, partners, government agencies, general public and the country. We also strive to promote attitude and organizational culture so that our employees have social responsibility with the ultimate goal of happy co-existence between the business, community and society and to make a sustainable progress towards the future together.

Operation and Preparation of Report

In realizing the Company Group's emphasis on responsibility, the Board of Director has adopted policy guideline on social responsibility for the management to implement as follows.

1. Manage the business operation of the Group honestly with transparency and accountability aiming for business growth and the quality of life of employees, community, social and environment protection, including the protection of interest of all stakeholders.
2. Give priority to basic human rights to promote the respect of rights and freedom without discrimination, promote equality, no unfair treatment, based on gender and class. Not employing child labor and opposing all kinds of corruptions.
3. Promote and educate all employees on social and environment responsibility to be used as guideline to jointly develop social and environmental responsibility throughout the organization.
4. Promote a two-way communication and public relations on project or social and environment activities between community and stakeholders by giving them the opportunity to participate in such activities as deemed appropriate, e.g., the public hearings in surrounding community to find the initial environmental effect (IEE) and to inform and create awareness among the people in the community on the impacts of the construction of power plant and energy production process on people who live in the community and on environment.
5. Publicize the innovation in generating electricity from renewable energy of the Company group for those who are interested in developing it for the benefit of society and environment. Presently, people who are interested in learning about solar energy generation technology are attending the classes.

CSR and Environment Promotion Activities

Thai Solar Energy Group has operated the business that includes the participation in social, community and environmental activities as part of our goal to develop a sustainable organization. Moreover, the Group also recognize the importance of creating and providing happiness to school-age children and youth who would be an important force in taking care of the society and the country in the future.



» Oscar Save the World Co., Ltd. in collaboration with Nakhon Si Thammarat Provincial Industrial Office Organize activities for the Volunteer Spirit Project to install / repair electrical systems at Khok Had Temple, Sai Ra Subdistrict, Nakhon Si Thammarat Province



» Siam Solar Energy 1 Company Limited, SSE1 - PV01 branch, supports Children's Day activities 2019 at Ban Wang Yai School, Chong Dan Subdistrict, Bo Phloi District, Kanchanaburi Province

» Oscar Save the World Co., Ltd. donated bicycles at the Children's Day Activity 2019 at Ban Khok Makham School, Na Kiang Subdistrict, Nakhon Si Thammarat Provinc



» Oscar Save the World Co., Ltd. together to help flood victims in the southern region 2019

The Group also organized other activities to promote social and environment well-being throughout 2019 such as:

» February 2019

- Bang Sawan Green Co., Ltd. organized the Phrasaem Remembrance Festival Bang Sawan Subdistrict Municipality Surat Thani Province
- Bang Sawan Green Co., Ltd. Organized the Phrasaeng Remembrance Festival to commemorate Ban Ko Noi Club Surat Thani Province
- Bang Sawan Green Co., Ltd. Supporting budget for the construction of a canteen at Ban Ko Noi School, Bang Sawan Sub-district, Surat Thani Province

» March 2019

- Bang Sawan Green Co., Ltd. Support the activities of
- Bangsawan Mayor Charity Volleyball Tournament.
- Bang Sawan Green Co., Ltd. Join the PEA Charity Activity (join forces to share the power of the children) of PEA, Surat Thani

» April 2018

- Bang Sawan Green Co., Ltd. Make a donation to the Training Review Project. Volunteer development and self-defense of the Civil Disaster Prevention Center, Na Kiang Subdistrict Administration Organization
- Oscar Save the World Co., Ltd. Organize the Songkran Festival for the year 62 of the Office of Disaster Prevention and Mitigation.
- Siam Solar Energy Co., Ltd., Branch SSE1-PV04, organized the Songkran Festival for the year 62 of Nong Krathum Subdistrict Municipality
- Siam Solar Energy Co., Ltd., Branch SSE1-PV10 Organize the Songkran Festival for the year 62 of the Village Headman Village No. 8
- Siam Solar Energy Co., Ltd., Branch SSE1-PV03 Participated in a charity bowling competition with the Provincial Electricity Authority, Region 3, Central region.

» May 2019

- Siam Solar Energy Co., Ltd. Supporting the prizes for students at the scholarship giving ceremony at Dan Chang Kindergarten Auditorium Suphan Buri Power Plant Cycle Fund 3 (ERC)
- Oscar Save the World Co., Ltd. Supporting sports shirts, sports events, Sai Ra games of the Saira Subdistrict Administrative Organization
- Oscar Save the World Co., Ltd. Supporting sports activities for invigorating people at the Health Promotion Hospital Kapad Subdistrict, Chawang District, Nakhon Si Thammarat Province

» June 2019 2562

- Siam Solar Energy Co., Ltd., Branch SSE1-PV07 Support football kits, anti - drug sports activities of village headmen, Village 12
- Oscar Save the World Co., Ltd. Support traffic lights, public service check points, Sai Ra Subdistrict, Chawang District, Nakhon Si Province
- Bang Sawan Green Co., Ltd. Supporting Golf Clubs, Provincial Waterworks Authority Regional Office 2, Nakhon Si Thammarat 2

» July 2019

- Oscar Save the World Co., Ltd. Support football kits Traditional ball festival Village leader, village headman, Nawae
- Oscar Save the World Co., Ltd. Supporting Rock Crystals 10 Q Tech, Highway Road in front of Pom Pom Police Station, Chawang District

» August 2019

- Siam Solar Energy Co., Ltd., Branch SSE1-PV06 Co-hosted the Unity Offering Ceremony for Education at Ban Nong Phai School Dan Makham Tia, Kanchanaburi
- Siam Solar Energy Co., Ltd., Branch SSE1-PV06 Make a donation to improve the health promotion hospital in Nong Phai Derm Subdistrict Dan Makham Tia, Kanchanaburi
- Siam Solar Energy Co., Ltd., Branch SSE1-PV07 Supporting sports equipment for students at Wat Sakloi Samakkhi School, Rang Sali Sub-district, Tha Muang District, Kanchanaburi Province
- Siam Solar Energy Co., Ltd., Branch SSE1-PV03 Participated in the charity Kathin Robe Offering by the Suphan Buri Provincial Industrial Office.
- Oscar Save the World Co., Ltd. Co-sponsors air conditioners at the checkpoint in Na Kiang District Chawang Police Station Nakhon Si Thammarat Province

» September 2019

- Oscar Save the World Co., Ltd. สนับสนุน Supporting aerobic sets to compete in the tenth month festival, Ban Na Kiang Health Promoting Hospital, Chawang District, Nakhon Si Thammarat Province
- Oscar Save the World Co., Ltd. Food expenses, color sport events, of Group 3 Organization Development Promotion Group and the Ministry of Industry, Nakhon Si Thammarat Province

» October 2019

- Siam Solar Energy Co., Ltd., Branch SSE1-PV01 Supporting to buy the Red Cross Lottery, the 20th Red Cross Fair of the year 2019 of the Bo Phloi King Red Cross Office
- Bang Sawan Green Co., Ltd. Supporting the granting of scholarships from Bang Sawan Police Station.
- Thai Solar Energy Public Company Limited Support the charity bowling competition team, join the Royal Fund to help the poor children in the Queen's education.

» November 2019

- Bang Sawan Green Co., Ltd. Sponsored jointly hosting a Kathin ceremony at Chantana Ram Temple, Surat Thani Province
- Bang Sawan Green Co., Ltd. Supporting the prizes of traditional activities on Loi Krathong Day 2019, Bang Sawan Subdistrict, Surat Thani Province
- Oscar Save the World Co., Ltd. Sponsorship fee Ban Kuan Remembrance Event at Ban Khuan School, Sai Ra Subdistrict, Chawang District, Nakhon Si Thammarat Province
- Oscar Save the World Co., Ltd. Supporting the Loi Krathong tradition Nakhon Si Thammarat Province

Anti-Corruption Policy

The Company manages the business by adhering on the principle of corporate food governance with transparency, fairness and accountability. The places a priority on social and environmental responsibilities and all of stakeholders regularly reviews compliance with its anti-corruption policy as well as improving the guidelines and regulations in doing its business in accordance with changes in business environment, rules, regulations and laws. The Group requires the directors, management team, and all employees of the Company / subsidiaries/ jointly controlled entities/ and affiliates to strictly follow the anti-corruption policy in order to create a clear practical guideline and to develop the Company as a sustainable organization.

Roles and Responsibilities

1. The Board of Directors has duty and responsibility to lay out policies and to ensure that an effective system is set up to support anti-corruption policies, including the reviewing of the appropriateness of the systems and other measures in accordance with changes in business, rules, regulations and laws.
2. The audit committee has the responsibility to review the financial and accounting reporting system, internal control and internal auditing to ensure that the business operation is up to international standard of high precision, appropriateness, modern and efficient.
3. CEO and the management team have the duties and responsibilities to promote and support the anti-corruption policy in order to ensure that the management realizes and communicates with all staffs and relevant parties on the importance of anti-corruption policy.

Practical Guidelines

1. The Board of Directors, management team, and employees at all levels must comply with the anti - corruption policy and are prohibited to be involved with corruption either directly or indirectly.
2. Employees shall not ignore or neglect when witnessing any act which can be considered as a corruption. If such incidents occur, the employees must report those suspicious acts to their supervisors or responsible party, including giving full cooperation in the investigation of the case.
3. The Company will protect and provide a fair treatment to employees who refuse to participate in corruption and employees who inform the corruption cases.
4. The Company will keep confidential and protect informants from harassment both during the process of investigation and afterwards.
5. The person who committed a corruption act is also considered as violating the code of ethics which is subject to disciplinary action, prescribed in the rules and regulations. In addition, if such conduct is against the laws, the offender shall also be subject to legal penalty.

6. The Board of Directors, the management team, and employees at all level must beware and proceed with careful discretion of the following issues:

6.1 The giving of gifts and entertaining the clients.

Giving or receiving of gifts and entertaining the clients must be arranged in accordance with the Company's rules and regulations.

6.2 Charity donations or supporting funds.

Giving or receiving a charity donation or supporting fund must be made transparently and accordance with the laws

the Group has signed the Declaration of the Collective Action Coalition of Thai Private Sector Against Corruption with a view to provide cooperation to the social sector, the press and international organization in creating a standard for transparent business practice. At present, the Group is in the process of preparing and improving the anti-corruption policies to cover all the related criteria, based on discretion and appropriate consideration.

Dividend Policy

● The Company's dividend policy

The dividend policy is to pay dividends at a rate of not less than 40% of the net profit on the Company's financial statement after deduction of corporate income tax, and all reserves required by law and the Company's articles of association. However, the dividend payment is subject to change depending on cash flow, financial performance, future business plans, terms and conditions for business expansion, the needs for capital spending each year, and any other terms and conditions in relevant agreements or contracts for which the Company has contractual obligations, as well as other necessity and appropriateness, deemed by Board of Directors.

The dividend payment mentioned above must be approved by the shareholders meeting, except in the case of an interim dividend payment which the Board of Directors may consider paying from time to time if the Board deems that the Company has earned reasonable profit and can afford to do so.

● The subsidiaries dividend policy

The dividend payment policy for subsidiaries and jointly controlled entities is based on cash flow, financial performance, future business plan, terms and conditions for business expansion, funding needs, and financial position of each subsidiary and jointly controlled entity, and any other dividend restriction stipulated in loan agreements, debentures or other relevant agreements each subsidiary or jointly controlled entity obliges, as well as, the necessity and appropriateness that may be deemed by the Board of Directors of each entity.

The dividend payment mentioned above must get approval from shareholders at the general meeting of shareholders based on each subsidiary's/ jointly controlled entity's Board of Directors' proposal.



Securities Holding of Director & Executive

Name-Surname	Position	Share holding (%)	Changes during 2019		Share holding (%)
		31 Dec 2018	Increase	Decrease	31 Dec 2019
Cathleen Maleenont,Ed.D.	Chairman of the Board of Directors Chairman of the Executive Committee Member of Nomination and Remuneration Committee	0.24	8.48	---	8.72
Mr.Prommin Lertsuridej	Independent Director Vice Chairman of the Board of Directors	---	---	---	---
Mr.Pala Sookawesh	Independent Director Member of the Audit Committee	---	---	---	---
Mrs.Siripen Sitasuwan	Independent Director Chairman of the Audit Committee	---	---	---	---
Mr. Prasan Chuapanich	Independent Director Member of the Audit Committee Chairman of Nomination and Remuneration Committee	---	---	---	---
Mr. Aran Apichari	Independent Director	---	---	---	---
Mr.Somphop Prompanapitak	Director Member of the Executive Committee Member of Nomination and Remuneration Committee	0.03	---	0.03	---
Mrs. Angkanee Rerksirisuk	Director	---	---	---	---
Mr. Masthawin Charnvirakul	Director	---	---	---	---
Mr. Kitiphong Thunnom	Chief Technical Officer Member of the Executive Committee	---	---	---	---
Mr.Nivej Boonwichai	Vice President Engineering and Construction	---	---	---	---

Note: Information on shareholding of the first 4 directors and the management is in accordance with the definition of the Securities and Exchange Commission, including the shareholding of spouse and children who have not reached legal age.



Remuneration for Directors and Executives

The Board of Directors assigns the Nomination and Remuneration Committee to determine and set the remuneration and other benefits both monetary and non-monetary remuneration for the directors, members of the Executive Committee and chief executive officer by determining the criteria and payment methods that are fair and reasonable and in consistent with the business operational performance of the Group and other companies in the industry. The recommendations of the Nomination and Remuneration Committee are submitted for a review and decision by the Board of Directors or the shareholders meeting.

● Director's Remuneration

At the Annual General Meeting of Shareholders for 2019, held on 22 April 2019, the shareholders approved total remuneration for members of the Board and its board committees in the forms of monthly remuneration and meeting allowance according to the number of meeting actually attended. Which is the same rate since 2015. Followings are the detail of the remuneration.

Position	Monthly retainer	Meeting Allowance
Board of Directors		
Chairman	35,000	35,000
Vice Chairman	30,000	25,000
Directors	20,000	20,000
Audit Committee		
Chairman	25,000	35,000
Directors	20,000	20,000
Nomination and Remuneration Committee		
Chairman	--	30,000
Directors	--	15,000

In 2019, the Company paid Director's Compensation for the amount 5.45 million baht

Name - Surname	Position	Remuneration 2019
1. Cathleen Maleenont,Ed.D.	Chairman of the Board of Directors Chairman of the Executive Committee Member of Nomination and Remuneration Committee	780,000
2. Mr.Prommin Leartsuridej	Vice Chairman of the Board Independent Director	585,000
3. Mr.Pala Sookawesh ¹	Independent Director Member of the Executive Committee	640,000
4. Mrs.Siripen Sitasuwan	Independent Director Chairman of the Audit Committee	965,000
5. Mr.Prasan Chupanich	Independent Director Member of the Audit Committee Chairman of Nomination and Remuneration Committee	770,000

Name - Surname	Position	Remuneration 2019
6. Mr.Boonchoo Direksathaporn ^{/2}	Independent Director Member of the Audit Committee	260,000
7. Mr.Somphop Prompanapitak	Director Member of the Executive Committee Member of Nomination and Remuneration Committee	465,000
8. Mr.Anutin Charnvirakul ^{/3}	Director	20,000
9. Mrs.Angkanee Rerksirisuk	Director	400,000
10. Mr. Masthawin Charnvirakul ^{/4}	Director	340,000
11. Mr. Aran Apichari ^{/5}	Independent Director	220,000

^{/1} Appointed as a Audit Committee on 22 April 2019

^{/2} Retired by rotation on 22 April 2019

^{/3} Resigned on 25 January 2019

^{/4} Appointed as a Director on 27 February 2019

^{/5} Appointed as a Director on 22 April 2019

● Executives' Remuneration

	Nature of Remuneration	Objective
Salary	Salary and other fringe benefits such as provident fund	To maintain knowledgeable and capable executives
Annual remuneration	Annual Bonus	enhance morale and encouragement in return for their diligence, industrious efforts and devotion to the success and performance of the Group

Annual fee: annual bonus. Intended as a morale Reward the perseverance and dedication to the success and performance of the company.

In 2019, the Company paid a monetary remuneration including salary, bonus and other remuneration to top management for a total of 23.57 million baht.

Remuneration	2019	
	Number (Person)	Remuneration (Million Baht)
Salary and Bonus	4	22.69
Other remuneration such as providence fund	4	0.88
Total	4	23.57



The Board of Directors' Responsibility for Financial Reporting

The Board of Directors is responsible for the preparation of consolidated and separate financial statements of Thai Solar Energy Public Company Limited and its subsidiaries and jointly controlled entity, including the financial information presented in this annual report. The aforementioned financial statements are prepared in accordance with Thai Financial Reporting Standards, using careful judgment and the best estimations. Important information is adequately and transparently disclosed in the notes to financial statements for the Company's shareholders and investors. The Board is also responsible for internal control activities that the Board deemed necessary for the preparation of overall and specific financial statements that do not contain any information that is significantly contradictory to the fact, either by fraudulent intention or by mistake.

The Board of Directors has appointed the Audit Committee to be responsible for reviewing the accounting policy, financial reports, risk management, internal controls, internal audit and disclosure of connected transactions. All the Audit Committee's opinions on these issues have been presented in the 2019 Audit Committee Report, included in this annual report.

The consolidated and separate financial statements of the Company and its subsidiaries and jointly controlled entity have been examined by an external auditor, Mr. Kajornkiet Aroonpirodkul (CPA No. 3445) of PricewaterhouseCoopers ABAS Limited. To facilitate the auditing process, the Group's Board of Directors provided information and documents so the auditor is able to audit and express an opinion in accordance with generally accepted auditing standards. The external auditor's opinion is presented in the auditor's report included in this annual report.

The Board of Directors believes that the Company's overall internal control system has functioned at a satisfactory level and rendered credibility and reliability to the financial statements of the consolidated and separate financial statements of the Company and its subsidiaries and jointly controlled entity for the year ended 31 December 2019. The Board of Directors also believes that all these financial statements have been prepared in accordance with the related Thai Financial Reporting Standards and related regulations.

Cathleen Maleenont,Ed.D.

Chairman of the Board



● Appointment of Auditor

The Audit Committee has the responsibility to screen and select the auditor and auditing fee by inviting auditing firms to submit their past works to be selected and proposed to the Board of Directors who would further submit the recommended auditor and auditor's fee to be approved by the ordinary shareholders meeting each year. The appointed audit firm and auditor must be able to work independently without any relation or stake with the Group, major shareholder or any party, related to these persons.

The 2019 ordinary shareholders meeting resolved to appoint the following persons on behalf of Pricewaterhouse Coopers ABAS Co., Ltd. as the Company's auditors:

Auditors

Name - Surname		CPA No.
1. Mr. Kajornkiet	Aroonpirodkul	3445
2. Miss Sakuna	Yaemsakul	4906
3. Mr. Pisit	Tangthanakul	4095

Any person is allowed to be an auditor and provide opinions toward the Company's financial statements. In the event that such certified public accountants cannot perform duties, Pricewaterhouse Coopers ABAS Co., Ltd. can replace with other certified public accountants of Pricewaterhouse Coopers ABAS Co., Ltd.

● Audit Fee

In 2019, the Group paid audit fees as follows.

	2562
Thai Solar Energy Public Company Limited	1,900,000
Subsidiaries (23 Companies)	8,677,000
Total Audit Fee	10,577,000

● Non – Audit Fee

The Group has paid a fee to the auditor from the Pricewaterhouse Coopers ABAS Ltd., to audit and prepare audit report related to the compliance audit of BOI certificate, issued by the Thailand Board of Investment at an amount of 1,120,000 Baht



Related Party Transaction

Persons which may have conflict of interest/ nature of business/nature of relationship	Nature of Transactions	Transaction Value		Necessity and Reasonableness of the transaction
		2018	2019	
<p>1. P.M. Energy Company Limited (“PME”)</p> <p><u>Nature of the business</u> Investment in renewable energy with the Head Office located at 725 Metropolis, 19th floor, Sukhumvit Road, KlongtanNua, Wattana Bangkok</p> <p><u>Relationship with the Company</u></p> <ul style="list-style-type: none"> A major shareholder of the Company. As of 31 December 2019 PME held 36.98% share in TSE The director who is in the management team: <p>Cathleen Maleenont,Ed.D. (Director, Chairman of Executive Committee and Chief Executive Officer of TSE) is a director and major shareholder of PME. Cathleen Maleenont,Ed.D. held 100% of PME as of 31 December 2019</p> <p>Mr.Somphop Prompanapitak (Director, Executive Committee and Chief Operations Officer of TSE) is a director of PME</p>	<p>Guarantee with compensation in the year 2019 of THB 3,000,000</p> <p>PME shares of the company Holding some shares of to be pledged with a commercial bank To be part of the loan guarantee for the company</p>	208	294*	<p>The Group had a loan from one commercial bank to be used for development of thermal power plant. Part of the loan was guaranteed by the company’s shares, held by PME which was in consistent with the requirement of the commercial bank that provided the loan and there was no cost incurred from such guarantee.</p> <p><u>Opinions of the Audit Committee</u></p> <p>Such transaction is to receive assistance from major shareholders. For use in project development for the company Therefore, the transaction is necessary and reasonable and beneficial to the company.</p>

* The transaction value was based on the market value of shares as of 31 December 2019, i.e., 2.94 Baht/share

Measures or procedures for approving related party transactions and policy for potential related party transactions in the future

the transfer of interest from the Company and/ or its subsidiaries. They consist of following measures:

1. The Company’ s/subsidiaries’ related party transactions with stakeholders or persons who may have a conflict of interest with the Company and / or its subsidiaries are required to be processed according to laws, regulations, announcements or notifications, rules and requirements, and related circular letters as per the following:

- 1) Securities and Exchange Act B.E.2535
- 2) Notification of the Capital Market Supervisory Board, Tor Chor. 21/2551: Rules on Connected Transactions
- 3) Notification of the SEC on Disclosure of Information and Operation of Listed Company for Related Parties Transactions B.E., 2546
- 4) Regulations of SET on Guidelines, Conditions, and Practice Relating to Information and Operations Disclosure of Listed Companies

- 5) Requirements related to disclosure of information of connected transactions in the note to financial statements which are prepared by a certified audit committee, and form of company's annual report (56-1 form), including related notifications from Capital Market Supervisory Board and SEC, circular letter and other related laws and regulations

2. Any related party transaction which may be considered as a transaction needing an approval from the Company's Board of Directors or resolution from a general shareholders meeting must be screened and considered by Audit Committee before presenting them to the Company's Board of Directors or general shareholders meeting for approval, depending on the cases. This is to ensure that the said related party transactions do not have an aim to transfer the Company's and/or its subsidiaries' assets. The Audit Committee's point of views must at least cover the following issue:

- 1) Whether the transaction reflects proper rationale and mutual benefit to the Company and/or subsidiaries.
- 2) Whether the pricing and mutual conditions of transaction reflect fairness by comparing the price and other returns with the market price or price offered from external parties of price valuation by an independent appraiser.
- 3) Whether conditions related to the transaction are appropriate by comparing conditions on payment and other returns to normal business conditions.

In a case where the Audit Committee has no expertise in screening related party transactions, the committee may seek advice from an independent expert or the Company's auditor to use as supporting material for its consideration before presenting the transactions to the Company's Board of Directors or general meeting of shareholders, whichever case may be.

3. The Company and or/its subsidiaries must prevent directors and stakeholder who have interests in such transactions to participate in the meeting and/or vote on that agenda. The company shall disclose information on related party transactions in note to financial statements which are already reviewed or certified by the Company's auditor

4. For all of related party transactions, the management may have authority to approve such transactions if the transactions have business agreements and conditions as if a person of ordinary prudence may proceed with contractor counterpart within the same situation based on business bargaining power without using authority of director, management, or related person. The Company also needs to prepare a summary report on related party transactions which have a value of more than THB 10 million baht and report to the Company's Board of Directors within an appropriate timeframe.

The Company has established an approval procedure for related party transactions of the Company, jointly controlled entities and/or subsidiaries, directors, management, stakeholder or persons who may have a conflict of interest that have normal business conditions as follows:

1. In the case of minor connected or related transactions that have normal business conditions, the management is obliged to consider and give approval.
2. In the case of medium and large connected or related transactions that have normal business conditions, the Company's Board of Directors will be the one to consider and give approval.
 - Minor transaction refers to transactions with a value equal to or less than THB 1 million, or equal to or less than 0.03% of net tangible assets whichever is higher.
 - Medium transaction refers to transactions with a value of more than THB 1 million but less than THB 20 million, or more than 0.03% but less than 3% of net tangible assets whichever is higher.
 - Large transaction refers to transactions with a value equal to or more than THB 20 million or more than 3% of net tangible assets whichever is higher.

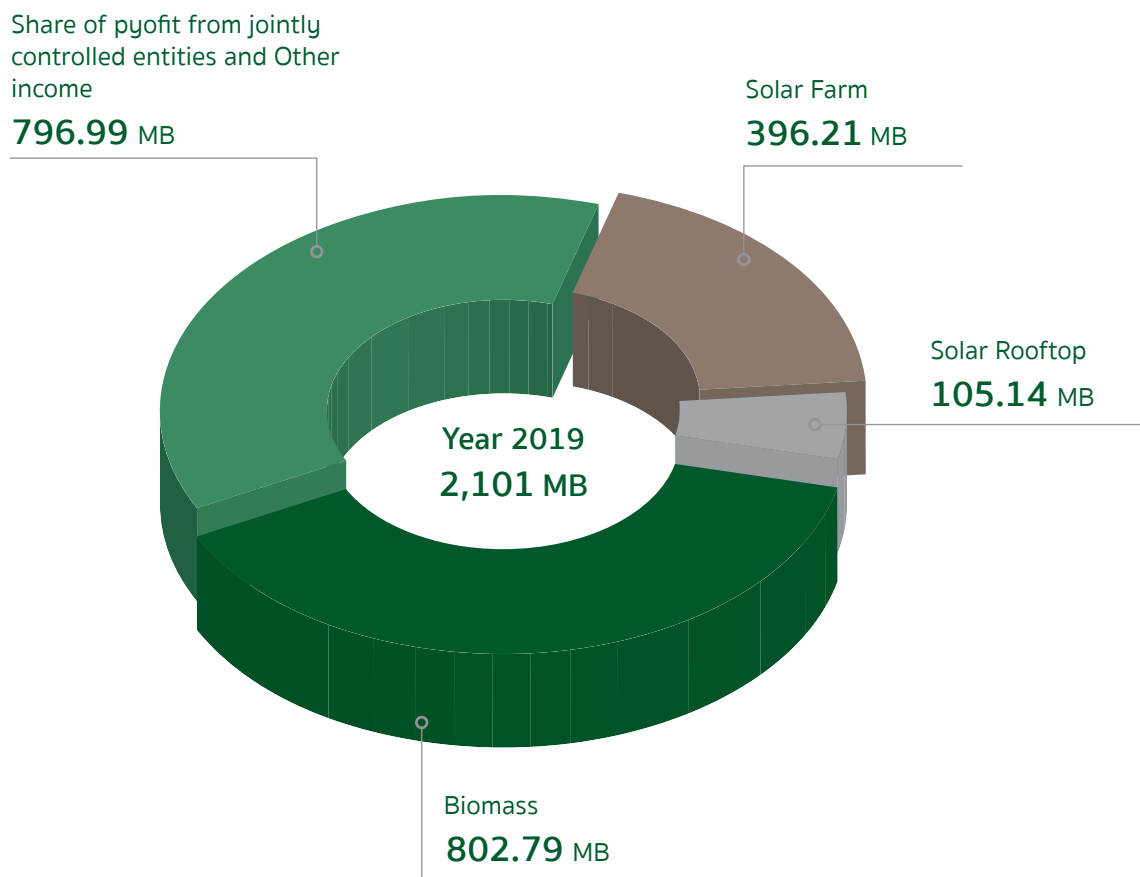


Financial Highlights

(Unit : MB)

	2019	2018	2017
อัตราส่วนทางการเงิน (งบการเงินรวม)			
Revenues from sales of goods and rendering of services	1,348.89	561.17	229.00
Share of profits of associates and joint ventures	659.52	610.19	586.96
Total revenues	2,101.13	1,327.75	855.27
Profit for the year attributed to owners of the Company	774.58	173.95	415.76
Total assets	15,869.98	14,689.24	12,218.44
Total liabilities	10,237.67	9,774.61	7,437.70
อัตราส่วนทางการเงิน (งบการเงินรวม)			
Return on equity (%)	14.90	3.71	9.06
Return on assets (%)	6.22	2.90	5.14
Debt-to-equity ratio (times)	1.82	2.05	1.61
Basic earning per share (Baht)	0.40	0.09	0.22
Net Profit Margin (%)	36.86	13.10	48.61

Revenue Structure





Explanation of Analysis of Financial Position and Performance

Significant Events in 2019 affecting Financial Statements

1. Biomass plant projects distributed electricity as Commercial Operation Date (COD)

The Company Group has fully recognized revenue of the 40 MW Biomass project in Surat Thani province and the 17.60 MW in Nakhon Si Thammarat province which started operation date since August 2018 and October 2018, respectively.

2. Additional distributed electricity as Commercial Operation Date (COD) from solar plant projects in Japan

In January 2019, the 13.5 MW project started its COD, giving rise to 7 COD projects with total selling capacity of 21.74 MW. The big project with the selling capacity of 154.98 MW is under construction and in the process of taking various procedures.

3. New acquired solar farms

The Company Group has acquired the 5 MW solar farms in Ayudthaya Province, 5 MW in Udonthani Province, and 8 MW farms in Angthong province in March 2019, in August 2019 and in November 2019, respectively, with a total generating capacity of the 18 MW from the new acquired projects. In addition, the Group has fully realized revenue from the 2 MW solar farms in Angthong Province acquired in October 2018.

Report on Analysis of Performance in Consolidated Financial Statements

1. Revenue from Sales and Services

The Company has revenue increased amounting of THB 492.98 million from 3 Biomass projects already completed construction and COD in March 2018, August 2018, and October 2018, respectively with total selling capacity of 22.2 MW.

The Company has the distribution of electricity for 7 solar plant projects in category of ground mounting in Japan with total selling capacity of 21.74 MW, the increase of 8.24 MW last year. Revenue also increased from projects distribution of electricity in Japan of Baht 211.39 million.

The Company Group has acquired a total of 18 MW solar farms in 2019 and recognized revenue from the distribution of electricity of Baht 68.34 million and fully realized revenue from acquired projects in October 2018 in the amount of THB 13.09 million in 2019.

As a result, the Company generated total revenue from sales and services for year 2019 amounting of THB 1,348.89 million, which increased by THB 787.52 million or 140.28% compared to Baht 561.37 million last year. (The revenue from sales and services did not include the revenue from 80 MW of solar farm which was recognized the contribution through share of profit from investments of 60% in jointly controlled entities)

The Company Group reported a decrease in other revenues of THB 63.47 million mainly due to the decreased compensation from damages paid by insurance companies.

2. Cost of Sales and Expenses

Total cost of sales and services for the year 2019 amounting of THB 911.36 million, which increased by THB 476.19 million or 109.43% compared to THB 435.17 million last year. The increment was mainly from operation costs of Biomass projects, depreciation from the starting of commercial operation date of the projects and new acquired projects as well as amortization of Power purchase agreement.

The Company's gross profit margin for the year 2019 was 32.44%, which increased from 22.48% in 2018. The increase came from the number of solar farm projects in 2019 with the gross profit margin higher than that of the Biomass projects.

3. Administration Expenses

Total administrative expenses for the year 2019 amounting of THB 233.35 million, which increased by THB 26.71 million or 12.93% compared to THB 206.64 million last year due to employee expenses to support new acquired projects.

In 2018, the Company recognized impairment loss of Thermal project assets amounting of THB 296 million since the project cannot generate revenue effectively. The impairment is considered as non-cash transaction. However, the Company has no impairment in 2019.

4. Finance Cost

Total finance costs for the year 2019 amounting of THB 147.19 million, which increased by THB 23.95 million or 19.43% compared to THB 123.24 million from last year. The increment mainly came from interest expenses of the projects that start operation date during the year 2018 and 2019, including finance costs from new acquired solar projects.

5. Share of Profit from Investment in Jointly Controlled Entities

According to Thai Accounting Standards with regards to an investment in joint controlled entities, the Company recognizes an investment in joint controlled entities based on equity method. This concept was applied for the 80-MW solar PV farm. The details are as follows

Financial Performance of joint controlled entities based on equity method

Unit: THB million

Items	31 December		Increase (Decrease)	
	2019	2018	Amount	%
Revenues	1,546.28	1,487.76	58.52	3.93
Costs and expenses	(447.08)	(470.78)	(23.70)	5.03
Net Profit	1,099.20	1,016.98	82.22	8.08
Share of Profit from Investment in Jointly Controlled Entities (60%)	659.52	610.19	49.33	8.08

The Company generated consistent operating results. Net profit of joint controlled entities for the year 2019 amounting of THB 1,099.20 million, increased by THB 82.22 million or 8.08% compared to THB 1,016.98 million last year. Net profit from jointly controlled entities would be categorized by the equity method in terms of share of profit from jointly controlled entities. In 2019, share of profit from jointly controlled entities (60%) amounted to THB 659.52 million, increased by THB 49.33 million or 8.08%, comparing to THB 610.19 million last year.

6. Comprehensive Income for the year

In 2019, the Company reported its net profit of THB 798.74 million, which increased by THB 615.67 million or 336.30% compared to THB 183.07 from last year. The increment was due to better performance in 2019 and no non-cash expenses occurred in 2018 such as the impairment of assets of Thermal projects of THB 296 million and the write-off of deferred tax assets of THB 76 million.

In 2019, compressive income for the year was THB 467.20 million, which increased from 178.89 million in 2018, mainly due to better performances and no non-cash transactions as mentioned above.

7. Return of Equity

The return on equity increased. Return on equity in 2019 and 2018 was 14.90% and 3.71%, respectively due to better performances and no non-cash loss of THB 372 million occurred in 2018.

Report on Financial Analysis in Consolidated Financial Statements

Analysis of Assets

As of 31 December 2019 and 2018, total assets were THB 15,869.98 million and THB 14,689.23 million, respectively, which increased by THB 1,180.75 million or 8.04% with the following details:

Unit: THB million

Item	31 December		Increase (Decrease)	
	2019	2018	Amount	%
Current Assets	1,641.47	1,462.16	179.31	12.26
Non-Current Assets	14,228.51	13,227.07	1,001.44	7.57
Total Assets	15,869.98	14,689.23	1,180.75	8.04

1) As at 31 December 2019, current assets were THB 1,641.47 million, increased by THB 179.31 million or 12.26% compared to THB 1,462.16 million 31 December 2018 due to an increase in temporary investments.

2) As at 31 December 2019, non-current assets were THB 14,228.51 million, increased by THB 1,001.44 million or 7.57% compared to THB 13,227.07 million from 31 December 2018 mainly due to the progress of the projects under construction both locally and internationally.

Analysis of Liabilities and Equities

As at 31 December 2019, total liabilities and equities were THB 15,869.98 million which increased by THB 1,180.75 million or 8.04% compared to THB 14,689.23 million from 31 December 2018 with the following details:

Unit: THB million

Item	31 December		Increase (Decrease)	
	2019	2018	Amount	%
Liabilities	10,237.67	9,774.62	463.05	4.74
Equity	5,632.31	4,914.61	717.70	14.60
Liabilities and Equity	15,869.98	14,689.23	1,180.75	8.04

1) As at 31 December 2019, total liabilities were THB 10,237.67 million, which increased by THB 463.05 million or 4.74% compared to THB 9,774.62 million from 31 December 2018 mainly due to borrowings from financial institutions of the subsidiaries to serve investment projects.

2) As at 31 December 2019, total equities were THB 5,632.31 million, which increased by THB 717.70 million compared to THB 4,914.61 million from 31 December 2018 mainly due to consistent profitability. The owners of the parent for the year of THB 774.58 million resulted in an increase in retained earnings from THB 2,207.23 million in 2018 to THB 2,856.78 million in 2019. In 2019, the Annual General Shareholders' Meeting resolved to approve dividend payments at THB 0.055 per share in the total amount of THB 105 million.

Appropriation of Capital Structure

The Company's debt to equity ratio remained at a low level. Its debt to equity ratio was 1.82 in 2019 compared to 2.05 in 2018. The change of its debt to equity ratio was mainly due to the non-cash loss of THB 372 million, resulting in the retained earnings in 2018 lower than it should be.

Report on Analysis of Cash Flow in Consolidated Financial Statements

As of 31 December 2019, cash and cash equivalent in the consolidated financial statements were THB 643.59 million which increased by THB 82.57 million compared to THB 561.02 million from 31 December 2018 which can be summarized as follows:

- 1) Net cash flows from operating activities of THB 693.08 million
- 2) Net cash flows used in investing activities of THB 765.40 million
- 3) Net cash flows from financing activities of THB 220.41 million
- 4) Effect of exchange rate changes on translation of financial statements of THB 65.52 million.



Independent Auditor's Report

To the shareholders and the Board of Directors of Thai Solar Energy Public Company Limited

My opinion

In my opinion, the consolidated financial statements of Thai Solar Energy Public Company Limited (the Company) and its subsidiaries (the Group) and the separate financial statements of the Company present fairly, in all material respects, the consolidated and separate financial position of the Group and of the Company as at 31 December 2019, and the consolidated and separate financial performance and the consolidated and separate cash flows for the year then ended in accordance with Thai Financial Reporting Standards (TFRSs).

What I have audited

The consolidated financial statements and the separate financial statements comprise:

- the consolidated and separate statements of financial position as at 31 December 2019;
- the consolidated and separate statements of comprehensive income for the year then ended;
- the consolidated and separate statements of changes in equity for the year then ended;
- the consolidated and separate statements of cash flows for the year then ended; and
- the notes to the consolidated and separate financial statements, which include a summary of significant accounting

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 one key audit matter : Business Combinations. The matter was addressed in the context of my audit of the consolidated and separate financial statements as a whole, and in forming my opinion thereon, and I do not provide a separate opinion on the matter.

Key audit matter	How my audit addressed the key audit matter
<p>Business combinations</p> <p>Refer to note 13 and note 31 to the financial statements related to investment in subsidiaries and business combinations. During 2019, the Group acquired investments in three companies which operate in ground-mounting solar power plants. The total purchase consideration paid was Baht 786.97 million. The Group's management assessed that the acquisition of these investments qualified as a business combination by applying the definition in TFRS 3 (revised 2018) - Business Combinations.</p> <p>The management engaged independent valuer to prepare the purchase price allocation to evaluate fair value of net assets acquired.</p> <p>I focused on this area because the amounts of these transactions are significant. In addition, the valuation method was complex and involved management's judgement on input and assumptions in the valuation model as well as discount rates applied</p>	<p>My audit procedures included the followings;</p> <ul style="list-style-type: none"> • I assessed the management's consideration whether the investments should be accounted for as a business combination under TFRS 3. • I evaluated the valuer's competency, independence and objectivity. I assessed the appropriateness of the identifiable assets acquired and the liabilities assumed at the acquisition date. • In testing the fair valuation method, I engaged an auditor expert to review the appropriateness and reasonableness of the methodology used in the valuation, the estimation of the discount rate and discount factor, and the model's logic and calculations, comparing with market practice in a comparable industry. <p>I evaluated the reasonableness of key assumptions applied in purchase price allocation by comparing with relative contracts, the subsidiaries' historical data and market data in the comparable industry.</p> <p>From the above procedures performed, I found that the acquisition of investments was a business combination in accordance with TFRS 3 and the assumptions applied in purchase price allocation were reasonable.</p> <p>I evaluated the accounting treatment and the disclosures made in note to financial statements, I did not note any significant issue.</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 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 and, based on the audit evidence obtained, whether a material uncertainty exists related to events or conditions that may cast significant doubt on the Group 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.



Kajornkiet Aroonpirodkul

Certified Public Accountant (Thailand) No. 3445

Bangkok

27 February 2020



Thai Solar Energy Public Company Limited
Statement of Financial Position

As at 31 December 2019

	Notes	Consolidated financial statements		Separate financial statements	
		2019 Baht	2018 Baht	2019 Baht	2018 Baht
Assets					
Current assets					
Cash and cash equivalents	8	643,594,118	561,020,761	43,843,636	209,557,883
Short-term restricted bank deposits	9	18,864,046	74,399,234	14,912,759	11,602,676
Short-term investments	10	221,114,307	459,753	221,114,307	459,753
Trade and other receivables	11	430,399,966	478,067,350	263,930,877	258,869,056
Short-term loans to subsidiaries	32.3	-	-	701,000,825	335,287,932
Current portion of long-term loans to subsidiaries	32.4	-	-	61,600,000	-
Inventories		24,028,968	14,452,830	-	-
Refundable Value Added Tax		273,156,145	181,178,565	-	-
Other current assets	12	30,316,921	152,581,949	14,582,520	11,977,634
Total current assets		1,641,474,471	1,462,160,442	1,320,984,924	827,754,934
Non-current assets					
Long-term restricted bank deposits	9	34,239,939	12,008,535	12,365,952	1,050,000
Long-term loans to subsidiaries	32.4	-	-	5,004,151,459	4,333,468,428
Receivables from disposal of investments	32.2	-	-	1,383,683,149	1,383,683,149
Investments in subsidiaries	13.2	-	-	1,199,149,897	1,198,749,905
Investments in joint ventures	13.1	1,840,054,520	1,787,086,887	350,000,130	350,000,130
Investment properties	14	103,857,149	89,977,885	89,977,885	89,977,885
Property, plant and equipment	15	7,549,859,170	6,928,083,195	273,737,922	280,233,690
Goodwill	16	17,112,763	17,726,430	-	-
Intangible assets	17	4,669,898,201	4,376,580,242	7,057,176	7,679,330
Deferred tax assets	18	1,623,005	2,409,825	-	-
Other non-current assets		11,871,739	13,201,756	7,339,848	2,652,339
Total non-current assets		14,228,516,486	13,227,074,755	8,327,463,418	7,647,494,856
Total assets		15,869,990,957	14,689,235,197	9,648,448,342	8,475,249,790



Thai Solar Energy Public Company Limited
Statement of Financial Position (Cont'd)

As at 31 December 2019

	Notes	Consolidated financial statements		Separate financial statements	
		2019 Baht	2018 Baht	2019 Baht	2018 Baht
Liabilities and equity					
Current liabilities					
Short-term borrowings from financial institutions	20.1	98,470,171	98,794,277	98,470,171	98,794,277
Construction and other payables	19	199,267,433	278,445,782	45,968,588	42,593,513
Current portion of right in power purchase agreement payables		2,056,215	-	-	-
Current portion of finance lease liabilities	20.2	7,195,003	2,619,884	2,720,032	2,619,884
Current portion of long-term borrowings	20.3	737,755,685	437,241,304	272,894,555	175,888,656
Short-term loan from subsidiary	32.5	-	-	22,500,000	22,500,000
Current portion of debentures	20.5	949,800,983	2,048,530,153	949,800,983	2,048,530,153
Income tax payable		4,404,066	1,349,856	-	-
Other current liabilities		26,403,034	15,484,548	5,292,403	966,918
Total current liabilities		2,025,352,590	2,882,465,804	1,397,646,732	2,391,893,401
Non-current liabilities					
Right in power purchase agreement payables		73,328,549	-	-	-
Finance lease liabilities	20.2	13,280,673	7,979,672	5,259,640	7,979,672
Long-term borrowings from financial institutions	20.3	5,736,434,390	5,922,634,037	2,291,060,602	2,062,779,803
Debentures	20.5	2,345,024,775	949,065,843	2,345,024,775	949,065,843
Employee benefit obligations	21	13,521,825	8,606,509	13,521,825	8,606,509
Provision for decommissioning costs		2,584,824	2,454,578	2,584,824	2,454,578
Deferred tax liabilities	18	28,066,973	1,335,446	3,111,610	1,266,952
Other non-current liabilities		72,000	72,000	72,000	72,000
Total non-current liabilities		8,212,314,009	6,892,148,085	4,660,635,276	3,032,225,357
Total liabilities		10,237,666,599	9,774,613,889	6,058,282,008	5,424,118,758
Equity					
Share capital					
Authorised share capital					
Ordinary shares 2,477,474,454 shares of par Baht 1 each (2018: 2,450,250,000 shares of par Baht 1 each)	22	2,477,474,454	2,450,250,000	2,477,474,454	2,450,250,000
Issued and paid-up share capital					
Ordinary shares 2,117,716,281 shares of paid-up Baht 1 each (2018: 1,905,749,580 shares of paid-up Baht 1 each)	22	2,117,716,281	1,905,749,580	2,117,716,281	1,905,749,580
Premium on ordinary shares	22	1,045,504,325	727,554,273	1,045,504,325	727,554,273
Retained earnings					
Appropriated-legal reserve	23	81,303,726	63,972,012	67,603,094	50,894,012
Unappropriated retained earnings		2,856,783,618	2,207,230,671	359,342,634	366,933,167
Other components of equity		(473,307,381)	(134,119,095)	-	-
Equity attributable to owners of the parent		5,628,000,569	4,770,387,441	3,590,166,334	3,051,131,032
Non-controlling interests		4,323,789	144,233,867	-	-
Total equity		5,632,324,358	4,914,621,308	3,590,166,334	3,051,131,032
Total liabilities and equity		15,869,990,957	14,689,235,197	9,648,448,342	8,475,249,790



Thai Solar Energy Public Company Limited
Statement of Comprehensive Income

As at 31 December 2019

	Notes	Consolidated financial statements		Separate financial statements	
		2019	2018	2019	2018
		Baht	Baht	Baht	Baht
Revenue from sales		1,235,447,207	496,417,874	2,280	1,242,355
Subsidy for adders		68,702,780	22,339,621	-	1,499,520
Management service fee income		44,741,114	42,610,585	94,735,249	74,351,127
Cost of sales and services		(911,358,079)	(435,172,853)	(74,633,921)	(88,386,181)
Gross profit (loss)		437,533,022	126,195,227	20,103,608	(11,293,179)
Dividends income		56	53	618,380,107	586,572,101
Other income	24	92,716,644	156,191,219	9,753,504	69,461,144
Administrative expenses		(233,345,785)	(206,642,688)	(136,551,349)	(138,886,509)
(Loss) gain on exchange rate		(5,414,481)	(47,475)	(194,165,264)	(65,893,001)
Other expenses	15	-	(296,000,000)	-	(296,000,000)
Finance costs	26	(147,191,521)	(123,240,033)	(198,870,291)	(260,140,885)
Share of profit from joint ventures		659,517,685	610,188,427	-	-
Profit (loss) before income tax		803,815,620	266,644,730	118,650,315	(116,180,329)
Income tax	27	(5,073,121)	(83,576,890)	(1,832,206)	(74,440,259)
Profit (loss) for the year		798,742,499	183,067,840	116,818,109	(190,620,588)
Other comprehensive income (loss) for the year:					
Items that will not be reclassified to profit or loss					
Remeasurements of post-employment benefit obligations	21	(2,873,219)	-	(2,873,219)	-
Income tax on the above item	21	(12,452)	-	(12,452)	-
Items that will be reclassified subsequently to profit or loss:					
Currency translation differences		(328,656,642)	(4,177,321)	-	-
Total comprehensive income (loss) for the year		467,200,186	178,890,519	113,932,438	(190,620,588)
Profit (loss) attributable to:					
Owners of the parent		774,584,221	173,954,320	116,818,109	(190,620,588)
Non-controlling interests		24,158,278	9,113,520	-	-
		798,742,499	183,067,840	116,818,109	(190,620,588)
Total comprehensive income (loss) attributable to:					
Owners of the parent		443,033,716	169,656,984	113,932,438	(190,620,588)
Non-controlling interests		24,166,470	9,233,535	-	-
		467,200,186	178,890,519	113,932,438	(190,620,588)
Earnings (loss) per share					
Basic earnings (loss) per share	29	0.40	0.09	0.06	(0.10)



Statement of Changes in Equity

As at 31 December 2019

Consolidated financial statements										
Notes	Attributable to owners of the parent						Other components of equity			
	Retained earnings			Changes in parent's ownership interest in subsidiary			Translation of financial statements		Total owners of the parent	
	Issued and paid-up share capital	Premium on ordinary share capital	Appropriated - legal reserve	Unappropriated	Baht	Baht	Baht	Baht	Baht	Baht
	Baht	Baht	Baht	Baht	Baht	Baht	Baht	Baht	Baht	Baht
Opening balance at 1 January 2018	1,815,000,000	727,554,273	62,894,012	2,135,195,319	-	(122,052,836)	4,618,590,768	162,151,409	4,780,742,177	
Change in equity for the year										
Additional investment in subsidiaries by purchasing shares from non-controlling interests	-	-	-	-	(7,768,923)	-	(7,768,923)	(27,151,077)	(34,920,000)	
Appropriation of legal reserve	23	-	1,078,000	(1,078,000)	-	-	-	-	-	
Share dividends	22	90,749,580	-	(90,749,580)	-	-	-	-	-	
Cash dividends	30	-	-	(10,091,388)	-	-	(10,091,388)	-	(10,091,388)	
Total comprehensive income for the year	-	-	-	173,954,320	-	(4,297,336)	169,656,984	9,233,535	178,890,519	
Closing balance at 31 December 2018	1,905,749,580	727,554,273	63,972,012	2,207,230,671	(7,768,923)	(126,350,172)	4,770,387,441	144,233,867	4,914,621,308	
Opening balance at 1 January 2019	1,905,749,580	727,554,273	63,972,012	2,207,230,671	(7,768,923)	(126,350,172)	4,770,387,441	144,233,867	4,914,621,308	
Change in equity for the year										
Additional investment in subsidiaries by purchasing shares from non-controlling interests	13.2	-	-	-	(10,523,452)	-	(10,523,452)	(164,076,548)	(174,600,000)	
Appropriation of legal reserve	23	-	17,331,714	(17,331,714)	-	-	-	-	-	
Issuance of ordinary shares	22	211,966,701	317,950,052	-	-	-	529,916,753	-	529,916,753	
Cash dividends	30	-	-	(104,813,889)	-	-	(104,813,889)	-	(104,813,889)	
Total comprehensive income for the year	-	-	-	771,698,550	-	(328,664,834)	443,033,716	24,166,470	467,200,186	
Closing balance at 31 December 2019	2,117,716,281	1,045,504,325	81,303,726	2,856,783,618	(18,292,375)	(455,015,006)	5,628,000,569	4,323,789	5,632,324,358	



Statement of Changes in Equity (Cont'd)

As at 31 December 2019

Separate financial statements						
Notes	Issued and paid-up share capital	Premium on ordinary share capital	Retained earnings			Total Baht
			Baht	Appropriated - legal reserve	Unappropriated Baht	
Opening balance at 1 January 2018						
	1,815,000,000	727,554,273	50,894,012	658,394,723		3,251,843,008
Change in equity for the year						
22	90,749,580	-	-	(90,749,580)		-
30	-	-	-	(10,091,388)		(10,091,388)
Total comprehensive loss for the year						
	-	-	-	(190,620,588)		(190,620,588)
Closing balance at 31 December 2018						
	1,905,749,580	727,554,273	50,894,012	366,933,167		3,051,131,032
Opening balance at 1 January 2019						
	1,905,749,580	727,554,273	50,894,012	366,933,167		3,051,131,032
Change in equity for the year						
23	-	-	16,709,082	(16,709,082)		-
22	211,966,701	317,950,052	-	-		529,916,753
30	-	-	-	(104,813,889)		(104,813,889)
Total comprehensive income for the year						
	-	-	-	113,932,438		113,932,438
Closing balance at 31 December 2019						
	2,117,716,281	1,045,504,325	67,603,094	359,342,634		3,590,166,334



Statement of Cash Flows

As at 31 December 2019

	Notes	Consolidated financial statements		Separate financial statements	
		2019	2018	2019	2018
		Baht	Baht	Baht	Baht
Cash flows from operating activities					
Profit (loss) before income tax		803,815,620	266,644,730	118,650,315	(116,180,329)
Adjustments for:					
Depreciation	14, 15	298,300,124	145,968,764	8,722,027	26,131,299
Amortisation	17	43,154,725	11,073,552	2,144,434	1,111,493
Share of profit from investments in joint ventures	13.1	(659,517,685)	(610,188,427)	-	-
Provision for employee benefits obligations	21	5,959,136	2,652,204	5,959,136	2,652,204
Unrealised (gain) loss on exchange		(4,493,831)	(2,024,288)	183,834,020	(73,463,351)
Fair value gain on trading securities	10	(497,803)	-	(497,803)	-
Gain on disposal of trading securities		(974,492)	(1,349,250)	(974,492)	(1,349,250)
Loss (reversal) from impairment of assets	15	13,079,191	296,000,000	(577,706)	296,000,000
Loss (gain) from disposal/write-off equipment		548,712	37,848	(21,887)	(18,515)
Loss from write-off withholding tax		16,467	17,528	-	-
Dividends income		(56)	(53)	(618,380,107)	(586,572,101)
Interest income	24	(1,756,685)	(23,090,909)	(6,463,021)	(24,495,479)
Other income		-	(1,578,280)	-	(3,030,593)
Finance cost	26	147,191,521	123,240,033	198,870,290	260,140,885
Gain on bargain purchase of subsidiaries	31	(56,004,450)	-	-	-
Loss on impairment of goodwill	16	971,663	-	-	-
		589,792,157	207,403,452	(108,734,794)	(219,073,737)
Changes in operating assets and liabilities					
Trade and other receivables		101,708,164	(393,228,292)	9,521,134	(10,822,156)
Inventories		(9,576,138)	(14,452,830)	-	-
Value added tax refundable		43,782,264	(67,167,834)	-	241,228
Derivatives assets		-	81,781,462	-	81,781,462
Other current assets		5,444,854	(57,076,636)	65,722	(324,323)
Other non-current assets		3,938,719	13,923,480	(4,695,979)	1,259,199
Other payables		(38,365,921)	35,085,118	2,069,083	315,560
Other current liabilities		3,594,680	773,786	4,325,485	283,267
Employee benefit payments	21	(3,917,039)	(121,452)	(3,917,039)	(121,452)
Cash flows from (used in) operating activities		696,401,740	(193,079,746)	(101,366,388)	(146,460,952)
<u>Add</u> Income tax received		-	1,546,610	-	1,546,610
<u>Less</u> Income tax paid		(3,324,445)	(12,787,837)	(2,670,607)	(2,279,665)
Cash flows from (used in) operating activities		693,077,295	(204,320,973)	(104,036,995)	(147,194,007)



Thai Solar Energy Public Company Limited
Statement of Comprehensive Income

As at 31 December 2019

		Consolidated financial statements		Separate financial statements	
		2019	2018	2019	2018
	Notes	Baht	Baht	Baht	Baht
Cash flows from investing activities					
Acquisition of subsidiaries, net of cash acquired		(745,028,449)	(45,909,210)	(399,992)	(488,700,475)
Proceeds from disposals of investment in subsidiaries		-	-	-	424,249,995
Increase in restricted bank deposits		33,319,048	(5,603,737)	(14,626,035)	(2,742,524)
Purchase of short-term investments	10	(995,390,807)	(510,971,859)	(995,390,807)	(510,971,859)
Proceeds from disposals of short-term investments		776,208,548	605,934,630	776,208,548	605,934,630
Short-term loans made to subsidiaries	32.3	-	-	(488,000,000)	(663,484,810)
Short-term loan repayments received from subsidiaries	32.3	-	-	67,287,107	380,741,723
Long-term loans made to subsidiaries	32.4	-	-	(1,018,162,498)	(563,736,515)
Long-term loan repayments received from subsidiaries	32.4	-	-	161,816,773	704,565,291
Purchase of property, plant and equipment		(434,438,142)	(2,255,191,134)	(3,987,216)	(6,927,944)
Proceeds from disposals of equipment		417,540	10,118,121	274,547	262,615
Purchase of intangible asset		(2,089,002)	(46,566,950)	(2,088,845)	(3,121,581)
Interest received		1,768,982	34,960,193	7,644,226	35,815,425
Dividends received		599,830,104	670,222,116	599,830,104	570,822,098
Net cash (used in) from investing activities		(765,402,178)	(1,543,007,830)	(909,594,088)	482,706,069
Cash flows from financing activities					
Proceeds from issuance of ordinary shares	22	529,916,753	-	529,916,753	-
Proceeds from short-term loans from financial institutions, net of financial service fee	20.1	145,923,140	85,986,004	145,923,140	85,986,004
Repayment to short-term loans from financial institutions	20.1	(150,000,000)	(2,250,000,000)	(150,000,000)	(2,250,000,000)
Repayment to finance lease liabilities	20.2	(6,757,229)	(2,973,324)	(2,973,324)	(2,973,324)
Proceeds from long-term borrowings, net of financial service fee	20.3	901,534,752	4,617,387,743	546,458,031	2,237,654,703
Repayment to long-term borrowings	20.3	(942,089,215)	(240,296,891)	(203,166,050)	-
Proceeds from issuance of debentures	20.5	2,344,712,500	-	2,344,712,500	-
Repayment to debentures	20.5	(2,050,000,000)	-	(2,050,000,000)	-
Purchase shares in subsidiary from non-controlling interests	13.2	(174,600,000)	(34,920,000)	-	-
Cash dividends payment		(104,813,889)	(10,181,324)	(104,813,889)	(10,181,324)
Interest expenses and financial service fee		(273,414,891)	(218,601,959)	(206,109,931)	(220,489,723)
Net cash from (used in) financing activities		220,411,921	1,946,400,249	849,947,230	(160,003,664)



Thai Solar Energy Public Company Limited
Statement of Cash Flows (Cont'd)

As at 31 December 2019

	Consolidated financial statements		Separate financial statements	
	2019 Baht	2018 Baht	2019 Baht	2018 Baht
Net increase (decrease) in cash and cash equivalents	148,087,038	199,071,446	(163,683,853)	175,508,398
Cash and cash equivalents at beginning of the year	561,020,761	424,752,306	209,557,883	32,023,034
Exchange loss (gain) on cash and cash equivalents	2,358,054	1,084,230	(2,030,394)	2,026,451
Effect of exchange rate changes on translation of financial statements	(67,871,735)	(63,887,221)	-	-
Cash and cash equivalents at end of the year	643,594,118	561,020,761	43,843,636	209,557,883
Non-cash transactions				
Significant non-cash transactions are as follows:				
Payable arising from purchase of investment in subsidiary	37,059,807	-	249,995	249,995
Payable arising from construction and purchase of equipment	6,993,242	119,907,294	-	2,086,003
Receivables from disposal of investments	-	-	1,383,683,149	1,383,683,149
Share dividends	-	90,749,580	-	90,749,580



As at 31 December 2019

1 General information

Thai Solar Energy Public Company Limited (“the Company”) is a Public Company Limited which is incorporated and domiciled in Thailand. The Company is listed on the Stock Exchange of Thailand. Its parent company is P.M. Energy Company Limited (incorporated in Thailand) (“Parent Company”). The address of the Company’s registered office is as follows:

725 Metropolis Building, 19th Floor, Sukhumvit Rd., Klongton Nua, Wattana, Bangkok.

For reporting purposes, the Company, its subsidiaries and Joint Venture are referred to as the Group.

The principal business operations of the Group are generation and distribution of electricity from solar power and biomass to government and private sector.

These consolidated and separate financial statements have been approved for issue by the Board of Directors on 27 February 2020.

2 Accounting policies

The principal accounting policies applied in the preparation of these consolidated and separate financial statements are set out below:

2.1 Basis of preparation

The consolidated and separate financial statements have been prepared in accordance with Thai Financial Reporting Standards (“TFRS”) and other financial reporting requirements issued under the Securities and Exchange Act.

The consolidated and separate financial statements have been prepared under the historical cost convention except trading investments as disclosed in accounting policy.

The preparation of financial statements in conformity with TFRS requires management to use certain critical accounting estimates and to exercise its judgement in applying the Group’s accounting policies. The areas involving a higher degree of judgement or complexity, or areas that are more likely to be materially adjusted due to changes in estimates and assumptions are disclosed in Note 5.

An English version of the consolidated and separate financial statements have been prepared from the statutory financial statements that are in the Thai language. In the event of a conflict or a difference in interpretation between the two languages, the Thai language statutory financial statements shall prevail.



As at 31 December 2019

2 Accounting policies (Cont'd)

2.2 New and amended financial reporting standards that are relevant to the Group

2.2.1 The Group has applied the following standard and amendments for the first time for their annual reporting commencing 1 January 2019

a) Thai Financial Reporting Standard no.15 (TFRS 15), Revenue from contracts with customers

The standard provides principle and approach of revenue recognition under five-step process. The underlying principle is that the Group will recognise revenue to depict the transfer of goods or services to customers at an amount that the entity expects to be entitled to in exchange for those goods or services. It replaces the principles of transferring the significant risks and rewards of ownership of the goods or services to the buyer in accordance with TAS 11, Construction contracts, TAS 18, Revenue and related interpretations.

Management has assessed the effects of applying the new standard and considered that the above revised standards do not have significant impact on the Group.

b) Thai Accounting Standard no.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 venture at fair value through profit or loss should be made separately for each associate or joint venture at initial recognition.

c) Thai Accounting Standard no.40 (revised 2018), Investment property

The amendment clarifies 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.

d) Thai Financial Reporting Interpretation no.22 (TFRIC 22), Foreign currency transactions and advance consideration

TFRIC 22 clarifies how to determine the date of transaction for the exchange rate to be used on initial recognition of a related asset, expense or income where an entity pays or receives consideration in advance for foreign currency-denominated contracts.



As at 31 December 2019

2 Accounting policies (Cont'd)

2.2 New and amended financial reporting standards that are relevant to the Group (Cont'd)

2.2.2 New and amended financial reporting standards that are effective for accounting period beginning or after 1 January 2020

Certain new and amended financial reporting standards have been issued that are not mandatory for current period end 31 December 2019 reporting period and have not been early adopted by the Group.

a) Financial instruments

The new financial standards relate to financial instruments are:

TAS 32	Financial instruments: Presentation
TFRS 7	Financial Instruments: Disclosures
TFRS 9	Financial Instruments
TFRIC 16	Hedges of a Net Investment in a Foreign Operation
TFRIC 19	Extinguishing Financial Liabilities with Equity Instruments

These new standards address the classification, measurement, derecognition of financial assets and financial liabilities, impairment of financial assets, hedge accounting, and presentation and disclosure of financial instruments.

On 1 January 2020, the Company will apply the new financial reporting standards on financial instruments in its financial statements by applying modified retrospective.

The Group's management is currently assessing the impact of initial adoption of this standard.

b) TFRS 16, Leases

Where the Group is a lessee, TFRS 16, Leases will result in almost all leases being recognised on the balance sheet as the distinction between operating and finance leases is removed. A right-of-use asset and a lease liability will be recognised, with exception on short-term and low-value leases.

On 1 January 2020, the Group will apply TFRS 16, Leases and adjust cumulative impact to opening retained earnings (modified retrospective approach).

From the preliminary impact assessment, the management expect that the Group will be affected by significant lease liabilities on office building space, motor vehicles and rooftop space, previously classified as operating leases under TAS 17, Leases.

The Group's management is currently assessing the impact of initial adoption of this standard.

c) Other new/amended standards

The new and amended financial reporting standards that will have significant impact on the Group are:

TAS 12	Income tax
TAS 19	Employee benefits
TAS 23	Borrowing cost
TAS 28	Investments in associates and joint venture
TFRS 3	Business combinations
TFRS 9	Financial instruments
TFRS 11	Joint arrangements
TFRIC 23	Uncertainty over income tax treatments

Amendment to TAS 12, Income tax - clarified that the income tax consequences of dividends of financial instruments classified as equity should be recognised according to where the past transactions or events that generated distributable profits were recognised.

Amendment to TAS 19, Employee benefits (plan amendment, curtailment or settlement) - clarified accounting for defined benefit plan amendments, curtailments and settlements that the updated assumptions on the date of change are applied to determine current service cost and net interest for the remainder of the reporting period after the plan amendment, curtailment or settlement.



2.2.2 New and amended financial reporting standards that are effective for accounting period beginning or after 1 January 2020 (Cont'd)

c) Other new/amended standards (Cont'd)

Amendment to TAS 23, Borrowing costs - clarified that if a specific borrowing remains outstanding after the related qualifying asset is ready for its intended use or sale, it becomes part of general borrowings.

Amendment to TAS 28, Investments in associates and joint venture (long-term interests in associates and joint venture) - clarified the accounting for long-term interests in an associate or joint venture, which is in substance form part of the net investment in the associate or joint venture, but to which equity accounting is not applied. Entities must account for such interests under TFRS 9, Financial instruments before applying the loss allocation and impairment requirements in TAS 28, Investments in associates and joint venture.

Amendment to TFRS 3, Business combinations - clarified that obtaining control of a business that is a joint operation is a business combination achieved in stages. The previously held interest is therefore re-measured.

Amendment to TFRS 9, Financial instruments (prepayment features with negative compensation) - enabling entities to measure certain prepayable financial assets with negative compensation at amortised cost instead of fair value through profit or loss. These assets include some loan and debt securities. To qualify for amortised cost measurement, the negative compensation must be 'reasonable compensation for early termination of the contract' and the asset must be held within a 'held to collect' business model.

Amendment to TFRS 11, Joint arrangements - clarified that the party obtaining joint control of a business that is a joint operation should not remeasure its previously held interest in the joint operation.

TFRIC 23, Uncertainty over income tax treatments - explained how to recognise and measure deferred and current income tax assets and liabilities where there is uncertainty over a tax treatment. In particular, it discusses:

- that the Group should assume a tax authority will examine the uncertain tax treatments and have full knowledge of all related information, ie that detection risk should be ignored.
- that the Group should reflect the effect of the uncertainty in its income tax accounting when it is not probable that the tax authorities will accept the treatment.
- That the judgements and estimates made must be reassessed whenever circumstances have changed or there is new information that affects the judgements.



2.3 Principles of consolidation and equity accounting

a) Subsidiaries

Subsidiaries are all 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 consolidated from the date on which control is transferred to the Group until the date that control ceases.

In the separate financial statements, investments in subsidiaries are accounted for using cost method.

b) Associates

Associates are all entities over which the Group has significant influence but not control or joint control. Investments in associates are accounted for using the equity method of accounting.

In the separate financial statements, investments in associates are accounted for using cost method.

c) Joint arrangements

Investments in joint arrangements are classified as either joint operations or joint venture depending on the contractual rights and obligations of each investor, rather than the legal structure of the joint arrangements.

List of joint ventures are disclosed in note 13.1.

Joint venture

A joint venture is a joint arrangement whereby the Group has rights to the net assets of the arrangement. Interests in joint venture are accounted for using the equity method.

In the separate financial statements, investments in joint venture are accounted for using cost method.

d) Equity method

The investment is initially recognised at cost which is consideration paid and directly attributable costs.

The Group's subsequently recognises shares of its associates and joint venture's profits or losses and other comprehensive income in the profit or loss and other comprehensive income, respectively. The subsequent cumulative movements are adjusted against the carrying amount of the investment.

When the Group's share of losses in associates and joint venture equals or exceeds its interest in the associates and joint venture, the Group does not recognise further losses, unless it has incurred obligations or made payments on behalf of the associates and joint venture.

e) Changes in ownership interests

The Group treats transactions with non-controlling interests that do not result in a loss of control as transactions with equity owners of the Group. A difference between the amount of the adjustment to non-controlling interests to reflect their relative interest in the subsidiary and any consideration paid or received is recognised within equity.

If the ownership interest in associates and joint venture is reduced but significant influence and joint control is retained, only a proportionate share of the amounts previously recognised in other comprehensive income is reclassified to profit or loss where appropriate. Profit or loss from reduce of the ownership interest in associates and joint venture is recognise in profit or loss.

When the Group losses control, joint control or significant influence over investments, any retained interest in the investment is remeasured to its fair value, with the change in carrying amount recognised in profit or loss. The fair value becomes the initial carrying amount of the retained interest which is reclassified to investment in an associate, or a joint venture or a financial asset accordingly.

f) Intercompany transactions on consolidation

Intra-group transactions, balances and unrealised gains on transactions are eliminated. Unrealised gains on transactions between the Group and its associates and joint venture are eliminated to the extent of the Group's interest in the associates and joint venture. Unrealised losses are also eliminated in the same manner unless the transaction provides evidence of an impairment of the asset transferred.



As at 31 December 2019

2 Accounting policies (Cont'd)

2.4 Business combination

The Group applies the acquisition method to account for business combinations with an exception on business combination under common control. The consideration transferred for the acquisition of a subsidiary comprises:

- fair value of the assets transferred
- liabilities incurred to the former owners of the acquiree
- equity interests issued by the Group

Identifiable assets and liabilities acquired 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 initially 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.

The excess of the consideration transferred, the amount of any non-controlling interest recognised and the acquisition-date fair value of any previous equity interest in the acquiree (for business combination achieved in stages) over the fair value of the identifiable net assets acquired is recorded as goodwill. In the case of a bargain purchase, the difference is recognised directly in profit or loss.

Acquisition-related cost

Acquisition-related cost are recognised as expenses.

Changes in fair value of contingent consideration paid/received

Subsequent changes to the fair value of the contingent consideration that is an asset or liability is recognised in profit or loss. Contingent consideration that is classified as equity is not re-measured.

2.5 Foreign currency translation

a) Functional and presentation currency

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

b) 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.

Any exchange component of gains and losses on a non-monetary item that recognised in profit or loss, or other comprehensive income is recognised following the recognition of a gain or loss on the non-monetary item.

c) Group companies

The operational results and financial position of the Group's entities (none of which has the currency of a hyper-inflationary economy) that have a different functional currency from the Group's presentation currency are translated into the presentation currency as follows:

- Assets and liabilities are translated at the closing rate at the date of respective statement of financial position;
- Income and expenses are translated at average exchange rates; and
- All resulting exchange differences are recognised in other comprehensive income.



2 Accounting policies (Cont'd)

2.6 Cash and cash equivalents

In the statements of cash flows, cash and cash equivalents includes cash on hand, deposits held at call, short-term highly liquid investments with maturities of three months or less from acquisition date

2.7 Restricted bank deposits

Restricted bank deposits mean all types of bank deposits that are under condition of withdrawal process for specific purpose according to financial agreement and loan facilities agreement with financial institution which provide credit to the Group.

2.8 Trade accounts receivable

Trade receivables are amounts due from customers for goods sold or service performed in the ordinary course of business.

Trade receivables are recognised initially at the amount of consideration that is unconditionally unless they contain significant financing components, when they are recognised at its present value. The Group presented trade receivables at cost less allowance for doubtful accounts.

2.9 Inventories

Inventories are stated at the lower of cost or net realisable value .

Cost of inventories is determined by the weighted average method. Cost of raw materials comprise all purchase cost and costs directly attributable to the acquisition of the inventory less all attributable discounts, direct labour and other direct costs.

2.10 Investments in debt and equity securities

Investments other than investments in subsidiaries, associates and joint venture are initially recognised at fair value of consideration paid plus direct transaction cost.

Trading and available-for-sale investments

Trading investments and available-for-sale investments are subsequently measured at fair value. The unrealised gains and losses of trading investments are recognised in profit or loss. The unrealised gains and losses of available for sale investments are recognised in other comprehensive income and are subsequently reclassified to profit or loss when the investment is disposed.

Held-to-maturity investments

Held-to-maturity investments are carried at amortised cost using the effective interest method less impairment.

Disposal of investments

On a disposal of an investment, the difference between the net disposal proceeds and the carrying amount (including cumulative changes in fair value recognised in equity) is recognised to the profit or loss. When the Group disposes an investment partially, the carrying amount of the disposed part is determined by the weighted average method.



As at 31 December 2019

2 Accounting policies (Cont'd)

2.11 Investment property

Investment properties of the Group are lands and condominium which are held for capital appreciation and are not occupied by the Group.

Investment property is measured initially at cost, including directly attributable costs and borrowing costs.

After initial recognition, investment property is carried at cost less any accumulated depreciation and any accumulated impairment losses.

Land is not depreciated. Depreciation on condominium is calculated by using straight-line method over 20 years.

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.

2.12 Property, plant and equipment

All other property, plant and equipment are stated at historical cost less accumulated depreciation and impairment losses. Historical cost includes expenditure that is directly attributable to the acquisition of the items.

Subsequent costs are included in the asset's carrying amount, only when it is probable that future economic benefits associated with the item will flow to the Group, capitalised where there is future economic benefits. The carrying amount of the replaced part is derecognised.

All other repairs and maintenance are charged to profit or loss when incurred.

Land is not depreciated. Depreciation on other assets is calculated using the straight-line method to allocate their cost to their residual values over their estimated useful lives, as follows:

Land improvement	15 years 4 months - 25 years
Power plants	15 years 4 months - 25 years
Office buildings	25 years
Tools and equipment	5 - 10 years
Office equipment	3 - 5 years
Vehicles	5 years

The assets' residual values and useful life are reviewed, and adjusted if appropriate, at the end of each reporting period.

Gains or losses on disposals are determined by comparing the proceeds with the carrying amount and are recognised in profit or loss.

2.13 Goodwill

Goodwill is tested for impairment annually, or more frequently if events or changes in circumstances indicate that it might be impaired and is carried at cost less accumulated impairment losses.

For the purpose of impairment testing, goodwill is allocated to cash-generating units or groups of cash-generating units that are expected to benefit from the business combination in which the goodwill arose. The units or groups of units are identified at the lowest level at which goodwill is monitored for internal management purposes.



2 Accounting policies (Cont'd)

2.14 Intangible assets

2.14.1 Computer software

Acquired computer software is capitalised on the basis of the costs incurred to acquire and bring to use the specific software. These costs are amortised over their estimated useful life of 5 years.

2.14.2 Right in Power Purchase Agreement

Right in Power Purchasing Agreements ("PPAs") comprise of PPA for renewable energy (Biomass project) which the Group signed with Provincial Electricity Authority (PEA) and PPA for generating electricity from solar farm as specified in certification for power distribution granted by Ministry of Economy, Trade and Industry, Japan (METI Certificate). The Group acquired those PPAs from acquisition of subsidiaries. PPAs were amortised by using the straight-line method to allocate their cost to their residual values over their Power Purchase Agreement. Amortisation starts when the Group start their commercial operation.

2.14.3 Right in use of land

Land for the location of The Electricity Generating Authority of Thailand Installed on the ground for government agencies and agricultural cooperatives that is a joint project between a subsidiary with a cooperative in Thailand. A subsidiary agreed to transfer the ownership in this plot of land to that cooperative by the end of the project. The Group remain the right to use such land over the agreement period. Right in use of land was amortised using straight-line method over the contractual period of 25 years.

2.15 Impairment of assets

Assets that have an indefinite useful life are tested annually for impairment, or more frequently if events or changes in circumstances indicate that it might be impaired. Assets that are subject to amortisation are reviewed for impairment whenever there is an indication of impairment. 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 of disposal and value in use.

Where the reasons for previously recognised impairments no longer exist, the impairment losses on the assets concerned other than goodwill is reversed.

2.16 Leases

Leases - where the Group is the lessee

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.

At the inception of finance lease, the lower of the fair value of the leased property or the present value of the minimum lease payments is capitalised. Each lease payment is allocated between the liability and finance charges to achieve a constant rate on the liabilities balance outstanding. The corresponding rental obligations is presented net of finance charges. Finance cost is charged to profit or loss over the lease period.



As at 31 December 2019

2 Accounting policies (Cont'd)

2.17 Borrowings

Borrowings are recognised initially at the fair value, net of directly attributable transaction costs incurred. Borrowings are subsequently stated at amortised cost.

Fees paid on the establishment of loan facilities are recognised as transaction costs of the loan to the extent that it will be drawn down. The fee is deferred until the drawn down occurs and included in effective interest calculation. However, if it is probable that facility will not be drawn down, that portion of the fee paid is recognised as a prepayment and amortised over the period of related facility.

Borrowings are removed from the statement of financial position when the obligation specified in the contract is discharged, cancelled, or expired. The difference between the carrying amount of a financial liability that has been extinguished or transferred to another party and the consideration paid, including any non-cash assets transferred or liabilities assumed, is recognised in profit or loss as finance costs.

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 reporting date.

2.18 Borrowing costs

General and specific borrowing costs directly attributable to the acquisition, construction or production of qualifying assets (assets that take times to get ready for its intended use or sale) are added to the cost of those assets less investment income earned from those specific borrowings. The capitalisation of borrowing costs is ceased when substantially all the activities necessary to prepare the qualifying asset for its intended use or sale are complete.

Other borrowing costs are expensed in the period in which they are incurred.

2.19 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.

Current tax

The current income tax is calculated on the basis of the tax laws enacted or substantively enacted at the end of the reporting period. 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

Deferred income tax is recognised on temporary differences arising from differences between the tax base of assets and liabilities and their carrying amounts in the financial statements. However, deferred income tax is not recognised for temporary differences arise from:

- initial recognition of an asset or liability in a transaction other than a business combination that affects neither accounting nor taxable profit or loss is not recognised
- investments in subsidiaries, associates and joint arrangements where the timing of the reversal of the temporary difference is controlled by the Group and it is probable that the temporary difference will not reverse in the foreseeable future.

Deferred income tax is measured using tax rates of the period in which temporary difference is expected to be reversed, based on tax rates and laws that have been enacted or substantially enacted by the end of the reporting period.

Deferred 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 tax assets and liabilities are offset when there is a legally enforceable right to offset current tax assets and liabilities and when the deferred tax balances relate to the same taxation authority. Current tax assets and tax liabilities are offset where the entity has a legally enforceable right to offset and intends either to settle on a net basis, or to realise the asset and settle the liability simultaneously.



As at 31 December 2019

2 Accounting policies (Cont'd)

2.20 Employee benefits

2.20.1 Short-term employee benefits

Liabilities for short-term employee benefits such as wages, salaries, paid annual leave and paid sick leave, bonuses, and medical care that are expected to be settled wholly within 12 months after the end of the period are recognised in respect of employees' service up to the end of the reporting period. They are measured at the amount expected to be paid.

2.20.2 Defined contribution plan

The Group operates a provident fund, being a defined contribution plan. The assets of which are held in a separate trustee - administered fund. The provident fund is funded by payments from employees and by the Company. Contributions to the provident fund are charged to the statement of comprehensive income in the period to which the contributions relate.

2.20.3 Defined benefit plans

A defined benefit plan is a retirement plan that is not a defined contribution plan. Typically defined benefit plans define an amount of retirement benefit that an employee will receive on retirement, usually dependent 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 less the fair value of plan assets. The defined benefit obligation is calculated annually 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 market yield of government bonds that are denominated in the currency in which the benefits will be paid, and that have terms to maturity approximating to the terms of the related retirement liability. Actuarial 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. They are included in retained earnings in the statements of changes in equity / presented as a separate item in statements of changes in equity.

Past-service costs are recognised immediately in profit or loss.

2.20.4 Termination benefits

The Group recognises termination benefits at the earlier of (a) when the Group can no longer withdraw the offer of those benefits; and (b) when the entity recognises costs for the related restructuring. Benefits due more than 12 months are discounted to their present value.

2.21 Provisions

Provisions are recognised when the Group has a present legal or constructive obligation as a result of past events; it is probable that an outflow of resources will be required to settle the obligation; and the amount has been reliably estimated.

Provisions are measured at the present value of the expenditures expected to be required to settle the obligation. The increase in the provision due to passage of time is recognised as interest expense.

2.22 Government grants

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 attached conditions.

Government grants relating to the sales of electricity generated from solar power is recognised as profit or loss systematically throughout the period. Moreover, the Group recognised expenses related to cost which is compensated.



As at 31 December 2019

2 Accounting policies (Cont'd)**2.23 Share capital**

Ordinary shares are classified as equity.

Incremental costs directly attributable to the issue of new shares or options (net of tax) are shown as a deduction in equity.

2.24 Revenue recognition

Revenue comprises the fair value of the consideration received or receivable for the sale of goods and service in the ordinary course of the Company's activities. Revenue including electricity tariff adders, net of fuel adjustment (Ft) and the Provincial Electricity Authority's operating charges, are the invoiced value, excluding valued added tax of electricity supplied, and after eliminating sales within the Group. Revenue from sales of goods is recognised when the collectability of goods provided is high probable.

Management service income is recognised when service is completed.

Interest income is recognised using the effective interest method.

Dividend income is recognised when the right to receive payment is established.

2.25 Dividend distribution

Dividend distributed to the Company's shareholders is recognised as a liability when interim dividends are approved by the Board of Directors, and when the annual dividends are approved by the shareholders.

2.26 Segment reporting

Operating segment 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 resource and assessing performance of the operating segments, has been identified as the Chief Executive Officer and the Executive Committee that make strategic decision.

3 Reclassification

Comparative figures have been reclassified to conform with changes in presentation in the current period.

Summary impact to statement of comprehensive income for the year ended 31 December 2018 is as follows:

	Consolidated financial statements		
	Previously present Baht	Reclassification Baht	Restatement Baht
Administrative expenses	(206,690,163)	47,475	(206,642,688)
(Loss) gain on exchange rate	-	(47,475)	(47,475)
	Separate financial statements		
	Previously present Baht	Reclassification Baht	Restatement Baht
Administrative expenses	(204,779,510)	65,893,001	(138,886,509)
(Loss) gain on exchange rate	-	(65,893,001)	(65,893,001)



4 Financial risk management

4.1 Financial risk factors

The Group exposes to a variety of financial risks: market risk (currency risk, fair value risk and price risk), credit risk and liquidity risk. The Group's overall risk management programme focuses on the unpredictability of financial markets and seeks to minimise potential adverse effects on the Group's financial performance. The board of directors provides written principles for overall risk management which is carried out by a central treasury department (the Group treasury), including identification, evaluation and hedge of financial risks in close co-operation with operating units.

4.1.1 Foreign exchange risk

As the Group generates and distributes electricity from solar power, the Group has entered into Power Plant construction agreement with supplier in foreign countries. The Group is exposed to foreign exchange risk arising from various currency exposures, primarily with respect to US Dollar and Japanese Yen, in terms of foreign exchange risk arises from future commercial transactions, recognition of assets and liabilities and net investments in foreign operations. However, the Group does not hedge foreign exchange risk as investments and borrowings were made in the same currency with future cash inflow.

The Company has granted loans denominated in Japanese Yen to its subsidiaries which expose the Company to a currency translation risk.

4.1.2 Interest rate risk

Interest rate risk of company occurs from credit facilities of commercial bank which is floating rate. Credit terms and interest rates depend on each borrower's creditability that cause the Company exposing to cash flow risk from interest rate.

4.1.3 Major customer reliance risk

The Group relies on Provincial Electricity Authority (PEA) and Metropolitan Electricity Authority (MEA) who purchase of all electricity generated in specific quantities at specific price based on each specific period according to Power Purchase Agreement, in accordance with Ministry of Energy's policy to encourage production and usage of renewable energy. As a result, agreement termination may significantly impact the Group's operations.

4.1.4 Risk from generated electricity lower than estimation

The electricity volume generated from solar power plants might be affected by climate change and natural disaster, forming as a risk of production volume is lower than estimation. In consequence, it may impact to revenue and operating results of the Group as well as other electricity generators in this industry.

4.1.5 Debt settlement ability risk

According to credit facilities conditions with commercial bank, the Group has to comply with financial covenants stated in the agreement such as to maintain Debt-to-Equity ratio and maintain Debt service coverage ratio. If the Group cannot maintain those financial covenants, the Group might be called up for immediate debt settlement.

4.2 Fair value

See disclosure of fair value of trading investments, investment property and fair value of borrowing in notes 10, 14 and 20 respectively.



As at 31 December 2019

5 Critical estimates and judgements

Estimates and judgements are continually evaluated and are based on historical experience and other factors, including expectations of future events that are believed to be reasonable under the circumstances.

Useful life of property plant and equipment

Management has estimated useful lives and residual value of property plant and equipment. The assets' residual values and useful lives are reviewed, and adjusted if appropriate, at the end of each reporting period and their carrying values are written-down immediately to its recoverable amount if the asset's carrying amount is greater than its estimated recoverable amount or it will write off technically obsolete or assets that have been abandoned or sold.

Estimated impairment of assets

The Group tests whether asset has suffered any impairment, in accordance with the accounting policy stated in Note 2.15. The recoverable amounts of cash-generating units have been determined based on fair value less costs to sell which was determined with reference to market prices for equivalent assets.

Consolidation of entities with less than 50% ownership

Management consider that the Group has de facto control over Bangsawan Green Co.,Ltd even though it has less than 50% of the voting rights. The Group is the major shareholder of Bangsawan Green Co.,Ltd with a 49% equity interest, while all other shareholders individually own less than 51% of its equity shares. There is no history of other shareholders forming a group to exercise their votes collectively.

6 Capital management

The Group's objectives when managing capital are to safeguard the Group's ability to continue as a going concern, so that they can continue to provide returns for shareholders and benefits for other stakeholders and to maintain an optimal capital structure to reduce the cost of capital.

In order to maintain or adjust the capital structure, the Group may adjust the amounts of dividends paid to shareholders, return capital to shareholders, issue new shares, or sell assets to reduce debt.

7 Operating segments

The principal business operations of the Group are generation and distribution of electricity from solar power and biomass and operating its business in Thailand and in Japan. Segment information is presented in respect of the Group's geography segments which are domestic and international. The two segments presented were classified and reviewed by authorised persons which are Chief Executive Officer and the Executive Committee.

The following information is used by authorised persons to evaluate operation of each segment.

As at 31 December 2019

7 Operating segments (Cont'd)

Financial information by geography segment

[illegible]



As at 31 December 2019

8 Cash and cash equivalents

	Consolidated financial statements		Separate financial statements	
	2019 Baht	2018 Baht	2019 Baht	2018 Baht
Cash on hand	1,870,000	2,077,931	25,000	60,000
Cash at bank	641,724,118	558,942,830	43,818,636	209,497,883
	<u>643,594,118</u>	<u>561,020,761</u>	<u>43,843,636</u>	<u>209,557,883</u>

The average effective interest rate on short-term bank deposits was 0.329% per annum (2018: 0.375%).

9 Restricted bank deposits

Short-term restricted bank deposits comprise saving deposits specially for repayment of debenture's principals and interest, pledged saving deposits and pledged deposits in current accounts of subsidiaries and the transfer of claims in the deposit accounts to the lender according to the specified expenditure conditions to secure the credit facilities.

The long-term restricted bank deposits consist of the pledged saving bank deposits of the Company to guarantee its electricity consumption, the pledged saving bank deposits of the subsidiaries for the specific purpose specified in the credit facility agreement and a fixed deposit of the Company pledged to the lender to guarantee the credit.

10 Short-term investments

The movements in short-term investments during the year are as follows:

	Consolidated and separate financial statements		
	Trading Baht	Held-to-maturity due within 1 year Baht	Total Baht
At 1 January 2018	30,389,235	40,664,038	71,053,273
Additions	510,851,113	120,746	510,971,859
Disposals	(541,240,348)	(63,345,031)	(604,585,379)
Transfer - in	-	23,020,000	23,020,000
At 31 December 2018	-	459,753	459,753
Additions	995,386,239	4,568	995,390,807
Disposals	(775,234,056)	-	(775,234,056)
Re-measuring of investments	497,803	-	497,803
At 31 December 2019	<u>220,649,986</u>	<u>464,321</u>	<u>221,114,307</u>

At 31 December 2019, the fair value of short-term investment are as follows:

	Consolidated and separate financial statements	
	Trading Baht	Held-to-maturity due within 1 year Baht
Investment in securities	<u>220,649,986</u>	<u>464,321</u>

The fair value of investments are based on bid price in liquidity market as at financial statement date. The fair values are within level 2 of the fair value hierarchy.



As at 31 December 2019

11 Trade and other receivables

Trade and other receivables as at 31 December 2019 and 2018 comprise the following:

	Consolidated financial statements		Separate financial statements	
	2019 Baht	2018 Baht	2019 Baht	2018 Baht
Trade receivables	237,261,772	168,206,169	-	56,518
Less Provision for impairment of trade receivables	-	-	-	-
Total trade receivables, net	237,261,772	168,206,169	-	56,518
Amounts due from and advances to related parties (Note 32.2)	4,053,761	3,860,725	99,069,193	93,031,887
Prepaid expenses	24,818,977	31,725,556	1,160,482	1,259,912
Dividends receivable (Note 32.2)	153,300,027	134,750,024	153,300,027	134,750,024
Other receivables	10,667,959	138,769,231	10,160,660	29,277,829
Advance payment	297,470	755,645	240,515	492,886
Total other receivables	193,138,194	309,861,181	263,930,877	258,812,538
Less Provision for impairment of other receivables	-	-	-	-
Total other receivables, net	193,138,194	309,861,181	263,930,877	258,812,538
Total trade and other receivables	430,399,966	478,067,350	263,930,877	258,869,056

All outstanding trade receivable are not yet due.

12 Other current assets

	Consolidated financial statements		Separate financial statements	
	2019 Baht	2018 Baht	2019 Baht	2018 Baht
Withholding tax deducted at sources	13,745,352	11,310,857	13,736,840	11,066,233
Input VAT undue	16,283,911	140,513,997	654,640	211,345
Others	287,658	757,095	191,040	700,056
	30,316,921	152,581,949	14,582,520	11,977,634



As at 31 December 2019

13 Investments in subsidiaries and investments in joint ventures**13.1 Investments in joint ventures****Movement in investments in joint ventures**

	Consolidated financial statements Baht	Separate financial statements Baht
For the year ended 31 December 2019		
Opening net book amount	1,787,086,887	350,000,130
Share of profit	659,517,685	-
Dividends received	(606,550,052)	-
Closing net book amount	<u>1,840,054,520</u>	<u>350,000,130</u>

Details of joint ventures in 2019 and 2018 are as follows:

	Business	Country of incorporation	% Ownership		Measurement method
			2019	2018	
Joint venture directly held by the Company					
Thai Solar Renewable Co., Ltd.	Investment holding	Thailand	60	60	Equity
Joint venture held by Thai Solar Renewable Co., Ltd.					
Siam Solar Energy 1 Co., Ltd.*	Generation and distribution of electricity	Thailand	60	60	Equity

* The Company directly holds one share and the remaining shares are held by Thai Solar Renewable Company Limited.

Thai Solar Renewable Co., Ltd. is investment holding company and Siam Solar Energy 1 Co., Ltd. engages in the generation and distribution of electricity from solar energy. These companies are private companies and their shares are not traded. These companies were joint venture held by the Company and Global Power Synergy Public Company Limited.

Summarised financial information for joint ventures

Financial statements of Siam Solar Energy 1 Co., Ltd., subsidiary of Thai Solar Renewable Co., Ltd., was included in the consolidated financial statements of Thai Solar Renewable Co., Ltd.



As at 31 December 2019

13 Investments in subsidiaries and investments in joint ventures (Cont'd)**13.1 Investments in joint ventures (Cont'd)**

Set out below are the summarised consolidated financial statements for Thai Solar Renewable Co., Ltd.

Summarised statement of financial positions

Consolidated financial statements of Thai Solar Renewable Co., Ltd. As at 31 December		
	2019 Baht	2018 Baht
Current		
Cash and cash equivalents	1,473,351	1,553,598
Other current assets (excluding cash)	617,286,173	595,092,763
Total current assets	618,759,524	596,646,361
Current financial liabilities (excluding trade payables)	(321,750,000)	(321,750,000)
Other current liabilities (including trade payables)	(304,104,265)	(265,893,085)
Total current liabilities	(625,854,265)	(587,643,085)
Total current net assets	(7,094,741)	9,003,276
Non-current		
Assets	4,798,663,173	5,016,204,510
Financial liabilities	(1,861,540,574)	(2,183,290,574)
Total non-current net assets	2,937,122,599	2,832,913,936
Net assets	2,930,027,858	2,841,917,212

Summarised statement of comprehensive income

Consolidated financial statements of Thai Solar Renewable Co., Ltd. For the year ended 31 December		
	2019 Baht	2018 Baht
Revenue from sales	513,383,500	485,947,325
Subsidy for adders	1,028,311,564	994,678,516
Cost of sales	(312,025,608)	(297,952,787)
Gross profit	1,229,669,456	1,182,673,054
Other income	4,582,965	7,130,872
Administrative expenses	(30,098,682)	(46,533,713)
Finance costs	(104,205,283)	(124,892,644)
Profit before income tax expense	1,099,948,456	1,018,377,569
Income tax	(752,315)	(1,396,858)
Profit from continuing operations after income tax	1,099,196,141	1,016,980,711

The information above reflects the amounts presented in the financial statements of the joint venture (and not the Group's share of those amounts). Under equity method (Note 2.3), the Group recognised profit or loss of the joint venture in Statement of Comprehensive Income within "Share of profit from investments in joint venture" according to the Group's interest in the joint venture.

As at 31 December 2019

13 Investments in subsidiaries and investments in joint ventures (Cont'd)

13.1 Investments in joint ventures (Cont'd)

Reconciliation of summarised financial information

Reconciliation of the summarised financial information presented to the carrying amount of its interest in joint ventures.

	Thai Solar Renewable Co., Ltd.	
	As at 31 December	
	2019 Baht	2018 Baht
Summarised financial information		
Closing net assets	2,930,027,858	2,841,917,212
Reconciliation:		
The difference from restructuring business under common control	136,913,097	136,730,717
Non-controlling interests	(183,422)	(169,784)
Closing net assets after reconciliation	3,066,757,533	2,978,478,145
Interest in joint ventures (60%)	1,840,054,520	1,787,086,887
Carrying value	1,840,054,520	1,787,086,887

As at 31 December 2019, Thai Solar Renewable Company Limited has pledged share certificates of Siam Solar Energy 1 Company Limited, amounting to Baht 1,080 million (2018: Baht 1,080 million) as collateral for its subsidiary's credit facilities granted by a commercial bank. In addition, Siam Solar Energy 1 Company Limited has mortgaged land with construction thereon and machinery with a total net book value of Baht 4,754.92 million (2018: Baht 4,974.74 million) and pledged bank deposits amounting to Baht 360 million (2018: Baht 360 million) as collateral for credit facilities granted by a commercial bank.

The Company has pledged all share certificates of the investment in the joint venture with the lender as the collateral for the credit facilities which the joint venture is granted from the commercial bank.

13.2 Investments in subsidiaries

Details of investments as at 31 December 2019 and 2018 are as follows:

			Proportion of ordinary shares directly held by parent (%)		Proportion of shares held by non-controlling interests (%)	
	Business	Country of incorporation	2019	2018	2019	2018
Subsidiaries directly held by the Company						
TSE Rooftop Co., Ltd.	Investment	Thailand	100	100	-	-
Solar Visible Co., Ltd.	Provision of maintenance service for power plants	Thailand	100	100	-	-
TSE Overseas Group Co., Ltd.	Investment	Thailand	100	100	-	-
World Solar Co., Ltd.	Production and distribution of electricity	Thailand	100	100	-	-
Thai Community Energy Co., Ltd.	Production and distribution of electricity	Thailand	100	100	-	-



As at 31 December 2019

13 Investments in subsidiaries and investments in joint ventures (Cont'd)

13.2 Investments in subsidiaries (Cont'd)

Details of investments as at 31 December 2019 and 2018 are as follows: (Cont'd)

			Proportion of ordinary shares directly held by parent (%)		Proportion of shares held by non-controlling interests (%)	
	Business	Country of incorporation	2019	2018	2019	2018
Subsidiaries held by TSE Rooftop Co., Ltd.						
Green Rooftop Co., Ltd.	Production and distribution of electricity	Thailand	100	100	-	-
North Rooftop Co., Ltd.	Production and distribution of electricity	Thailand	100	100	-	-
Lucky Solar Co., Ltd.	Production and distribution of electricity	Thailand	100	100	-	-
Champ Energy Co., Ltd.	Production and distribution of electricity	Thailand	100	100	-	-
Roof Energy Co., Ltd.	Production and distribution of electricity	Thailand	100	100	-	-
Subsidiaries held by Solar Visible Co., Ltd.						
Solar Community Co., Ltd.	Production and distribution of electricity	Thailand	100	100	-	-
Infinity Solar Co., Ltd.	Production and distribution of electricity	Thailand	100	100	-	-
BS Bangsai Solar Co., Ltd.	Production and distribution of electricity	Thailand	100	-	-	-
BS Solar Energy Co., Ltd.	Production and distribution of electricity	Thailand	100	-	-	-
Siam Solar Power Plc.	Production and distribution of electricity	Thailand	100	-	-	-
Subsidiaries held by Thai Community Energy Co., Ltd.						
Sun Future Co., Ltd.	Production and distribution of electricity	Thailand	100	100	-	-
The Solar Earth Co., Ltd.	Production and distribution of electricity	Thailand	100	100	-	-
Clean Renewable Co., Ltd.	Production and distribution of electricity	Thailand	100	100	-	-
Bangsawan Green Co., Ltd.	Production and distribution of electricity	Thailand	49	49	51	51
Oscar Save The World Co., Ltd.	Production and distribution of electricity	Thailand	100	75	-	25
Subsidiary held by Siam Solar Power Plc.						
Siam Waste Power Co., Ltd.	Production and distribution of electricity	Thailand	100	-	-	-
Subsidiaries held by TSE Overseas Group Co., Ltd.						
TSE Group International. Pte. Ltd.	Investment	Singapore	100	100	-	-
Solar Assets Pte. Ltd.	Investment	Singapore	100	100	-	-
Onikoube Solar Power Pte. Ltd.	Investment	Singapore	100	100	-	-
Subsidiaries held by TSE Group International. Pte. Ltd.						
Eco Solar Aizu GK	Production and distribution of electricity	Japan	97	97	3	3
Ishikawa Hanamizuki 1 GK	Production and distribution of electricity	Japan	97	97	3	3
Subsidiaries held by Solar Assets Pte. Ltd.						
Ibaraki Ushiku 1 GK	Land lease	Japan	100	100	-	-
Ibaraki Ushiku 2 GK	Land lease	Japan	100	100	-	-
Subsidiaries held by Onikoube Solar Power Pte. Ltd.						
PurpleSol GK	Production and distribution of electricity	Japan	100	100	-	-



As at 31 December 2019

13 Investments in subsidiaries and investments in joint ventures (Cont'd)**13.2 Investments in subsidiaries (Cont'd)****Movements of investments in subsidiaries during the year are as follow:**

For the year ended 31 December 2019

Opening net book amount
Acquisitions

Closing net book amount

Separate financial statements Baht	
	1,198,749,905
	399,992
	<u>1,199,149,897</u>

Movements of investments in subsidiaries**Additional investment under Thai Solar Energy Plc.**

On 9 August 2019, the Company paid for additional called-up capital of World Solar Co., Ltd. For 100,000 shares at Baht 4 each amounting to Baht 0.40 million.

Additional investment under Solar Visible Co., Ltd.

On 7 March 2019, the Group acquired 820,000 ordinary shares representing 100% interests in BS Bangsai Solar Company Limited, which operates a ground-mounting solar power plant with the production capacity of 5 MW for a consideration of Baht 131.20 million. The acquisition is considered as an acquisition of business. Details of the acquisition are disclosed in Note 31.

On 19 August 2019, the Group acquired 630,000 ordinary shares representing 100% interests in BS Solar Energy Company Limited, which operates a ground-mounting solar power plant with the production capacity of 5 MW for a consideration of Baht 73.71 million. The acquisition is considered as an acquisition of business. Details of the acquisition are disclosed in Note 31.

On 15 November 2019, the Group acquired 300,000,000 ordinary shares representing 100% interests in Siam Solar Power Public Company Limited, which operates a ground-mounting solar power plant with the production capacity of 8 MW and its subsidiary for a consideration of Baht 582.06 million. The acquisition is considered as an acquisition of business. Details of the acquisition are disclosed in Note 31.

Additional investment under Thai Community Energy Co., Ltd.

On 9 July 2019, the Group acquired 1,455,000 ordinary shares of Oscar Save The World Co., Ltd. from Thainakorn Parawood Co., Ltd. at Baht 120 per share totaling Baht 174.60 million, resulting in an increase in the investment proportion of the Group in that subsidiary from 75% to 100%. Loss from change in holding interest amounting to Baht 10.52 million was recognised directly in equity attributed to the owners of parent in the consolidated financial statements.

Change in investment under TSE Overseas Group Co., Ltd.**Investment in TSE Group International Pte. Ltd.**

On 1 October 2019, TSE Group International Pte. Ltd. has reduced its shares capital amounting to Japanese Yen 324 million from Japanese Yen 2,845.77 million to Japanese Yen 2,521.77 million and has returned the capital reduction to shareholders.

Investment in Ishikawa Hanamizuki 1 GK

During 2019, the Group reduced investments in Ishikawa Hanamizuki 1 GK totaling of Japanese Yen 450 million.



As at 31 December 2019

14 Investment property

	Consolidated financial statements		Separate financial statements	
	2019 Baht	2018 Baht	2019 Baht	2018 Baht
As at 1 January				
Cost	110,193,203	108,614,923	110,193,203	108,614,923
<u>Less</u> Provision for impairment	(20,215,318)	(20,215,318)	(20,215,318)	(20,215,318)
Net book amount	89,977,885	88,399,605	89,977,885	88,399,605
Fair value	124,420,100	112,493,525	124,420,100	112,493,525
For the year ended 31 December				
Opening net book amount	89,977,885	88,399,605	89,977,885	88,399,605
Acquisition of a subsidiary (Note 31)	14,000,000	-	-	-
Additions	-	1,578,280	-	1,578,280
Depreciation	(120,736)	-	-	-
Closing net book amount	103,857,149	89,977,885	89,977,885	89,977,885
As at 31 December				
Cost	124,193,203	110,193,203	110,193,203	110,193,203
<u>Less</u> Accumulated depreciation	(120,736)	-	-	-
<u>Less</u> Provision for impairment	(20,215,318)	(20,215,318)	(20,215,318)	(20,215,318)
Net book amount	103,857,149	89,977,885	89,977,885	89,977,885
Fair value	138,420,100	124,420,100	124,420,100	124,420,100

The fair value of investment properties is based on property valuation using market comparison approach. The fair values are within level 2 of the fair value hierarchy.

Amounts recognised in profit and loss that are related to investment property are as follows:

	Consolidated and Separate financial statements	
	2019 Baht	2018 Baht
Rental income	418,500	418,500
Direct operating expense relating to rental income	6,612	6,612
Operating expense not relating to rental income	9,355	9,577



Notes to the Consolidated and Separate Financial Statements

As at 31 December 2019

15 Property, plant and equipment

Property, plant and equipment

	Consolidated financial statements								
	Land Baht	Land improvement Baht	Power plants Baht	Office buildings Baht	Tools and equipment Baht	Office equipment Baht	Vehicles Baht	Asset under construction Baht	Total Baht
At 31 December 2018									
Cost	563,852,962	3,141,059	2,139,096,614	11,206,916	13,319,317	10,405,613	39,796,007	2,899,194,727	5,680,013,215
Less Accumulated depreciation	-	(484,444)	(263,533,863)	(1,743,803)	(3,054,582)	(6,990,307)	(1,189,807)	-	(276,996,806)
Less Provision for impairment	-	(882,014)	(245,318,953)	(3,159,461)	(242,100)	(109,564)	(204,486)	-	(249,916,578)
Net book amount	563,852,962	1,774,601	1,630,243,798	6,303,652	10,022,635	3,305,742	38,401,714	2,899,194,727	5,153,099,831
Year ended 31 December 2018									
Opening net book amount	563,852,962	1,774,601	1,630,243,798	6,303,652	10,022,635	3,305,742	38,401,714	2,899,194,727	5,153,099,831
Exchange differences	5,017,022	-	7,627,681	-	-	64	-	19,990,700	32,635,467
Acquisition of subsidiaries	23,196,315	7,540,000	77,660,000	-	-	-	-	-	108,396,315
Additions	17,367,078	178,674	9,136,691	111,159	969,161	2,814,187	13,364,486	2,136,597,367	2,180,538,803
Disposals/write-off, net	-	-	(9,685,535)	-	-	(470,434)	-	-	(10,155,969)
Transfer-in (out)	-	47,336,150	2,351,878,007	18,765,158	5,677,570	3,614,636	13,701,477	(2,535,435,486)	(94,462,488)
Depreciation charge	-	(1,005,757)	(128,230,827)	(3,767,902)	(2,121,573)	(2,260,216)	(8,582,489)	-	(145,968,764)
Impairment charge	-	(1,021,094)	(291,254,193)	(3,620,918)	(26,749)	(74,698)	(2,348)	-	(296,000,000)
Closing net book amount	609,433,377	54,802,574	3,647,375,622	17,791,149	14,521,044	6,929,281	56,882,840	2,520,347,308	6,928,083,195
At 31 December 2019									
Cost	609,433,377	58,195,883	4,574,328,943	30,083,233	19,966,047	14,872,170	66,861,970	2,520,347,308	7,894,088,931
Less Accumulated depreciation	-	(1,490,201)	(390,380,175)	(5,511,705)	(5,176,154)	(7,758,627)	(9,772,296)	-	(420,089,158)
Less Provision for impairment	-	(1,903,108)	(536,573,146)	(6,780,379)	(268,849)	(184,262)	(206,834)	-	(545,916,578)
Net book amount	609,433,377	54,802,574	3,647,375,622	17,791,149	14,521,044	6,929,281	56,882,840	2,520,347,308	6,928,083,195

Notes to the Consolidated and Separate Financial Statements

As at 31 December 2019

15 Property, plant and equipment (Cont'd)

Property, plant and equipment (Contd)	Consolidated financial statements								
	Land Baht	Land improvement Baht	Power plants Baht	Office buildings Baht	Tools and equipment Baht	Office equipment Baht	Vehicles Baht	Asset under construction Baht	Total Baht
Year ended 31 December 2019									
Opening net book amount	609,433,377	54,802,574	3,647,375,622	17,791,149	14,521,044	6,929,281	56,882,840	2,520,347,308	6,928,083,195
Exchange differences	(25,972,728)	-	(180,043,684)	-	-	(13,799)	-	(35,656,099)	(241,686,310)
Acquisition of subsidiaries (Note 31)	163,000,000	27,732,999	638,609,155	-	117,062	2,426,834	3,168,000	25,950	835,080,000
Additions	9,476,156	2,532,759	27,279,116	-	5,029,853	2,609,453	16,638,017	294,458,295	358,023,649
Disposals/write-off, net	-	-	(17,416,533)	-	(3,108)	(403,549)	(559,595)	-	(18,382,785)
Transfer-in (out)	-	(1,349,686)	1,903,509,970	1,354,583	10,800	149,760	-	(1,903,675,427)	-
Depreciation charge	-	(4,792,480)	(269,951,014)	(4,172,029)	(3,355,155)	(2,525,400)	(13,383,310)	-	(298,179,388)
(Impairment charge) reversal of impairment	-	-	(13,492,208)	-	145,127	61,056	206,834	-	(13,079,191)
Closing net book amount	755,936,805	78,926,166	5,735,870,424	14,973,703	16,465,623	9,233,636	62,952,786	875,500,027	7,549,859,170
At 31 December 2019									
Cost	755,936,805	87,111,955	6,946,266,967	31,437,816	25,099,132	19,269,824	85,068,987	875,500,027	8,825,691,513
Less Accumulated depreciation	-	(6,282,681)	(660,331,189)	(9,683,734)	(8,509,787)	(9,912,982)	(22,116,201)	-	(716,836,574)
Less Provision for impairment	-	(1,903,108)	(550,065,354)	(6,780,379)	(123,722)	(123,206)	-	-	(558,995,769)
Net book amount	755,936,805	78,926,166	5,735,870,424	14,973,703	16,465,623	9,233,636	62,952,786	875,500,027	7,549,859,170



Notes to the Consolidated and Separate Financial Statements

As at 31 December 2019

15 Property, plant and equipment (Cont'd)

Property, plant and equipment (Cont'd)	Separate financial statements								
	Land Baht	Land improvement Baht	Power plants Baht	Office buildings Baht	Tools and equipment Baht	Office equipment Baht	Vehicles Baht	Asset under construction Baht	Total Baht
At 31 December 2018									
Cost	37,552,064	3,141,059	872,007,952	11,206,916	2,594,244	8,188,508	23,467,522	32,247,877	990,406,142
Less Accumulated depreciation	-	(484,444)	(135,606,769)	(1,743,803)	(1,607,611)	(5,421,734)	(820,573)	-	(145,684,934)
Less Provision for impairment	-	(882,014)	(245,318,953)	(3,159,461)	(242,100)	(109,564)	(204,486)	-	(249,916,578)
Net book amount	37,552,064	1,774,601	491,082,230	6,303,652	744,533	2,657,210	22,442,463	32,247,877	594,804,630
Year ended 31 December 2018									
Opening net book amount	37,552,064	1,774,601	491,082,230	6,303,652	744,533	2,657,210	22,442,463	32,247,877	594,804,630
Additions	-	-	-	111,159	22,300	1,855,113	-	5,815,887	7,804,459
Disposals - net	-	-	-	-	-	(244,100)	-	-	(244,100)
Transfer-in (out)	-	-	15,440,387	18,765,158	-	3,614,636	-	(37,820,181)	-
Depreciation charge	-	(60,423)	(17,574,610)	(3,767,902)	(288,378)	(1,876,338)	(2,563,648)	-	(26,131,299)
Impairment charge	-	(1,021,094)	(291,254,193)	(3,620,918)	(26,749)	(74,698)	(2,348)	-	(296,000,000)
Closing net book amount	37,552,064	693,084	197,693,814	17,791,149	451,706	5,931,823	19,876,467	243,583	280,233,690
At 31 December 2018									
Cost	37,552,064	3,141,059	887,448,339	30,083,233	2,616,544	12,227,812	23,467,522	243,583	996,780,156
Less Accumulated depreciation	-	(544,867)	(153,181,379)	(5,511,705)	(1,895,989)	(6,111,727)	(3,384,221)	-	(170,629,888)
Less Provision for impairment	-	(1,903,108)	(536,573,146)	(6,780,379)	(268,849)	(184,262)	(206,834)	-	(545,916,578)
Net book amount	37,552,064	693,084	197,693,814	17,791,149	451,706	5,931,823	19,876,467	243,583	280,233,690
Year ended 31 December 2019									
Opening net book amount	37,552,064	693,084	197,693,814	17,791,149	451,706	5,931,823	19,876,467	243,583	280,233,690
Additions	-	-	665,000	-	-	1,213,413	-	22,800	1,901,213
Disposals - net	-	-	-	-	-	(252,660)	-	-	(252,660)
Transfer-in (out)	-	-	-	105,583	10,800	-	-	(116,383)	-
Depreciation charge	-	-	(25,164)	(3,785,109)	(381,485)	(1,814,182)	(2,716,087)	-	(8,722,027)
Reversal of impairment	-	-	164,689	-	145,127	61,056	206,834	-	577,706
Closing net book amount	37,552,064	693,084	198,498,339	14,111,623	226,148	5,139,450	17,367,214	150,000	273,737,922
At 31 December 2019									
Cost	37,552,064	3,141,059	888,113,339	30,188,816	2,627,344	12,846,631	23,467,522	150,000	998,086,774
Less Accumulated depreciation	-	(544,867)	(153,206,543)	(9,296,814)	(2,277,474)	(7,583,975)	(6,100,308)	-	(179,009,980)
Less Provision for impairment	-	(1,903,108)	(536,408,457)	(6,780,379)	(123,722)	(123,206)	-	-	(545,338,872)



As at 31 December 2019

15 Property, plant and equipment (Cont'd)

Borrowing costs incurring from the borrowings for the construction of the power plants during the year were capitalised and included as “Additions” for Baht 20.34 million (2018: Baht 75.95 million). The Group used the capitalisation rates of 3.01% to 4.58% per annum (2018: 1.25% to 6.07% per annum) to calculate the borrowing costs for the capitalisation. The capitalisation rate are the actual rate of the borrowings which were used for the construction, and the interest rate differential between borrowing costs that would incur if the company borrowed in its functional currency and actual borrowing costs incurred on foreign currency borrowing.

Depreciation expense has been recognised in the statement of comprehensive income as follows:

	Consolidated financial statements		Separate financial statements	
	2019 Baht million	2018 Baht million	2019 Baht million	2018 Baht million
Cost of sales and services	278.10	131.36	0.41	17.92
Administrative expense	20.08	14.61	8.32	8.21
	298.18	145.97	8.73	26.13

In 2019, the company recognised the provision for impairment on obsolete solar panels amounting to Baht 13.66 million.

Leased assets included above, where the Group is a lessee under finance leases, comprise vehicles:

	Consolidated financial statements		Separate financial statements	
	2019 Baht	2018 Baht	2019 Baht	2018 Baht
Cost of assets under the finance lease	39,381,976	22,760,759	22,760,759	22,760,759
<u>Less</u> Accumulated depreciation	(7,311,313)	(2,885,886)	(5,393,548)	(2,885,886)
Net book amount	32,070,663	19,874,873	17,367,211	19,874,873

Capital commitments

Capital commitments exist as at the date of the statement of financial position but not included in the financial statements are as follows:

	Currency	Consolidated financial statements		Separate financial statements	
		2019	2018	2019	2018
Power plants	BHT	-	64,400,000	-	64,400,000
Power plants	USD	400	400	-	-
Power plants	JPY	-	201,500,000	-	-
Machinery	EUR	-	-	-	-

The subsidiaries have pledged assets with the net book value amounting to Baht 4,783 million (2018: Baht 5,522 million) as collaterals for credit facilities which they received from the commercial bank.



As at 31 December 2019

16 Goodwill

	Consolidated financial statements	
	2019 Baht	2018 Baht
As 1 January		
Cost	17,726,430	-
<u>Less</u> Provision for impairment	-	-
Net book amount	17,726,430	-
For the year ended 31 December		
Opening net book amount	17,726,430	-
Acquisition of subsidiary (Note 31)	357,996	17,726,430
Impairment charge	(971,663)	-
Closing net book amount	17,112,763	17,726,430
At 31 December		
Cost	18,084,426	17,726,430
<u>Less</u> Provision for impairment	(971,663)	-
Net book amount	17,112,763	17,726,430

The Group has reduced the carrying amount of goodwill to the amount that is recoverable by recognising the loss from impairment of goodwill. Such losses are included in cost of sales and services in profit or loss.

The recoverable amount of a CGU is determined based on value-in-use calculations. These calculations use pre-tax cash flow projections based on financial budgets approved by management covering a contractual period of power purchase agreement. The growth rate does not exceed the long-term average growth rate for the business in which the CGU operates.

The key assumptions used for value-in-use calculations are as follows:

Gross margin ¹	50.38 - 69.79 %
Growth rate ²	(0.38) - (0.50) %
Discount rate ³	7.00 - 9.00 %

¹ Budgeted gross margin.

² Weighted average growth rates used to extrapolate cash flows for the budget period.

³ Pre-tax discount rates applied to the cash flow projections.

Management determined budgeted gross margin based on past performance. The weighted average growth rates used are consistent with the forecasts throughout contractual period of power purchase agreement. The discount rates used are pre-tax and reflect specific risks relating to the relevant segments.

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As at 31 December 2019

17 Intangible assets (Cont'd)

	Separate financial statements		
	Computer software Baht	Works in progress Baht	Total Baht
As at 31 January 2018			
Cost	3,436,711	4,101,500	7,538,211
<u>Less</u> Accumulated amortisation	(1,911,598)	-	(1,911,598)
Net book amount	1,525,113	4,101,500	5,626,613
Year ended 31 December 2018			
Opening net book amount	1,525,113	4,101,500	5,626,613
Additions	766,090	2,398,121	3,164,211
Transfer-in (out)	4,677,500	(4,677,500)	-
Amortisation charge	(1,111,494)	-	(1,111,494)
Closing net book amount	5,857,209	1,822,121	7,679,330
As at 31 December 2018			
Cost	8,880,301	1,822,121	10,702,422
Accumulated amortisation	(3,023,092)	-	(3,023,092)
Net book amount	5,857,209	1,822,121	7,679,330
Year ended 31 December 2019			
Opening net book amount	5,857,209	1,822,121	7,679,330
Additions	790,780	731,500	1,522,280
Transfer-in (out)	1,822,121	(1,822,121)	-
Amortisation charge	(2,144,434)	-	(2,144,434)
Closing net book amount	6,325,676	731,500	7,057,176
As at 31 December 2019			
Cost	11,493,202	731,500	12,224,702
<u>Less</u> Accumulated amortisation	(5,167,526)	-	(5,167,526)
Net book amount	6,325,676	731,500	7,057,176

Borrowing costs incurring from the borrowings specifically for developing the power plant projects to its intended use were capitalised and included as "Additions" for Baht 187.91 million (2018: Baht 181.23 million). The Group used the capitalisation rates of 3.01% to 4.58% per annum (2018: 3.42% to 6.07% per annum) to calculate the borrowing costs for the capitalisation. The capitalisation rate are the actual rate of the borrowings which were used for the construction, and the interest rate differential between borrowing costs that would incur if the company borrowed in its functional currency and actual borrowing costs incurred on foreign currency borrowing.

Amortisation expense has been recognised in the statement of comprehensive income as follows;

	Consolidated financial statements		Separate financial statements	
	2019 Baht million	2018 Baht million	2019 Baht million	2018 Baht million
Cost of sales and services	40.94	9.96	-	-
Administrative expense	2.22	1.11	2.14	1.11
	43.16	11.07	2.14	1.11



As at 31 December 2019

18 Deferred income taxes

The analysis of deferred income tax assets and liabilities is as follows:

	Consolidated financial statements		Separate financial statements	
	2019 Baht	2018 Baht	2019 Baht	2018 Baht
Deferred income tax assets:				
Deferred income tax asset to be settled within 12 months	-	-	-	-
Deferred income tax asset to be settled after more than 12 months	39,328,779	11,080,917	-	1,721,301
	<u>39,328,779</u>	<u>11,080,917</u>	<u>-</u>	<u>1,721,301</u>
Deferred income tax liabilities:				
Deferred income tax liabilities to be settled within 12 month	(1,309,420)	(1,504,410)	(1,309,420)	(1,504,410)
Deferred income tax liabilities to be settled after more than 12 month	(64,463,327)	(8,502,128)	(1,802,190)	(1,483,843)
	<u>(65,772,747)</u>	<u>(10,006,538)</u>	<u>(3,111,610)</u>	<u>(2,988,253)</u>
Deferred income taxes - net	<u>(26,443,968)</u>	<u>1,074,379</u>	<u>(3,111,610)</u>	<u>(1,266,952)</u>

The gross movement and the deferred income tax account are as follows:

	Consolidated financial statements		Separate financial statements	
	2019 Baht	2018 Baht	2019 Baht	2018 Baht
As at 1 January	1,074,379	73,702,662	(1,266,952)	73,173,307
Acquisition of subsidiaries (Note 31)	(25,692,896)	-	-	-
Charged/(credited) to profit or loss	(1,785,395)	(73,457,736)	(1,832,206)	(74,440,259)
Charged/(credited) directly to equity	(12,452)	831,035	(12,452)	-
Exchange differences	(27,604)	(1,582)	-	-
As at 31 December	<u>(26,443,968)</u>	<u>1,074,379</u>	<u>(3,111,610)</u>	<u>(1,266,952)</u>



As at 31 December 2019

18 Deferred income taxes (Cont'd)

The movements in deferred income tax assets and liabilities during the year are as follows:

	Consolidated financial statements			
	Tax losses Baht	Retirement benefits Baht	Others Baht	Total Baht
Deferred income tax assets				
As at 1 January 2019	125,376	1,721,301	9,234,240	11,080,917
Acquisition of subsidiaries (Note 31)	-	-	29,922,871	29,922,871
Charged/(credited) to profit or loss	-	(1,708,849)	92,995	(1,615,854)
Charged/(credited) directly to equity	-	(12,452)	-	(12,452)
Exchange differences	(7,336)	-	(39,367)	(46,703)
As at 31 December 2019	118,040	-	39,210,739	39,328,779
As at 1 January 2018	76,313,867	1,215,152	2,080,144	79,609,163
Charged/(credited) to profit or loss	(76,187,070)	506,149	938,316	(74,742,605)
Charged/(credited) directly to equity	-	-	6,214,693	6,214,693
Exchange differences	(1,421)	-	1,087	(334)
As at 31 December 2018	125,376	1,721,301	9,234,240	11,080,917
	Consolidated financial statements			
	Deferred debt issuance Baht	Depreciation expense of Power plant Baht	Other Baht	Total Baht
Deferred income tax liabilities				
As at 1 January 2019	(5,261,479)	(5,582,682)	837,623	(10,006,538)
Acquisition of subsidiaries (Note 31)	-	-	(55,615,767)	(55,615,767)
Charged/(credited) to profit or loss	1,360,707	(2,065,472)	535,224	(169,541)
Exchange differences	126,733	337,694	(445,328)	19,099
As at 31 December 2019	(3,774,039)	(7,310,460)	(54,688,248)	(65,772,747)
As at 1 January 2018	(4,355,712)	(6,875,768)	5,324,979	(5,906,501)
Charged/(credited) to profit or loss	(51,154)	(327,307)	1,663,330	1,284,869
Charged/(credited) directly to equity	-	-	(5,383,658)	(5,383,658)
Exchange differences	(854,613)	1,620,393	(767,028)	(1,248)
As at 31 December 2018	(5,261,479)	(5,582,682)	837,623	(10,006,538)



As at 31 December 2019

18 Deferred income taxes (Cont'd)

The movements in deferred income tax assets and liabilities during the year are as follows: (Cont'd)

	Separate financial statements		
	Tax losses Baht	Retirement benefits Baht	Total Baht
Deferred income tax assets			
As at 1 January 2019	-	1,721,301	1,721,301
Charged/(credited) to profit or loss	-	(1,708,849)	(1,708,849)
Charged/(credited) directly to equity	-	(12,452)	(12,452)
As at 31 December 2019	-	-	-
As at 1 January 2018	76,313,867	1,215,152	77,529,019
Charged/(credited) to profit or loss	(76,313,867)	506,149	(75,807,718)
As at 31 December 2018	-	1,721,301	1,721,301

	Separate financial statements		
	Deferred debt issuance cost Baht	Others Baht	Total Baht
Deferred income tax liabilities			
As at 1 January 2019	(2,988,253)	-	(2,988,253)
Charged/(credited) to profit or loss	1,217,457	(1,340,814)	(123,357)
As at 31 December 2019	(1,770,796)	(1,340,814)	(3,111,610)
As at 1 January 2018	(4,355,712)	-	(4,355,712)
Charged/(credited) to profit or loss	1,367,459	-	1,367,459
As at 31 December 2018	(2,988,253)	-	(2,988,253)

Presentation in the statements of financial position is as follows:

As at 31 December	Consolidated financial statements		Separate financial statements	
	2019 Baht	2018 Baht	2019 Baht	2018 Baht
Deferred income tax assets	1,623,005	2,409,825	-	-
Deferred income tax liabilities	(28,066,973)	(1,335,446)	(3,111,610)	(1,266,952)
Deferred income tax, net	(26,443,968)	1,074,379	(3,111,610)	(1,266,952)

Deferred income tax assets and liabilities are offset when the income taxes related to the same fiscal authority. Deferred tax assets and deferred tax liabilities in the consolidated financial position are presented at net amount of assets and liabilities incurred in each entity.

Deferred income tax assets are recognised for tax loss carry forwards only to the extent that realisation of the related tax benefit through the future taxable profits is probable. The Group did not recognise deferred income tax assets of Baht 135.28 million (2018: Baht 175.41 million) in respect of losses carry forward amounting to Baht 676.40 million (2018: Baht 877 million).



As at 31 December 2019

18 Deferred income taxes (Cont'd)

A summary of the tax losses carried forward and the expiry dates are set out below:

Expiry year	Consolidated financial statements Baht	Separate financial statements Baht
2020	88,754,589	76,722,994
2021	63,660,295	53,390,602
2022	219,557,411	210,429,201
2023	304,429,519	291,765,982
	<u>676,401,814</u>	<u>632,308,779</u>

19 Construction and other payables

	Consolidated financial statements		Separate financial statements	
	2019 Baht	2018 Baht	2019 Baht	2018 Baht
Amounts due to related parties (Note 32.2)	-	667,187	-	-
Construction payables and retention guarantee	6,993,242	119,949,922	7,500	2,086,003
Other payables	72,557,019	55,966,786	5,957,523	4,907,315
Payables from acquisition of investments	37,059,807	-	249,995	249,995
Accrued expenses	82,657,365	101,861,887	39,753,570	35,350,200
	<u>199,267,433</u>	<u>278,445,782</u>	<u>45,968,588</u>	<u>42,593,513</u>

20 Borrowings**20.1 Short-term borrowings from financial institutions**

	Consolidated and Separate financial statements	
	2019 Baht	2018 Baht
Short-term borrowings from financial institutions	98,470,171	98,794,277

Movements in short-term borrowings from financial institutions during 2019 and 2018 are analysed as follows:

	Consolidated and separate financial statements	
	2019 Baht	2018 Baht
Opening amount as at 1 January	98,794,277	2,233,047,945
Cash inflows (outflows):		
Additions	150,000,000	100,000,000
Financial service fee	-	(11,250,000)
Discount on notes payable	(4,076,860)	(2,763,996)
Repayment of borrowings	(150,000,000)	(2,250,000,000)
Non-cash changes:		
Amortisation of financial service fee	-	28,202,055
Amortisation of discount on notes payable	3,752,754	1,558,273
Closing amount as at 31 December	<u>98,470,171</u>	<u>98,794,277</u>



As at 31 December 2019

20 Borrowings (Cont'd)**20.2 Finance lease liabilities**

The present value of finance lease liabilities is as follows:

	Consolidated financial statements		Separate financial statements	
	2019 Baht	2018 Baht	2019 Baht	2018 Baht
Not later than 1 year	7,195,003	2,619,884	2,720,032	2,619,884
Later than 1 year but not later than 5 years	13,280,673	7,979,672	5,259,640	7,979,672
	20,475,676	10,599,556	7,979,672	10,599,556

The movements in finance lease can be analysed as follows:

	Consolidated financial statements		
	Finance lease payables	Deferred interest	Finance lease liabilities
At 1 January 2018	14,371,066	(1,248,087)	13,122,979
Cash outflows:			
Repayment	(2,973,324)	-	(2,973,324)
Non-cash changes:			
Amortised deferred interest	-	449,901	449,901
At 31 December 2018	11,397,742	(798,186)	10,599,556
At 1 January 2019	11,397,742	(798,186)	10,599,556
Cash outflows:			
Repayment	(6,757,229)	-	(6,757,229)
Non-cash changes:			
Addition	16,876,782	(670,514)	16,206,268
Amortised deferred interest	-	427,081	427,081
At 31 December 2019	21,517,295	(1,041,619)	20,475,676
	Separate financial statements		
	Finance lease payables	Deferred interest	Finance lease liabilities
At 1 January 2018	14,371,066	(1,248,087)	13,122,979
Cash outflows:			
Repayment	(2,973,324)	-	(2,973,324)
Non-cash changes:			
Amortised deferred interest	-	449,901	449,901
At 31 December 2018	11,397,742	(798,186)	10,599,556
At 1 January 2019	11,397,742	(798,186)	10,599,556
Cash outflows:			
Repayment	(2,973,324)	-	(2,973,324)
Non-cash changes:			
Amortised deferred interest	-	353,440	353,440
At 31 December 2019	8,424,418	(444,746)	7,979,672



As at 31 December 2019

20 Borrowings (Cont'd)

20.3 Long-term borrowings from financial institutions

	Consolidated financial statements		Separate financial statements	
	2019 Baht	2018 Baht	2019 Baht	2018 Baht
Current portion of long-term borrowings	737,755,685	437,241,304	272,894,555	175,888,656
Long-term borrowings payable between 1 to 5 years	3,453,869,298	3,482,748,527	2,240,180,868	175,888,656
Long-term borrowings payable more than 5 years	2,282,565,092	2,439,885,510	50,879,734	1,886,891,147
	<u>6,474,190,075</u>	<u>6,359,875,341</u>	<u>2,563,955,157</u>	<u>2,238,668,459</u>

The long-term borrowings from financial institutions are secured by the pledge and the assignment of rights over the Group's bank deposits, certain shares held by the subsidiaries and the joint venture's shares held by the Company, pledge of the Company's shares that held by P.M. Energy Company Limited, shares of subsidiaries, and the right to receive dividends from subsidiaries and joint venture.

The loan agreements contain covenants imposed on the Group as specified in the agreements, related to such matters as dividend payment, reduction of share capital, merger or consolidation with any other entities.

Movements in long-term borrowings from financial institutions during 2019 and 2018 are analysed as follows:

	Consolidated financial statements		Separate financial statements	
	2019 Baht	2018 Baht	2019 Baht	2018 Baht
Opening amount as at 1 January	6,359,875,341	1,903,287,857	2,238,668,459	-
Cash inflows (outflows):				
Additions	909,770,842	4,644,151,500	548,192,531	2,250,000,000
Financial service fee	(9,519,560)	(26,763,757)	(1,734,500)	(12,345,297)
Repayment of borrowings	(942,089,214)	(240,296,891)	(203,166,050)	-
Non-cash changes:				
Acquisition of subsidiaries (Note 31)	270,157,262	58,689,870	-	-
Amortisation of financial service fee	28,118,005	7,359,988	5,495,536	1,013,756
Foreign currency translation differences	(142,122,600)	13,446,774	(23,500,819)	-
Closing amount as at 31 December	<u>6,474,190,075</u>	<u>6,359,875,341</u>	<u>2,563,955,157</u>	<u>2,238,668,459</u>

The contractual interest rates of the long-term borrowings at the statement of financial position date are as follows :

	Consolidated financial statements	
	2019 %	2018 %
Long-term loans for the construction of solar power plants	MLR - 0.50 MLR - 1.50 MLR - 1.95 TIBOR + 3.00 TIBOR + 2.00 TIBOR + 1.22	MLR - 1.5 - - TIBOR + 3.00 TIBOR + 2.00 TIBOR + 1.22
Long-term loans for the construction of biomass power plants	Six months fixed deposit rate + 3.35	4.75



As at 31 December 2019

20 Borrowings (Cont'd)

20.4 Borrowing Facilities

The Group and the Company have the following undrawn committed borrowing facilities:

	Currency	Consolidated financial statements		Separate financial statements	
		2019 Baht	2018 Baht	2019 Baht	2018 Baht
Floating rate					
Expiring beyond one year	Baht Thousand	178,874	448,926	400	200,000
Floating rate					
Expiring beyond one year	Yen Thousand	601,115	390,000	601,115	-
Fixed rate					
Expiring beyond one year	Baht Thousand	4,966	7,241	-	-

20.5 Debentures

	Consolidated and Separate financial statements	
	2019 Baht	2018 Baht
Current portion of debentures	949,800,983	2,048,530,153
Debentures payable between 1 to 5 years	2,345,024,775	949,065,843
	<u>3,294,825,758</u>	<u>2,997,595,996</u>

Movements in debentures during 2019 and 2018 are analysed as follows:

	Consolidated and Separate financial statements	
	2019 Baht	2018 Baht
Opening amount as at 1 January	2,997,595,996	2,995,173,493
Cash inflows (outflows):		
Issuance of debentures	2,350,000,000	-
Maturing of debentures	(2,050,000,000)	-
Deferred issuance cost	(5,287,500)	-
Non-cash changes:		
Amortisation of issuance cost	2,517,262	2,422,503
Closing amount as at 31 December	<u>3,294,825,758</u>	<u>2,997,595,996</u>

As at 31 December 2019, outstanding debentures comprise name-registered certificate of unsubordinated and unsecured debentures totaling 2,350,000 units and 950,000 units with the fixed interest of 4.50% per annum, with the interest payable every 3 and 6 months, respectively. Debentures have the face value of Baht 1,000. The debentures amounting to Baht 2,350 million and Baht 950 million will be redeemed on 22 October 2022 and 5 April 2020, respectively.



As at 31 December 2019

20 Borrowings (Cont'd)

20.6 Fair value

The carrying amounts and fair values of certain long-term borrowings are as follows:

	Consolidated financial statements			
	Carrying amounts		Fair value	
	2019 Baht	2018 Baht	2019 Baht	2018 Baht
Long-term borrowings	5,736,434,390	6,359,875,341	6,277,087,595	6,230,409,722
Debentures	3,294,825,757	2,997,595,996	3,313,923,268	2,999,409,190

	Separate financial statements			
	Carrying amounts		Fair value	
	2019 Baht	2018 Baht	2019 Baht	2018 Baht
Long-term borrowings	2,563,955,157	2,238,668,459	2,574,542,377	2,167,492,686
Debentures	3,294,825,758	2,997,595,996	3,313,923,268	2,999,409,190

The fair value of current borrowings equals their carrying amount, as the impact of discounting is not significant.

The fair values of non-current borrowings are based on discounted cash flows using a discount rate based upon the borrowing rates of 1.88% to 5.64% (2018: 1.87% to 6.15%) and are within level 2 of the fair value hierarchy.

20.7 Interest rates

The effective interest rates at the statement of financial position date were as follows:

	Consolidated financial statements		Separate financial statements	
	2019	2018	2019	2018
Borrowings from financial institutions	1.88% - 5.64%	1.87% - 6.15%	3.17% - 5.64%	3.05%
Finance lease liabilities	3.76% - 6.44%	3.76%	3.76%	3.76%
Debentures	4.58%	4.29% - 4.58%	4.58%	4.29% - 4.58%



As at 31 December 2019

21 Employee benefit obligations (Cont'd)

Through its defined benefit retirement plans, the Group is exposed to a number of risks, the most significant of which are detailed below:

Changes in bond yields	A decrease in Government bond yields will increase plan liabilities.
Inflation risk	Some of the Group pension obligations are linked to inflation, and higher inflation will lead to higher liabilities.

The weighted average duration of the defined benefit obligation is 26.15 years.

Expected maturity analysis of undiscounted retirement:

As at 31 December 2019

	Consolidated and Separate financial statements				Total Baht
	Less than a year Baht	Between 1-2 years Baht	Between 2-5 years Baht	Over 5 years Baht	
Retirement benefits	-	117,079	1,029,252	223,284,445	224,430,776

22 Share capital and premium on share capital

	Consolidated and Separate financial statements				Total Baht
	Number of shares Shares	Issued and paid Shares	Issued and paid up Baht	Share premium Baht	
At 1 January 2018	2,359,500,000	1,815,000,000	1,815,000,000	727,554,273	2,542,554,273
Capital reduction	(544,500,000)	-	-	-	-
Register new ordinary shares	635,250,000	-	-	-	-
Share dividends	-	90,749,580	90,749,580	-	90,749,580
At 31 December 2018	2,450,250,000	1,905,749,580	1,905,749,580	727,554,273	2,633,303,853
Capital reduction	(1,116,225,294)	-	-	-	-
Register new ordinary shares	1,143,449,748	-	-	-	-
Exercise of TSR	-	211,966,701	211,966,701	317,950,052	529,916,753
At 31 December 2019	2,477,474,454	2,117,716,281	2,117,716,281	1,045,504,325	3,163,220,606

On 20 April 2018, the shareholders at the Annual General Meeting of Shareholders passed a resolution to reduce 544,500,000 ordinary shares and to increase the authorised and registered 635,250,000 new ordinary shares with a par value of Baht 1 each. The shareholders also approved share dividends in respect of operating results of 2017 distributed to the shareholders at the ratio of 20 ordinary shares: 1 dividend share with the total amount of Baht 90.75 million.

On 22 April 2019, the Annual General Meeting for 2019 approved a reduction of registered capital by reducing 544,500,420 unissued and non-offering shares and approved the issuance of 571,724,874 new ordinary shares at par value of Baht 1 each for General Mandate purpose.

On 8 July 2019, the Board of Directors' Meeting approved a reduction of registered capital by reducing 571,724,874 unissued and non-offering shares and approved the issuance of 571,724,874 new ordinary shares at par value of Baht 1 each by allocation of up to 381,149,916 newly issued shares for the purpose of reserving to accommodate the exercise of TSR (Transferable Subscription Rights) allocated to the existing shareholders as a proportion of their respective shareholdings (Right Offering) without consideration, and allocation of up to 190,574,958 newly issued shares under a General Mandate.

On 22 October 2019, The Company issued ordinary shares and registered capital from the exercise of TSR totalling 211,966,701 shares at par value of Baht 1 per share. The newly issued shares were exercised at Baht 2.50 per share, totalling Baht 529.92 million.

As at 31 December 2019, the total authorised number of ordinary shares is 2,477,474,454 shares (2018: 2,450,250,000 shares) with a par value of Baht 1 each (2018: Baht 1 each). 2,117,716,281 shares are issued and fully paid (2018: 1,905,749,580 shares).



As at 31 December 2019

23 Legal reserve

	Consolidated financial statements		Separate financial statements	
	2019 Baht	2018 Baht	2019 Baht	2018 Baht
At 1 January	63,972,012	62,894,012	50,894,012	50,894,012
Appropriation during the year	17,331,714	1,078,000	16,709,082	-
At 31 December	81,303,726	63,972,012	67,603,094	50,894,012

Under the Public Limited Company 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.

24 Other income

	Consolidated financial statements		Separate financial statements	
	2019 Baht	2018 Baht	2019 Baht	2018 Baht
Rental income	974,799	962,014	974,799	962,014
Service income	-	1,591,580	-	1,591,580
Gain on disposal of assets	21,886	18,515	21,887	18,515
Interest income	1,756,685	23,090,909	6,463,021	24,495,479
Realised gain on disposal of trading securities	1,472,295	1,349,250	1,472,296	1,349,250
Compensation for cancellation of share purchase agreement	-	38,000,000	-	38,000,000
Insurance claims	12,055,207	65,669,217	-	-
Gain on bargain purchase (Note 31)	56,004,450	-	-	-
Other income	20,431,322	25,509,734	821,501	3,044,306
	92,716,644	156,191,219	9,753,504	69,461,144

25 Expenses by nature

The following expenditure items, classified by nature, have been charged in arriving at the operating profit:

	Consolidated financial statements		Separate financial statements	
	2019 Baht	2018 Baht	2019 Baht	2018 Baht
Salary, wages and employees' benefits	149,811,557	139,061,637	127,969,732	116,784,030
Depreciation (Note 14,15)	298,300,124	145,968,764	8,722,027	26,131,299
Amortisation (Note 17)	43,154,725	11,073,552	2,144,434	1,111,493
Impairment loss	13,079,191	296,000,000	-	296,000,000
Loss from disposals	288,358	-	-	-
Professional fees	136,496,042	97,675,990	25,127,095	36,800,546
Operation and maintenance of power plants	26,575,317	14,196,444	120	375,402
Allowance for bad debt	2,624,520	-	-	-



As at 31 December 2019

26 Finance costs

	Consolidated financial statements		Separate financial statements	
	2019 Baht	2018 Baht	2019 Baht	2018 Baht
Interest on borrowing from financial institutions	150,489,971	80,363,882	214,298,313	228,502,571
Financial service fees	20,202,368	42,876,151	8,072,796	31,638,314
Others	(23,500,818)	-	(23,500,818)	-
	<u>147,191,521</u>	<u>123,240,033</u>	<u>198,870,291</u>	<u>260,140,885</u>

27 Income tax

	Consolidated financial statements		Separate financial statements	
	2019 Baht	2018 Baht	2019 Baht	2018 Baht
Current tax on profits for the year	3,114,945	3,618,329	-	-
Deferred tax (Note 18)	1,785,395	73,457,736	1,832,206	74,440,259
Adjustments in respect of prior year	172,781	6,500,825	-	-
	<u>5,073,121</u>	<u>83,576,890</u>	<u>1,832,206</u>	<u>74,440,259</u>

The tax on the Group's profit before tax differs from the theoretical amount that would arise using the basic tax rate as follows:

	Consolidated financial statements		Separate financial statements	
	2019 Baht	2018 Baht	2019 Baht	2018 Baht
Profit (loss) before tax	803,815,620	266,644,730	118,650,314	(116,180,329)
Tax calculated at a tax rate of 20% (2018: 20%)	160,763,124	53,328,946	23,730,063	(23,236,066)
Tax effect of:				
Foreign tax rate difference	(1,244,335)	(6,096,144)	-	-
Joint venture's results reported net of tax	(131,903,537)	(122,037,685)	-	-
Tax exemption for income under BOI	(51,358,005)	(11,299,288)	-	-
Income subject to tax	24,116,157	27,152,630	22,324,668	20,017,086
Income not subject to tax	(115,552)	(11)	(123,791,563)	(117,314,420)
Expenses not deductible for tax purpose	8,709,627	66,127,315	3,154,361	64,350,602
Expense deducted at greater amount	(8,939,732)	(6,637,074)	(7,515,615)	(5,035,118)
Tax losses for which no deferred income tax asset was recognised	82,642,581	68,318,456	82,100,086	61,217,916
Utilisation of previously unrecognised tax losses	(9,270,320)	(64,447)	-	-
Deferred tax expense relating to the origination and reversal of temporary differences	1,785,395	73,457,736	1,832,206	74,440,259
Unrealised (loss) gain from intercompany transactions	(70,285,063)	(65,174,369)	-	-
Adjustment in respect of prior periods	172,781	6,500,825	-	-
Tax charge	<u>5,073,121</u>	<u>83,576,890</u>	<u>1,832,206</u>	<u>74,440,259</u>



As at 31 December 2019

28 Promotional privileges

The Group is granted with 33 certificates of promotional privileges from the Board of Investment for the production of electricity generated from solar power and biomass, the privilege include an exemption of import duty on imported machinery, an exemption for corporate income tax for a period of 8 years from the date the promoted operation commenced generating revenue (the commercial operation date).

The Group's operating revenue from sales and subsidy for adders as per the statements of comprehensive income for the years ended 31 December 2019 and 2018 wholly derive from promoted operations in Thailand. Details of operating segments are disclosed in Note 7.

29 Earnings (loss) per share

Basic earnings (loss) per share is calculated by dividing the net profit (loss) attributable to ordinary shareholders of the Company by the weighted average number of ordinary shares in issue during the year. The number of ordinary shares used in the calculations of earnings per share for the year ended 31 December 2018 are adjusted as if the shares dividends had been distributed at the beginning of 2018.

	Consolidated financial statements		Separate financial statements	
	2019	2018	2019	2018
Net profit (loss) attributable to ordinary shareholders of the company (Baht)	774,584,221	173,954,320	116,818,109	(190,620,588)
Weighted average number of ordinary shares outstanding (Shares)	1,950,465,843	1,905,749,580	1,950,465,843	1,905,749,580
Basic earnings (loss) per share (Baht per share)	0.40	0.09	0.06	(0.10)

Outstanding TSR has expired during 2019. Therefore, there are no potential dilutive ordinary shares during 2019 and 2018.

30 Dividends**2019**

On 22 April 2019, the Annual General Meeting of Shareholders approved a dividend payment in respect of operating results for the year 2018 to shareholders at Baht 0.055 per share, totaling Baht 105 million. The dividends were paid on 21 May 2019.

2018

On 20 April 2018, the Annual General Meeting of Shareholders approved a dividend payment in respect of operating results for the year 2017 to shareholders in forms of shares dividend at the ratio of 20 ordinary shares: 1 dividend share, totaling Baht 90.75 million and cash dividend at Baht 0.00556 per share, totaling 10.09 million. Total dividends were amounting to Baht 100.54 million. The dividends were paid on 18 May 2018.



As at 31 December 2019

31 Business combination

On 7 March 2019, the Group purchased 100 % of interests in BS Bangsai Solar Company Limited, totaling 820,000 shares, for a total consideration of Baht 131.20 million to acquire a business of a ground-mounting solar power plant with the production capacity of 5 MW. The acquisition is considered as an acquisition of business.

The following table summarises the consideration paid for BS Bangsai Solar Company Limited, and the amounts of the assets acquired and liabilities assumed recognised on acquisition date.

	As at acquisition date Baht
Consideration	
Cash	131,200,000
Total consideration	131,200,000
Recognised amounts of identifiable assets acquired and liabilities assumed	Baht
Cash and cash equivalents	67,947
Short-term investments	10,089
Trade receivables	7,204,213
Short-term loans to subsidiaries	82,730
Other current assets	9,630,940
Power Purchase Agreement	128,724,751
Property, plant and equipment	208,900,000
Other non-current assets	842,270
Construction and other payables	(41,314,078)
Right in power purchase agreement payables	(28,143,589)
Long-term borrowings from financial institutions	(140,264,473)
Other current liabilities	(4,457,995)
Deferred tax liabilities	(4,399,888)
Total identifiable net assets	136,882,917
Gain on bargain purchase	(5,682,917)
Total	131,200,000

Expenses related to the acquisition of subsidiary amounting to Baht 372,480 are recognised as administrative expenses in the consolidated financial statements for the year ended 31 December 2019.

The revenue included in the consolidated statement of comprehensive income from 7 March 2019 to 31 December 2019 contributed by BS Bangsai Solar Company Limited was Baht 37 million. BS Bangsai Solar Company Limited also contributed profit of Baht 7 million during the same period.



As at 31 December 2019

31 Business combination (Cont'd)

On 19 August 2019, the Group purchased 100 % of interests in BS Solar Energy Company Limited, totaling 630,000 shares, for a total consideration of Baht 73.71 million to acquire a business of a ground-mounting solar power plant with the production capacity of 5 MW. The acquisition is considered as an acquisition of business.

The following table summarises the consideration paid for BS Solar Energy Company Limited, and the amounts of the assets acquired and liabilities assumed recognised on acquisition date.

	As at acquisition date Baht
Consideration	
Cash	73,710,000
Total consideration	73,710,000
Recognised amounts of identifiable assets acquired and liabilities assumed	Baht
Cash and cash equivalents	24,360
Trade receivables	6,261,339
Other current assets	6,132,754
Power Purchase Agreement	66,479,547
Property, plant and equipment	190,800,000
Other non-current assets	1,613,142
Construction and other payables	(14,160,001)
Right in power purchase agreement payables	(50,058,262)
Long-term borrowings from financial institutions	(129,892,789)
Other current liabilities	(409,621)
Deferred tax liabilities	(3,438,465)
Total identifiable net assets	73,352,004
Goodwill (Note 16)	357,996
Total	73,710,000

Expenses related to the acquisition of subsidiary amounting to Baht 123,024 are recognised as administrative expenses in the consolidated financial statements for the year ended 31 December 2019.

The revenue included in the consolidated statement of comprehensive income from 19 August 2019 to 31 December 2019 contributed by BS Solar Energy Company Limited was Baht 14 million. BS Solar Energy Company Limited also contributed profit of Baht 7 million during the same period.

On 15 November 2019, the Group purchased 100 % of interests in Siam Solar Power Public Company Limited, totaling 300,000,000 shares, for a total consideration of Baht 582.06 million to acquire a business of a ground-mounting solar power plant with the production capacity of 8 MW and its subsidiary. The acquisition is considered as an acquisition of business.



As at 31 December 2019

31 Business combination (Cont'd)

The following table summarises the consideration paid for Siam Solar Power Public Company, and the amounts of the assets acquired and liabilities assumed recognised on acquisition date.

	As at acquisition date Baht
Consideration	
Cash	545,000,000
Payables from acquisition of investments	37,059,807
Total consideration	582,059,807
Recognised amounts of identifiable assets acquired and liabilities assumed	Baht
Cash and cash equivalents	4,789,244
Short-term restricted bank deposits	15,263
Trade receivables	12,893,771
Other receivables	23,145,274
Other current assets	512,135
Power Purchase Agreement	163,000,000
Investment property	14,000,000
Property, plant and equipment	435,380,000
Intangible Assets	744,075
Other non-current assets	52,000
Construction and other payables	(1,682,634)
Finance lease liabilities	(157,056)
Other current liabilities	(2,456,189)
Deferred tax liabilities	(17,854,543)
Total identifiable net assets	632,381,340
Gain on bargain purchase	(50,321,533)
Total	582,059,807

Expenses related to the acquisition of subsidiary amounting to Baht 746,872 are recognised as administrative expenses in the consolidated financial statements for the year ended 31 December 2019.

The revenue included in the consolidated statement of comprehensive income from 15 November 2019 to 31 December 2019 contributed by Siam Solar Power Public Company Limited was Baht 21 million. Siam Solar Power Public Company Limited also contributed profit of Baht 14 million during the same period.

32 Related party transactions

Enterprises and individuals that directly, or indirectly through one or more intermediaries, control, or are controlled by, or are under common 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.

The Company is controlled by P.M. Energy Company Limited (incorporated in Thailand) which owns 37% of the Company's shares. The remaining 63% of the shares are held by Wave Entertainment (Public) Company Limited, Sino-Thai Engineering & Construction Public Company Limited and individual shareholders. The significant investments in subsidiaries, and joint venture are set out in Note 13.



32 Related party transactions (Cont'd)

The following material transactions were carried out with related parties:

32.1 Sales of goods and services

For the year ended 31 December	Consolidated financial statements		Separate financial statements	
	2019 Baht	2018 Baht	2019 Baht	2018 Baht
Subsidiaries				
Management service income	-	-	48,314,135	30,060,541
Operation and maintenance income	-	-	1,680,000	1,680,000
Dividends income	-	-	11,829,999	12,921,999
	-	-	61,824,134	44,662,540
Joint venture				
Management service income	44,741,114	42,610,585	44,741,114	42,610,585
Rental income	453,600	453,600	453,600	453,600
Other income	-	1,531,637	-	1,531,637
Dividends income	-	53	606,550,052	573,650,102
	45,194,714	44,595,875	651,744,766	618,245,924
Related parties				
Rental income	-	69,472	-	69,472
Service income	-	46,315	-	46,315
Other income	-	10,205	-	10,205
	-	125,992	-	125,992

32.1 Outstanding balances arising from sales/purchases of goods/services

	Consolidated financial statements		Separate financial statements	
	2019 Baht	2018 Baht	2019 Baht	2018 Baht
Amounts due from and advances to related parties (Note 11)				
Subsidiaries	-	-	95,015,432	89,171,162
Joint venture	4,053,761	3,860,725	4,053,761	3,860,725
	4,053,761	3,860,725	99,069,193	93,031,887
Dividends receivable (Note 11)				
Joint venture	153,300,027	134,750,024	153,300,027	134,750,024
	153,300,027	134,750,024	153,300,027	134,750,024
Receivables from disposal of investments				
Subsidiaries	-	-	1,383,683,149	1,383,683,149
	-	-	1,383,683,149	1,383,683,149



As at 31 December 2019

32 Related party transactions (Cont'd)**32.2 Outstanding balances arising from sales/purchases of goods/services**

Receivables from disposal of investments were made from the Group's restructuring.

	Consolidated financial statements		Separate financial statements	
	2019 Baht	2018 Baht	2019 Baht	2018 Baht
Amounts due to related parties (Note 19)				
Related parties	-	667,187	-	-
	-	667,187	-	-
Payables from acquisition of investments				
Subsidiaries	-	-	249,995	249,995
	-	-	249,995	249,995

32.3 Short-term loans to subsidiaries**For the year ended 31 December**

Short-term loans to subsidiaries

Movements in loans to subsidiaries are analysed as follows:

	Separate financial statements	
	2019 Baht	2018 Baht
	701,000,825	335,287,932
	Separate financial statements	
	2019 Baht	2018 Baht
Opening net book amount	335,287,932	2,276,372,707
Additions	488,000,000	663,484,810
Repayment received	(67,287,107)	(380,741,723)
Transferred to long-term loan (Note 32.4)	(55,000,000)	(2,226,045,802)
Foreign currency translation differences	-	2,217,940
Closing net book amount	701,000,825	335,287,932

Loans to subsidiaries are non-bearing interest promissory notes denominated in Thai Baht with maturity within December 2020.

32.4 Long-term loans to subsidiaries**For the year ended 31 December**

Current portion of long-term loans to subsidiaries

Long-term loans to subsidiaries

Separate financial statements	
2019 Baht	2018 Baht
61,600,000	-
5,004,151,459	4,333,468,428
5,065,751,459	4,333,468,428



As at 31 December 2019

32 Related party transactions (Cont'd)**32.4 Long-term loans to subsidiaries (Cont'd)**

Movements in loans to subsidiaries are analysed as follows:

	Separate financial statements	
	2019 Baht	2018 Baht
Opening net book amount	4,333,468,428	2,232,305,697
Additions	1,018,162,498	563,736,515
Repayment received	(161,816,773)	(704,565,291)
Transferred from short-term loan (Note 32.3)	55,000,000	2,226,045,802
Transferred to equity	-	(52,781,017)
Foreign currency translation differences	(179,062,694)	68,726,722
Closing net book amount	5,065,751,459	4,333,468,428

Long-term loans to subsidiaries are in form of loan agreements, denominated in Japanese Yen and Thai Baht with no interest. The agreements are due for repayment at call and the other agreement has maturity within June 2021.

Long-term loans to the other subsidiaries are in form of loan agreements denominated in Thai Baht with interest of 4.3% and 6% and have maturity within September 2026 and due for repayment at call after 3 years, respectively.

The management do not have intention to call these loans within next 12 months. Therefore, these loans were classified as long-term loans.

32.5 Short-term loan from subsidiary

	Separate financial statements	
	2019 Baht	2018 Baht
Short-term loan from subsidiary	22,500,000	22,500,000

Short-term loan from subsidiary is in form of a promissory note with no interest and due for repayment within September 2020.

32.6 Key management compensation

	Consolidated financial statements		Separate financial statements	
	2019 Baht	2018 Baht	2019 Baht	2018 Baht
For the year ended 31 December				
Short-term employee benefits	40,090,999	43,181,211	24,527,887	22,085,600
Post-employment benefits	1,389,182	1,254,474	1,389,182	1,254,475
	41,480,181	44,435,685	25,917,069	23,340,075



As at 31 December 2019

33 Commitments and contingencies

33.1 Power purchase agreements

Domestic

As at 31 December 2019, the Group has 33 power purchase agreements with the Provincial Electricity Authority (“PEA”) and the Metropolitan Electricity Authority (“MEA”) (2018: 30 agreements). Currently, the Group has commenced the production and distribution of electricity under 33 power purchase agreements which are summarised as follows:

The electricity generated system	Company	Number of agreements	Production capacity MW	Electricity rate (Baht/kilowatt-hour)	The term of the agreements
Renewable energy	Company	1	4.5	Peak period amounting to Baht 4.21 and off-peak period amounting to Baht 2.63 for the quantity which do not exceed the capacity factor and peak period amounting to Baht 4.22 and off-peak period amounting to Baht 2.36 for the quantity which exceed the capacity factor and the Company had also been granted an adder amounting to Baht 8 granted for a period of 10 years commencing from commercial operation date (COD).	The agreements are for a period of 5 years and will be automatically renewed every 5 years until the contract termination.
Solar farm	Joint venture	10	80	Peak period amounting to Baht 4.21 and off-peak period amounting to Baht 2.63 for the quantity which do not exceed the capacity factor and peak period amounting to Baht 4.22 and off-peak period amounting to Baht 2.36 for the quantity which exceed the capacity factor and the Company had also been granted an adder amounting to Baht 6.50 granted for a period of 10 years commencing from commercial operation date (COD).	The agreements are for a period of 5 years and will be automatically renewed every 5 years until the contract termination.
Solar rooftops	Subsidiaries	14	14	Feed-in Tariff system (FIT) amounting to Baht 6.16.	The agreements are for a period of 25 years commencing from commercial operation date (COD).
Solar farm	Subsidiary	3	8	Feed-in Tariff system (FIT) amounting to Baht 5.66.	The agreements are for a period of 25 years commencing from commercial operation date (COD).
Biomass energy	Subsidiary	1	4.6	Feed-in Tariff system (FIT) amounting to Baht 4.24 and Feed-in Tariff system (FIT) Premium amounting to Baht 0.3 granted for a period of 8 years commencing from commercial operation date (COD).	The agreements are for a period of 20 years commencing from commercial operation date (COD).
Biomass energy	Subsidiary	2	17.6	Feed-in Tariff system (FIT) amounting to Baht 4.24 and Feed-in Tariff system (FIT) Premium amounting to Baht 0.3 granted for a period of 8 years commencing from commercial operation date (COD).	The agreements are for a period of 15 years 4 months commencing from commercial operation date (COD).
Solar farm	Subsidiary	1	5	Feed-in Tariff system (FIT) amounting to Baht 4.12.	The agreements are for a period of 25 years commencing from commercial operation date (COD).
Solar farm	Subsidiary	1	8	Peak period amounting to Baht 4.18 and off-peak period amounting to Baht 2.60 for the quantity which do not exceed the capacity factor and peak period amounting to Baht 4.22 and off-peak period amounting to Baht 2.36 for the quantity which exceed the capacity factor and the Company had also been granted an adder amounting to Baht 8 granted for a period of 10 years commencing from commercial operation date (COD).	The agreements are for a period of 1 years and will be automatically renewed every 1 years until the contract termination.



As at 31 December 2019

Overseas

As at 31 December 2019, subsidiaries operating in Japan have 7 power purchase agreements (2018: 6 agreements) with the power purchasing agencies, of which the power plants have already commenced generating and distributing the electricity. In addition, subsidiaries have another 1 power purchase agreement and right to develop for the power purchase agreement (2018: 2 agreements) for the projects which have not yet commenced generating and distributing the electricity. The agreements are summarised as follows:

	The electricity generated system	Company	Number of agreements	Production capacity MW	Electricity rate (Baht/kilowatt-hour)	The term of the agreements
Production and distribution of electricity	Solar	Subsidiary	7	21.74	Feed-in Tariff system (FIT) amounting to Yen 32 - 36.	The agreements are for a period of 20 years starting from commercial operation date (COD).
Under development and construction	Solar	Subsidiary	1	154.98	Feed-in Tariff system (FIT) amounting to Yen 32 - 36.	The agreement has maturity within B.C. 2040 starting from commercial operation date (COD).

33 Commitments and contingencies (Cont'd)**33.2 Operating lease commitments - where the Group is the lessee**

The Company and its subsidiaries have entered into several lease agreements in respect of the lease of office building space, motor vehicles, equipment and the lease of rooftop space and other building space in order to install solar cells. The terms of the agreements are generally between 3 and 26 years.

As at 31 December 2019 and 2018, future minimum lease payments required under these operating lease contracts were as follows:

	Consolidated financial statements		Separate financial statements	
	2019 Baht	2018 Baht	2019 Baht	2018 Baht
Not later than 1 year	16,312,010	20,088,646	7,233,668	12,086,704
Later than 1 year but not later than 5 years	41,876,683	43,486,307	3,600,435	10,069,239
Later than 5 years	148,651,330	137,247,452	-	-
	<u>206,840,023</u>	<u>200,822,405</u>	<u>10,834,103</u>	<u>22,155,943</u>

In addition, under agreements of leasing rooftop spaces and other building spaces, subsidiaries have commitments to pay rent at the higher of a percentage of sales and the minimum amounts specified in the agreements.



33.3 Contracts and other commitments

- a) A joint venture has commitments in respect of a management service agreement with the other venture amounting to Baht 6 million per annum for a period of 10 years from May 2013, with the service fee to increase on an annual basis at the rate specified in the agreement. The fees for the year ended 31 December 2019 amounting to Baht 4 million (2018: Baht 4 million) (in proportionate of the Company's interest in the joint venture) were recognised as expenses.
- b) A joint venture has commitments in respect of the operation and maintenance agreements of seven power plants with a company, amounting to Baht 9 million per annum for the period of 10 years from the commercial operation date. The fees for the year ended 31 December 2019 amounting to approximately Baht 5 million (2018: Baht 5 million) (in proportionate of the Company's interest in the joint venture) were recognised as expenses.
- c) A joint venture has commitments in respect of the operation and maintenance agreements of three power plants with a company, amounting to Baht 8 million per annum for the period of 5 years from June 2017. The fees for the year ended 31 December 2019 amounting to Baht 5 million per annum (2018: Baht 5 million) (in proportionate of the Company's interest in the joint venture) were recognised as expenses.
- d) A subsidiary has commitments in respect of the operation and maintenance agreements of two power plants with a company, amounting to Baht 44 million per annum for the period of 5 years from the commercial operation date. The fees for the year ended 31 December 2019 amounting to Baht 44 million (2018: Baht 15 million) were recognised as expenses.
- e) A subsidiary has commitments in respect of the operation and maintenance agreements of one power plants with a company, amounting to Baht 18 million per annum for the period of 5 years from the commercial operation date. The fees for the year ended 31 December 2019 amounting to Baht 18 million (2018: Baht 20 million) were recognised as expenses.

33.4 Guarantees

As at 31 December 2019, there were outstanding bank guarantees of approximately Baht 6 million (2018: Baht 8 million) issued by banks on behalf of the Company and its subsidiaries in respect of certain performance bonds as required in the normal course of business.



General Information

Capital and Major Shareholders

● Securities

As of 31 December 2019, the company registered capital is 2,477,474,454 Baht, divided into 2,477,474,454 million shares with a par value of 1 Baht. The paid – up capital was 2,117,716,281 Baht.

● Shareholders

The company's shareholding structure as of the latest book closure date on 30 December 2019, prepared by Thailand Securities Depository Co.,Ltd. (TSD) is as follows:

	Number of shareholders	Number of shares	Percentage
Thai securities holders	6,943	1,981,334,878	93.56
Foreign securities holders	21	136,381,403	6.44
Total	6,964	2,117,716,281	100.00

● List of top 10 major shareholders of the Company

	Name	Number of shares	Percentage
1	Cathleen,Ed.D. Group*		
	P.M. Energy Co.,Ltd. (“PME”) ^{/1}	783,034,150	36.98
	Cathleen Maleenont,Ed.D.	184,620,000	8.72
	Total	967,654,150	45.70
2	Wave Entertainment Public Co.,Ltd. (“WAVE”)	190,837,500	9.01
3	SINO-THAI ENGINEERING AND CONSTRUCTION PUBLIC	190,575,000	9.00
4	CREDIT SUISSE AG, SINGAPORE BRANCH	76,247,946	3.60
5	CITIBANK NOMINEES SINGAPORE PTE LTD-S.A PBG CLIENTS SG	39,900,000	1.88
6	Thai NVDR Co., Ltd.	33,946,366	1.60
7	Bualuang Long Term Equity Fund	24,188,600	1.14
8	Ms. Benjamas Nanthaveerawat	17,785,100	0.84
9	The Bualuang infrastructure Retirement Mutual Fund	14,532,700	0.69
10	Mr. Chaiyun Aurwattana	13,113,500	0.62

* The grouping is referred to the definition of related persons according to Kor.Jor.17/2551 dated 15 December 2009; not referring related persons under section 258 of The Securities Exchange of Thailand Act B.E. 2535 (including the adjustment)

^{/1} PME operates its business by investing in renewable energy companies. Its major shareholder as of 31 December 2019 was Cathleen Maleenont,Ed.D. holding 100.00 %



Information of the Company Group and reference persons

● Information of the Company Group

Name's Company	Nature of Business	Registered Capital (Million Baht)	Paid – up Capital (Million Baht)	Percentage
Address of Company Group				
725 Metropolis, 19 th floor, Sukhumvit Road, KlongtanNua, Wattana Bangkok 10110				
The companies held by Thai Solar Energy PLC. (“the Company”)				
1. Thai Solar Renewable Co., Ltd. - TSR	Holding Company	583.33	583.33	60
2. Solar Visible Co., Ltd. - SV	Holding Company	202	51.5	100
3. World Solar Co., Ltd. - WS	Solar Farm	1	0.65	100
4. TSE Rooftop Co., Ltd. - TSER	Holding Company	182	182	100
5. Thai Community Energy Co., Ltd. - TCE	Holding Company	450	450	100
6. TSE Overseas Group Co., Ltd. - TSEO	Holding Company	515	515	100
The companies held by Thai Solar Renewable Co., Ltd. - TSR				
7. Siam Solar Energy 1 Co., Ltd. - SSE1	Solar Farm	1,800	1,800	100
The companies held by Solar Visible Co., Ltd. - SV				
8. Solar Community Co., Ltd. - SLC	Solar Co-Op	100	25	100
9. Infinity Solar Co., Ltd. - INS	Solar Farm	30	30	100
10. Bs Bangsai Solar Co., Ltd. - BSS	Solar Co-Op	82	82	100
11. Bs Solar Energy Co., Ltd. - BSE	Solar Co-Op	63	63	49
Address 46/3 Soi Sukhaphiban 5 Soi 57				
O-Ngoen, Sai Mai, Bangkok 10220				
12. Siam Solar Power PCL. - SSP	Solar Farm	400	300	100
The companies held by Siam Solar Power PCL. - SSP				
13. Siam Waste Power Co., Ltd. – SWP	RDF	1	1	100
The companies held by TSE Rooftop Co., Ltd. – TSER				
14. Champ Energy Co., Ltd. - CE	Solar Rooftop	52	52	100
15. North Rooftop Cp., Ltd. - NR	Solar Rooftop	39	39	100
16. Roof Energy Co., Ltd. - RE	Solar Rooftop	39	39	100
17. Green Rooftop Co., Ltd. - GR	Solar Rooftop	26	26	100
18. Lucky Solar Co., Ltd. - LS	Solar Rooftop	26	26	100
The companies held by Thai Community Energy Co., Ltd. - TCE				
19. Oscar Save the World Co., Ltd. - OSW	Biomass	582	582	100
20. Bangsawan Green Co., Ltd. - BSW	Biomass	174	174	100
21. Clean Renewable Co., Ltd. - CLR	Biomass	1	0.25	100
22. Sun Future Co., Ltd. - SFT	Biomass	1	0.25	100
23. The Solar Earth Co., Ltd. - SE	Biomass	1	0.25	100
The companies held by TSE Overseas Group Co., Ltd. - TSEO				
24. Onikoube Solar Power PTE.LTD - OSP	Holding Company	7,815.95	7,815.95	100
Address 41 Middle Road #04-00 Boon Sing Building, Singapore (188950)		Million JPY	Million JPY	

Name's Company	Nature of Business	Registered Capital (Million Baht)	Paid – up Capital (Million Baht)	Percentage
25. TSE Group International PTE. LTD. - TSI Address 41 Middle Road #04-00 Boon Sing Building, Singapore (188950)	Holding Company	2,521.77 Million JPY	2,521.77 Million JPY	100
26. Solar Assets PTE. LTD. - SA Address 41 Middle Road #04-00 Boon Sing Building, Singapore (188950)	Holding Company	431.78 Million JPY	431.7 Million JPY	100
The companies held by Onikobe Solar Power PTE.LTD - OSP				
27. Purplesol Godo Kaisha - PPS Address 15-1 AZ9 Kamurodake, Onikoube, Naruko Onsen, Osakishi, Miyagi Prefecture	Solar Farm	393.9 Million JPY	393. Million JPY	100
The companies held by TSE Group International PTE. LTD. - TSI				
28. Eco Solar Aizu Godo Kaisha - ESA Address 1-2-9 Hanai Building SF, shibakouen, Minato-ku, Tokyo	Solar Farm	10,000 JPY	10,000 JPY	97
29. Ishikawa Hanamizuki No.1 Godo Kaisha - IH1 Address 3-22-10-201 Toranaman, Minato-ku, Tokyo	Solar Farm	10,000 JPY	10,000 JPY	97
The companies held by Solar Assets PTE. LTD. - SA				
30. Ibaraki Ushiku 1 Godo Kaisha - IU1 Address 1-2-9 Hanai Building SF, shibakouen, Minato-ku, Tokyo	Land Lease	10,000 JPY	10,000 JPY	100
31. Ibaraki Ushiku 2 Godo Kaisha - IU2 Address 2-2-1 Shin Otemachi Buliding 3F Otemachi, Chiyoda-ku, Tokyo	Land Lease	10,000 JPY	10,000 JPY	100

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