



Thai Solar Energy Public Company Limited

# OPPORTUNITY DAY

## 3Q 2024

26 November 2024

# AGENDA

- O1**    **COMPANY OVERVIEW**
- O2**    **HIGHLIGHTS OF 3Q 2024**
- O3**    **BUSINESS OUTLOOK**
- O4**    **Q&A**



# COMPANY OVERVIEW

Summary of Corporate Information




Thai Solar Energy Public Company Limited

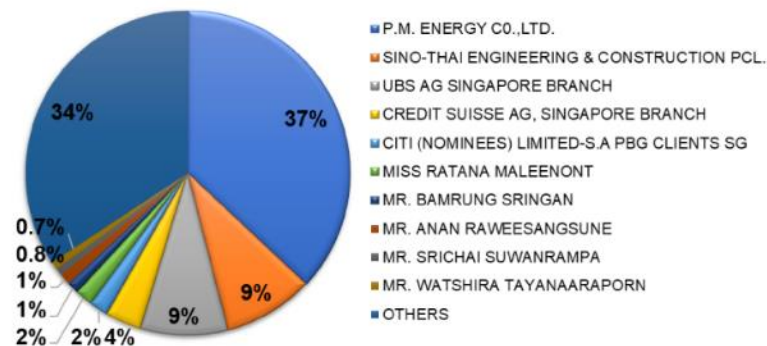
# COMPANY OVERVIEW

**Thai Solar Energy Public Company Limited (“TSE”)** is a producer and supplier of renewable electricity from solar power and biomass to government and private companies. Our mission is to establish a strong presence in Thailand’s solar power industry, expand into other renewable energy sectors, and develop an international solar power business with a focus on the Asia and Oceania regions.

## Stock Information

Company:	Thai Solar Energy Public Company Limited
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 Score:	
Company Credit Rating (July-2024):	BBB “stable”

## Major Shareholders as of March 14, 2024





# TSE'S 16-Year Achievements

## 2008-2014

### Solar Farms & Solar Rooftops (TH)

**2008:** Established TSE

**2011:**

- Majority owned by Dr. Cathleen Maleenont
- COD 1 Solar Thermal (4.5 MW.)

**2013:**

- COD 5 Solar PV farms (40 MW.)/Partnership with GPSC (TSE 60%)

**2014:**

- COD 5 Solar Rooftop projects (5 MW)
- Listed in MAI on 30 October 2014.
- The Group had total selling capacity of 89.5 MW.



## 2015-2017

### Solar Farms (JP) & Biomass (TH)

**2015:**

- COD 9 Solar Rooftop (9 MW.)
- Expansion business in Japan
- COD a Solar PV farm in Japan (0.5 MW.)

**2016:**

- COD a Solar PV "SLC" project in TH (1 MW.)
- COD 4 Solar PV projects in JP (6.5 MW)

- Invested in 3 Biomass projects

**2017:** • Invested in Mega project in Japan "Onikoube" (147 MWp)

• The Group had total selling capacity of 106.49 MW.



## 2018-2019

### Merger & Acquisition

**2018:** • COD Biomass 3 projects (22.2 MW)

- COD a JP Solar PV project "Jyoso" (1.25 MW)
- Acquired a new project "INS" in Ang Thong (2.0 MW)

**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.

• Acquired 3 new projects:

1. "BSS" in Ayutthaya (5 MW)
2. "BSE" in Udornthani (5 MW)
3. "SSP" in Ang Thong (8 MW)

• The Group had total selling capacity of 158.94 MW.



## 2020-2021

### New Private PPA

**2020:** • Start construction "Onikoube" Project.

- Invested in a Floating Solar farm project in Prachinburi (8.0 MW)

• Acquired: "EES" in Krabi (5.0 MW)

• Disposed: "BSE" in Udornthani (5.0 MW)

• Acquired 1 Solar PV Farm project "MARS" (5.0 MW).

**2021:** • COD Floating Solar PV project (8 MWp)

• Disposed investment in 6 small Solar Farms in Japan (totaling 8.24 MW)

• The Group had the total selling capacity of 292 MW.



## 2022-2023

### Exploring Investment Project in TH

**2022:**

- Divested a solar farm "Hanamizuki" 13.5 MW in JP.
- Acquired a new project "SCT" Solar Tracking in Nakhonsawan (8.0 MW)

**2023:**

- Acquire and Signed acceptance conditions of the Procurement of Electricity generated from Renewable Sources under the Feed-in Tariff Scheme 2022 – 2030 for new 88.66 MW.

• COD mega project in Japan "Onikoube" (133 MW) in May and divested it in December.



## 2024-Onwards

### Expanding New Investment Opportunities

**2024:**

- Expand Private PPA Projects to new industrial customers.
- PV panel replacement for solar farms and rooftops.
- Submission for the new bid of PDP plan Phase 2 & 3.
- The Board of Directors approved the expansion into the healthcare business.

• The Company Group has a total selling capacity of 241.86 MWppa.



# TSE'S PROJECTS

## TOTAL 41 PROJECTS AND CAPACITY 241.86 MWppa

### Solar PV Farms & Floating in TH

109 MWppa – 16 Farms  
8 MWppa – 1 Floating  
Total of 117 Mwppa- 17 Projects



### Solar PV Rooftops

14 MWppa – 14 Rooftops



### Biomass

22.2 MWppa – 3 Plants



### Awarded New PPA Solar PV Farms in TH

88.66 MWppa – 7 Farms





# โครงการในประเทศไทย

# 109 MW โซลาร์ฟาร์ม



ข้อมูล / จังหวัด	สุพรรณบุรี	กาญจนบุรี	อ่างทอง	ประจวบคีรีขันธ์	อยุธยา	กระบี่	นครสวรรค์
ดำเนินการโดย:	SSEI-PV02	SSEI-PV01	INS	SLC	BSS	Mars Solar	SCT
ที่ตั้งโครงการ:	ดอนเจดีย์	บอพลอย	อ่างทอง	บางสะพาน	บางไทร	คลองท่อม	นครสวรรค์
กำลังไฟฟ้าเสนอขาย:	8.0 MW	8.0 MW	2.0 MW	1.0 MW	5.0 MW	5.0 MW	8.0 MW
COD:	17 ก.ค. 2013	4 ก.ย. 2013	28 ธ.ค. 2015	29 ธ.ค. 2016	26 DEC 2016	27 DEC 2018	29 DEC 2015
ดำเนินการโดย:	SSEI-PV03	SSEI-PV06	SSP				
ที่ตั้งโครงการ:	หนองหญ้าไซ	Dan Makham Tia	Ang Thong				
กำลังไฟฟ้าเสนอขาย:	8.0 MW	8.0 MW	8.0 MW				
COD:	28 ต.ค. 2013	6 มิ.ย. 2014	29 มิ.ค. 2013				
ดำเนินการโดย:	SSEI-PV04	SSEI-PV07					
ที่ตั้งโครงการ:	เดิมบางนางบวช	Ta Muang					
กำลังไฟฟ้าเสนอขาย:	8.0 MW	8.0 MW					
COD:	21 พ.ย. 2013	20 มิ.ค. 2014					
ดำเนินการโดย:	SSEI-PV05	SSEI-PV08					
ที่ตั้งโครงการ:	เดิมบางนางบวช	Panom Tuan					
กำลังไฟฟ้าเสนอขาย:	8.0 MW	8.0 MW					
COD:	21 พ.ย. 2013	6 มิ.ย. 2014					
ดำเนินการโดย:	SSEI-PV09						
ที่ตั้งโครงการ:	อู่ทอง						
กำลังไฟฟ้าเสนอขาย:	8.0 MW						
COD:	9 เม.ย. 2014						
ดำเนินการโดย:	SSEI-PV10						
ที่ตั้งโครงการ:	สามชุก						
กำลังไฟฟ้าเสนอขาย:	8.0 MW						
COD:	30 เม.ย. 2014						







# โครงการในประเทศไทย

# 109 MW โซลาร์ฟาร์ม



SSE-PV01 (8 MW)  
COD SEP 2013



SSE-PV02 (8MW)  
COD JUL 2013



SSE-PV03(8MW)  
COD OCT 2013



SSE-PV04(8MW)  
COD NOV 2013



SSE-PV05(8MW)  
COD NOV 2013



SSE-PV06(8MW)  
COD JUN 2014



SSE-PV07(8MW)  
COD MAR 2014



SSE-PV08(8MW)  
COD JUN 2014



SSE-PV09(8MW)  
COD APR 2014



SSE-PV10(8MW)  
COD MAY 2014



INS (2MW)  
COD DEC 2015



SSP (8MW)  
COD MAR 2013



SLC(1MW)  
COD DEC 2016



BSS (5MW)  
COD DEC 2016



Mars (5MW)  
COD DEC 2018



SCT (8MW)  
COD DEC 2015





# โครงการในประเทศไทย

## 8 MW โซลาร์ฟาร์มบนน้ำ (Private PPA)



### ข้อมูลโครงการ

ดำเนินการโดย : บริษัท สยาม ธารา พลากติ่ง จำกัด

ที่ตั้งโครงการ: นิคมอุตสาหกรรมภินทรบุรี (KIZ)

กำลังไฟฟ้าเสนอขาย: 8 MW

COD: 25 พ.ค. 2021

รูปแบบสัญญา: Private PPA อายุสัญญา 25 ปี

คู่สัญญา: บริษัท อาร์เชลิก อิตาชี โอม แอปพลายแอนซ์ จำกัด





# โครงการในประเทศไทย

## 14 MW โซลาร์บนหลังคา



ข้อมูล / จังหวัด	กรุงเทพฯ	ภาคใต้	ภาคกลาง	ภาคตะวันออก	ภาคเหนือ
ดำเนินการโดย: ที่ตั้งโครงการ: กำลังไฟฟ้าเสนอขาย.: COD:	TSER-RT10 เอกมัย-รามอินทรา 1.0 MW ก.พ. 2015	TSER-RT04 ชุมพร 1.0 MW ก.ย. 2014	TSER-RT03 นครสวรรค์ 1.0 MW มี.ย. 2015	TSER-RT09 เขาใหญ่ 1.0 MW พ.ย. 2014	TSER-RT02 Phrae 1.0 MW ก.พ. 2015
ดำเนินการโดย: ที่ตั้งโครงการ: กำลังไฟฟ้าเสนอขาย.: COD:	TSER-RT11 ราชพฤกษ์ 1.0 MW พ.ย. 2014	TSER-RT05 สุราษฎร์ธานี 1.0 MW ธ.ค. 2014	TSER-RT01 ลพบุรี 1.0 MW ก.ย. 2014	TSER-RT08 อุบลราชธานี 1.0 MW มี.ค. 2015	
ดำเนินการโดย: ที่ตั้งโครงการ: กำลังไฟฟ้าเสนอขาย.: COD:	TSER-RT12 Thapra 1.0 MW ก.ค. 2015	TSER-RT06 นครศรีธรรมราช 1.0 MW ก.ค. 2015			
ดำเนินการโดย: ที่ตั้งโครงการ: กำลังไฟฟ้าเสนอขาย.: COD:	TSER-RT13 บางกะปิ 1.0 MW ก.ค. 2015	TSER-RT07 หาดใหญ่ 1.0 MW ต.ค. 2015			
ดำเนินการโดย: ที่ตั้งโครงการ: กำลังไฟฟ้าเสนอขาย.: COD:	TSER-RT14 จามวงศ์วาน 1.0 MW ส.ค. 2015				







# โครงการในประเทศไทย

## 14 MW โซลาร์บนหลังคา



RT-01 Lopburi  
COD SEP 2014



RT-02 Phrae  
COD FEB 2015



RT-03 NakornSawan  
COD JUN 2015



RT-04 Chumporn  
COD SEP 2014



RT-05 SuratThani  
COD DEC 2014



RT-06 Nakhon Si Thammarat  
COD JUL 2015



RT-07 HatYai  
COD OCT 2015



RT-08 Ubon Ratchathane  
COD MAR 2015



RT-09 KhaoYai  
COD NOV 2014



RT-10 Ekamai-Ramindra  
COD FEB 2015



RT-11 Ratchapruk  
COD NOV 2014



RT-12 Thapra  
COD JUL 2015



RT-13 Bangkok  
COD JUL 2015



RT-14 Ngamwongwan  
COD AUG 2015



# โครงการในประเทศไทย

22.2 MW โรงไฟฟ้าพลังงานชีวมวล



**BSW (4.6 MW)**



**OSW1 (8.8 MW)**



**OSW2 (8.8 MW)**

รายละเอียด / โครงการ

**BSW**

**OSW Project # 1 & 2**

ดำเนินการโดย: บริษัท บางสวรค์ กรีน จำกัด  
กำลังการผลิตติดตั้ง/เสนอขาย: 6.0 MWp/ 4.6 MWppa  
อายุสัญญา: 20 ปี  
ที่ตั้งโครงการ: สุราษฎร์ธานี  
COD: มีนาคม 2018

บริษัท ออสการ์ เซฟ เดอะ เวิร์ล จำกัด (โครงการ 1 & 2)  
19.8 MWp/ 17.6 MWppa  
15 ปี 4 เดือน  
นครศรีธรรมราช  
OSW1 – สิงหาคม 2018  
OSW2 – ตุลาคม 2018



# HIGHLIGHTS OF 3Q 2024



Thai Solar Energy Public Company Limited

# KEY ACTIVITIES IN 3Q 2024

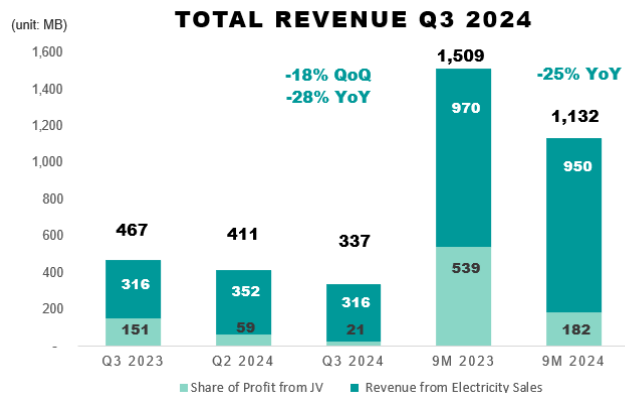


# INCOME STATEMENT

Unit: MB

<b>TSE - Consolidated</b>	<b>Q3/2024</b>	<b>Q3/2023</b>	<b>Δ (%)</b>	<b>9M/2024</b>	<b>9M/2023</b>	<b>Δ (%)</b>
Total revenue	316	316	0%	950	970	-2%
COGS	(144)	(144)	0%	(408)	(430)	-5%
<b>Gross Profit</b>	<b>172</b>	<b>172</b>	<b>0%</b>	<b>542</b>	<b>540</b>	<b>0%</b>
SG&A	(33)	(39)	-15%	(89)	(223)	-60%
<b>Operating Profit</b>	<b>139</b>	<b>133</b>	<b>4%</b>	<b>453</b>	<b>317</b>	<b>43%</b>
Share of profit from investment in joint venture	21	151	-86%	182	539	-66%
Other gains (losses)	49	(39)	-225%	64	61	5%
<b>EBITDA</b>	<b>209</b>	<b>245</b>	<b>-15%</b>	<b>699</b>	<b>917</b>	<b>-24%</b>
Depreciation & Amortization	(79)	(82)	-4%	(237)	(244)	-3%
<b>EBIT</b>	<b>130</b>	<b>163</b>	<b>-20%</b>	<b>462</b>	<b>673</b>	<b>-31%</b>
Finance costs	(59)	(99)	-40%	(199)	(285)	-30%
<b>EBT</b>	<b>71</b>	<b>64</b>	<b>11%</b>	<b>263</b>	<b>388</b>	<b>-32%</b>
Income tax (expenses)	1	2	-63%	(8)	(1)	700%
<b>Net profit from Continuing Operation for period</b>	<b>72</b>	<b>66</b>	<b>9%</b>	<b>255</b>	<b>387</b>	<b>-34%</b>
<b>Net profit from Discontinued Operation for period</b>	<b>-</b>	<b>55</b>	<b>-100%</b>	<b>-</b>	<b>119</b>	<b>-100%</b>
<b>Net Profit for the period</b>	<b>72</b>	<b>121</b>	<b>-40%</b>	<b>255</b>	<b>506</b>	<b>-50%</b>

# TOTAL REVENUE AND EBITDA OF 3Q 2024

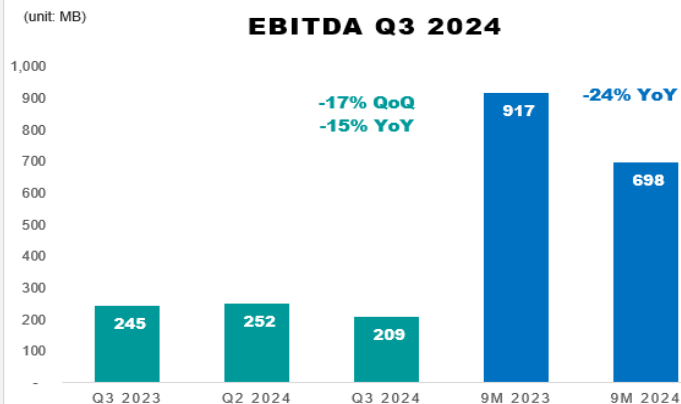


## TOTAL REVENUE AND SHARE OF PROFIT FROM JV

Total revenue including the share of profit from the JV, for the 3-month period of Q3 2024 was 337 MB., a decrease of 18% QoQ and 28% YoY. For the 9-month period of Q3 2024, total revenue including the share of profit from the JV, was 1,132 MB, reflecting a 25% decrease YoY.

The primary reason is a decrease in profit share from the joint venture due to the reduction in the Adder, which began phasing out in 2023.

However, the Company has initiated the replacement of solar panels to enhance efficiency and increase electricity output. Additionally, the Group is actively bidding for new projects to generate income and enhance profitability.



## EBITDA

EBITDA, for the 3-month period of Q3 2024 was 209 MB. reflecting a decrease of 17% QoQ and 15% YoY. For the 9-month period, EBITDA totaled 698 MB., a decrease of 24% YoY.

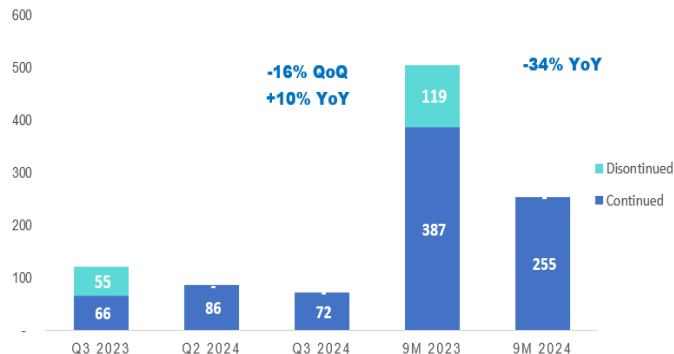
This decline is due to the gradual expiration of the Adder income contract for the electricity purchase price and the adjustment of the variable electricity price (Ft) as announced by the Energy Regulatory Commission (ERC).



# NET PROFIT AND EPS OF 3Q 2024

(unit: MB)

## NET PROFIT Q3 2024



## NET PROFIT

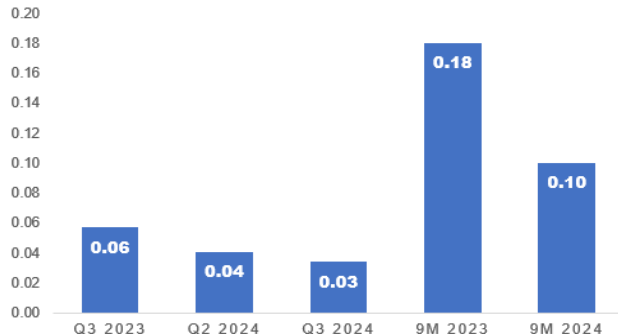
The Group's net profit for the 3-month period of 2024 was 72 MB., reflecting a decrease of 16% QoQ and 40% YoY. However, there was a profit of 55 MB. from discontinued operations in Q3 2023. As a result, the YoY net profit shows an increase of 10%.

For the 9-month period, the net profit was 255 MB., a decrease of 50% YoY. However, There was also a profit of 119 million THB from discontinued operations in Q3 2023. Therefore, the YoY net profit shows a decrease of 34% compared to the same period last year.

This decrease is primarily due to the share of profit from the investment in a JV. Despite this, the production efficiency of the power plants has continued to operate consistently and effectively.

(unit: Baht/share)

## EPS Q3 2024

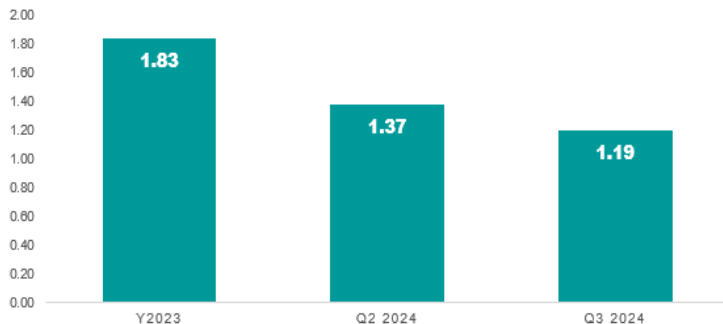


## EPS

EPS for 3-month period amounting of 0.03 Baht per share and 9-month period of Q3 2024 amounting of 0.10 Baht per share respectively, which decreased from last year because of net profit reduction from the company's revenue and share of profit from JV was decreased.

# D/E RATIO AND ROE OF 3Q 2024

(unit: time) **D/E RATIO Q3 2024**

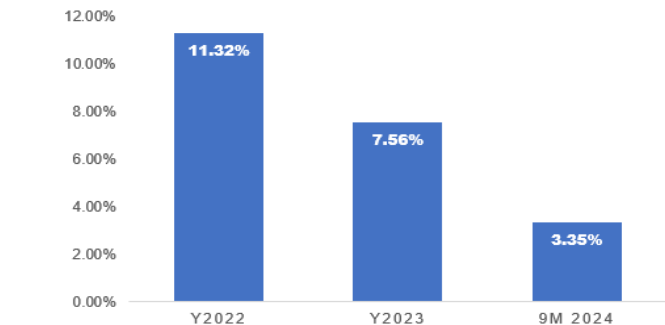


## D/E RATIO

The D/E ratio at the end of Q3 2024 decreased to 1.19 times, a reduction of 13% compared to Q2 2024, and 35% compared to 1.83 times at the end of 2023.

This reduction in the D/E ratio is due to the successful early redemption of debentures and long-term loans from financial institutions. With this improved financial position, the Group is well-positioned to secure funding from financial institutions.

(unit: percent) **ROE**



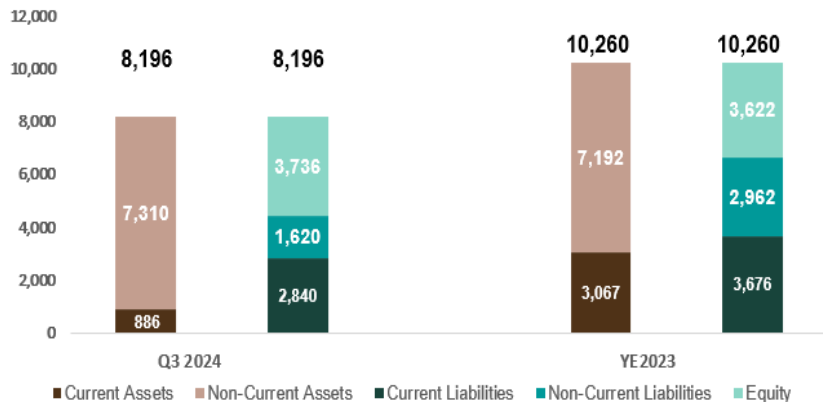
## ROE

ROE in 9M 2024 decreased to 3.35 % compared to YE 2023 and YE2022, primarily due to the reduction in net profit, which was mainly affected by adjustments to the Adder and Ft rates.

Note: - Equity is average equity attributable to owners of the parent  
- ROE is annualized ROE

# FINANCIAL POSITION 9M 2024

(Unit: MB)



FINANCIAL POSITION	YE2023	9M2024	+/- (%)
Assets	10,260	8,196	-20%
Liabilities	6,638	4,460	-33%
Equities*	3,622	3,736	+3%

Note: \*Average Equity attributable to owners of the parent

## **TOTAL ASSETS -20%**

TSE's total assets were 8,196 MB., a decrease of 2,064 MB from 10,260 MB. or 20% compared to YE2023, primarily due to a reduction in cash and cash equivalents for the repayment of debentures and long-term loans.

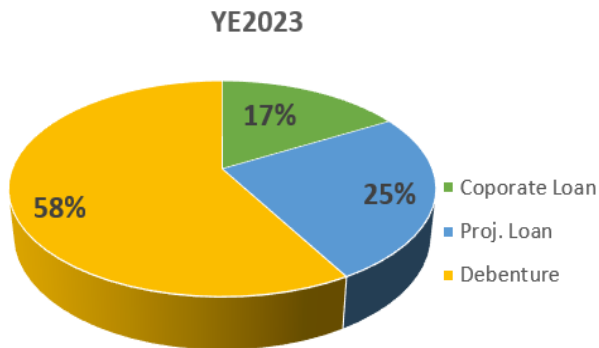
## **TOTAL LIABILITIES -33%**

The Group's total liabilities amounted to THB 4,460 million, a decrease of 2,179 MB. from 6,638 MB., or 33% from YE2023, primarily due to the repayment of debentures and long-term loans.

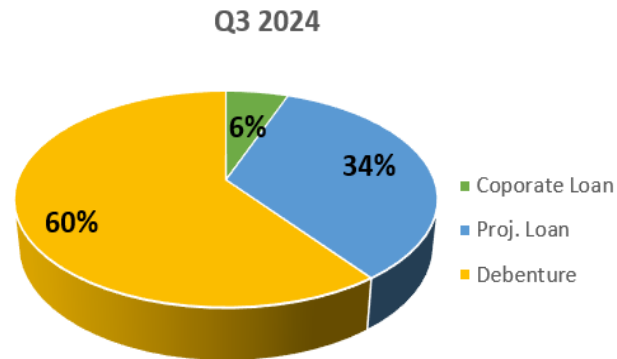
## **EQUITY +3%**

The Group's equity increased to 3,736 MB. from 3,622 MB. or 3%, from the YE2023. This positive growth highlights the Group's strong operating performance.

# INTEREST BEARING DEBT OF Y2023 & Q3 2024



**TOTAL 6,073 MB**



**TOTAL 3,944 MB**

## **INTEREST BEARING DEBT**

Most of the group's Interest bearing debt (IBD) was from **debenture**, and the proportion of debenture to IBD of 2Q2024 **increasing by 2%** from 58% at YE2023 to 60%, Because of a decrease of project finance loan from Onikoube Project divestment.

The remaining of interest bearing debt was from **project finance loan** and **corporate loan**, and the proportion to IBD of 3Q2024 **decreasing by 2%** from 42% at YE2023 to 40%. Because of a decrease of debenture.

The ratio of interest-bearing debt to equity was 1.06 times in Q3/2024, **decreasing** from 1.68 times at YE2023, reflecting the decrease in corporate loans and debentures.



# BUSINESS OUTLOOK

Summary of TSE's Business Plan



Thai Solar Energy Public Company Limited

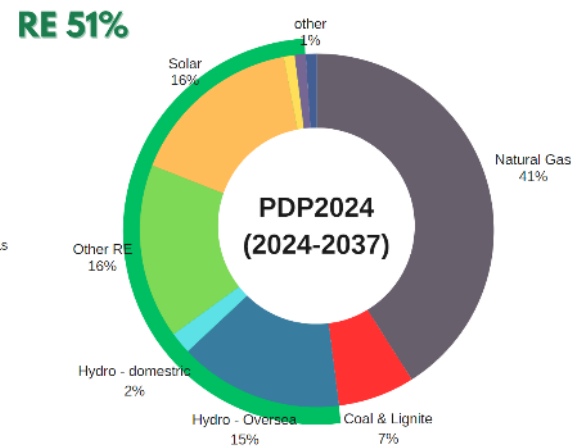
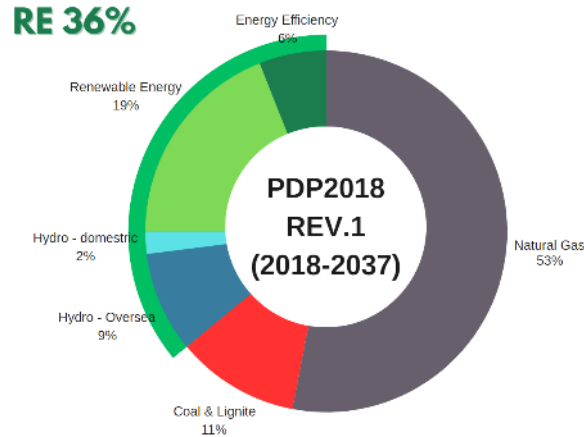
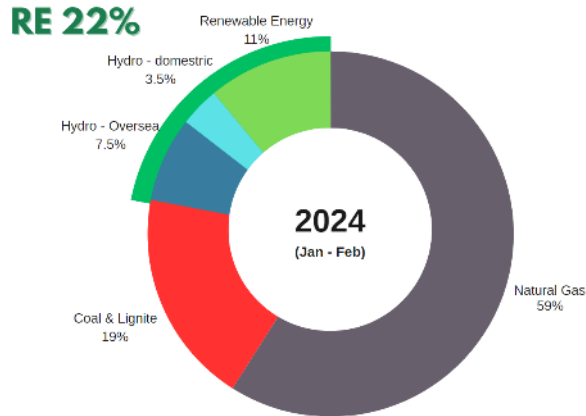
The background of the slide is a photograph of a large-scale solar farm. Rows of blue photovoltaic solar panels are mounted on metal frames and tilted towards the sun. The panels are arranged in neat, parallel lines across a grassy field. In the distance, there are rolling green hills under a clear, bright blue sky. A small white building, likely a part of the solar farm's infrastructure, is visible in the middle ground on the right side.

# **TRENDS & OPPORTUNITIES**

# TRENDS & OPPORTUNITIES OF RENEWABLE ENERGY IN THAILAND

## Pathway to Thailand's new PDP2024

The Energy Policy and Planning Office (EPPO) of the Ministry of Energy has announced a public hearing for PDP2024 and AEDP2024, scheduled from June 19 to 23, 2024. According to the draft PDP2024, the plan aims to increase the proportion of renewable and alternative energy to 50% by 2037, up from the 30% target set in PDP2018 Rev.1.



Note 1) Ref. Draft PDP2024 by The Energy Policy and Planning Office (EPPO) of the Ministry of Energy

# TRENDS & OPPORTUNITIES OF RENEWABLE ENERGY IN THAILAND

## The Promotion of Renewable Energy under AEDP2018 – Electricity Sector

In 2022-2023, ERC had released regulation to procure Electricity from Renewable Energy using Feed-in-Tariff (FiT) Scheme for 2024-2030. The total capacity is equal to 8,871 MW, which split into 2 phases as following:

Phase 1 - SCOD	2024	2025	2026	2027	2028	2029	2030	Total
<b>Solar Energy</b>								
Solar Farm	190	290	258	440	490	310	390	2,368
Solar Farm + BESS	100	100	100	100	200	200	200	1,000
<b>Wind Energy</b>		250	250	250	250	250	250	1,500
<b>Biogas Energy</b>			75	75	75	70	40	335
<b>Grand Total</b>	<b>290</b>	<b>640</b>	<b>683</b>	<b>865</b>	<b>1,015</b>	<b>830</b>	<b>880</b>	<b>5,203</b>

**Phase 1: 5,203 MW**

Status: **Completed**

**TSE acquired 88 MWppa under New FiT Scheme (Phase 1)**

Phase 2 - SCOD	2024	2025	2026	2027	2028	2029	2030	Total
<b>Solar Energy</b>								
Solar Farm			232	200	600	800	800	2,632
Wind Energy					200	400	400	1,000
<b>Biogas Energy</b>			7					7
<b>Industrial Waste</b>			30					30
<b>Grand Total</b>			<b>269</b>	<b>200</b>	<b>800</b>	<b>1,200</b>	<b>1,200</b>	<b>3,669</b>

**Phase 2: 3,669 MW**

Status: **Tentative**

**Targeting to get additional 100-150 MWppa under Phase 2 and 50-100 MWppa under Phase 3**

**Note:**

- The projects that were not selected in Phase 1 will be confirmed for participation in Phase 2.
- New projects will be submitted under Phase 3.

# BUSINESS PLAN : GROWTH & INVESTMENT

## TSE'S 3-YEARS INVESTMENT PLAN (FY2024-2026)

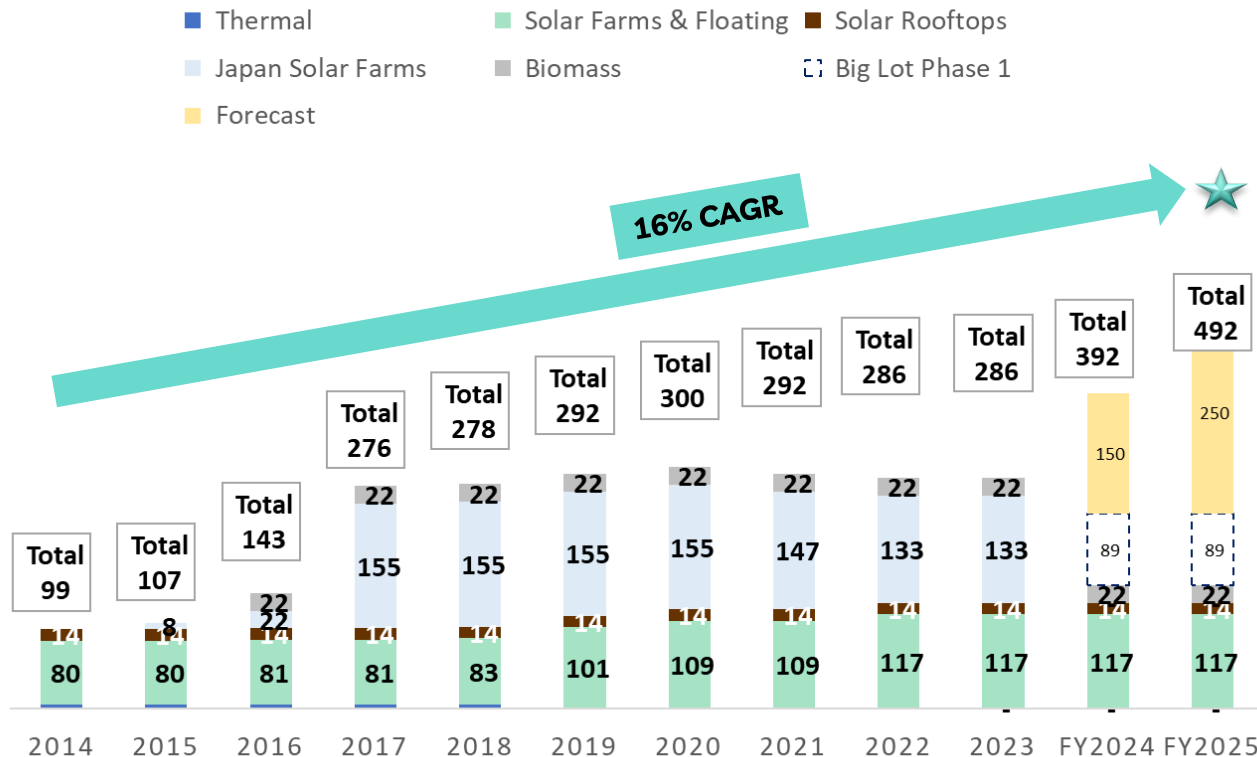




# BUSINESS PLAN : GROWTH & INVESTMENT

## CAPACITY GROWTH

### ACQUIRE CAPACITY (MW PPA)



# Q&A



Thai Solar Energy Public Company Limited

# THANK YOU

## Investor Relations



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