

Toward a Sustainable and Affordable Energy in ASEAN

By

Nitus Voraphonpiput, Ph.D.

Director, Generation and Transmission System Planning Division

Goal 7:

Ensure access to affordable, reliable, sustainable and modern energy for all.



7.A enhance international cooperation to facilitate access to clean energy research and technology, including **renewable energy, energy efficiency and advanced and cleaner fossil-fuel technology**, and **promote investment in energy infrastructure and clean energy technology**

7.B expand infrastructure and upgrade technology for supplying modern and sustainable energy services for all in developing countries, in particular least developed countries, small island developing States, and land-locked developing countries, in accordance with their respective programmes of support.

Goal 7 Targets by 2030

7.1 ensure universal access to affordable, reliable and modern energy services

7.2 increase substantially the share of renewable energy in the global energy mix

7.3 double the global rate of improvement in energy efficiency

EGAT's Multipurpose Dam

9 Dams

30% of Water Surface Area

43.6 km²

Capacity of Floating Solar Power Plant

2,725 MW

During 2018-2037 (PDP 2018)



1st Project

Capacity **45 MW**

Water Surface Area **0.72 sq.km.**

Capacity Factor **18.74 %**

Commercial Operation Date **2020**

2nd Project

Contracted Capacity **24 MW**

Water Surface Area **0.04 sq.km.**

Capacity Factor **18.59%**

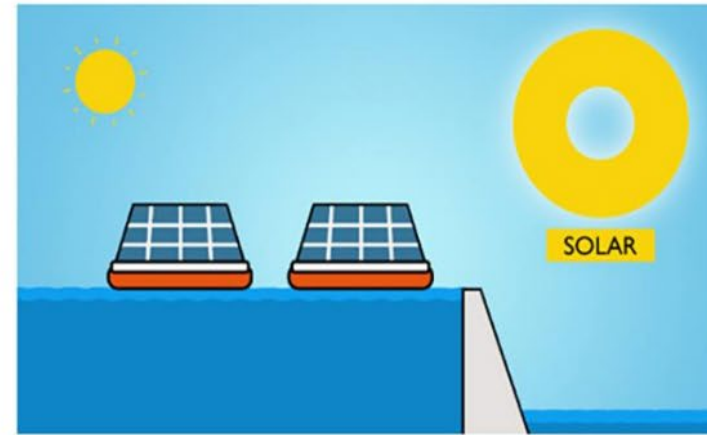
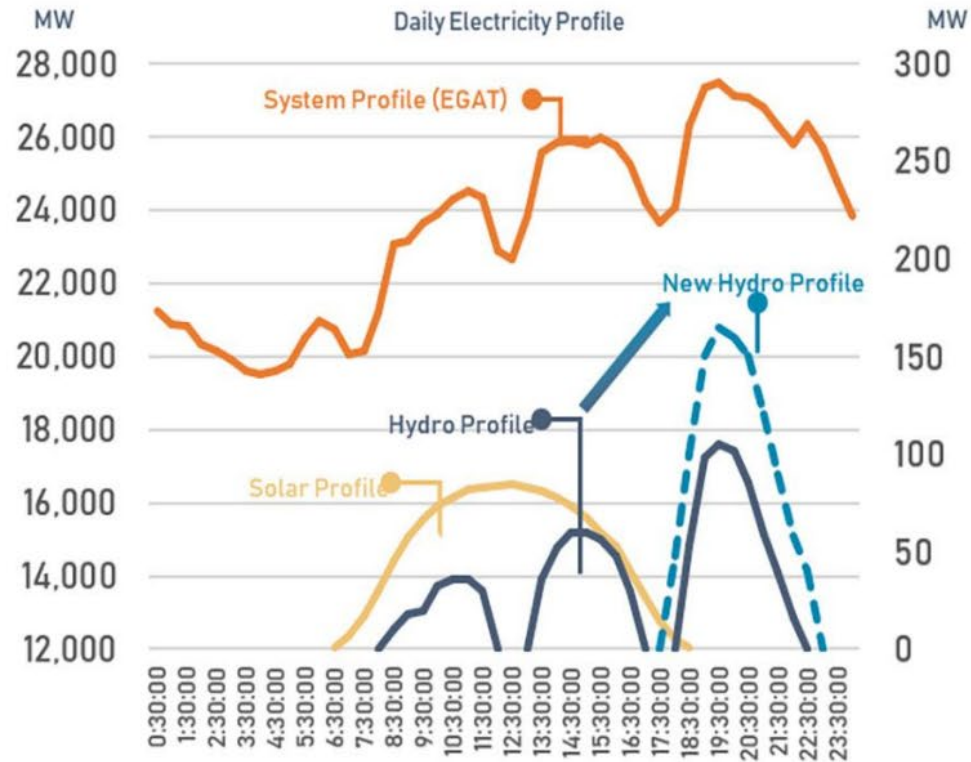
Commercial Operation Date **2023**

Main Features:

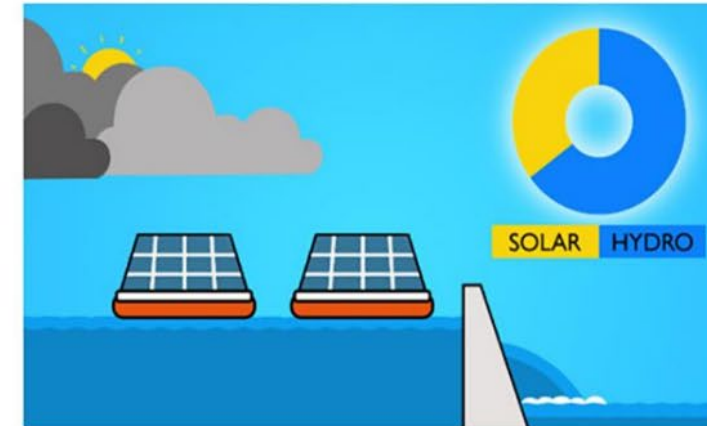
Hydro-Floating Solar Hybrid Project

- Generate solar power at day time
- Reserve hydro power at night time

Load Profile and Energy Management



Full Irradiance

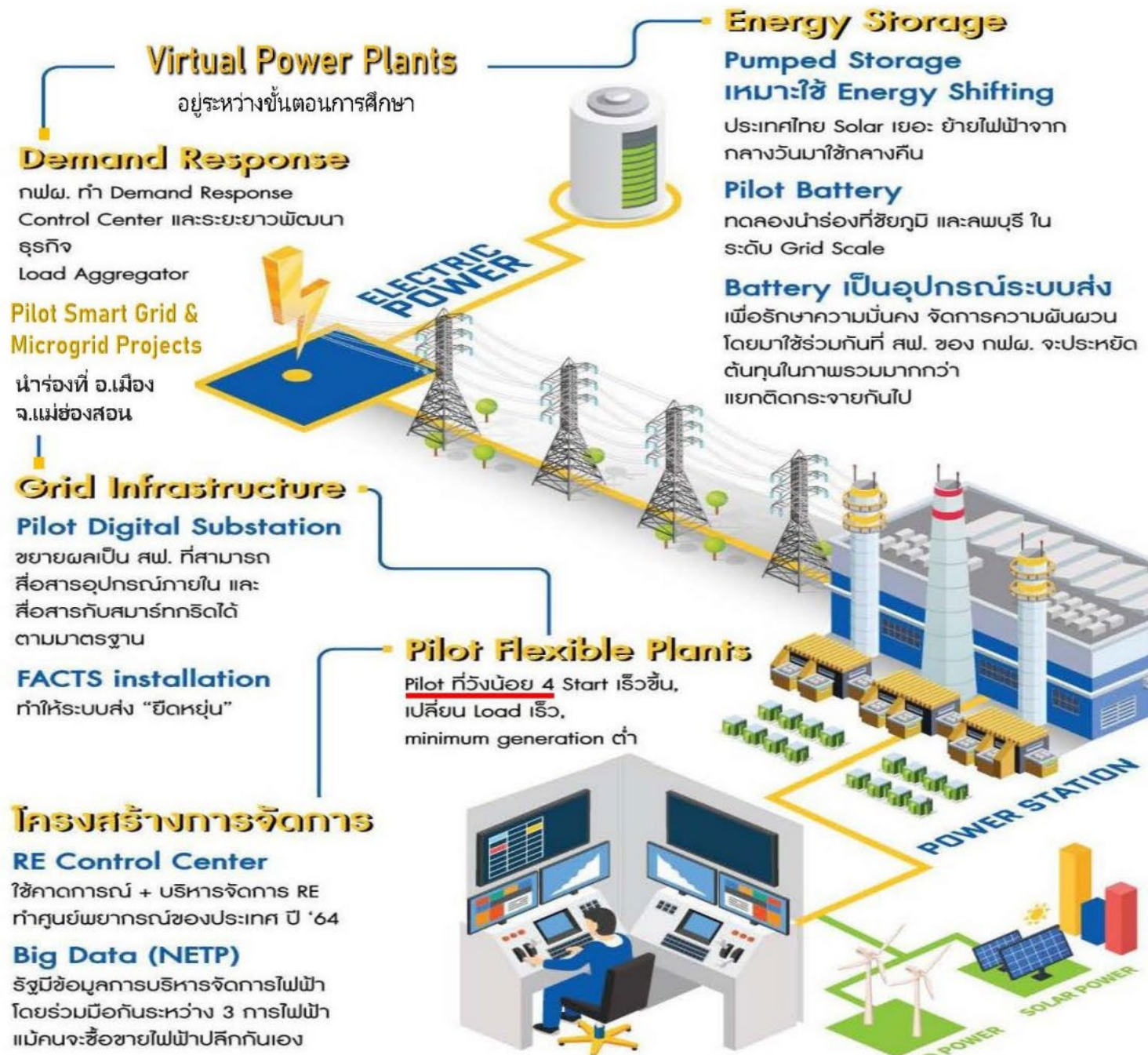


Some Irradiance



No Irradiance

Grid modernization to accommodate with RE



แผนการดำเนินงาน

- Flexibility Plant
- EGAT's Grid-Scale BESS
- RE Control Center
- DR Control Center
- EGAT's Smart Grid
- EGAT's Microgrid
- Digital Substation (IEC61850)
- National Energy Trading Platform
- Virtual Power Plants

2559 | 2562 | 2565 | 2570

2562-2563 (2 ปี)

2559-2563 (5 ปี)

2561-2564 (4 ปี)

2561-2564 (4 ปี)

2563-2565 (3 ปี)

2559-2566 (8 ปี)

2560-2564 (5 ปี)

2561-2565 (5 ปี)

อยู่ระหว่างขั้นตอนการศึกษา

REGIONAL GRID CONNECTIVITY

Infrastructure

To serve as the hub for regional electricity transmission, the 500 kV power grid is connected from the north to the south and from the east to the west.

- **East-west corridor**
Being connected from the east to the west borders
- **500 kV cross-country**
Supporting Thailand as the hub for regional electricity transmission

Regional power market

RPTCC

Regional Power Trade Coordination Committee
EGAT is ready to be the center for GMS regional power trade hub.

Regional Power Trading Hub

EGAT is ready to be the center for ASEAN Power Pool.



Strategic multilateral connectivity

● LTM+S

Lao PDR - Thailand - Malaysia + Singapore
At the beginning, Thailand is the power transmitter from Lao PDR to Malaysia via existing transmission system and now is ready to expand the cooperation to 300 MW and to Singapore.

ACMECS

**Aeyawadee-Chaopraya-Mekong
Economic Cooperation Strategy**

● LTMM

Lao PDR - Thailand - Myanmar
Being the power transmitter from Lao PDR to Myanmar

● Cambodia

Supporting the neighboring country's high growth demand with power

● GMS

Greater Mekong Subregion
Connection between
Lower Mekong Countries and China

● BIMSTEC

**Bay of Bengal Initiative for Multisectoral
Technical and Economic Cooperation**
Electrical connection between
South Asia and ASEAN

“to utilize the RE resources and Grid connectivity,
aimed for electricity cost reduction toward the whole region”
An Opportunity