



Thai Solar Energy Public Company Limited

PRESENTATION 3Q2021

NOVEMBER 2021



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AGENDA

01 COMPANY OVERVIEW

Summary of Corporate Information

03 OUTLOOK

Summary of TSE's Business Outlook and Investment Plan

02 HIGHLIGHTS of 3Q2021

Summary of TSE's Financial Performance 3Q2021 and Projects' Update

04 APPENDIX

Summary of Company Structure and its Investment



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.

01

COMPANY OVERVIEW

Summary of Corporate
Information

COMPANY OVERVIEW

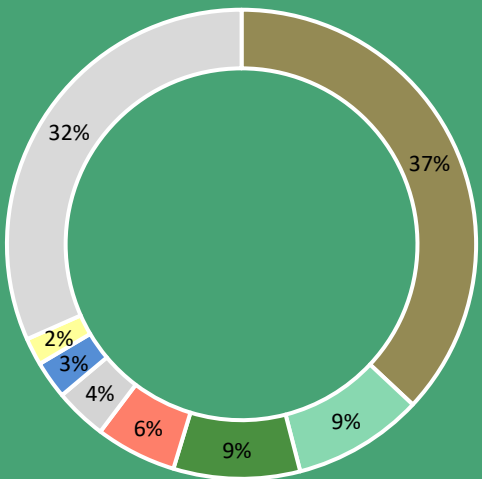
Thai Solar Energy Public Company Limited (“TSE”) was established in 2008 with a mission to establish a solid footprint in Thailand in the solar power industry and expand into other renewable energies as well as developing an international solar power business focusing in Asia and Oceania regions.



COMPANY OVERVIEW

TSE's Major Shareholders

(as of 11 MAR 2021)



- P.M. Energy Co., Ltd.
- SINO-THAI Engineering & Construction PCL.
- Ms. Cathleen Maleenont
- WAVE Entertainment PCL.
- CREDIT SUISSE AG, SINGAPORE BRANCH
- Bualuang Long-Term Equity Fund
- CITI (NOMINEES) LIMITED-S.A PBG CLIENTS SG
- Others

Listed in:

MAI on October 30, 2014



Moved to **SET** since May 14, 2019



Paid up Capital:

THB 2,117 million

Sector:

Energy & Utilities

Industry:

Resources

CG Rating:



Credit Rating:

BBB- stable

3 Core Businesses

Solar PV Farms



Solar PV Rooftops





Biomass



MILESTONES

2008 – 2014



Solar Farms + Rooftops (TH)

- 2008:** > Established TSE 
- 2011:** > Majority owned by Dr. Cathleen Maleenont
> COD Solar Thermal (4.5 MW)
- 2013:** > COD Solar PV TH 5 projects* (40 MW)
*Partnership with GPSC (TSE 60%) 
- 2014:** > **Listed in MAI on 30 OCT 2014**
> COD Solar PV TH 5 projects* (40 MW)
*Partnership with GPSC (TSE 60%)
> COD Solar Rooftop 5 Projects (5 MW)



2015 – 2017


Solar Farms (JP) + Biomass (TH)

- 2015:** > **Expanded TSE's business operation in Japan** 
> COD Solar PV JP 1 project (0.5 MW)
> COD Solar Rooftop 9 projects (9 MW)
- 2016:** > COD Solar PV "SLC" 1 project (1 MW)
> COD Solar PV JP 4 projects (6.49 MW)
> **Invested in Biomass 3 projects**
- 2017:** > **Large Investment in Japan "Onikoube" project (147 MWp)** 



2018 – 2019

Merger & Acquisition

- 2018:** > COD Biomass 3 projects (22.2 MW)
> COD Solar PV JP: Jyoso (1.25 MW)
> **Acquired** a new project "INS" in Ang Thong province (2.0 MW) in OCT 2018
- 2019:** > COD Solar PV JP: Hanamizuki (13.5 MW)
> Fully Operate Biomass 3 projects (22.2 MW) 
> **Moved to SET on 14 MAY 2019**
> Capital Increase to 2,117.7 MB. completely in OCT 2019.
Note: TSR 212 million shares Total 530 MB.
> **Acquired:**
1. "BSS" in Ayutthaya province (5 MW) in MAR 2019
2. "BSE" in Udonnathani province (5 MW) in AUG 2019
3. "SSP" in Ang Thong province (8 MW) in NOV 2019

2020 – 2021

Private PPA

- 2020:** > Start project "Onikoube" Construction and receive project loan from BBL
> **Invested in a Floating Solar PV farm project in Prachinburi province (8.0 MW) in JUN 2020**
> Acquired: "EES" in Krabi province (5.0 MW) in JUL 2020
> Disposed: "BSE" in Udonnathani province (5.0 MW) in SEP 2020
- 2021:** > **COD Floating Solar PV project (8 MWp) since 25 May 2021**
> Disposed investment in 6 small Solar Farms in Japan (totaling 8.24 MW) in SEP 2021



2022 – onward

Exploring Investment Opportunity overseas (i.e. Vietnam) + Expanding Private PPA

- 2022:** > SCOD "Onikoube" project (147 MWp) 4Q2022



Ref. photo of "Onikoube" project

BOARD OF DIRECTORS



Cathleen Maleenont, Ed.D.

Chairman of Board of Directors



Dr. Prommin Lertsuridej

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



Mr. Pala Sookawesh

Independent Director



Mr. Prasert Patradhilok

Independent Director and
Chairman of Audit Committee



Mr. Aran Apichari

Independent Director



Mr. Somphop Prompanapitak

Director



Mrs. Angkanee Rerksirisuk

Director



Mr. Masthawin Charnvirakul

Director

AUDIT COMMITTEE



Mr. Prasert Patradhilok

Chairman of Audit Committee
and Independent Director



Mr. Pala Sookawesh

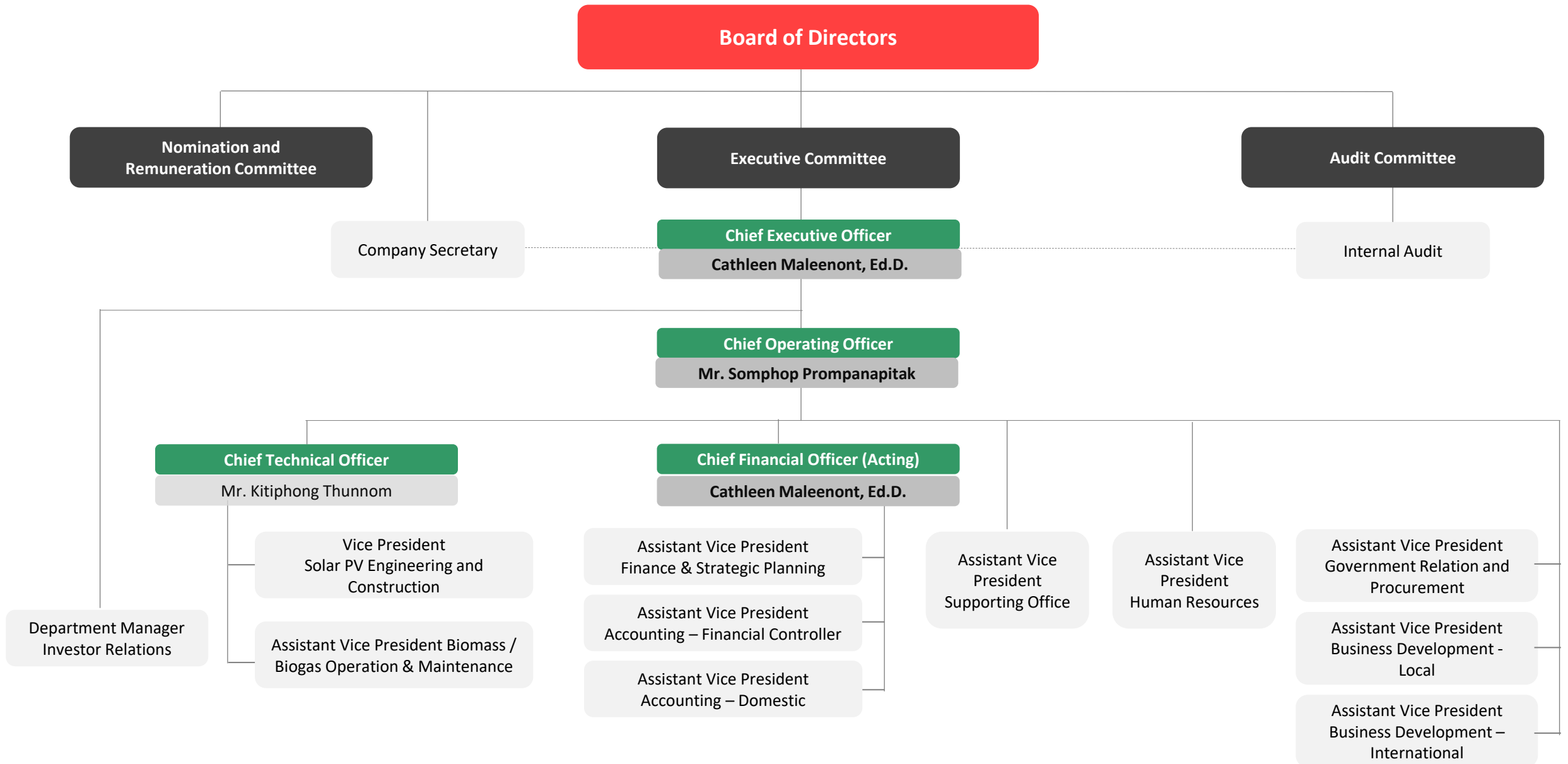
Member of Audit Committee
and Independent Director



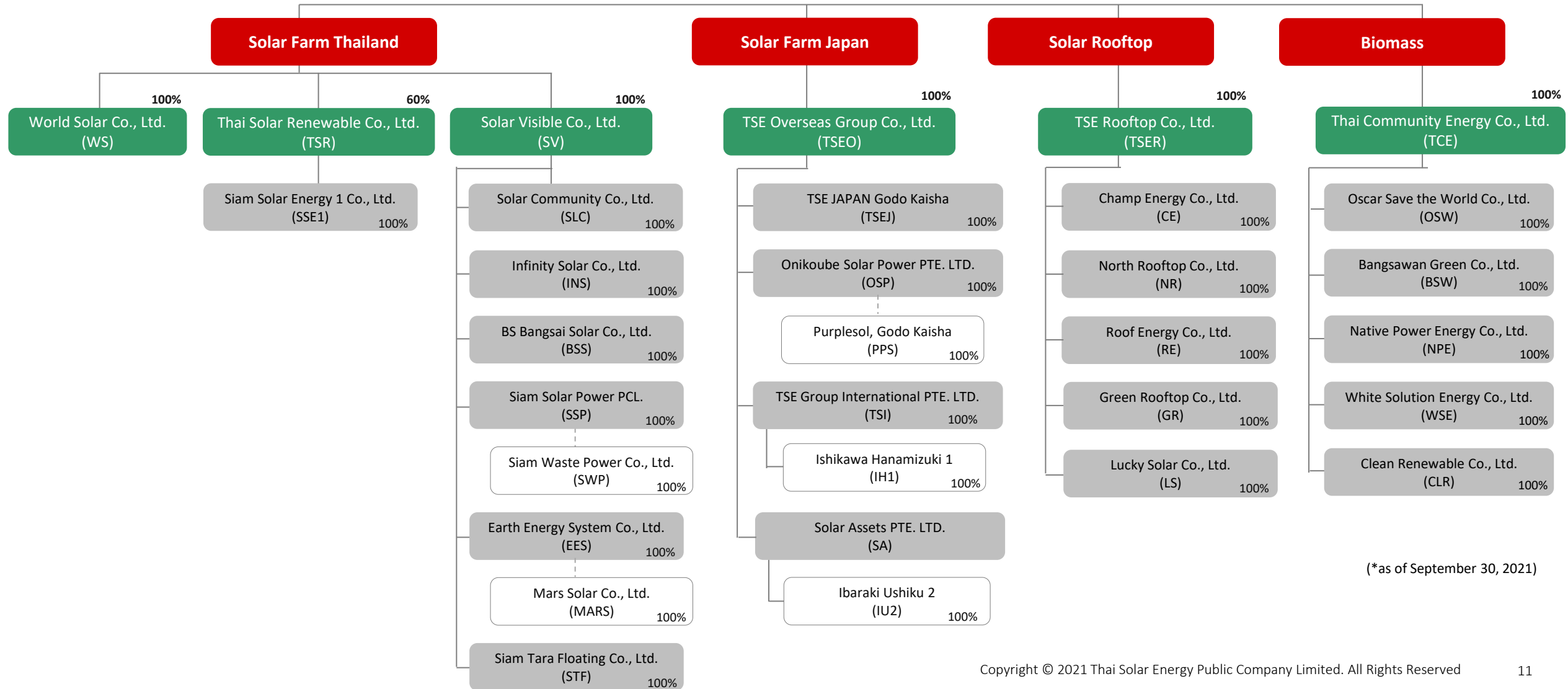
Dr. Praphan Subsang

Member of Audit Committee
and Independent Director

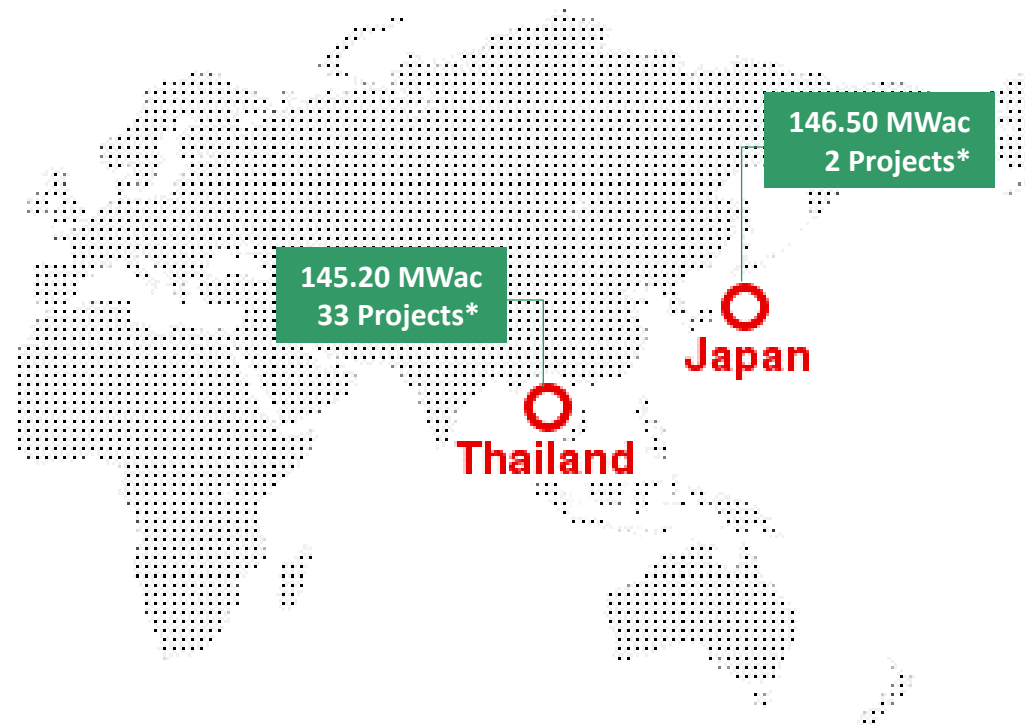
ORGANIZATION STRUCTURE



COMPANY STRUCTURE



CORE BUSINESS



**291.70
MWac**

TSE and its subsidiaries (“the Group”) The Group’s core businesses are generation and distribution of electricity from solar power and biomass to government and private company in Thailand and Japan.



In Operation
158.70 MWac*



Under Construction
133 MWac*

**Total: 35 Projects
291.70 MWac**

(*as of September 30, 2021)

02 HIGHLIGHTS of 3Q2021

Summary of TSE's Financial
Performance 3Q2021 and
Projects' Update

HIGHLIGHTS OF 3Q2021

01

Disposal of 6 Solar Farms in Japan

Disposal of 100% investment interests in 6 solar farms (a total contract capacity of 8.24 MW). TSE earned a total enterprise value of **JP¥ 3,363 million** or approximately **THB 1,027 million** and recorded the profit in 3Q2021.



Shima (1.25 MW)
COD MAR 2016



Hikeme (1.50 MW)
COD APR 2016



Sakura (1.99 MW)
COD NOV 2017



Ryugazaki (1.75 MW)
COD SEP 2016



Kuno (0.5 MW)
COD AUG 2015



Jyoso (1.25 MW)
COD MAY 2018

02

Dividend Payment @ 0.04 Baht/ share

Cash dividend payment for 1H2021 @0.04 Baht / share.

Record date for the right to receive dividends is on
30 SEP 2021.

Payment date is on **12 OCT 2021.**

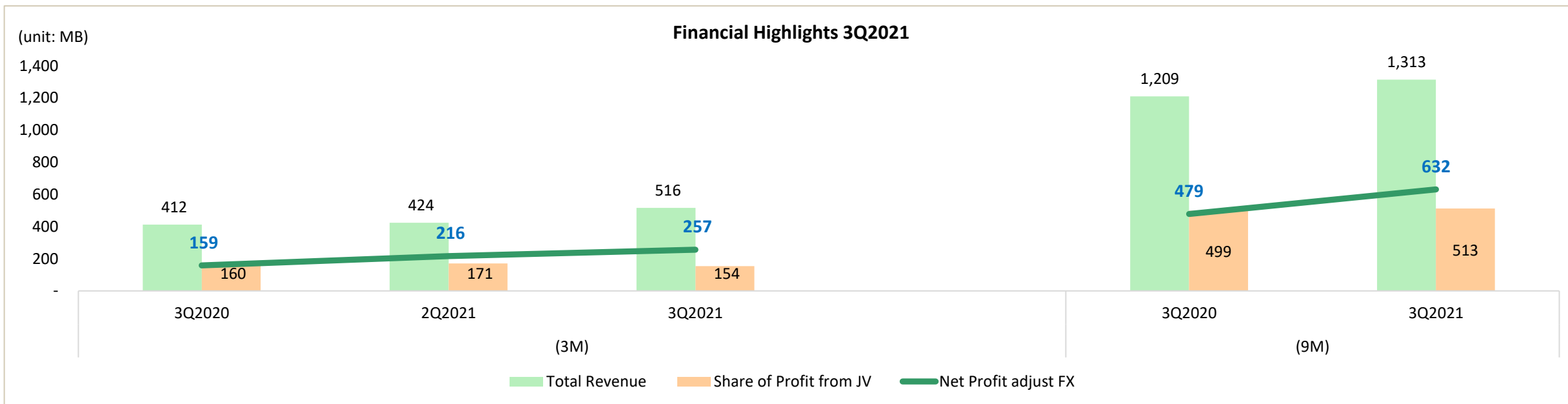
Disposed of
investments in
6 small solar
farms in Japan

Cash Dividend
Payment @
0.04 Baht /
Share

INCOME STATEMENT 3Q2021

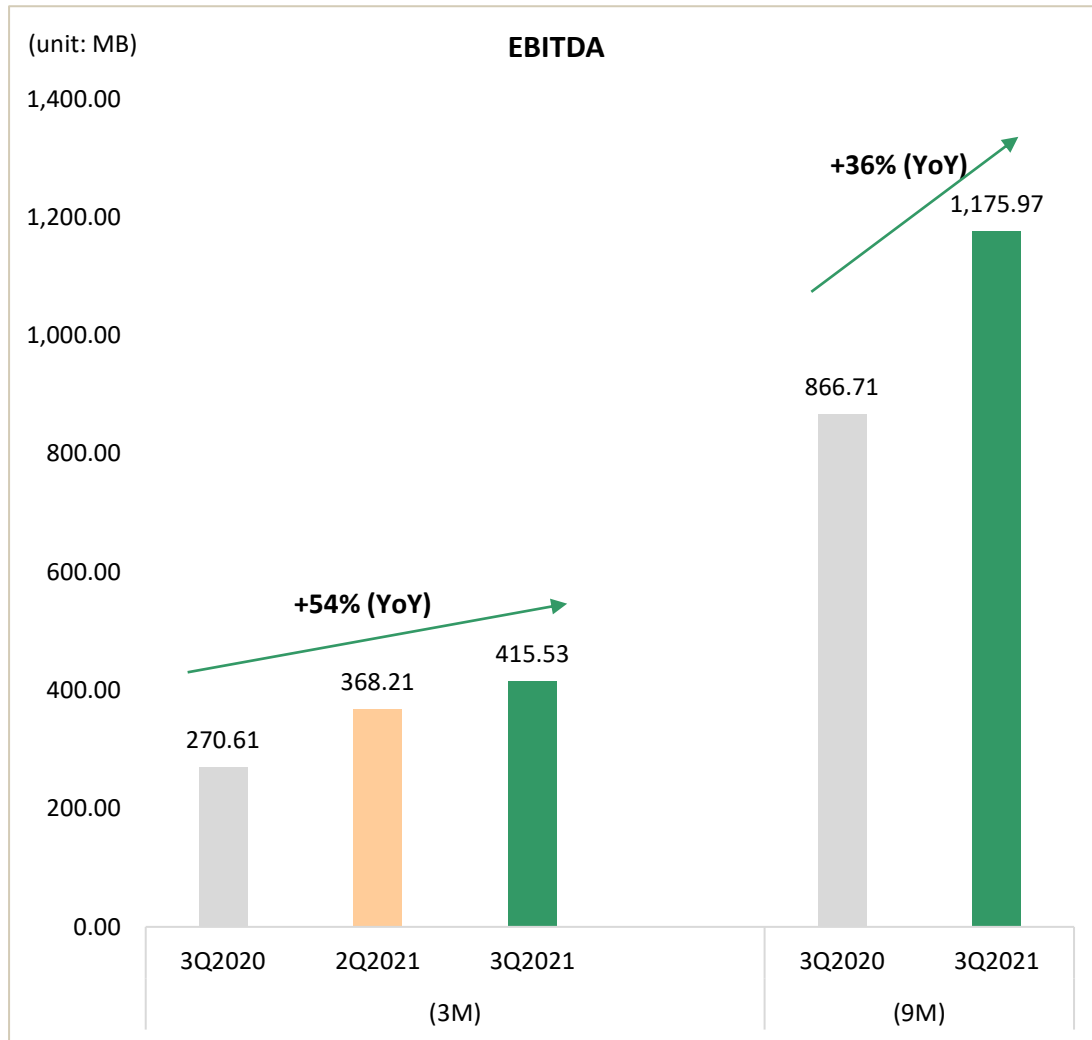
	(3M)				(9M)		
Statement of Comprehensive Income	Consolidated (Unit: Thousand Baht)						
	3Q2021	3Q2020	% Change		3Q2021	3Q2020	% Change
Revenue							
Electricity Sales	401,470	396,605	1.23%		1,167,904	1,163,934	0.34%
Management Fee	12,530	11,934	4.99%		36,796	35,044	5.00%
Total Revenue	414,000	408,539	1.34%		1,204,700	1,198,978	0.48%
COGs	(270,186)	(258,764)	4.41%		(798,724)	(758,765)	5.27%
Gross Profit	143,814	149,775	-3.98%		405,976	440,213	-7.78%
Other Income	102,151	3,540	2785.62%		108,343	10,361	945.68%
Administrative Expenses	(53,472)	(59,828)	-10.62%		(139,176)	(219,635)	-36.63%
Gain (loss) from exchange rate	(48,402)	(87,578)	-44.73%		(38,630)	(158,695)	-75.66%
Finance costs	(84,367)	(95,186)	-11.37%		(252,408)	(250,837)	0.63%
Share of Profit from joint ventures	154,153	160,292	-3.83%		513,044	498,870	2.84%
Profit (Loss) before Income Tax	213,877	71,015	201.17%		597,149	320,277	86.45%
Income Tax	(5,509)	267	-2163.30%		(3,821)	316	-1309.18%
Net Profit from Operation	208,368	71,282	192.32%		593,328	320,593	85.07%
Currency translation differences	277,769	271,081	2.47%		277,050	495,473	-44.08%
Change in fair value of hedging derivatives	5,312	(6,497)	100.00%		2,800	(9,411)	100.00%
Total Comprehensive Income	491,449	335,866	46.32%		873,178	806,655	8.25%
Profit Attributable to:							
Owners of the Parent	208,368	71,119	192.98%		593,048	320,027	85.31%
Non-Controlling Interests	-	163	100.00%		280	566	-50.53%
	208,368	71,282	192.32%		593,328	320,593	85.07%
Total Comprehensive Income Attributable to:							
Owners of the Parent	491,449	335,491	46.49%		872,855	805,705	8.33%
Non-Controlling Interests	-	375	100.00%		323	950	-66.00%
	491,449	335,866	46.32%		873,178	806,655	8.25%

FINANCIAL HIGHLIGHTS 3Q2021



3Q2021	(3M)	(9M)	Details
Total Revenue	QoQ: +21.87% YoY: +25.26%	YoY: +8.58%	- Total revenue in 3Q2021 was increased due to improved operation performance and new revenue recognition from a floating Solar PV Farm “STF” project (8M) which was started to COD since 25 May 2021.
Share of Profit from JV	QoQ: -10.11% YoY: -3.83%	YoY: +2.84%	- Share of Profit from JV in 3Q2021 (3M) was slightly decreased due to a rainy season that there was a lot of rain in this year as compared to last year.
Net Profit adjust FX	QoQ: +18.74% YoY: +61.80%	YoY: +31.95%	- Net Profit adjust FX in 3Q2021 was increased due to improved operation performance in overall, a decrease in finance costs, a decrease in administration expenses, and other income that the Company recognized a gain from disposal of investment in Japan amounting to 101.15 MB.

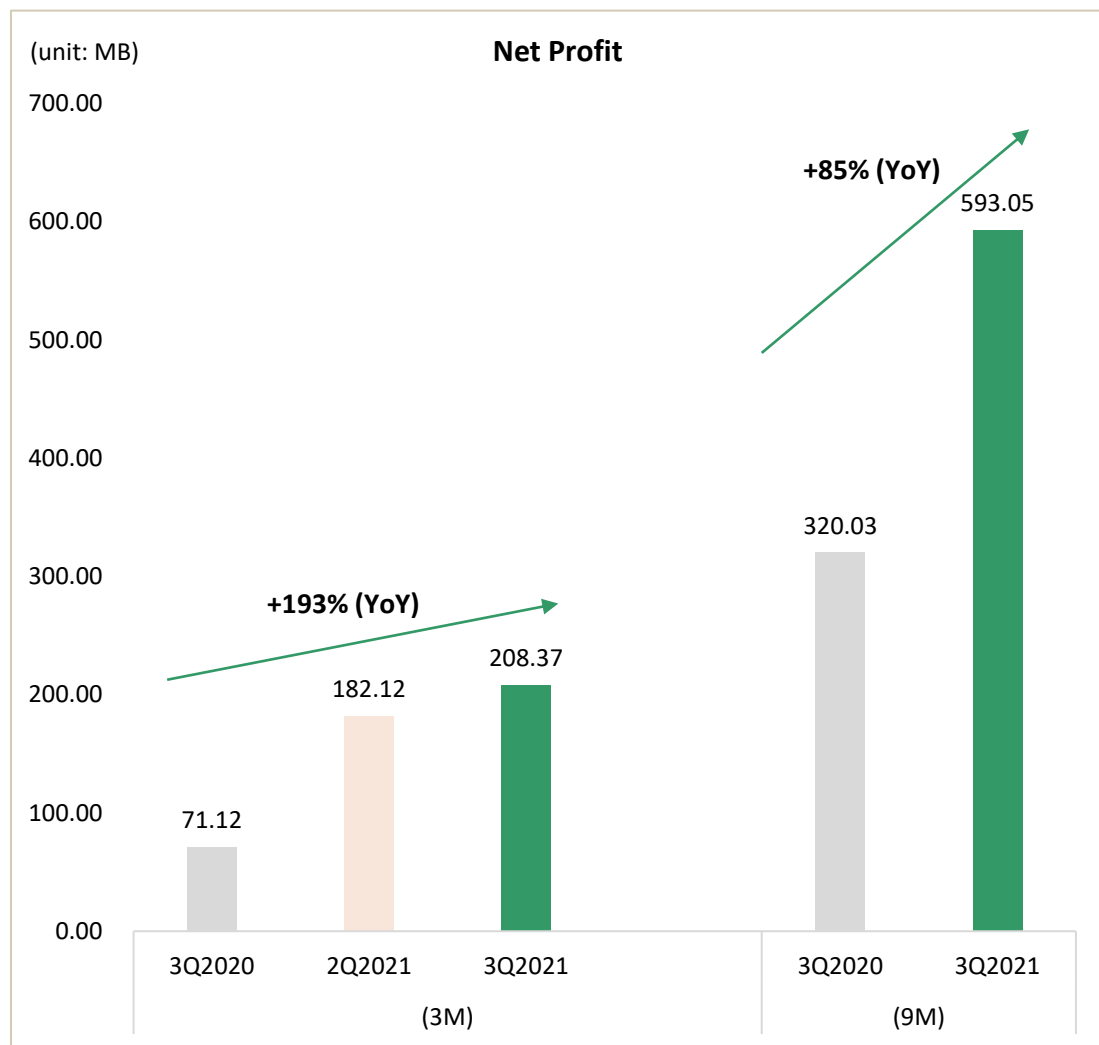
EBITDA 3Q2021



3Q2021	(3M)	(9M)
EBITDA	QoQ: +12.85%	
	YoY: +53.56%	YoY: +35.68%

- EBITDA in 3Q2021 was increased due to improved operation performance in overall and other income that the Company recognized a gain from disposal of investment in Japan amounting to 101.15 MB

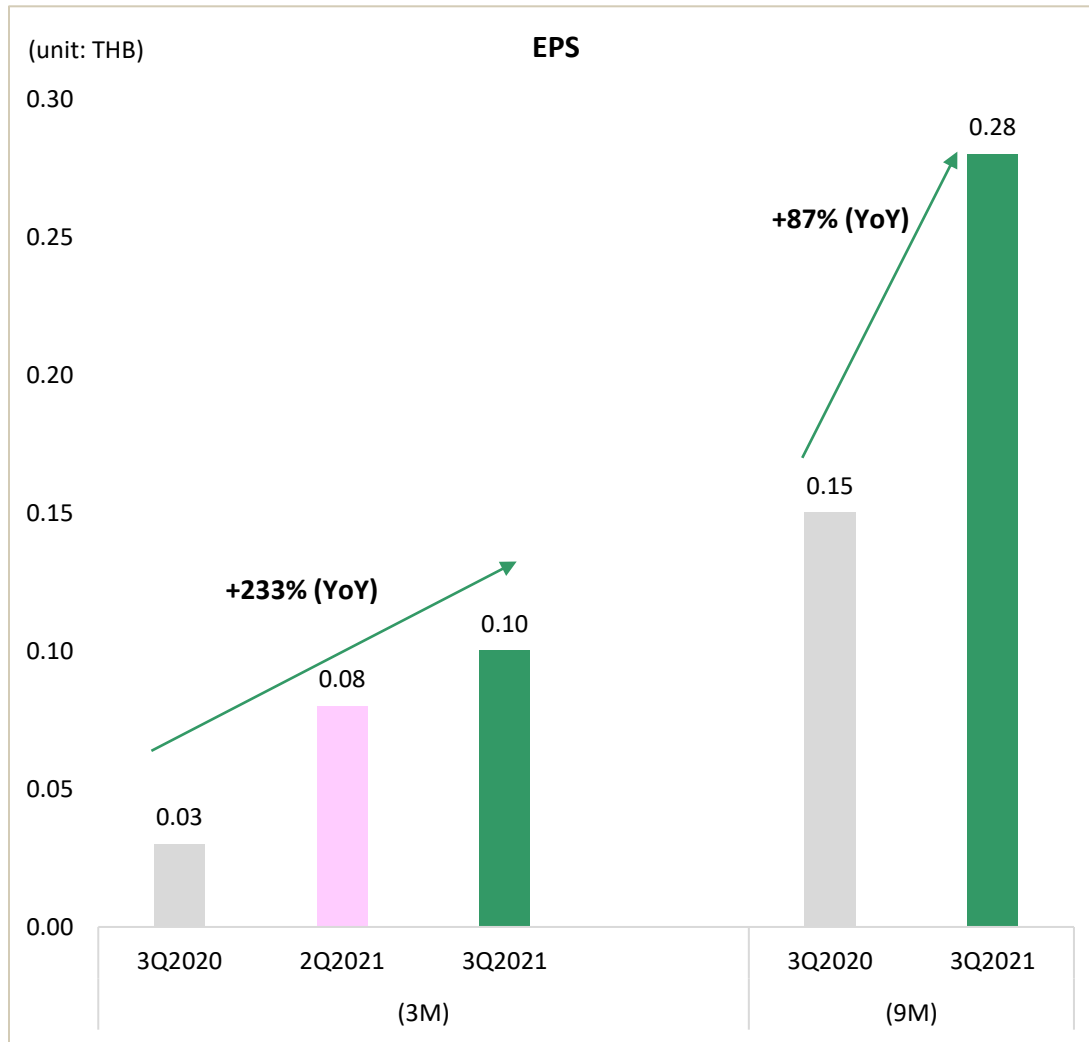
NET PROFIT 3Q2021



3Q2021	(3M)	(9M)
NET PROFIT	QoQ: +14.42% YoY: +192.98%	YoY: +85.31%

- Net Profit in 3Q2021 was increased due to improved operation performance in overall, a decrease in administration expenses, a decrease in loss on exchange rate, a decrease in finance costs, and other income that the Company recognized a gain from disposal of investment in Japan amounting to 101.15 MB

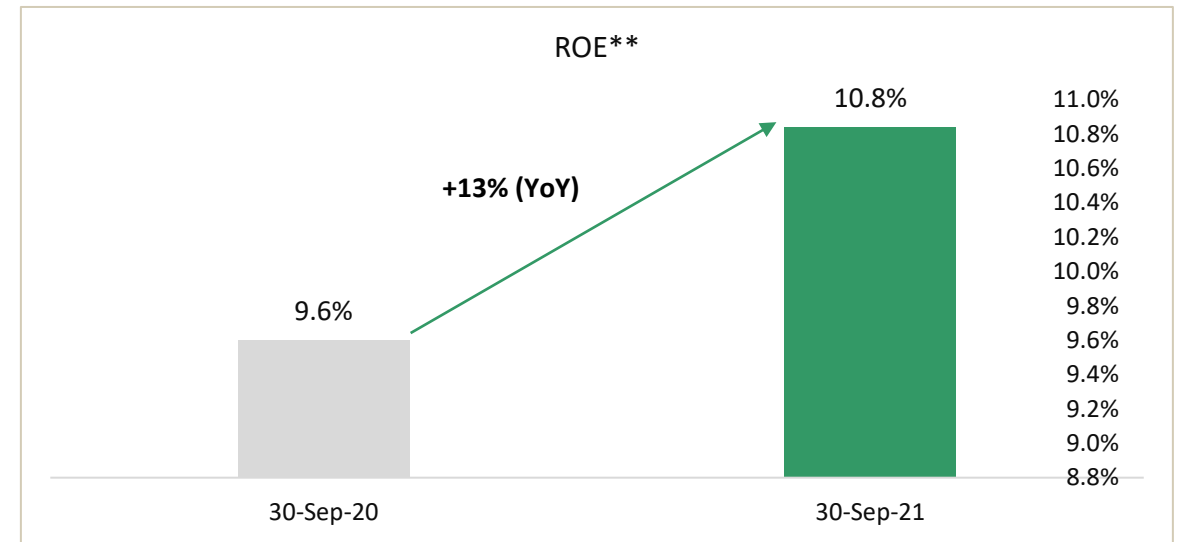
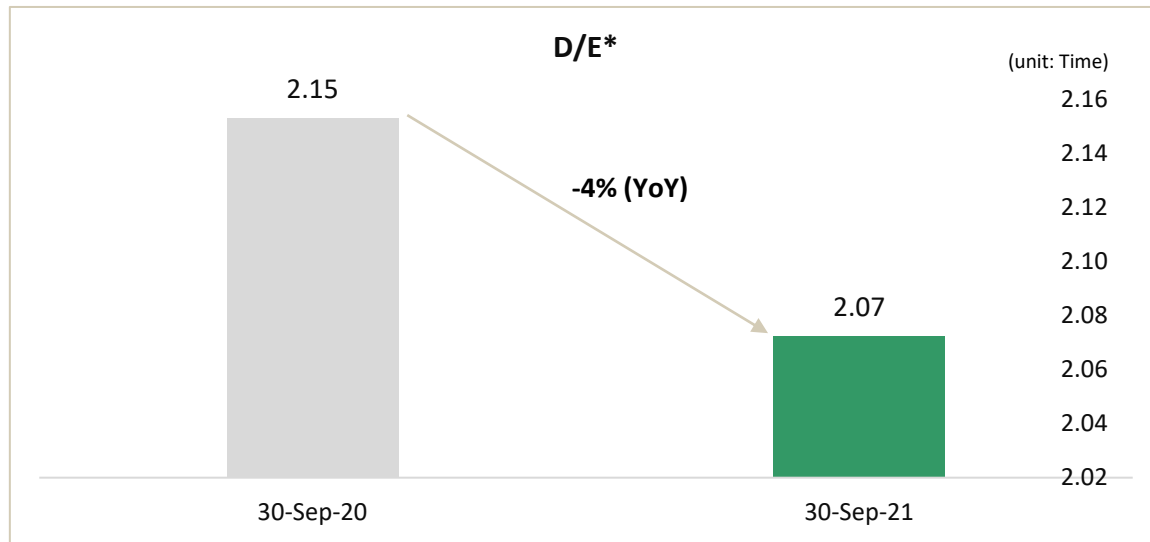
EPS 3Q2021



3Q2021	(3M)	(9M)
EPS	QoQ: +25.00% YoY: +233.33%	YoY: +86.67%

- Net Profit in 3Q2021 was increased due to improved operation performance in overall, a decrease in administration expenses, a decrease in loss on exchange rate, a decrease in finance costs, and other income that the Company recognized a gain from disposal of investment in Japan amounting to 101.15 MB.

D/E RATIO and ROE 3Q2021



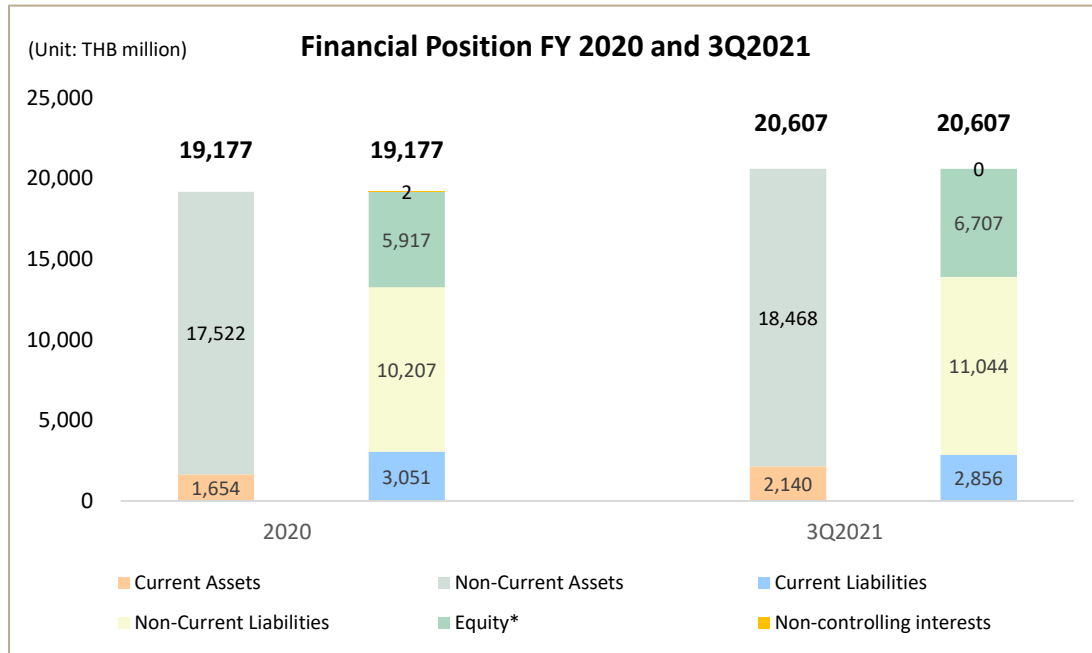
As of 30 September 2021		Details
D/E* Ratio	YoY: -3.75%	- D/E* ratio in 3Q2021 was decreased because overall operation performance has been improved continually which helped increase in net profit from the growth of business, whereas liabilities decreased from loan repayment during the year 2021.
ROE**	YoY: +12.89%	- ROE** in 3Q2021 was increased due to improved operation performance in overall, a decrease in administration expenses, a decrease in finance costs, and other income that the Company recognized a gain from disposal of investment in Japan amounting to 101.15 MB.

Note:

*Average Equity attributable to owners of the parent

** Annualized: ROE

FINANCIAL POSITION 3Q2021



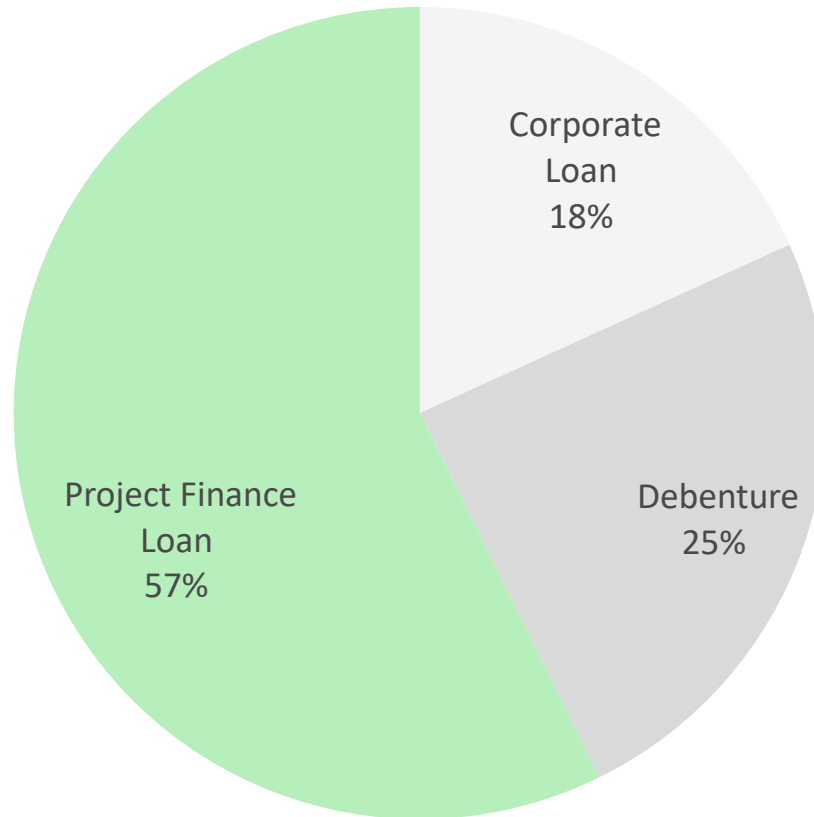
FINANCIAL POSITION	FY2020	3Q2021	+/- (%)
Assets	19,176.78	20,607.54	7.46%
Liabilities	13,257.45	13,900.26	4.85%
Equities*	5,917.30	6,707.28	13.35%
D/E* Ratio (times)	2.24	2.07	-7.50%

Summary

- **Total Assets:**
Increasing from 19,177 MB to 20,608 MB, or +7.46%.
- **Total Liabilities:**
Increasing from 13,257 MB to 13,900 MB, or +4.85%.
- **Equity Attributable to owners of the parent:**
Increasing from 5,917 MB to 6,707 MB or +13.35%.

In 3Q2021, overall operating performance has been improved continually. The Company was able to generate more revenues and to manage administration expenses and finance costs which resulted in lower expenses and higher net profit. In addition, there was new other income gaining from disposal of investment in Japan amounting to THB 101.15 million.

DEBT STRUCTURE 3Q2021



Summary

- Most of interest bearing debt from Project Finance Loan for 57%, increased from Onikoube Project Finance Loan drawdown.
- 26% of Project Finance Loan from COD projects decreased accordingly from schedule repayment.
- The remaining interest bearing debt from Corporate Loan and Debenture for 43% decreased from schedule repayment.

PROJECT UPDATE



Solar PV Farm “Onikoube”

Purchase Rate - FiT 36 JP¥

Summary of “Onikoube” Project

Installed Capacity (MWp):	147
Selling Capacity (MWac):	133
Purchase Rate (FiT JP¥):	36
Location:	Miyagi Province, Japan
Off-taker:	Tohoku Utility
SCOD:	4Q2022
Status:	Under construction
Operated by:	OSP
Start Project Construction:	In April, 2020

Project Components

EPC by:	TOSHIBA	
PV Module by:	Trina Solar	
Inverter by:	Huawei	

Financing

Project Finance by:	BBL (THB 8.6 bn.)
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CONSTRUCTION UPDATE

Solar PV Farm “Onikoube”



As of the end of September 2021, the project work progress was approximately 48.4% since it was started in 1Q2020. EPC is continually in the process of solar module installation which is planned to be completed by December 2021. The project is expected to SCOD within 4Q2022.

03 **OUTLOOK**

Summary of TSE's Business
Outlook and Investment Plan

OUTLOOK



THAILAND



- Acquiring New Projects
- Penetrating Private PPA in Solar PV Farms
- Expanding into Waste to Energy

Totaling approx. **50 MW PPA**

OVERSEAS



- Exploring new opportunities in renewable energy projects (i.e. Wind and Solar Farms) overseas

Totaling approx. **50 – 100 MW PPA**

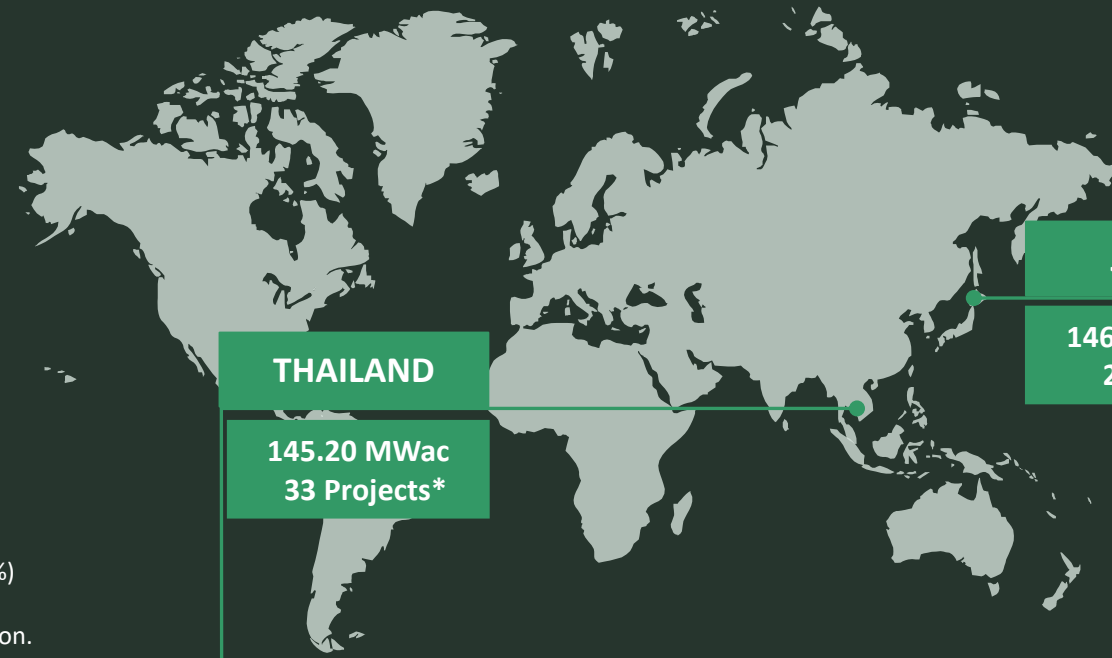
Total approx. 100 – 200 MW*
within the next 5 years

Note: *The plan is subject to change depending on various factors.

04 APPENDIX

Summary of Company Structure
and its Investment

TSE's PROJECTS



THAILAND

**145.20 MWac
33 Projects***

JAPAN

**146.50 MWac
2 Projects***

(As of 30 SEP 2021)

Note: *101 MW (69 MWe) > Partnership with GPSC (TSE 60%)

** 291.70 MW > 158.70 MWac are in operation.
> 133 MWac are under construction.

Solar PV Farms

101 MWac – 15 Farms
8 MWac – 1 Floating

Solar PV Rooftops

14 MWac – 14 Rooftops

Biomass

22.2 MWac – 3 Plants

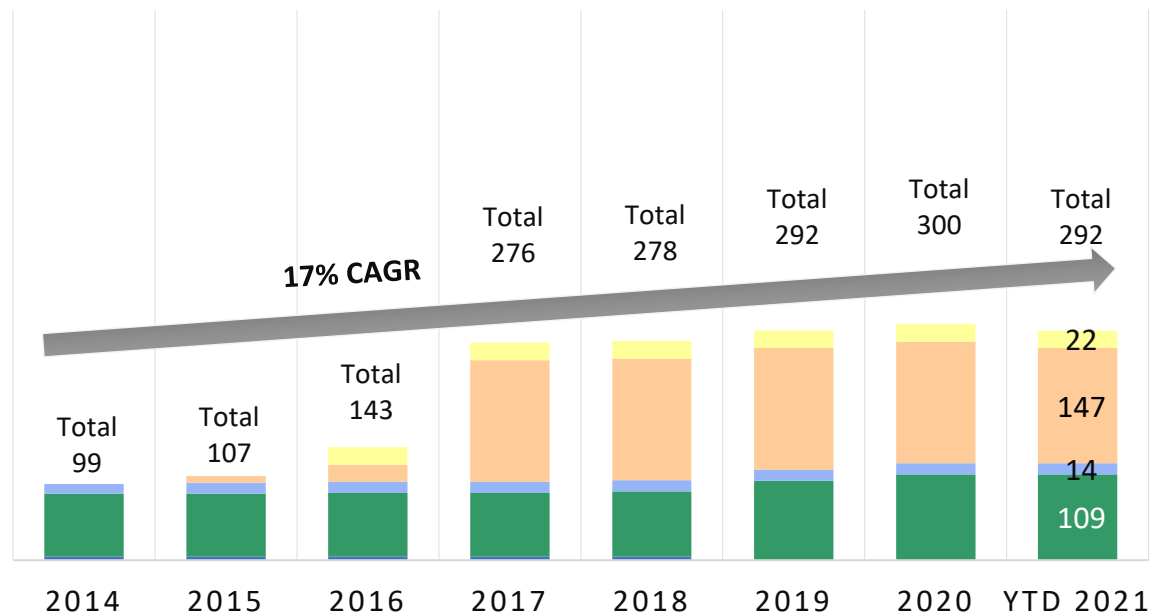
Solar PV Farms

146.50 MWac – 2 Farms

CAPACITY GROWTH

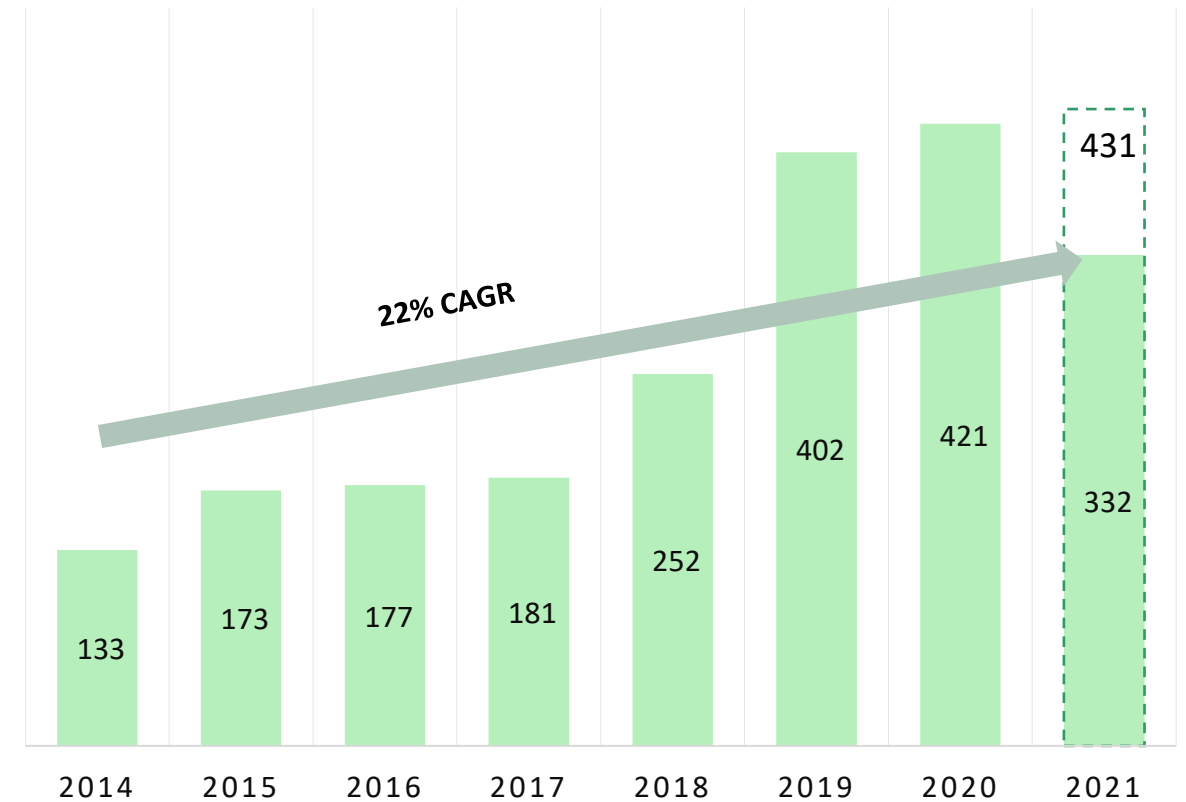
**ACQUIRE CAPACITY
(MW PPA)**

■ Thermal ■ Solar Farms ■ Solar Rooftops
■ Japan Solar Farms ■ Biomass Total

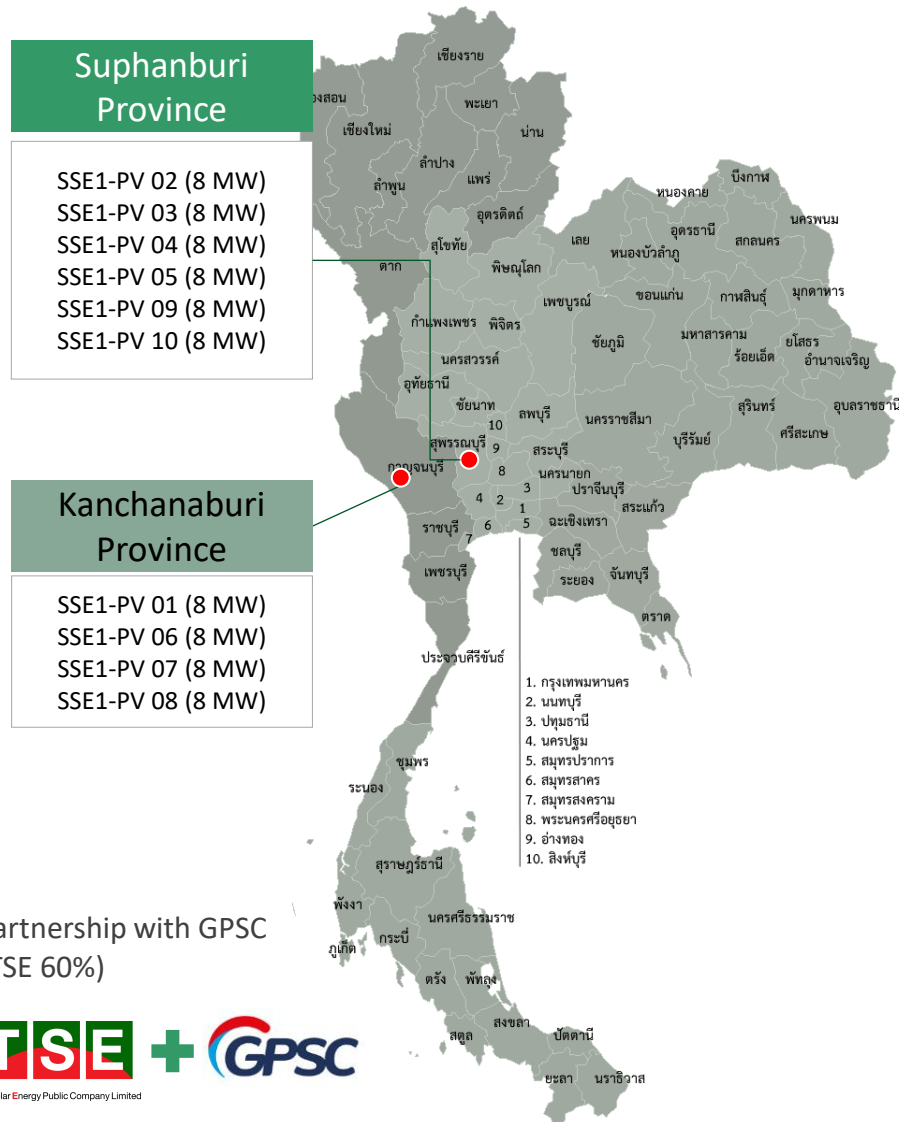


**POWER OUTPUT PRODUCTION
(MIL KWH)**

■ Actual ■ Forecast



SOLAR PV FARMS (THAILAND) : 10 Projects (80 MWac) with GPSC



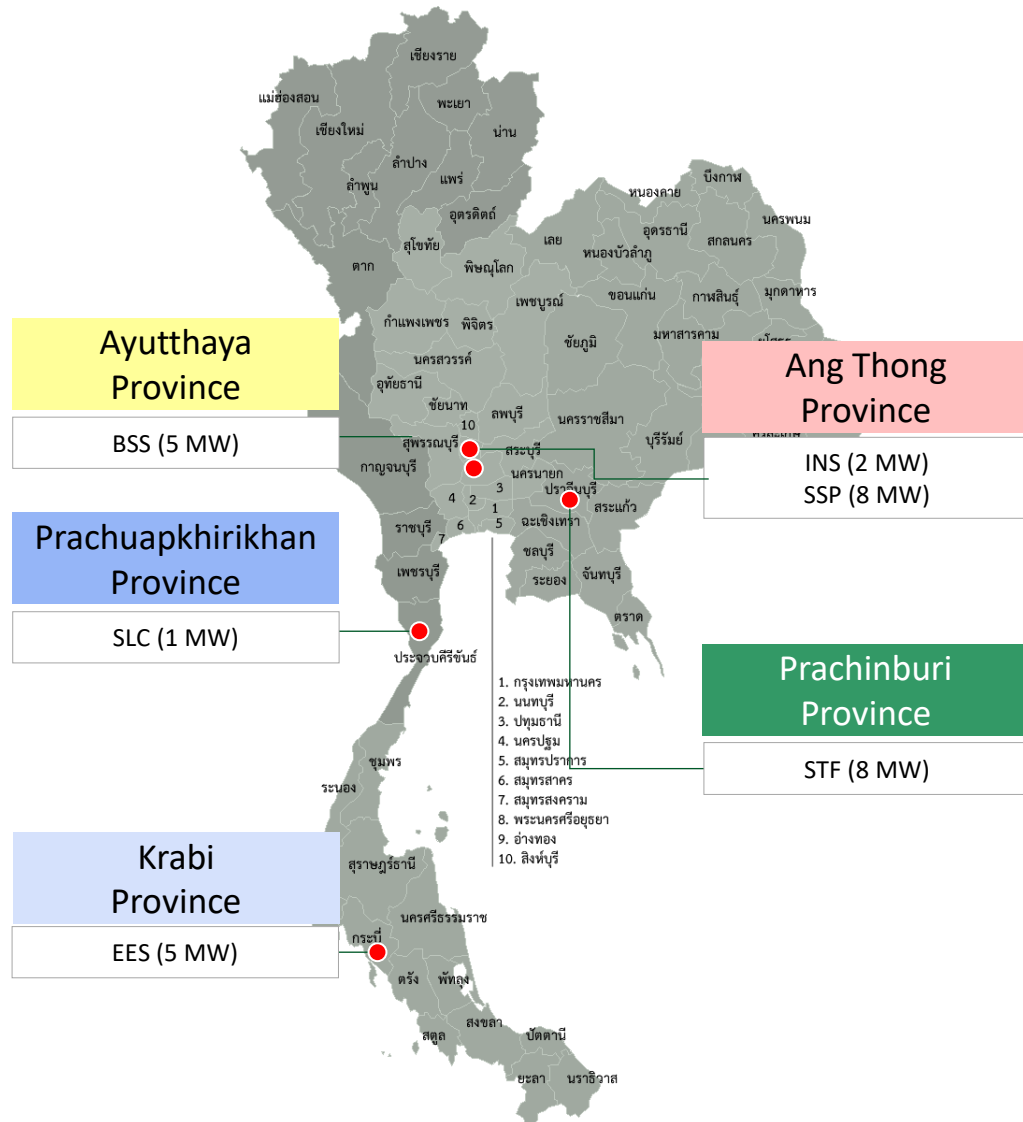
Note: Partnership with GPSC
(TSE 60%)



Adder 6.5 THB/ kWh
(SSE1: PV01 – PV10)



SOLAR PV FARMS (THAILAND) : 6 Projects (29 MWac)



FiT
5.66
THB/ kWh

SLC (1MW)
COD DEC 2016

INS (2MW)
COD DEC 2015

FiT
4.12
THB/ kWh

BSS (5MW)
COD DEC 2016

EES (5 MW)
COD DEC 2018

Adder
8 THB/ kWh

SSP (8MW)
COD MAR 2013

Private PPA

Floating Solar PV Farm (8MW)
COD MAY 2021

FLOATING SOLAR PV FARM (THAILAND) : 8 MWac



Private PPA 25 Years

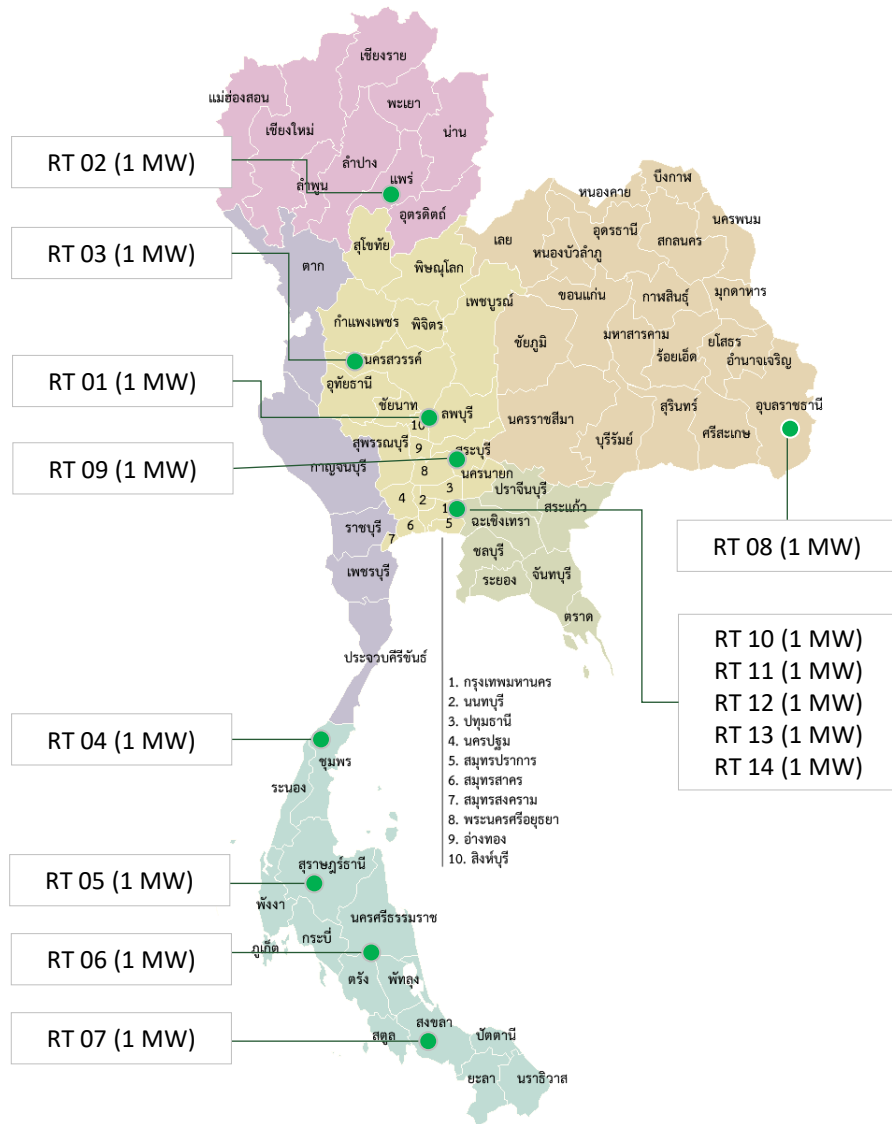
Summary of “Siam Tara Floating” 8 MWp Project

Installed Capacity (MWp):	8
Selling Capacity (MWac):	8
PPA Type:	Private PPA
PPA Period:	25 years
Location:	Kabinburi Industrial Zone (KIZ), in Prachinburi Province
Off-Taker:	Arcelik Hitachi Home Appliances (Thailand) Ltd.
COD:	25 MAY 2021
Operated By:	SV (TSE’s subsidiary)
Investment:	June, 2020

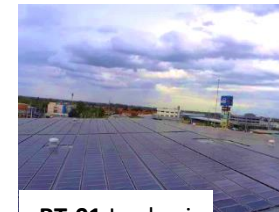
Project Components

PV Module by:	Trina Solar	
Floating material and Mounting structure:	SCG Thailand	
Inverter by:	String type - Huawei	
Electrical apparatus:	Switchgear - Siemens, Transformer – Ekarat	 

SOLAR PV ROOFTOPS (THAILAND): 14 Projects (14 MWac)



FiT
6.16 THB/
kWh



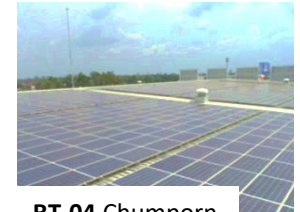
RT-01 Lopburi
COD SEP 2014



RT-02 Phrae
COD FEB 2015



RT-03 Nakorn Sawan
COD JUN 2015



RT-04 Chumporn
COD SEP 2014



RT-05 Surat Thani
COD DEC 2014



**RT-06 Nakhon Si
Thammarat**
COD JUL 2015



RT-07 Hat Yai
COD OCT 2015



**RT-08 Ubon
Ratchathane**
COD MAR 2015



RT-09 Khao Yai
COD NOV 2014



RT-10 Ekamai-Ramindra
COD FEB 2015



RT-11 Ratchapruek
COD NOV 2014



RT-12 Thapra
COD JUL 2015



RT-13 Bangkok
COD JUL 2015

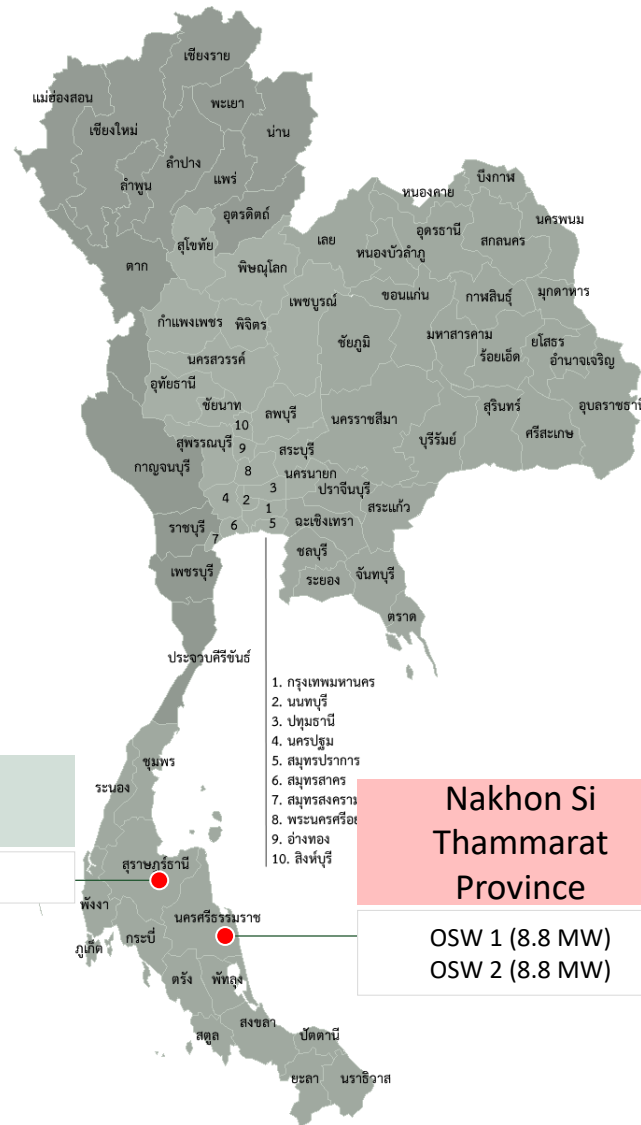


RT-14 Ngamwongwan
COD AUG 2015

Note: Partnership with
The Mall + HomePro



BIOMASS (THAILAND): 3 Projects (22.2 MWac)



FiT
4.24 Baht +
Premium 0.30 THB
(8 years)



BSW (4.6 MW)
COD MAR 2018

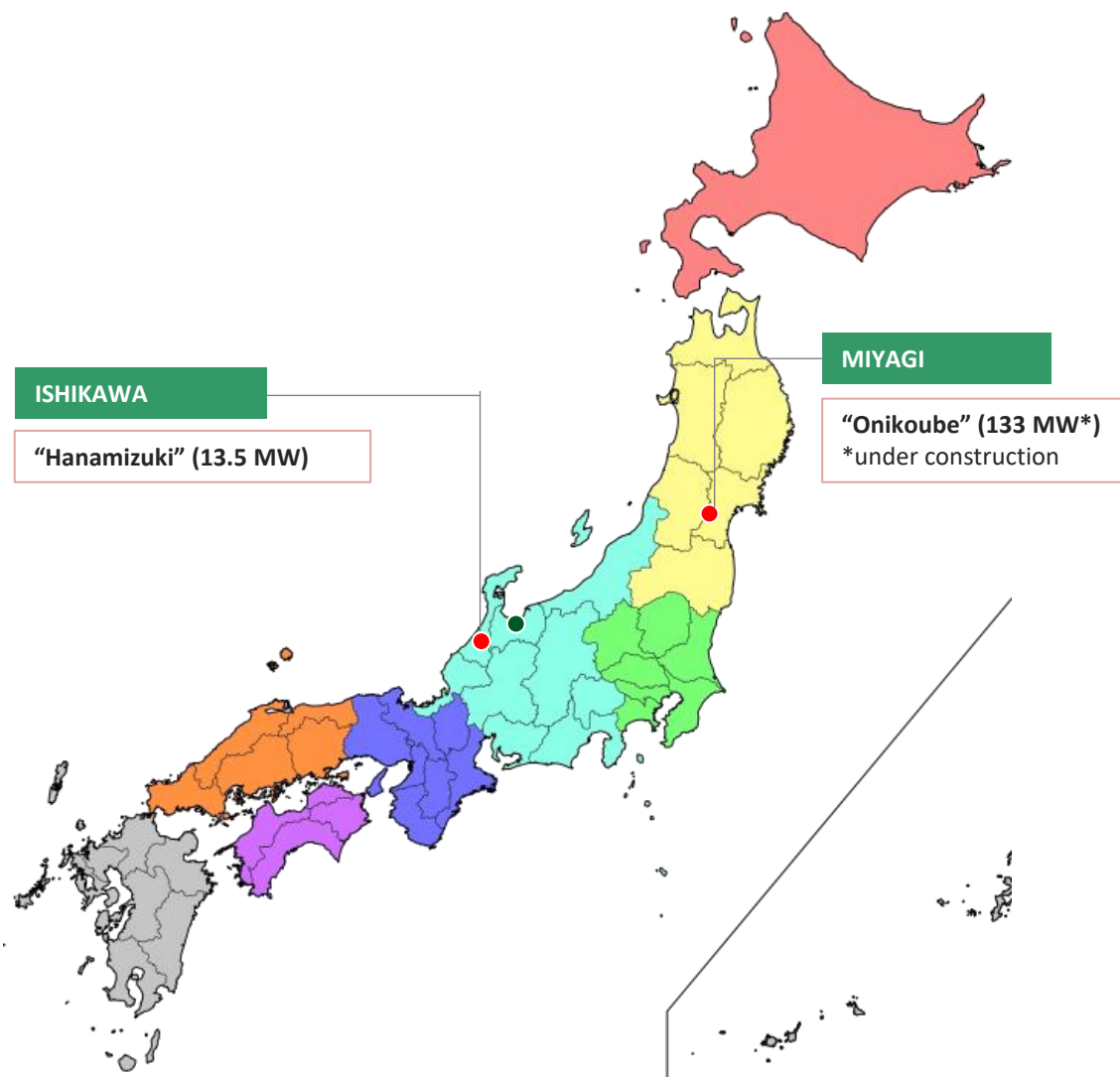


OSW1 (8.8 MW)
COD AUG 2018



OSW2 (8.8 MW)
COD OCT 2018

SOLAR PV FARMS (JAPAN) : 2 Projects (146.50 MWac)



ณ วันที่ 30 กันยายน 2564

FiT
36 JP¥/ kWh



Hanamizuki (13.5 MW)
COD JAN 2019



Onikoube (133 MW)*
SCOD 4Q2022



Thai Solar Energy Public Company Limited

THANK YOU

www.thaisolarenergy.com

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