

# The Leading Solar Farm and Solar Roof Developer in ASEAN







**SPCG Public Company Limited Operating Results of Q3/2015** 

Opportunity Day, 20 Nov 2015 @ Meeting room 1-2, 5th Flr. Siam Paragon

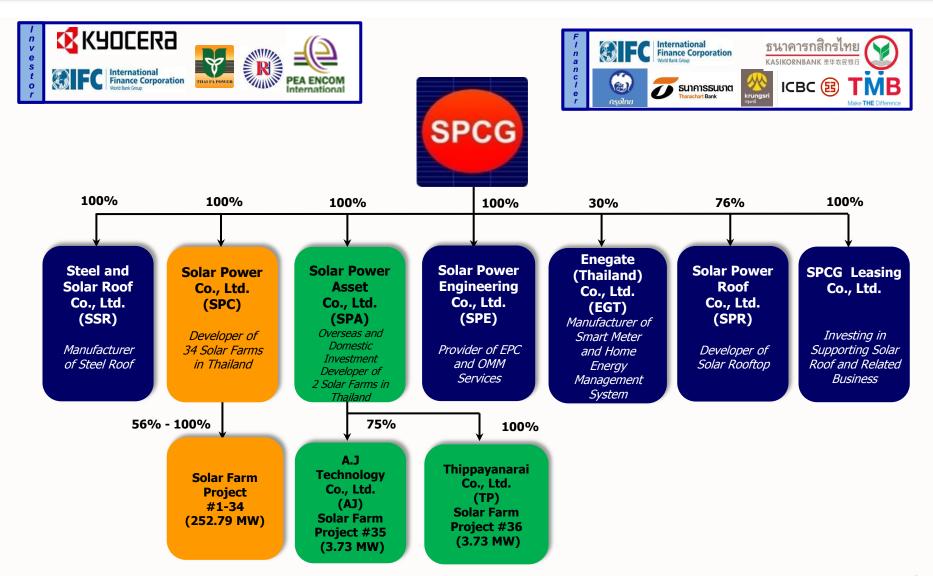


## Agenda





## **Business Overview**





## **Business Overview**



#### Solar Farm

- SPCG invests and develops 36 solar farms, which are considered the largest in ASEAN with total 260 MW PPAs by THB 8 adder on top of base tariff and Ft.
- The Company achieved COD of 36 solar farms



#### Solar Rooftop

SPR, a subsidiary of SPCG, provides full services for distribution and installation of solar roof systems
including design and installation, supply and distribution of materials, and advice on effective management
in energy-saving and safety by focusing on residence, industry and real estate project

SPCG established SPCG Leasing Co., Ltd ) in order to be a supporter in solar roof business and related business



#### EPC and O&MM

- SPCG provides Engineering, Procurement and Construction (EPC) and Operation, Maintenance and Monitoring (O&MM) services for all of its solar farms through Solar Power Co., Ltd. (SPC), a wholly owned subsidiary
- The Company expands EPC and O&MM services to external clients, both domestically and internationally through Solar Power Engineering Co., Ltd. (SPE), a wholly owned subsidiary



#### Steel Roofing

 Steel and Solar Roof Co., Ltd. (SSR) provides manufacturing, distribution and installation services for steel or metal roofing sheets.



## **Business Overview**

#### 2011 2015 Successful M&A with STEEL (listed in · Investment in the MAI) Japan 30 MW Changed the Company's name from **Issue Debenture in** "STEEL" to "SPCG" Dec up to THB **Completion and COD of additional 4** 12,500 million solar farms Set up Solar Power Engineering with the goal of providing EPC and OMM 2013 services to outside customers Included in SET100 COD of 14 solar farms Launched solar rooftop 2010 operated by Solar Power · Obtained additional 28 Roof (SPR) PPA licenses from PEA Completion and COD of the first and largest Long term growth commercial solar farm in Thailand • To capture new capacity through acquisition of new 2009 **PPAs** Obtained 6 • To become a leading full 2014 range EPC & OMM PPA licenses from PEA provider for both domestic · Capital increase to and international THB 923.99 million 2012 customers Bond Issued Successfully PO in 1Q2012 with To be a leader in THB 4,000 million transaction size of THB1,260 mm **Solar Rooftop Completion and COD of**

#### 2007

The 1st Adder Policy for 8 THB/7 years announced

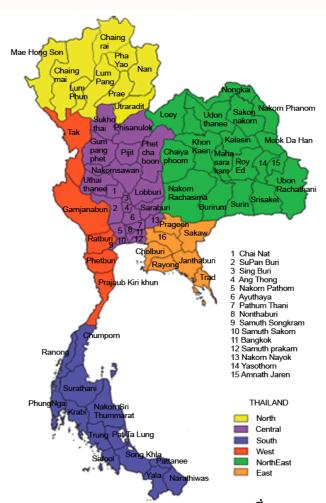
#### 2008

The 2<sup>nd</sup> Adder Policy for 8 THB/10 years has announced

- additional 4 solar farms
- Move from the MAI to the SET
- Begin a plan to set up IFF
- JV with ENEGATE (Japan) and Thai Aichi Denki
- Obtained 2 PPA'S subsidiaries from SPA namely AJ and TP)
- Completed COD of all solar farms with total installed capacity 260 MW



## **Thailand Energy Situation**



#### 77 Provinces\*

Population as of Nov, 2015 **65,185,656 persons\*** 

# **Generating Electricity Capacity as of 2014**

 Total
 37,612MW\*\*

 • EGAT
 41.20%

 • IPP
 35.00%

 • SPP
 12.00%

 • VSPP
 5.40%

 • Overseas
 6.40%

 Total
 100.00%

ที่มา:

<sup>\*</sup>สถาบันวิจัยประชากรและสังคม มหาวิทยาลัยมหิดล , Nov 13, 2015. www.thailandometers.mahidol.ac.th

<sup>\*\*</sup>กระทรวงพลังงาน. Jun 30, 2015. PDP 2015



# **Power Development Plan (PDP) 2015**

# <u>แผนพัฒนากำลังผลิตไฟฟ้าของประเทศไทย (PDP2015)</u>

#### กำลังผลิตไฟฟ้าในช่วงปี 2558 - 2579

- กำลังผลิตไฟฟ้า ณ ธันวาคม 2557
- กำลังผลิตไฟฟ้าใหม่ ในช่วงปี 2558 2579
- กำลังผลิตไฟฟ้าที่ปลดออกจากระบบ ในช่วงปี 2558 2579
- รวมกำลังผลิตไฟฟ้าทั้งสิ้น ณ สิ้นปี 2579

37,612	เมกะวัตต์
57,459	เมกะวัตต์
-24,736	เมกะวัตต์
70,335	เมกะวัตต์

ที่มา: กระทรวงพลังงาน (PDP 2015)



# **Power Development Plan (PDP) 2015**

## แผนพัฒนาพลังงานทดแทนและพลังงานทางเลือก (AEDP) ปี 2579

ตารางที่ 3 /	บ ยาย เหมือน เ	าพลังงางท	ดแทนและพลังงานท	างเลือก (	AFDD) वी	2570		1020000
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ปี	แสงอาทิตย์	พลังลม	พลังน้ำ	ขยะ	ชีวมวล	ก๊าซ ชีวภาพ	พืช พลังงาน	รวม
2557	1,298.5	224.5	3,048.4	65.7	2,541.8	311.5	-	7,490.4 1/
2579	6,000.0	3,002.0	3,282.4	500.0	5,570.0	600.0	680.0	19,634.4

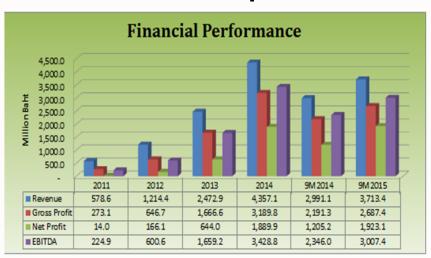
<u>หมายเหตุ</u> : <u>1</u>/ กำลังผลิตติดตั้ง

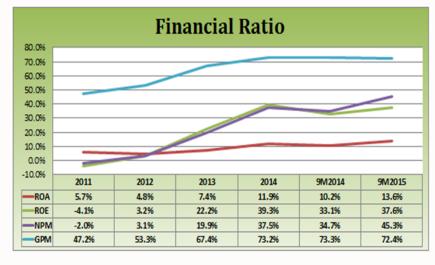
ที่มา: กระทรวงพลังงาน (PDP 2015)

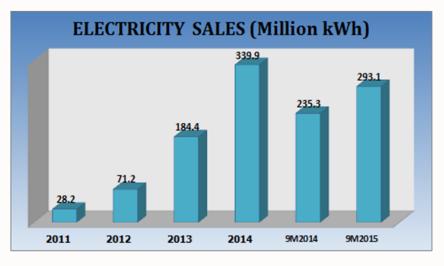


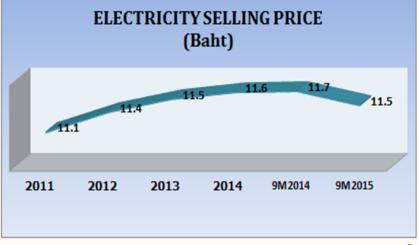
## **Financial Highlights**

### For the nine-month period ended 30 Sep 2015



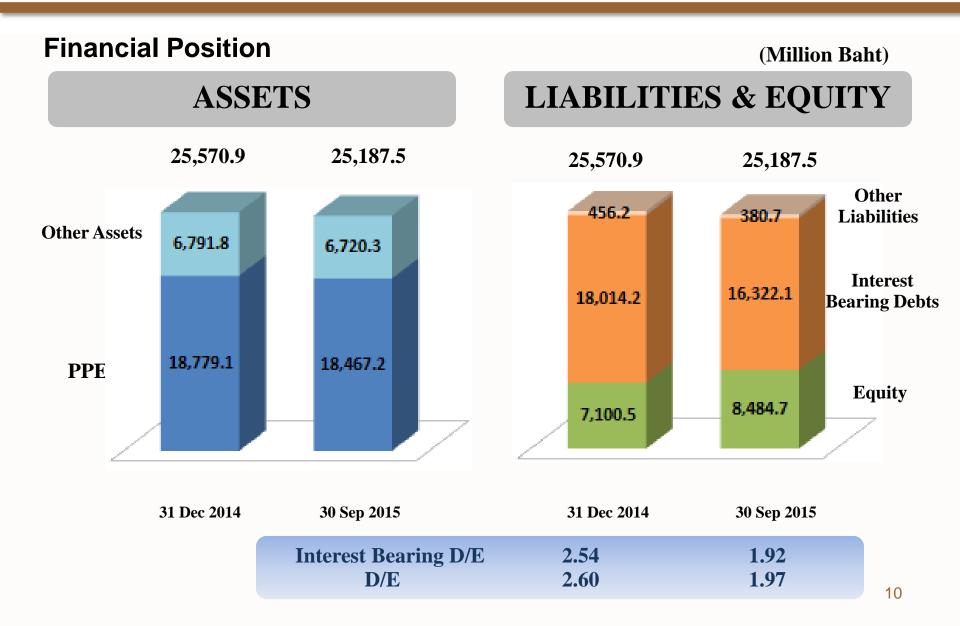








# **Financial Highlights**



# **Financial Highlights**

# **TRIS** Rating announcement

	New announcement	Rating history
Company Rating	A-	A-
Issue Ratings		
- SPCG196A: Bt4,000 million guaranteed and amortizing debentures due within 2019	A-	BBB+
- Up to Bt13,000 million senior unsecured debentures due within 2023	A-	-
Rating outlook	Stable	Stable

Source: http://www.trisrating.com/en/spcg-plc/3937-spcg111115.html



## **Potential Business**

# <u>Solar Farm Investments - both locally and internationally</u>

- SPCG is well positioned to expand our solar farm business:
  - Locally through new PPAs and acquisition of existing PPAs.
  - Internationally (i.e. Myanmar).
- Japan: Opportunity to invest in solar farms in Japan through our strong partnership with Kyocera.
- Myanmar: Opportunity to invest with IFC



#### **EPC Business**

Participate in the government's community solar farm and solar roof projects such as community solar farms.

#### Solar Roof: SPR & SSR

- SPR and SSR an expert in industrial roofs are working very closely to grow and to become the leader of solar rooftop business in Thailand.
- Potential to win bidding on government project on solar rooftop
- Opportunity on energy shortage and increase in electricity price
- Reduce carbon dioxide emissions



## **Potential Business**





## **About SPR**



- Solar Power Roof Company Limited (SPR) is a subsidiary company of SPCG
   Public Company Limited (SPCG).
- SPR has Registered Capital of 400 million Baht.
- SPR is in exclusive partnership with Kyocera Corporation.
- SPR offers one-stop service since survey, design, consultation, installation, after-sale service, monitoring, and documentation work with government authority, in addition of financial support to customer.
- SPR has 3 main segment:
  - Residential
  - Commercial and Industrial
  - Special (Government and Others)





# Selling tools



- Solar PV Module Price Reduction (ROI ≅< 8 years)</li>
- Low LCOE (Levelized Cost of Energy)
- BOI Incentive
- Energy Output Guarantee
- Monitoring Service
- SPCG Leasing









## Reference



## **Residential**

263 households 1.06 MW







## Commercial & Industrial

38 sites

4.37 MW





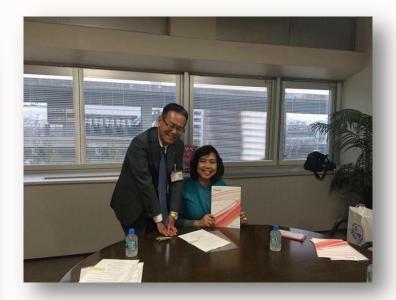




# **Tottori Yanago Project**

โครงการโรงไฟฟ้าพลังงานแสงอาทิตย์ Tottori Yanago Project ประเทศญี่ปุ่น กำลัง การผลิตรวม 30 เมกกะวัตต์

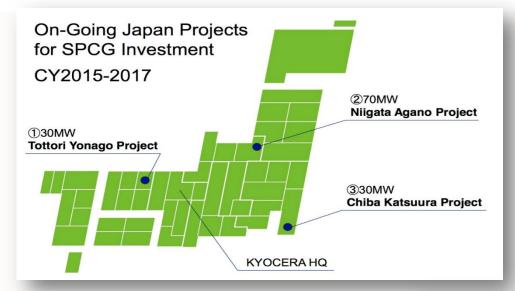








# **Tottori Yanago Project**







# **Tottori Yanago Project**















# Q & A Thank you for your attention





Contact: ir@spcg.co.th Website: www.spcg.co.th



# **Appendix**





# **Solar Power (Korat 1-2)**







# **Solar Power (Korat 1)**







# **Solar Power (Korat 5)**







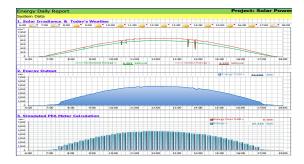
## **Monitoring System**



# Monitoring Energy Production (kWh) & Performance Ratio (PR)

- Daily
- Monthly
- Annually

#### **Energy Report**



#### **Weather Station**

- Solar irradiation
- Wind velocity
- Ambient and module temperature







## ศูนย์เรียนรู้โซถาฟาร์ม

## (Solar Farm Education Center)







## **Solar Farm Business**

#### **High Quality Technologies**

### Kyocera's PV module(25 years guarantee)

- Proven track record
- Low degradation in its PV module
- Large & strong PV module supplier

#### SMA's String Inverter

- String inverter minimizes energy loss & takes less time to replace
- SMA is the leading supplier for string inverters







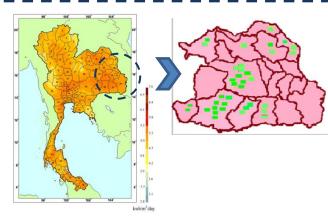




#### **Highly Experienced Team**

- Lead by capable management with 30 years of experience
- Capable engineering team that completed the most numbers of solar farm projects in Thailand
- Solid experience in operating solar farms





#### **Warranties and Insurances**

- Construction insurance to cover construction risk
- All-risk insurance for ongoing operation
- PV module degradation warranty from Kyocera
- Inverter warranty from SMA



#### **High Potential Lands in the Northeastern**

- High solar radiation
- Low flooding risk due to high terrain
- I Reasonable land prices
- 70% of lands located near the high-way
- Ownership of all lands (around 2,000 acres)