



Thai Solar Energy Public Company Limited

# PRESENTATION 2Q2021

SEPTEMBER, 2021





# DISCLAIMER

The information contained in this presentation is provided by Thai Solar Energy Public Company Limited (“TSE”) solely for information purposes.

This presentation does not constitute or form part of any offer or invitation by or on behalf of TSE for sale or subscription of or solicitation or invitation of any offer to or recommendation to buy or subscribe for any securities of TSE, nor shall it or any part of it form the basis of or be relied on in connection with any contract, commitment or investment decision in relation thereto (“Securities”) in Thailand, the United States or any other jurisdiction.

The information contained herein does not take into consideration the investment objectives, financial situation or particular needs of any particular investor, and should not be treated as giving investment advice.





# AGENDA

## 01 COMPANY OVERVIEW

Summary of Corporate Information

## 02 HIGHLIGHTS of 2Q2021

Summary of TSE's Financial Performance 2Q2021 and Projects' Update

## 03 OUTLOOK

Summary of TSE's Business Outlook and Investment Plan

## 04 APPENDIX

Summary of Company Structure and its Investment



# VISION & 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.

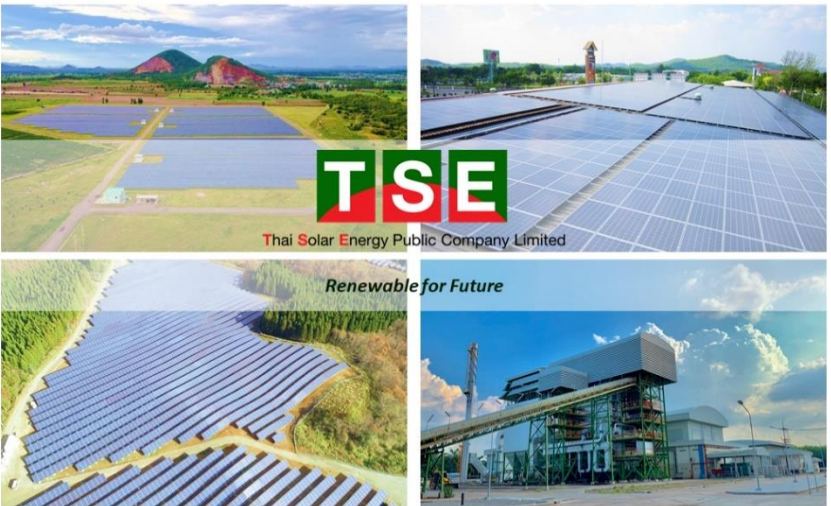


## COMPANY OVERVIEW

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.

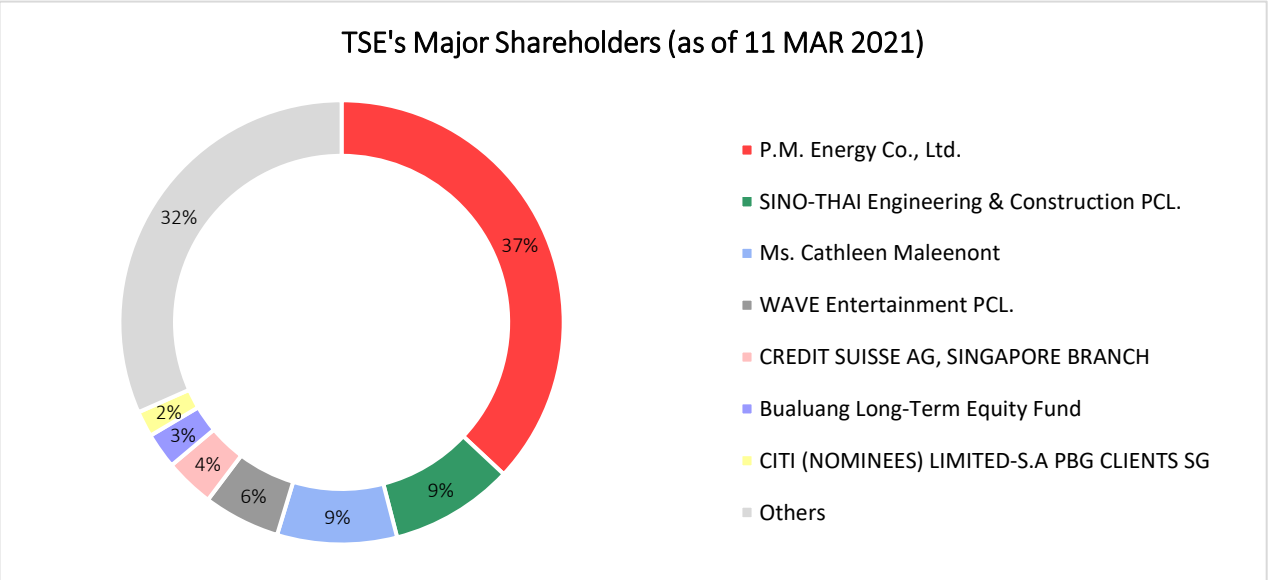


# COMPANY OVERVIEW

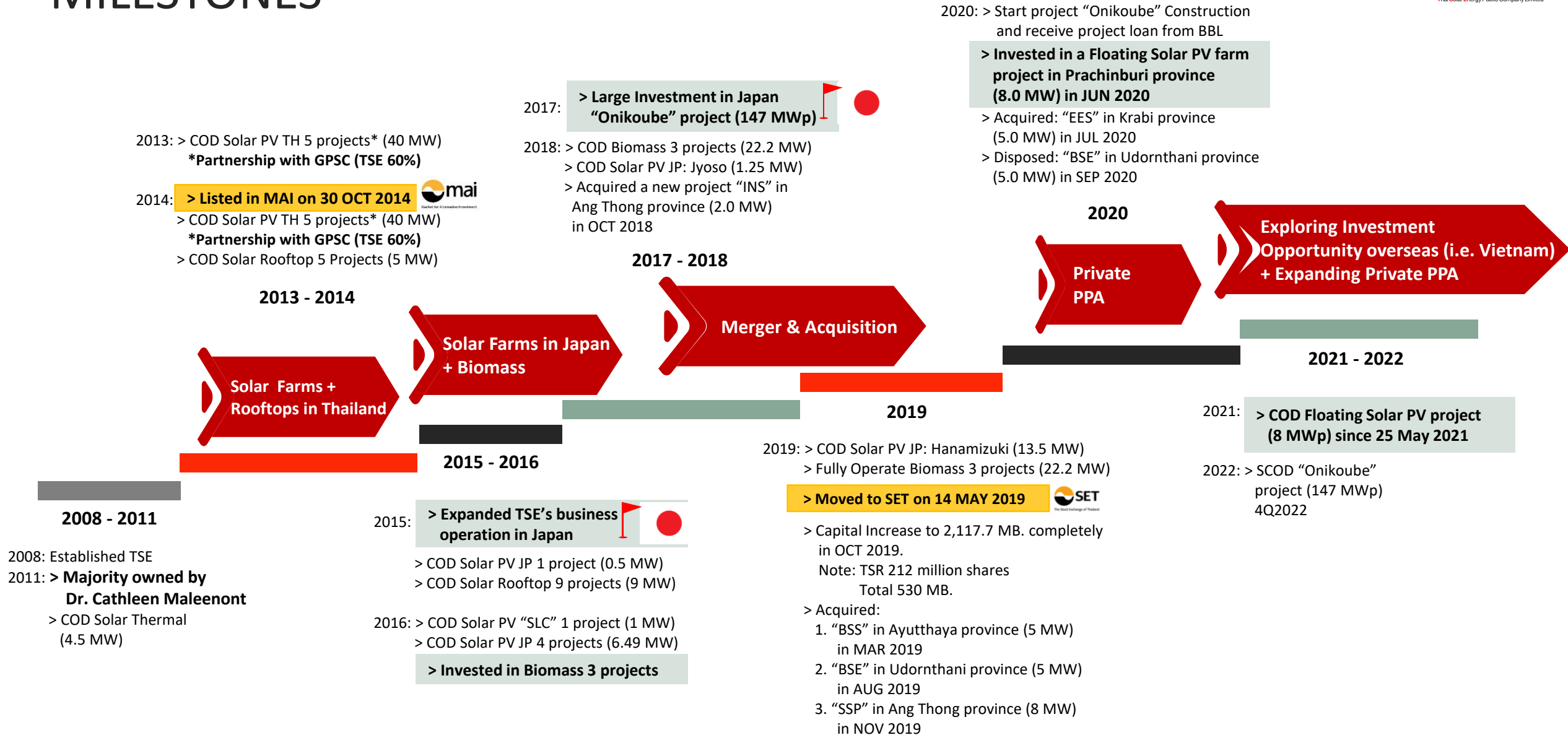


Listed in:	MAI (30 OCT 2014)
	Moved to SET (since 14 MAY 2019)

Paid-up Capital:	THB 2,117 million
Sector:	Energy & Utilities
Industry:	Resources
CG Rating:	   
Credit Rating:	BBB- stable



# MILESTONES



# 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

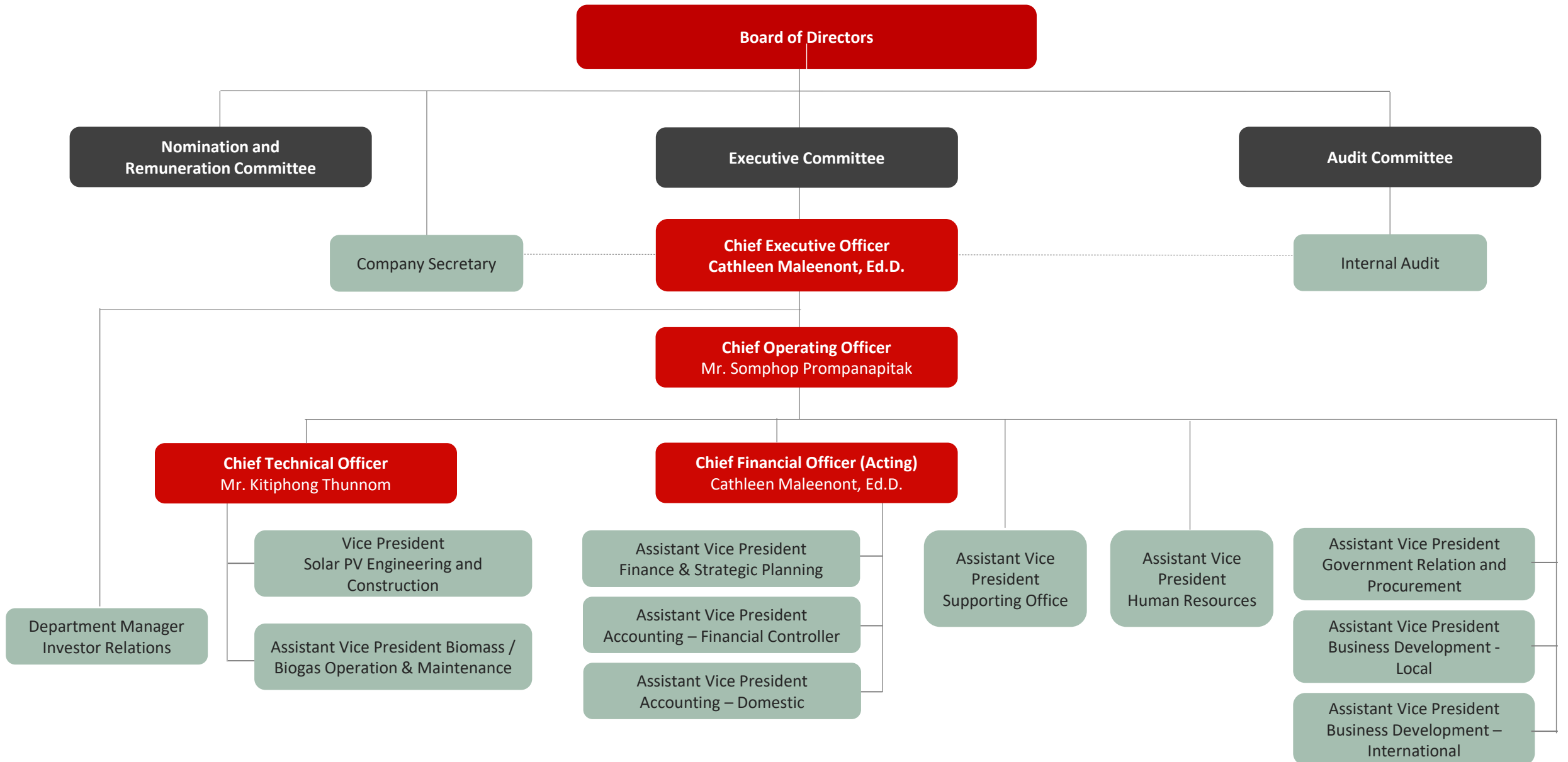


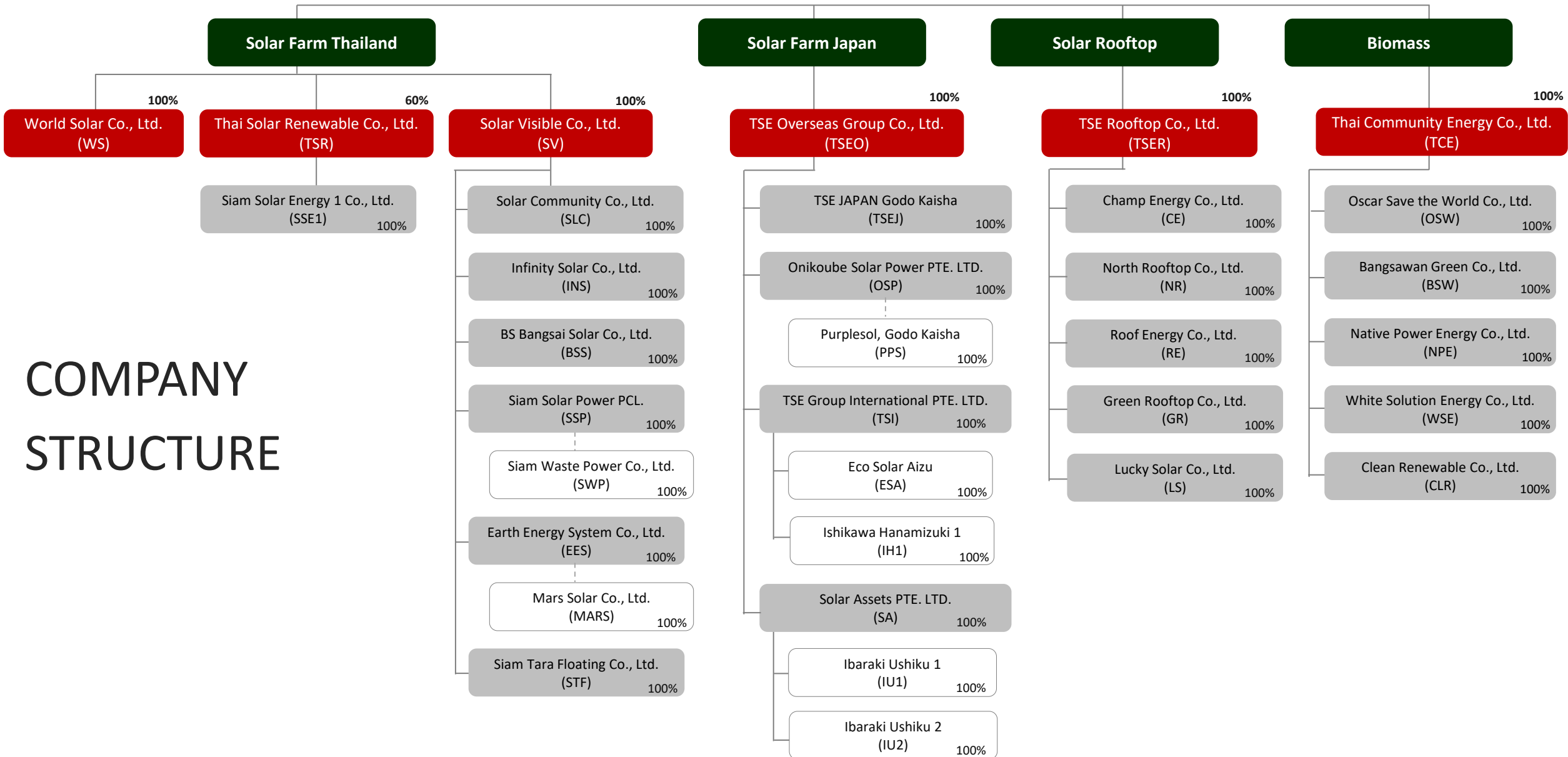
**Dr. Praphan Subsang**

Member of Audit Committee  
and Independent Director



# ORGANIZATION STRUCTURE





# COMPANY STRUCTURE



# CORE BUSINESS

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.



Solar PV Farms



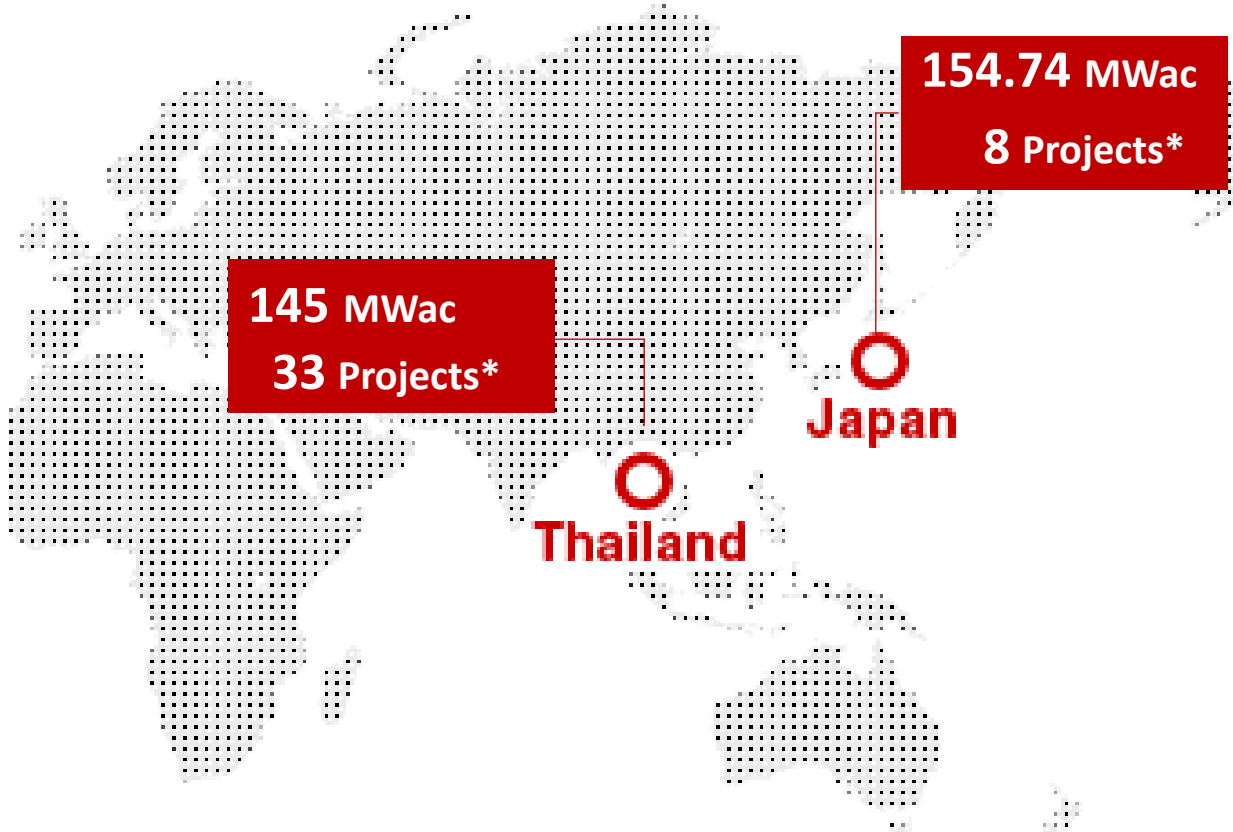
Solar PV  
Rooftops



Biomass

<b>Total:</b>	<b>41 Projects</b>	<b>299.94 MWac</b>
In Operation:	166.94	MWac*
Under Construction:	133.00	MWac*

(\*as of 30 June 2021)



Note: \*10 Solar PV Farms (totaling 80 MWac) are partnering with GPSC (TSE 60%)



# FINANCIAL HIGHLIGHTS

Summary of TSE's Financial Performance 2Q2021

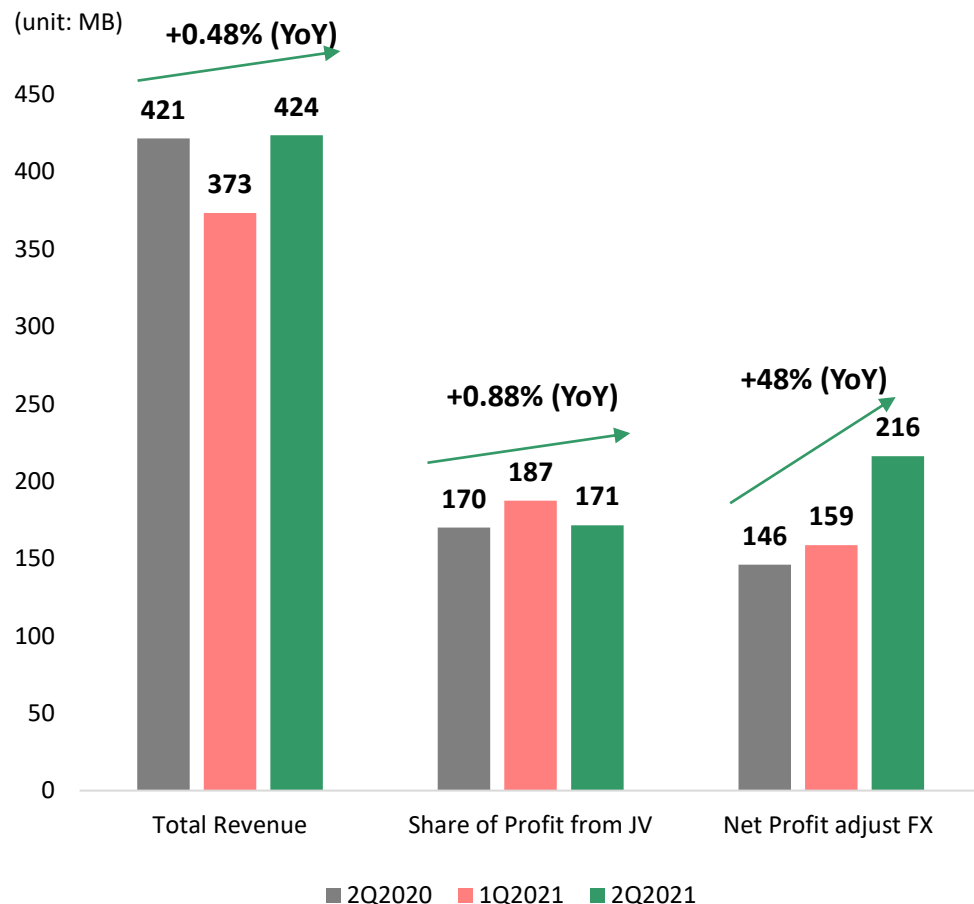


# INCOME STATEMENT 2Q2021

Statement of Comprehensive Income	(3M)			(6M)		
	2Q2021	2Q2020	% Change	2Q2021	2Q2020	% Change
Consolidated (Unit: Thousand Baht)						
<b>Revenue</b>						
Electricity Sales	406,964	407,635	-0.16%	766,434	767,329	-0.12%
Management Fee	12,332	11,745	5.00%	24,266	23,110	5.00%
<b>Total Revenue</b>	<b>419,296</b>	<b>419,380</b>	<b>-0.02%</b>	<b>790,700</b>	<b>790,439</b>	<b>0.03%</b>
COGs	(258,732)	(258,539)	0.07%	(528,538)	(500,001)	5.71%
<b>Gross Profit</b>	<b>160,564</b>	<b>160,841</b>	<b>-0.17%</b>	<b>262,162</b>	<b>290,438</b>	<b>-9.74%</b>
Other Income	4,217	2,112	99.67%	6,192	6,820	-9.21%
Administrative Expenses	(38,252)	(94,075)	-59.34%	(85,704)	(159,807)	-46.37%
Gain (loss) from exchange rate	(34,138)	96,355	-135.43%	9,772	(71,117)	-113.74%
Finance costs	(83,350)	(93,114)	-10.49%	(168,041)	(155,651)	7.96%
Share of Profit from joint ventures	171,489	169,990	0.88%	358,891	338,579	6.00%
<b>Profit (Loss) before Income Tax</b>	<b>180,530</b>	<b>242,109</b>	<b>-25.43%</b>	<b>383,272</b>	<b>249,262</b>	<b>53.76%</b>
Income Tax	1,905	712	167.56%	1,688	49	3344.90%
<b>Net Profit from Operation</b>	<b>182,435</b>	<b>242,821</b>	<b>-24.87%</b>	<b>384,960</b>	<b>249,311</b>	<b>54.41%</b>
Currency translation differences	141,941	(290,766)	-148.82%	(719)	224,392	-100.32%
Change in fair value of hedging derivatives	(13,880)	4,826	100.00%	(2,512)	(2,914)	100.00%
<b>Total Comprehensive Income</b>	<b>310,496</b>	<b>(43,119)</b>	<b>-820.09%</b>	<b>381,729</b>	<b>470,789</b>	<b>-18.92%</b>
<b>Profit Attributable to:</b>						
Owners of the Parent	182,115	242,377	-24.86%	384,680	248,908	54.55%
Non-Controlling Interests	320	444	-27.93%	280	403	-30.52%
	<b>182,435</b>	<b>242,821</b>	<b>-24.87%</b>	<b>384,960</b>	<b>249,311</b>	<b>54.41%</b>
<b>Total Comprehensive Income Attributable to:</b>						
Owners of the Parent	310,120	(43,393)	-814.68%	381,406	470,214	-18.89%
Non-Controlling Interests	376	274	37.23%	323	575	-43.83%
	<b>310,496</b>	<b>(43,119)</b>	<b>-820.09%</b>	<b>381,729</b>	<b>470,789</b>	<b>-18.92%</b>

# FINANCIAL HIGHLIGHTS 2Q2021

## 3-months period



## Summary (3-months period)

### ■ Total Revenue:

**+13.43% QoQ:** the total revenue growth in 2Q2021 was because there was snow in Japan and an annual shutdown of a biomass power plant “BSW” project in 1Q2021. In addition, it was because of a revenue from solar farm projects acquired during 2019 totaling of 18 MW in Ayutthaya, Udonrthani, and Ang Thong provinces as well as a new project - floating solar PV farm “STF” in Prachinburi province that started to COD since 25 May 2021.

**+0.48% YoY:** due to improvement of power plants’ efficiency in the year 2021 and new revenue recognition from the floating solar PV farm project.

### ■ Share of Profit from JV:

**-8.49% QoQ:** due to the rainy season during 2Q2021.

**+0.88% YoY:** due to improved operation performance of solar PV farms and a decrease in finance costs.

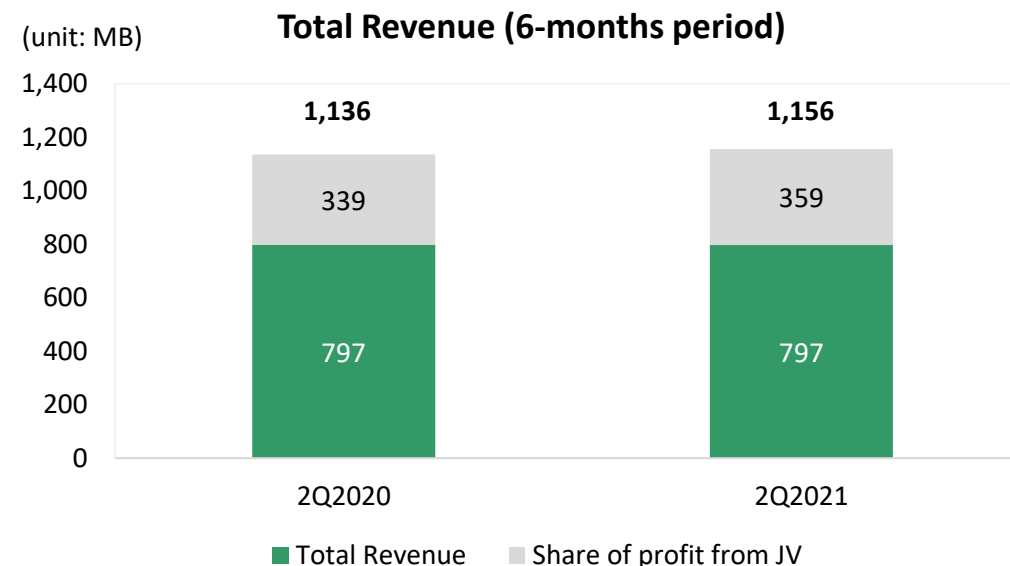
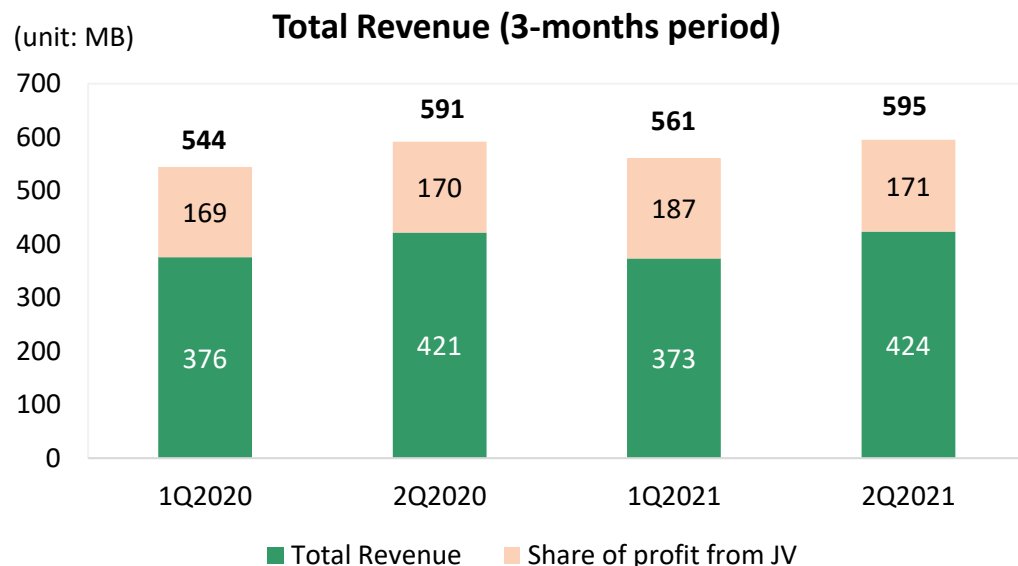
### ■ Net Profit adjust FX:

**+36.22% QoQ:** due to improved operation performance in overall,

**+48.00% YoY:** a decrease in finance costs, a decrease in administration expenses, and new revenue recognition from the “STF” project.



# TOTAL REVENUE 2Q2021



## Summary (3-months)

### ■ Total Revenue including Share of Profit from JV:

+6.10% QoQ: } total revenue including share of profit from  
 +0.60% YoY: } JV was increased due to improved  
 operation performance and new revenue  
 recognition from a new project - floating  
 solar farm "STF" project.

## Summary (6-months)

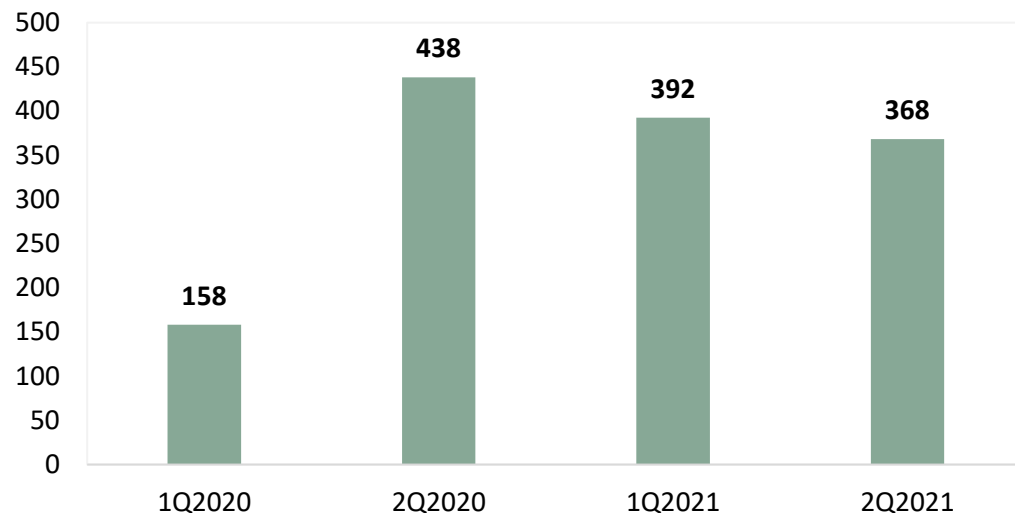
### ■ Total Revenue including Share of Profit from JV:

+1.76% YoY: total revenue including share of profit from JV  
 was increased due to improved operation  
 performance and new revenue recognition from  
 a new project - floating solar farm "STF" project.

# EBITDA 2Q2021

(unit: MB)

## EBITDA (3-months period)



### Summary (3-months)

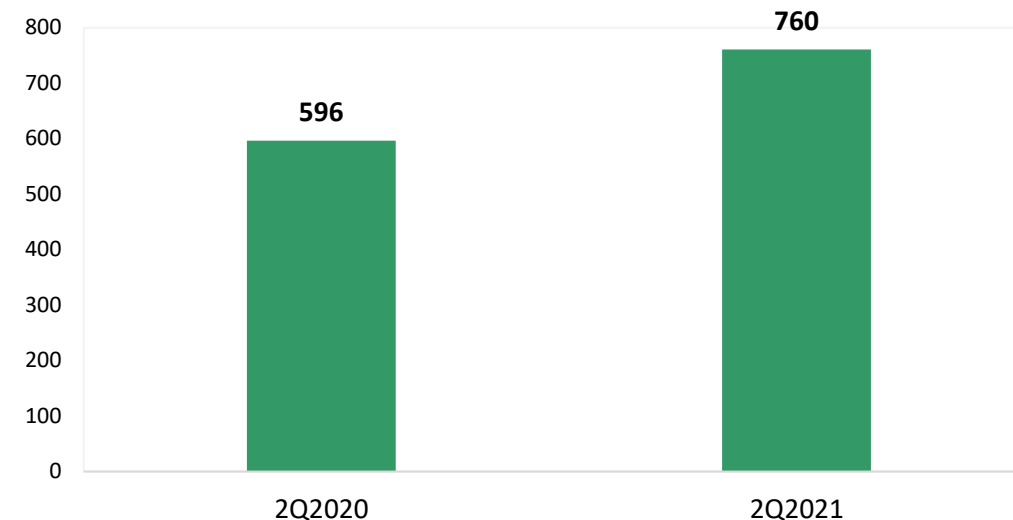
#### ■ EBITDA:

-6% QoQ: } due to the recognition of loss from exchange rate  
-16% YoY: } in 2Q2021 (3M) which occurred from loans in  
foreign currency of 34.14 MB in 2Q2021, whereas  
there was gain from exchange rate of 96.36 MB in  
2Q2020.

The record of Loss and Gain from exchange rate is such an accounting transaction and it does not have impact on the Company's cash flow and performance

(unit: MB)

## EBITDA (6-months period)



### Summary (6-months)

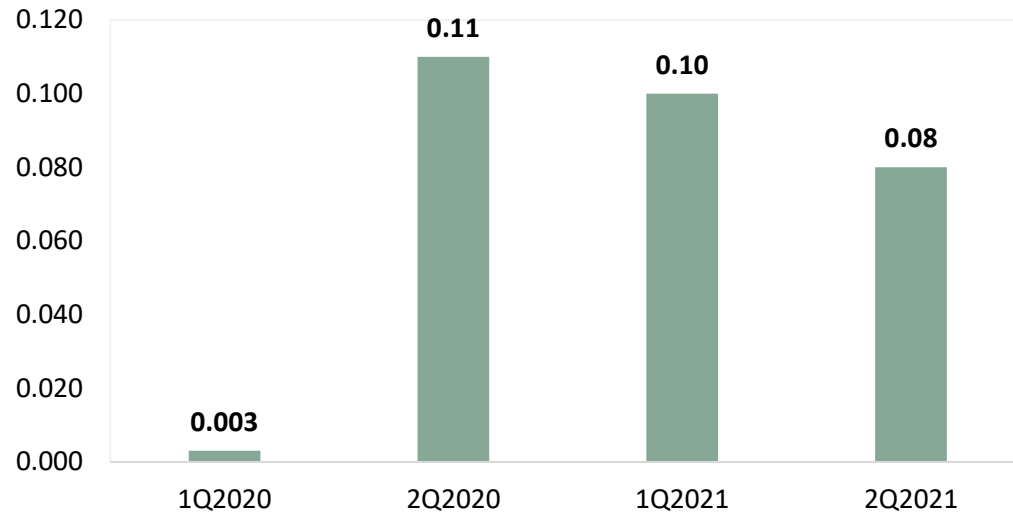
#### ■ EBITDA:

+28% YoY: it was mainly due to volatility of foreign currency and a decrease in administrative expenses in 2Q2021.

# EPS 2Q2021

(unit: THB)

## EPS (THB) (3-months period)



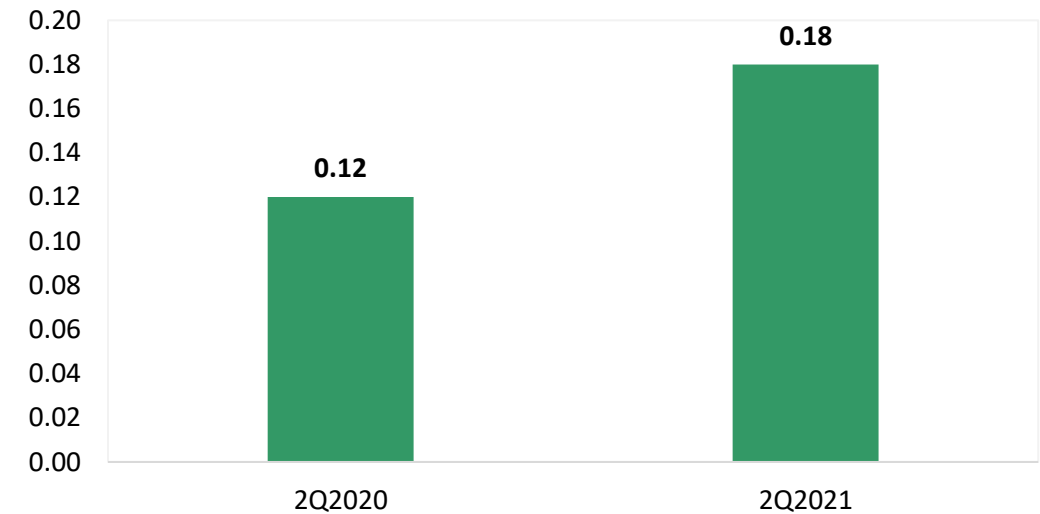
### Summary (3-months)

#### ■ EPS:

-20.00% QoQ: } mainly due to volatility of exchange rate in  
-27.27% YoY: } each period, whereas overall operation  
performance has been improved continually.

(unit: THB)

## EPS (THB) (6-months period)



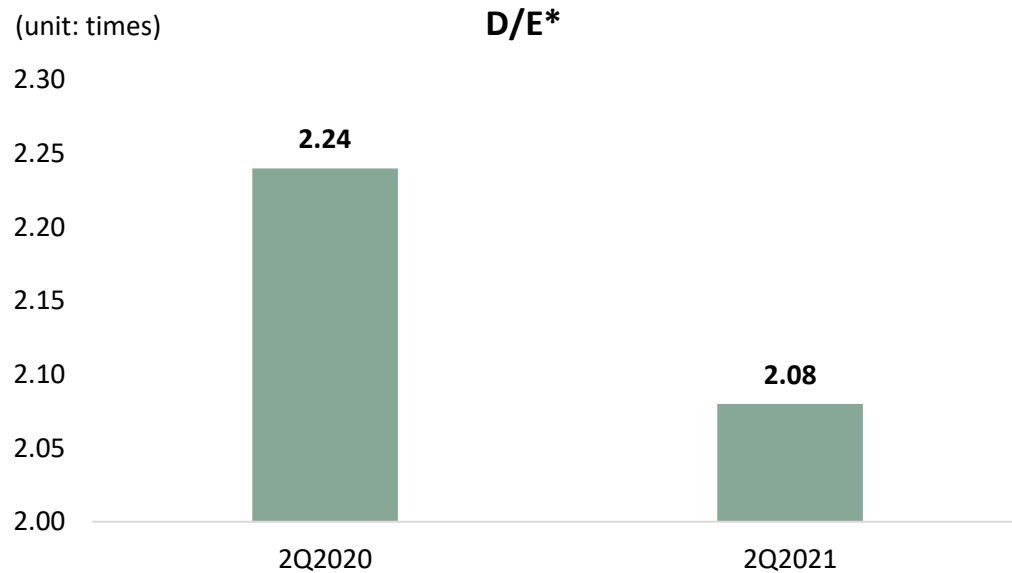
### Summary (6-months)

#### ■ EPS:

+50.00% YoY: due to improvement of power plants' efficiency in the year 2021, a decrease in administrative expenses and finance costs, and the reversion of gain on exchange rate of 9.77 MB in 2Q2021, while there was loss on exchange rate of 71.12 MB in 2Q2020.



# D/E RATIO and ROE 2Q2021

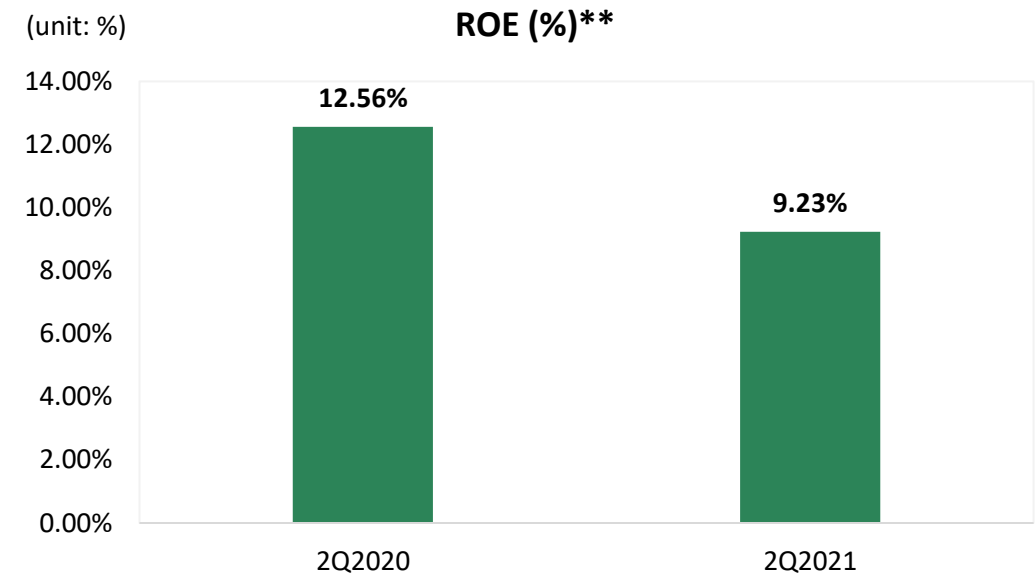


## Summary

### ▪ D/E\* Ratio:

-7.22%YoY: due to a decrease in liabilities from loan repayment during the year 2021 and an increase in net profit from the growth of business.

Note: \*Equity attributable to owners of the parent



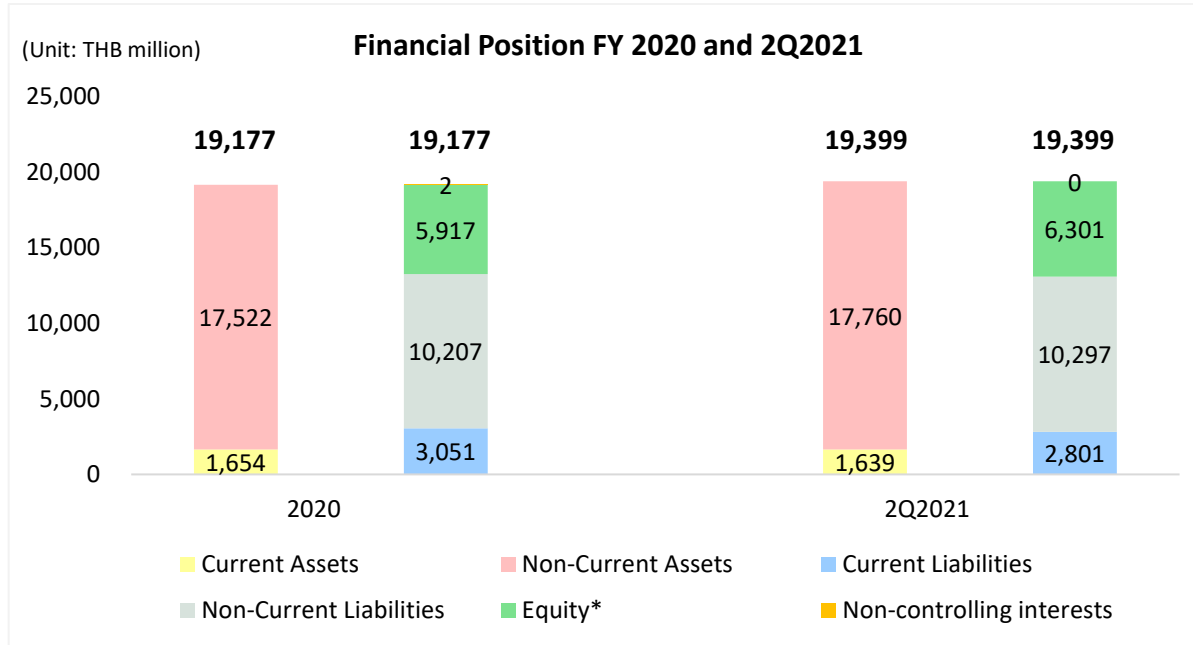
## Summary

### ▪ ROE:

-26.48%YoY: due to an increase in average equities in 2Q2021.

Note: \*\* Annualized: ROE

# FINANCIAL POSITION 2Q2021



FINANCIAL POSITION	FY2020	2Q2021	+/- (%)
Assets	19,177	19,399	1.16%
Liabilities	13,257	13,098	-1.20%
Equities*	5,917	6,301	6.48%
D/E* Ratio (times)	2.24	2.08	-7.22%

## Summary

### ■ Total Assets:

Increasing from 19,177 MB to 19,399 MB, or +1.16%.

### ■ Total Liabilities:

Decreasing from 13,257 MB to 13,098 MB, or -1.20%.

### ■ Equity Attributable to owners of the parent:

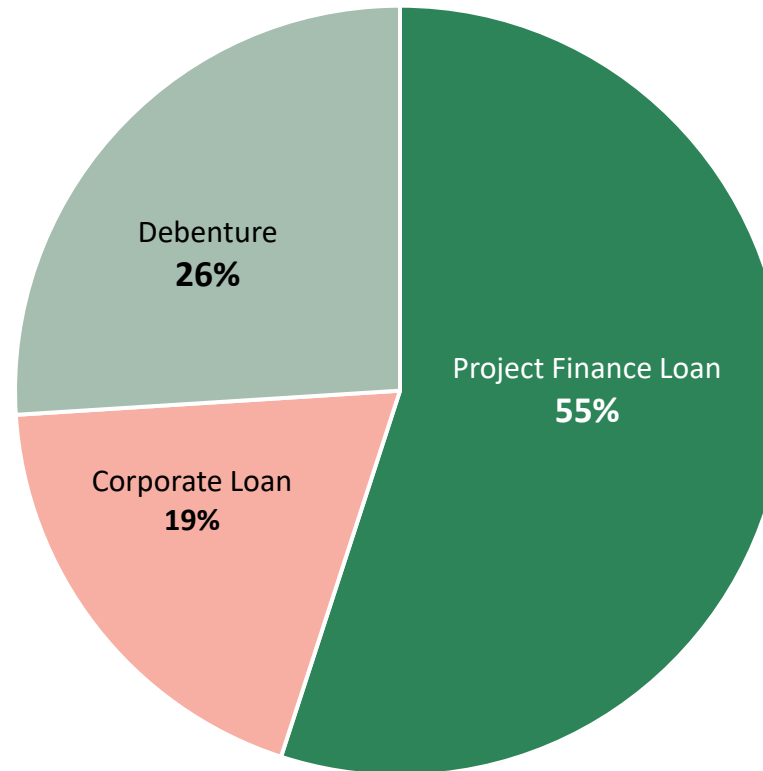
Increasing from 5,917 MB to 6,301 MB or +6.48%.

A growing business, improvement of power plants' efficiency, new revenue recognition from the floating solar farm project, a decrease in finance costs, and a decrease in administration expenses were main reasons to help generate more revenues and help net profit adjust FX to rise continually.

# DEBT STRUCTURE 2Q2021

## Corporate Loan and Debenture

The remaining interest bearing debt from Corporate Loan and Debenture for 45%.



■ Project Finance Loan ■ Corporate Loan ■ Debenture

## Project Finance Loan

Most of interest bearing debt from Project Finance Loan for 55%, changed from Onikoube Project Finance Loan drawdown.

33% of Project Finance Loan from COD projects decreased accordingly from schedule repayment.

The rest of Project Finance Loan from the project under-construction.





## PROJECTS UPDATE

Floating Solar Project “STF” and Solar PV Farm “Onikoube”



# Floating Solar Project “STF”

## 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:	Hitachi Consumer Products (Thailand) Ltd.
COD:	25 MAY 2021
Operated By:	SV (TSE’s subsidiary)
Investment:	June, 2020

## Private PPA 25 Years

### 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





# “Siam Tara Floating” 8 MWp





# Solar PV Farm Project “Onikoube”

## Summary of “Onikoube” 147 MWp 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

Purchase Rate - FiT **36** JP¥

## Project Components

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

## Financing

Project Finance by: BBL (THB 8.6 bn.)



# “Onikoube” 147 MWp

## Construction Update

Construction had been started since 1Q2020. EPC mainly focuses on civil work so solar module installation can be speedily installed in later stage. Solar modules are planned to be placed on its original landscape conditions. The construction progress target of 61.5% is planned to be completed by December 2021. The project is expected to SCOD within 4Q2022.



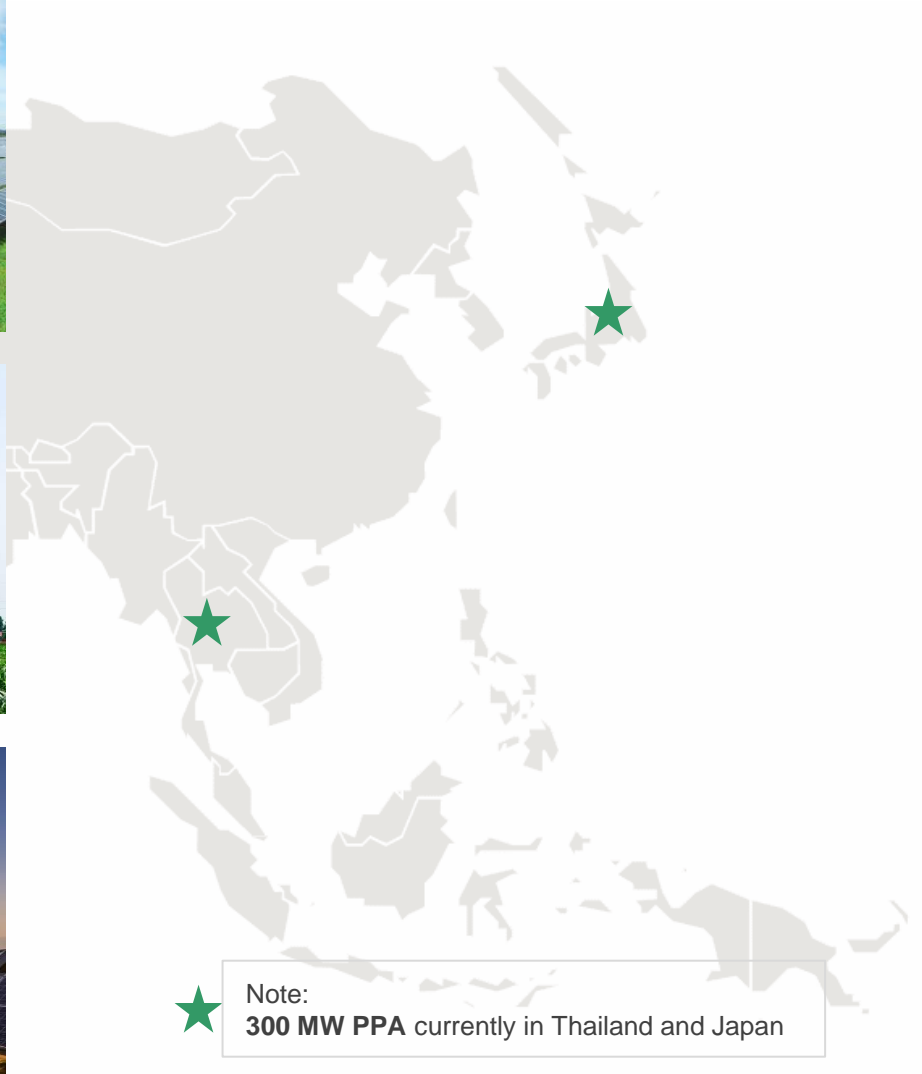


# OUTLOOK

Summary of TSE's Business Outlook and Investment Plan



# OUTLOOK



★ Note:  
**300 MW PPA** currently in Thailand and Japan

## 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**

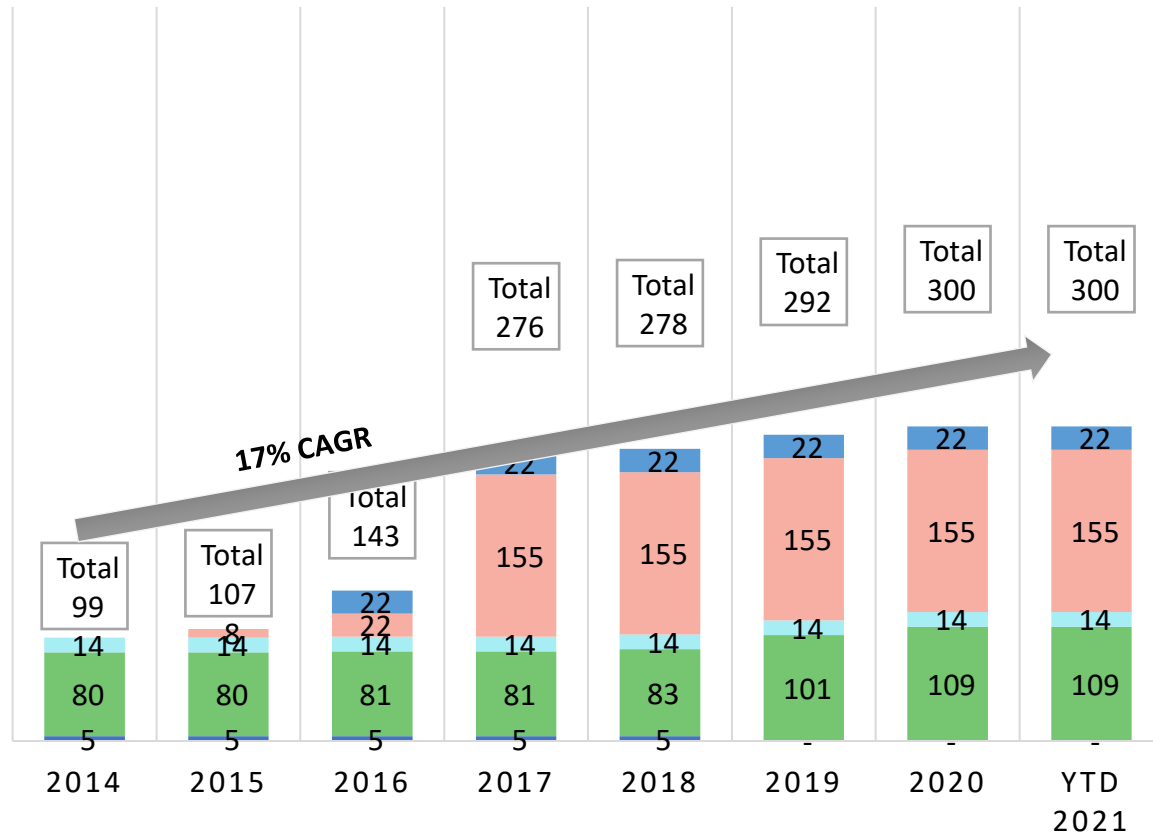
**Total approx. 100 – 200 MW\***  
**within the next 5 years**

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

# CAPACITY GROWTH

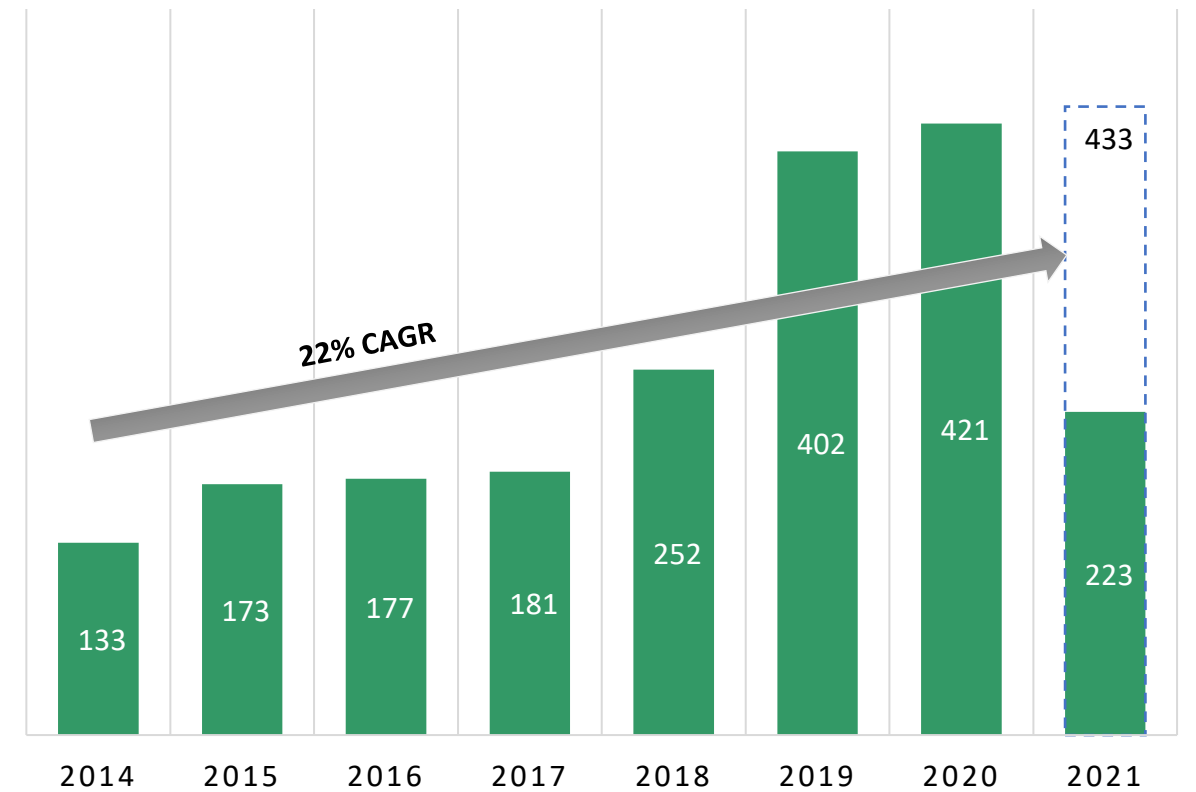
## ACQUIRE CAPACITY (MW PPA)

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



## POWER OUTPUT PRODUCTION (MIL KWH)

■ Actual ■ Forecast



# TSE's PROJECTS



(As of 31 May 2021)

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

\*\* 299.94 MW > 166.94 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

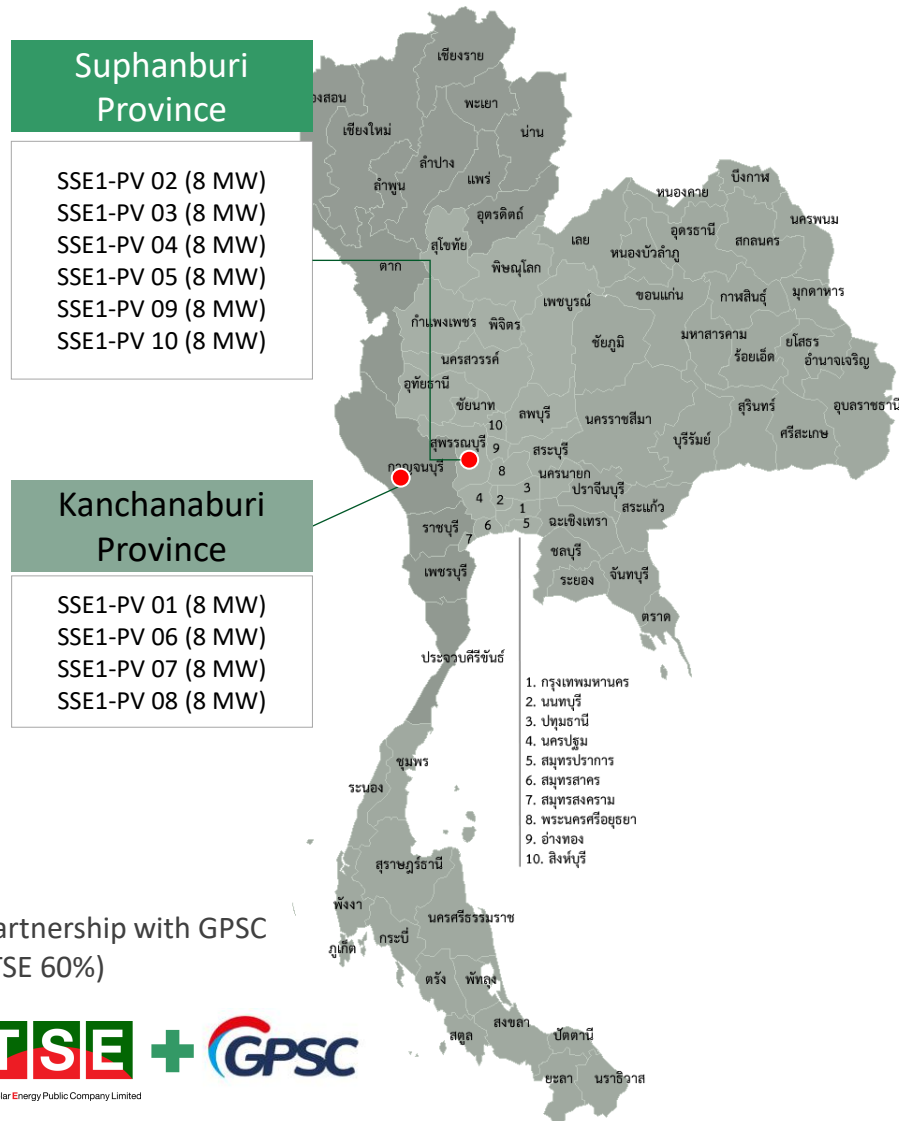
## Biomass

22.2 MWac – 3 Plants

## Solar PV Farms

154.74 MWac – 8 Farms

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



Note: Partnership with GPSC  
(TSE 60%)

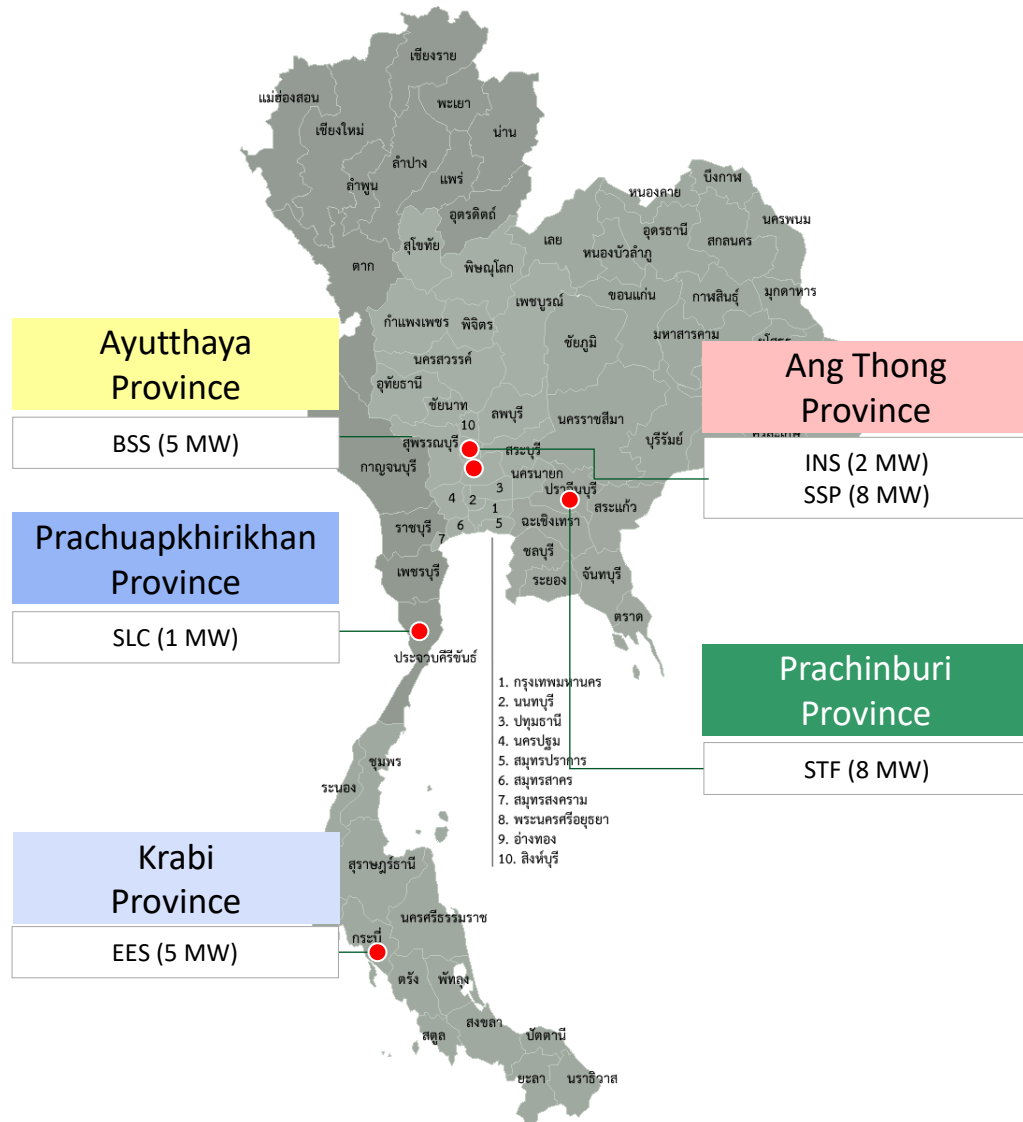


**Adder 6.5 THB/ kWh**  
(SSE1: PV01 – PV10)





# 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

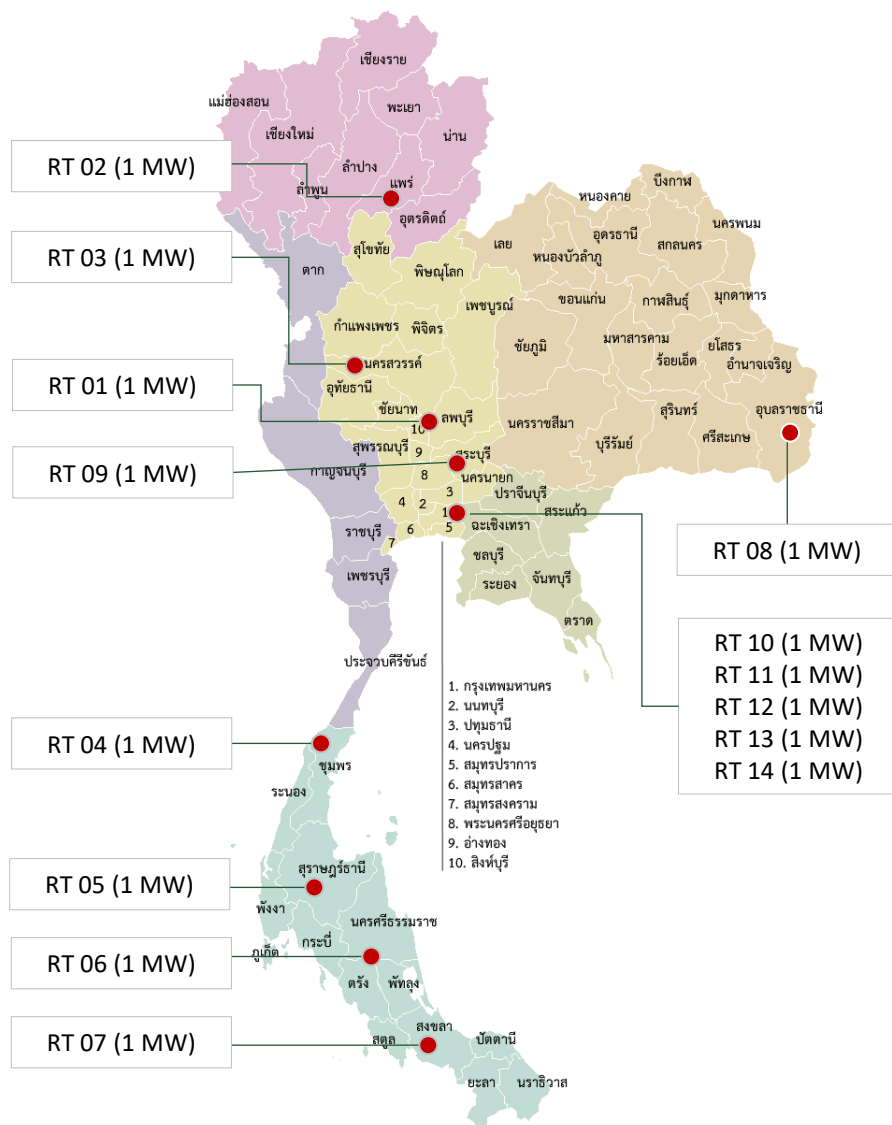
**Adder**  
**8 THB/ kWh**

**SSP (8MW)**  
COD MAR 2013

**Private PPA**

**Floating Solar PV Farm (8MW)**  
COD MAY 2021

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



FiT  
6.16 THB/  
kWh



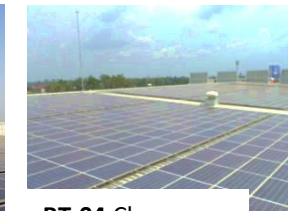
**RT-01 Lopburi**  
COD SEP 2014



**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



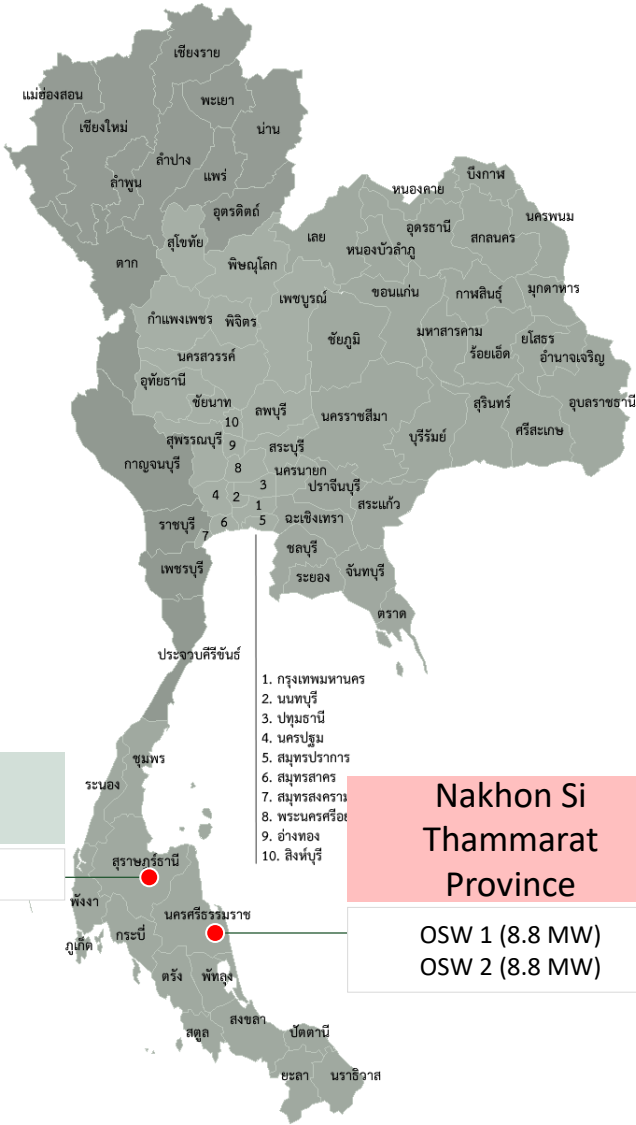
**RT-14 Ngamwongwan**  
COD AUG 2015

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

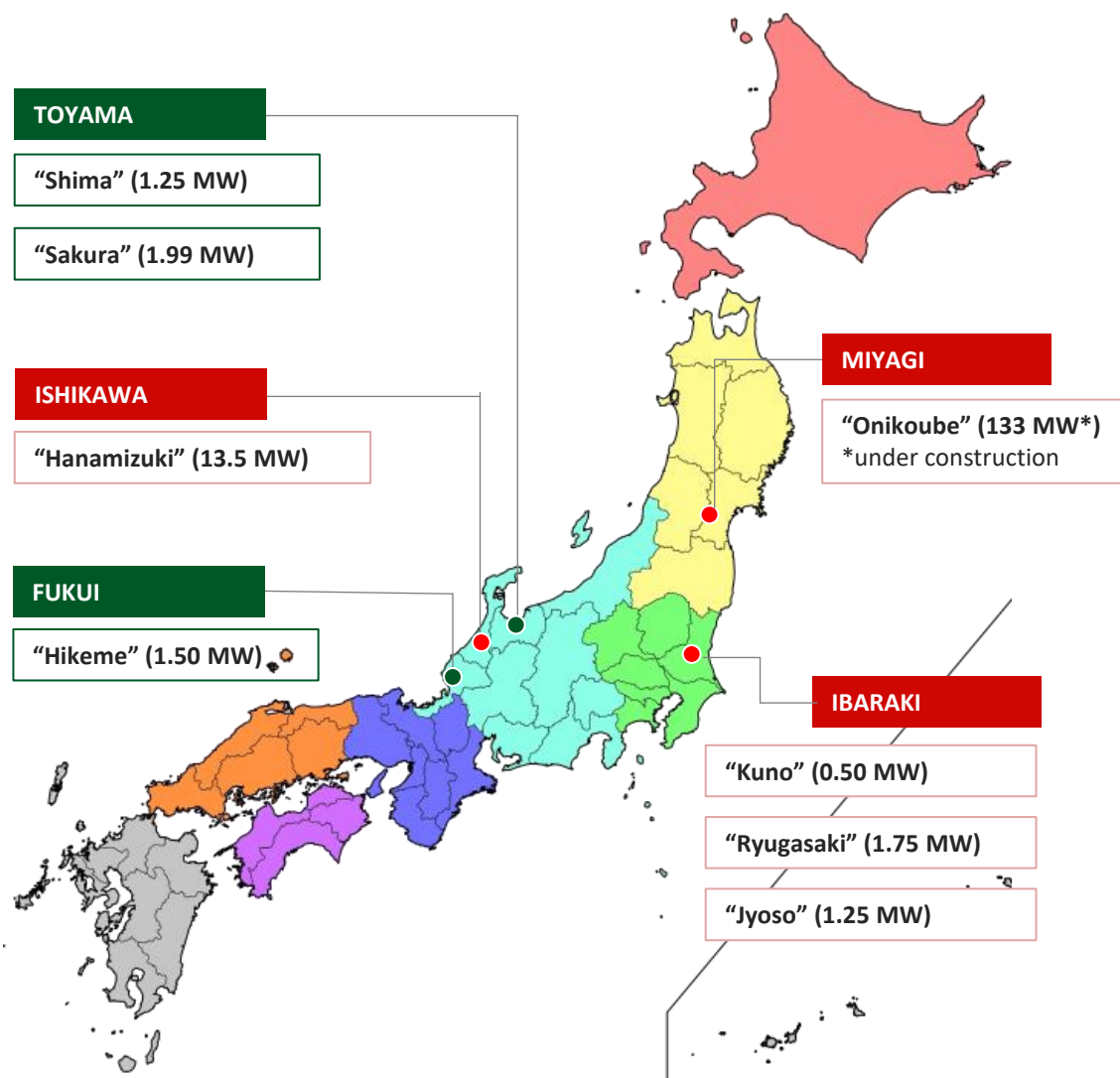


OSW1 (8.8 MW)  
COD AUG 2018



OSW2 (8.8 MW)  
COD OCT 2018

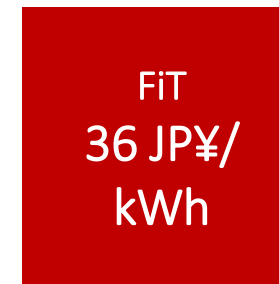
# SOLAR PV FARMS (JAPAN) : 8 Projects (154.74 MWac)



**Ryugazaki** (1.75 MW)  
COD SEP 2016



**Kuno** (0.5 MW)  
COD AUG 2015



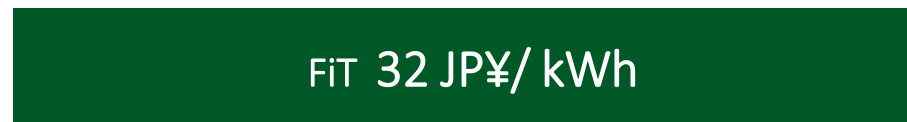
**Jyoso** (1.25 MW)  
COD MAY 2018



**Hanamizuki** (13.5 MW)  
COD JAN 2019



**Onikoube** (133 MW)\*  
SCOD 4Q2022



**Shima** (1.25 MW)  
COD MAR 2016



**Hikeme** (1.50 MW)  
COD APR 2016



**Sakura** (1.99 MW)  
COD NOV 2017





Thai Solar Energy Public Company Limited

THANK YOU

[www.thaisolarenergy.com](http://www.thaisolarenergy.com)

Tel. +66 2258 4530-34

