



Thai Solar Energy Public Company Limited

THAI SOLAR ENERGY PUBLIC COMPANY LIMITED

Form 56-1 / Annual Report 2022

# ONE REPORT 2022

## SOLAR TRACKING

The latest projects of the group



# 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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# Message From the Chairman of the Board

## Dear All Shareholders

The year 2022 is expected to witness a gradual economic recovery in Thailand, surpassing the previous year. The recovery is likely to be supported by global economic growth, increased government investment, and the government's policy of liberalizing the country. Consequently, the tourism industry is expected to recover gradually, aided by measures implemented to control the spread of COVID-19. Nonetheless, the Company Group has plans in place to manage various situations that may arise.

Furthermore, the year 2022 marks a successful expansion for the Company, with positive developments across various areas impacting the Company Group. Firstly, the Group acquired a ground-mounted solar power plant project equipped with a solar tracking system. The project has a selling capacity of 8 megawatts and is located in Nakhon Sawan Province. Secondly, the Company Group participated in the Energy Regulatory Commission's (ERC) tender offer for purchasing electricity from renewable energy via a feed-in tariff (FIT) for 2022-2030. The Group has successfully passed the qualification readiness evaluation (Round 1) and the minimum technical readiness evaluation (Round 2) and will know the final results in April 2023. The Group has made thorough preparations in all aspects, including pre-submission research and project readiness in four key areas: land, funding sources, technology, and fuel. Lastly, the Group has received a BBB- corporate credit rating with a stable outlook from TRIS Rating Company Limited, which is part of its plan to secure funding sources to support business expansion and future investments.

At the end of 2022, the Company Group have the total of 35 active projects in Thailand and Japan. The total offering production capacity is 286.2 megawatts, divided to 34 projects in Thailand with a total offering production capacity of 153.2 megawatts and 1 project in Japan with a total offering production capacity of 133 megawatts.

On behalf of the Board of Directors and executives, I would like to express our gratitude to our shareholders, business partners, financial institutions, and all the public and private sectors that have supported the Company. We are particularly grateful to our employees, whose hard work and determination in the face of challenges have contributed to our achievements in the past year. We urge everyone to remain confident that the Company will continue to conduct business in accordance with ethical principles and good corporate governance practices, while fulfilling our social responsibility towards sustainability. Once again, we extend our heartfelt thanks to everyone who has played a role in our success.



**Cathleen Maleenont, Ed.D**  
Chairman of the Board









# Message From Vice Chairman of the Board

## Dear All Shareholders

Thai Solar Energy Public Company Limited is committed to ensuring the continuous growth of our organization through the implementation of good corporate governance, ethical practices, and a focus on honesty, transparency, and accountability. We place great importance on safeguarding the interests of all stakeholders, treating them equally and fairly, and promoting their well-being.

The past year presented its own set of challenges, but with the preparedness of the Board of Directors, the management division, and every employee of the Company, we were able to overcome them and achieve success in many areas. Moreover, we have gained expertise and experience in various fields, which has enhanced our business potential and enabled us to explore new business opportunities, resulting in increased revenue.

Lastly, I would like to express my heartfelt gratitude to all our shareholders and stakeholders for their unwavering trust, confidence, and support in our business operations. I would also like to extend my thanks to the management division and employees for their dedicated cooperation in performing their duties with integrity, honesty, and accountability to the best of their abilities. The Company remains committed to conducting business with a sense of responsibility towards the economy, society, and environment, in accordance with the principles of good corporate governance.



A handwritten signature in black ink, appearing to read 'Prommin Lertsuridej'.

**Prommin Lertsuridej, M.D.**

Vice Chairman of the Board





# Report of the Audit Committee

## Dear All Shareholders

The Audit Committee of Thai Solar Energy Public Company Limited comprises of 3 independent directors, namely Mr. Prasert Pattradilok as the Chairman of the Audit Committee, Mr. Pala Sukawesh and Dr. Praphan Supsang as the audit committee members, who are fully qualified in accordance with the requirements of the Securities and Exchange Commission and announcements of the Stock Exchange of Thailand.

In 2022, the Audit Committee held 4 meetings along with the internal audit department, the management department, and the Company's external auditors. The objective is to review the sufficiency and the effectiveness of the internal control system, risk management, reliability of financial reports, as well as compliance with the law and rules related to the Company. The key points can be summarized as follows:

### 1. Reviews of the Financial Report

- The Audit Committee has reviewed the quarterly and annual financial statements for the year 2022 together with the management department, internal audit department, and the auditor, including asking and giving advice on various issues related to the Company's financial reports to ensure that the preparation of financial statements is in accordance with the requirements of laws and generally accepted accounting standards
- To acknowledge and consideration of Key Audit Matters, i.e. the acquisition of the investment qualified as a business combination, The management engaged an independent valuer to prepare the purchase price allocation to evaluate fair value of net assets acquired.
- The Audit Committee is of the opinion that, in preparation of the Group's financial report for the year 2022, the auditor is independent in performing such duties and discloses information completely, accurately, and adequately.

### 2. Review of the Effectiveness of the Internal Control System, Risk Management, and Supervision of the Internal Audit Unit

- The Audit Committee has approved the annual internal audit plan, annual budget review, and provided recommendations to improve the quality of internal audit work and consistently monitor the resolution of the issues that are found in the performance of the management.
- The Audit Committee has reviewed the effectiveness and efficiency of the internal control process, risk management, regulatory compliance that are related to the Company together with the internal audit department for every quarter. There are no significant issues or drawbacks found.
- The Audit Committee has reviewed the assessment of the sufficiency of the Company's internal control system for the year 2022 according to the assessment form of the Office of the Securities and Exchange Commission. The results of the assessment of the sufficiency of the Company's internal control system showed that no significant drawbacks were found.
- The Audit Committee is of the opinion that the Group has sufficient and appropriate internal control system, risk management and, the independent internal audit unit. There is a consistency in internal audit development to create a good internal control process.

### 3. Consideration of Appointment and Determination of the Annual Auditor's Remuneration

- The Audit Committee has considered, selected and compared the auditor's remuneration to propose to the Board of Directors for consideration and approval at the shareholders' meeting for the appointment of the auditors of PricewaterhouseCoopers ABAS Co., Ltd. to be the Company's auditor.



### 4. Review of the Audit Committee Charter and the Internal Auditor

- The Audit Committee has regularly reviewed the appropriateness of the Audit Committee Charter and the Internal Auditor in order to be in compliance with good practice and in accordance with the rules of the Stock Exchange of Thailand, and international practice, including the principles of good corporate governance.

In summary, the Audit Committee is of the opinion that the Board of Directors and Executive Directors, as well as Management of the Company, have ethics and determination to carry out their duties in order to achieve the Company's goals and see the importance of operating the business under effective and transparent corporate governance. The Company's financial reports are accurate, reliable, in accordance with generally accepted accounting standards. The operation complies with the law and the internal control system is continually sufficient and suitable to the business environment.

**Mr. Prasert Pattradilok**

Chairman of the Audit Committee



# Report of the Nomination and Remuneration Committee

## Dear All Shareholders

The Nomination and Remuneration Committee comprises of 3 directors, namely, MD.Prommin Lertsuridej as the Chairman of Nomination and Remuneration Committee. In 2022, the Nomination and Remuneration Committee convened 2 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.

**Prommin Lertsuridej, M.D.**  
Chairman of the Nomination and  
Remuneration Committee





# The Board of Directors and Management

## Education

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

## Training Record with Thai Institute of Directors (IOD)

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

## Other Training Record

- The National Defence, Class 65, Thailand National Defence College
- Top Executive Program in Commerce and Trade (TEPCoT) Class 11, Commerce Academy
- Administrative Justice for Executives Program Class 6, the Administrative Justice Institute, the Office of the Administrative Courts
- Bhumiपालung Phandin Course for Executives Class 3, Chulalongkorn University
- Top Executives in the Energy Education Program Class 3, Thailand Energy Academy
- Capital Market Academy (CMA) Class 15, Capital Market Academy

## Working Experiences (5-Year Past Experience)

- 2014 - Present  
Chairman of Board of Directors /  
Chairman of the Executive Directors /  
Chief Executive Officer / Nomination and  
Remuneration Committee  
Thai Solar Energy Public Company Limited
- 2017 - 2022  
Acting Chief Financial Officer,  
Thai Solar Energy Public Company Limited

## Position in other listed company

- November 2022 - Present  
Chairman of Board of Directors,  
Wave Entertainment Public Company Limited
- 2006 - Present  
Authorized Director,  
Wave Entertainment Public Company Limited
- 1999 - 2022  
Assistant to Senior Executive Vice President,  
BEC World Public Company Limited

## Positions in other unlisted companies

- 2014 - Present  
Authorized Director,  
Thai Solar Energy Group's Subsidiaries &  
Affiliates
- 2006 - Present  
Authorized Director, Wave Entertainment  
Group's Subsidiaries & Affiliates

## Other position in other company doing business competing with the Company or business

-None-

## Shareholding in TSE (including spouse and minor)

-None-

## Family Relationship among Directors and Executives

-None-

## Criminal-Free Track Record for the past 10 years

-None-



**Cathleen Maleenont, Ed.D**

Age : 52

Chairman of Board of Directors /  
Chairman of the Executive Directors /  
Chief Executive Officer /  
Nomination and Remuneration Committee /  
Authorized Director



**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 Experiences (5-Year Past Experience)**

- April 2021 - Present Chairman of Nomination and Remuneration Committee
- Thai Solar Energy Public Company Limited
- 2014 - Present Vice Chairman / Independent Director, Thai Solar Energy Public Company Limited

**Position in other listed company**

-None-

**Positions in other unlisted companies**

- February 2022 - Present Director, Pridi Banomyong International College (PBIC)
- 2014 - October 2021 Vice President and Chairman of Board of Directors, Shinawatra University
- 2017 - 2018 Advisory Board of Directors, Rama IX Hospital
- 2014 - 2017 Board of Directors / Board of Executive Directors, Rama IX Hospital
- 2013 - 2014 Advisor to Strategic Committee for Reconstruction and Future Development (SCRF) Government of Yingluck Shinawatra

**Other position in other company doing business competing with the Company or business**

-None-

**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.

**Royal Foreign Decoration**

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

**Shareholding in TSE (including spouse and minor)**

-None-

**Family Relationship among Directors and Executives**

-None-

**Criminal-Free Track Record for the past 10 years**

-None-

**Prommin Lertsuridej, M.D.**

Age : 69

Vice Chairman / Independent Director /  
Chairman of Nomination and Remuneration  
Committee

# The Board of Directors and Management

## Education

- Master Degree of Business Administration (Finance), Chulalongkorn University
- Bachelor's Degree in Engineering (Mechanical), Prince of Songkla University

## Training Record with Thai Institute of Directors (IOD)

- Anti Corruption: The practical Guide ACPG Class no. 15/2014
- DCP Refresher: no. 1/2005
- Directors Certification Program (DCP) Year 2002

## Other Training Record

- Royal Thai Army War College, Year 2000

## Working Experiences (5-Year Past Experience)

- February 2021 - Present      Independent Director /  
Chairman of The Audit Committee  
Thai Solar Energy Public Company Limited

## Position in other listed company

- December 2022 - Present      Audit Committee, Pace Development Corporation Public Company Limited
- April 2022 - Present      Audit Committee, Panjawattana Plastic Public Company Limited
- May 2021 - Present      Audit Committee, Pinthong Industrial Park Public Company Limited
- December 2018 - Present      Chairman of The Audit Committee, Teka Construction Public Company Limited
- August 2018 - February 2022      Advisor, Panjawattana Plastic Public Company Limited
- May 2015 - October 2022      Chairman of The Audit Committee, WAVE Entertainment Public Company Limited
- May 2011 - February 2022      Audit Committee, Pace Development Corporation Public Company Limited
- March 2004 - March 2021      Chairman of The Audit Committee, Boutique Newcity Public Company Limited

## Positions in other unlisted companies

- March 2022 - Present      Director, Thai Asset Solutions Co., Ltd.
- June 2015 - Present      Director, Advisory Plus Co., Ltd.
- 2004 - Present      Director, Kindred Co., Ltd.
- 2004 - Present      Director, Robinson planner Co., Ltd.
- 2019 - 2021      Director /  
Chairman of the Board of Executive Directors,  
Export-Import Bank of Thailand
- April 2004 - 2016      Director, Investment Banking Club
- February 2004 - May 2015      General Manager, Advisory Plus Co., Ltd.

## Other position in other company doing business competing with the Company or business

-None-

## Shareholding in TSE (including spouse and minor)

-None-

## Family Relationship among Directors and Executives

-None-

## Criminal-Free Track Record for the past 10 years

-None-



**Mr. Prasert Patradhilok**

Age : 65

Independent Director /  
Chairman of The 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, USA.
- CERT. in System Analysis in Water Resource Planning, US. Army Corp. of Engineers, USA.
- M.Eng. (2nd Class Honors) in Electrical Engineering, Chulalongkorn University

**Training Record with Thai Institute of Directors (IOD)**

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

**Working Experiences (5-Year Past Experience)**

- April 2019 - Present      Audit Committee,  
Thai Solar Energy Public Company Limited
- 2014 - Present      Independent Director,  
Thai Solar Energy Public Company Limited

**Position in other listed company**

- 2012 - Present      Chairman of Board of Directors,  
Union Petrochemical Public Company Limited

**Positions in other unlisted companies**

- 2010 - Present      Chairman, Petroleum Institute of Thailand
- 2011 - Present      Advisor, Empire Asia Group Co.,Ltd.

**Other position in other company doing business competing with the Company or business**

-None-

**Royal Thai Decoration**

- 1999 Knight Commander (Second Class) of the Most Noble Order of the Crown of Thailand.
- 2000 Grand Companion (Third Class, higher grade) of the Most Illustrious Order of Chula Chom Klao.

**Shareholding in TSE (including spouse and minor)**

-None-

**Family Relationship among Directors and Executives**

-None-

**Criminal-Free Track Record for the past 10 years**

-None-

**Mr. Pala Sukawesh**

Age : 83

Independent Director / Audit Committee

# The Board of Directors and Management

## Education

- Honorary Degree of Doctor of laws, Sukhothai Thammathirat Open University
- Bachelor of Arts (Art in Political Science) Ramkhamhaeng University
- Thai barrister at law, The institute of legal education Thai bar association
- Bachelor of Laws (very good Honors) The first Gold Medal Award Thammasat University, 1969

## Other Training Record

- Advanced Justice Administration Program (Class 8)
- Dispute Settlement and Negotiation Course
- Land and Buildings Law Course
- Business finance course for lawyers
- Course in Economics and Business Mechanism for Judges
- Intellectual property law course
- Principles of Bankruptcy and Business Rehabilitation Law
- Environmental law courses, Kyushu University, Japan
- Law Course, Administrative Procedure, Election and Corruption Case for Politicians, Toulouse University, France
- Negotiation and dispute resolution courses

## Working Experiences 5-Year Past Experience

- 2021 - Present Independent Director / Audit Committee, Thai Solar Energy Public Company Limited

## Position in other listed company

-None-

## Positions in other unlisted companies

- Oct 2011 - Sep 2017 Senior Judge, The Court of Appeal
- Oct 2007 - Sep 2011 Senior Judge, The Supreme Court
- Oct 2004 - Sep 2007 President of the Criminal Division for The Supreme Court  
Persons Holding Political Positions
- Oct 2002 - Sep 2004 Presiding Justice, The Supreme Court
- Oct 1998 - Sep 2002 Judge, The Supreme Court
- Oct 1995 - Sep 1998 Presiding Justice, The Court of Appeal
- Oct 1991 - Sep 1995 Judge, The Court of Appeal
- Jan 1990 - Sep 1991 Presiding Justice, The Civil Court
- Apr 1988 - Jan 1990 Judge, The Civil Court
- Apr 1987 - Mar 1988 Chief Justice of the Ministry of Courts  
Assist government officials of judge, The Civil Court

## Other position in other company doing business competing with the Company or business

-None-

## Royal Thai Decoration

- 1997 Knight Grand Cross (First Class) of the Most Exalted Order of the White Elephant.
- 1996 The Chakrabarti Mala Medal.
- 1992 Knight Grand Cordon (Special Class) of the Most Noble Order of the Crown of Thailand.
- 1989 Knight Grand Cross (First Class) of the Most Exalted Order of the White Elephant.
- 1986 Knight Grand Cross (First Class) of the Most Noble Order of the Crown of Thailand.
- 1983 Knight Commander (Second Class) of the Most Exalted Order of the White Elephant.
- 1979 Knight Commander (Second Class) of the Most Noble Order of the Crown of Thailand.
- 1976 Commander (Third Class) of the Most Noble Order of the Crown of Thailand.

## Shareholding in TSE (including spouse and minor)

- -None-

## Family Relationship among Directors and Executives

- -None-

## Criminal-Free Track Record for the past 10 years

- -None-



**Dr. Praphan Subsang**  
Age : 76

Independent Director / Audit Committee



**Education**

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

**Training Record with Thai Institute of Directors (IOD)**

- Capital Market Academy (CMA29)
- Thailand Energy Academy (TEA10)
- Exam-Diploma Examinations (Fellow Membership) 24/2009
- Directors Certification Program (DCP) 106/2008
- Directors Certification Program Update (DCPU) 1/2014
- Company Secretary Program (CSP) 31/2009
- Executive Development Program (EDP7)

**Working Experiences (5-Year Past Experience)**

- 2014 - Present      Director / Executive Director /  
Nomination and Remuneration  
Committee / Chief Operating Officer /  
Company Secretary / Authorized Director  
Thai Solar Energy Public Company  
Limited

**Position in other listed company**

-None-

**Positions in other unlisted companies**

- 2013 - Present      Authorized Director,  
Thai Solar Energy Group's Subsidiaries &  
Affiliates

**Other position in other company doing business competing with the Company or business**

-None-

**Shareholding in TSE (including spouse and minor)**

-None-

**Family Relationship among Directors and Executives**

-None-

**Criminal-Free Track Record for the past 10 years**

-None-



**Mr. Somphop Prompanapitak**  
Age : 56

Director / Executive Director /  
Nomination and Remuneration Committee  
Chief Operating Officer / Company Secretary /  
Authorized Director

# The Board of Directors and Management

## Education

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

## Training Record with Thai Institute of Directors (IOD)

- Directors Accreditation Program (DAP) Class 138/2017

## Training Record with Federation of Accounting Professions

- Chief Financial Officer Certification Program Class 19

## Training Record with The Stock Exchange of Thailand

- Strategic CFO in Capital Markets Program Class 8

## Training Record with Thai Listed Companies Association

- Fundamental Practice for Corporate Secretary

## Working Experiences (5-Year Past Experience)

- January 2023 - Present Chief Financial Officer, Thai Solar Energy Public Company Limited
- March 2017 - Present Director / Authorized Director, Thai Solar Energy Public Company Limited

## Position in other listed company

- November 2020 - October 2022 Director / Authorized Director, WAVE Entertainment Public Company Limited
- May 2013 - December 2022 Chief Financial Officer, WAVE Entertainment Public Company Limited

## Positions in other unlisted companies

- 2020 - December 2022 Director, The Megawatt Co., Ltd.

## Other position in other company doing business competing with the Company or business

-None-

## Shareholding in TSE (including spouse and minor)

-None-

## Family Relationship among Directors and Executives

-None-

## Criminal-Free Track Record for the past 10 years

-None-



**Mrs. Angkanee Rerksirisuk**  
Age : 51

Director / Chief Financial Officer /  
Authorized Director / The person assigned  
to take the highest responsibility in  
Accounting and Finance



**Education**

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

**Training Record with Thai Institute of Directors (IOD)**

- Director Accreditation Program (DAP) 1/2003

**Other Training Record**

- 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 Experiences (5-Year Past Experience)**

- 2019 - present                      Director,  
Thai Solar Energy Public Company Limited

**Position in other listed company**

- 2002 - present                      Director / Managing Director,  
STP&I Public Company Limited
- 1996 - present                      Director, Sino-Thai Engineering and  
Construction Public Company Limited

**Positions in other unlisted companies**

- Present                                  Director / Managing Director, STIT Co., Ltd.  
Director, ST Property and Logistics Co., Ltd.  
Chairman, Fill Up Network Co., Ltd

**Other position in other company doing business competing with the Company or business**

-None-

**Shareholding in TSE (including spouse and minor)**

-None-

**Family Relationship among Directors and Executives**

-None-

**Criminal-Free Track Record for the past 10 years**

-None-

**Mr. Masthawin Charnvirakul**

Age : 52

Director

# The Board of Directors and Management

## Education

- Master of Public Administration (Public Administration) NATIONAL UNIVERSITY, U.S.A.
- Bachelor of Public Administration (Criminology) Portland State University, U.S.A.

## Training Record with Thai Institute of Directors (IOD)

- Directors Certification Program (DCP) 149/2011

## Other Training Record

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

## Working Experiences (5-Year Past Experience)

- 2019 - Present Independent Director, Thai Solar Energy Public Company Limited

## Position in other listed company

- 2012 - 2020 Chairman of Board of Directors / Chairman of the Board of Executive Directors, Three Sixty-Five Public Company Limited
- 2007 - 2010 Vice President Customer Business Department, Thai Airways International Public Company Limited

## Positions in other unlisted companies

- 2012 Chairman Effect monopoly case seating system. (GDS) company between Thai - Amadeus Co., Ltd. and Thai Airways International Public Company Limited
- 2011 Director, The Transport Co., Ltd.
- 2011 Director, Bangkok Mass Transit Authority, BMTA

## Other position in other company doing business competing with the Company or business

-None-

## 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 in TSE (including spouse and minor)

-None-

## Family Relationship among Directors and Executives

-None-

## Criminal-Free Track Record for the past 10 years

-None-



**Mr. Aran Apichari**

Age : 66

Independent Director

**Education**

- Master Degree in Business Administration, Chulalongkorn University
- Bachelor degree in Electrical Engineering, Chulalongkorn University

**Working Experiences (5-Year Past Experience)**

- August 2017 - Present  
Executive Director /  
Chief Technical Officer  
Thai Solar Energy Public Company Limited

**Position in other listed company**

- 2015 - 2017  
Vice President Business Development,  
Glow Energy Public Company Limited
- 2005 - 2009  
Chief Executive Officer,  
National Power Supply Public  
Company Limited

**Positions in other unlisted companies**

- Present  
Director, Thai Solar Energy Group's  
Subsidiaries & Affiliates
- 2010 - 2015  
Chief Technology Officer, Italian-Thai Power  
Company Limited (IPC)

**Other position in other company doing business competing with the Company or business**

-None-

**Shareholding in TSE (including spouse and minor)**

-None-

**Family Relationship among Directors and Executives**

-None-

**Criminal-Free Track Record for the past 10 years**

-None-

**Mr. Kitiphong Thunnom**

Age : 55

Executive Director /  
Chief Technical Officer



# The Board of Directors and Management

## Education

- Bachelor of Engineering Program in Electrical Engineering : Power Electrical King Mongkut's University of Technology North Bangkok

## Working Experiences (5-Year Past Experience)

- 2015 - Present Vice President Engineering and Construction - PV Power Plant & Special Project, Thai Solar Energy Public Company Limited

## Position in other listed company

- 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

## Positions in other unlisted companies

- July 2020 – Present 1<sup>st</sup> Association Director of Solar Entrepreneurs and Technicians

## Other position in other company doing business competing with the Company or business

-None-

## Shareholding in TSE (including spouse and minor)

-None-

## Family Relationship among Directors and Executives

-None-

## Criminal-Free Track Record for the past 10 years

-None-



**Mr. Nivej Boonwichai**  
Age : 55

Vice President Engineering and Construction  
- PV Power Plant & Special Project











# 1

## Business Operation and Operating Results

- Organizational structure and operation of the group of companies
- Risk factors on business operation
- Business sustainability development
- Management Discussion and Analysis (MD&A)
- General and Key Information





# Organizational structure and operation of the group of companies

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## Policy and business overview

Thai Solar Energy Public Company Limited, its subsidiaries and jointly controlled entities (collectively, the “Group of Company”) are committed to being the leader in the power plant business from renewable energy. By focusing on doing business by choosing the right technology. Provide good and stable returns in the long term. including providing efficient power plant construction and equipment procurement (Engineering Procurement and Construction: EPC)

As of 31 December 2022, Group of Company Operating in the form of solar power plant in category of ground mounting (Solar Farm) in Thailand and Japan, in the form of installation on the roof (Solar Rooftop), in the form of installation on the float (Solar Floating) and generating electricity from Biomass power plant, there are 35 projects with a total selling capacity of 286.2 MW of which 34 projects have already generating electricity to the commercial system with a total selling capacity of 153.2 megawatts. In addition, the Group of Company has studied and expanded the business of generating electricity from solar energy in the form of solar farm, solar rooftop and solar floating, including more forms of renewable energy such as biomass energy, biogas energy, wind energy, waste energy, etc., as well as seeking investment opportunities abroad to become a leading company in renewable energy business in Thailand and Asia

## Vision and Mission

### 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

## 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:





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 31 December 2018, the Company 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 145.44 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 Udonrthani 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 31 December 2019, the Company 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.



2020



## Additional investment

- Solar Visible Company Limited which is a subsidiary owned 100% investment in B P Trading (Thailand) Company Limited (BPT) which Holding company manufacturing and distribute electricity including businesses of all types of electrical and energy systems, which BPT is the developer and invest in electrical and energy systems project from floating solar energy (Floating Solar PV Project) in Kabin Buri Industrial Zone with the installed capacity of 8 MW
- Solar Visible Company Limited which is a subsidiary owned 100% investment in Earth Energy System Company Limited (EES) 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 Krabi Province
- Solar Visible Company Limited which is a subsidiary owned 100% to enter into the asset disposal transaction by disposing of all shares 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 Udornthani

As of 31 December 2020, the Company Group has a total of 41 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 299.94 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.

2021



## Recognition of additional income, disposal of projects in Japan and additional investment

- Solar Floating Project at Kabin Buri District, Prachinburi Province, with an offering capacity of 8 megawatts, operated by Siam Tara Floating Company Limited (formerly known as BPT) as "the first private floating solar farm project". which is considered one of the achievements of the group of companies in participating in the production of clean energy for the benefit of customers and communities It is also an important step towards becoming carbon neutral. or truly reduce carbon emissions (Carbon Neutrality). The Solar Floating project will begin recognizing income from the commercial distribution of electricity in May 2021.
- TSE Group International Pte. Ltd. ("TSI") and Solar Assets Pte. Ltd. ("SA") which companies indirect subsidiaries of the Company with 100% ownership interest held through TSE Overseas Group Co.,Ltd. ("TSEO") to deal with the disposition of 2 subsidiaries registered in Japan, the comprise of (1) Eco Solar Aizu G.K. ("ESA") which operates 6 solar power projects in Japan with a total installed of 8.24 MW held by TSE Group International Pte. Ltd. ("TSI") held by TSE Group International Pte. Ltd. ("TSI") and (2) Ibaraki Ushiku 1 G.K. ("IU1") which operate of land lease held by Solar Assets Pte. Ltd. ("SA")

As of 31 December 2021, the Company Group has a total of 35 projects under its operation in Thailand and Japan that comprise 17 solar PV projects (15 in Thailand and 2 in Japan), 14 solar rooftop, 3 biomass power plants and 1 Solar Floating with a total selling capacity of 291.7 MW. Of these, 34 projects have distributed electricity commercially, including the selling capacity in Thailand and Japan at the total capacity of 158.7 MW.

2022



## Disposal of projects in Japan, additional investment and signed the MOU with L&H's clubhouses

- TSE Group International Pte. Ltd. (TSI) and Solar Assets Pte. Ltd. (SA) which both companies are indirect subsidiaries of the Company with 100% ownership interest held through TSE Overseas Group Co.,Ltd. ("TSEO") to deal with the disposition of 2 subsidiaries registered in Japan, the comprise of (1) Ishikawa Hanamizuki 1 G.K. ("IH1") which operates 1 solar power project in Japan with a contract capacity of 13.5 MW held by TSE Group International Pte. Ltd. ("TSI") and (2) Ibaraki Ushiku 2 G.K. ("IU2") which operates of land lease held by Solar Assets Pte. Ltd. ("SA")
- Solar Visible Company Limited ("SV") which is a subsidiary owned 100% of the total paid-up capital by the Company has acquired all shares of total paid-up capital, representing 100% of Silcretes Technology Company Limited ("SCT") which operates the solar power plant projects in category of ground mounting solar, system adjusts the face of the solar panel or reflective surfaces to align with the sun (Solar Tracking) with the selling capacity of 8 MW located at Nakhon Sawan Province which the purchasing period is 25 years and the Feed-in Tariff (FiT) of Baht 5.66
- TSE signed the Memorandum of Understanding (MOU) with Land and House Public Company Limited (LH) to install solar cell on the rooftops of L&H's clubhouses in 5 luxury home projects for example, VIVE Ekkamai-Ramintra, NANTAWAN Pinklao-Kanchana, NANTAWAN Rama 9 New Krungthepkreetha, Villaggio Rangsit Klong 4, MANTANA Bangna km 15, in order to save energy for the long term and to reduce our environment.

As of 31 December 2022, the Company Group has a total of 35 projects under its operation in Thailand and Japan that comprise 17 solar PV projects (16 in Thailand and 1 in Japan), 14 solar rooftop, 3 biomass power plants and 1 Solar Floating with a total selling capacity of 286.2 MW. Of these, 34 projects have distributed electricity commercially, including the selling capacity in Thailand and Japan at the total capacity of 153.2 MW

## Nature of Business Operations

Currently, the group of companies engages in the business of generation and distribution of electricity from solar energy and other renewable energy which can be divided into 2 types: solar power plants and biomass power plants

### 1) Solar PV Power Plants

Group's PV power plants generation and distribution of electricity using photovoltaic systems which can be categorized as follows:

#### 1.1 Solar PV Farm

##### Domestic

TSE Group has 16 projects solar PV farm with a total generation capacity of 109 MW and distribution of electricity to the Provincial Electricity Authority (PEA) with the capacity of 101 MW.

##### Overseas

TSE Group has 1 solar power plants in Japan with total selling production capacity of 133 MW. At present, the power transmission system has already been connected. It is in the final stage of testing which is expected to be commercially available in the quarter 2/2023

#### 1.2 Solar Rooftop

TSE Group has 14 Solar Rooftop projects, the highest number in Thailand with a total selling capacity of 14 MW, all of which has been sale of electricity output to the Provincial Electricity Authority (PEA) and Metropolitan Electricity Authority (MEA) with the capacity of 14 MW.

#### 1.3 Solar Floating

The Group has 1 Solar Floating project with a total generation of 8 MW generation and distribution of electricity to the private PPA

### 2) Biomass Power Plants

As of 31 December 2022, the Company Group has Operating generation and distribution of electricity in 3 biomass power plants through subsidiaries, 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 generation and distribution of electricity total of 22.2 MW. all of which has been sale of electricity output to the Provincial Electricity Authority (PEA)







## Revenue Structure

The Revenue Structure of the Group of Company 3 years 0period as follows:

Product Line / Business Group	Operated by	Shareholding (%)	2020		2021		2022	
			(Million Baht)	%	(Million Baht)	%	(Million Baht)	%
Sales of electricity income								
1. Sales of electricity income - domestic	TCE, TSER, SV	100%	1,178.15	53.89	1,189.37	54.64	1,244.20	63.03
2. Sales of electricity income - overseas	TSEO	100%	305.21	13.96	285.38	13.11	15.13	0.77
<b>Total – Sales of electricity income</b>			<b>1,483.36</b>	<b>67.85</b>	<b>1,474.75</b>	<b>67.75</b>	<b>1,259.33</b>	<b>63.79</b>
Management service fee income and other income	TSE	-	59.38	2.72	59.20	2.72	67.04	3.40
Share of profit on investment in joint venture	TSR	60%*	643.33	29.43	642.92	29.53	647.70	32.81
<b>Total</b>			<b>2,186.07</b>	<b>100.00</b>	<b>2,176.87</b>	<b>100.00</b>	<b>1,974.07</b>	<b>100.00</b>

Remark: \* It shows the income from the PV-Solar farm power plant in proportion to the shareholding of the said project, which in the consolidated financial statements of the Company will not appear such income, because the said power plant project is a joint venture company, the revenue must be recognized under the equity method so that the revenue from the sale of electricity does not appear in the total revenue in the consolidated financial statements. Instead, profits will be recognized under the equity method in the form of Share of profit on investment in joint venture entities.

Source: The Company's consolidated financial statements

## Product Information

### 1. Characteristics of Products and Services

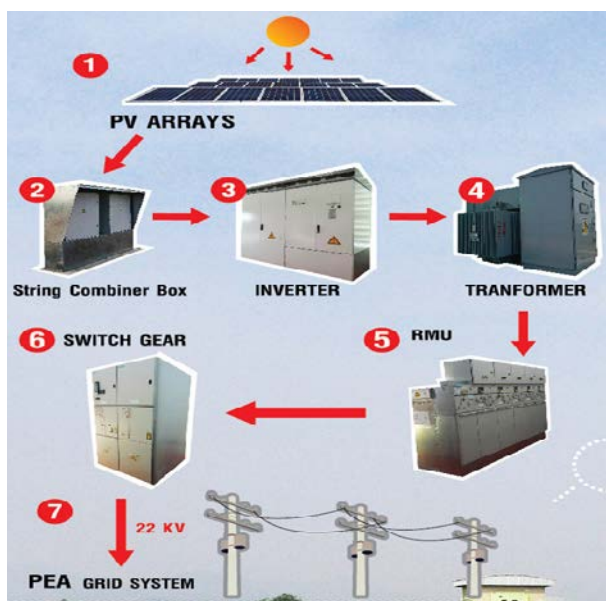
The Company Group operates the business of producing and distributing electricity from solar energy to distribute to the government sector according to the policy to promote the production and use of electricity from renewable energy by the Energy Policy and Planning Office, Ministry of Energy.

**Power Generation Process** of the company group can be divided into 2 types according to the types of technology which are the followings:

#### 1) Solar power generation process by photovoltaic system (Photovoltaic - PV) or solar cells.

The production process of electricity from solar energy by photovoltaic system (PV) or solar cells is the process of converting light energy into electrical energy. In this process, the solar panels are used as a light receiver, which accepts direct radiation, diffuse radiation, and total radiation. Solar panels are composed of a semiconductor that can absorb sunlight and act as an electrical conductor. Whenever the sunlight hits the solar panel, the surface is transformed into a conductive carrier. The positive and negative charges will be separated to provide voltage at both terminals of the solar cell in order to generate electricity from solar panels and are sent to the string combiner box before passing to the inverter to change the direct current: (DC) produced into alternative current (AC). Then, the AC power is passed to the transformer in order to increase the amount of voltage to match the amount of

voltage used to supply power to the transmission system according to the power purchase agreement. Before sending electricity to the electrical system, it will be sent through a high-voltage disconnecter (Ring Main Unit: RMU) and switch gear, which is used for disconnecting the electricity sales in the system and sending to the meter to measure the number of electricity units before sending to the transmission line of MEA or PEA at the specified power purchase point for further distribution to electricity consumers.



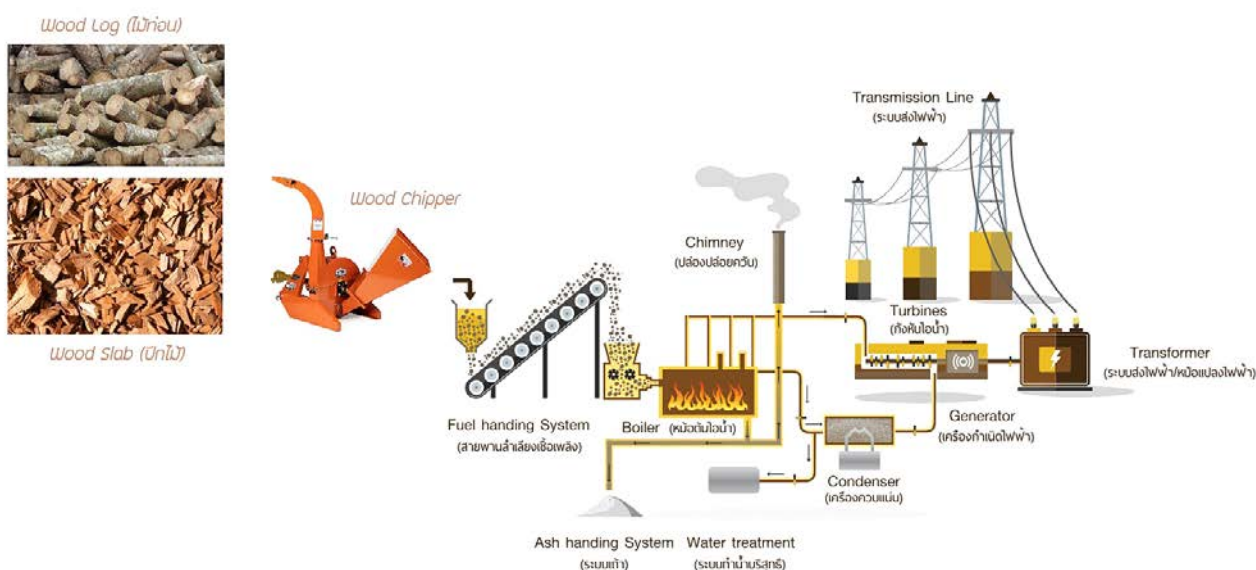
The picture of the production process of electricity from solar energy by PV system

## 2) Biomass Power Plant

The production process of a biomass power plant consists of 7 main systems: 1) A fuel preparation system consisting of scales, piles, fuel shredders, belt drive system, a fuel storage silo, and a fuel feeding system to the furnace 2) A fuel furnace system consisting of the furnace body, which is designed to be sloped in order to convey fuel into the combustion chamber and slag kiln 3) A steam generator system or boiler, consisting of high heat resistant metal pipes, which is coiled back and forth in order to exchange heat to water in the pipe to become steam 4) Power generation systems such as steam turbines and generator 5) Treatment and filtration system for hot gas that leaves the chimney, including hot gas treatment system and a gas chimney 6) The water production system, used in the production process, consisting of the cooling water system and the wastewater treatment system from the production process and 7) the ash collection system for disposal or used to make fertilizer for farmers.

### Monitoring Process

For the power plant operation controlling process, the Group has CCTV and operational control systems that have been developed in a modern manner to easily and accurately control the process with centralized control in real-time through the internet network for



The picture of the biomass fuel management process.



controlling, commanding, and monitoring the operation of power plants in various points. There is a team to control, supervise, solve problems, repair and maintain the power plants of the Group consisting of experienced internal or external experts who have passed strict selection from the Group to ensure that any problems can be solved quickly within the specified time according to the standards and the power plant is kept in good condition, ready for use, and able to distribute electricity normally.

## Investment Privileges

All power plant projects of the Group have been approved for investment by the Board of Investment (BOI) under the investment promotion certificate with the following benefits:

### Benefits from corporate income tax

- 1) Exemption from corporate income tax on net profits received from the electricity generating business for 8 years, starting from the date that the business starts to earn income
- 2) Reduction of corporate income tax for net profit at the rate of 50% of the normal rate for 5 years The benefit starts from the date of expiration of the corporate income tax exemption period. The benefits mentioned above are received by the Company only for solar power generation project

### Other benefits

- 1) Shareholders of the project are also exempted from including dividends received from the project for income tax calculation throughout the period of corporate income tax exemption.
- 2) Exemption from import duty on machinery as approved by the Board
- 3) Receive the authorization to deduct twice the amount of transportation, electricity and water costs for 10 years from the date of starting to earn income from the business. The Company only receives such privileges from solar power generation projects.
- 4) Receive the authorization to deduct 25% of the investment on installation or construction of the facility, in addition to the normal depreciation deduction. The Company only receives such privileges from solar power generation projects.



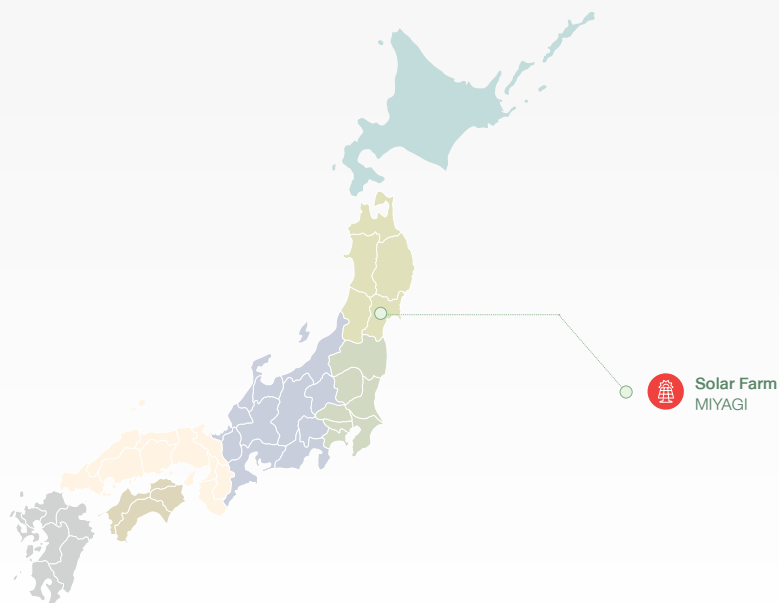


## Commercially Operated Power Plants

As of the end 2022, TSE Group engages in the administration of and investments in local and international renewable-energy businesses has 35 projects. Divided into 34 projects in Thailand with a total capacity of 153.2 MW and 1 project in Japan, with a total capacity of 133 MW, representing a total production capacity of 286.2 MW

A total of 34 commercial power distribution projects are divided into 33 projects in Thailand, 1 project in Japan, representing a total production capacity of 153.2 MW Details are as follows:

Thailand				Japan			
types	number	Capacity	COD	types	number	Capacity	COD
Solar Farm				Solar Farm			
SSE1	10	80 MW	2014	Onikoube	1	133.0 MW	The 275kV high-voltage transmission system has been connected, which is now ready for final stage of testing
INS	1	2 MW	2015				
SSP	1	8 MW	2013				
SCT	1	8 MW	2015				
Solar Farm (Co-Op)							
SLC	1	1 MW	2016				
BSS	1	5 MW	2016				
MARS	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				
Solar Floating							
STF	1	8 MW	2021				
Total	33	145.2 MW		Total	2	146.5 MW	
COD	33	145.2 MW		In Progress	1	133.0 MW	



**Projects in Thailand a total of 34 projects for power supply to the commercial system, totaling 153.2 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

**SSE1-PV 01**



**Capacity :** 8 MW **Location :** Bo Phloi District, Kanchanaburi  
**COD :** September 2013

**SSE1-PV 02**



**Capacity :** 8 MW **Location :** Don Chedi District, Suphanburi  
**COD :** July 2013

**SSE1-PV 03**



**Capacity :** 8 MW  
**Location :** Nong Ya Sai District, Suphanburi  
**COD :** October 2013

**SSE1-PV 04**



**Capacity :** 8 MW  
**Location :** Doem Bang Nang Buat District, Suphanburi  
**COD :** November 2013

**SSE1-PV 05**



**Capacity :** 8 MW  
**Location :** Doem Bang Nang Buat District, Suphanburi  
**COD :** November 2013

**SSE1-PV 06**



**Capacity :** 8 MW  
**Location :** Dan Makham Tia District, Kanchanaburi  
**COD :** June 2014





SSE1-PV 07



Capacity : 8 MW

Location : Tha Muang District, Kanchanaburi

COD : March 2014

SSE1-PV 08



Capacity : 8 MW

Location : Phanom Tuan District, Kanchanaburi

COD : June 2014

SSE1-PV 09

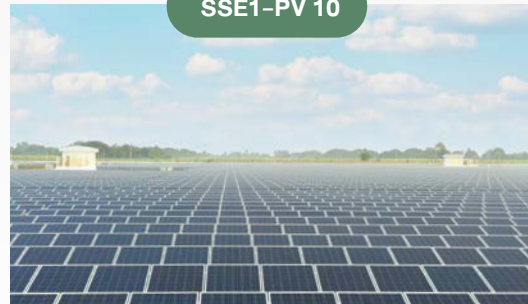


Capacity : 8 MWU

Location : Thong District, Suphanburi

COD : April 2014

SSE1-PV 10



Capacity : 8 MW

Location : Sam Chuk District, Suphanburi

COD : May 2014

## 1.2 Infinity Solar Co., Ltd. (or "INS")

INS



Capacity : 2 MW Location : Wiset Chai Chan District, Ang Thong COD : December 2015

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

SSP



**Capacity :** 8 MW **Location :** Pho Thong District, Ang Thong  
**COD :** March 2013

### 1.4 Soilcretes Technology Company Limited (or “SCT”)

SCT



**Capacity :** 8 MW **Location :** Mueang Nakhon Sawan District, Nakhon Sawan Provinc  
**COD :** December 2015

## 2. Solar Farm (Co-Op) Operated by

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

SLC



**Capacity :** 1 MW  
**Location :** Bang Saphan District, Prachuap Khiri Khan  
**COD :** December 2015

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

BSS



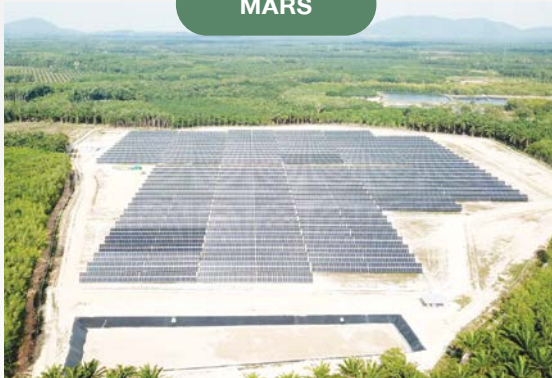
**Capacity :** 5 MW  
**Location :** Bangsai District, Phra Nakhon Si Ayutthaya  
**COD :** December 2016





## 2.3 Mars Solar Co., Ltd (or “MARS”)

### MARS



Capacity : 5 MW Location : Klong Thom District, Krabi COD : 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

#### CE 01



Capacity : 1 MW Location : Homepro Chumphon  
COD : September 2014

#### CE 02



Capacity : 1 MW Location : Homepro Nakorn Sri Thammarat  
COD : July 2015

#### CE 03



Capacity : 1 MW Location : Homepro Surat thani  
COD : December 2014

#### CE 04



Capacity : 1 MW Location : Homepro Songkhla  
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

**NR 01**



**Capacity :** 1 MW  
**Location :** Homepro Lopburi  
**COD :** September 2014

**NR 02**



**Capacity :** 1 MW  
**Location :** Homepro Phrae  
**COD :** February 2015

**NR 03**



**Capacity :** 1 MW Homepro  
**Location :** Nakhon Sawa  
**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

**RE 01**



**Capacity :** 1 MW  
**Location :** The Mall Thapra,  
Bangkok  
**COD :** July 2015

**RE 02**



**Capacity :** 1 MW  
**Location :** The Mall Bangkok,  
Bangkok  
**COD :** July 2015

**RE 03**



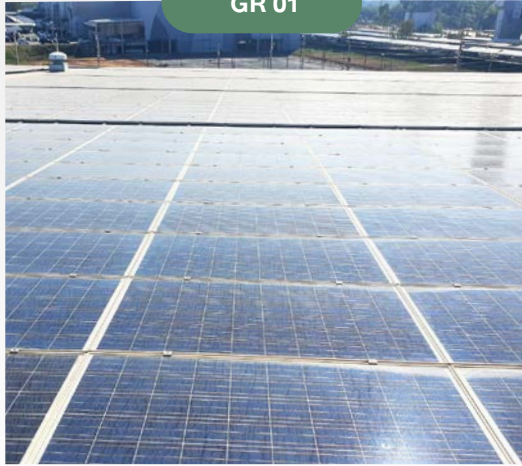
**Capacity :** 1 MW  
**Location :** The Mall Ngamwongwan,  
Bangkok  
**COD :** August 2015



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

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

GR 01



**Capacity :** 1 MW **Location :** Homepro Ubon Ratchathani  
**COD :** March 2015

GR 02

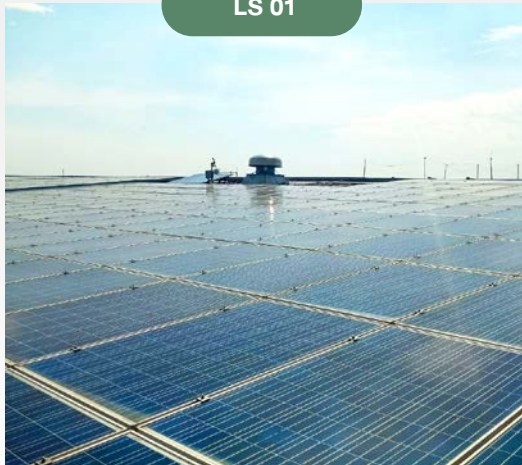


**Capacity :** 1 MW **Location :** Homepro Nakhon Ratchasima  
**COD :** November 2014

### 3.5 Lucky Solar Co., Ltd. (or “LS”)

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

LS 01



**Capacity :** 1 MW  
**Location :** Homepro Ratchaphruek, Bangkok  
**COD :** November 2014

LS 02

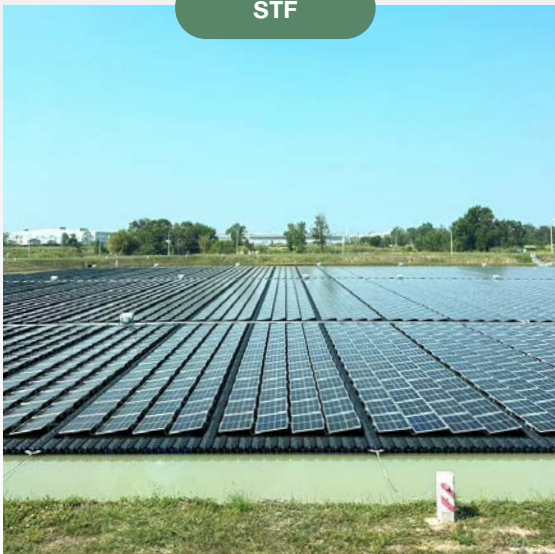


**Capacity :** 1 MW  
**Location :** Homepro Ekamai-Raminthra, Bangkok  
**COD :** February 2015



4. Floating Solar Operated by Siam Tara Floating Co., Ltd. (or “STF”)

STF

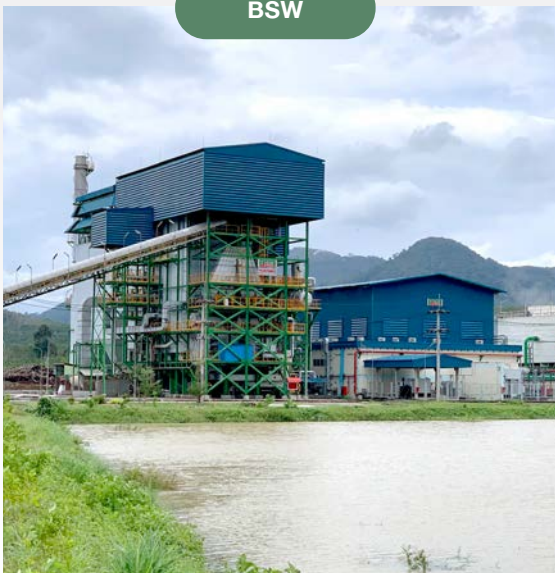


Capacity : 8 MW Location : Kabinburi Industrial Zone, Prachinburi COD : May 2021

5. Biomass Operated by

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

BSW



Capacity : 4.6 MW Location : Phrasaeng District, Surat Thani COD : March 2018

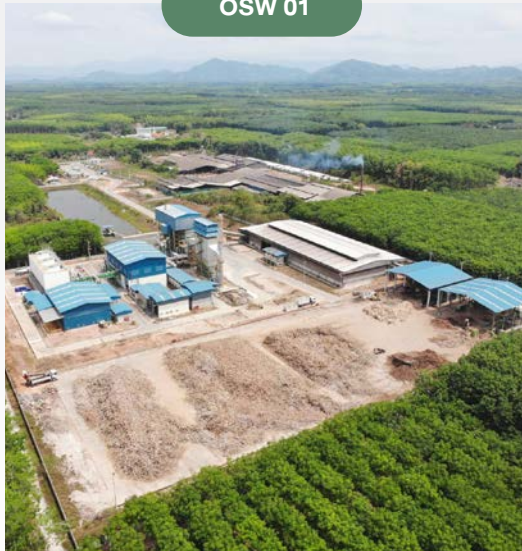




## 5.2 Oscar Save the World Co., Ltd. (or “OSW”)

2 projects with a capacity of 8.8 MW for each project, a total of 17.6 MW

OSW 01



Capacity : 8.8 MW

Location : Chawang District, Nakhon Si Thammarat

COD : August 2018

OSW 02



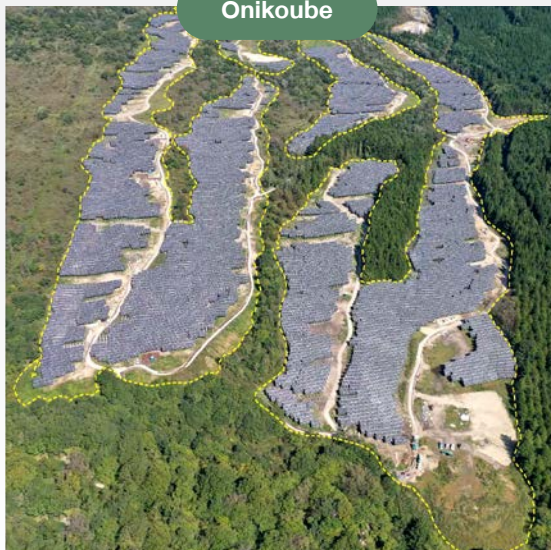
Capacity : 8.8 MW

Location : Chawang District, Nakhon Si Thammarat

COD : October 2018

## Projects in Japan 1 project, operated by Purplesol Goudou Kaisha (or “PPS”)

Onikoube



Capacity : 133 MW Location : Miyaki, Japan

COD : The 275kV high-voltage transmission system has been connected, which is now ready for final stage of testing





## Market and Competition

### 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 or private institution under the Power Purchase Agreement.
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) or private institution according to the contracts, totaling 33 projects. 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 as for the distribution to the private sector, it will connect to the PEA's station. And pay to customers.

### 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.

## Competition conditions

Overview of 2022: Following the COVID-19 crisis, the private power generation business group is expected to experience strong growth, driven by an estimated average annual increase in electricity demand of 3% in the country. This growth is supported by government investment policies, including the power development plan and renewable and alternative energy development plans. Furthermore, the National Energy Policy Council (NEPC) has approved a Feed-in Tariff (FiT) power purchase rate to increase the production of clean energy under Thailand's power development plan, further bolstering the growth potential of the private power generation business group. 2018 - 2037, the 1st revision (PDP2018 Rev.1), during the years 2021 - 2030 (amended) with a total contractual capacity of 9,996 megawatts of clean energy and has approved the principle of purchasing electricity from renewable energy and the proposed purchase rate of electricity from renewable energy in the form of a Feed-in Tariff for the years 2021 - 2030. For power generation projects without fuel costs, the contractual capacity cannot exceed 90 megawatts and can include solar ground-mounted, solar ground-mounted with energy storage systems (Solar+BESS), wind energy, and biogas (from wastewater or waste). The electricity purchase process employs rigorous criteria to evaluate project readiness, qualifications, and technical capabilities, ensuring that only projects with a high probability of successful development and timely electricity supply to the system are selected. In terms of competition, the industry is becoming increasingly intense, with continued investment expansion by large operators and the entry of new entrepreneurs investing in renewable energy production. These factors are attributed to the Energy Regulatory Commission's (ERC) invitation to purchase electricity from renewable energy, across all technologies, through a Feed-in Tariff (FiT) for the years 2022 - 2030.

The private sector market, which utilizes private power purchase agreements (PPAs), is also highly competitive. The Energy Regulatory Commission (ERC) announced at its meeting on July 27, 2022, that it would increase the variable electricity charge (Ft) for electricity billing during the September-December 2022 period. The charge will be 93.43 satang per unit (excluding VAT).

The variable electricity charge (Ft) is expected to increase in 2023, further heightening the competitiveness of the private sector market. Many private sector companies are interested in purchasing electricity through private power purchase agreements (PPAs) to lower their electricity costs.

### Overview of electrical systems in Thailand

The current Thai power system is a centralized system which is, having a power plant and a large transmission system covering the whole country. However, in the future, there will be a distribution of electricity generation and an electrical system control center to the community, as well as an increase in the proportion of electricity generation from renewable



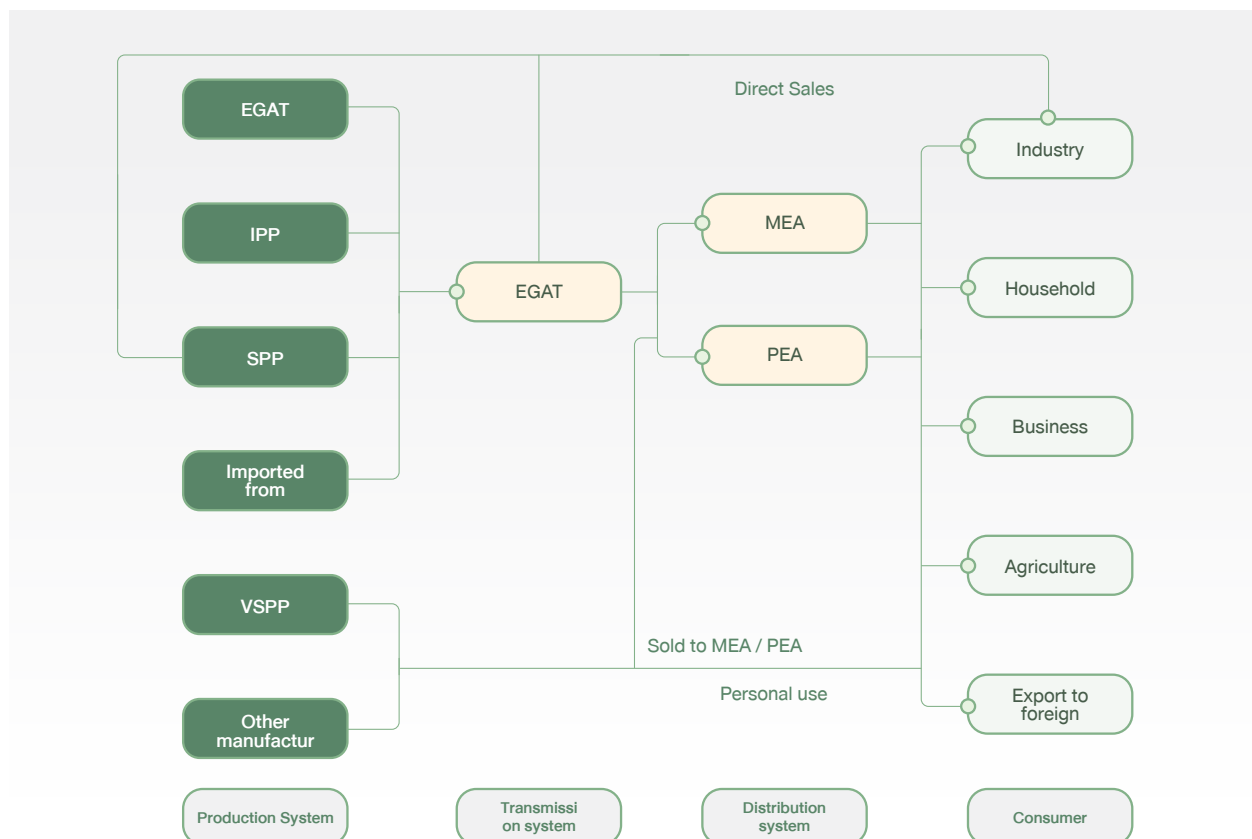
energy. Therefore, the advancement of the electricity industry in the era of changing technology must support the arrival of renewable energy, which is to create flexibility of the electrical system. The power plant must be flexible and be able to operate quickly. The power transmission and distribution system must be developed into a Smart Grid system that works through a remote monitor and is able to retrieve information and commands from the control center to resolve emergency situations immediately. The integration of data from outside agencies is needed for the prediction or forecast of future electricity demand. Renewable energy that still has limitations on instability should be developed in the form of a combination of renewable energy and the main fuel (RE Hybrid Firm) to reduce volatility and be able to produce electricity within the specified contract period, such as solar cells with hydroelectric power plants, wind power plants and fuel cells, and biomass fuel with solar cells. These combinations will become an important alternative for the development of renewable energy in the future, along with the development of energy storage systems to help stabilize electricity distribution from renewable energy. EGAT has piloted three energy storage battery installation projects, namely; the project in Mueang District, Mae Hong Son Province, with a capacity of 4 MW; the Chai Badan high power station in Lopburi Province, with a capacity of 21 MW per hour; and the Bamnet Narong High Voltage Power Station in Chaiyaphum Province, with a capacity of 16 MW-hours.

The development of the electrical industry must be based on fairness to the nation and its people by considering the balance. There must be a stable and flexible power system that is suitable for the overall picture of Thai society and able to be managed in accordance with the stakeholders, including producers, the public, and regulatory agencies, effectively, as well as having competitive electricity bills in order to create investment opportunities and sustainable development of the country.

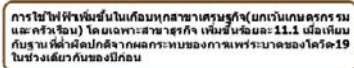
The power plant industry in Thailand consists of 4 main parts: power generation system, power transmission system, power distribution system, and consumers as shown in the diagram.

The demand for electricity and net generation is forecast to grow between 3.0-3.5 percent in the first half of 2023, based on the economic growth rate (GDP) projection provided by the Office of the Federation of Thai Industries on December 7, 2022.

As of the third quarter of 2022, Thailand's energy situation indicates that the final commercial energy consumption is still below the estimated maximum electricity demand of the system, despite an overall increase of 4.4%.



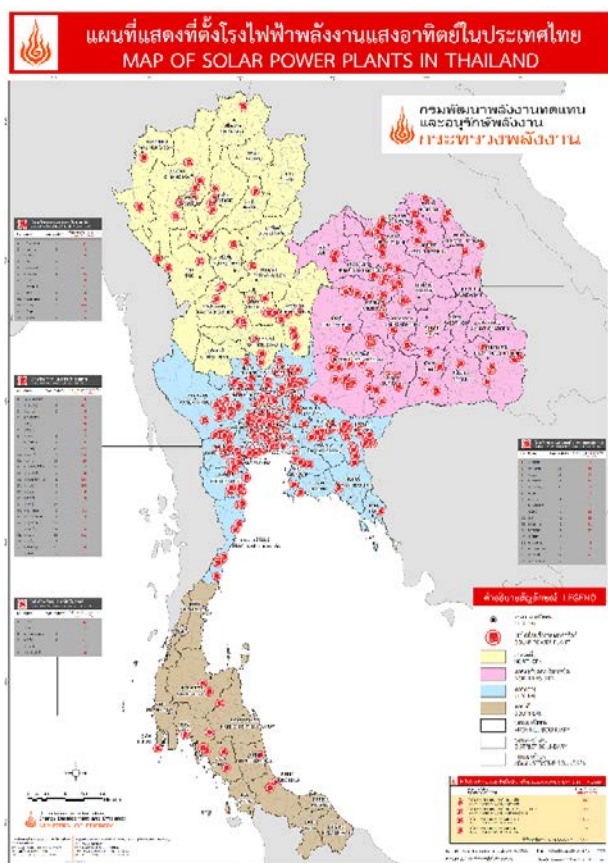
### ความต้องการพลังไฟฟ้าสูงสุดในระบบ 3 การไฟฟ้า



### การจำหน่ายไฟฟ้าของกลุ่มอุตสาหกรรมที่สำคัญ



043



Source: Department of Alternative Energy Development and Efficiency (DEDE) [www.dede.go.th](http://www.dede.go.th)

In the solar power plant business, the business operator shall possess qualifications as specified by the Electricity Authority and the Ministry of Energy in submitting a sales application and connecting the electrical system. The business operator shall be prepared in the 4 areas, as follows:

1. Location and Link Readiness: A contract to buy and sell the land or lease the space, which specifies the point of purchase of electricity in the district and sub-district where the project will be implemented must be provided.
2. Technical Information on Used Technology: The information includes the properties of solar panels, transformers and the selection of inverter model according to the model specified by the electricity provider. If the model is not specified by the electricity provider, there must be a test result to confirm the efficiency of the inverter.
3. Financial Capability: A certificate of financial status from the bank must be provided
4. A public hearing certificate from the community that will proceed with the construction of the power plant must be provided.

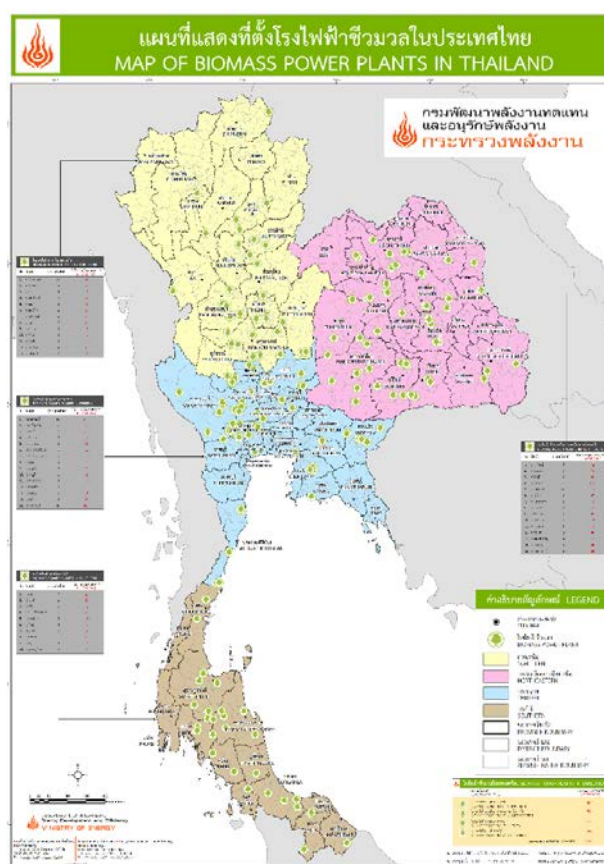
However, for the Commercial Rooftop PV projects, it is not necessary to demonstrate the ability to provide financing or show any public hearing certificate.

Moreover, to obtain a PPA contract, apart from the operator's readiness as mentioned above, a number of external factors that affect competition or the likelihood of acquiring PPA contracts, such as the commission's policy of accepting electricity purchases, national energy policy, the selection process for entrepreneurs according to the Energy Regulatory Commission Regulations on Power Purchase, the number of entrepreneurs interested in participating in the project, etc., must also be taken into consideration.

However, since all the electricity produced has been contracted with the MEA, PEA, or the private sectors under such contracts, the amount or quantity and purchase price are fixed for each period. Each producer has a certain income. Therefore, after entering into the power purchase agreement, the Group has no significant competition with other power producers.

### Biomass Energy Situation in Thailand

Like many countries around the world, Thailand faces energy security challenges, with a heavy reliance on energy



Source: Department of Alternative Energy Development and Efficiency (DEDE) [www.dede.go.th](http://www.dede.go.th)





imports that are expected to continue to increase. To address this, the government has implemented policies to promote renewable energy as a substitute for fossil fuels. In 2019-2022, the most widely used form of renewable energy in Thailand was thermal energy, accounting for 53.20% of all renewable energy consumption, followed by electricity at 30.16% and biofuels at 16.64%. Biomass has the highest proportion of use as a renewable energy source, mainly due to Thailand's agricultural sector, which exports high-value processed agricultural products annually, generating a significant amount of agricultural residue such as chopped rubber wood, rice husks, bagasse, cassava residue, and corn cobs. These domestic raw materials are cost-effective and can be utilized to produce thermal energy and electricity.



## Procurement of products or services

### • 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.

Type of Business	The main factors considered include company
<b>Solar PV</b>	<ol style="list-style-type: none"> <li>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.</li> <li>2. The height of land which affect the likelihood of flooding.</li> <li>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.</li> <li>4. The shape and size of the land suitable for the construction of the power plant</li> <li>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.</li> </ol>
<b>Solar Rooftop</b>	<ol style="list-style-type: none"> <li>1. The lifetime of 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.</li> <li>2. The strength of the building structure Due to the weight of the solar panels.</li> <li>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.</li> <li>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 Homepro, the business is expanding steadily. Without a plan to come into power generation business is not a core business.</li> <li>5. Rental rates which will affect the duration of the payback of the project.</li> <li>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 PPA.</li> </ol>
<b>Solar Floating</b>	<ol style="list-style-type: none"> <li>1. There are water sources that are suitable for Solar Floating, including the appropriate water level. Good water quality and have adequate water supply all year</li> <li>2. Distance from well and system connection</li> </ol>
<b>Biomass</b>	<ol style="list-style-type: none"> <li>1. The distance from the main road the distance from the PEA electrical system interconnection which affects the cost of electric wire. And the rate of electricity loss from distances used in connecting electricity to PEA system.</li> <li>2. The height of the land which affects the likelihood of flooding</li> <li>3. Soil characteristics suitable for the construction of a biomass power plant</li> <li>4. The shape and size of the land suitable for the construction of a biomass power plant.</li> <li>5. Water source for use in production processes</li> <li>6. The fuel source is sufficient to meet the needs at a reasonable distance.</li> </ol>



- Procurement of contractors

Type of Business	The main factors considered include company
<b>Domestic</b>	
<b>Solar PV</b>	<p>In the hiring of EPC Contractors, the Group has a rigorous selection process to ensure that the Group's power plants It will be able to produce electricity efficiently, safely and worth the investment</p> <p>At the same time, for large projects in the country, the Group has hired technical consultants OWL o provide advice from the process of hiring contractors until the construction is completed. to help ensure that the scope of work, investment capital and details of conditions in the contract in accordance with objectives of each project and is reasonable and the contractor has delivered the work and performed according to the specified contract. and has entered into a contract to hire a turnkey contractor with expertise in design and construction</p>
<b>Solar Rooftop</b>	<p>The Group has chosen to procure the main raw materials by itself, such as solar panels and inverters, etc. The Company has procured directly from the manufacturers. and hiring contractors (Sub-Contractor) with experience, expertise and potential suitable for each area of the project</p> <p>At the same time, the Group has hired Excellence Engineer International technical consultant. To provide consultation from the design of the construction contractor's engineering structure Construction quality inspection until completion of construction to ensure that the contractors deliver quality work and in accordance with the contract</p>
<b>Solar Floating</b>	<p>The company selects and purchases the main equipment such as solar panels. Power inverter and buoyancy in this regard, we have hired a technical consultant, GGE, a professional and experienced company</p>
<b>Biomass</b>	<p>In the outsourcing of EPC Contractors, the Group has a rigorous selection process to ensure that the Group's power plants It will be able to produce electricity efficiently, safely and worth the investment</p> <p>At the same time, for 3 large-scale biomass power plants that will occur simultaneously in the country, The Group has hired technical consultants Engineering Evolution, JERA Power (Thailand), and Tractable Engineering to provide advice from the design process Preparation of project details, EPC contracts and procurement, work supervision and inspection of contractors' work from the start of construction until the commercial power distribution is complete to help ensure that the scope of work, investment capital and details of conditions The contracts are consistent with the objectives of each project and are reasonable. And the contractor has delivered the work and performed according to the specified contract. and has entered into a contract to hire a turnkey contractor with expertise in design and construction</p>
<b>Overseas</b>	
<b>Solar PV</b>	<p>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</p>



- Procurement of Raw Materials

Type of Business	Main raw material
<b>Solar PV</b>	The main raw material for power generation is the solar energy whose supply is unlimited, depending on geography and climate. For procurement of main equipment, the Group joins hands with its EPC contractors to select all main equipment used in the Group's power plant projects.
<b>Solar Rooftop</b>	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.
<b>Solar Floating</b>	The main equipment is supplied by the company by purchasing directly from the manufacturer. This is based on information and experience from the Group's past solar farm PV plant construction. The buoys for the construction of the company are selected from reliable suppliers.
<b>Biomass</b>	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.

- Procurement of O&M Contractors

Type of Business	Procurement of O&M Contractors
<b>Solar PV</b>	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
<b>Solar Rooftop</b>	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.
<b>Solar Floating</b>	The Company Group will manage and maintain the said power plant by experienced employees. Knowledge of management and maintenance is passed on from a turnkey contractor team.
<b>Biomass</b>	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.



## Business Assets

### Main fixed assets

The Group's main fixed assets as of 31 December 2022 are land, land improvements, power plants, office buildings, vehicles, power plants under construction, and investment properties, with a net book value of 11,463 million Baht, or 56% of total assets.

### Asset Details

List	Types of Ownership	Net Book Value (Million Baht)			Obligation
		Assets in Consolidated Financial Statements	Assets of Controlled Entity Combined <sup>1</sup>	Total	
1. The land where the power plant is located	Owned	646	193	839	Mortgage lien <sup>2</sup>
2. Land improvement	Owned	69	1	70	Mortgage lien <sup>2</sup>
3. Power plant	Owned	3,221	2,291	5,512	Mortgage lien <sup>2</sup>
4. Office building	Owned	9	--	9	Mortgage lien <sup>2</sup>
5. Tools and Equipment	Owned	20	3	23	Mortgage lien <sup>2</sup>
6. Furnishings and office supplies	Owned	4	--	4	-None-
7. Vehicle	Owned	8	--	8	-None-
8. Power plant under construction	Owned	7,385	3	7,388	Mortgage lien <sup>2</sup>
9. Investment property	Owned	101	--	101	-None-
Total		11,463	2,491	13,954	

Remark: <sup>1</sup>. The jointly controlled entity's assets represent the assets used in the Solar Farm type of PV power plant project, which is not reflected in the consolidated financial statements because the Company employs the equity method of accounting (Take Equity Method).  
<sup>2</sup>. A mortgage was used as collateral for financial institution loans for the development of the Thermal Power Plant Project and the Solar Farm PV Power Plant with a total mortgage credit line of 12,180 million Baht (the mortgage amount includes the mortgage obligation of PV type Solar Farm of 4,140 million Baht).

## Summary of Important Contracts

Summary of the Company's and subsidiaries' contracts is classified by type of contract as follows:

### 1. Power Purchase Agreement (PPA)

All power plant projects of the Group is under a power purchase agreement with MEA, PEA, or the private sector, with the essence of the contract as follows:

<b>Contract Parties</b>	<b>The Group ("Power Producer") and MEA or PEA ("Electricity Authority") / Utilities Company</b>
<b>Contract Period</b>	<p><b>Solar Farm (Adder type sponsored projects)</b></p> <p>The contract term is 5 years and can be automatically renewed for 5 years at a time. The contract is effective until it is terminated by the electricity supplier or when the other party breaches the contract, including</p> <ul style="list-style-type: none"> <li>• Siam Solar Energy 1 Company Limited</li> <li>• Siam Solar Power Company Limited</li> </ul> <p><b>Solar Rooftop (FIT type sponsored projects)</b></p> <ul style="list-style-type: none"> <li>• Champ Energy Company Limited. Contract term: 25 years from COD</li> <li>• North Rooftop Company Limited. Contract term: 25 years from COD</li> <li>• Roof Energy Company Limited. Contract term: 25 years from COD</li> <li>• Green Rooftop Company Limited. Contract term: 25 years from COD</li> <li>• Lucky Solar Company Limited. Contract term: 25 years from COD</li> </ul> <p><b>Solar Farm (Co-op) (FIT type sponsored projects)</b></p> <ul style="list-style-type: none"> <li>• Solar Community Company Limited. Contract term: 25 years from COD</li> <li>• BS Bangsai Solar Company Limited. Contract term: 25 years from COD</li> <li>• Mar Solar Company Limited. Contract term: 25 years from COD</li> </ul> <p><b>Solar Farm (Others) (FIT type sponsored projects)</b></p> <ul style="list-style-type: none"> <li>• Infinity Solar Company Limited. Contract term: 25 years from COD</li> <li>• Soilcretes Technology Company Limited. Contract term: 25 years from COD</li> </ul> <p><b>Solar Floating (Private PPA)</b></p> <ul style="list-style-type: none"> <li>• Siam Tara Floating Company Limited. Contract term: 25 years from COD</li> </ul> <p><b>Biomass (FIT type sponsored projects)</b></p> <ul style="list-style-type: none"> <li>• Bangsawan Green Company Limited. Contract term: 20 years from COD</li> <li>• Oscar Save the World Company Limited. Project 1, Contract term: 15 years 4 months from COD</li> <li>• Oscar Save the World Company Limited. Project 2, Contract term: 15 years 4 months from COD</li> </ul> <p><b>Solar Farm PV Project (Overseas)</b></p> <p>The contract term is 20 years from COD.</p>
<b>Termination of the Contract:</b>	<p>The parties agree to terminate the contract in the following cases:</p> <ol style="list-style-type: none"> <li>1. The Power Producer submits a written letter to the Electricity Authority expressing its intention to terminate the power purchase agreement by the termination of the contract.</li> <li>2. If either party fails to comply with any of the contracts, the other party may notify the non-compliant party and require that party to take corrective action. If not, the other party may terminate the contract.</li> </ol>

Remark: The purchase of electricity by the Electricity Authority will be in accordance with the conditions stipulated in the regulations for the purchase of electricity from very small power producers for electricity generation from renewable energy. The Electricity Generating Authority will purchase electricity from the Power Producer in accordance with the total power generated but not exceeding the maximum offered capacity as stipulated in the PPA. The electricity supplier does not have any obligations from producing electricity lower than the amount specified in the purchase agreement.





## 2. Construction Contract

Summary of details for each type of power plant projects is as follows:

### Solar Floating

Contract Parties	STF (“Employer”) (1) Green Grow Energy Company Limited (2) Ensys Company Limited (3) Thai Meidensha Company Limited (the “Contractor”) (4) Texplot Company Limited (the “Contractor No.1-4”)
Service Scope	Design, develop, install, construct and test an 8-megawatt floating solar power generation system.
Guarantees for Construction Works and All kinds of Installed Equipment	1 year from the date of acceptance of work
Guarantees and Collaterals	The contractor has guaranteed both during the construction and after the construction has been completed in the form of a construction guarantee to ensure that the contractor’s operation is in accordance with the contract and a warranty against defects to ensure the contractor’s operation during construction and after the construction has been completed at the rate and duration agreed upon in the contract.

## 3. Operation and Maintenance Agreement

Contract Parties (Domestic / Abroad)	SSE1 / BSW / OSW (“Employer”) Connery (Thailand) Company Limited or Ensys Company Limited (“Contractor”)
Contract Period (Domestic / Abroad)	SSE1 – 10 years from the date of completion of the power plant construction or COD, depending on mutual agreement / BSW / OSW – 5 years from the date of completion of the power plant construction or COD, depending on mutual agreement
Contract Service Fee	Pay in advance or pay annually at the agreed rate
Service Scope	Manage and maintain power plants
Termination of the Contract	The Employer may terminate the contract according to the conditions specified in the contract by notifying the contractor in advance in writing within the specified time.

#### 4. Project Area Rental Contract

<b>Lessee</b>	<b>Group</b>
<b>Lessor</b>	The Mall Shopping Complex Company Limited or Home Product Center PCL.
<b>Contract Period</b>	25 years from COD
<b>Leased Property</b>	The roof-deck area and other areas of the building used in the project
<b>The Purpose of the Contract</b>	To be used as a place to install solar cells and/or photovoltaic panels and other devices related to producing solar power installed on the roof (Solar PV Rooftop) and distribute electricity to MEA and/or PEA under the rooftop solar power purchase agreement.
<b>Rental Fee</b>	can be divided into two forms, one of which is as follows: 1. Minimum rental cost per square meter per year or 2. Revenue Sharing according to the agreed period and rate
<b>Termination of the Contract</b>	<p>The party who does not breach the contract has the right to terminate the contract if the other party breaches the contract and does not make amendments or acts in accordance with the contract within the specified period. If the Lessor breaches the contract, the Lessor agrees to indemnify the lessee for all damages received from the breach of this contract.</p> <p>In the event of force majeure that the parties are unable to control and are unpredictable that significantly affects the performance of the contract by either party and which fails to take a remedy within the specified period, either party has the right to terminate the contract.</p>

<b>Lessee</b>	<b>Mar Solar Company Limited</b>
<b>Lessor</b>	Ban Huai Phlu Nang Rubber Plantation Fund Cooperative
<b>Contract Period</b>	26 years (1 January 2018 – 31 December 2043)
<b>Leased Property</b>	The total land area for the establishment of the project
<b>The Purpose of the Contract</b>	To be used as a place to install solar cells and/or photovoltaic panels and other devices related to producing solar power on the ground and sell electricity to PEA under the ground-mounted solar power purchase agreement for government agencies and agricultural cooperatives. B.E. 2017
<b>Termination of the Contract</b>	The party who does not breach the contract has the right to terminate the contract if the other party breaches the contract and fails to make amendments or act in accordance with the contract within the specified period.



Lessee	Prachuap Khiri Khan Coconut Farmers' Cooperative Limited
Lessor	Solar Community Company Limited
Contract Period	25 years 6 months (23 August 2016 – 22 February 2042)
Leased Property	Total land of 15 rai
The Purpose of the Contract	for the Lessor to set up an establishment of a ground-mounted solar power plant
Termination of the Contract	If either party commits any of the offenses, the at-fault party agrees to be liable to indemnify, damages, lost, and other expenses to the counterparty and the counterparty who does not breach the contract may terminate this contract upon giving a notice to the breaching party within 45 days.

## 5. Insurance Contract

For all the power plant projects that have begun their commercial operations, the Group has provided non-life insurance and support insurance with the insured property, namely: the structure of the building, machinery, and various accessories, as well as business interruption insurance. The compensation period is 12 months. For projects that are under construction, the Company has construction insurance, in which the contract period will be according to the construction period of the project. The Group and/or contractor are determined as the insured, and a reputable and reliable insurance business operator is determined as the guarantor. However, commercial banks, lenders, or group companies are the beneficiaries.

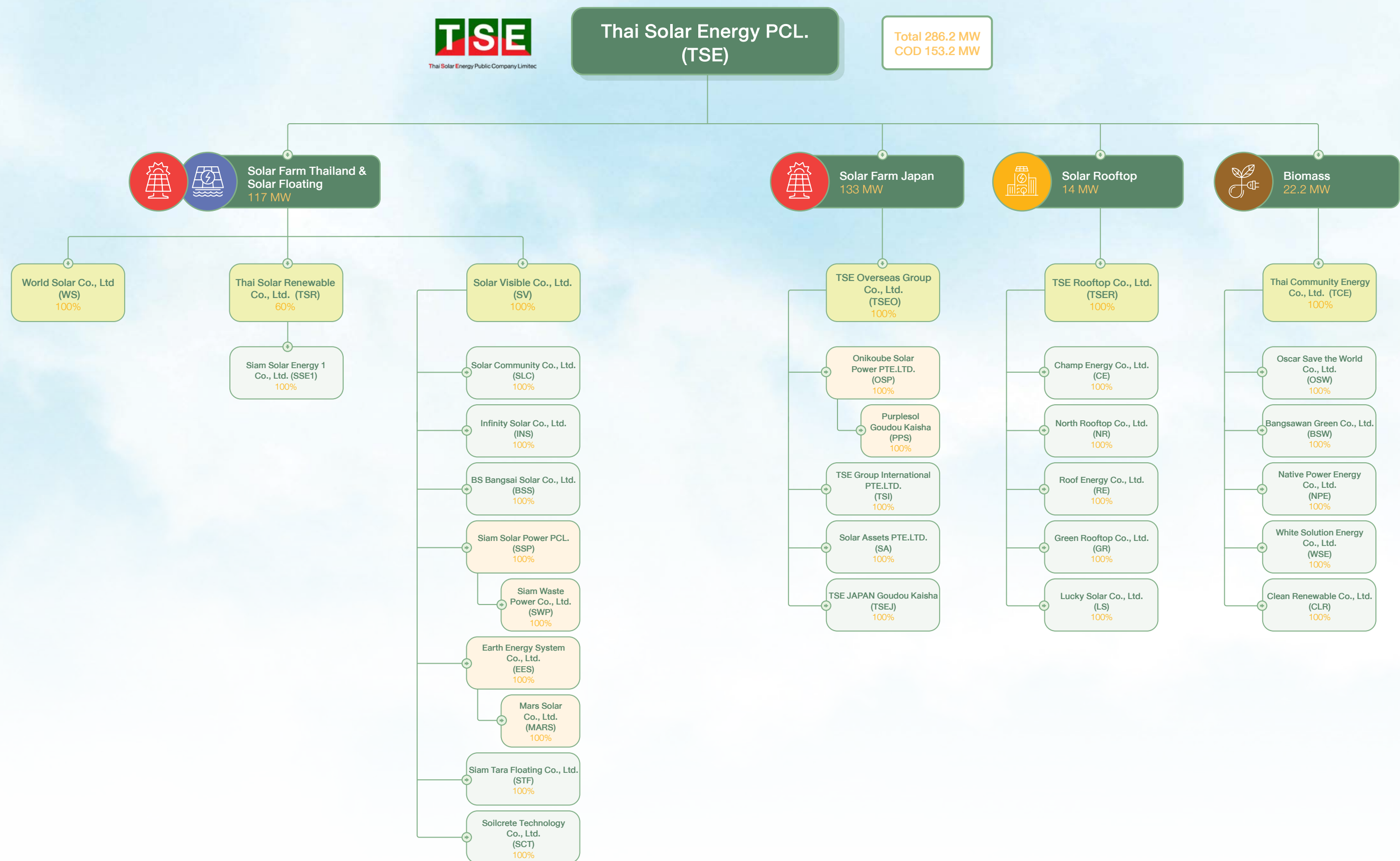
The type of Group's insurance is Industrial All Risks Insurance, which covers damage caused by natural disasters, accidents, loss or damage to the insured property and business interruption, including the first part of the damage, business interruption insurance, and third party liability insurance.

## Work That Has Not Yet Been Delivered

-None-



Shareholding Structure of TSE Group



## General information on TSE-invested companies

Information of the Company's Subsidiaries

Company	Business	Registered Capital (Million baht)	Paid-up Capital (Million baht)	Percentage (%)
<b>Address of Company Group</b> 725 S-Metro, 19 <sup>th</sup> floor, Sukhumvit Road, KlongtanNua, Wattana Bangkok 10110 Tel. : 02 258 4530-3 Fax. : 02 258 4534				
<b>The companies held by Thai Solar Energy PLC. ("the Company")</b>				
1. Thai Solar Renewable Co., Ltd. – TSR	Holding Company	583.33	583.33	60
2. Solar Visible Co., Ltd. – SV	Holding Company	502	126.50	100
3. World Solar Co., Ltd. – WS	Solar Farm	1	0.65	100
4. TSE Rooftop Co., Ltd. – TSER	Holding Company	382	232	100
5. Thai Community Energy Co., Ltd. – TCE	Holding Company	450	450	100
6. TSE Overseas Group Co., Ltd. – TSEO	Holding Company	1,530	1,530	100
<b>The companies held by Thai Solar Renewable Co., Ltd. – TSR</b>				
7. Siam Solar Energy 1 Co., Ltd. – SSE1	Solar Farm	1,800	1,800	100
<b>The companies held by Solar Visible Co., Ltd. – SV</b>				
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. Siam Solar Power PCL. – SSP	Solar Farm	400	300	100
12. Earth Energy System Co., Ltd. – EES	Holding Company	1	1	100
13. Siam Tara Floating Co., Ltd. – STF	Solar Floating	103.18	103.18	100
14. Soilcrete Technology Co., Ltd. – SCT	Solar Farm	225.40	225.40	100
<b>The companies held by Siam Solar Power PCL. – SSP</b>				
15. Siam Waste Power Co., Ltd. – SWP	RDF	1	1	100
<b>The companies held by Earth Energy System Co., Ltd. – EES</b>				
16. Mars Solar Co., Ltd. – MARS	Solar Farm	86.50	86.50	100



Company	Business	Registered Capital (Million baht)	Paid-up Capital (Million baht)	Percentage (%)
<b>The companies held by TSE Rooftop Co., Ltd. – TSER</b>				
17. Champ Energy Co., Ltd. – CE	Solar Rooftop	52	52	100
18. North Rooftop Co., Ltd. – NR	Solar Rooftop	39	39	100
19. Roof Energy Co., Ltd. – RE	Solar Rooftop	39	39	100
20. Green Rooftop Co., Ltd. – GR	Solar Rooftop	26	26	100
21. Lucky Solar Co., Ltd. – LS	Solar Rooftop	26	26	100
<b>The companies held by Thai Community Energy Co., Ltd. – TCE</b>				
22. Oscar Save the World Co., Ltd. – OSW	Biomass	582	582	100
23. Bangsawan Green Co., Ltd. – BSW	Biomass	174	174	100
24. Native Power Energy Co., Ltd. – NPE	Holding Company	1	0.25	100
25. White Solution Energy Co., Ltd. – WSE	Holding Company	1	0.25	100
26. Clean Renewable Co., Ltd. – CLR	Holding Company	15	3.75	100
<b>The companies held by TSE Overseas Group Co., Ltd. – TSEO</b>				
27. Onikoube Solar Power PTE.LTD – OSP <b>Address</b> 41 Middle Road #04-00 Boon Sing Building, Singapore (188950)	Holding Company	7,815.95 Million JPY	7,815.95 Million JPY	100
28. TSE Group International PTE. LTD. – TSI <b>Address</b> 41 Middle Road #04-00 Boon Sing Building , Singapore (188950)	Holding Company	19.94 Million JPY	19.94 Million JPY	100
29. Solar Assets PTE. LTD. – SA <b>Address</b> 41 Middle Road #04-00 Boon Sing Building , Singapore (188950)	Holding Company	18.88 Million JPY	18.88 Million JPY	100
30. TSE Japan Goudou Kaisha – TSEJ <b>Address</b> Shin Otemachi Building, 3F., xLINK Otemachi Room No.104, 2-2-1, Otemachi, Chiyoda-ku, Tokyo	Solar Farm	3 Million JPY	3 Million JPY	100
<b>The companies held by Onikoube Solar Power PTE.LTD – OSP</b>				
31. Purplesol Goudou Kaisha – PPS <b>Address</b> 15-1 Aza Kamurodake, Onikoube, Naruko Onsen, Osakishi, Miyagi Prefecture	Solar Farm	4,022.93 Million JPY	4,022.93 Million JPY	100



## Shareholders

The company's shareholding structure as of the latest book closure date on 30 December 2022, prepared by Thailand Securities Depository Co., Ltd. (TSD) is as follows:

	Number of shareholders	Number of shares	Percentage
Thai securities holders	10,922	1,407,760,001	66.48
Foreign securities holders	20	709,956,280	33.52
<b>Total</b>	<b>10,942</b>	<b>2,117,716,281</b>	<b>100.00</b>

## The Company's top 10 major shareholders as at 30 December 2022:

	Name	Number of shares	%
1.	UBS AG SINGAPORE BRANCH	421,322,650	19.90
2.	P.M. Energy Co., Ltd.	396,331,500	18.72
3.	Sino-Thai Engineering and Construction Public Co., Ltd.	190,575,000	9.00
4.	LGT BANK (SINGAPORE) LTD	150,000,000	7.08
5.	CREDIT SUISSE AG, SINGAPORE BRANCH	76,247,946	3.60
6.	CITI (NOMINEES) LIMITED-S.A PBG CLIENTS SG	39,900,000	1.88
7.	Miss Ratana Maleenont	37,563,200	1.77
8.	Bualuang Infrastructure RMF	13,216,100	0.62
9.	ThaiNVDR Co., Ltd.	12,140,561	0.57
10.	Mr. Sanit Dussadeenod	11,398,900	0.54
	<b>Total Top 10 Major Shareholders</b>	<b>1,348,695,857</b>	<b>63.69</b>
	Other Shareholders	769,020,424	36.31
	<b>Total</b>	<b>2,117,716,281</b>	<b>100.00</b>

## Major Shareholder's Agreement

- None -

## Registered and paid-up capital

As of 31 December 2022, the Company registered capital of 2,477,474,454 Baht, divided into 2,477,474,454 shares with a par value of 1.00 Baht and paid - up capital of 2,117,716,281 Baht, divided into 2,117,716,281 shares with a par value of 1.00 Baht.



## Issuance of other securities

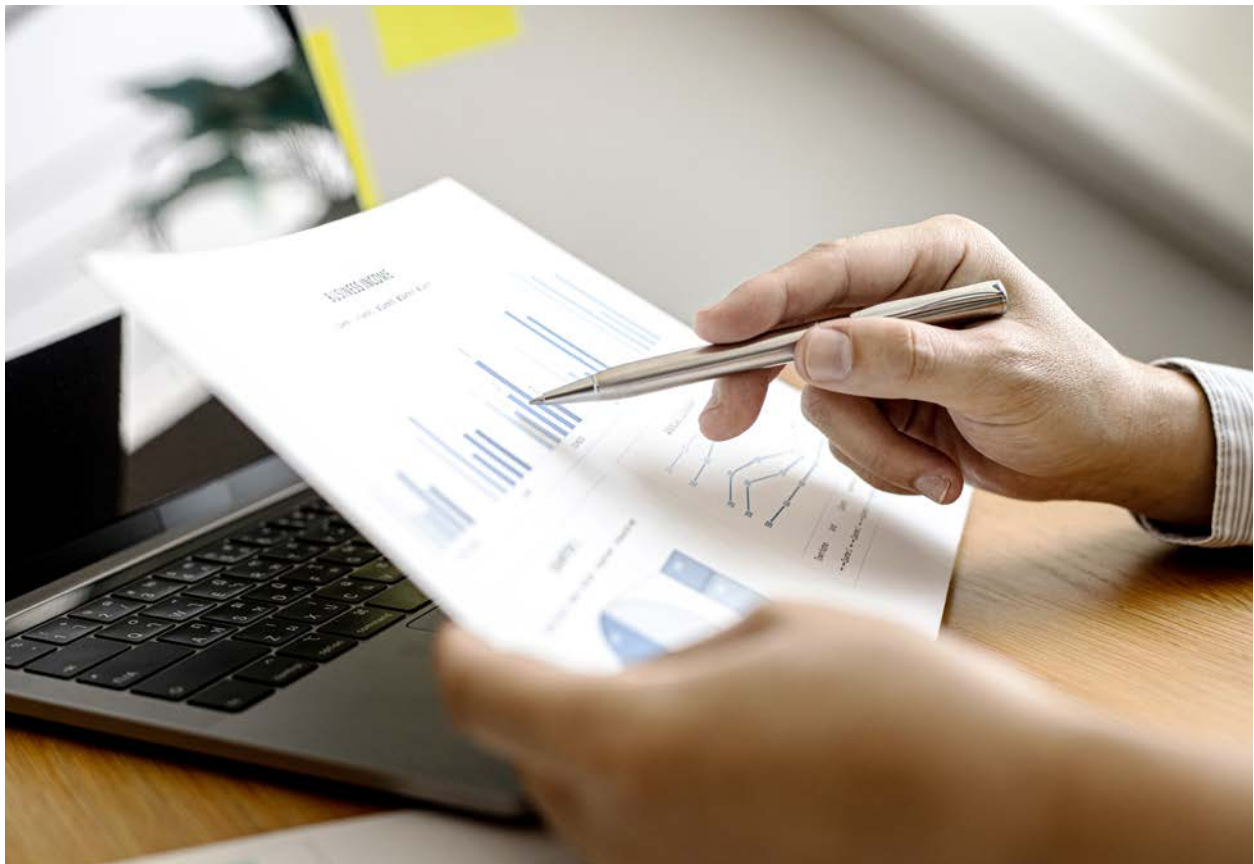
### (1) Debenture

As of 31 December 2022, The Company has outstanding balance from the issuance of debentures, totalling 3,449.60 million baht, with details as follows:

Bond number	Debenture type	Amount (Baht million)	Issued date	Maturity date
TSE240A	name-registered, unsubordinated and unsecured debentures with debenture holders' representative, with the issuer's right to early redemption	2,350.00	27 October 2022	27 October 2024
TSE234A	name-registered, unsubordinated and unsecured debentures with debenture holders' representative.	1,099.60	10 April 2020	10 April 2023
Total value of debentures remaining		3,449.60		

### (2) Bill of Exchange

As of 31 December 2022, The Company has no outstanding bills of exchange.



## 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.





# Risk factors on business operation

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. Business Risks of the Company and the Group

### 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 Interest rate volatility risk

Long-term loans in the form of debentures with fixed interest rates and borrowing from financial institutions with fixed and adjustable interest rates are provided by the Company. The volatility of such borrowing rates, however, is rather minimal. The Company has managed to keep the fixed-to-floating interest rate ratio at a level appropriate for the nature of the Company's industry.

### 1.5 Exchange rate volatility risk

The Company intends to manage the impact of currency exchange rates on investments and returns from projects with foreign investments denominated in different currencies by closely monitoring and analyzing the movements and factors affecting exchange rate changes in order to consider appropriate financial management options, including the selection of various types of financial instruments (hedging instruments) to reduce the risk of exchange rate volatility.

### 1.6 Risk from price volatility and the amount of fuel used in power generation

The Company operates three biomass power plant projects that utilize wood chips for electricity generation. Since commencing commercial operations in 2018, the Company has had to procure sufficient wood chips each year for production. However, this may be impacted by the limited supply of wood chips and seasonal fluctuations in their prices.

The Company conducted a study on the availability of wood chips in various regions and found that the southern region has sufficient wood chips for production. Therefore, the Company decided to establish the biomass project in this area, which has enabled it to procure enough wood chips since the commencement of commercial operations. Additionally, the Company has invested in wood chippers to reduce production costs and maintains adequate wood chip inventories in the warehouse to mitigate the risk of price fluctuations caused by seasonal variability in wood chip prices.

### 1.7 Risk from maintaining financial ratios

Pursuant to the terms of the Rights and Obligations of the Debenture Issuer and Bondholders, the Company is obligated to maintain a net debt to equity ratio not exceeding 3:1. This ratio is calculated based on the information presented in the audited consolidated financial statements for each fiscal year. As of December 31, 2022, the Company's net debt to equity ratio, as per the aforementioned terms, was 2.04 times.

If the net debt to equity ratio exceeds the limit specified in the terms of the rights, the Company may default and be required to repay the debentures before their due date. However, the Company has implemented measures to maintain a net debt to equity ratio that is lower than the required financial ratio specified in the terms of rights. Moreover, the Company has established a reserve line and other financial instruments to manage its liquidity in the short and long term.



## 2. Operational risk

### 2.1 Loss of personnel in key positions risk

Like any other company, the Company is vulnerable to the loss of key personnel that may impact its operational efficiency and success. To mitigate this risk, the Company has implemented a succession plan that involves developing the potential of employees who may replace key personnel in terms of technical and soft skills. Additionally, the Company conducts engagement surveys annually to collect information that enables analysis of the causes of personnel loss in important positions and identify preventative measures from the outset.

### 2.2 Potential labor shortage risk

The Company faces challenges in recruiting qualified personnel for specific positions, especially when opening new positions or when vacancies arise. Due to the expansion of the business, it may become increasingly challenging to find suitable candidates for these roles compared to others. However, the Company has taken steps to address this issue by continually expanding the channels used for recruitment and analyzing appropriate channels for each position. Moreover, the Company has invested in developing the potential of its employees to perform tasks in certain positions, thereby reducing the labor shortage issue and providing employees with a clear career path.

### 2.3 Risk of employee error in operations

Every employee is capable of making a mistake at any time. However, the Company has implemented measures to minimize errors, such as establishing work processes, creating manuals for complex tasks, and providing on-the-job training for new employees. In the event of an error, the Company encourages employees to report it, enabling a collaborative analysis of the root cause and the development of solutions to prevent the recurrence of the same error in the future.

### 2.4 Safety, occupational hygiene, and working environment risk

Due to the nature of the Company's biomass power plants, there are inherent risks associated with safety, occupational health, and the working environment which are higher compared to other factories and head offices. To mitigate these risks, the Company provides appropriate personal protective equipment for the workplace, conducts regular and annual analyses of potential occupational hygiene risks, and assesses the health of employees based on their age and working conditions to prevent potential hazards in a timely manner.

## 3. Investment risk imposed on the securities holders

### 3.1 Credit Risk

Bondholders face the risk that interest or principal may not be paid if the issuer's business and performance do not meet expectations or the issuer's assets are insufficient to support the Company's operations to pay off debt before investing. Investors should consider the issuer's financial position and debt repayment ability based on the information contained in the prospectus when assessing the issuer's credit risk. Investors can view credit ratings provided by credit rating agencies for their investment decisions. If the bond's credit rating is low, the credit risk of the bond or its issuer is high, and the return that investors receive should also be high to offset the high risk of the bond. Investors are advised to keep up-to-date with the issuer's news and updates on credit ratings from the website of the SEC, credit rating agencies, or the Thai Bond Market Association.



### 3.2 Price Risk

The market price of an instrument can be influenced by various factors, including interest rate levels in financial markets, policies of the Bank of Thailand, overall economic conditions, inflation rates, the maturity of instruments, and excess or deficit demand for instruments. Consequently, holders of instruments may be impacted by price volatility if the instrument is traded prior to maturity.

### 3.3 Liquidity Risk

The value of an instrument can be influenced by a multitude of factors, such as interest rate fluctuations, policies of the Bank of Thailand, prevailing economic conditions, inflation rates, maturity of the instrument, and excess or insufficient demand. As a result, holders of such instruments may be subject to price volatility if they are traded before maturity.

Moreover, the transfer or sale of the instruments is restricted to qualified institutional buyers and high net worth investors, as defined in the Securities and Exchange Commission's Notification No. Kor.Jor. 39/2021, "Determination of Definitions for Qualified Institutional Buyer, Special High Net Worth Investors, and High Net Worth Investors," dated December 24, 2021. Any transfers made by individuals who do not fall under these categories will not be accepted by the debenture issuer and/or registrar, except for inheritance transfers.

### 3.4 The risk of having a condition that the debenture issuer can redeem the debentures before maturity (callable)

If the debentures are callable, the debenture issuer may redeem them before maturity, which may lead to the debenture holders facing the reinvestment risk. This risk occurs when a tranche of debentures is subject to the terms of right, granting the issuer the right to redeem all debentures or to redeem upon the occurrence of specified conditions in the terms of right. If the debenture issuer exercises the right to redeem such debentures, the debenture holders may face the reinvestment risk. They may not be able to reinvest the proceeds from the early redemption of the debentures in other instruments that provide equal or better returns than the debentures.

### 3.5 Risk from the group's debt that has the right to receive repayment first (priority debt).

The information provided states that as of December 31, 2022, the group's financial liabilities, excluding lease liabilities, amounted to 13,511 million baht. A majority of this amount is a secured loan from a financial institution to a subsidiary, with a first repayment of 9,578 million baht. This results in the ratio of priority debt to total debt being 71 percent, which is more than 50 percent of the total liabilities. As a result, the Company's unsecured creditors have lower rights to claim assets than secured creditors. However, the Company is receiving stable cash flow from current and future power plant projects in the form of dividends received from subsidiaries. To manage this situation, the Company plans to implement a suitable and efficient financial management plan to improve its liquidity and credit status.

### 3.6 Default risk

The company has no Historical records of default either on principal or interest for debentures, mortgages, or loans from commercial banks, finance and securities firms, credit fanciers, and specialized financial institutions (SFIs) and historical records of default of the past 3 years

## 4. Risk of investing in foreign securities

- None -



## Business sustainability development

### Policy and goals for sustainability management

The Group has established a vision for the overall business operation that will expand and grow in tandem with the entire Group of Companies, allowing them to support one another while conducting business operations while adhering to the principles of social and environmental responsibility and taking into account all stakeholders, including not taking any actions that have negative consequences for stakeholders and being able to grow the business steadily and sustainably.

### Issue management in the business value chain

The Group recognizes the importance of stakeholder participation and believes that solid relationships built on trust, as well as stakeholder comments and suggestions, will influence the organization's ability to develop and grow sustainably. Furthermore, stakeholder management will assist the Company in effectively responding to stakeholders' requests and reducing the danger of damage to its image and economic chances.

## Value Chain

### 1. Solar Farm

Domestic



Sunlight  
(Install the solar on the ground)



Generate electricity

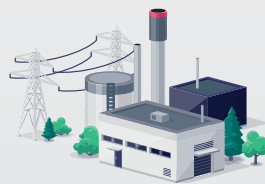


Sold to MEA / PEA

Oversea



Sunlight  
(Install the solar on the ground)



Generate electricity

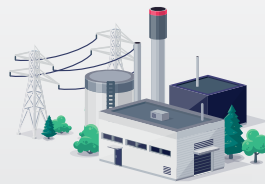


Sold to the Electricity Authority of  
each region in Japan

### 2. Solar Rooftop



Sunlight  
(Install rooftop)



Generate electricity

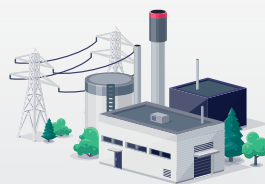


Sold to MEA / PEA

### 3. Solar Floating



Sunlight  
(Install floating)



Generate electricity



Sold to private PPA

### 4. Biomass



Chopped wood



Generate electricity



Sold to PEA

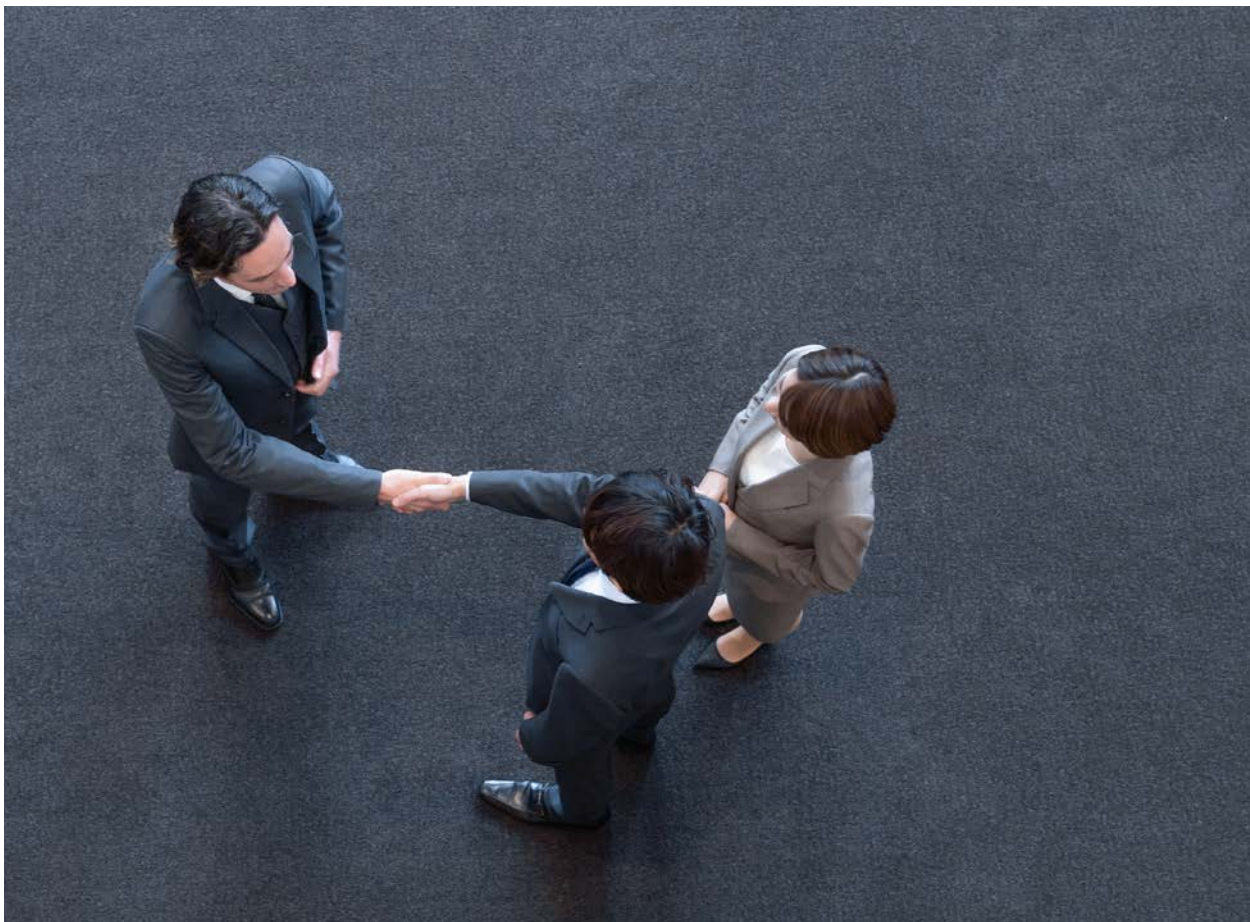




## Stakeholder analysis in the business value chain

Stakeholder group	Expectations	Response	Engagement channel
1. Shareholders	<ul style="list-style-type: none"> <li>• Good performance</li> <li>• Good governance</li> <li>• Equal opportunity for all shareholders to join Annual General Meeting with equal</li> <li>• voting rights and questioning opportunities</li> <li>• Correct, complete, up to date and transparent Company information</li> <li>• Constant business growth</li> </ul>	<ul style="list-style-type: none"> <li>• Good governance</li> </ul>	<ul style="list-style-type: none"> <li>• Annual General Meeting</li> <li>• Annual Report</li> <li>• Opportunity Day</li> <li>• Various communication channels, e.g. website, e-mail and phone calls</li> </ul>
2. Employees	<ul style="list-style-type: none"> <li>• Employee well-being, occupational health, and safety at work</li> <li>• Good remuneration and welfare</li> <li>• Promote the development of employee potential</li> <li>• Provide adequate news and information to employees thoroughly</li> </ul>	<ul style="list-style-type: none"> <li>• Human resources development through training, diversity enhancement, equality, in the organization</li> <li>• Human rights</li> <li>• Occupational health and safety at work</li> </ul>	<ul style="list-style-type: none"> <li>• Annual operation assessment</li> <li>• Activities organized by the Company</li> <li>• Welfare committee</li> <li>• Annual employee satisfaction survey</li> <li>• Various all-time communication channels i.e. e-mail and Line</li> </ul>
3. Customers	<ul style="list-style-type: none"> <li>• Business transparency</li> <li>• Strictly abide by the terms and conditions with customers</li> <li>• Reliable power production and distribution system</li> </ul>	<ul style="list-style-type: none"> <li>• Customer relations management</li> <li>• Ethics in maintaining customer confidentiality</li> </ul>	<ul style="list-style-type: none"> <li>• Annual customer satisfaction survey</li> <li>• Occasional visits or appointments with customers, e.g. meals</li> </ul>
4. Creditors	<ul style="list-style-type: none"> <li>• High credit ratings</li> <li>• Ability to debt repayment</li> <li>• Ability to follow terms and conditions in agreements</li> </ul>	<ul style="list-style-type: none"> <li>• Strictly abide by repayment schedules</li> <li>• Conduct revenue analysis and forecast and manage financial risks</li> </ul>	<ul style="list-style-type: none"> <li>• Agreements on issues including how to keep confidential information secure</li> </ul>
5. Suppliers	<ul style="list-style-type: none"> <li>• Fair, well-defined, transparent, and auditable procurement policy</li> <li>• Compliance with agreed conditions without supplier manipulation</li> </ul>	<ul style="list-style-type: none"> <li>• Assess suppliers' qualifications</li> <li>• Transparent and auditable procurement system</li> </ul>	<ul style="list-style-type: none"> <li>• Mutual meeting for summarize result and solution</li> </ul>
6. Competitors	<ul style="list-style-type: none"> <li>• Treat business competitors fairly</li> </ul>	<ul style="list-style-type: none"> <li>• Operate within the framework of rule and laws on good competition</li> </ul>	<ul style="list-style-type: none"> <li>• Business operation</li> </ul>

Stakeholder group	Expectations	Response	Engagement channel
<b>7. Communities and society</b>	<ul style="list-style-type: none"> <li>• Operations with responsibility for society/community</li> <li>• Support for activities with community participation</li> <li>• Recognition of their views and prompt problem solving</li> </ul>	<ul style="list-style-type: none"> <li>• Ensure environmental and safety management in compliance with laws and relevant regulations and continually prevent possible risks to community</li> <li>• Support public activities</li> </ul>	<ul style="list-style-type: none"> <li>• Regular community relations activities/visits to communities and people with possible direct and indirect impact, as well as social contributions in cash and kind</li> </ul>
<b>8. Government agencies</b>	<ul style="list-style-type: none"> <li>• Ability to comply with related laws</li> </ul>	<ul style="list-style-type: none"> <li>• Comply with rules and regulations prescribed by the law in every area</li> </ul>	<ul style="list-style-type: none"> <li>• Meetings and explanations of government agencies</li> </ul>



# Managing the Environmental Aspect of Sustainability

## Environmental Sustainability Management Policy

The Group is committed to the development of solar energy and other forms of renewable energy as clean alternatives. It is dedicated to operating in an environmentally responsible manner and adheres to the Company’s environmental management rules in all its business activities. The Group has established an environmental policy with clear objectives and takes consistent and serious action to protect the environment and prevent pollution in its operations. The Group also continuously improves its environmental management practices and promotes a safe and healthy working environment for its employees.

## Operational Goals

The Company has established objectives to ensure compliance with laws, regulations, and requirements related to environmental responsibility and social accountability.

## Sustainability Strategy in Environmental Dimension

The Company has implemented a comprehensive strategy that considers the interconnectedness of its operations with the environment, society, and community. This strategy emphasizes systematic and ongoing management. The Company has also implemented an environmental management system (ISO 14001:2015) and has been certified since 2015. Additionally, the Company has obtained continuous certification for its occupational health and safety management system (ISO 45001:2018).





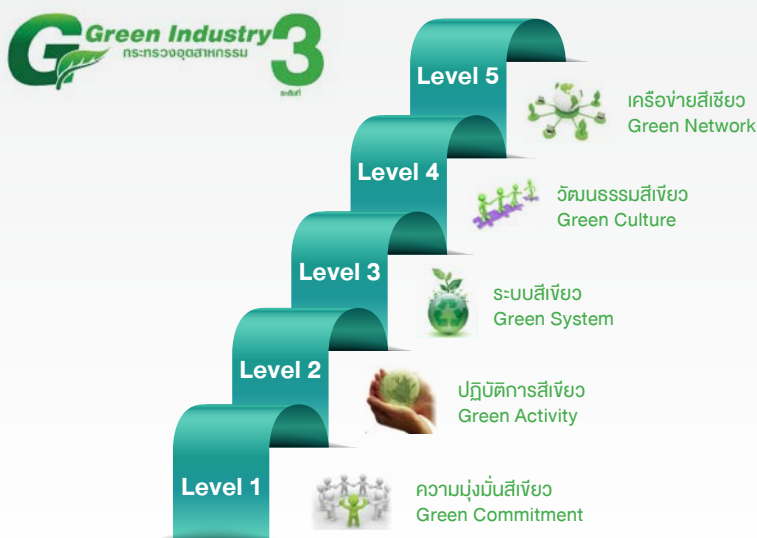
## Environmental Management Guidelines

To effectively sustain the operations of the Company and achieve the established goals, an environmental committee was established to oversee and support the implementation of sustainability practices. This committee facilitates concrete actions by creating participation among departments and stakeholders, both internally and externally. The committee also consults and promotes sustainability throughout the organization to ensure consistent direction and practices.

The Company places a high level of importance on environmental stewardship, both in its internal processes and its impact on the external environment, taking into account the effects on society and the environment, and striving to develop clean and modern technologies to make every aspect of its operations more efficient. The Company is committed to creating strong and sustainable growth for the organization through a balanced and stable foundation. As such, it has established guidelines for sustainability management that promote socially and environmentally responsible business development and maximize resource utilization for optimal efficiency. These guidelines are as follows:

- Protection at the source: environment, plant fence projects, heavy ash roofing projects, energy conservation projects, occupational health and safety projects, hearing conservation, waste management, utilization, and maintenance of personal protective equipment (PPE).
- Using environmentally friendly production technology: use electrostatic precipitators (ESP), which is a dust collection system that is more efficient than other systems and can trap dust of all sizes, even dust as small as 0.1 microns, and is equipped with a continuous air quality monitoring system (Continuous Emission Monitoring System: CEMS) or surveillance system.
- Reduce energy consumption in production and service: for continuous improvement and development of operations, there is a plan for the management and maintenance of machinery and equipment on a regular basis.
- Knowledge training: environmental and occupational health and safety for employees to be aware of environmental preservation and efficient use of resources, such as participating in the green factory project of the Department of Industrial Works and working under various projects to be responsible for environmentally friendly business operations and sustainable development.
- Participation in the Green Industry project by the Ministry of Industry and has been declared a Green Industry Level 3 (Green System: Green System)

### Levels of development towards a green industry





## Environment Performance

	Unit	2020	2021	2022
<b>Energy Management</b>				
Electricity consumption	Kilowatt-Hour	N/A	44,014	49,866
Electricity expense	Baht	N/A	264,084	316,177
<b>Water Management</b>				
Water consumption	m3	N/A	43	52
Water expense	Baht	N/A	860	1,040

The Company experienced an increase in the cost of electricity and water supply in 2022 due to a few factors. Firstly, the Company adjusted its operations to have employees come to work more frequently than in 2021, as well as recruited additional employees to support its business expansion plan. Additionally, there was an increase in electricity and water usage due to the COVID-19 pandemic, which required the Company to switch manpower and adapt to the new working conditions. However, the Company has implemented measures to reduce costs, such as turning off water and lights after use, shutting down computer screens and other electrical equipment during lunch breaks, and regularly checking and repairing any malfunctioning equipment to prevent energy waste and the risk of fire accidents caused by electrical leakage.

## Managing the Social Aspect of Sustainability

### Personnel management policy

The Company has established a policy for human resource management in various fields in order for the Company's and its affiliates' personnel management to operate efficiently, transparently, and in accordance with good corporate governance principles, as well as to promote an appropriate working environment that is fair to all parties involved:

#### 1. Labor and human rights

The Company has a policy to protect human rights inside the organization, to follow laws and regulations relating to fundamental human rights in accordance with international principles, to respect individuality and human dignity, and to refrain from participating in human rights breaches.

#### 2. Employment, recruitment and dismissal of employees

The Company has a policy to manage manpower to suit the organizational structure and external situations that affect the Company's business in a transparent and fair manner. The Company's recruitment and selection process is always being improved to guarantee that qualified employees are hired, both in terms of experience, knowledge, and future potential. Employees who violate the Company's discipline and/or for other reasons are also considered for dismissal in accordance with the law and fairness.

#### 3. Performance management

The Company has a policy for employee performance that is measured in different factors relating to work, attitudes, behaviors, consistency in performance, duties, responsibilities, and the workload of individual employees as part of the Company's efficient and fair performance management program.

#### 4. Compensation and welfare

The Company places a high value on paying remuneration and benefits that are appropriate, fair, and consistent with the business's competitive environment and ability to pay by comparing with other businesses in the same industry and the general labor market on a regular basis, as well as encouraging employees to participate in determining their own welfare through the workplace welfare committee and/or other channels.

The Company has provided complete vaccinations for employees and contract workers due to the COVID-19 outbreak, which has been spreading since 2020. Furthermore, the Company acts as an intermediary in booking and providing alternative vaccinations for employees' family members and close relatives, as well as employees of the Company's contractors, in order to alleviate concerns about the health of close relatives and to boost employees' confidence in everyday life.

5. Employees' knowledge and abilities and career growth development

Employees' potential, knowledge, ability, and professional expertise are developed through internal and external development training, and employees are given opportunities to advance in their fields based on their knowledge, abilities, experience, and individual potential, as determined by the organizational structure.

6. Employee appointment, transfer, reward and punishment

Employees are appointed, transferred, rewarded, and punished in accordance with the rules set forth in the Company's regulations, announcements, and laws, with equal and fair consideration given to knowledge, ability, performance, employee potential, and the Company's business needs.

7. Opinions and employee engagement

Employees can report unsolicited matters, complaints, or various grievances to the Company, and the Company will take appropriate action to resolve the problem in accordance with the Company's regulations/announcements. Furthermore, information is being communicated more effectively and appropriately throughout the organization, resulting in a better understanding. In addition, a regular survey of employee satisfaction and engagement with the company is conducted in order to analyze the results and improve policy in various fields in accordance with employee needs and the Company's business needs.

## HR Management Policy

The company realizes that human resource development is very important in developing competitiveness with other companies. The company places importance on the management of available resources. by focusing on creating and developing personnel to have knowledge, job skills, ability and good attitude as well as promoting progress in quality work

The Company operates on personnel management as follows:

1. Provide training both internally and outside the organization The objective is to develop personnel to have knowledge, abilities and skills to work for professional expertise. keep up with the changes Has a modern concept and is ready to adapt to accommodate any changes.
2. There is a human resource management system such as selection, recruiting, recruiting, appointment, hiring, evaluation, promotion. Salary increases that are ethical, transparent, can be explained with reason and is a clear standard
3. Payment of compensation and benefits to employees at an appropriate rate based on knowledge, ability, responsibility Employee performance is measured every year. Including reviewing the policy of paying compensation and benefits in accordance with the Company's operating results. both short term and long term
  - Short-term payouts The Company has established payouts that are comparable with the general payout rates of other companies in the same industry. In addition, the company the bonus payout is also slated to be linked to the operating results for each year.
  - Long-term return The company focuses on welfare that enhances the stability of the employees' livelihoods, such as provident funds. as a guarantee at the end of the employee's employment or retirement the monthly contributions are made between 3% and 10% of the salary. The Company pays monthly contributions between 3% and 5.5% of the employee's salary. The receiving of the contributions and the benefits of the contributions will be in accordance with the conditions set by the company.





4. adhere to the principle of equality honesty and discipline at work relationship and treat each other as fellow employees
5. There is a performance appraisal plan once a year and suggestions are encouraged for continuous improvement of performance.

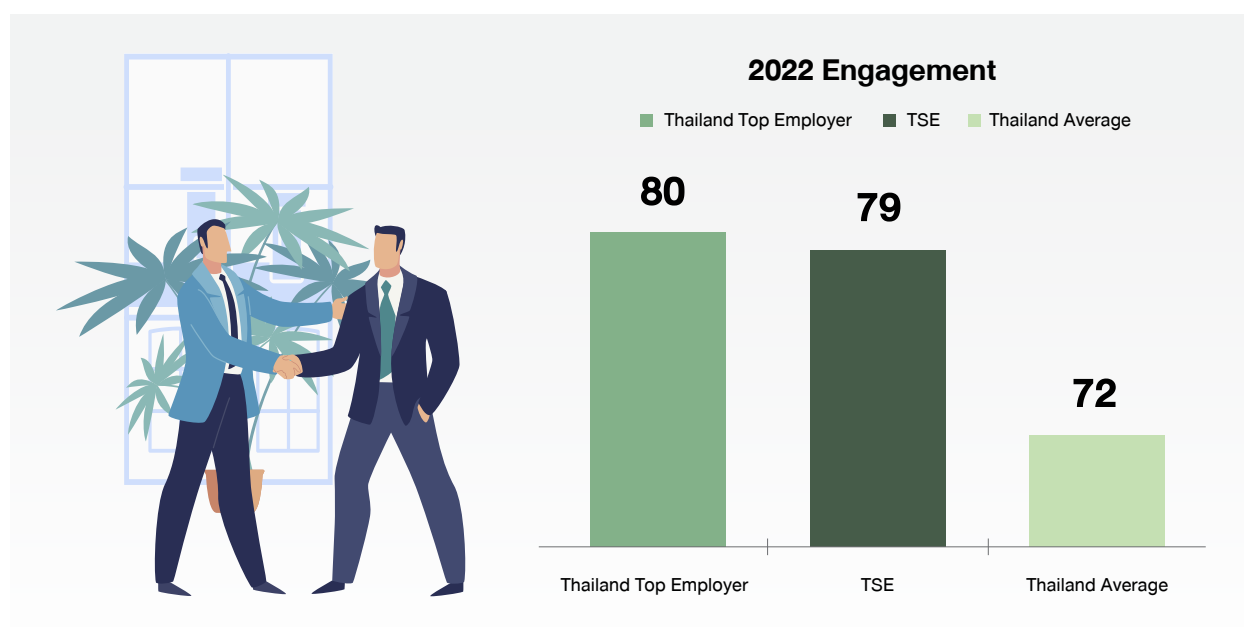
## Social Performance

	Unit	2020	2021	2022
<b>Employees by Gender</b>				
Total number of employees	Person	217	266	305
• Total number of male employees	Person	140	182	208
• Total number of female employees	Person	77	84	97
<b>Male Employees by Age group</b>				
• Total number of employees under 30 years old	Person	24	40	50
• Total number of employees 30 - 50 years old	Person	95	120	133
• Total number of employees over 50 years old	Person	21	22	25
<b>Female Employees by Age group</b>				
• Total number of female employees under 30 years old	Person	27	32	39
• Total number of female employees 30 - 50 years old	Person	47	48	50
• Total number of female employees over 50 years old	Person	3	4	8
<b>Male Employees by Employee Level</b>				
• Total number of male employees in operational level	Person	134	176	202
• Total number of male employees in management level	Person	4	4	4
• Total number of male employees in executive level	Person	2	2	2
<b>Female Employees by Employee Level</b>				
• Total number of female employees in operational level	Person	72	79	92
• Total number of female employees in management level	Person	4	4	4
• Total number of female employees in executive level	Person	1	1	1
<b>Employee Remuneration</b>				
Total employee remuneration	Baht	108,018,163	122,571,452	130,063,984
• Total male employee remuneration	Baht	67,176,101	79,862,811	88,169,442
• Total female employee remuneration	Baht	40,842,062	42,708,641	41,894,542

	Unit	2020	2021	2022
<b>Employee Provident Fund</b>				
• Total number of employees joining employee provident fund	Person	160	203	211
• Total amount of provident fund contributed by the Company	Baht	3,371,363	4,157,255	4,490,884
<b>Human Capital Development</b>				
• Average employee training hours	Hours/ Person/ Year	7	4	10
• Total amount spent on employee training and development	Baht	561,799	307,604	979,044
<b>Employee Relation and Engagement</b>				
• Total number of employee turnover leaving the Company voluntarily	Person	12	14	23
• Total number of male employee turnover leaving the Company voluntarily	Person	6	9	11
• Total number of female employee turnover leaving the Company voluntarily	Person	6	5	12
• Significant labor dispute		-None-	-None-	-None-

## The corporate engagement

### The results of the corporate engagement survey for the year 2022



The Company conducted a survey in November 2022 to measure employee satisfaction and engagement, which was reported at 79%. This figure is higher than the average in Thailand, which is 72% according to a Kincentric survey. However, it is slightly lower than organizations that have been recognized as top employers, with an average employee satisfaction rate of 80%. It is worth noting that this figure represents a slight decrease from the 81% recorded in 2021.



## Safety, Occupational Health and Work Environment

Thai Solar Energy Public Company Limited and its affiliates are committed to improving and developing the management system for safety, occupational health, working environment, and environmental quality management to be in accordance with the relevant laws, the quality management system standard ISO 9001:2015, the occupational health and safety management system standard ISO 14001:2015 and the environmental management system standard ISO14001, with the expectation that employees within the Company subcontractor have knowledge, understanding, consciousness, and awareness leading to serious action through the Company's safety policy with the Safety, Occupational Health, and Working Environment Committee to consider and prepare an action plan to be proposed for approval and annual budget of the Company Group in summary as follows:

### 1. Provide knowledge, seminars, public relations and training as follows:

No.	Activity	Objective	Target	Indicator
1.1	Orientation/ On Job Training (OJT)	To gain knowledge on the Company's regulations and practices to comply with the law on Occupational safety, health and environment	<ul style="list-style-type: none"> <li>New employees/ employees who have changed jobs/job transfers</li> <li>Subcontractor outside/requesting to visit the premises</li> </ul>	The curriculum evaluation criteria (Pretest/Post-test)
1.2	Seminars and Emergency Preparedness Drills	<ul style="list-style-type: none"> <li>To develop a body of safety knowledge and environment to suit the operation</li> <li>To prepare for emergency situations that may arise</li> </ul>	Employees at all levels	<ul style="list-style-type: none"> <li>All employees must receive safety training in accordance with the Company's work regulations.</li> <li>There are safety personnel, such as Jor.Por./ and those who have specific qualifications in safety as required by law and standards.</li> <li>There is an emergency drill as prescribed each year.</li> </ul>
1.3	Public relations in safety communications	To raise awareness among everyone of the Company's safety information.	Employees at all levels	<ul style="list-style-type: none"> <li>Communication through meetings</li> <li>Communication through the Company's information system</li> <li>Company's public relations board</li> </ul>

### 2. Job search risk and management along with risk control measures

No.	Activity	Objective	Target	Indicator
2.1	Risk Assessment	To gain knowledge on the risks and hazards of the job responsibilities and jointly formulate control measures	All units/ departments/ divisions	All units/departments/divisions contain hazard identification information/risk assessment information and mitigation measures
2.2	Security Surveillance (Safety Patrol)	To conduct surveys to identify potential hazards from people, machines, operating methods, and working environments in order to improve continuously	Working area inside the factory and around the factory	Summary of weekly/monthly/yearly inspection report

### 3. Protection against danger from machinery, equipment and personal protective equipment

No.	Activity	Objective	Target	Indicator
3.1	Installing a safeguard or blocking a dangerous area	To prevent potential hazards to operators	There is a block to prevent touch and point of danger.	The level of risk in the work area has been lowered to an acceptable level.
3.2	Installing hazard warning signs in various points	In order for operators to be aware of the dangerous points in the work area	Hazard identification area or what to do when entering the area	Hazard warning signs are installed at various points.
3.3	Procurement of personal protective equipment	Workers are equipped with protective equipment suitable for the nature of the work each are responsible for.	Employees who work according to types of risk	Workers are equipped with personal protective equipment for proper use.

### 4. The introduction of modern technology in the system to reduce the risk.

No.	Activity	Objective	Target	Indicator
4.1	The use of production control system with a monitoring system	To be able to control the production of the whole system	To be able to Check the whole system working in a timely manner	Constant use of the production control system

### 5. Employee health check according to risk factors

No.	Activity	Objective	Target	Indicator
5.1	Annual employee health check, as well as health checks based on work exposure risk factors	To be able to know the health condition of employees in the organization to determine appropriate preventive measures and to be the information for surveillance and health promotion	All employees in the organization	Employee health check report

The Company believes that one of the most important factors that contribute to efficient and effective work is the safety, occupational health, and working environment of its employees. As a result, the policy and development of the safety, occupational health, and working environment have been formulated and developed in accordance with international standard laws and other requirements in order to create work safety for employees, business partners, subcontractors, and those who come into contact with or come to work within the Company to take place continuously and sustainably.





## Table of reports on the number of accidents for the year 2020 - 2022 of the Group

	2020	2021	2022
<b>Total number of lost time injury incidents by employees (Case)</b>			
• Solar Farm	0	0	0
• Solar Rooftop	0	0	0
• Solar Floating	0	0	0
• Biomass	0	0	0
<b>Total number of employees that lost time injuries for 1 day or more (Person)</b>			
• Solar Farm	0	0	0
• Solar Rooftop	0	0	0
• Solar Floating	0	0	0
• Biomass	0	0	0
<b>Total number of employees that fatalities as a result of work-related injury (Person)</b>			
• Solar Farm	0	0	0
• Solar Rooftop	0	0	0
• Solar Floating	0	0	0
• Biomass	0	0	0

To prepare for emergency situations that may arise at any time, the Company has prepared by educating, raising awareness, and practicing coping skills when the unexpected occurs. Emergency drills for emergency situations within the Company aim to allow employees to practice responding to incidents or situations properly and in accordance with safety principles, which is critical.

Fire drills and fire emergency evacuation plan



Theory training



Learn about first aid and CPR



Practice the correct use of fire extinguish



Practice the use of fire extinguishers to stop the incident



Fire fighting team training



Fire fighting techniques



Fire Evacuation Drills



At the assembly point



First aid and evacuation practice



Summary of the practice results

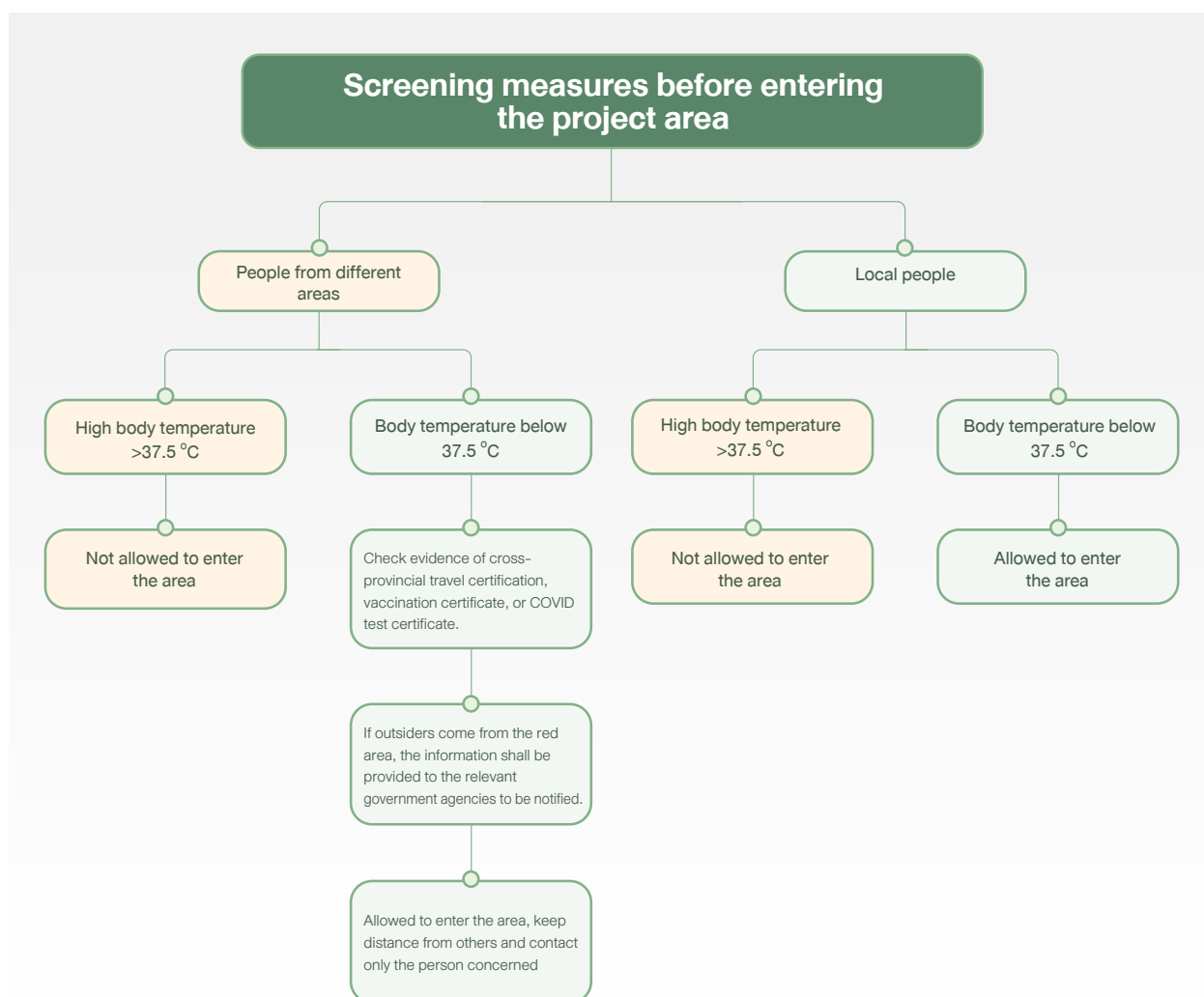


## Preventive measures in the situation of the COVID-19 pandemic

The Company has closely monitored the news and situation surrounding the coronavirus disease (Covid-19) pandemic and has taken preventative measures from the start, such as measuring the temperature every time an employee enters the area, requiring employees to wear masks at all times, providing gels and alcohol for hand washing at various points, and cleaning and spraying disinfectant in the workplace every 2 weeks. Not only that, there is social distancing with zigzag working seats, taking turns working in the office, working from home and the use of digital technology to make the most of it. The system, such as a video conference, can be accessed from any location and at any time in order to operate and operate efficiently without interfering with the Company's operations in any way.

As for the power plant project, the Company has set up preventive measures by preliminary screening before entering the area as follows:

1. Set up a screening point and enter personal information of those who come to work in the power plant project area for information on the route of infection in case some people getting infected.
2. Arrange for infection testing of the Company's employees according to the specified period of the month.
3. Provide screening measures in the event that people or subcontractors are required to work in the project area by confirming the results of the infection from the medical certificate and evidence of vaccination before granting permission to enter.
4. Training to educate workers about COVID-19 pandemic prevention and to clarify how to behave when entering the area to prevent infection and spread.







## Monthly staff COVID-19 testing



## Training to educate about measures to prevent the spread of COVID-19 and regulations on safety at work



To prevent illness from severe illnesses, the Company provides vaccinations for employees during severe outbreaks, and this results in boosting morale for the staff during the difficult time.

From the implementation of all measures as summarized, management is committed to and has prioritized the Company's personnel safety, occupational health, and work environment policies, which are important forces that will continue to develop the organization's potential.

## 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

### Corporate Social Responsibility Activities



**Thai Solar Energy Public Company Limited**  
To donate sports equipment to World Vision Foundation of Thailand,  
in the event for the 12<sup>th</sup> anniversary of Hooninside





**Thai Solar Energy Public Company Limited and Subsidiaries**  
Sponsor items for Kanchanaburi Industrial Red Cross Day activities.



**Siam Solar Energy 1 Co., Ltd. SSE1 – PV04**  
Support N95 mask, ATK test kit, PPE test kit, Nong Krathum Subdistrict Health Promoting Hospital, Suphanburi Province



**Siam Solar Energy 1 Co., Ltd. SSE1 – PV05**  
Supporting the National Children's Day 2022 at Wat Nong Krathum School, Doem Bang Nang Buat District, Suphanburi Province



**Bangsawan Green Co., Ltd.**  
Sponsored 50 traffic cones at Bang Sawan Police Station, Surat Thani Province



**Bangsawan Green Co., Ltd.**  
Supporting the Kanchanabarami Foundation to contribute to the mammography X-ray machine, Surat Thani Province



**Oscar Save the World Co., Ltd**  
Contributions to service activities Bang Sawan Municipality, Surat Thani Province



Oscar Save the World Co., Ltd  
Sponsored 24 sports uniforms in conjunction with  
Sai Ra Subdistrict Kamnan Office,  
Nakhon Si Thammarat Province



Oscar Save the World Co., Ltd  
Donated computer equipment to Chawang District  
Police Station, Nakhon Si Thammarat Province



Oscar Save the World Co., Ltd  
Support reflective vest to the Chawang District Police  
Station, Nakhon Si Thammarat Province



Oscar Save the World Co., Ltd  
Supporting sports uniforms at Wat Samakkinukul  
School, Chawang District, Nakhon Si Thammarat  
Province



Oscar Save the World Co., Ltd  
Sponsor sports shirts to the Provincial Electricity  
Authority Chawang District, Nakhon Si Thammarat  
Province



Mars Solar Co., Ltd  
Sponsor sports shirts for the village sports club at the  
village headman's office, Moo 3, Sai Khao Subdistrict,  
Khlong Thom District, Krabi Province





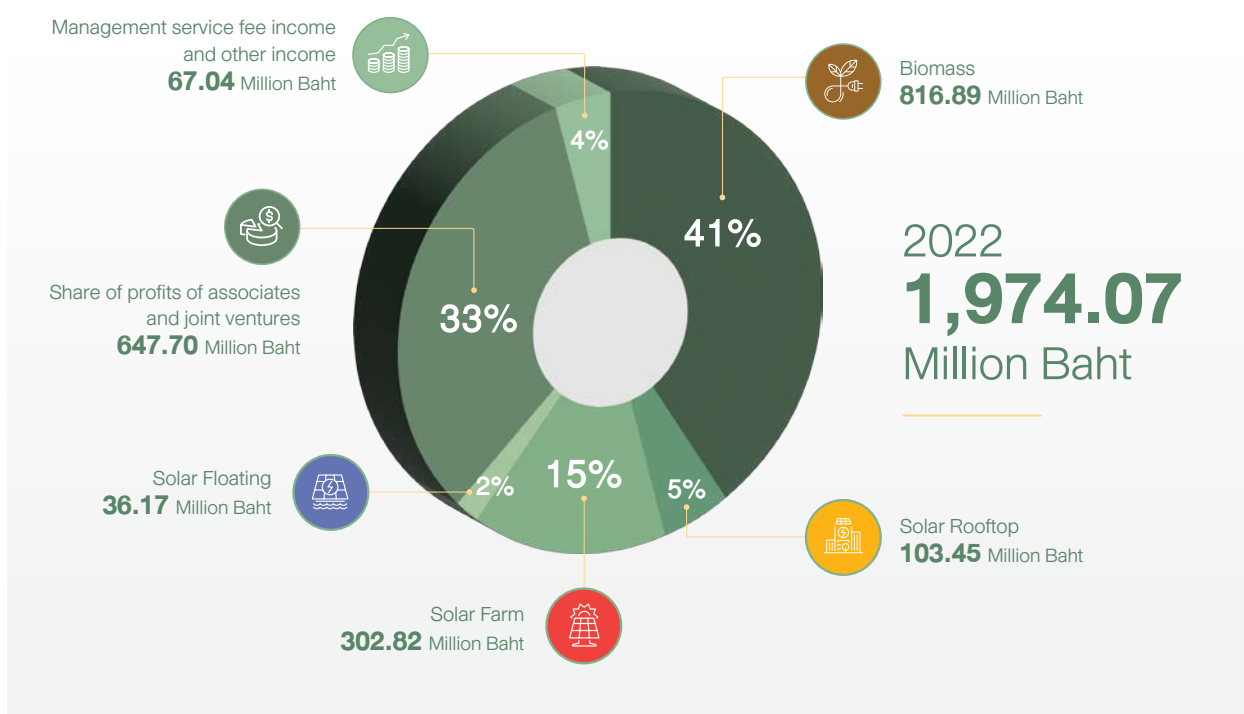
# Management Discussion and Analysis (MD&A)

## Financial Highlights

Unit: Million Baht

	2020	2021	2022
<b>Operating Results and Financial Positions (Consolidated)</b>			
Revenues from sales of goods and rendering of services	1,530.45	1,524.08	1,314.59
Share of profits of associates and joint ventures	643.33	642.92	647.70
Total revenues	2,186.07	2,176.87	1,974.07
Profit for the year attributed to owners of the Company	421.43	492.71	723.77
Proportion Profit for the year attributed to owners of the Company to total revenue	19%	23%	37%
Total assets	19,176.78	19,706.91	20,510.04
Total liabilities	13,257.45	13,357.53	14,067.31
<b>Financial Ratio (Consolidated)</b>			
<b>Current Ratio</b>			
Current Ratio (Times)	0.54	0.51	0.66
A/R Turnover (Times)	3.97	4.28	3.40
<b>Profitability Ratio</b>			
Gross Profit Margin (%)	33.13	29.45	32.07
Operating Profit Margin (%)	49.24	54.76	80.45
Net Profit Margin (%)	27.15	32.14	54.57
Return On Equity (%)	7.30	8.03	11.32
<b>Operating Efficiency Ratio</b>			
Return On Assets (%)	4.34	4.32	5.31
Return On Fix Assets (%)	8.65	8.20	9.78
Total Asset Turnover (Times)	0.09	0.08	0.07
<b>Leverage Ratio or Financial Ratio</b>			
Debt to Equity (Times)	2.24	2.10	2.18
Interest coverage ratio (Times)	3.47	3.76	4.28

## Revenue Structure



## Management Discussion and Analysis

### Significant Events Affecting the Financial Statement

- In the year 2022, our Company Group sold a solar power plant project in Japan, consisting of 1 plant with a total capacity of 13.5 megawatts in March 2022. It resulted in our Company Group realizing a profit from disposal of investments in the subsidiaries of 234.44 million baht.
- In the same year, the Company purchased the “Solar Tracking” type solar power plant project “Soilcrete”, with a size of installed capacity and power purchase of 8 megawatts. The project was completed and commercially operational in July. This resulted in our Company being able to immediately recognize revenue in Q3/2022

### Performance Analysis Based on the Comparative Consolidated Financial Statements for the Year Ended on December 31, 2022 and 2021 as follows:

#### Statement of Comprehensive Income for 2022

##### Services and Sales Revenues

The Company Group has a revenue from sales and services for the year of 1,314.59 million baht, which is lower than the previous year's amount of 1,524.08 million baht, a decrease of 209.48 million baht, or 13.75 percent. This revenue does not include the revenue from the solar power project, which is 80 megawatts and the Company Group received a share of the profits from the investment in the project, which is 647.70 million baht.

##### - Increased Services and Sales Revenues From Newly Purchased Projects and Full-Year Revenues from the Floating Solar Energy Power Plant



The Company group has more revenue from the “Soilcrete” solar power plant, solar tracking type, with an installed and trading capacity of 8 megawatts. It is a project that has been completed and commercially operated since December 2015. As a result, the Company able to recognize revenue immediately in Q3/2022. Moreover, there is a revenue increase from full revenue recognition for the year of floating solar power plant which was completed and commercially operated during the year 2021, resulting in an revenue increase from sales and service in the amount of 60.76 million baht.

#### - Decreased Services and Sales Revenue from the Solar Energy Power Plant Project in Japan

As approved by the Board of Directors, the Group sold one of its solar energy power plant projects in Japan, which was 13.50 megawatts, during 2022, resulting in a decrease in revenue for the Group of 270.25 million baht in 2022. Currently, the Group has one solar energy power plant project in Japan, which is under construction and nearly completed, with 133 megawatts remaining. It is expected to be commercially operational within the next 2 years in Q2/2023.

#### • Cost of Sales and Services

The Company Group has a total cost of sales and service for the year of 892.94 million baht, a decrease from the same period of the previous year of 1,075.24 million baht, a decrease of 182.30 million baht or 16.95 percent. This is mainly due to a decrease in the cost of the power plant project sales during the year and from the fuel cost management and control policy of the power plant group from the efficient use of renewable energy.

This resulted in the Company Group having a basic profit margin for the year of 32.75 percent, an increase from 2021 with a basic profit margin of 29.45 percent. This shows an improvement in the cost management of the Company Group.

#### • Administrative Expenses

The Company Group has administrative expenses for the year of 227.09 million baht, a decrease from the previous year's amount of 348.78 million baht, a decrease of 121.68 million baht or 34.89 percent. The main cause of this decrease is due to the sale of power plants and the recording of depreciation of the energy-saving power plant assets in 2021, amounting 155 million baht, while there was no recording of depreciation in 2022. Additionally, there will be an increase in consulting expenses for finance and law related to the sale of power plants in the current year.

#### • Other Profit/Loss

In the year 2022, the Company Group recognized a profit from the sale of investments in subsidiary companies of 234.44 million baht, an increase from the previous year of 104 million baht, an increase of 130 million baht. In addition, there is an item of foreign exchange loss of 21.43 million baht, which makes the Company Group have other profit (loss) of 213.02 million baht.

#### • Financial Cost

The Company Group has financial costs for the year of 327.96 million baht, a decrease from the previous year of 338.32 million baht, a decrease of 10.36 million baht or 3.06 percent. This is mainly due to the repayment of loans from the sale of power plants and the normal repayment of principal.

#### • Profit Allocation from Investment in Joint Ventures

According to the accounting policy on investment in associates and joint ventures, the Company recognizes investment in joint ventures using the equity method, which is a business that invests in and manages a solar energy project with a capacity of 80 mega-watt installed on the ground, as detailed below:

## Performance of Joint Ventures by the Equity Method

Unit: Million Baht

Items	December 31		Increase (Decrease)	
	2022	2021	Amount	Percentage
Revenue	1,622.34	1,546.99	75.35	4.87
Cost and Expense	(542.84)	(475.46)	(67.38)	14.17
Net Profit	1,079.50	1,071.53	7.97	0.74
Share of profits of associates and joint ventures (60%)	647.70	642.92	4.78	0.74

For the year 2022, the joint venture had a net profit of 1,079.50 million baht, an increase from the same period in the previous year of 1,071.53 million baht, an increase of 7.97 million baht, equivalent to 0.74 percent. This resulted in the Company Group recognizing its share of the profits from the joint venture investment, which was 647.70 million baht compared to 642.92 million baht in the same period the previous year, an increase of 4.78 million baht or 0.74 percent. The improvement was due to the successful operations and effective cost control.

### • Consolidated Net Profit

For the year 2022, the Company Group had a net profit for the year of 723.77 million baht, an increase from the previous year's amount of 492.99 million baht, an increase amounting of 230.79 million baht, equivalent to 46.81 percent. The main reason was an increase in other profits (losses) - net, which consisted of gain on sales of investments in the subsidiaries in Japan, net of foreign exchange gains increased by 126 million baht from the previous year, and non-cash items which were allowance for the value of assets incurred in 2021 in the amount of 155 million baht.

For the year 2022, the Company Group had a consolidated total loss for the year of 119.51 million baht, a decrease from the previous year's consolidated total profit of 515.28 million baht. The main reason was due to the fluctuation in exchange rates from currency conversion and adjustments to loan values at the end of the term, which were accounting adjustments and did not impact the Company Group's cash flow.

### • Return on Equity (ROE)

For the year 2022, the Company Group's return on equity increased with a ROE of 16.68 percent, higher than 13.69 percent in 2021. The increase was due to operating profits and profits from disposal of investments in the subsidiaries.

### • Asset Analysis

As of December 31, 2022 and 2021, the Company Group had total assets of 20,510.04 million baht and 19,706.92 million baht, respectively. The Company Group's total assets increased by 803.12 million baht, or 4.08 percent, with details as follows:

Unit: Million Baht

Items	December 31		Increase (Decrease)	
	2022	2021	Amount	Percentage
Current Assets	1,758.69	1,749.93	8.76	0.50
Non-Current Assets	18,751.35	17,956.99	794.36	4.42
<b>Total Assets</b>	<b>20,510.04</b>	<b>19,706.92</b>	<b>803.12</b>	<b>4.08</b>





- 1) As of December 31, 2022, the Company Group had current assets of 1,758.69 million baht, an increase from December 31, 2021, of 1,749.93 million baht, or an increase of 8.76 million baht, equivalent to 0.50 percent. The main reason for the increase was due to the increase in taxes on purchases that have not been paid for construction projects and security deposits for bidding projects. The decrease was due to cash and cash equivalents used in operations during the year.
- 2) As of December 31, 2022, the Company Group had non-current assets of 18,751.35 million baht, an increase from the same period the previous year of 17,956.99 million baht, or 794.36 million baht, equivalent to 4.42 percent. The main reason for the increase was due to investment spending on the Onikobe power plant project under construction and the purchase of the 8 mega-watt solar power plant "Soilcrete" in Q3/2022, which is included in the land, building, and equipment list of the subsidiaries.

#### • Liability and Equity Analysis

As of December 31, 2022, the Company Group had total liabilities and equity of 20,510.04 million baht, an increase from December 31, 2021, of 19,706.92 million baht, or an increase of 803.12 million baht, equivalent to 4.08 percent, with details as follows:

Unit: Million Baht

Items	December 31		Increase (Decrease)	
	2022	2021	Amount	Percentage
Liabilities	14,067.31	13,357.54	709.77	5.31
Equity	6,442.73	6,349.38	93.35	1.47
<b>Total of Liabilities and Equity</b>	<b>20,510.04</b>	<b>19,706.92</b>	<b>803.12</b>	<b>4.08</b>

- 1) On December 31, 2022, the Company Group had a total liability of 14,067.31 million baht, an increase from December 31, 2021, which had a total liability of 13,357.54 million baht. The increase was 709.77 million baht, representing a percentage increase of 5.31. The main reason for the increase was borrowing from financial institutions for investment expenses in the Onikoube project, which was still under construction, and for the acquisition of the "Soilcrete" solar power plant project with a production capacity of 8 megawatts.
- 2) On December 31, 2022, the Company Group had a total equity of 6,442.73 million baht, an increase from December 31, 2021, which had a total equity of 6,349.38 million baht. The increase was 93.35 million baht, representing a percentage increase of 1.47. The Company Group had an owner of the parent's profit of 723.77 million baht for the year 2022, resulting in the Company Group having an increase in accumulated profits from 3,250.08 million baht in 2021 to 3,883.35 million baht on December 31, 2022.

#### • Capital Structure Suitability

The debt-to-equity ratio of the Company Group was still within normal levels. On December 31, 2022, the Company Group had a debt-to-equity ratio of 2.18 times, which was higher than the ratio of 2.10 times at the end of 2021. Additionally, the Group had a net debt-to-equity ratio (according to the terms of the loan stock) of 2.04 times, which was higher than the ratio of 1.86 times at the end of 2021. The main reason for the change in the debt-to-equity ratio was borrowing from financial institutions for the ongoing Onikoube project and the acquisition of the "Soilcrete" solar power plant project with a production capacity of 8 megawatts.

#### • Solvency

- On December 31, 2022, the Company Group had an IBD/EBITDA ratio of 9.34 times, which was lower than the ratio of 9.87 times at the end of 2021. This was because the Company Group had made loan repayments, reducing the total debt burden, and increasing profits from operations.

- On December 31, 2022, the Company Group had an interest coverage ratio (according to definition of the SEC) (ICR) of 4.28 times, which was higher than the ratio of 3.76 times at the end of 2021. This was because the Company Group had increased profits from operations and reduced financial costs from repaying loans during the period.
- On December 31, 2022, the Company Group had a debt service coverage ratio (according to definition of the SEC) (DSCR) of 0.50 times, which was higher than the ratio of 0.43 times at the end of 2021. This was due to increased profits from operations and the issuance of new bonds to repay existing bonds that were due within one year.

## Cash Flow Statement for 2022

On December 31, 2022, the Company Group had remaining cash and cash equivalents, according to consolidated financial statements, totaling 360.64 million baht, a decrease from the balance of 849.07 million baht on December 31, 2021, by 488.43 million baht. It can be summarized as follows:

- 1) Net cash used in operating activities amounted to 156.83 million baht, which was the cash flow generated from operating activities during the period of 430.30 million baht. This included payments of taxes not yet due, amounting to 233.22 million baht, as well as project deposits and guarantees totaling 260.30 million baht, and other miscellaneous expenses totaling 93.61 million baht.
- 2) Net cash used in investing activities amounted to 2,309.88 million baht, as follows:
  - 2.1) Cash paid for investments in a power plant project under construction amounted to 2,932.82 million baht.
  - 2.2) Cash received from the disposal of investments in the subsidiaries amounted to 530.87 million baht.
  - 2.3) Dividend receivable amounted to 660.30 million baht.
  - 2.4) Cash paid for the acquisition of the subsidiaries and other expenses amounted to 568.23 million baht.
- 3) Net cash provided by financing activities amounted to 431.47 million baht, generated from:
  - 3.1) Cash received from borrowing from financial institutions, primarily for investment in projects under construction, amounted to 2,501.62 million baht.
  - 3.2) Interest payables, financial fees, dividend payments, and other expenses amounted to 540.69 million baht.
- 4) The impact of foreign exchange rate fluctuations on the currency translation of the profit and loss statement amounted to 17.35 million baht.



# General and Key Information

<b>Company Name</b>	:	Thai Solar Energy Public Company Limited
<b>Security Name</b>	:	TSE
<b>Registered as public company limited</b>	:	30 October 2014
<b>Industry</b>	:	Resources
<b>Head Office Address</b>	:	725 S-Metro, 19th floor, Sukhumvit Road, KlongtanNua, Wattana Bangkok 10110
<b>Type Of Business</b>	:	Generation and distribution of electricity from solar power and other renewable power in Thailand and overseas
<b>Business Registration Number</b>	:	0107557000055
<b>Telephone</b>	:	02 258 4530 - 3
<b>Fax</b>	:	02 258 4534
<b>Website</b>	:	www.thaisolarenergy.com
<b>Registered Capital and Paid-up Capital</b>	:	Registered Capital 2,477,474,454 Baht Paid-up Capital 2,117,716,281 Baht
<b>Par Value</b>	:	1.00 Baht

## References

**Securities registrar** Thailand Securities Depository Company Limited (TSD)  
93 Ratchadaphisek Road, Dindaeng Subdistrict, Dindaeng District, Bangkok 10400  
Tel : 02 009 9000 Fax : 02 009 9991

**Auditor** Ms. Nuntika Limviriyalers (CPA Registration No. 7358)  
PricewaterhouseCoopers ABAS Limited  
179/74-80 Bangkok City Tower 15th Floor, South Sathorn Road, Thung Maha Mek Subdistrict Sathorn District, Bangkok 10120  
Tel : 02 844 1000 Fax : 02 286 5050

**Bondholders' Representative** Bangkok Bank Public Company Limited  
(Securities Services Department)  
333 Silom Road, Silom, Bangrak, Bangkok 10500  
E-mail: dhr.grp@bangkokbank.com  
Tel : 02 230 1894

## Other key information

- None -

## Secondary market

- TSE is not listed on the stock exchange of any other country -

## Litigations

- None -









# 2

## Corporate Governance

- Corporate governance policy
- Corporate governance structure and material facts related to the board, subcommittees, executives, employees and others
- Key Corporate Governance Implementation
- Internal control and related party transactions

# 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](http://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

Principles of Good Corporate Governance for Listed Companies Year at the Securities and Exchange Commission Principles have been issued for use as guidelines and adapted as appropriate for the business. The Company has mostly applied such principles. And there are some parts that the company may choose to use other practices that are suitable for the business.

Principles Guideline	Guidelines for choosing the Company's practice
The Chairman of the Board should be an independent director	Chairman of the Board is not an independent director * 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 * 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 * The Chairman of the Nomination and Remuneration is an independent director who is able to provide independent opinion
The Board shall limit the term of office of independent directors to 9 consecutives years from the day of first nomination.	The Board has not limited the term of office of independent directors, directors and sub-committee members because the company believes that the directors are knowledgeable and competent personnel. Their long experiences help them understand the company's businesses which will be beneficial to the company's key strategy development
The Company should set a policy for directors and senior executives to notify the board of directors about stock trading the Company's stock trading at least 1 day in advance of trading	The Company has a policy on the use of inside information requiring the board of directors and top Prepare and submit reports on the holdings of the Company's securities by themselves, their spouses, and minor children since the appointment and every time there is a change in those holdings. This policy covers compliance with the rules and regulations of regulatory agencies.
The board should consider appointing subcommittees. • Corporate Sustainability Committee • Corporate Governance Committee • Risk Management Committee	Board of Directors, Audit Committee, Nomination and Remuneration Committee, and Executive Committee audit and control the company's operations to be in accordance with the Company's business plan.



# The Company's Corporate Governance

## Section 1 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

- The right to purchase, sell, or transfer stocks and to be sufficiently information
- The right to an equitable dividend
- The 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.
- The right to attend meetings through channels specified by the company each year. including electronic meetings to purchase, sell, or transfer stocks and to be sufficiently information

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, meeting format such as meetings via electronic media including procedures and methods for attending the meeting and 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 shareholder 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.

## Section 2 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 meeting format such as meetings via electronic media including procedures and methods for attending the meeting 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.

## Shareholders Meetings

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.

## Section 3 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.

The Company adheres to the Act on Promotion and Development of the Life of Persons with Disabilities, B.E. 2550, article 33, which requires employers and establishment owners to provide employment opportunities to persons with disabilities in proportion to the number of workers in the establishment. Additionally, the Company provides opportunities for underprivileged groups to join the workforce. Furthermore, the Company contributes to the fund for the promotion and development of the quality of life of persons with disabilities, as per article 34, by submitting the required amount by January 31 of each year. This is to ensure that individuals with disabilities have a good quality of life, become self-reliant, support occupations, and promote income."

The Group announces policies on remuneration and welfare in the working rules and regulations, including the provision of additional welfare during the year.

## 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.

## Respecting Intellectual Property or Copyright

The Company places importance on respecting intellectual property rights, patents or any other rights of customers, partners, other related parties. including protecting the said rights of the Company without disclosing confidential and proprietary information of the Company to outsiders including not using such information for personal gain or for any purpose that is contrary to the interests of the Company

- Maintain intellectual property including confidential and proprietary information of customers, partners and other related parties. of the Company in accordance with applicable laws and regulations.



## Section 4 Information 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 and Potential 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: Corporatesec@thaisolsrenergy.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

### Related-party 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 inform 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.

## Section 5 Responsibilities of the Board of Directors

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 Composition

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.

### Board Membership Criteria

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





## Board Selection

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.

## Term of Office for Directors

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.

## Re-appointment of Directors

The Nomination and Remuneration Committee shall consider many factors such as experience, expertise, time to devote to the duty, meeting attendance, etc. In the 2022 Annual General Meeting of shareholders, has reappointed is MD. Prommin Lertsuridej, Mr. Aran Apichari and Mrs. Angkanee Rerksirisuk to the serve one more term according to the opinions and reviewing process of the Nomination and Remuneration Committee.

## 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 Performance Evaluations

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.

## Sub-committees

Sub-Committees of the Company It consists of 3 committees as follows: The Audit Committee, Nomination and remuneration Committee and Executive Committee

## Code of Conduct

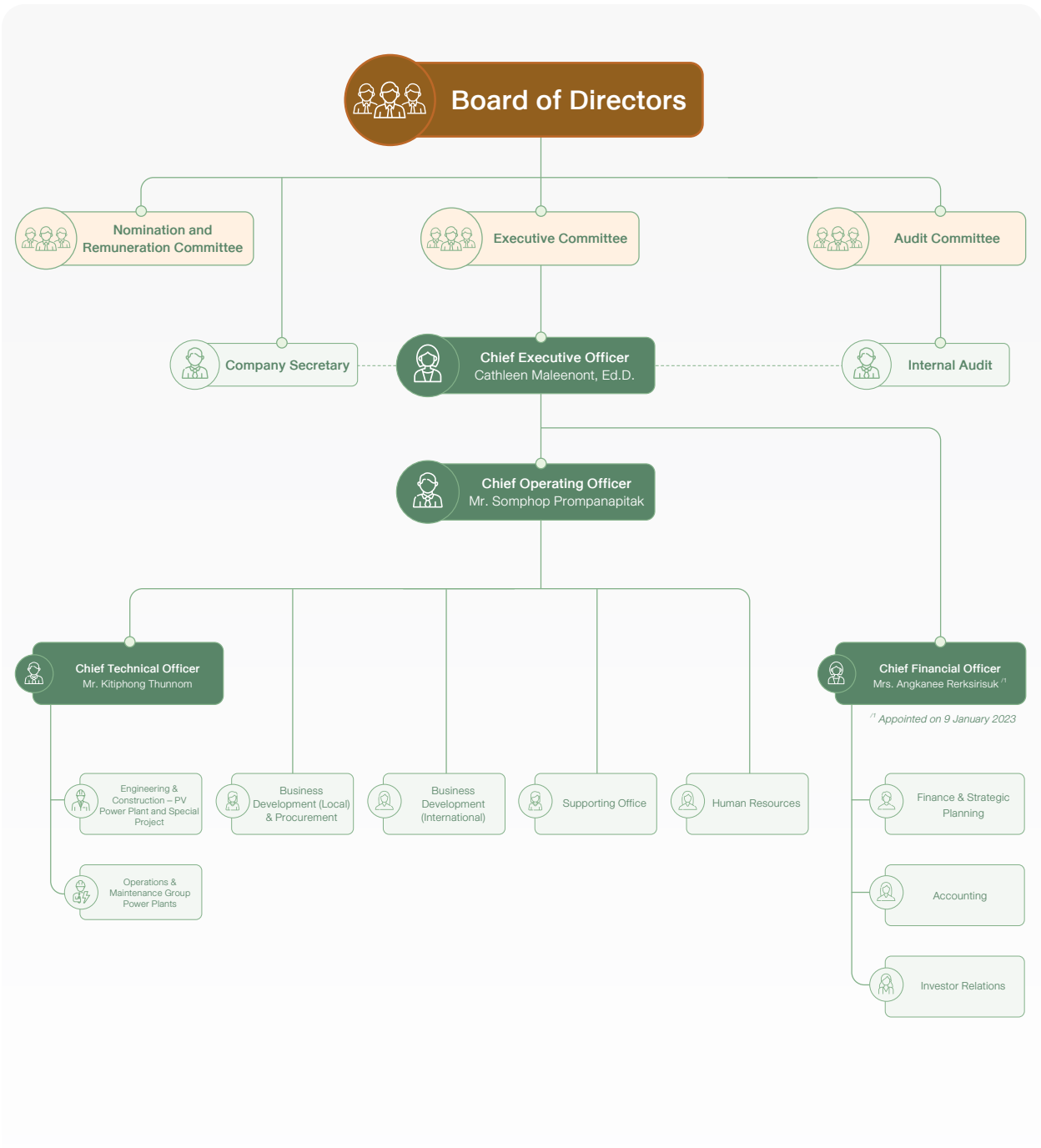
The Board of Directors operates the business under ethical principle and complies with standard laws and code of good practice as follows;

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](http://www.thaisolarenergy.com) under the topic of "Investors Relations- Corporate Good Governance".*

# Corporate governance structure and material facts related to the board, subcommittees, executives, employees and others

## Corporate governance structure



## Information on the Board of Directors and subcommittees

Board of Directors Structure consists of 4 committees, namely the Board of Directors, The Audit Committee, Nomination and Remuneration Committee and the Executive Committee which has jurisdiction Duties and Responsibilities of each committee member as follows:

### 1. The Board of Directors

As of 31 December 2022, Board of Directors consisted of the following 9 directors:

Name - Surname		Position	Date First Appointed	Meeting Attended
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	5/5
2. Prommin	Lertsuridej, M.D. <sup>/1</sup>	Vice Chairman of the Board of Directors Chairman of Nomination and Remuneration Committee Independent Director	18 February 2014 7 April 2021	5/5
3. Mr. Prasert	Patradhilok	Independent Director Chairman of the Audit Committee	26 February 2021	5/5
4. Mr. Pala	Sookawesh <sup>/1</sup>	Independent Director Member of the Audit Committee	18 February 2014 22 April 2019	5/5
5. Dr. Praphan	Subsang	Independent Director Member of the Audit Committee	7 April 2021	5/5
6. Mr. Somphop	Prompanapitak	Director Member of the Executive Committee Member of Nomination and Remuneration Committee	18 February 2014	5/5
7. Mrs. Angkanee	Rerksirisuk	Director	23 May 2017	5/5
8. Mr. Masthawin	Charnvirakul	Director	27 February 2019	5/5
9. Mr. Aran	Apichari	Independent Director	22 April 2019	5/5

<sup>/1</sup> MD. Prommin Lertsuridej and Mr. Pala Sookawesh resigned from director on 1 March 2023

### Authorized Signatories

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

### Role of the Board and

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.

### The roles and responsibilities of the Board

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

## 2. 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 2022, the Audit Committee consists of 3 directors as follows:

Name - Surname		Position	Meeting Attended
1. Mr. Prasert	Patradhilok	Chairman of the Audit Committee	4/4
2. Mr. Pala	Sookawesh	Member of the Audit Committee	4/4
3. Dr. Praphan	Subsang	Member of the Audit Committee	4/4

Mr. Amm Kaitunyalak 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. Mr. Prasert Patradhilok Currently, he is the Chairman of the Audit Committee. and independent directors in leading companies in Thailand who are knowledgeable and experience in accounting and finance
2. 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
3. Dr. Praphan Subsang Currently holding the position of Audit Committee of the Company. and is a special lecturer in law Sukhothai Thammathirat Open University He is also a judge, the Supreme Court, the Court of Appeal and the Civil Court, who is knowledgeable. Legal expertise

### Authority, Duties and Responsibilities

1. To review the Company's financial reporting to ensure the accountability and reliability with adequate information disclosure.
2. To review and advice the management about internal control system, internal audit system and risk management that they are adequate, effective, efficient, and in line with the principles of good governance and sustainable development.
3. To consider the independence of the internal audit section, including the giving of opinion for the appointment, transfer, and termination of the Head of Internal Audit or other sections that are responsible for the internal auditing.
4. To review to ensure that the company is in compliance with the Securities and Exchange Commission, the Stock Exchange of Thailand regulations, and other laws related with the business of the company.
5. To consider, select and propose for an independent person to be appointed as auditor of the company as well as the remuneration for the auditor.
6. To consider connected transactions or transactions that may cause conflict of interests to be in line with the laws and regulations of the Stock Exchange of Thailand. This is to ensure that such transactions are reasonable and for the best benefit of the company.
7. In case that the Audit Committee performs duties and note or suspect that transactions or actions described below has happened which might be materially affect the company's financial position or operating results, the Audit Committee shall promptly report to the Board of Directors for the rectification in a timely manner.



1. a transaction which causes a conflict of interest;
  2. any fraud, irregularity, or material defect in an internal control system
  3. a breach or infringement of the laws on securities and securities exchange, regulations of the Stock Exchange of Thailand, or any other law relating to the business of the company.
8. To supervise the internal audit section in the following matters:
1. To review and approve the Internal Audit Charter at least once a year. This is to ensure that the objectives, authority, duties and responsibilities are in compliance with the international professional framework of internal auditing.
  2. To approve internal audit year plan and its significant change that proposed by the internal audit section to ensure that it is in line with the organization risk, including the oversee to ensure that the audits have been conducted as planned
  3. To consider giving initial approval for the annual budget for the internal auditing provided that the internal audit section shall follow the same budgeting process as other sections of the company.

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.

### 3. 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 2022, the Nomination and Remuneration Committee consisted of 3 members as follows:

Name – Surname		Position	Meeting Attended
1. Prommin	Lertsuridej, M.D.	Chairman of Nomination and Remuneration Committee	2/2
2. Cathleen	Maleenont, Ed.D	Member of Nomination and Remuneration Committee	2/2
3. Mr. Somphop	Prompanapitak	Member of Nomination and Remuneration Committee	2/2

Ms. Wannaporn Srinives as Secretary of Nomination and Remuneration Committee

#### Authority, Duties and Responsibilities

1. Selection
  - 1.1 Consider the organization structure, qualifications of directors, chief executive officer and members of sub-committees appropriate to the Company's business.
  - 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.

## 2. Remuneration

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.

2.2 Consider and approve the Company and its subsidiaries' overall annual remuneration policy.

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.

## 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.

## 4. 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 2022, the Executive Committee consisted of 3 directors as follows:

Name – Surname		Position	Meeting 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

### Authority, Duties and Responsibilities

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 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 Company and have the same criteria as when dealing with outside parties (arm's length transactions)

## 5. Management Team

As of 31 December 2022, 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
2. Mr. Somphop	Prompanapitak	Chief Operating Officer
3. Mr. Kitiphong	Thunnom	Chief Technical Officer
4. Mrs. Angkanee	Rerksirisuk <sup>/1</sup>	Chief Financial Officer
5. Mr. Nivej	Boonwichai	Vice President Engineering and Construction – PV Power Plant & Special Project

<sup>/1</sup> Appointed on 9 January 2023

### Authority, Duties and Responsibilities

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)

### 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

In 2022, the Company paid a monetary remuneration including salary, bonus and other remuneration to top management for a total of 25.73 million baht.

Remuneration	2022	
	Number (Person)	Remuneration (Million Baht)
Salary and Bonus	4	24.75
Other remuneration such as providence fund	4	0.98
<b>Total</b>	<b>4</b>	<b>25.73</b>

## Employee Data

### 1. Total number of employees

Table showing details of the number of employees in each line of work as of 31 December 2022

Function		Headcount (People)	
		Full time staff	Temporary worker
1	Engineering	146	-
2	Accounting and Finance	41	-
3	Business development	30	-
4	Office operations	16	-
5	Human resources	7	38
Total		240	38

### 2. Employee Remuneration

The Group of Companies has paid compensation to employees in various ways. by employee compensation (excluding executive officers) of the year 2022 are as follows:

Remuneration	Million Baht
Salary	96
Bonus	20
Other Remuneration <sup>1</sup>	13
Total	129

Note: <sup>1</sup> Other Remuneration including provident funds Social Security and Other Welfare





## Other Key Information

### List of officers responsible for the following key duties at TSE:

#### 1. Company Secretary

Mr. Sompop Prompapatik, Chief Operating Officer, acting as a company secretary, with the requirement of the Securities and Exchange Act, B.E. 2535 (and its amendment). Mr. Somphop 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). His profile and qualifications appear in The Board of Directors and Management.

#### Duties and Responsibilities

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)

#### 2. Directly responsible person for accounting

TSE has assigned Ms. Chanakarn Yiamwinya, Assistant Vice President - Financial Controllers, to be directly responsible for corporate accounting supervision. Her profile appears in Attachment 2.

#### 3. Chief of internal audit

The Board of Directors has established the Internal Audit Department as an independent unit. Mr. Amm Kaitunyalak is the Section Manager - Internal Audit. It is responsible for reporting internal audit results directly to the Audit Committee. On this occasion, the Internal Audit Department prepares an annual audit plan, by considering the risk factors that are significant to the achievement of the Company's objectives. The Audit Committee reviewed and approved. The annual audit plan as well as follow up on quarterly audit results and performance of the Internal Audit Department. His profile appears in Attachment 2.

#### 4. Chief of compliance

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. Her profile appears in Attachment 2.

#### 5. Chief contacts for Investor Relations

Ms. Chadatirud Lertaveesin, Investor Relations Department Manager

Tel: 02 258 4530-34

E-mail: Corporatesec@thaisolarenergy.com

## Audit and other fees

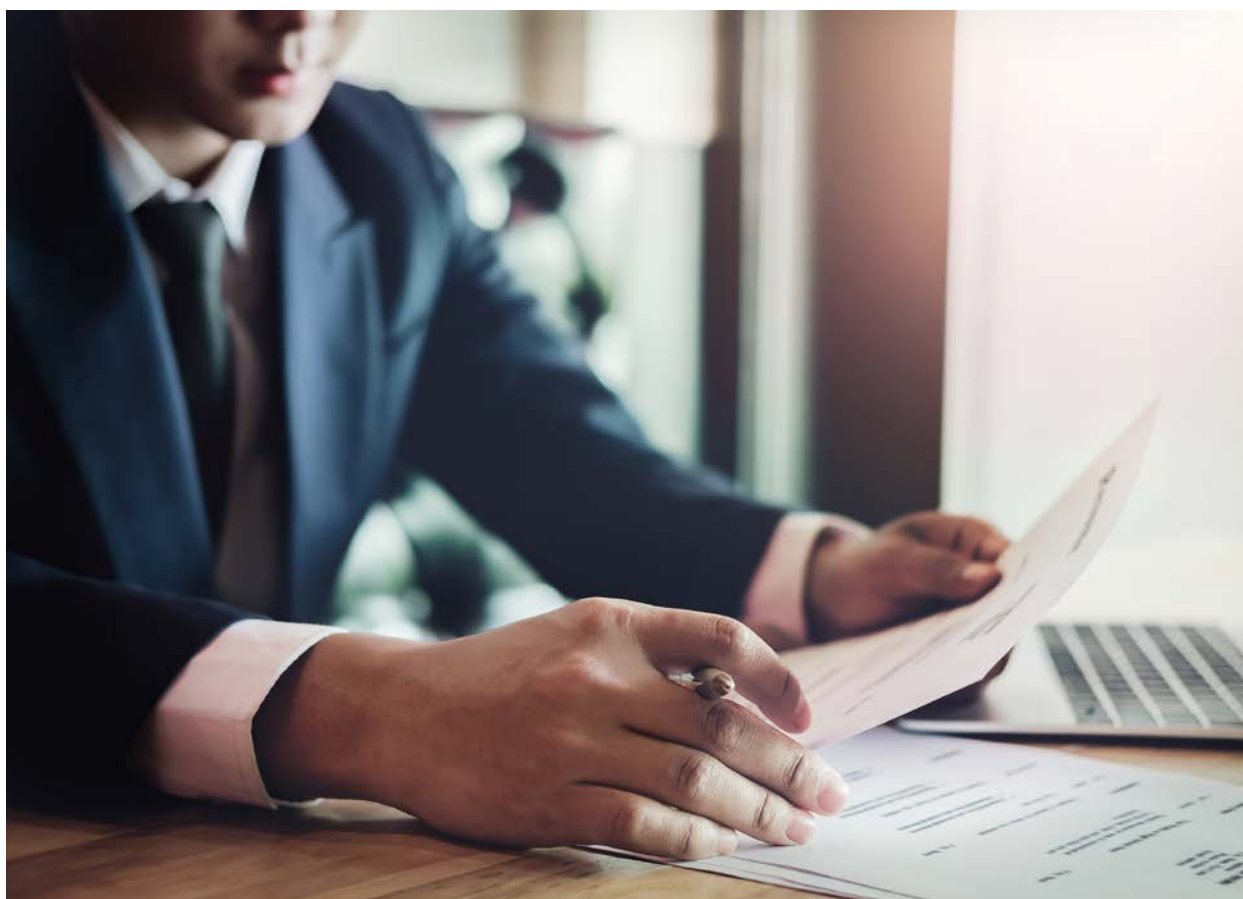
- Audit fees

In 2022, the Company's Subsidiaries paid audit fees as follows.

	2022
Thai Solar Energy Public Company Limited	1,540,000
Subsidiaries	7,660,000
<b>Total audit fee TSE and subsidiaries</b>	<b>9,200,000</b>

- 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 1,155,000 Baht





# Key Corporate Governance Implementation

## Performance of the Board of Directors in 2022

In 2022, the Board of Directors reviewed and formulated the Company's and its subsidiaries' visions in order to be consistent and suitable for future business operations, as well as good corporate governance guidelines. The Company has assigned works in various fields through sub-committees, including the management team to manage work in various fields in accordance with established policies and in accordance with the principles of good corporate governance.

### 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.

## Meeting attendance and remuneration of the Board of Directors

List of directors, executives and the number of meeting attendance as of 31 December 2022

Name - Surname		AGM 2022	BOD Meeting	Audit Committee Meeting	Nomination and Remuneration Committee	Executive Committee
1. Cathleen	Maleenont, Ed.D.	attend	5/5	--	2/2	8/8
2. Prommin	Lertsuridej, M.D.	attend	5/5	--	2/2	--
3. Mr. Prasert	Patradhilok	attend	5/5	4/4	--	--
4. Mr. Pala	Sookawesh	attend	5/5	4/4	--	--
5. Dr. Praphan	Subsang	attend	5/5	4/4	--	--
6. Mr. Somphop	Prompanapitak	attend	5/5	--	2/2	8/8
7. Mrs. Angkanee	Rerksirisuk	attend	5/5	--	--	--
8. Mr. Masthawin	Charnvirakul	attend	5/5	--	--	--
9. Mr. Aran	Apichari	attend	5/5	--	--	--
10. Mr. Kitiphong	Thunnom	---	--	--	--	8/8

## Director Remuneration

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.

## Monetary Remuneration

At the Annual General Meeting of Shareholders for 2022, held on 12 April 2022, 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 Fee
<b>Board of Directors</b>		
- Chairman	35,000	35,000
- Vice Chairman	30,000	25,000
- Directors	20,000	20,000
<b>Audit Committee</b>		
- Chairman	25,000	35,000
- Directors	20,000	20,000
<b>Nomination and Remuneration Committee</b>		
- Chairman	--	30,000
- Directors	--	15,000

During 2022, the total compensation paid to monthly retainers and meeting fees for the Board and board committee members was 4.66 million baht. The payments to each individual are shown below.

Name - Surname	Position	Monthly Remuneration	Meeting Allowances	Total Amount (Baht)
1. Cathleen Maleenont, Ed.D	Chairman of the Board of Directors Chairman of the Executive Committee Member of Nomination and Remuneration Committee	420,000	205,000	625,000
2. Prommin Lertsuridej, M.D.	Vice Chairman of the Board of Directors Chairman of Nomination and remuneration Committee Independent Director	360,000	185,000	545,000
3. Mr. Pala Sookawesh	Independent Director Member of the Audit Committee	480,000	180,000	660,000
4. Mr. Prasert Patradhilok	Independent Director Chairman of the Audit Committee	540,000	240,000	780,000
5. Dr. Praphan Subsang	Independent Director Member of the Audit Committee	480,000	180,000	660,000
6. Mr. Somphop Prompanapitak	Director Member of the Executive Committee Member of Nomination and Remuneration Committee	240,000	130,000	370,000
7. Mrs. Angkanee Rerksirisuk	Director	240,000	100,000	340,000
8. Mr. Masthawin Charnvirakul	Director	240,000	100,000	340,000
9. Mr. Aran Apichari	Independent Director	240,000	100,000	340,000

#### Other Remuneration

-None-

## Corporate Governance of Subsidiaries, Joint-Ventured and Affiliates

The Company supervises the operation of Subsidiaries, Joint-Ventured and Affiliates 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 or equivalent and higher level, about the preparation and submission of the reports on securities holding and 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

## Directors and Executives' Shareholding in TSE in 2022

Name - Surname		Position	Shareholding (%)	Changes during 2022		Shareholding (%)
			31 Dec 2021	Increase	Decrease	31 Dec 2022
Cathleen	Maleenont, Ed.D.	Chairman of the Board of Directors Chairman of the Executive Committee Member of Nomination and Remuneration Committee	--	---	--	--
Prommin	Lertsuridej, M.D.	Vice Chairman of the Board of Directors Chairman of Nomination and Remuneration Committee Independent Director	---	---	---	---
Mr. Prasert	Patradhilok	Chairman of the Audit Committee Independent Director	---	---	---	---
Mr. Pala	Sookawesh	Member of the Audit Committee Independent Director	---	---	---	---
Dr. Praphan	Subsang	Member of the Audit Committee Independent Director	---	---	---	---
Mr. Somphop	Prompanapitak	Director Member of the Executive Committee Member of Nomination and Remuneration Committee	---	---	---	---
Mrs. Angkanee	Rerksirisuk	Director	---	---	---	---
Mr. Masthawin	Charnvirakul	Director	---	---	---	---
Mr. Aran	Apichari	Independent Director	---	---	---	---
Mr. Kitiphong	Thunnom	Member of the Executive Committee Chief Technical Officer	---	---	---	---
Mr. Nivej	Boonwichai	Vice President Engineering and Construction - PV Power Plant & Special Project	---	---	---	---

*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.



## 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

At present, the Company is in the process of preparing and improving the anti-corruption policy further. to cover in accordance with the relevant criteria with due diligence and using proper judgment as well as joining the Thai Private Sector Collective Action Coalition Against Corruption (CAC), in cooperation with civil society, the media and international organizations. to create a clean business standard

## Whistleblowing

The Company provides channels for whistleblowing and complaints of all stakeholders. They can report clues and complaints to the Company by having an independent audit committee to consider and has an internal audit department Screening for such clues and complaints through the following channels

- Send an e-mail to the Internal Audit Department : [AuditCom@thaisolarenergy.com](mailto:AuditCom@thaisolarenergy.com) or Send a sealed letter to the Chairman of the Audit Committee. (Which is an independent director) or a director of the company at the following address: Thai Solar Energy Public Company Limited 725 S-Metro Building, 19th Floor, Sukhumvit Road, KlongtanNua, Wattana, Bangkok 10110

In 2022, There is no complaint or breach of policies or practices or any actions which may be deemed as corruption or unethical practices. There is no case of the executive resignation due to the corporate governance issues, and there is no case of defamation due to the failure of monitoring the Board



# Internal control and related party transactions

## Internal control

The Audit Committee, which is comprised of 3 independent directors, has been assigned by the Board of Directors to review and follow up on the assessment of the internal control system sufficiency, including the accuracy and reliability of financial reports, compliance with relevant laws and regulations, and items that may pose a conflict of interest for the Company's shareholders, directors, and executives.

The Board of Directors has considered that the Company has sufficient and appropriate internal control system in order to be able to operate the system effectively able to protect the assets of the Company and its subsidiaries from being misused by directors or executives without authority including transactions with persons who may have conflicts of interest and connected persons enough for internal control in other topics. The Board of Directors is of the opinion that the Company has sufficient internal control as well.

At the Audit Committee meeting on February 24, 2021, the effectiveness of the internal control system was evaluated following the goal of the Committee of Sponsoring Organizations of the Treadway Commission's COSO Internal Control-Integrated Framework 2013 (COSO 2013), which consists of five components and 17 principles with aims to support the companies to achieve key operational objectives, financial reporting, legal compliance, and the rules and regulations that govern these areas. Internal control activities can be summarized as follows based on the internal control assessment of Thai Solar Energy Public Company Limited and its subsidiaries in various fields in 2021:

### 1. Control Environment

- The Board of Directors is autonomous from the administration. The Board of Directors additionally decides the endorsement authority of the Board of Directors, the Chief Executive Officer and the Company Department conveyed plainly and appropriately. There is an authoritative structure that obviously expresses the power, order, and obligation.
- The Board of Directors has clearly defined visions, missions, and objectives as guidelines for the operations of the management and employees in order to operate in accordance with the goals, taking into account all groups of stakeholders.
- The Board of Directors has assigned the Audit Committee to be responsible for reviewing the suitability and effectiveness of the internal control system to ensure that the Company and its subsidiaries are suitable enough to protect Company assets and maintain the interests of shareholders with an internal audit unit that is responsible for checking the performance of all departments.





## 2. Risk Assessment

- The Company has evaluated the risks by taking into account internal and external factors that may have an impact on the Company's goals by evaluating opportunities and the impact that will occur that can be used to prioritize and identify the major risks for the Company. Furthermore, the Company provides various measures in order to reduce or prevent potential risks.
- The Company operates under a risk appetite in order to achieve the Company's objectives and respond to the expectations of all stakeholders.

## 3. Control Activities

- The Company determined financial approval authority in order of the management's approval of various items in writing, including reviewing the financial approval authority regularly to be suitable. In addition, there are policies, regulations, operational procedures to guide operations, such as the preparation of rules and regulations for the procurement process for the head office and at the power plant, where a method of practice has been established, including clearly stated duties and responsibilities. The policies, procedures, and control activities are reviewed periodically to ensure that the authorization and review is consistent with changing circumstances or risks under a controlled environment.
- The Company established Business Continuity Plan (BCP) to deal with the impact of the coronavirus disease 2019 (COVID-19) outbreak on Company operations. The Company has policies in place to allow employees to work from home and then return to the office, including measures to limit third-party entry and exit, among other things.

## 4. Information & Communication

- At TSE, there are information system that provides critical information to the Board of Directors and management. For example, at least 7 days prior to the meeting date, an invitation letter and meeting agenda containing necessary and sufficient information are sent to the Board of Directors.
- The operating results will be reported to the Board of Directors and related persons, such as executives, auditors, and internal auditors, shall be invited to attend the meeting, discuss, clarify or answer questions as required.
- Documentation for the preparation of financial reports and important documents such as regulations and orders related to business operations are kept and completely organized into categories for the convenience of reference and search.
- Communication channels to disseminate information to third parties through the Company's website and investor relations are provided for outsiders and stakeholders to be able to receive information or contact for information about the Company at any time.
- Guidelines for whistleblowing or complaints about business ethics are set and published on the website of the Company. Employees and stakeholders can report the matter to the Audit Committee, Company Director, or Internal Audit Department, and the information of the whistleblower will be kept confidential to build confidence for whistleblowers.

## 5. Monitoring Activities

- Management and the Company's Head will decide how to monitor the internal control system's effectiveness, such as by meeting to discuss follow-up meetings and data analysis. By reporting to the Audit Committee for acknowledgment on a quarterly basis, the internal audit unit is responsible for independently evaluating the effectiveness of the internal control system, monitoring and reporting on the progress of management's remediation of detected issues, such as issues of high damage value that may affect the Company's reputation, violations of regulations or laws, and issues that may be related to corruption, etc.
- The Company will support the external auditors to be able to work independently, review and express opinions on the financial statements to comply with the level of risk in their changing business model and environment, the results are reported to the Audit Committee for acknowledgment on a quarterly basis.

## Related party transactions

Related party transactions during the past 3 years

Persons which may have conflict of interest/nature of business/nature of relationship	Nature of Transactions	Transaction Value			Necessity and Reasonableness of the transaction
		2020	2021	2022	
<p>1. P.M. Energy Company Limited ("PME")</p> <p><b>Nature of the business</b> Investment in renewable energy with the Head Office located at 725 S-Metro, 19th floor, Sukhumvit Road, KlongtanNua, Wattana Bangkok</p> <p><b>Relationship with the Company</b></p> <ul style="list-style-type: none"> <li>A major shareholder of the Company. As of 31 December 2022 PME held 41% share in TSE</li> <li>The director who is in the management team:</li> </ul> <p><b>Ms. Cathleen Maleenont, Ed.D.</b> (Chairman of Board of Directors, Chairman of Executive Committee and Chief Executive Officer of TSE) is a director and major shareholder of PME.</p> <p><b>Mr.Somphop Prompanapitak</b> (Director, Executive Committee and Chief Operation Officer of TSE) is a director of PME</p>	<p>PME takes the Company's shares Some holdings are pledged with a commercial bank. as part of the collateral for the Company's loan</p>	248	262	234	<p>The Company has a loan facility from a commercial bank. by the said loan amount Partly secured by the Company's shares held by PME, which is in accordance with the specified conditions.</p> <p><b>Opinions of the Audit Committee</b></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 2022, i.e., 2.34 Baht/share

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

The Company established measures and procedures for approving related party transactions of the Company and/ or its subsidiaries with stakeholders or persons which may have a conflict of interest or a potential conflict of interest in the future. These measures and procedures are to ensure transparency and fairness and to prevent the transfer of interest from the Company and/ or its subsidiaries. They consist of following measures:

- 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:
  - 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.







# 3

## Financial Statement

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# The Board of Directors' Responsibility for Financial Reporting

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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 2022 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, Miss Nuntika Limviriyalers (CPA No. 7358) 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 2022. 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



# 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 and the separate financial statements present fairly, in all material respects, the consolidated financial position of Thai Solar Energy Public Company Limited (the Company) and its subsidiaries (the Group) and the separate financial position of the Company as at 31 December 2022, and its consolidated and separate financial performance and its consolidated and separate cash flows for the year then ended in accordance with Thai Financial Reporting Standards (TFRS).

### 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 2022;
- 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 significant accounting policies and other explanatory information.

### Basis for opinion

I conducted my audit in accordance with Thai Standards on Auditing (TSAs). My responsibilities under those standards are further described in the Auditor's responsibilities for the audit of the consolidated and separate financial statements section of my report. I am independent of the Group and the Company in accordance with the Code of Ethics for Professional Accountants including Independence Standards issued by the Federation of Accounting Professions (TFAC Code) that are relevant to my audit of the consolidated and separate financial statements, and I have fulfilled my other ethical responsibilities in accordance with the TFAC Code. 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 judgement, were of most significance in my audit of the consolidated and separate financial statements of the current period. I determined one key audit matter: Acquisition of investment in Soilcrete Technology Company Limited. The matter was addressed in the context of my audit of the consolidated and separate financial statements as a whole, and in forming my opinion thereon, and I do not provide a separate opinion on the matter.

Key audit matter	How my audit addressed the key audit matter
<p><b>Acquisition of investment in Soilcrete Technology Company Limited</b></p> <p>Refer to note 7 to the 'Critical accounting estimates and judgements' and note 15 'Investment in subsidiaries'.</p> <p>On 7 July 2022, the Group acquired investments in Soilcrete Technology Company Limited which engages in ground-mounting solar power plants, for a consideration of Baht 527.61 million, representing 100% of its equity. The Group's management assessed that the acquisition of the investment qualified as a business combination by applying the definition in TFRS 3 - Business Combinations.</p> <p>The management engaged an 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 amount of this transaction 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 key procedures included the following:</p> <ul style="list-style-type: none"> <li>• I assessed the management's consideration whether the investment should be accounted for as a business combination under TFRS 3.</li> <li>• I assessed the appropriateness of the identifiable assets acquired and the liabilities assumed at the acquisition date. I also evaluated the valuer's competency, independence and objectivity.</li> <li>• 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.</li> <li>• I evaluated the reasonableness of key assumptions applied in purchase price allocation by comparing with relative contracts, historical data and market data in the comparable industry.</li> <li>• I tested mathematical on goodwill arises during business combinations which is a difference between the amount of consideration paid from acquirer to acquiree and net identifiable assets acquired.</li> <li>• I evaluated the appropriateness of the accounting records and adequacy of the disclosure made to the financial statements.</li> </ul> <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. 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 TFRS, 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's and the Company's ability to continue as a going concern, disclosing, as applicable, matters related to going concern and using the going concern basis of accounting unless 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's and the Company's financial reporting process.

## Auditor's responsibilities for the audit of the consolidated and separate financial statements

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

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

- Identify and assess the risks of material misstatement of the consolidated and separate financial statements, whether due to fraud or error, design and perform audit procedures responsive to those risks, and obtain audit evidence that is sufficient and appropriate to provide a basis for my opinion. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control.
- Obtain an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Group's and the Company's internal control.

- Evaluate the appropriateness of accounting policies used and the reasonableness of accounting estimates and related disclosures made by the directors.
- Conclude on the appropriateness of the directors' use of the going concern basis of accounting and, based on the audit evidence obtained, whether a material uncertainty exists related to events or conditions that may cast significant doubt on the Group's and the Company's ability to continue as a going concern. If I conclude that a material uncertainty exists, I am required to draw attention in my auditor's report to the related disclosures in the consolidated and separate financial statements or, if such disclosures are inadequate, to modify my opinion. My conclusions are based on the audit evidence obtained up to the date of my auditor's report. However, future events or conditions may cause the Group and the Company to cease to continue as a going concern.
- Evaluate the overall presentation, structure and content of the consolidated and separate financial statements, including the disclosures, and whether the consolidated and separate financial statements represent the underlying transactions and events in a manner that achieves fair presentation.
- Obtain sufficient appropriate audit evidence regarding the financial information of the entities or business activities within the Group to express an opinion on the consolidated financial statements. I am responsible for the direction, supervision and performance of the group audit. I remain solely responsible for my audit opinion.

I communicate with 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 the matter 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.



**Nuntika Limviriyalers**

Certified Public Accountant (Thailand) No. 7358

Bangkok

23 February 2023



# Thai Solar Energy Public Company Limited

## Statement of Financial Position

As at 31 December 2022

	Notes	Consolidated financial statements		Separate financial statements	
		2022	2021	2022	2021
		Baht	Baht	Baht	Baht
<b>Assets</b>					
<b>Current assets</b>					
Cash and cash equivalents	9	360,642,982	849,068,198	131,134,688	79,388,743
Short-term restricted bank deposits	10	6,217,761	9,124,751	6,217,761	9,124,751
Financial assets measured at amortised cost	11.1	468,168	467,589	468,168	467,589
Financial assets measured at fair value					
through profit or loss	11.2	2,007,126	-	-	-
Trade and other receivables	12	400,797,218	371,513,189	317,779,151	327,699,310
Current portion of long-term loans to subsidiaries	36.3	-	-	76,690,000	78,520,000
Inventories		31,189,727	26,301,577	-	-
Refundable Value Added Tax		38,220,850	71,076,712	-	-
Undue input Value Added Tax		652,434,399	419,219,001	505,971	288,825
Other current assets	13	266,708,013	3,153,152	126,786,798	2,884,447
<b>Total current assets</b>		<b>1,758,686,244</b>	<b>1,749,924,169</b>	<b>659,582,537</b>	<b>498,373,665</b>
<b>Non-current assets</b>					
Long-term restricted bank deposits	10	51,350,686	46,236,784	1,050,000	1,050,000
Long-term loans to subsidiaries	36.3	-	-	5,829,244,977	5,830,077,641
Receivables from disposal of investments	36.2	-	-	404,409,990	1,383,683,149
Investments in subsidiaries	15	-	-	2,339,149,897	1,199,149,897
Investments in joint ventures	14	2,095,059,465	2,049,707,165	350,000,130	350,000,130
Investment properties	16	100,968,511	101,930,512	89,977,885	89,977,885
Property, plant and equipment	17	11,362,224,564	10,463,170,193	83,176,530	89,744,639
Right-of-use assets	18	180,708,339	302,291,711	15,234,184	22,597,270
Goodwill	19	96,670,636	48,539,794	-	-
Intangible assets	20	4,795,600,613	4,885,480,446	1,726,640	3,356,774
Deferred tax assets	21	22,025,026	22,021,077	-	-
Other non-current assets		46,745,295	37,614,540	27,766,392	19,812,429
<b>Total non-current assets</b>		<b>18,751,353,135</b>	<b>17,956,992,222</b>	<b>9,141,736,625</b>	<b>8,989,449,814</b>
<b>Total assets</b>		<b>20,510,039,379</b>	<b>19,706,916,391</b>	<b>9,801,319,162</b>	<b>9,487,823,479</b>

# Thai Solar Energy Public Company Limited

## Statement of Financial Position (Cont'd)

As at 31 December 2022

		Consolidated		Separate	
		financial statements		financial statements	
		2022	2021	2022	2021
Notes		Baht	Baht	Baht	Baht
Liabilities and equity					
Current liabilities					
Short-term borrowings from financial institutions	23.1	824,800,000	230,000,000	824,800,000	230,000,000
Trade and other payables	22	170,203,405	152,265,624	54,698,526	45,074,890
Current portion of right in power purchase agreement payables		889,771	842,823	-	-
Current portion of lease liabilities	23.2	16,203,277	29,091,881	3,365,064	7,989,350
Current portion of long-term borrowings	23.3	498,840,729	600,855,831	292,704,365	331,320,868
Current portion of debentures	23.5	1,099,290,378	2,348,497,958	1,099,290,378	2,348,497,958
Income tax payable		6,408,450	5,536,865	-	-
Other current liabilities		34,570,763	38,948,970	11,505,268	12,704,537
Total current liabilities		2,651,206,773	3,406,039,952	2,286,363,601	2,975,587,603
Non-current liabilities					
Right in power purchase agreement payables		24,043,956	24,933,727	-	-
Lease liabilities	23.2	192,211,291	288,316,598	2,066,470	4,861,779
Long-term borrowings from financial institutions	23.3	8,753,066,696	8,393,802,259	1,747,228,671	1,854,568,747
Debentures	23.5	2,334,960,631	1,098,310,884	2,334,960,631	1,098,310,884
Derivative liabilities	24	-	50,463,036	-	-
Employee benefit obligations	25	20,519,070	21,559,034	20,519,070	21,559,034
Provision for decommissioning costs		5,951,786	31,114,679	2,793,266	2,721,982
Deferred tax liabilities	21	85,273,462	42,924,412	5,111,357	3,557,083
Other non-current liabilities		72,000	72,000	72,000	72,000
Total non-current liabilities		11,416,098,892	9,951,496,629	4,112,751,465	2,985,651,509
Total liabilities		14,067,305,665	13,357,536,581	6,399,115,066	5,961,239,112





## Thai Solar Energy Public Company Limited

### Statement of Financial Position (Cont'd)

As at 31 December 2022

	Notes	Consolidated		Separate	
		financial statements		financial statements	
		2022	2021	2022	2021
		Baht	Baht	Baht	Baht
<b>Liabilities and equity</b> (Cont'd)					
<b>Equity</b>					
Share capital	26				
Authorised share capital					
Ordinary shares 2,477,474,454 shares of par Baht 1 each		2,477,474,454	2,477,474,454	2,477,474,454	2,477,474,454
Issued and paid-up share capital					
Ordinary shares 2,117,716,281 shares of fully-paid		2,117,716,281	2,117,716,281	2,117,716,281	2,117,716,281
Premium on ordinary shares		1,045,504,325	1,045,504,325	1,045,504,325	1,045,504,325
Retained earnings					
Appropriated-legal reserve	27	150,677,758	130,022,093	91,877,074	91,877,074
Unappropriated		3,883,347,624	3,250,080,099	147,106,416	271,486,687
Other components of equity		(754,512,274)	(193,942,988)	-	-
Equity attributable to owners of the parent		6,442,733,714	6,349,379,810	3,402,204,096	3,526,584,367
Non-controlling interests		-	-	-	-
<b>Total equity</b>		6,442,733,714	6,349,379,810	3,402,204,096	3,526,584,367
<b>Total liabilities and equity</b>		20,510,039,379	19,706,916,391	9,801,319,162	9,487,823,479

# Thai Solar Energy Public Company Limited

## Statement of Comprehensive Income

For the year ended 31 December 2022

	Notes	Consolidated financial statements		Separate financial statements	
		2022	2021	2022	2021
		Baht	Baht	Baht	Baht
Revenue from sales and service		1,091,835,690	1,308,508,946	-	-
Subsidy for adders		167,499,061	166,241,916	-	-
Management service fee income		55,258,432	49,327,078	153,886,742	194,993,395
<b>Total revenue</b>		<b>1,314,593,183</b>	<b>1,524,077,940</b>	<b>153,886,742</b>	<b>194,993,395</b>
Cost of sales and services		(892,943,426)	(1,075,242,834)	(130,001,347)	(111,285,345)
<b>Gross profit</b>		<b>421,649,757</b>	<b>448,835,106</b>	<b>23,885,395</b>	<b>83,708,050</b>
Dividends income		35	58	682,299,863	597,387,947
Other income	28	11,778,925	9,871,559	11,515,808	15,040,495
Other gains (losses)	29	213,017,371	87,087,217	(363,920,651)	(8,467,729)
Administrative expenses		(227,091,309)	(348,776,071)	(131,267,253)	(262,525,052)
Finance costs	31	(327,958,128)	(338,316,401)	(273,661,676)	(246,979,275)
Share of profit from investment in joint ventures	14	647,702,369	642,919,195	-	-
<b>Profit (loss) before income tax</b>		<b>739,099,020</b>	<b>501,620,663</b>	<b>(51,148,514)</b>	<b>178,164,436</b>
Income tax	32	(15,326,672)	(8,635,487)	(1,554,275)	1,131,472
<b>Profit (loss) for the year</b>		<b>723,772,348</b>	<b>492,985,176</b>	<b>(52,702,789)</b>	<b>179,295,908</b>
<b>Other comprehensive income for the year:</b>					
Item that will not be reclassified to profit or loss:					
Remeasurements of post - employment benefit obligation		2,442,589	-	2,442,589	-
Items that will be reclassified subsequently to profit or loss:					
Currency translation differences		(606,703,965)	14,285,513	-	-
Change in fair value of hedge derivatives		-	8,009,244	-	-
<b>Total comprehensive income for the year</b>		<b>119,510,972</b>	<b>515,279,933</b>	<b>(50,260,200)</b>	<b>179,295,908</b>
<b>Profit attributable to:</b>					
Owners of the parent		723,772,348	492,705,987	(52,702,789)	179,295,908
Non-controlling interests		-	279,189	-	-
		<b>723,772,348</b>	<b>492,985,176</b>	<b>(52,702,789)</b>	<b>179,295,908</b>
<b>Total comprehensive income attributable to:</b>					
Owners of the parent		119,510,972	514,958,378	(50,260,200)	179,295,908
Non-controlling interests		-	321,555	-	-
		<b>119,510,972</b>	<b>515,279,933</b>	<b>(50,260,200)</b>	<b>179,295,908</b>
<b>Earnings (loss) per share</b>	33				
Basic earnings (loss) per share		0.34	0.23	(0.02)	0.08

# Thai Solar Energy Public Company Limited

## Statement of Changes in Equity

For the year ended 31 December 2022

Consolidated financial statements												
Notes	Attribute to owners of the parent											
	Retained earnings			Other components of equity			Fair value			Total owners of the parent		
	Issued and called-up share capital	Premium on ordinary capital	Appropriated - legal reserve	Unappropriated	Changes in parent's ownership interest in subsidiary	Translation of financial statements	of hedge derivatives	Non-controlling interests	Total	Baht	Baht	Baht
	Baht	Baht	Baht	Baht	Baht	Baht	Baht	Baht	Baht	Baht	Baht	Baht
<b>Opening balance at 1 January 2021</b>	2,117,716,281	1,045,504,325	106,757,899	2,865,346,957	(18,292,375)	(143,759,081)	(55,972,247)	2,031,046	5,917,301,759	5,919,332,805		
<b>Change in equity for the year</b>												
Additional investment in subsidiary by purchasing shares from non-controlling interests	-	-	-	-	1,828,324	-	-	-	1,828,324	(2,352,601)	(524,277)	
Appropriation of legal reserve	-	-	23,264,194	(23,264,194)	-	-	-	-	-	-	-	-
Cash dividends	-	-	-	(84,708,651)	-	-	-	-	(84,708,651)	-	(84,708,651)	
Total comprehensive income for the year	-	-	-	492,705,987	-	14,243,147	8,009,244	321,555	514,958,378	515,279,933		
<b>Closing balance at 31 December 2021</b>	2,117,716,281	1,045,504,325	130,022,093	3,250,080,099	(16,484,051)	(129,515,934)	(47,963,003)	-	6,349,379,810	6,349,379,810		
<b>Opening balance at 1 January 2022</b>	2,117,716,281	1,045,504,325	130,022,093	3,250,080,099	(16,484,051)	(129,515,934)	(47,963,003)	-	6,349,379,810	6,349,379,810		
<b>Change in equity for the year</b>												
Disposal of subsidiary	-	-	-	1,828,324	(1,828,324)	-	47,963,003	-	47,963,003	-	47,963,003	
Appropriation of legal reserve	-	-	20,655,665	(20,655,665)	-	-	-	-	-	-	-	-
Cash dividends	-	-	-	(74,120,071)	-	-	-	-	(74,120,071)	-	(74,120,071)	
Total comprehensive income for the year	-	-	-	726,214,937	-	(606,703,965)	-	-	119,510,972	119,510,972		
<b>Closing balance at 31 December 2022</b>	2,117,716,281	1,045,504,325	150,677,758	3,883,347,624	(18,292,375)	(736,219,899)	-	-	6,442,733,714	6,442,733,714		

# **Thai Solar Energy Public Company Limited** **Statement of Changes in Equity (Cont'd)**

For the year ended 31 December 2022

	Notes	Separate financial statements					
		Issued and paid-up share capital	Premium on ordinary share capital	Retained earnings		Total	
		Baht	Baht	Appropriated - legal reserve	Unappropriated		
		Baht	Baht	Baht	Baht	Baht	Baht
<b>Opening balance at 1 January 2021</b>		2,117,716,281	1,045,504,325	80,090,954	188,685,550	3,431,997,110	
<b>Change in equity for the year</b>							
Appropriation of legal reserve	27	-	-	11,786,120	(11,786,120)	-	
Cash dividends	35	-	-	-	(84,708,651)	(84,708,651)	
Total comprehensive income for the year		-	-	-	179,295,908	179,295,908	
<b>Closing balance at 31 December 2021</b>		2,117,716,281	1,045,504,325	91,877,074	271,486,687	3,526,584,367	
<b>Opening balance at 1 January 2022</b>		2,117,716,281	1,045,504,325	91,877,074	271,486,687	3,526,584,367	
<b>Change in equity for the year</b>							
Appropriation of legal reserve	35	-	-	-	(74,120,071)	(74,120,071)	
Total comprehensive income for the year		-	-	-	(50,260,200)	(50,260,200)	
<b>Closing balance at 31 December 2022</b>		2,117,716,281	1,045,504,325	91,877,074	147,106,416	3,402,204,096	





# Thai Solar Energy Public Company Limited

## Statement of Cash Flows

For the year ended 31 December 2022

	Notes	Consolidated financial statements		Separate financial statements	
		2022	2021	2022	2021
		Baht	Baht	Baht	Baht
<b>Cash flows from operating activities</b>					
Profit before income tax		739,099,020	501,620,663	(51,148,514)	178,164,436
Adjustments for:					
Depreciation	30	265,614,761	370,438,422	15,438,533	15,935,584
Amortisation	30	69,701,835	60,124,835	1,941,454	2,006,997
Expected credit loss		-	7,605,020	-	7,605,020
Share of profit from investments in joint ventures	14	(647,702,369)	(642,919,195)	-	-
Provision for long-term employee benefits obligation	25	7,094,792	4,304,857	7,094,792	4,304,857
Unrealised (gain) loss on exchange		(100,708,106)	11,174,854	356,596,891	67,718,928
Gain from measurement on financial assets	11	(7,126)	-	-	-
Loss from impairment of assets	30	-	154,562,421	-	154,562,421
Write-off equipment	30	476,889	4,598,100	-	-
Gain on loan restructuring	29	-	(60,451,325)	-	(60,451,325)
Gain from disposal of subsidiaries	29	(234,436,964)	(104,410,828)	-	-
Write-off withholding tax		66,781	198,854	418	-
Dividends income		(35)	(58)	(682,299,863)	(597,387,947)
Interest income	28	(543,577)	(442,201)	(8,113,407)	(13,855,736)
Finance cost	31	327,958,128	338,316,401	273,661,676	246,979,275
Loss on impairment of goodwill	19	3,681,768	2,315,248	-	-
		430,295,797	647,036,068	(86,828,020)	5,582,510
<b>Changes in operating assets and liabilities</b>					
Trade and other receivables		(70,958,204)	24,021,529	21,917,902	(99,082,914)
Inventories		(4,888,150)	(3,496,851)	-	-
Value added tax refundable		32,855,862	34,039,947	-	-
Undue input Value Added Tax		(233,215,398)	(148,700,538)	(217,146)	313,685
Other current assets		(260,302,398)	1,858,212	(121,212,411)	(2)
Other non-current assets		(9,051,171)	1,953,396	(7,968,747)	(33,660)
Trade and other payables		(12,826,217)	3,008,661	9,850,564	1,486,461
Other current liabilities		(6,707,597)	(28,629,952)	(1,199,269)	6,850,942
Employee benefit payments	25	(5,692,167)	(117,079)	(5,692,167)	(117,079)
Cash flows from (used in) operating activities		(140,489,643)	530,973,393	(191,349,294)	(85,000,057)
<u>Add</u> Income tax received		3,724,000	-	2,693,405	-
<u>Less</u> Income tax paid		(20,061,928)	(11,443,985)	(5,383,764)	(3,380,368)
Cash flows from (used in) operating activities		(156,827,571)	519,529,408	(194,039,653)	(88,380,425)

# Thai Solar Energy Public Company Limited

## Statement of Cash Flows (Cont'd)

For the year ended 31 December 2022

	Notes	Consolidated		Separate	
		financial statements		financial statements	
		2022 Baht	2021 Baht	2022 Baht	2021 Baht
<b>Cash flows from investing activities</b>					
Acquisition of subsidiaries, net of cash acquired		(493,385,871)	-	(1,140,000,000)	-
Proceeds from disposal of subsidiaries		530,868,640	351,185,241	979,273,159	
(Increase) decrease in restricted bank deposits		(2,206,912)	(2,157,852)	2,906,990	1,221,665
Acquisition of financial assets measured at fair value through profit or loss	11	(2,000,000)	-	-	-
Long-term loans made to subsidiaries	36.3	-	-	(734,178,055)	(200,597,300)
Repayment received from long-term loan to subsidiaries	36.3	-	-	385,161,395	508,208,010
Purchase of property, plant and equipment		(2,932,824,819)	(1,669,233,840)	(858,731)	(259,073)
Payment for borrowing cost of property, plant and equipment		(69,006,449)	(99,128,154)	-	-
Purchase of intangible assets	20	(2,110,720)	(848,476)	(311,320)	(243,640)
Interest received		532,922	446,414	13,256,801	10,531,059
Dividends received		660,249,824	549,787,997	660,249,859	549,787,939
Net cash (used in) generated from investing activities		(2,309,883,385)	(869,948,670)	165,500,098	868,648,660
<b>Cash flows from financing activities</b>					
Proceeds from short-term borrowings from financial institutions, net of financial service fee	23.1	3,206,800,000	60,000,000	3,206,800,000	60,000,000
Repayment to short-term borrowings from financial institutions	23.1	(2,612,000,000)	(80,000,000)	(2,612,000,000)	(80,000,000)
Repayment to lease liabilities	23.2	(35,715,359)	(43,236,031)	(8,449,889)	(9,049,409)
Proceeds from long-term borrowings	23.3	2,448,883,398	1,557,491,210	190,000,000	-
Financial service fee from long-term borrowings	23.3	(950,000)	(4,539,901)	(950,000)	(4,539,901)
Repayment to long-term borrowings from financial institutions	23.3	(542,062,017)	(652,363,726)	(336,732,017)	(360,771,656)
Proceeds from issuance of debentures, net debt issuance cost	23.5	2,333,550,000	-	2,333,550,000	-
Redemption of debentures	23.5	(2,350,000,000)	-	(2,350,000,000)	-
Repayment from short-term borrowings from others		(117,550,747)		-	
Purchase shares in subsidiary from non-controlling interests		-	(524,277)	-	-
Cash dividends	35	(74,120,071)	(190,593,465)	(74,120,071)	(190,593,465)
Interest paid		(295,898,839)	(328,512,808)	(267,818,015)	(240,957,391)
Net cash generated from (used in) financing activities		1,960,936,365	317,721,002	80,280,008	(825,911,822)



## Thai Solar Energy Public Company Limited

### Statement of Cash Flows (Cont'd)

For the year ended 31 December 2022

	Consolidated		Separate	
	financial statements		financial statements	
	2022	2021	2022	2021
	Baht	Baht	Baht	Baht
<b>Net (decrease) increase in cash and cash equivalents</b>	(505,774,591)	(32,698,260)	51,740,453	(45,643,587)
Cash and cash equivalents at beginning of the year	849,068,198	883,246,238	79,388,743	124,974,583
Effect of exchange differences on cash and cash equivalents	5,492	(46,655)	5,492	57,747
Effect of exchange differences on translation of financial statements	17,343,883	(1,433,125)	-	-
<b>Cash and cash equivalents at end of the year</b>	<b>360,642,982</b>	<b>849,068,198</b>	<b>131,134,688</b>	<b>79,388,743</b>
<b>Non-cash transactions</b>				
Significant non-cash transactions are as follows:				
Payable arising from construction and purchase of equipment	407,500	1,145,800	-	-
Capitalise borrowing cost to property, plant and equipment	18,375,872	18,499,575	-	-

# Thai Solar Energy Public Company Limited

## Notes to the Consolidated and Separate Financial Statements

For the year ended 31 December 2022

### 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 S-Metro Building, 19<sup>th</sup> 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 23 February 2023.

#### Financial position

As of 31 December 2022, The Group and the Company have the total current liabilities exceeding total current assets. Management has prepared a cash flow forecast and confident that the estimation can be achieved. In addition, the Group has enough undrawn credit facilities available and plan to roll over the debentures to use in its operation. Accordingly, the Group could continue its operations as a going concern, and to fulfil all its financial obligations now and in the future.

### 2 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 certain financial assets and liabilities (including derivative instrument) 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 7.

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.





# Thai Solar Energy Public Company Limited

## Notes to the Consolidated and Separate Financial Statements

For the year ended 31 December 2022

### 3 New and amended financial reporting standards

#### 3.1 New and amended financial reporting standards that are effective for accounting period beginning on or after 1 January 2022 and relevant to the Group

The Group's management has assessed that the new and amended financial reporting standard does not have impact to the Group.

#### 3.2 Amended financial reporting standards that are effective for accounting period beginning or after 1 January 2023 and relevant to the Group

- a) **Amendment to TAS 16 - Property, plant and equipment** clarified to prohibit entities from deducting from the cost of an item of PP&E any proceeds received from selling any items produced while the entity is preparing that asset for its intended use.
- b) **Amendment to TAS 37 - Provisions, contingent liabilities and contingent assets** clarified that, in considering whether a contract is onerous, the direct costs of fulfilling a contract include both the incremental costs of fulfilling the contract and an allocation of other costs directly related to fulfilling the contract. Before recognising a separate provision for an onerous contract, the entity must recognise any impairment losses that have occurred on the assets used in fulfilling the contract.
- c) **Amendment to TFRS 3 - Business combinations** clarified some minor amendments to update its references to the Conceptual Framework for Financial Reporting and added a consideration for the recognition of liabilities and contingent liabilities acquired from business combinations. The amendments also confirmed that contingent assets shouldn't be recognised at the acquisition date.
- d) **Amendment to TFRS 9 - Financial Instruments** clarified which fees should be included in the 10% test for the derecognition of financial liabilities. It should only include fees between the borrower and lender.

The Group have not early adopted the amended financial reporting standards before effective date. The Group's management is currently assessing the impact of initial adoption of these standards.

### 4 Accounting policies

#### 4.1 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) 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.

##### 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.

List of joint venture is disclosed in Note 14.

# Thai Solar Energy Public Company Limited

## Notes to the Consolidated and Separate Financial Statements

For the year ended 31 December 2022

### c) 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 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 joint venture, the Group does not recognise further losses, unless it has incurred obligations or made payments on behalf of the joint venture.

### d) 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.

### e) 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.

## 4.2 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 in consolidated financial statements

### 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.



# Thai Solar Energy Public Company Limited

## Notes to the Consolidated and Separate Financial Statements

For the year ended 31 December 2022

### 4.3 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 for statement of comprehensive income are translated at average exchange rates; and
- All resulting exchange differences are recognised in other comprehensive income.

### 4.4 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

### 4.5 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.

### 4.6 Trade accounts receivable

Trade receivables are amounts due from customers for goods sold or services performed in the ordinary course of business. They are generally due for settlement within 60 days and therefore are all classified as current.

Trade receivables are recognised initially at the amount of consideration that is unconditional unless they contain significant financing components, they are recognised at fair value. The Group holds the trade receivables with the objective to collect the contractual cash flows and therefore measures them subsequently at amortised cost.

### 4.7 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.

# Thai Solar Energy Public Company Limited

## Notes to the Consolidated and Separate Financial Statements

For the year ended 31 December 2022

### 4.8 Financial assets

Investments and other financial assets

#### a) Classification

The Group classifies its debt instrument financial assets in the following measurement categories depending on i) business model for managing the asset and ii) the cash flow characteristics of the asset whether they represent solely payments of principal and interest (SPPI).

- those to be measured subsequently at fair value (either through other comprehensive income or through profit or loss); and
- those to be measured at amortised cost

The Group reclassifies debt investments when and only when its business model for managing those assets changes.

For investments in equity instruments, the Group has an irrevocable election at the time of initial recognition to account for the equity investment at fair value through profit or loss (FVPL) or at fair value through other comprehensive income (FVOCI) except those that are held for trading, they are measured at FVPL.

#### b) Recognition and derecognition

Regular way purchases, acquires and sales of financial assets are recognised on trade-date, the date on which the Group commits to purchase or sell the asset. Financial assets are derecognised when the rights to receive cash flows from the financial assets have expired or have been transferred and the Group has transferred substantially all the risks and rewards of ownership.

#### c) Measurement

At initial recognition, the Group measures a financial asset at its fair value plus, in the case of a financial asset not at FVPL, transaction costs that are directly attributable to the acquisition of the financial asset. Transaction costs of financial assets carried at FVPL are expensed in profit or loss.

Financial assets with embedded derivatives are considered in their entirety when determining whether the cash flows are solely payment of principal and interest (SPPI).

#### d) Debt instruments

Subsequent measurement of debt instruments depends on the Group's business model for managing the asset and the cash flow characteristics of the asset. There are three measurement categories:

- Amortised cost: Assets that are held for collection of contractual cash flows that represent solely payments of principal and interest (SPPI) are measured at amortised cost. Interest income is included in other income using the effective interest method. Any gain or loss on derecognition is presented in other gains/(losses), together with foreign exchange gains and losses. Impairment losses are presented as separate line item.
- FVOCI: Assets that are held for collection of contractual cash flows that represent SPPI and for selling the financial assets are measured at FVOCI. Movements in the carrying amount are taken through OCI, except impairment gains or losses, interest revenue and foreign exchange gains and losses which are recognised in profit or loss. Interest revenue is included in finance income. Foreign exchange gains and losses are presented in other gains/(losses). Impairment losses are presented as separate line item. When the financial asset is derecognised, the cumulative gain or loss previously recognised in OCI is reclassified to profit or loss in other gains/(losses).
- FVPL: Assets that do not meet the criteria for amortised cost or FVOCI are measured at FVPL. A gain or loss on subsequent measurement is presented in other gains/(losses).

The Group reclassifies debt instruments only when its business model for managing those assets changes.





# Thai Solar Energy Public Company Limited

## Notes to the Consolidated and Separate Financial Statements

For the year ended 31 December 2022

### e) Impairment

The Group assesses expected credit loss on a forward-looking basis for its financial assets carried at FVOCI and at amortised cost. The impairment methodology applied depends on whether there has been a significant increase in credit risk, except trade receivables, contract assets, and lease receivables which the Group applies the simplified approach in determining its expected credit loss.

For trade receivables, the Group applies the simplified approach, which requires expected lifetime losses to be recognised from initial recognition of the receivables.

Impairment (reversal of impairment) losses are recognised in profit or loss and included in administrative expenses.

### 4.9 Lease

#### Leases - where the Group is the lessee

Leases are recognised as a right-of-use asset and a lease liability at the date at which the leased asset is available for use by the Group. Each lease payment is allocated between the liability and finance cost. The finance cost is charged to profit or loss over the lease period so as to produce a constant periodic rate of interest on the remaining balance of the liability for each period. The right-of-use asset is depreciated over the shorter of the asset's useful life and the lease term on a straight-line basis.

Assets and liabilities arising from a lease are initially measured on a present value basis. Lease liabilities include the net present value of the following lease payments:

- fixed payments (including in-substance fixed payments), less any lease incentives receivable
- variable lease payment that are based on an index or a rate
- amounts expected to be payable by the lessee under residual value guarantees
- the exercise price of a purchase option if the lessee is reasonably certain to exercise that option, and
- payments of penalties for terminating the lease, if the lease term reflects the lessee exercising that option.

The lease payments are discounted using the interest rate implicit in the lease. If that rate cannot be determined, the lessee's incremental borrowing rate is used, being the rate that the lessee would have to pay to borrow the funds necessary to obtain an asset of similar value in a similar economic environment with similar terms and conditions.

Right-of-use assets are measured at cost comprising the following:

- the amount of the initial measurement of lease liability
- any lease payments made at or before the commencement date less any lease incentives received
- any initial direct costs, and
- restoration costs.

Payments associated with short-term leases and leases of low-value assets are recognised on a straight-line basis as an expense in profit or loss. Short-term leases are leases with a lease term of 12 months or less. Low-value assets comprise small items of office furniture.

### 4.10 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.

Subsequently, 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.

# Thai Solar Energy Public Company Limited

## Notes to the Consolidated and Separate Financial Statements

For the year ended 31 December 2022

### 4.11 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:

	<u>Number of years</u>
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 the statement of comprehensive income.

### 4.12 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.

### 4.13 Intangible assets

#### 4.13.1 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.

#### 4.13.2 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.

#### 4.13.3 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 remains 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.



# Thai Solar Energy Public Company Limited

## Notes to the Consolidated and Separate Financial Statements

For the year ended 31 December 2022

### 4.14 Impairment 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.

### 4.15 Financial liabilities

#### a) Classification

Financial instruments issued by the Group are classified as either financial liabilities or equity securities by considering contractual obligations.

- Where the Group has an unconditional contractual obligation to deliver cash or another financial asset to another entity, it is considered a financial liability unless there is a predetermined or possible settlement for a fixed amount of cash in exchange of a fixed number of the Group's own equity instruments.
- Where the Group has no contractual obligation or has an unconditional right to avoid delivering cash or another financial asset in settlement of the obligation, it is considered an equity instrument.

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.

#### b) Measurement

Financial liabilities are initially recognised at fair value and are subsequently measured at amortised cost.

#### c) Derecognition and modification

Financial liabilities are derecognised when the obligation specified in the contract is discharged, cancelled, or expired.

Where the terms of a financial liability are renegotiated/modified, the Group assesses whether the renegotiation / modification results in the derecognition of that financial liability. Where the modification results in an extinguishment, the new financial liability is recognised based on fair value of its obligation. The remaining carrying amount of financial liability is derecognised. The difference as well as proceed paid is recognised as other gains/(losses) in profit or loss.

Where the modification does not result in the derecognition of the financial liability, the carrying amount of the financial liability is recalculated as the present value of the renegotiated / modified contractual cash flows discounted at its original effective interest rate. The difference is recognised in other gains/(losses) in profit or loss.

### 4.16 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.

# Thai Solar Energy Public Company Limited

## Notes to the Consolidated and Separate Financial Statements

For the year ended 31 December 2022

### 4.17 Current and deferred income taxes

The tax expense for the period comprises current and deferred tax. Tax is recognised in profit or loss, except to the extent that it relates to items recognised in other comprehensive income or directly in equity.

#### 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.

### 4.18 Employee benefits

#### 4.18.1 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.

#### 4.18.2 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.



# Thai Solar Energy Public Company Limited

## Notes to the Consolidated and Separate Financial Statements

For the year ended 31 December 2022

### 4.18.3 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.

### 4.18.4 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.

## 4.19 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.

## 4.20 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.

## 4.21 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.

## 4.22 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. The Group recognised service contracts with a continuous service provision as revenue on a straight line basis over the contract term, regardless of the payment pattern.

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.



# Thai Solar Energy Public Company Limited

## Notes to the Consolidated and Separate Financial Statements

For the year ended 31 December 2022

### 4.23 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.

### 4.24 Derivative and hedge accounting

Derivatives are initially recognised at fair value on the date a derivative contract is entered into and are subsequently remeasured to their fair value at the end of each reporting period. The Group designates certain derivatives as either hedges of a particular risk associated with the cash flows of i) recognised assets and liabilities and ii) highly probable forecast transactions (cash flow hedges).

At inception of the hedge relationship, the Group documents i) the economic relationship between hedging instruments and hedged items including whether changes in the cash flows of the hedging instruments are expected to offset changes in the cash flows of hedged items and ii) its risk management objective and strategy for undertaking its hedge transactions.

The full fair value of a hedging derivative is classified as a current or non-current asset or liability following the maturity of related hedged item.

#### Cash flow hedges that qualify for hedge accounting

The effective portion of changes in the fair value of derivatives that are designated and qualified as cash flow hedges is recognised in the cash flow hedge reserve within equity. The gain or loss relating to the ineffective portion is recognised immediately in profit or loss within other gains (losses).

When forward contracts are used to hedge forecast transactions, the Group generally designates only the change in fair value of the forward contract related to the spot component as the hedging instrument. Gains or losses relating to the effective portion of the change in the spot component of the forward contracts are recognised in the cash flow hedge reserve within other components of equity. The change in the forward element of the contract that relates to the hedged item ('aligned forward element') is recognised within other comprehensive income in the costs of hedging reserve within equity. In some cases, the Group may designate the full change in fair value of the forward contract (including forward points) as the hedging instrument. In such cases, the gains or losses relating to the effective portion of the change in fair value of the entire forward contract are recognised in the cash flow hedge reserve within other components of equity.

Amounts accumulated in equity are reclassified in the periods when the hedged item affects profit or loss. The gain or loss relating to the effective portion of the interest rate swaps hedging variable rate borrowings is recognised in profit or loss within finance cost at the same time as the interest expense on the hedged borrowings.

When a hedging instrument expires, or is sold or terminated, or when a hedge no longer meets the criteria for hedge accounting, any cumulative deferred gain or loss and deferred costs of hedging in other components of equity at that time remains in equity until the forecast transaction occurs. When the forecast transaction is no longer expected to occur, the cumulative gain or loss and deferred costs of hedging that were reported in equity are immediately reclassified to profit or loss.

### 4.25 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.



# Thai Solar Energy Public Company Limited

## Notes to the Consolidated and Separate Financial Statements

For the year ended 31 December 2022

### 5 Financial risk management

#### 5.1 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.

##### 5.1.1 Market risk

##### a) Foreign exchange risk

The Group hires contractor for construction of power plants. Contractors are operating in overseas. The Group is exposed to foreign exchange risk arising from various currency exposures, primarily with respect to Singapore 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 and cash outflow.

The domestic subsidiary has granted loans denominated in Japanese Yen to its subsidiaries which expose the Company to a foreign exchange risk.

##### Sensitivity

The Group is primarily exposed to changes in Baht and Japanese Yen and Baht and SG Dollar exchange rates. The sensitivity of profit or loss to changes in the exchange rates arises mainly from financial assets and financial liabilities denominated in Japanese Yen and SG Dollar.

	Separate financial statements			
	Impact to net profit		Impact to other components of equity	
	2022 Baht	2021 Baht	2022 Baht	2021 Baht
Baht to Japanese Yen exchange rate				
- increase 10%*	309,202,759	341,092,584	-	-
Baht to Japanese Yen exchange rate				
- decrease 10%*	(309,202,759)	(341,092,584)	-	-
Baht to SG Dollar exchange rate				
- increase 10%*	5,313,700	2,664,614	-	-
Baht to SG Dollar exchange rate				
- decrease 10%*	(5,313,700)	(2,664,614)	-	-

\* Holding all other variables constant

# Thai Solar Energy Public Company Limited

## Notes to the Consolidated and Separate Financial Statements

For the year ended 31 December 2022

### b) Cash flow and fair value interest rate risk

Interest rate risk of the Group occurs from credit facilities of commercial bank which is floating rate that cause the Company exposing to cash flow risk from interest rate. Generally, the Group enters into long-term borrowings at floating rates and swaps them into fixed rates that are lower than those available if the Group borrowed at fixed rates directly. The Group's borrowings at variable rate were mainly denominated in Thai Baht and Japanese Yen on 31 December 2022. The Group does not apply financial instruments to manage the risk.

#### Sensitivity

Profit or loss is sensitive to higher or lower interest income from cash and cash equivalents, and interest expenses from borrowings as a result of changes in interest rates. Other components of equity changes as a result of an increase or decrease in the fair value of the cash flow hedges of borrowings and the fair value of debt investments at fair value through other comprehensive income.

	Consolidated financial statements			
	Impact to net profit		Impact to other components of equity	
	2022	2021	2022	2021
	Baht	Baht	Baht	Baht
Interest rate - increase 10%*	(27,921,981)	(19,110,024)	-	(2,157,217)
Interest rate - decrease 10%*	27,921,981	19,110,024	-	2,157,217

\* Holding all other variables constant

	Separate financial statements			
	Impact to net profit		Impact to other components of equity	
	2022	2021	2022	2021
	Baht	Baht	Baht	Baht
Interest rate - increase 10%*	(8,408,354)	(3,660,599)	-	-
Interest rate - decrease 10%*	8,408,354	3,660,599	-	-

\* Holding all other variables constant

### 5.1.2 Credit risk

Credit risk arises from cash and cash equivalents and credit exposures from customers, including outstanding receivables.

#### a) Risk management

Credit risk is managed on a group basis. For banks and financial institutions, only independently rated parties with a minimum rating of 'A' are accepted.

If customers are independently rated, these ratings are used. Otherwise, if there is no independent rating, risk control assesses the credit quality of the customer, taking into account its financial position, past experience and other factors. Individual risk limits are set based on tips assessments in accordance with limits set by the board. The compliance with credit limits by customers is regularly monitored by line management.

#### b) Impairment

The Group and the Company has financial assets that are subject to the expected credit loss model:

- Trade and other receivables
- Loan to related parties

While cash and cash equivalents are also subject to the impairment requirements of TFRS 9, the identified impairment loss was immaterial.



# Thai Solar Energy Public Company Limited

## Notes to the Consolidated and Separate Financial Statements

For the year ended 31 December 2022

### Trade receivables

The Group applies the TFRS 9 simplified approach to measure expected credit losses which uses a lifetime expected loss allowance for all trade receivables.

To measure the expected credit losses, trade receivables and contract assets have been grouped based on shared credit risk characteristics and the days past due. The contract assets relate to unbilled work in progress and have substantially the same risk characteristics as the trade receivables for the same types of contracts. The Group has therefore concluded that the expected loss rates for trade receivables are a reasonable approximation of the loss rates for the contract assets.

The expected loss rates are based on the payment profiles of sales before 31 December 2022 and the corresponding historical credit losses experienced within this period. The historical loss rates are adjusted to reflect current and forward-looking information on macroeconomic factors affecting the ability of the customers to settle the receivables.

### Loans to related parties

Loans to related parties measured at amortised cost are considered to have low credit risk, and the loss allowance recognised during the year was therefore limited to 12 months expected losses. Lifetime expected credit losses is recognised for the loans that the credit risk is significant increased.

#### 5.1.3 Liquidity risk

Prudent liquidity risk management implies maintaining sufficient cash and the availability of funding through an adequate amount of committed credit facilities to meet obligations when due and to close out market positions. At the end of the reporting period the Group held deposits at call of Baht 360.64 million (2021: Baht 849.07 million) that are expected to readily generate cash inflows for managing liquidity risk. Due to the dynamic nature of the underlying businesses, the Group Treasury maintains flexibility in funding by maintaining availability under committed credit lines.

Management monitors i) rolling forecasts of the Group's liquidity reserve (comprising the undrawn borrowing facilities below); and ii) cash and cash equivalents on the basis of expected cash flows. In addition, the Group's liquidity management policy involves projecting cash flows in major currencies and considering the level of liquid assets necessary, monitoring balance sheet liquidity ratios and maintaining financing plans.

#### a) Financing arrangements

The detail of undrawn facilities as at 31 December are disclosed in Note 23.

#### b) Maturity of financial liabilities

Trade payables and financial liabilities have maturity within 1 year. The maturity of the borrowing from financial institutes, lease liabilities and debentures are disclosed in Note 23.

### 5.2 Capital management

#### Risk management

The objectives when managing capital are to:

- Safeguard their ability to continue as a going concern, to provide returns for shareholders and benefits for other stakeholders, and
- Maintain an optimal capital structure to reduce the cost of capital

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

Consistent with others in the industry, the Group monitors capital based on gearing ratio which is determined by dividing net debt with equity.

# Thai Solar Energy Public Company Limited

## Notes to the Consolidated and Separate Financial Statements

For the year ended 31 December 2022

### 5.3 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 Agreements, 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.

### 5.4 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 revenues and operating results of the Group as well as other electricity generators in this industry.

### 5.5 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.

## 6 Fair value

Fair value of financial assets, investment property and derivative liabilities are disclosed in Notes 11, 16 and 24, respectively.

## 7 Critical accounting estimates and judgements

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

### Power plant, equipment and intangible assets

The Group determines the estimated useful lives and residual values for the power plant, equipment and intangible assets mainly based on its technical ability and economic useful lives. The management will revise the depreciation charge where useful lives and residual values are significantly different to previously estimated, or they will write off or write-down technically obsolete or assets that have been abandoned or sold.

### Fair value estimation on business combination

The Group estimates the fair value of net assets acquired under business combination by engaging the professional valuer, applying appropriate valuation method based on financial assumptions to derive fair value of net assets acquired. These calculations require the use of management judgement on the inputs and assumptions in the valuation model.

## 8 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.



# Thai Solar Energy Public Company Limited

## Notes to the Consolidated and Separate Financial Statements

For the year ended 31 December 2022

### Financial information by geography segment

	For the year ended 31 December (Million Baht)							
	Domestic		International		Total		Elimination	
	2022	2021	2022	2021	2022	2021	2022	2021
Revenue from operations	1,398.09	1,384.37	23.93	297.80	1,422.02	1,682.17	(107.43)	(158.09)
Other income	18.66	20.11	1.11	3.54	19.77	23.65	(7.99)	(13.78)
Dividends income	926.35	762.68	-	-	926.35	762.68	(926.35)	(762.68)
Cost of operations	(884.17)	(869.07)	(31.64)	(212.25)	(915.81)	(1,081.32)	22.87	6.08
Operating profit	1,458.93	1,298.09	(6.60)	89.09	1,452.33	1,387.18	(1,018.90)	(928.47)
Administrative expenses	(243.59)	(361.99)	(67.19)	(67.07)	(310.78)	(429.06)	83.69	80.28
Profit (loss) before finance cost and taxes	1,215.34	936.10	(73.79)	22.02	1,141.55	958.12	(935.21)	(848.19)
Finance costs	(350.28)	(333.28)	(4.05)	(37.32)	(354.33)	(370.60)	26.37	32.28
Other (losses) gains	(367.70)	(2.53)	224.54	99.25	(143.16)	96.72	356.18	(9.63)
Share of profit from investments in joint ventures	647.70	642.92	-	-	647.70	642.92	-	-
Operating results before taxes	1,145.06	1,243.21	146.70	83.95	1,291.76	1,327.16	(552.66)	(825.54)
Income tax	(14.05)	(6.57)	(1.28)	(2.06)	(15.33)	(8.63)	-	-
<b>Net profit (loss)</b>	1,131.01	1,236.64	145.42	81.89	1,276.43	1,318.53	(552.66)	(825.54)
<b>Timing of revenue recognition</b>								
Over time								
<b>Total revenue</b>								
							1,314.59	1,524.08
<b>Total assets</b>	19,432.89	18,467.30	11,609.28	11,569.03	31,042.17	30,036.33	(10,532.13)	(10,329.56)
							20,510.04	19,706.92
<b>Total liabilities</b>	12,394.59	12,900.68	9,774.74	9,014.04	22,169.33	21,914.72	(8,102.03)	(8,557.33)
							14,067.31	13,357.39

# Thai Solar Energy Public Company Limited

## Notes to the Consolidated and Separate Financial Statements

For the year ended 31 December 2022

### 9 Cash and cash equivalents

	Consolidated financial statements		Separate financial statements	
	2022 Baht	2021 Baht	2022 Baht	2021 Baht
Cash on hand	215,000	225,000	30,000	25,000
Cash at bank	360,427,982	848,843,198	131,104,688	79,363,743
	360,642,982	849,068,198	131,134,688	79,388,743

The average effective interest rate on short-term bank deposits was 0.23% per annum (2021: 0.11% per annum).

### 10 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 and current 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.

### 11 Fair value

As at 31 December 2022, all financial assets and liabilities are measured at amortised cost, except for the investment in debt instruments measured at fair value through profit or loss. The fair value of financial assets and financial liabilities matured within one year approximate their carrying amount.

Financial assets measured at fair value through profit or loss - investments in debt instruments

	Consolidated and separate financial statements
	Financial assets measured at fair value through profit or loss Baht
<b>At 31 December 2021</b>	-
Additions	2,000,000
Change in fair value of investments	7,126
<b>At 31 December 2022</b>	2,007,126

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



# Thai Solar Energy Public Company Limited

## Notes to the Consolidated and Separate Financial Statements

For the year ended 31 December 2022

### 12 Trade and other receivables

Trade and other receivables as at 31 December 2022 and 2021 comprise the following:

	Consolidated financial statements		Separate financial statements	
	2022 Baht	2021 Baht	2022 Baht	2021 Baht
Trade receivables	220,609,619	199,692,438	-	-
<u>Less</u> Expected credit loss	-	-	-	-
Total trade receivables, net	220,609,619	199,692,438	-	-
Amounts due from and advances to related parties (Note 36.2)	4,692,736	4,469,272	152,947,438	187,115,196
Prepaid expenses	9,881,261	20,481,629	4,123,050	3,652,408
Dividends receivable (Note 36.2)	158,550,028	136,500,024	158,550,028	136,500,024
Other receivables	14,952,549	12,155,373	10,280,535	8,687,562
Advance payment	611,025	6,714,453	378,100	244,120
Total other receivables	188,687,599	180,320,751	326,279,151	336,199,310
<u>Less</u> Expected credit loss	(8,500,000)	(8,500,000)	(8,500,000)	(8,500,000)
Total other receivables, net	180,187,599	171,820,751	317,779,151	327,699,310
Total trade and other receivables	400,797,218	371,513,189	317,779,151	327,699,310

All outstanding trade receivable are not yet due.

### 13 Other current assets

	Consolidated financial statements		Separate financial statements	
	2022 Baht	2021 Baht	2022 Baht	2021 Baht
Deposit for project bidding	260,400,000	-	120,800,000	-
Withholding tax deducted at sources	5,447,172	2,758,841	5,383,764	2,693,405
Others	860,841	394,311	603,034	191,042
	266,708,013	3,153,152	126,786,798	2,884,447

### 14 Investments in joint ventures

#### Movement in investments in joint ventures

	Consolidated financial statements Baht	Separate financial statements Baht
<b>For the year ended 31 December 2022</b>		
Opening net book amount	2,049,707,165	350,000,130
Share of profit	647,702,369	-
Dividends received	(602,350,069)	-
Closing net book amount	2,095,059,465	350,000,130

# Thai Solar Energy Public Company Limited

## Notes to the Consolidated and Separate Financial Statements

For the year ended 31 December 2022

Details of investment in joint ventures at 31 December 2022 and 2021 are as follows:

	Type of business	Country of incorporation	% Ownership		Measurement method
			2022	2021	
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 1 share and the remaining shares are held by Thai Solar Renewable Co., Ltd.

Thai Solar Renewable Co., Ltd. is investment holding company and Siam Solar Energy 1 Co., Ltd. engage 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 Co., Ltd.

### 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.

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

### Summarised statement of financial positions

	Consolidated financial statements of Thai Solar Renewable Co., Ltd.	
	As at 31 December	
	2022 Baht	2021 Baht
<b>Current</b>		
Cash and cash equivalents	452,836	681,405
Other current assets (excluding cash)	615,876,975	558,781,631
Total current assets	616,329,811	559,463,036
Current financial liabilities (excluding trade payables)	(376,357,230)	(376,393,752)
Other current liabilities	(354,416,508)	(277,530,796)
Total current liabilities	(730,773,738)	(653,924,548)
<b>Non-current</b>		
Non-current assets	4,199,157,838	4,478,244,300
Non-current financial liabilities	(728,512,233)	(1,102,977,766)
Other non-current financial liabilities	(1,685,685)	(1,708,654)
Total non-current net assets	3,468,959,920	3,373,557,880
<b>Net assets</b>	3,354,515,993	3,279,096,368



# Thai Solar Energy Public Company Limited

## Notes to the Consolidated and Separate Financial Statements

For the year ended 31 December 2022

### Summarised statement of comprehensive income

<b>Consolidated financial statements of Thai Solar Renewable Co., Ltd. For the year ended 31 December</b>		
	<b>2022 Baht</b>	<b>2021 Baht</b>
Revenue from sales	581,861,963	496,467,987
Subsidy for adders	1,033,455,163	1,046,670,027
Cost of sales	(320,300,770)	(321,520,947)
<b>Gross profit</b>	<b>1,295,016,356</b>	<b>1,221,617,067</b>
Other income	7,023,266	3,857,781
Other gains	-	782,921
Administrative expenses	(74,457,118)	(80,838,951)
Finance costs	(48,999,889)	(59,875,968)
<b>Profit before income tax</b>	<b>1,178,582,615</b>	<b>1,085,542,850</b>
Income tax	(99,078,667)	(14,010,858)
<b>Profit from continuing operations after income tax</b>	<b>1,079,503,948</b>	<b>1,071,531,992</b>

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 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.

### Reconciliation of summarised financial information

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

<b>Thai Solar Renewable Co., Ltd. As at 31 December</b>		
	<b>2022 Baht</b>	<b>2021 Baht</b>
<b>Summarised financial information</b>		
<b>Closing net assets</b>	<b>3,354,515,993</b>	<b>3,279,096,368</b>
<b>Reconciliation:</b>		
The difference from restructuring business under common control	136,913,097	136,913,097
Non-controlling interests	336,685	169,143
<b>Closing net assets after reconciliation</b>	<b>3,491,765,775</b>	<b>3,416,178,608</b>
Interest in joint ventures (60%)	2,095,059,465	2,049,707,165
<b>Carrying value</b>	<b>2,095,059,465</b>	<b>2,049,707,165</b>

As at 31 December 2022, Thai Solar Renewable Company Limited has pledged share certificates of Siam Solar Energy 1 Company Limited, amounting to Baht 1,080 million (2021: 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 4,139.68 million (2021: Baht 4,424.52 million) and pledged bank deposits amounting to Baht 334 million (2021: Baht 305 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.



# Thai Solar Energy Public Company Limited

## Notes to the Consolidated and Separate Financial Statements

For the year ended 31 December 2022

### 15 Investments in subsidiaries

Details of investments as at 31 December 2022 and 2021 are as follows:

	Type of business	Country of incorporation	Proportion of ordinary shares directly held by parent (%)		Proportion of shares held by non-controlling interests (%)	
			2022	2021	2022	2021
Subsidiaries directly held by the Company						
TSE Rooftop Co., Ltd.	Investment	Thailand	100	100	-	-
Solar Visible Co., Ltd.	Investment	Thailand	100	100	-	-
TSE Overseas Group Co., Ltd.	Investment	Thailand	100	100	-	-
World Solar Co., Ltd.	Investment	Thailand	100	100	-	-
Thai Community Energy Co., Ltd.	Investment	Thailand	100	100	-	-
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	100	-	-
Siam Solar Power Plc.	Production and distribution of electricity	Thailand	100	100	-	-
Siam Tara Floating Co., Ltd.	Production and distribution of electricity	Thailand	100	100	-	-
Soilcrete Technology Co., Ltd.	Production and distribution of electricity	Thailand	100	-	-	-
Earth Energy Systems Co., Ltd.	Investment	Thailand	100	100	-	-
Subsidiaries held by Thai Community Energy Co., Ltd.						
Bangsawan Green Co., Ltd.	Production and distribution of electricity	Thailand	100	100	-	-
Oscar Save The World Co., Ltd.	Production and distribution of electricity	Thailand	100	100	-	-
Native Power Energy Co., Ltd.	Production and distribution of electricity	Thailand	100	100	-	-
White Solution Energy Co., Ltd.	Production and distribution of electricity	Thailand	100	100	-	-
Clean Renewable Co., Ltd.	Production and distribution of electricity	Thailand	100	100	-	-
Subsidiary held by Siam Solar Power Plc.						
Siam Waste Power Co., Ltd.	Production and distribution of electricity	Thailand	100	100	-	-
Subsidiary held by Earth Energy Systems Co., Ltd.						
Mars Solar Co., Ltd.	Production and distribution of electricity	Thailand	100	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	-	-
TSE Japan G.K.	Service	Japan	100	100	-	-
Subsidiaries held by TSE Group International Pte. Ltd.						
Ishikawa Hanamizuki 1 G.K.	Production and distribution of electricity	Japan	-	100	-	-
Subsidiaries held by Solar Assets Pte. Ltd.						
Ibaraki Ushiku 2 G.K.	Land lease	Japan	-	100	-	-
Subsidiaries held by Onikoube Solar Power Pte. Ltd.						
PurpleSol G.K.	Production and distribution of electricity	Japan	100	100	-	-



# Thai Solar Energy Public Company Limited

## Notes to the Consolidated and Separate Financial Statements

For the year ended 31 December 2022

**Movements of investments in subsidiaries during the year are as follow:**

### Additional investment under Thai Solar Energy Plc.

	<b>Separate financial information Baht</b>
Opening net book value	1,199,149,897
Additions	1,140,000,000
Closing net book value	2,339,149,897

On 10 May 2022, the Company additionally invested in 101,500,000 ordinary shares of TSE Overseas Group Co., Ltd., wholly owned subsidiary, at Baht 10 per share totaling Baht 1,015 million. The holding interest remains unchanged.

On 7 November 2022, the Company additionally invested in 30,000,000 ordinary shares of Solar Visible Ltd., wholly owned subsidiary, at Baht 2.5 per share totaling Baht 75 million. The holding interest remains unchanged.

On 7 November 2022, the Company additionally invested in 20,000,000 ordinary shares of TSE Rooftop Ltd., wholly owned subsidiary, at Baht 2.5 per share totaling Baht 50 million. The holding interest remains unchanged.

### Business combination under Solar Visible Ltd.

On 7 July 2022, Solar Visible Company Limited, wholly owned subsidiary, acquired 2,254,000 ordinary shares of Soilcrete Technology Company Limited, representing 100% of the registered capital for a total consideration of Baht 527.61 million. Soilcrete Technology Company Limited engages in a ground-mounting solar power plant with the production capacity of 8 MW. The acquisition is considered as business acquisition.

The following table summarises the consideration paid for acquiring Soilcrete Technology Company Limited and the assets acquired and liabilities assumed recognised on acquisition date.

<b>Consideration paid</b>	<b>Baht</b>
Cash	527,613,112
<b>Total consideration</b>	<b>527,613,112</b>
<b>Recognised amounts of identifiable assets acquired and liabilities assumed</b>	<b>Baht</b>
Cash and cash equivalents	34,227,241
Trade and other receivables	14,865,939
Other current assets	19,626
Property, plant and equipment	242,522,790
Right in power purchase agreement	345,000,000
Other non-current assets	64,800
Trade and other payables	(91,434)
Short-term loans from related parties	(117,550,747)
Other current liabilities	(2,329,390)
Deferred tax liabilities	(40,928,323)
<b>Total identifiable net assets</b>	<b>475,800,502</b>
Goodwill	51,812,610
<b>Total</b>	<b>527,613,112</b>
<b>Net cash paid for business combination</b>	<b>493,385,871</b>

Expenses related to the acquisition of subsidiary amounting to Baht 0.64 million are recognised as administrative expenses in the consolidated financial statements for the year ended 31 December 2022.

# Thai Solar Energy Public Company Limited

## Notes to the Consolidated and Separate Financial Statements

For the year ended 31 December 2022

### Disposal of investment under TSE Group International Pte. Ltd.

On 1 March 2022, TSE Group International Pte. Ltd. disposed investment in Ishikawa Hanamizuki 1 G.K. for a consideration of Baht 703.10 million. The Group deconsolidated and ceased consolidating this subsidiary since 1 March 2022. The Group recognised a gain from disposal of investment amounting to Baht 234.46 million under “Other gains (losses)” in the statement of comprehensive income in consolidated financial statements for the year ended 31 December 2022.

### Disposal of investment under Solar Assets Pte. Ltd.

On 1 March 2022, Solar Assets Pte. Ltd. disposed investment in Ibaraki Ushiku 2 G.K. for a consideration of Baht 13.39 million. The Group deconsolidated and ceased consolidating this subsidiary since 1 March 2022. The Group recognised a loss from disposal of investment amounting to Baht 0.02 million under “Other gains (losses)” in the statement of comprehensive income in consolidated financial statements for the year ended 31 December 2022.

## 16 Investment properties

	Consolidated financial statements		Separate financial statements	
	2022 Baht	2021 Baht	2022 Baht	2021 Baht
Cost	124,193,203	124,193,203	110,193,203	110,193,203
<u>Less</u> Accumulated depreciation	(2,047,373)	(1,085,372)	-	-
Provision for impairment	(20,215,318)	(20,215,318)	(20,215,318)	(20,215,318)
Net book amount	101,930,512	102,892,513	89,977,885	89,977,885
Fair value	138,420,100	138,420,100	124,420,100	124,420,100
<b>For the year ended 31 December</b>				
Opening net book amount	101,930,512	102,892,513	89,977,885	89,977,885
Depreciation	(962,001)	(962,001)	-	-
Closing net book amount	100,968,511	101,930,512	89,977,885	89,977,885
<b>As at 31 December</b>				
Cost	124,193,203	124,193,203	110,193,203	110,193,203
<u>Less</u> Accumulated depreciation	(3,009,374)	(2,047,373)	-	-
Provision for impairment	(20,215,318)	(20,215,318)	(20,215,318)	(20,215,318)
Net book amount	100,968,511	101,930,512	89,977,885	89,977,885
Fair value	270,040,040	138,420,100	251,146,000	124,420,100

The fair value of investment property are within level 2 of the fair value hierarchy which are based on market comparable approach by comparing with the current price of recently sold properties in the same location.

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

	Consolidated financial statements		Separate financial statements	
	2022 Baht	2021 Baht	2022 Baht	2021 Baht
Rental income	450,228	411,573	450,228	411,573
Direct operating expenses relating to rental income	3,969	3,662	3,969	397
Operating expenses not relating to rental income	66,286	4,190	33,632	4,190



# Thai Solar Energy Public Company Limited

## Notes to the Consolidated and Separate Financial Statements

For the year ended 31 December 2022

### 17 Property, plant and equipment

	Consolidated financial statements						
	Land improvement Baht	Land Baht	Power plants Baht	Office buildings Baht	Tools and equipment Baht	Office equipment Baht	Asset under construction Baht
<b>At 1 January 2021</b>							
Cost	778,261,129	101,892,583	7,073,122,189	30,092,186	35,775,548	21,441,920	45,926,121
Less Accumulated depreciation	-	(17,124,992)	(954,043,248)	(12,145,388)	(12,709,542)	(13,495,797)	(23,809,891)
Provision for impairment	-	(1,903,108)	(537,144,706)	(6,780,379)	(123,722)	(123,206)	-
Net book amount	778,261,129	82,864,483	5,581,934,235	11,166,419	22,942,284	7,822,917	22,116,230
<b>For the year ended 31 December 2021</b>							
Opening net book amount	778,261,129	82,864,483	5,581,934,235	11,166,419	22,942,284	7,822,917	22,116,230
Disposal of subsidiaries	(116,112,938)	-	(771,138,950)	-	-	-	-
Additions	-	314,808	11,847,108	363,000	4,968,624	703,628	-
Write-off, net	-	-	(4,541,084)	-	(57,000)	(16)	-
Transfer-in (out)	-	-	303,393,268	-	415,542	-	-
Depreciation charge	-	(11,488,710)	(298,269,619)	(3,794,126)	(5,773,129)	(2,911,764)	(8,940,621)
Impairment charge	-	(693,084)	(159,246,458)	5,455,211	(796)	(77,294)	-
Exchange differences	4,828,197	-	34,041,194	-	-	1,193	-
Closing net book amount	666,976,388	70,997,497	4,698,019,694	13,190,504	22,495,525	5,538,664	13,175,609
<b>At 31 December 2021</b>							
Cost	666,976,388	102,207,391	6,643,956,088	30,455,186	41,102,714	22,044,015	45,926,121
Less Accumulated depreciation	-	(28,613,702)	(1,256,740,355)	(17,264,682)	(18,482,671)	(16,505,351)	(32,750,512)
Provision for impairment	-	(2,596,192)	(689,196,039)	-	(124,518)	-	-
Net book amount	666,976,388	70,997,497	4,698,019,694	13,190,504	22,495,525	5,538,664	13,175,609
<b>At 31 December 2022</b>							
Cost	12,525,444,215	1,370,357,273	125,562,421	154,562,421	33,695,652	10,018,472,757	10,018,472,757
Less Accumulated depreciation	-	-	-	-	-	-	-
Provision for impairment	-	-	-	-	-	-	-
Net book amount	12,525,444,215	1,370,357,273	125,562,421	154,562,421	33,695,652	10,018,472,757	10,018,472,757

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## Notes to the Consolidated and Separate Financial Statements

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Borrowing costs incurring from the borrowings for the construction of the power plants during the year were capitalised and included as "Additions" for Baht 87.38 million (2021: Baht 117.63 million). The Group used the capitalisation rates of 2.82% to 4.58% per annum (2021: 2.82% to 4.58% 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.

During the year ended 31 December 2021, the management has reviewed the recoverable amount of the thermal power plant, which was ceased the operation. Accordingly, loss on impairment amounting to Baht 154.56 million was additionally recognised in the statement of comprehensive income.

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

	Consolidated financial statements		Separate financial statements	
	2022 Baht million	2021 Baht million	2022 Baht million	2021 Baht million
Cost of sales	228.43	323.14	1.98	2.00
Administrative expense	6.61	8.04	5.45	5.52
	235.04	331.18	7.43	7.52

Land, building and equipment with the net book value amounting to Baht 9,695.76 million (2021: Baht 8,724.29 million) have been pledged as collaterals for credit facilities obtained from commercial bank.

### 18 Right-of-use assets

Right-of-use assets as at 31 December comprise the following:

	Consolidated financial statements			
	Properties Baht	Equipment Baht	Vehicles Baht	Total Baht
Balance as at 1 January 2022	250,737,159	14,000,881	37,553,671	302,291,711
Additions	2,008,929	-	2,332,883	4,341,812
Disposal of subsidiaries	(89,923,212)	-	-	(89,923,212)
Depreciation	(17,545,001)	(1,131,385)	(10,937,911)	(29,614,297)
Translation adjustments	(6,387,675)	-	-	(6,387,675)
Net book value as at 31 December 2022	138,890,200	12,869,496	28,948,643	180,708,339

	Separate financial statements		
	Properties Baht	Vehicles Baht	Total Baht
Balance as at 1 January 2022	5,631,415	16,965,855	22,597,270
Additions	-	648,607	648,607
Depreciation	(3,900,879)	(4,110,814)	(8,011,693)
Net book value as at 31 December 2022	1,730,536	13,503,648	15,234,184

The expenses relating to leases that not included in the measurement of lease liabilities and right-of-use assets are as follows:

	Consolidated financial statements		Separate financial statements	
	2022 Baht	2021 Baht	2022 Baht	2021 Baht
Expense relating to short-term leases	596,182	114,605	169,962	114,605
Expense relating to leases of low-value assets	208,680	225,360	112,640	115,440
Expense relating to variable lease payments	7,402,034	8,061,944	-	-

Total cash outflow of leases in 2022 is Baht 51.44 million in the consolidated financial statements and Baht 9.33 million in separate financial statements. (2021: Baht 51.64 million in the consolidated financial statements and Baht 9.30 million in separate financial statements)



# Thai Solar Energy Public Company Limited

## Notes to the Consolidated and Separate Financial Statements

For the year ended 31 December 2022

### 19 Goodwill

	Consolidated financial statements	
	2022 Baht	2021 Baht
<b>As 1 January</b>		
Cost	53,332,214	53,332,214
<u>Less</u> Provision for impairment	(4,792,420)	(2,477,172)
Net book amount	48,539,794	50,855,042
<b>For the year ended 31 December</b>		
Opening net book amount	48,539,794	50,855,042
Acquisition of a subsidiary (Note 15)	51,812,610	-
Impairment charge	(3,681,768)	(2,315,248)
Closing net book amount	96,670,636	48,539,794
<b>At 31 December</b>		
Cost	105,144,824	53,332,214
<u>Less</u> Provision for impairment	(8,474,188)	(4,792,420)
Net book amount	96,670,636	48,539,794

The Group has reduced the carrying amount of goodwill to the amount that is recoverable by recognising the loss from impairment of goodwill in statement of comprehensive income.

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 <sup>1</sup>	54.16 - 68.43%
Growth rate <sup>2</sup>	0.46 - 0.50%
Discount rate <sup>3</sup>	8.00%

<sup>1</sup> Budgeted gross margin

<sup>2</sup> Weighted average growth rates used to extrapolate cash flows for the budget period

<sup>3</sup> Post-tax discount rates applied to the cash flow projections

These assumptions are used for analysis a CGU generating cash in business segments.

Management determined budgeted gross margin based on past performance and expected market growth. 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.

The impairment charge arose from the decreasing in the expected period of the operation in respect of the duration of the specified Power Purchase Agreement.

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## Notes to the Consolidated and Separate Financial Statements

For the year ended 31 December 2022

### 20 Intangible assets

	Consolidated financial statements		
	Software Baht	Power purchase agreement Baht	Total Baht
<b>As at 1 January 2021</b>			
Cost	13,386,693	5,037,813,126	5,051,199,819
<u>Less</u> Accumulated amortisation	(7,704,927)	(98,225,295)	(105,930,222)
Net book amount	5,681,766	4,939,587,831	4,945,269,597
<b>For the year ended 31 December 2021</b>			
Opening net book amount	5,681,766	4,939,587,831	4,945,269,597
Additions	848,476	-	848,476
Amortisation charge	(2,214,191)	(57,910,644)	(60,124,835)
Exchange differences	-	(512,792)	(512,792)
Closing net book amount	4,316,051	4,881,164,395	4,885,480,446
<b>As at 31 December 2021</b>			
Cost	14,235,169	5,037,300,334	5,051,535,503
<u>Less</u> Accumulated amortisation	(9,919,118)	(156,135,939)	(166,055,057)
Net book amount	4,316,051	4,881,164,395	4,885,480,446
<b>For the year ended 31 December 2022</b>			
Opening net book amount	4,316,051	4,881,164,395	4,885,480,446
Additions	2,110,720	-	2,110,720
Acquisition of a subsidiary	-	345,000,000	345,000,000
Amortisation charge	(2,640,985)	(67,060,851)	(69,701,836)
Exchange differences	-	(367,288,717)	(367,288,717)
Closing net book amount	3,785,786	4,791,814,827	4,795,600,613
<b>As at 31 December 2022</b>			
Cost	16,345,889	5,015,011,617	5,031,357,506
<u>Less</u> Accumulated amortisation	(12,560,103)	(223,196,790)	(235,756,893)
Net book amount	3,785,786	4,791,814,827	4,795,600,613



# Thai Solar Energy Public Company Limited

## Notes to the Consolidated and Separate Financial Statements

For the year ended 31 December 2022

	<b>Separate financial statements</b>
	<b>Computer software Baht</b>
<b>As at 1 January 2021</b>	
Cost	12,349,757
<u>Less</u> Accumulated amortisation	<u>(7,229,626)</u>
Net book amount	<u>5,120,131</u>
<b>For the year ended 31 December 2021</b>	
Opening net book amount	5,120,131
Additions	243,640
Amortisation charge	<u>(2,006,997)</u>
Closing net book amount	<u>3,356,774</u>
<b>As at 31 December 2021</b>	
Cost	12,593,397
<u>Less</u> Accumulated amortisation	<u>(9,236,623)</u>
Net book amount	<u>3,356,774</u>
<b>For the year ended 31 December 2022</b>	
Opening net book amount	3,356,774
Additions	311,320
Amortisation charge	<u>(1,941,454)</u>
Closing net book amount	<u>1,726,640</u>
<b>As at 31 December 2022</b>	
Cost	12,904,716
<u>Less</u> Accumulated amortisation	<u>(11,178,076)</u>
Net book amount	<u>1,726,640</u>

Amortisation expenses recognised in the statement of comprehensive income are as follows;

	<b>Consolidated financial statements</b>		<b>Separate financial statements</b>	
	<b>2022</b>	<b>2021</b>	<b>2022</b>	<b>2021</b>
	<b>Baht million</b>	<b>Baht million</b>	<b>Baht million</b>	<b>Baht million</b>
Cost of sales	67.06	57.91	-	-
Administrative expense	2.64	2.21	1.94	2.01
	<u>69.70</u>	<u>60.12</u>	<u>1.94</u>	<u>2.01</u>



# Thai Solar Energy Public Company Limited

## Notes to the Consolidated and Separate Financial Statements

For the year ended 31 December 2022

### 21 Deferred income taxes

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

	Consolidated financial statements		Separate financial statements	
	2022 Baht	2021 Baht	2022 Baht	2021 Baht
Deferred income tax assets	108,465,857	83,034,709	-	-
Deferred income tax liabilities	(171,710,194)	(103,938,044)	(5,111,357)	(3,557,083)
<b>Deferred income taxes - net</b>	<b>(63,248,436)</b>	<b>(20,903,335)</b>	<b>(5,111,357)</b>	<b>(3,557,083)</b>

Movement of deferred income tax account is as follows:

	Consolidated financial statements		Separate financial statements	
	2022 Baht	2021 Baht	2022 Baht	2021 Baht
As at 1 January	(20,903,335)	(22,247,848)	(3,557,083)	(4,688,555)
Acquisition of subsidiaries	(40,928,323)	-	-	-
Disposal of subsidiaries	-	(334,371)	-	-
Recognised in profit or loss (Note 32)	(1,416,778)	1,867,835	(1,554,274)	1,131,472
Exchange differences	-	(188,951)	-	-
As at 31 December	<b>(63,248,436)</b>	<b>(20,903,335)</b>	<b>(5,111,357)</b>	<b>(3,557,083)</b>

Movements of deferred income tax assets and liabilities during the year are as follows:

	Consolidated financial statements				
	Tax losses Baht	Fair value of plant and equipment from acquisition of subsidiaries Baht	Right-of-use assets Baht	Others Baht	Total Baht
<b>Deferred income tax assets</b>					
As at 1 January 2021	124,346	49,186,372	35,764,410	794,717	85,869,845
Disposal of a subsidiary	(124,328)	-	-	(567,157)	(691,485)
Recognised in profit or loss	-	-	(1,916,073)	104,611	(1,811,462)
Exchange differences	(18)	-	-	(332,171)	(332,189)
As at 31 December 2021	-	49,186,372	33,848,337	-	83,034,709
As at 1 January 2022	-	49,186,372	33,848,337	-	83,034,709
Acquisition of subsidiaries	-	25,450,859	-	-	25,454,958
Recognised in profit or loss	-	-	(23,810)	-	(23,810)
As at 31 December 2022	-	74,637,231	33,824,527	-	108,461,758



# Thai Solar Energy Public Company Limited

## Notes to the Consolidated and Separate Financial Statements

For the year ended 31 December 2022

	Consolidated financial statements					Total Baht
	Deferred debt issuance cost Baht	Depreciation Baht	Fair value of intangible assets Baht	Fair value of property from acquisition of subsidiaries Baht	Other Baht	
<b>Deferred income tax liabilities</b>						
As at 1 January	(2,657,140)	(24,668,169)	(63,545,089)	(8,539,930)	(8,707,365)	(108,117,693)
Disposal of subsidiaries	1,857,490	(1,500,376)	-	-	-	357,114
Recognised in profit or loss	(468,989)	3,693,153	-	-	455,133	3,679,297
Exchange differences	218,390	(64,104)	-	-	(11,048)	143,238
As at 31 December 2021	(1,050,249)	(22,539,496)	(63,545,089)	(8,539,930)	(8,263,280)	(103,938,044)
As at 1 January 2022	(1,050,249)	(22,539,496)	(63,545,089)	(8,539,930)	(8,263,280)	(103,938,044)
Acquisition of subsidiaries	-	-	(63,479,182)	(2,900,000)	-	(66,379,182)
Recognised in profit or loss	24,268	925,556	-	-	(2,342,792)	(1,392,968)
As at 31 December 2022	(1,025,981)	(21,613,940)	(127,024,271)	(11,439,930)	(10,606,072)	(171,710,194)

	Separate financial statements			
	Deferred debt issuance cost Baht	Depreciation Baht	Others Baht	Total Baht
<b>Deferred income tax liabilities</b>				
As at 1 January 2021	(691,170)	(2,896,586)	(1,100,799)	(4,688,555)
Recognised in profit or loss	(359,079)	948,047	542,504	1,131,472
As at 31 December 2021	(1,050,249)	(1,948,539)	(558,295)	(3,557,083)
As at 1 January 2022	(1,050,249)	(1,948,539)	(558,295)	(3,557,083)
Recognised in profit or loss	24,268	933,253	(2,511,795)	(1,554,274)
As at 31 December 2022	(1,025,981)	(1,015,286)	(3,070,090)	(5,111,357)

Presentation in the statements of financial position is as follows:

	Consolidated financial statements		Separate financial statements	
	2022 Baht	2021 Baht	2022 Baht	2021 Baht
Deferred income tax assets	22,025,026	22,021,077	-	-
Deferred income tax liabilities	(85,273,462)	(42,924,412)	(5,111,357)	(3,557,083)
Deferred income tax, net	(63,248,436)	(20,903,335)	(5,111,357)	(3,557,083)

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 403.31 million (2021: Baht 303.59 million) in respect of losses carry forward amounting to Baht 2,016.53 million (2021: Baht 1,517.94 million).

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For the year ended 31 December 2022

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
2023	304,503,288	291,765,982
2024	418,156,161	410,500,432
2025	308,074,352	235,528,229
2026	259,193,622	234,490,004
2027	726,603,732	698,551,806
	2,016,531,155	1,870,836,453

### 22 Trade and other payables

	Consolidated financial statements		Separate financial statements	
	2022 Baht	2021 Baht	2022 Baht	2021 Baht
Trade account payables	38,729,999	54,654,948	2,914,151	1,973,393
Construction payables and retention guarantee	407,500	1,145,800	7,500	7,500
Payables from acquisition of investments (Note 36.2)	-	-	249,995	249,995
Other accrued expenses	131,065,906	96,464,876	51,526,880	42,844,002
	170,203,405	152,265,624	54,698,526	45,074,890

### 23 Borrowings

#### 23.1 Short-term borrowings from financial institutions

	Consolidated and Separate financial statements	
	2022 Baht	2021 Baht
Short-term borrowings from financial institutions	824,800,000	230,000,000

Movements in short-term borrowings from financial institutions during 2022 and 2021 are analysed as follows:

	Consolidated and Separate financial statements	
	2022 Baht	2021 Baht
Opening amount as at 1 January	230,000,000	250,000,000
Cash items:		
Additions	3,206,800,000	60,000,000
Repayment of borrowings	(2,612,000,000)	(80,000,000)
Closing amount as at 31 December	824,800,000	230,000,000

The short-term borrowings comprised promissory note issued to financial institution amounting to Baht 824.80 million with interest rate of 2.60% to 6.35% per annum. The principal repayment is due by 17 May 2023.



# Thai Solar Energy Public Company Limited

## Notes to the Consolidated and Separate Financial Statements

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### 23.2 Lease liabilities

The present value of lease liabilities are as follows:

	Consolidated financial statements		Separate financial statements	
	2022 Baht	2021 Baht	2022 Baht	2021 Baht
Not later than 1 year	16,203,277	29,091,881	3,365,064	7,989,350
Later than 1 year but not later than 5 years	35,334,199	60,389,269	2,066,470	4,861,779
Later than 5 years	156,877,092	227,927,329	-	-
	208,414,568	317,408,479	5,431,534	12,851,129

Movements in lease can be analysed as follows:

	Consolidated financial statements		
	Lease payables	Deferred interest	Lease liabilities
As at 1 January 2021	451,930,202	(113,509,809)	338,420,393
Cash items:			
Repayment	(43,236,031)	-	(43,236,031)
Non-cash items:			
Additions	11,649,384	(254,381)	11,395,003
Lease termination	(293,715)	7,969	(285,746)
Amortised deferred interest	-	11,128,594	11,128,594
Foreign currency translation differences	(6,607)	(7,127)	(13,734)
As at 31 December 2021	420,043,233	(102,634,754)	317,408,479
As at 1 January 2022	420,043,233	(102,634,754)	317,408,479
Cash items:			
Repayment	(35,715,359)	-	(35,715,359)
Non-cash items:			
Additions	4,547,582	(331,185)	4,216,397
Disposal of subsidiaries	(87,685,763)	6,499,952	(81,185,811)
Amortised deferred interest	-	9,589,068	9,589,068
Foreign currency translation differences	(6,329,415)	431,209	(5,898,206)
As at 31 December 2022	294,860,278	(86,445,710)	208,414,568
	Separate financial statements		
	Lease payables	Deferred interest	Lease liabilities
As at 1 January 2021	21,717,823	(1,186,116)	20,531,707
Cash items:			
Repayment	(9,049,409)	-	(9,049,409)
Non-cash items:			
Additions	720,000	(51,853)	668,147
Amortised deferred interest	-	700,684	700,684
As at 31 December 2021	13,388,414	(537,285)	12,851,129
As at 1 January 2022	13,388,414	(537,285)	12,851,129
Cash items:			
Repayment	(8,449,888)	-	(8,449,888)
Non-cash items:			
Additions	720,000	(71,393)	648,607
Amortised deferred interest	-	381,686	381,686
As at 31 December 2022	5,658,526	(226,992)	5,431,534

# Thai Solar Energy Public Company Limited

## Notes to the Consolidated and Separate Financial Statements

For the year ended 31 December 2022

### 23.3 Long-term borrowings from financial institutions

	Consolidated financial statements		Separate financial statements	
	2022 Baht	2021 Baht	2022 Baht	2021 Baht
Current portion of long-term borrowings	498,840,729	600,855,831	292,704,365	331,320,868
Long-term borrowings payable between 1 to 5 years	8,331,670,688	7,098,652,162	1,632,829,446	1,839,874,374
Long-term borrowings payable more than 5 years	421,396,008	1,295,150,097	114,399,225	14,694,373
	9,251,907,425	8,994,658,090	2,039,933,036	2,185,889,615

The long-term borrowings from financial institutions are secured by the pledge and the assignment of rights over the Group's bank deposits, land with construction thereon and machinery, the assignment of rights under all project agreements, pledge of the 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 and maintenance of certain debt to equity and debt service coverage ratios.

On 1 October 2021, the Company amended the loan agreement by converting currency of the outstanding balance from Japanese Yen to Thai Baht, changing interest rate from TIBOR +3% to MLR -1% and extending the borrowing term from 1 October 2021 to 3 October 2024.

The Company assessed the amendment of the new term and determined that it meets definition of derecognition. Accordingly, the Company recognised the new financial liability based on the fair value of its obligation. The outstanding balance of the existing liability is derecognised. The difference amounting to Baht 60.45 million is recorded as gain in other gains/losses in statement of comprehensive income for the year ended 31 December 2021.

Movements in long-term borrowings from financial institutions during 2022 and 2021 are analysed as follows:

	Consolidated financial statements		Separate financial statements	
	2022 Baht	2021 Baht	2022 Baht	2021 Baht
Opening amount as at 1 January	8,994,658,090	8,722,347,683	2,185,889,615	2,538,651,285
Cash items:				
Addition	2,448,883,398	1,557,491,210	190,000,000	-
Financial service fee	(950,000)	(4,539,901)	(950,000)	(4,539,901)
Repayment of borrowings	(542,062,017)	(652,363,726)	(336,732,017)	(360,771,656)
Non-cash items:				
Disposal of subsidiaries	(1,104,210,408)	(646,231,143)	-	-
Gain on loan restructuring	-	(60,451,325)	-	(60,451,325)
Amortisation of financial service fee	9,440,899	13,921,176	1,725,438	3,568,846
Foreign currency translation differences	(553,852,537)	64,484,116	-	69,432,366
Closing amount as at 31 December	9,251,907,425	8,994,658,090	2,039,933,036	2,185,889,615





# Thai Solar Energy Public Company Limited

## Notes to the Consolidated and Separate Financial Statements

For the year ended 31 December 2022

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

Consolidated financial statements				
Currency	Fixed interest rates	2022		2021
		%		%
		Floating interest rates	Fixed interest rates	Floating interest rates
Yen	-	TIBOR + 1.22 to 2.75	-	TIBOR + 1.22 to 2.75
Baht	3.30	Fixed deposit rate + 3.35	3.25	Fixed deposit rate + 3.35
	2.00	THBFIX + 3.50	2.00	THBFIX + 3.50
		MLR - 1.00 to 1.95		MLR - 1.00 to 1.95
		Compound thor +2.50		
		2.00		

Separate financial statements				
Currency	Fixed interest rates	2022		2021
		%		%
		Floating interest rates	Fixed interest rates	Floating interest rates
Baht	3.30	MLR - 1.00 to 1.95	3.25	MLR - 1.00 to 1.95
		Compound thor +2.50		
		2.00		

### 23.4 Borrowing facilities

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

	Currency	Consolidated financial statements		Separate financial statements	
		2022	2021	2022	2021
Floating rate					
Expiring beyond one year	Baht Thousand	160,450	197,132	35,400	35,400
	Yen Thousand	5,841,250	14,141,250	-	-
Fixed rate					
Expiring beyond one year	Baht Thousand	4,966	4,966	-	-

### 23.5 Debentures

	Consolidated and Separate financial statements	
	2022	2021
	Baht	Baht
Current portion of debentures	1,099,290,378	2,348,497,958
Debentures payable between 1 to 5 years	2,334,960,631	1,098,310,884
	3,434,251,009	3,446,808,842

# Thai Solar Energy Public Company Limited

## Notes to the Consolidated and Separate Financial Statements

For the year ended 31 December 2022

Movements in debentures during 2022 and 2021 are analysed as follows:

	Consolidated and Separate financial statements	
	2022 Baht	2021 Baht
Opening amount as at 1 January	3,446,808,842	3,444,096,320
Cash items:		
Issuance of debentures	2,350,000,000	-
Maturing of debentures	(2,350,000,000)	-
Deferred issuance cost	(16,450,000)	-
Non-cash items:		
Amortisation of issuance cost	3,892,167	2,712,522
Closing amount as at 31 December	3,434,251,009	3,446,808,842

As at 31 December 2022, outstanding debentures comprise name-registered certificate of unsubordinated and unsecured debentures totaling 1,099,600 units and 2,350,000 units with the fixed interest of 4.50% and 5.10% per annum, with the interest payable every 3 months. Debentures have the face value of Baht 1,000. The debentures amounting to Baht 1,099.60 million and Baht 2,350 million will be redeemed on 10 April 2023 and 27 October 2024, respectively.

### 23.6 Fair value

The carrying amounts and fair values of certain lease liabilities, long-term borrowings from financial institutions and debentures are as follows:

	Consolidated financial statements			
	Carrying amounts		Fair value	
	31 December 2022 Baht	31 December 2021 Baht	31 December 2022 Baht	31 December 2021 Baht
Lease liabilities	208,414,568	317,408,479	207,852,280	258,126,355
Long-term borrowings from financial institutions	9,251,907,425	8,994,658,090	7,785,565,451	8,305,329,828
Debentures	3,434,251,009	3,446,808,842	3,451,236,200	3,429,551,010

	Separate financial statements			
	Carrying amounts		Fair value	
	31 December 2022 Baht	31 December 2021 Baht	31 December 2022 Baht	31 December 2021 Baht
Lease liabilities	5,431,534	12,851,129	5,334,454	12,384,627
Long-term borrowings from financial institutions	2,039,933,036	2,185,889,615	1,866,177,697	1,992,231,804
Debentures	3,434,251,009	3,446,808,842	3,451,236,200	3,429,551,010

The fair value of short-term borrowings from financial institutions equals their carrying amount, as the impact of discounting is not significant.

The fair values are based on discounted cash flows using a discount rate based upon the borrowing rates of 5.25% (2021: 1.89% to 4.33%) and are within level 2 of the fair value hierarchy.

### 23.7 Interest rates

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

	Consolidated financial statements		Separate financial statements	
	2022	2021	2022	2021
Borrowings from financial institutions	2.02% - 5.25%	1.89% - 4.33%	2.88% - 4.96%	4.15% - 4.85%
Debentures	4.53% - 5.39%	4.52%	4.53% - 5.39%	4.52%



# Thai Solar Energy Public Company Limited

## Notes to the Consolidated and Separate Financial Statements

For the year ended 31 December 2022

### 24 Derivative liabilities

	Consolidated financial statements	
	2022 Baht	2021 Baht
Non-current interest rate swap	-	50,463,036

The fair value of interest rate swaps are within level 2 of the fair value hierarchy which are calculated as the present value of the estimated future cash flows based on observable yield curve.

#### Cash flow hedging on long-term borrowing

To avoid the uncertainty of floating interest rate exposure under JPY denominated borrowing, the Group entered into interest rate swap agreement of principal amounting to Baht 1,175.97 million with financial institution in March 2017 to swap floating rate to a fixed rate until 2037. Such contract was belonged to a foreign subsidiary located overseas. The Group disposed this investment in such subsidiary during 2022. At 31 December 2022, the Group has no derivative liabilities.

### 25 Employee benefit obligations

	Consolidated and Separate financial statements	
	2022 Baht	2021 Baht
Statement of financial position:		
Retirement benefits		
Liability in the statement of financial position	20,519,070	21,559,034

The movement in the defined benefit obligations over the year is as follows:

	Consolidated and Separate financial statements	
	2022 Baht	2021 Baht
<b>At 1 January</b>	21,559,034	17,371,256
Current service cost	6,739,084	4,018,245
Interest expense	355,708	286,612
Remeasurements	(2,442,589)	-
Benefit payment	(5,692,167)	(117,079)
<b>At 31 December</b>	20,519,070	21,559,034

The principal actuarial assumptions used were as follows:

	Consolidated and Separate financial statements	
	2022	2021
Discount rate	3.01%	1.65%
Salary growth rate	4.00%	4.00%

# Thai Solar Energy Public Company Limited

## Notes to the Consolidated and Separate Financial Statements

For the year ended 31 December 2022

The sensitivity analyses of significant actuarial assumptions in pension liability calculations.

	Impact on defined benefit obligation					
	Change in assumption		Increase in assumption		Decrease in assumption	
	2022	2021	2022	2021	2022	2021
Discount rate	1%	1%	Decrease by 10.69 %	Decrease by 10.68 %	Increase by 12.71 %	Increase by 12.66 %
Salary growth rate	1%	1%	Increase by 12.45 %	Increase by 14.39 %	Decrease by 10.69 %	Decrease by 12.26 %

The above sensitivity analyses are based on a change in an assumption while holding all other assumptions constant. In practice, this is unlikely to occur, and changes in some of the assumptions may be correlated. When calculating the sensitivity of the defined benefit obligation to significant actuarial assumptions, the same method (present value of the defined benefit obligation calculated with the projected unit credit method at the end of the reporting period) has been applied as when calculating the pension liability recognised within the statement of financial position.

The methods and types of assumptions used in preparing the sensitivity analysis did not change compared to the previous year.

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 23.01 years (2021: 24.60 years).

Expected maturity analysis of undiscounted retirement:

	Consolidated and Separate financial statements				
	Less than a year Baht	Between 1-2 years Baht	Between 2-5 years Baht	Over 5 years Baht	Total Baht
Retirement benefits					
As at 31 December 2021	409,672	619,580	1,872,380	221,412,065	224,313,697
As at 31 December 2022	780,140	516,359	3,008,567	287,999,563	292,304,629

## 26 Share capital and premium on share capital

	Consolidated and Separate financial statements				
	Number of shares Shares	Issued and paid Shares	Issued and paid up Baht	Share premium Baht	Total Baht
At 1 January 2022	2,477,474,454	2,117,716,281	2,117,716,281	1,045,504,325	3,163,220,606
At 31 December 2022	2,477,474,454	2,117,716,281	2,117,716,281	1,045,504,325	3,163,220,606

As at 31 December 2022, the total authorised number of ordinary shares is 2,477,474,454 shares (2021: 2,477,474,454 shares) with a par value of Baht 1 each (2021: Baht 1 each). 2,117,716,281 shares are issued and fully paid (2021: 2,117,716,281 shares).



# Thai Solar Energy Public Company Limited

## Notes to the Consolidated and Separate Financial Statements

For the year ended 31 December 2022

### 27 Legal reserve

	Consolidated financial statements		Separate financial statements	
	2022 Baht	2021 Baht	2022 Baht	2021 Baht
At 1 January	130,022,093	106,757,899	91,877,074	80,090,954
Appropriation during the year	20,655,665	23,264,194	-	11,786,120
At 31 December	150,677,758	130,022,093	91,877,074	91,877,074

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.

### 28 Other income

	Consolidated financial statements		Separate financial statements	
	2022 Baht	2021 Baht	2022 Baht	2021 Baht
Rental income	926,508	1,040,853	926,508	1,040,853
Interest income	543,577	442,201	8,113,407	13,855,736
Other income	10,308,840	8,388,505	2,475,893	143,906
	11,778,925	9,871,559	11,515,808	15,040,495

### 29 Other gains (losses)

	Consolidated financial statements		Separate financial statements	
	2022 Baht	2021 Baht	2022 Baht	2021 Baht
Loss on exchange rate	(21,426,718)	(77,774,936)	(363,920,651)	(68,919,054)
Gain on loan restructuring	-	60,451,325	-	60,451,325
Realised gain on disposal of financial assets measured at fair value	7,126	-	-	-
Gain on sale of investment in subsidiaries (Note 15)	234,436,964	104,410,828	-	-
	213,017,371	87,087,217	(363,920,651)	(8,467,729)



# Thai Solar Energy Public Company Limited

## Notes to the Consolidated and Separate Financial Statements

For the year ended 31 December 2022

### 30 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	
	2022 Baht	2021 Baht	2022 Baht	2021 Baht
Salary, wages and employees' benefits	216,240,156	179,232,892	176,636,288	156,226,299
Depreciation	265,614,761	370,438,422	15,438,533	15,935,584
Amortisation	69,701,835	60,124,835	1,941,454	2,006,997
Impairment loss (Note 17)	-	154,562,421	-	154,562,421
Write off equipment	476,889	4,598,100	-	-
Professional fees	121,694,396	157,282,593	34,669,030	13,935,104
Operation and maintenance of power plants	28,273,664	31,791,762	660,310	524,753
Expected credit loss	-	7,768,571	-	7,605,020

### 31 Finance costs

	Consolidated financial statements		Separate financial statements	
	2022 Baht	2021 Baht	2022 Baht	2021 Baht
Interest on borrowing from financial institutions	310,088,292	317,095,882	266,243,482	239,497,221
Financial service fees	8,280,122	10,623,716	7,036,508	6,781,370
Interest on lease liabilities	9,589,714	10,596,803	381,686	700,684
	327,958,128	338,316,401	273,661,676	246,979,275

### 32 Income tax

	Consolidated financial statements		Separate financial statements	
	2022 Baht	2021 Baht	2022 Baht	2021 Baht
Current tax on profits for the year	13,909,894	10,495,393	-	-
Deferred tax (Note 21)	1,416,778	(1,867,835)	1,554,275	(1,131,472)
Adjustments in respect of prior year	-	7,929	-	-
	15,326,672	8,635,487	1,554,275	(1,131,472)



# Thai Solar Energy Public Company Limited

## Notes to the Consolidated and Separate Financial Statements

For the year ended 31 December 2022

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	
	2022 Baht	2021 Baht	2022 Baht	2021 Baht
Profit (loss) before tax	739,099,020	501,620,663	(51,148,515)	178,164,436
Tax calculated at a tax rate of 20% (2021: 20%)	147,819,804	100,324,133	(10,229,703)	35,632,887
Tax effect of:				
Foreign tax rate difference	9,649,766	6,995,686	-	-
Joint venture's results reported net of tax	(129,540,474)	(128,583,839)	-	-
Tax exemption for income under BOI	(55,600,305)	(46,662,169)	-	-
Income subject to tax	9,334,430	23,049,153	7,272,254	8,022,013
Income not subject to tax	(43,397,940)	(20,957,891)	(136,459,973)	(119,477,589)
Expenses not deductible for tax purpose	3,540,563	36,055,828	2,488,700	35,095,808
Expense deducted at greater amount	(2,871,575)	(6,547,686)	(2,781,639)	(6,171,120)
Tax losses for which no deferred income tax asset was recognised	145,320,746	51,838,724	139,710,361	46,898,001
Utilisation of previously unrecognised tax losses	(1,370,038)	(2,522,247)	-	-
Deferred tax expense relating to the origination and reversal of temporary differences	1,416,778	(1,867,833)	1,554,275	(1,131,472)
Unrealised (loss) gain from intercompany transactions	(68,975,083)	(2,494,301)	-	-
Adjustment in respect of prior periods	-	7,929	-	-
Tax charge	15,326,672	8,635,487	1,554,275	(1,131,472)

### 33 Earnings (loss) per share

Basic earnings per share is calculated by dividing the profit(loss) attributable to ordinary shareholders of the Company by the weighted average number of ordinary shares in issue during the year.

	Consolidated financial statements		Separate financial statements	
	2022	2021	2022	2021
Net profit attributable to ordinary shareholders of the company (Baht)	723,772,348	492,705,987	(52,702,789)	179,295,908
Weighted average number of outstanding ordinary shares (Shares)	2,117,716,281	2,117,716,281	2,117,716,281	2,117,716,281
Basic earnings per share (Baht per share)	0.34	0.23	(0.02)	0.08

There are no potential dilutive ordinary shares during 2022 and 2021.

### 34 Promotional privileges

The Group is granted with 34 certificates of promotional privileges from the Board of Investment for the production of electricity generated from solar power and biomass, the privilege includes 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 2022 and 2021 wholly derive from promoted operations in Thailand. Details of operating segments are disclosed in Note 8.

# Thai Solar Energy Public Company Limited

## Notes to the Consolidated and Separate Financial Statements

For the year ended 31 December 2022

### 35 Dividends

#### 2022

At the Annual General Meeting of Shareholders for 2022 held on 12 April 2022, the Shareholders had passed a resolution to approve payment of dividends at Baht 0.035 per share, totaling Baht 74.12 million. The dividends were paid on 22 April 2022.

#### 2021

On 16 September 2021, the Board of Directors Meeting approved a dividend payment in respect of operating results during January to June 2021 to the shareholders at Baht 0.040 per share, totaling Baht 84.71 million. The dividends were paid on 12 October 2021.

### 36 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 46% of the Company's shares. The remaining 54% of the shares are held by Sino-Thai Engineering & Construction Public Company Limited and individual shareholders. The significant investments in joint venture, and subsidiaries are set out in Notes 14 and 15.

The following material transactions were carried out with related parties:

#### 36.1 Sales of goods and services

For the year ended 31 December	Consolidated financial statements		Separate financial statements	
	2022 Baht	2021 Baht	2022 Baht	2021 Baht
<b>Subsidiaries</b>				
Management service income	-	-	79,212,000	139,397,500
Operation and maintenance income	-	-	19,416,310	6,268,817
Dividends income	-	-	79,949,756	11,487,839
	-	-	178,578,066	157,154,156
<b>Joint venture</b>				
Management service income	51,793,432	49,327,078	51,793,432	49,327,078
Operation and maintenance income	3,465,000	-	3,465,000	-
Rental income	476,280	476,280	476,280	476,280
Dividends income	56	58	602,350,107	585,900,108
	55,734,768	49,803,416	658,084,819	635,703,466

Management service income and maintenance income from subsidiaries and joint venture are based on agreed upon rate.



# Thai Solar Energy Public Company Limited

## Notes to the Consolidated and Separate Financial Statements

For the year ended 31 December 2022

### 36.2 Outstanding balances arising from sales/purchases of goods/services

	Consolidated financial statements		Separate financial statements	
	2022 Baht	2021 Baht	2022 Baht	2021 Baht
<b>Amounts due from and advances to related parties (Note 12)</b>				
Subsidiaries	-	-	148,254,702	182,645,924
Joint venture	4,692,736	4,469,272	4,692,736	4,469,272
	4,692,736	4,469,272	152,947,438	187,115,196
<b>Dividends receivable (Note 12)</b>				
Joint venture	158,550,028	136,500,024	158,550,028	136,500,024
<b>Receivables from disposal of investments</b>				
Subsidiaries	-	-	404,409,990	1,383,683,149

Receivables from disposal of investments arose due to the Group's restructuring.

<b>Payables from acquisition of investments (Note 22)</b>				
Subsidiaries	-	-	249,995	249,995

### 36.3 Long-term loans to subsidiaries

	Separate financial statements	
	2022 Baht	2021 Baht
Current portion of long-term loans to subsidiaries	76,690,000	78,520,000
Long-term loans to subsidiaries	5,829,244,977	5,830,077,641
	5,905,934,977	5,908,597,641

Movements in loans to subsidiaries for the year ended 31 December are analysed as follows:

	Separate financial statements	
	2022 Baht	2021 Baht
Opening net book amount	5,908,597,641	6,214,589,798
Cash items:		
Addition	734,178,055	200,597,300
Repayment received	(385,161,395)	(508,208,010)
Non-cash items:		
Foreign currency translation differences	(351,679,324)	1,618,553
Closing net book amount	5,905,934,977	5,908,597,641

Long-term loans to subsidiaries are in form of loan agreements denominated in Japanese Yen and Thai Baht. Loans carry zero interest and the rates range from 4.3% to 6.0% per annum, respectively. Loans have maturity within 2023 to 2028. The management do not have intention to call the for repayment of loans due at call in the next 12 months and classify these loans as long-term accordingly.

# Thai Solar Energy Public Company Limited

## Notes to the Consolidated and Separate Financial Statements

For the year ended 31 December 2022

### 36.4 Key management compensation

For the year ended 31 December	Consolidated financial statements		Separate financial statements	
	2022 Baht	2021 Baht	2022 Baht	2021 Baht
Short-term employee benefits	46,255,991	44,185,171	25,992,814	25,354,216
Post-employment benefits	3,176,185	1,706,895	3,176,185	1,706,895
	49,432,176	45,892,066	29,168,999	27,061,111

## 37 Contingencies

### Guarantees

As at 31 December 2022, there were outstanding bank guarantees amounting to Baht 6 million (2021: Baht 6 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.

## 38 Commitments

### 38.1 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 and Separate financial statements	
	31 December 2022	31 December 2021
Power plants	USD	-
Power plants	JPY	17,555,070
	4,924,450,000	11,818,680,000

### 38.2 Power purchase agreements

#### Domestic

As at 31 December 2022, the Group has 35 power purchase agreements with the Provincial Electricity Authority ("PEA") and the Metropolitan Electricity Authority ("MEA") (2021: 34 agreements). Currently, the Group has commenced the production and distribution of electricity under 34 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
Production and distribution of electricity	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.
Production and distribution of electricity	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.





# Thai Solar Energy Public Company Limited

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For the year ended 31 December 2022

	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 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).
Production and distribution of electricity	Solar farm	Subsidiary	4	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).
Production and distribution of electricity	Biomass energy	Subsidiary	1	4.6	Feed-in Tariff system (FIT) amounting to Baht 4.28 and Feed-in Tariff system (FIT) Premium amounting to Baht 0.30 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).
Production and distribution of electricity	Biomass energy	Subsidiary	2	17.6	Feed-in Tariff system (FIT) amounting to Baht 4.28 and Feed-in Tariff system (FIT) Premium amounting to Baht 0.30 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).
Production and distribution of electricity	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).
Production and distribution of electricity	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 year and will be automatically renewed every 1 year until the contract termination.
Production and distribution of electricity	Floating Solar	Subsidiary	1	8	Peak period amounting Baht 4.10 and off-peak period amounting to Baht 2.58 granted for a period of 25 years commencing from commercial operation date (COD).	For a period of 25 years commencing from commercial operation date (COD).

### Overseas

As at 31 December 2022, subsidiaries operating in Japan have no power purchase agreements (2021: 1 agreements) with the power purchasing agencies, of which the power plants have already commenced generating and distributing the electricity. In addition, subsidiaries have 1 power purchase agreement and right to develop for the power purchase agreement (2021: 1 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
Under development and construction	Solar farm	Subsidiary	1	154.98	Feed-in Tariff system (FIT) amounting to Yen 36.	The agreement has maturity within 2040 starting from commercial operation date (COD).

### 38.3 Contracts and other commitments

- 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 2022 amounting to Baht 4 million (2021: Baht 4 million) (in proportionate of the Company's interest in the joint venture) were recognised as expenses.
- 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 2022 amounting to approximately Baht 5 million (2021: Baht 5 million) (in proportionate of the Company's interest in the joint venture) were recognised as expenses.
- A joint venture has commitments in respect of the operation and maintenance agreements of three power plants with a company, amounting to Baht 6 million per annum for the period of 4 years 7 months from June 2022. The service fees will be increased once a year at the rate stipulated in the contract. The fees for the year ended 31 December 2022 amounting to Baht 2 million per annum (in proportionate of the Company's interest in the joint venture) were recognised as expenses.
- A subsidiary has commitments in respect of the operation and maintenance agreements of two power plants with a company, amounting to Baht 43 million per annum for the period of 5 years from the commercial operation date. The fees for the year ended 31 December 2022 amounting to Baht 43 million (2021: Baht 44 million) were recognised as expenses.





# 4

## Attachment

- **Attachment 1**  
Details of the directors of subsidiaries  
and joint ventures as of 31 December 2022
- **Attachment 2**  
Details of the person assigned to take direct  
responsibility for accounting supervision  
Details of the Heads of the Internal Audit  
Details of the Heads of the Compliance Units
- **Attachment 3**  
Assets for business undertaking and details of  
asset appraisal

## Attachment 1 : Details of the directors of subsidiaries and joint ventures as of 31 December 2022

	Miss Cathleen Maleenont	Mr. Somphop Prompanapitak	Mr. Kitipong Thannom	Mr. Niwate Bunwichai	Miss Sirirat Huaithan	Mr. Jaruwat Singhsomdee	Mr. Phattharakrit Techasikan
<b>Subsidiaries</b>							
1. World Solar Co., Ltd.	D,S	D,S					
2. Solar Visible Co., Ltd.	D,S	D,S	D,S		D,S		
3. Solar Community Co., Ltd.	D,S	D,S					
4. Infinity Solar Co., Ltd.	D,S	D,S	D,S		D,S		
5. Bs Bangsai Solar Co., Ltd.	D,S	D,S	D,S		D,S		
6. Siam Solar Power PCL.	D,S	D,S	D,S	D,S	D,S		
7. Siam Waste Power Co., Ltd.	D,S	D,S	D,S		D,S		
8. Earth Energy System Co., Ltd.	D,S	D,S	D,S				
9. Mars Solar Co., Ltd.	D,S	D,S	D,S				
10. Siam Tara Floating Co., Ltd.	D,S	D,S	D,S				
11. Soilcrete Technology Co., Ltd.	D,S	D,S	D,S		D,S		
12. TSE Rooftop Co., Ltd.	D,S	D,S	D,S		D,S		
13. Champ Energy Co., Ltd.	D,S	D,S					
14. North Rooftop Cp., Ltd.	D,S	D,S					
15. Roof Energy Co., Ltd.	D,S	D,S					
16. Green Rooftop Co., Ltd.	D,S	D,S					
17. Lucky Solar Co., Ltd.	D,S	D,S					
18. Thai Community Energy Co., Ltd.	D,S	D,S	D,S		D,S		



## Attachment 1 : Details of the directors of subsidiaries and joint ventures as of 31 December 2022

	Miss Cathleen Maleenont	Mr. Somphop Prompanapitak	Mr. Kitipong Thannom	Mr. Niwate Bunwichai	Miss Sirirat Huaithan	Mr. Jaruwat Singhsomdee	Mr. Phattharakrit Techasikan
19. Oscar Save the World Co., Ltd.	D,S	D,S	D,S		D,S		
20. Bangsawan Green Co., Ltd.	D,S	D,S			D,S		
21. Native Power Energy Co., Ltd.	D,S	D,S	D,S		D,S		
22. White Solution Energy Co., Ltd.	D,S	D,S	D,S		D,S		
23. Clean Renewable Co., Ltd.	D,S	D,S	D,S		D,S		
24. TSE Overseas Group Co., Ltd.	D,S	D,S					
25. Onikoube Solar Power PTE.LTD	D,S	D,S					
26. TSE Group International PTE. LTD.	D,S	D,S					
27. Solar Assets PTE. LTD.	D,S	D,S					
28. TSE Japan Goudou Kaisha		D,S					
<b>Joint ventures</b>							
29. Thai Solar Renewable Co., Ltd.	D,S	D,S	D			D,S	D,S
30. Siam Solar Energy 1 Co., Ltd.	D,S	D,S	D			D,S	D,S

Remarks : D – Director S – Authorized director



## Attachment 2 : Details of the person assigned to take direct responsibility for accounting supervision

### Miss Chanakarn Yiamwinya

Assistant Vice President - Financial Controllers

Age : 35

### Education

- Bachelor of Business Administration, Accounting, Kasetsart University
- Professional Accountant Certificate

### Accounting training

- Update Thai Financial Reporting Standards (TFRS) 2023 total 7 hours
- Thai Financial Reporting Standards 9 Financial Instrument total 7 hours
- Thai Financial Reporting Standards 16 Lease total 7 hours

### Working Experience (5-Year Past Experience)

- June 2022 - Present      Assistant Vice President - Financial Controllers,  
Thai Solar Energy Public Company Limited
- June 2019 - June 2022      Financial Consolidation Manager, Asset World Corp Public Company Limited
- April 2011 - May 2019      Senior Assistant Auditor, EY Office Limited



## Attachment 2 : Details of the Heads of the Internal Audit

### Mr. Amm Kaitunyalak

Section Manager - Internal Audit

Age : 39

### Education

- Master Degree Major Internal Audit at University of the Thai chamber of commerce
- Bachelor Degree Major Accounting at Rajamangala University of Technology Phranakhon

### Training Record

- Course Certified Professional Internal Audit of Thailand : CPIAT (Have Certification CPIAT)
- COSO 2013
- Internal Audit Procedures

### Working Experience (5-Year Past Experience)

- October 2022 - Present                      Section Manager - Internal Audit, Thai Solar Energy PCL.
- April 2022 - September 2022              Assistant Internal Audit Manager, Lease IT PCL.
- October 2015 - March 2022                Manager - Strategic Finance Partner & Insight, Boonrawd Brewery LTD.

## Attachment 2 : Details of the Heads of the Compliance Units

### Miss Nottaporn Thiengprathes

Assistant Vice President - Supporting Office

Age : 57

### Education

- Bachelor of Business Administration, Ramkhamhaeng University

### Training courses of the Thai Institute of Directors Association

- Company Secretary Program
- Effective Minutes Taking
- Board Reporting Program

### Working Experience (5-Year Past Experience)

- 2017 - Present      Assistant Vice President - Supporting Office, Thai Solar Energy Public Company Limited
- 2015 - 2016      Section Manager - Supporting Office, Thai Solar Energy Public Company Limited
- 2013 - 2014      Section Manager - Regulatory and Administrative, Thai Solar Energy Public Company Limited

### Scope of responsibilities

- Prepare information for the Board of Directors' meeting and shareholders' meeting. considering the criteria of Public Company Limited Act, Securities and Exchange Act and the Stock Exchange of Thailand including related regulations as required by listed companies
- Supervise the company to operate in accordance with the Company's Articles of Association, Public Limited Companies Act, the Securities and Exchange Act, including rules and regulations according to the announcement of the Securities and Exchange Commission.
- Examine important information that must be disclosed to the SET, the SEC and shareholders. According to the rules and regulations of the Stock Exchange of Thailand, the Office of the Securities and Exchange Commission, the Securities Depository Center, and the Ministry of Commerce
- Check the documents submitted for registration with the Department of Business Development of the entire group of companies



## Attachment 3 : Assets for business undertaking and details of asset appraisal

### Assets for business undertaking

Details appear as follows in assets for business undertaking

### Details of asset appraisal

- none -



Thai Solar Energy Public Company Limited

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