# 

Thai Solar Energy Public Company Limited





# **TSE PRESENTATION** 3Q2022

(as of September, 2022)

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#### FINANCIAL HIGHLIGHTS OF 3Q2022

#### TSE's OPERATING ASSETS

### 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.

### COMPANYOVERVIEW

#### Summary of Corporate Information





### **COMPANY OVERVIEW**



regions.



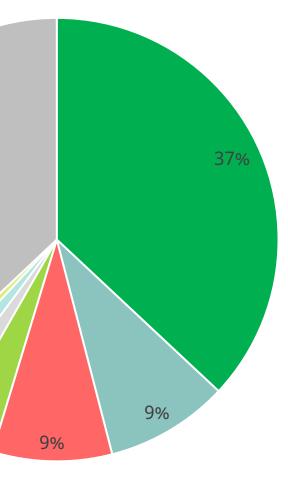
Thai Solar Energy Public Company Limited ("TSE") was established in 2008 with a mission to establish a solid footprint in Thailand in the solar power industry and expand into other renewable energies as well as developing an international solar power business focusing in Asia and Oceania

### **COMPANY OVERVIEW**

	Stock Information
Company:	Thai Solar Energy PCL.
SET Symbol:	TSE
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:	media a sarar state of Country Nation of Country
<b>Credit Rating:</b>	BBB- stable



#### or Shareholders (RD of March 10, 2022)

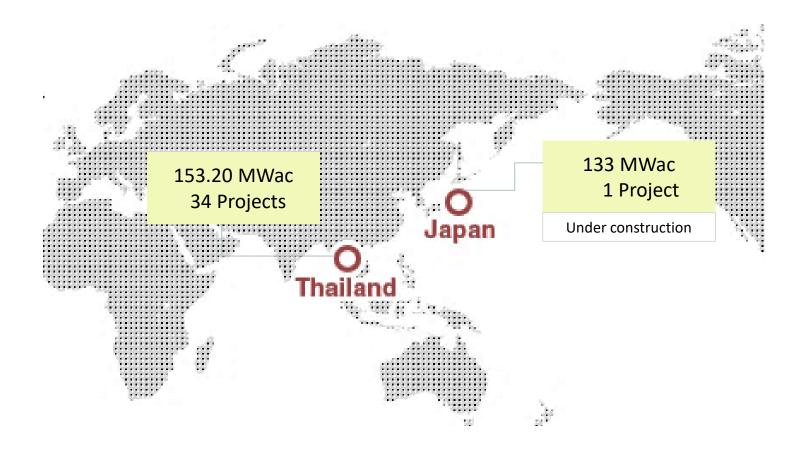


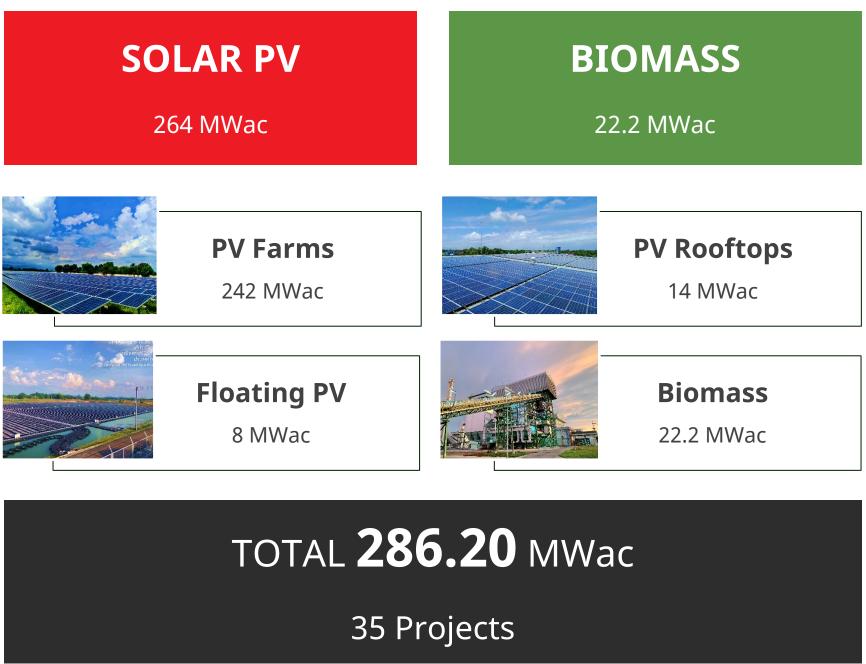
- P.M. Energy Co., Ltd.
- SINO-THAI Engineering & Construction PCL.
- UBS AG SINGAPORE BRANCH
- CREDIT SUISSE AG, SINGAPORE BRANCH
- CITI (NOMINEES) LIMITED-S.A PBG CLIENTS SG
- Miss Ratana Maleenont
- Bualuang Long-Term Equity Fund

Others

### **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.







### MILESTONES

Solar Farms + Rooftops (TH)	Solar Farms (JP) + Biomass (TH)	Merger & Acquisition	
2008 – 2014	2015 – 2017	2018 – 2019	
2008: > Established TSE	2015: > Expanded TSE's business operation in Japan	<b>2018:</b> > COD Biomass 3 projects (22.2 MW)	2020:
<b>2011:</b> > Majority owned by Dr. Cathleen Maleenont > COD Solar Thermal (4.5 MW)	<ul> <li>&gt; COD Solar PV JP 1 project (0.5 MW)</li> <li>&gt; COD Solar Rooftop 9 projects (9 MW)</li> </ul>	<ul> <li>&gt; COD Solar PV JP: Jyoso (1.25 MW)</li> <li>&gt; Acquired a new project "INS" in Ang Thong province (2.0 MW) in OCT 2018</li> </ul>	
2013: > COD Solar PV TH 5 projects* (40 MW) *Partnership with GPSC (TSE 60%) > Listed in MAI on 30 OCT 2014	<b>2016:</b> > COD Solar PV "SLC" 1 project (1 MW) > COD Solar PV JP 4 projects (6.49 MW)	<ul> <li>2019: &gt; COD Solar PV JP: Hanamizuki (13.5 MW)</li> <li>&gt; Fully Operate Biomass 3 projects (22.2 MW)</li> </ul>	
2014: > COD Solar PV TH 5 projects*	> Invested in Biomass 3 projects	> Moved to SET on 14 MAY 2019	
<ul> <li>(40 MW)</li> <li>*Partnership with GPSC</li> <li>(TSE 60%)</li> <li>&gt; COD Solar Rooftop 5 Projects</li> <li>(5 MW)</li> </ul>	2017: > Large Investment in Japan "Onikoube" project (147 MWp)	<ul> <li>Capital Increase to 2,117.7 MB. completely in OCT 2019. Note: TSR 212 million shares Total 530 MB.</li> </ul>	2021:
	Creiteder Seiter peopler Land.	<ul> <li>&gt; Acquired:</li> <li>1. "BSS" in Ayutthaya province (5 MW) in MAR 2019</li> <li>2. "BSE" in Udornthani province (5 MW) in AUG 2019</li> <li>3. "SSP" in Ang Thong province (8 MW) in NOV 2019</li> </ul>	



#### Private PPA

#### 2020 - 2021

- 0: > 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 Udornthani province (5.0 MW) in SEP 2020
- 21: > 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

#### Exploring Investment Opportunity overseas + Expanding Private PPA

- 2022 onward
- **2022:** > Divested in a solar farm "Hanamizuki" 13.5 MW in Japan in MAR 2022
  - > Acquired a new project "SCT" Solar Tracking in Nakhonsawan province (8.0 MW) in JUN 2022. The acquisition process was completed in JUL 2022.
  - > SCOD "Onikoube" project (147 MWp) 4Q2022





Ref. photo of "Onikoube" project

### **BOARD OF DIRECTORS**



Dr. Prommin Lertsuridej

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



Mr. Prasert Patradhilok

Independent Director and Chairman of Audit Committee



Mr. Pala Sookawesh

Independent Director,

Audit Committee



Dr. Praphan Subsang

Independent Director, Audit Committee



Mr. Somphop Prompanapitak

Director, COO, Nomination and Remuneration Committee



Mrs. Angkanee Rerksirisuk

Director



Mr. Masthawin Charnvirakul

Director

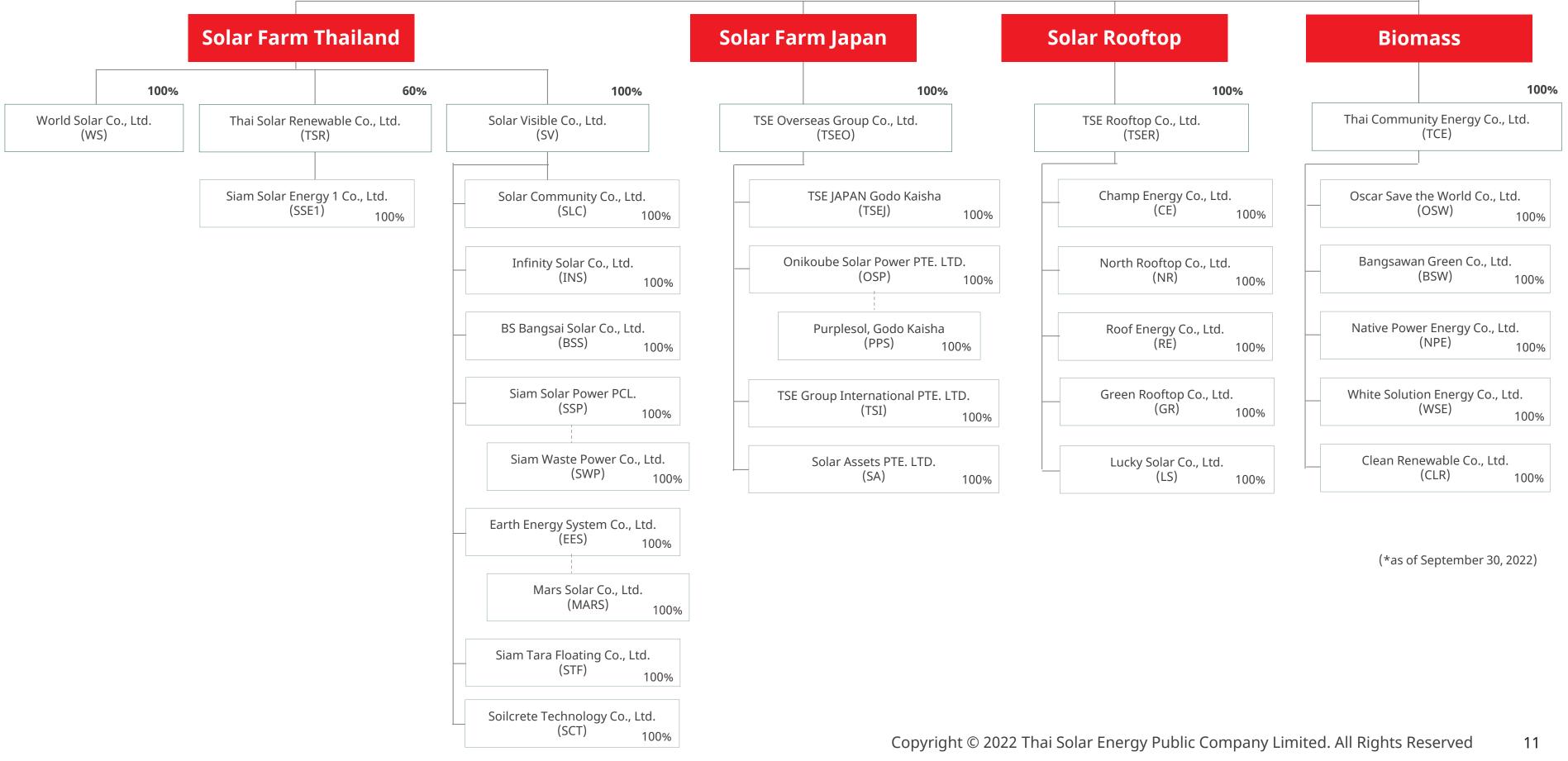




#### Cathleen Maleenont, Ed.D.

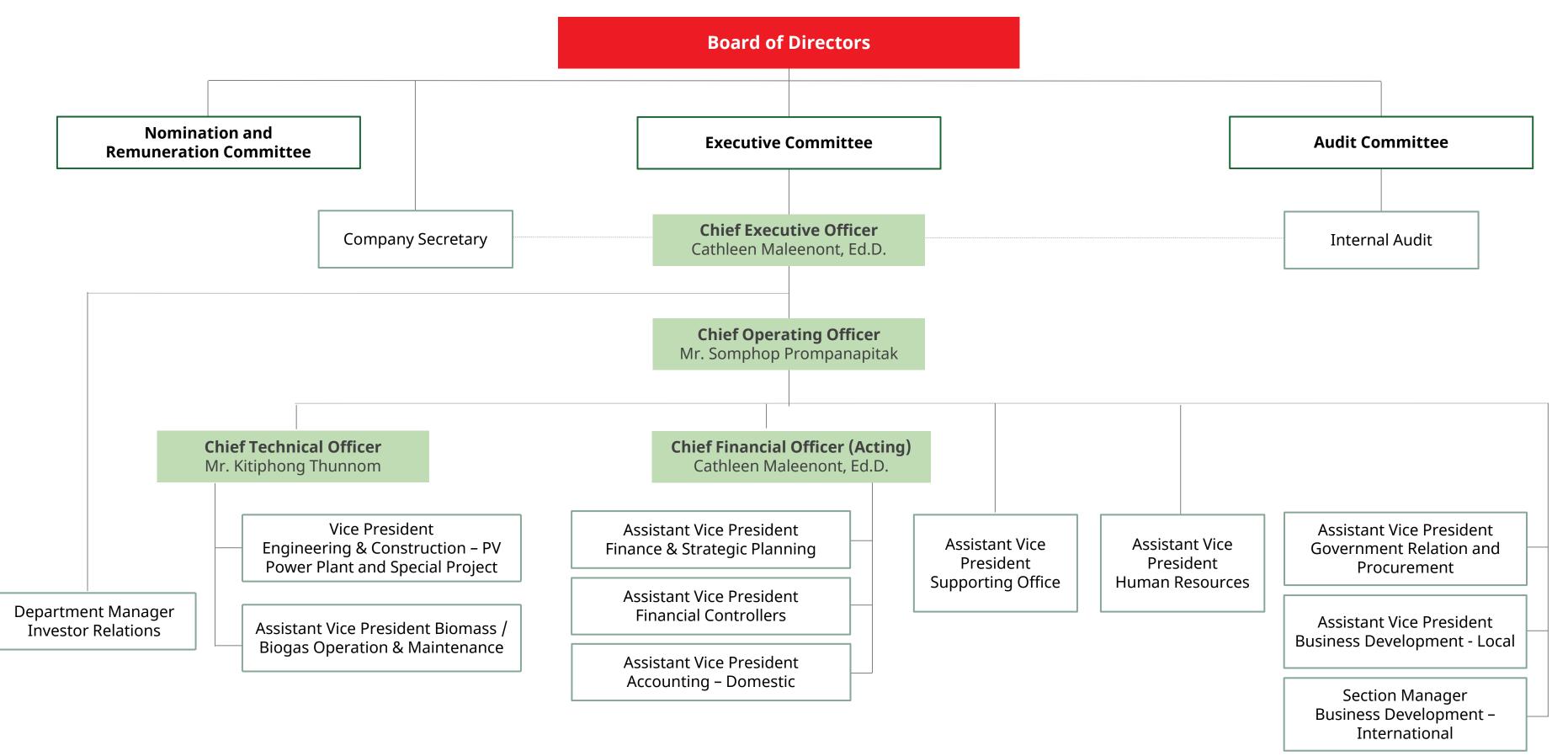
Chairman of Board of Directors, CEO, Nomination and Remuneration Committee

### **COMPANY STRUCTURE**





### ORGANIZATION STRUCTURE





## FINANCIAL HIGHLIGHTS OF 3Q2022

#### Summary of TSE's Financial Performance





### HIGHLIGHT OF 3Q2022





### PROJECT "SOILCRETE" 8 MW





Summary of	"Soilcrete	" Project
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Installed Capacity (MWp): Selling Capacity (MWac):	8.0 8.0
Location:	Nakhonsawan Province
Type of Solar Plant:	Ground Mounted Solar Power Plant (Tracking)
Contract parties:	Provincial Electricity Authority (PEA)
Contract period: BOI Privilege:	25 years 0% 8 years
Type of PPA:	FiT – 5.66 THB/kWh TOU – 2.90 THB/kWh
COD:	29 December 2015

#### INCOME STATEMENT 3Q2022

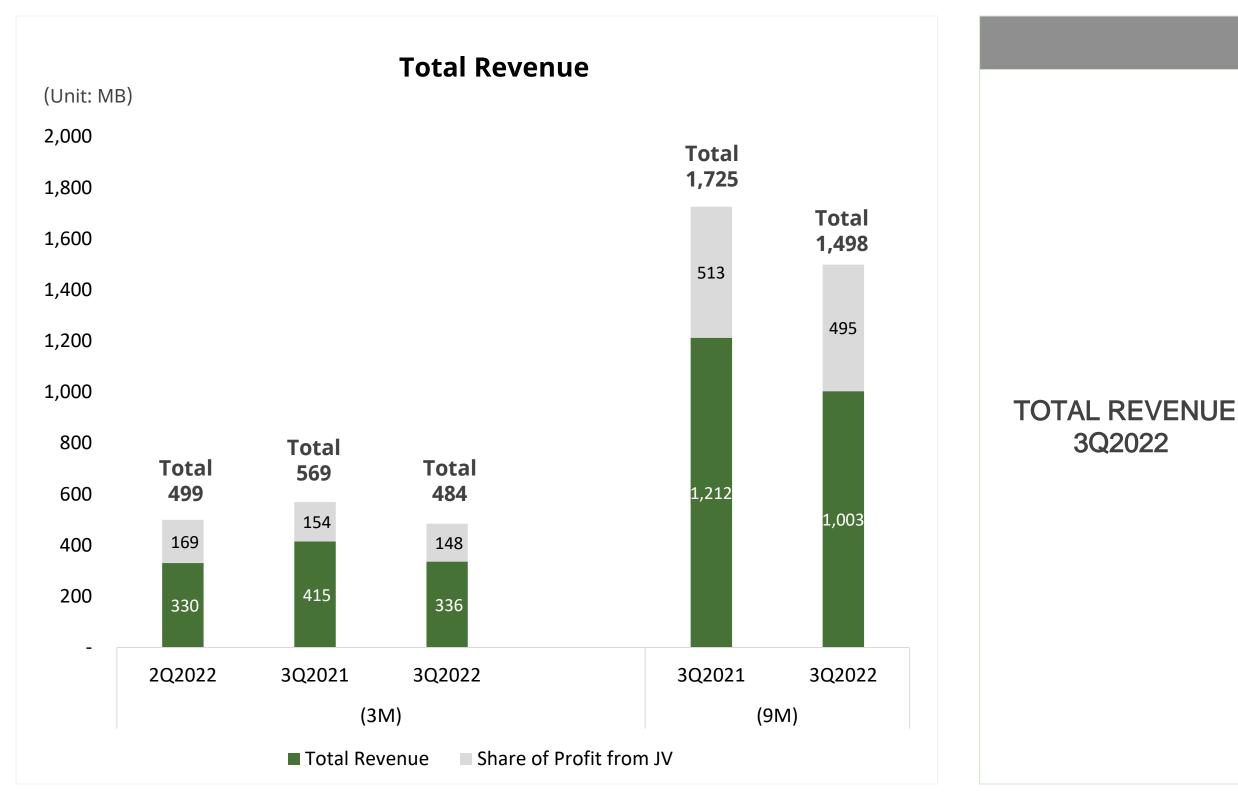
		Consolidated (Unit: Thousand Bant)				
<u>Statement of Comprehensive Income</u>		(3M)		(9M)	(9M)	
	3Q2022	3Q2021	% Change	3Q2022	3Q2021	% Change
Revenue						
Electricity Sales	318,209	401,470	-20.74%	956,477	1,167,904	-18.10%
Management Fee	14,642	12,530	16.86%	40,616	36,796	10.38%
Total Revenue	332,851	414,000	-19.60%	997,093	1,204,700	-17.23%
COGs	(216,808)	(270,186)	-19.76%	(663,496)	(798,724)	-16.93%
Gross Profit	116,043	143,814	-19.31%	333,597	405,976	-17.83%
Other Income	3,029	997	203.81%	6,115	7,189	-14.94%
Administrative Expenses	(42,834)	(53,472)	-19.89%	(163,241)	(139,176)	17.29%
Other gains (losses), net	(22,431)	52,752	-142.52%	197,969	62,524	216.63%
Finance costs	(78,532)	(84,367)	-6.92%	(230,570)	(252,408)	-8.65%
Share of Profit from joint ventures	148,396	154,153	-3.73%	495,122	513,044	-3.49%
Profit (Loss) before Income Tax	123,671	213,877	-42.18%	638,992	597,149	7.01%
Income Tax	(2,211)	(5,509)	-59.87%	(7,924)	(3,821)	107.38%
Net Profit from Operation	121,460	208,368	-41.71%	631,068	593,328	6.36%
Currency translation differences	103,299	277,769	-62.81%	(559,066)	277,050	-301.79%
Change in fair value of hedging derivatives	-	5,312	-100.00%	-	2,800	-100.00%
Total Comprehensive Income	224,759	491,449	-54.27%	72,002	873,178	-91.75%
Profit Attributable to:						
Owners of the Parent	121,460	208,368	-41.71%	631,068	593,048	6.41%
Non-Controlling Interests	-	-		-	280	-100.00%
	<u>121,460</u>	<u>208,368</u>	-41.71%	<u>631,068</u>	<u>593,328</u>	6.36%
Total Comprehensive Income Attributable to:						
Owners of the Parent	224,759	491,449	-54.27%	72,002	872,855	-91.75%
Non-Controlling Interests	-	-		-	323	-100.00%
	<u>224,759</u>	<u>491,449</u>	-54.27%	<u>72,002</u>	<u>873,178</u>	-91.75%

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#### **Consolidated (Unit: Thousand Baht)**

### TOTAL REVENUE 3Q2022





3-month period (3M)		9-month period (9M)		
QoQ:	-3%	YoY:	-13%	
YoY:	-15%			

#### 3-month period :

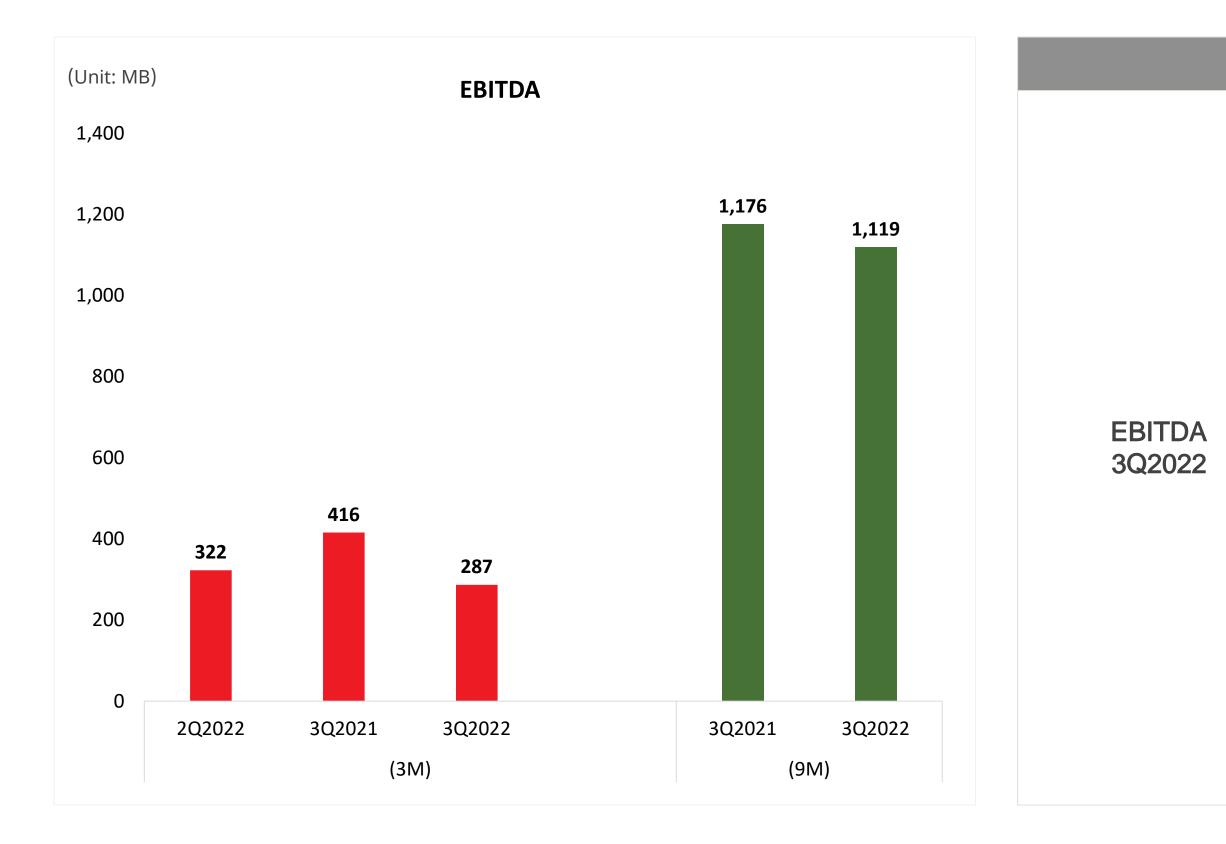
Total Revenue including share of profit from JV in 3Q2022 (3M) decreased to 484 MB or -15% (YoY) as compared to 3Q2021 (3M) of 569 MB.

#### 9-month period :

Total Revenue including share of profit from JV (9M) decreased to 1,498 MB or -13% (YoY) as compared to 3Q2021 (9M) of 1,725 MB.

This was mainly due to the result of the divestment in 7 Solar PV Farm projects (totaling 21.74 MW) in Japan since 3Q2021 (6 projects) and 1Q2022 (1 project) and the effect of heavy rain during this quarter. However, the Company has revenue increased from a Floating Solar PV project (8MW) in Prachinburi Province and from a new Solar PV project (8MW) in Nakhonsawan province that completely acquired in 3Q2022.

#### EBITDA 3Q2022





3-month period (3M)		9-month	period (9M)
QoQ:	-11%	YoY:	-5%
YoY:	-31%		

<u>3-month period</u>:

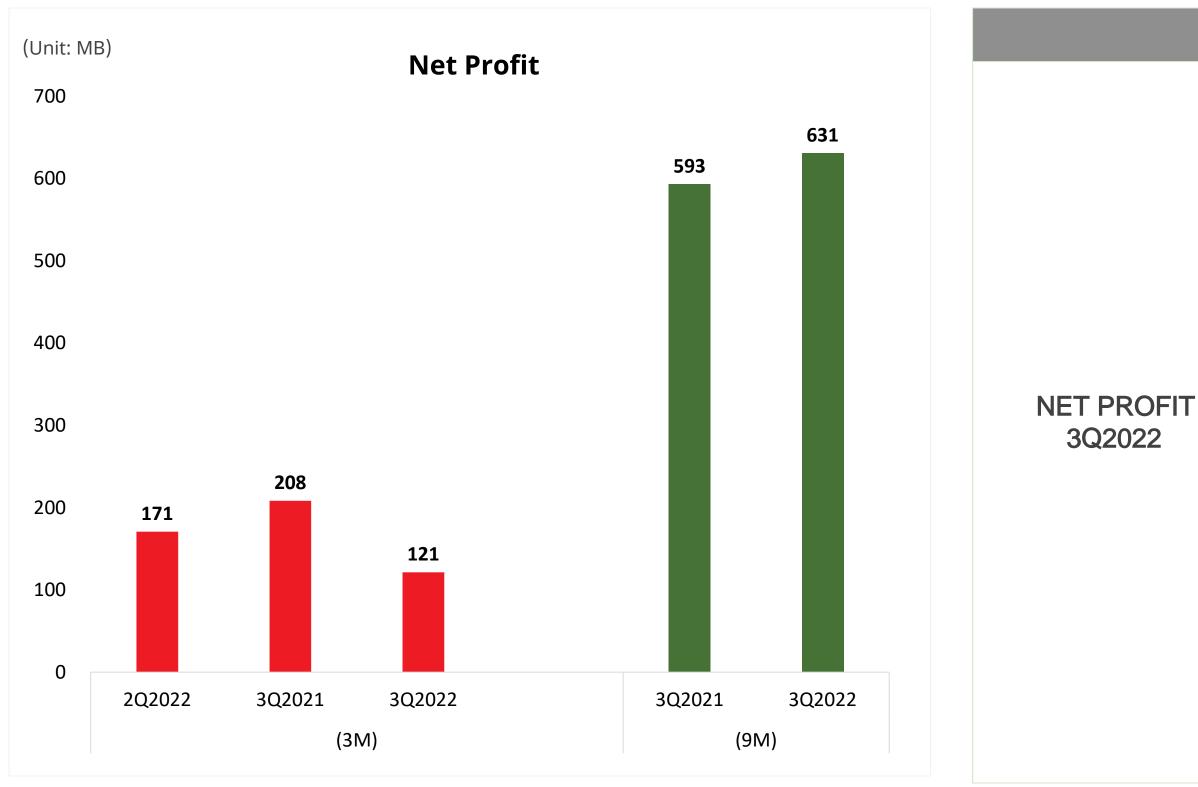
EBITDA in 3Q2022 (3M) decreased to 287 MB or -31% (YoY) as compared to 3Q2021 (3M) of 416 MB.

<u>9-month period</u>:

EBITDA in 3Q2022 (9M) decreased to 1,119 MB or -5% (YoY) as compared to 3Q2021 (9M) of 1,176 MB.

This was mainly due to the result of the divestment in 7 Solar PV Farm projects (totaling 21.74 MW) in Japan that caused the total revenue in 3Q0222 decreased. However, the Company has revenue increased from a Floating Solar PV project (8MW) in Prachinburi province that was fully recognized and from a new Solar PV project (8MW) in Nakhonsawan province that was completely acquired in 3Q2022.

#### NET PROFIT 3Q2022





3-month period	(3M)
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9-month period (9M)

QoQ: -29% YoY: +6%

YoY: -42%

3-month period :

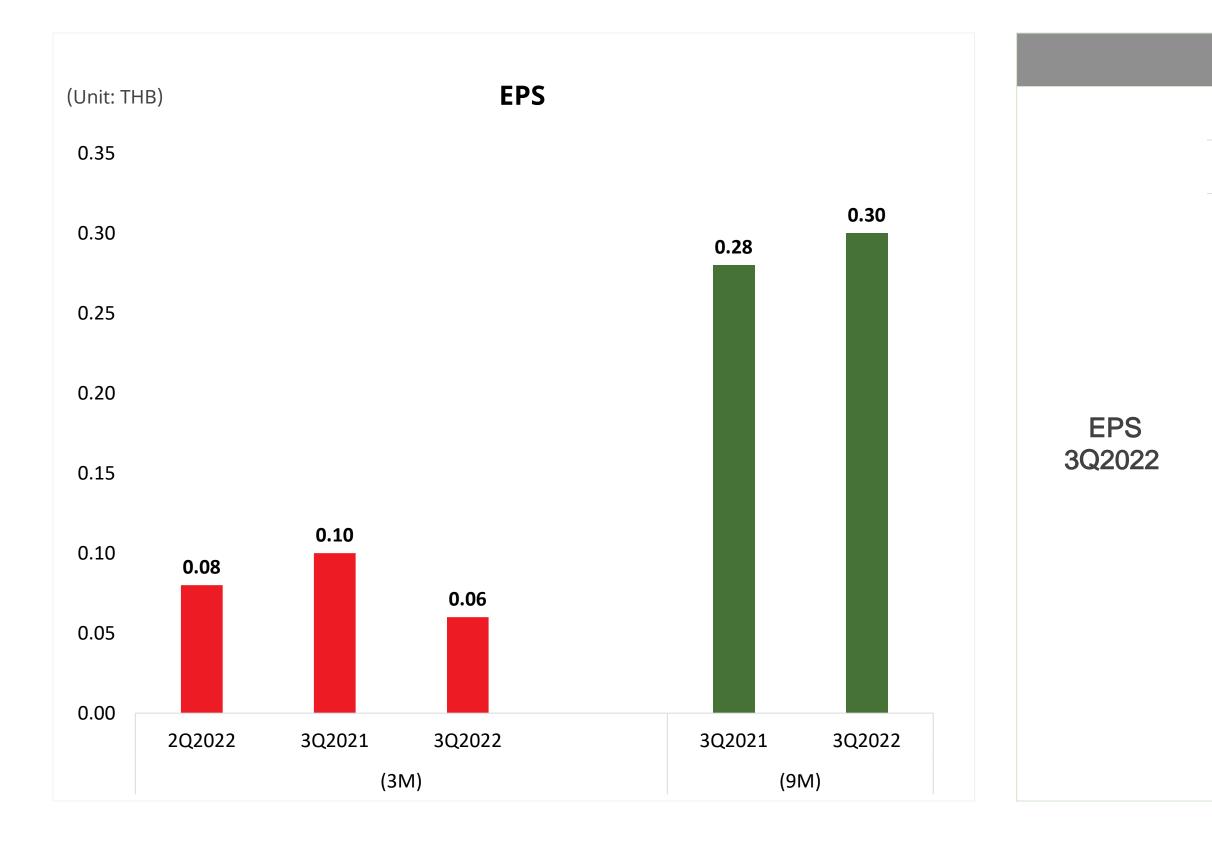
Net Profit in 3Q2022 (3M) decreased to 121 MB or -42% (YoY) as compared to 3Q2021 (3M) of 208 MB.

9-month period :

Net Profit in 3Q2022 (9M) increased to 631 MB or 6% (YoY) as compared to 3Q2021 (3M) of 593 MB.

This was primarily due to the result of the divestment in 7 Solar PV Farm projects (totaling 21.74 MW) in Japan which caused the revenue in 3Q2022 decreased. However, the Company has revenue increased from a Floating Solar PV project (8MW) in Prachinburi province that was fully recognized and from a new Solar PV project (8MW) in Nakhonsawan province that was completely acquired in 3Q2022. Also, the depreciation and amortization expenses in 3Q2022 decreased due to the divestment.

#### EPS 3Q2022





3-month period (3M)		9-month period (9M)		
QoQ:	-25%	YoY:	+7%	
YoY:	-40%			

<u>3-month period</u>:

EPS in 3Q2022 (3M) decreased to 0.06 Baht / share or -40% as compared to 3Q2021 (3M) of 0.10 Baht / share.

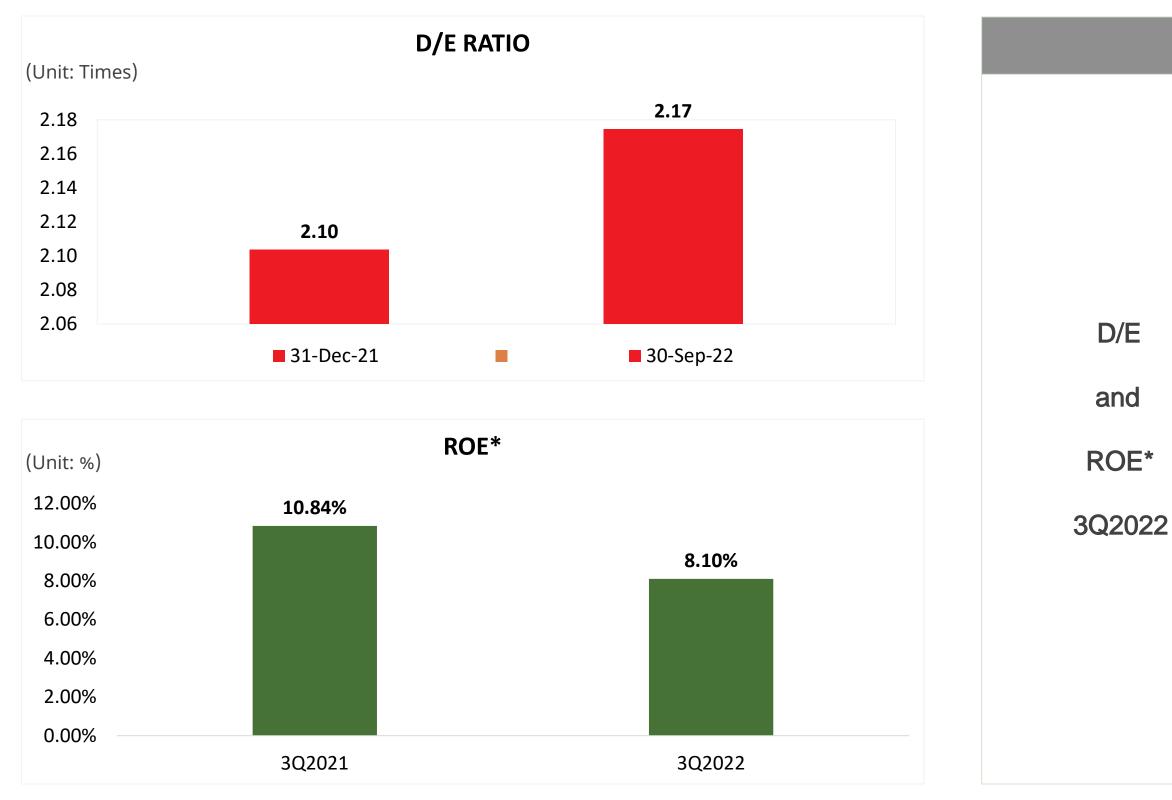
This was primarily due to the reversion of other losses on exchange rate due to the divestment in subsidiaries in Japan in 3Q2022 which was 22 MB. or -143% whereas this transaction was represent as the other gains of 53 MB in 3Q2021. Also, this was a result of the Net Profit in 3Q2022.

<u>9-month period</u>:

EPS in 3Q2022 (9M) increased to 0.30 Baht / share or +7% as compared to 3Q2021 (9M) of 0.28 Baht / share.

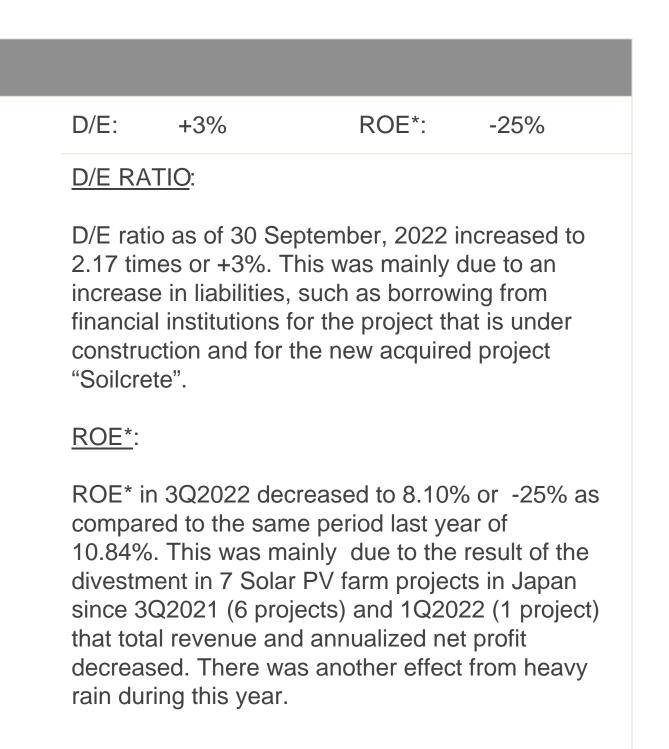
This was primarily due to the other gains, net regarding divestment in subsidiaries in Japan. In 3Q2022, other gains, net significantly increased to 198 MB or +217% while in 3Q2021 were 63 MB.

#### D/E RATIO and ROE\* 3Q2022



Note: \* Annualized: ROE





#### FINANCIAL POSITION 30 SEPTEMBER 2022



FINANCIAL POSITION	31-Dec-21	30-Sep-22	+/- (%)
Assets	19,707	20,301	3.01%
Liabilities	13,358	13,906	4.10%
Equities	6,349	6,395	0.72%
D/E* Ratio (times)	2.10	2.17	3.36%

As of 30 September, 2022, total assets, total liabilities, and total equity were increased. This was primarily due to an investment in the Solar PV farm project "Onikoube" (133 MW) in Japan which is currently under construction.

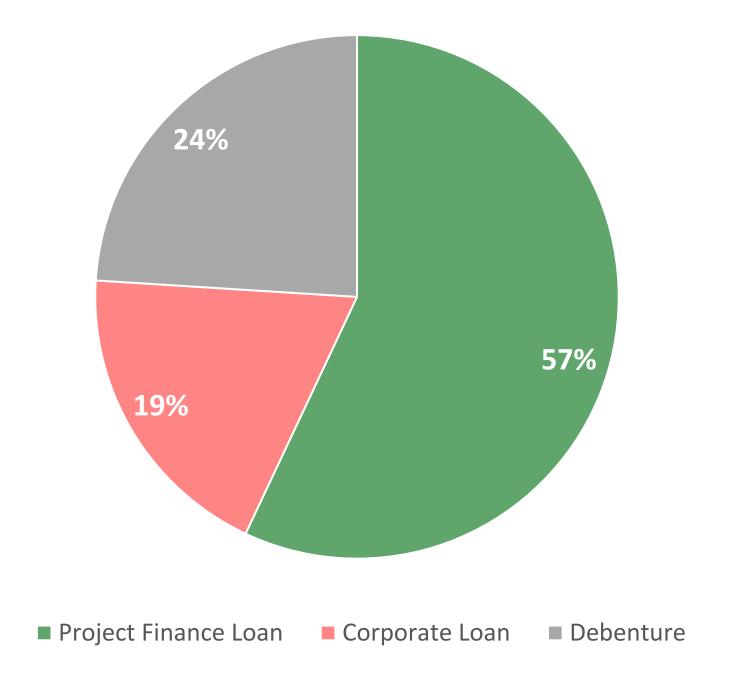
Besides, the Company acquired a new Solar PV farm project "Soilcrete" (8MW) in Nakhonsawan province in 3Q2022. This project has already COD since December 2015 which enables the Company to recognize revenue in 3Q2022.

MoreoverPV, total equity increased due to the result of the divestment in a Solar Farm project "Hanamizuki" (13.5 MW) in Japan in 1Q2022.



Financial Position 30 September 2022			
•	Increased to 20,301 MB or +3%		
ties:	Increased to 13,906 MB or +4%		
•	Increased to 6,395 MB or 0.7%		

#### DEBT STRUCTURE 3Q2022



Most of interest bearing debt from Project Finance Loan for 57%, increased from Onikoube Project Finance Loan drawdown. 15% 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.



### CONSTRUCTION UPDATE





#### Purchase Rate - FiT 36 JP¥

Summary of "On	nikoube" Project		
acity (MWp): ty (MWac):	147 133		
e (FiT JP¥):	36 Miyagi Province, Japan		
	Tohoku Utility 4Q2022		
	Under construct OSP	ion	
Construction:	In April, 2020		
Project Co	mponents		
	TOSHIBA	TOSHIBA	
•	Trina Solar	Trinasolar	
	Huawei	HUAWEI	
Financing			
e by:	BBL (THB 8.6 bn	.)	

### CONSTRUCTION UPDATE



The construction progress achieved 91% as of the end of September 2022. The module piling and installation work are being accelerated to accomplish the COD schedule while major electrical equipment work has good progress in accordance with the construction plan, especially the 275kV substation, which is now ready for the interconnection with the utility for commissioning in early October 2022.





#### 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. <u>50 MW PPA</u>

#### **OVERSEAS**

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

Totaling approx. <u>50 – 100 MW PPA</u>

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

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

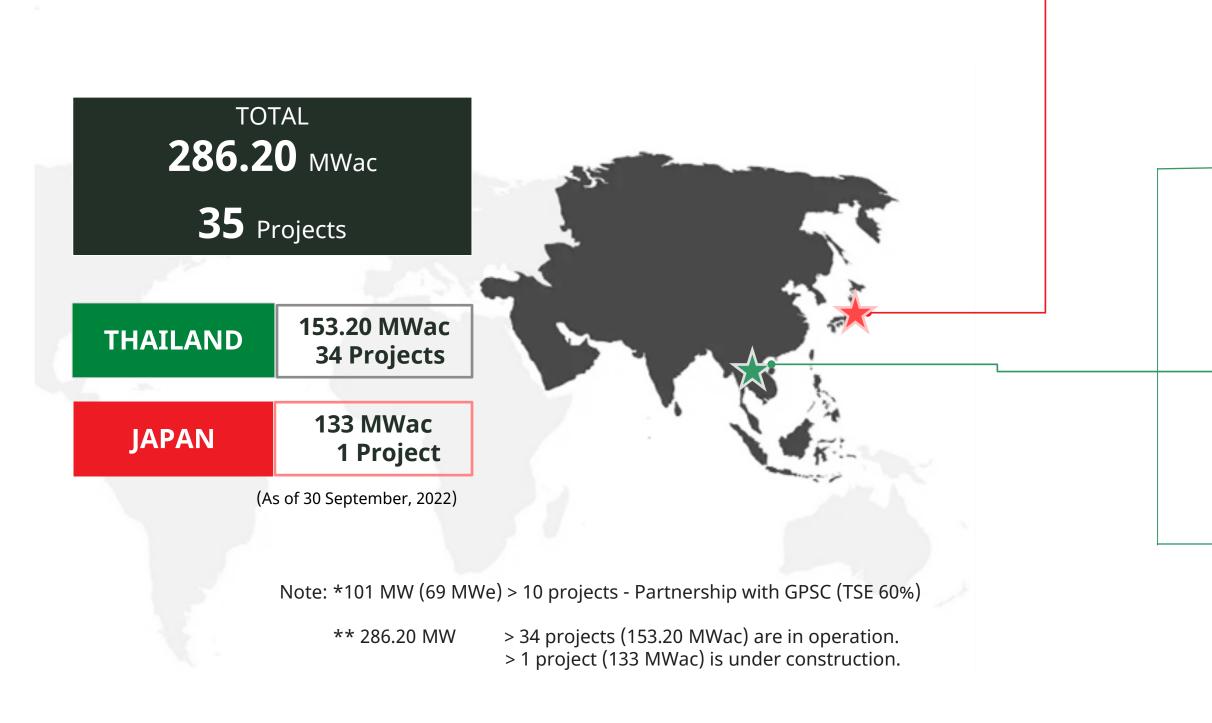


#### Summary of TSE's Projects





### TSE's PROJECTS





#### Solar PV Farm

133 MWac – 1 Farm (under construction)



#### Solar PV Farms

109 MWac – 16 Farms 8 MWac – 1 Floating



#### Solar PV Rooftops

14 MWac – 14 Rooftops

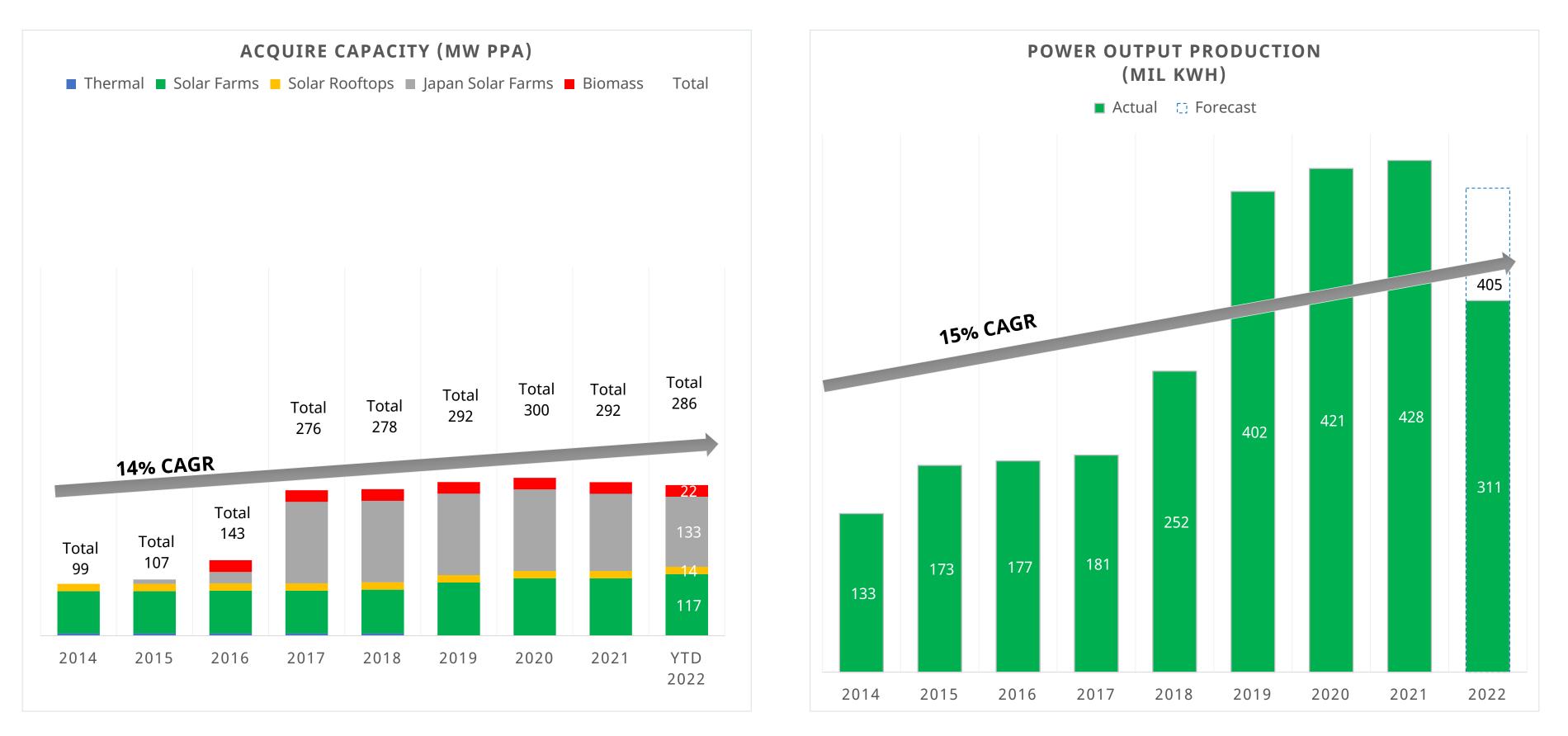
#### **Biomass**

22.2 MWac – 3 Plants



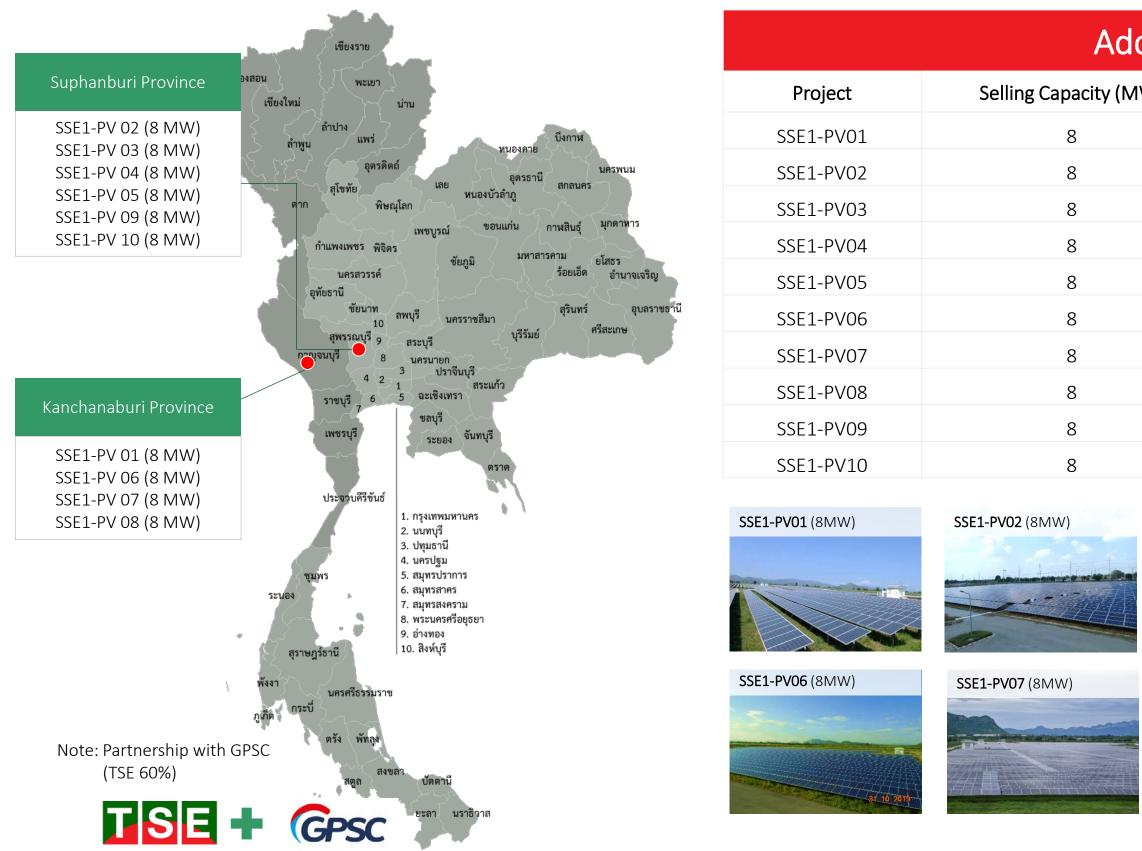


### CAPACITY GROWTH





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



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der	6.5 THB/ kWh	
1W)	COD	Province
	4-Sep-13	Kanchanaburi
	17-Jul-13	Suphanburi
	28-Oct-13	Suphanburi
	21-Nov-13	Suphanburi
	21-Nov-13	Suphanburi
	6-Jun-14	Kanchanaburi
	20-Mar-14	Kanchanaburi
	6-Jun-14	Kanchanaburi
	4-Apr-14	Suphanburi
	30-May-14	Suphanburi



SSE1-PV08 (8MW)





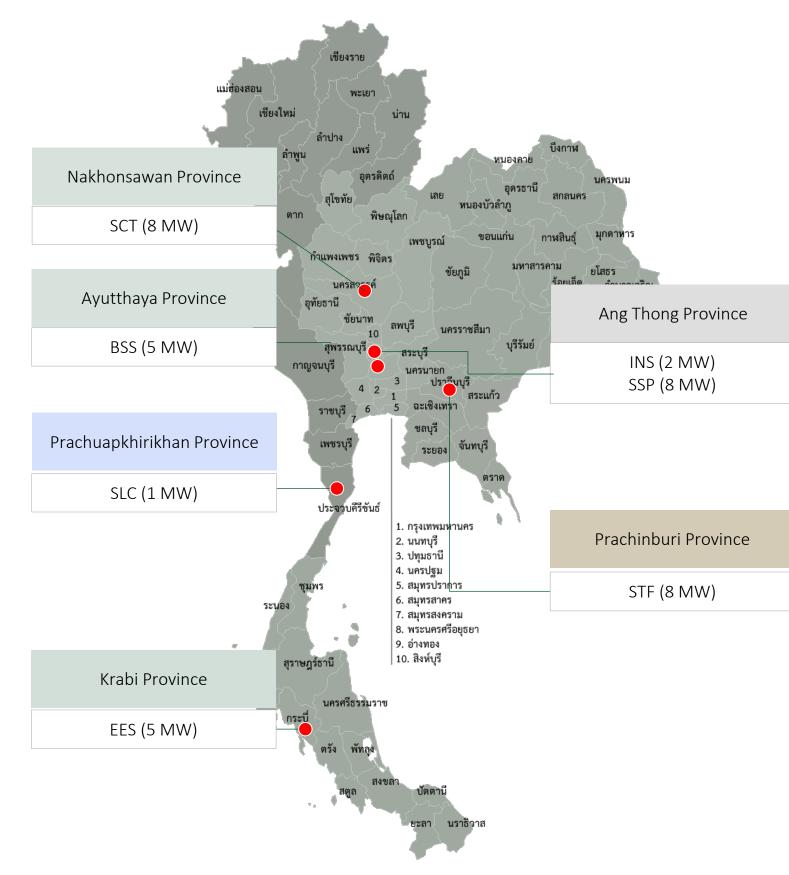




SSE1-PV10 (8MW)



### SOLAR PV FARMS (THAILAND): 7 Projects (37 MWac)



Project	Selling Capacity (MW)	COD	Province	Power Purchase Rate
SLC	1	Dec-16	Prachuap Kirikhan	FiT 5.66 THB/ kWh
INS	2	Dec-15	Ang Thong	FiT 5.66 THB/ kWh
BSS	5	Dec-16	Ayutthaya	FiT 4.12 THB/ kWh
EES	5	Dec-18	Krabi	FiT 4.12 THB/ kWh
SSP	8	Mar-13	Ang Thong	Adder 8.0 THB/ kWh
STF	8	May-21	Prachinburi	Private PPA
SCT	8	Dec-15	Nakhonsawan	FiT 5.66 THB/ kWh







#### FLOATING SOLAR PV FARM (THAILAND): 8 MWac



Su Installed Capacit Selling Capacity PPA Type: PPA Period: Location: Off-Taker: COD: Operated By: Investment:

PV Module by:

Floating materia Mounting struct

Inverter by:

Electrical appara

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#### **Private PPA 25 Years**

Summary of '	"Siam Tara Floating" 8 MWp Project		
ity (MWp):	8		
(MWac):	8		
	Private PPA		
	25 years		
	Kabinburi Industrial Zone (KIZ), in Prachinburi Province		
	Arcelik Hitachi Home Appliances (Thailand) Ltd.		
	25 MAY 2021		
	SV (TSE's subsidiary)		
	June, 2020		
	Project Components		
	Trina Solar Trinasolar		
al and ture:	SCG Thailand		
	String type - Huawei		
atus:	Switchgear - Siemens, SIEMENS Transformer – Ekarat		

#### SOLAR PV FARM (THAILAND) - "SOILCRETE" PROJECT : 8 MWac





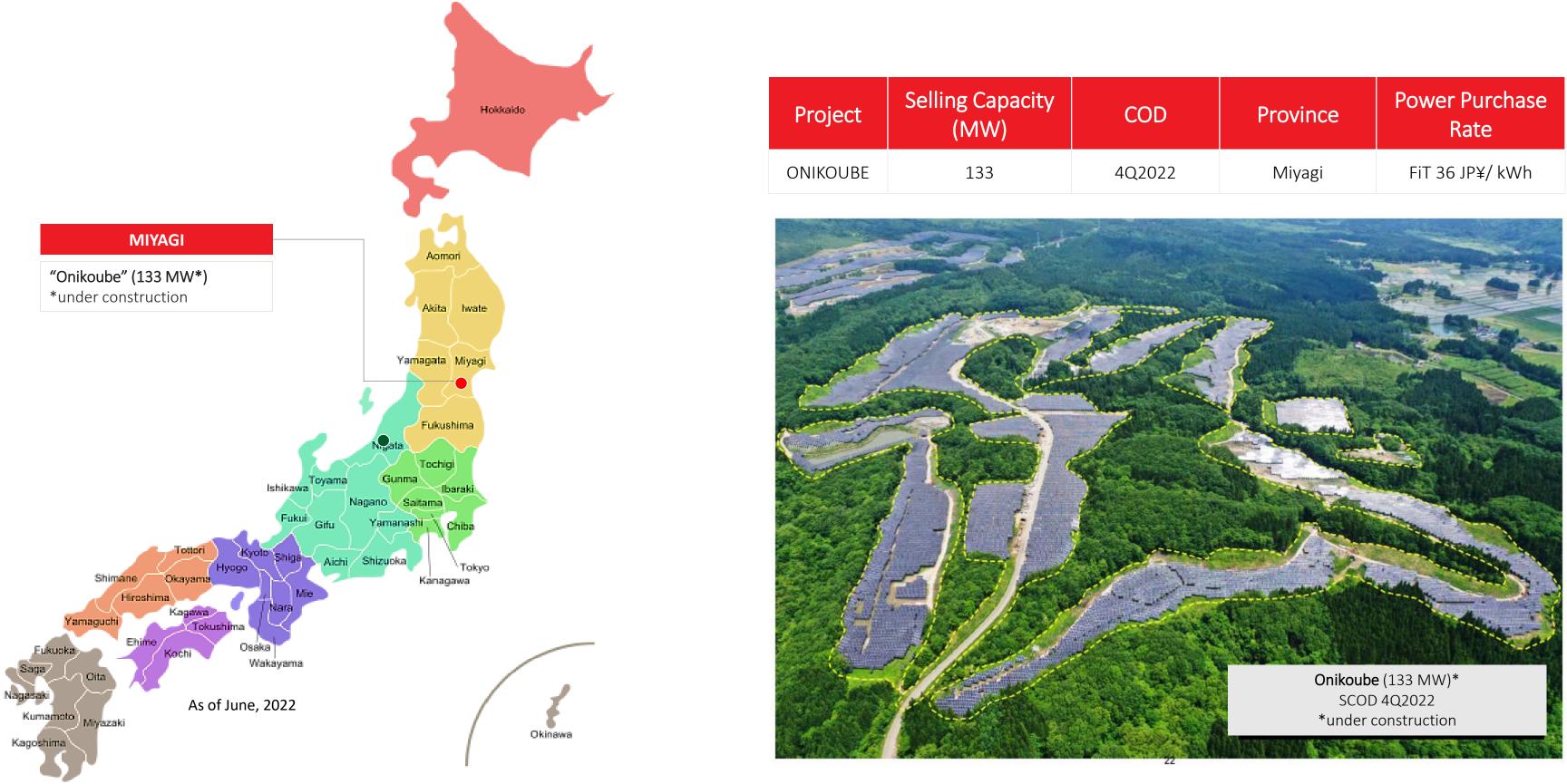


#### FiT 5.66 THB/ kWh

#### Summary of "Soilcrete" 8 MWp Project

Capacity (MWp):	8
pacity (MWac):	8
lar Plant:	Ground Mounted Solar Power Plant (Tracking)
d:	25 years
ge	0% 8 years
	Nakhonsawan Province
oarties:	Provincial Electricity Authority (PEA)
	29 DEC 2015
By:	SV (TSE's subsidiary)
PA:	FiT – 5.66 THB/kWh TOU – 2.90 THB/kWh

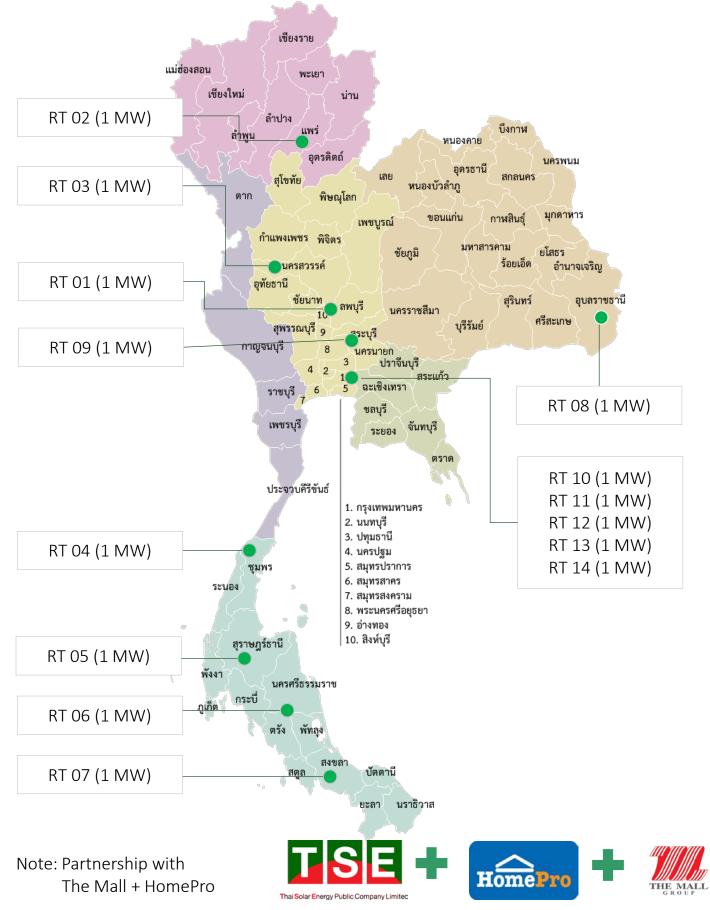
### SOLAR PV FARMS (JAPAN): 1 Project (133 MWac)





Capacity W)	COD	Province	Power Purchase Rate
33	4Q2022	Miyagi	FiT 36 JP¥/ kWh

### SOLAR PVROOFTOPS (THAILAND): 14 Projects (14 MWac)



FiT 6.16 THB/ kWh			
Project	Selling Capacity (MW)	COD	Province
TSER-RT01	1	Sep-14	Lopburi
TSER-RT02	1	Feb-15	Phrae
TSER-RT03	1	Jun-15	Nakhonsawan
TSER-RT04	1	Sep-14	Chumporn
TSER-RT05	1	Dec-14	Surat Thani
TSER-RT06	1	Jul-15	Nakhon Si Thammarat
TSER-RT07	1	Oct-15	Hat Yai
TSER-RT08	1	Mar-15	Ubon Ratchathanee
TSER-RT09	1	Nov-14	Khao Yai
TSER-RT10	1	Feb-15	Ekamai – Ramindra, Bangkok
TSER-RT11	1	Nov-14	Ratchapruek, Bangkok
TSER-RT12	1	Jul-15	Thapra, Bangkok
TSER-RT13	1	Jul-15	Bangkapi, Bangkok
TSER-RT14	1	Oct-15	Ngamwongwan, Bangkok







### SOLAR PVROOFTOPS (THAILAND): 14 Projects (14 MWac)



RT-01 Lopburi COD SEP 2014



RT-06 Nakhon Si Thammarat COD JUL 2015



RT-11 Ratchapruek COD NOV 2014



RT-02 Phrae COD FEB 2015



RT-07 Hat Yai COD OCT 2015



RT-12 Thapra COD JUL 2015



RT-03 Nakorn Sawan COD JUN 2015



RT-08 Ubon Ratchathanee COD MAR 2015



RT-13 Bangkapi COD JUL 2015











RT-04 Chumporn COD SEP 2014

RT-14 Ngamwongwan COD AUG 2015

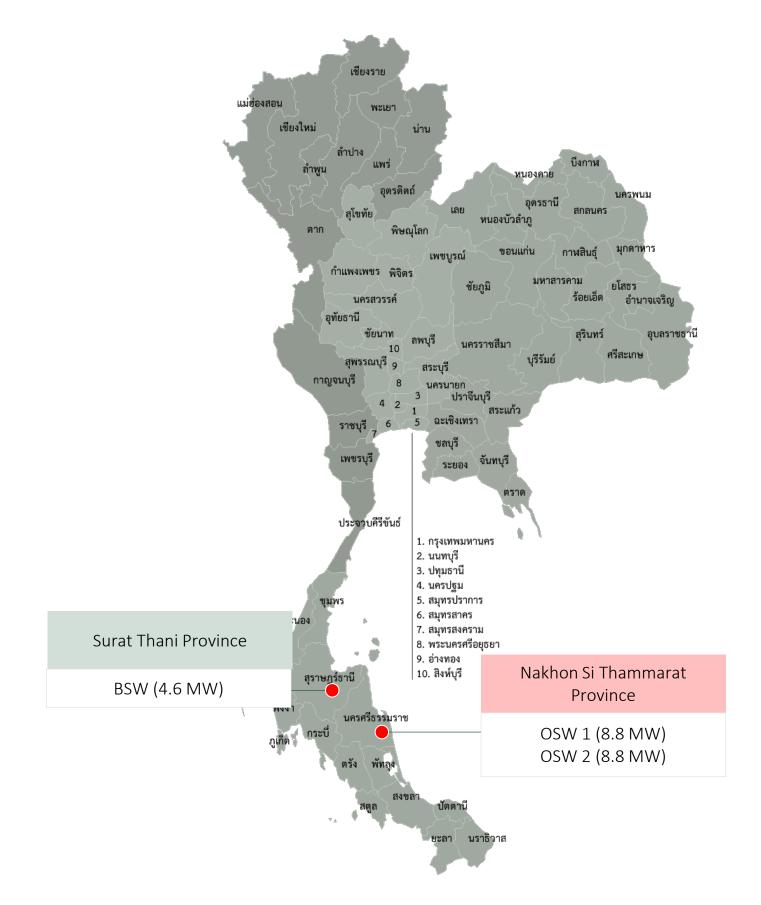


RT-05 Surat Thani COD DEC 2014



RT-10 Ekamai-Ramindra COD FEB 2015

#### BIOMASS (THAILAND): 3 Projects (22.2 MWac)



#### FiT 4.24 Baht + Premium 0.30 THB (8 years)

Project	Selling Capacity (MW)	COD	Province
BSW	4.6	Mar-18	Surat Thani
OSW 1	8.8	Aug-18	Nakhon Si Thammarat
OSW 2	8.8	Oct-18	Nakhon Si Thammarat







Thai Solar Energy Public Company Limited

*Renewable for the Future* 





# THANK YOU

#### THAI SOLAR ENERGY PUBLIC COMPANY LIMITED

#### IR Contact

- *Tel.* +66(0) 2258 4530-34 (*IR* #2504)
- *E-mail: info@thaisolarenergy.com*
- Website: www.thaisolarenergy.com