



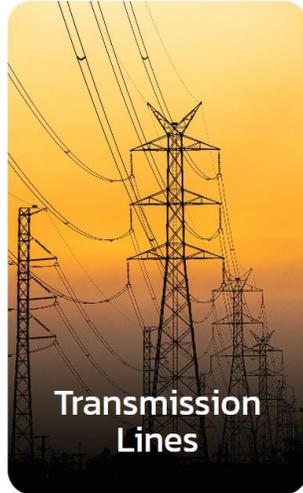
The Ongoing Renewable Energy Projects in Thailand

“Energy Transition and Sustainability in Thailand:
Opportunities for the French Companies”

23rd November 2022



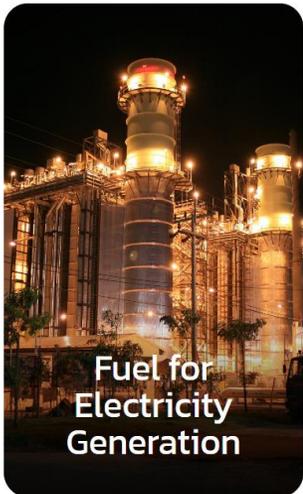
Power Plants
& Dams



Transmission
Lines



Renewables



Fuel for
Electricity
Generation



About EGAT



Core Business



Electricity Generation



Electricity is generated from EGAT power plants countrywide. With a total contract capacity of 15,520.3 MW consist of

Natural Gas	8,852.0	MW
Lignite	2,220.0	MW
Hydro	2,972.4	MW
PSH	1,000.0	MW
Oil & Diesel	345.4	MW
Other RE	130.5	MW

Electricity Purchase



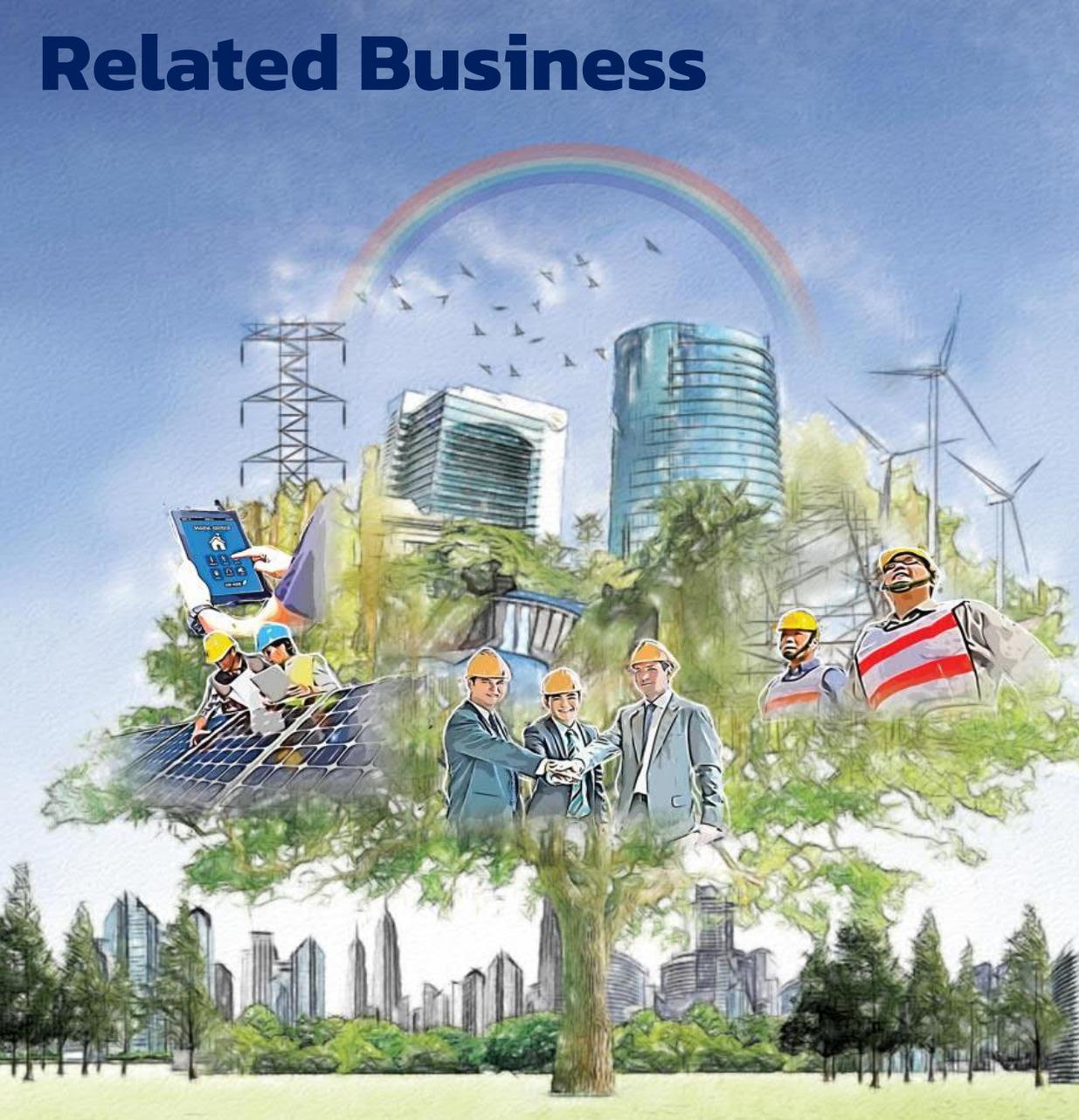
IPP	16,123.50	MW
SPP	9,480.95	MW
Import Power	5,720.60	MW

Electricity Transmission



EGAT owns and operate grid network covering all parts of the country, ranging from 500 kV 230 kV 132 kV 115 kV and 69 kV

Related Business



Engineering & Construction of power plants and transmission systems Business

Power Plant Operation and Maintenance Business

Transmission System Maintenance Business



By-Product Business
(Fly/Bottom ash waste and Gypsum)



Telecommunications Business

1

Electricity Generating Authority of Thailand (EGAT)

- Secure the power reliability and enhance competitiveness of the nation through innovation for Thai happiness



EGAT International Company Limited (EGATi)

2

- Overseas investment opportunity in electricity business and EGAT related businesses

EGAT Diamond Service Company Limited (EDS)

3

- Refurbishment work for the hot gas path parts of gas turbine (45%)



RATCH Group

Public Company Limited (RATCH) (45%)



4

- Investing, developing and joining with allies in both in Thailand and overseas
- Electricity business, Infrastructure system and Related Business

INNOPOWER (40%)

INNOPOWER Company Limited

5

- Develop and make commercial use of the research and innovations as well as investment in future energy New S-Curve

Startup Ecosystem Development

InnoSpace (13.61%)

- Promote and develop Thai startups to pioneer in mobilizing economic development of the country

Electricity Generating Public Company Limited (EGCO)

7



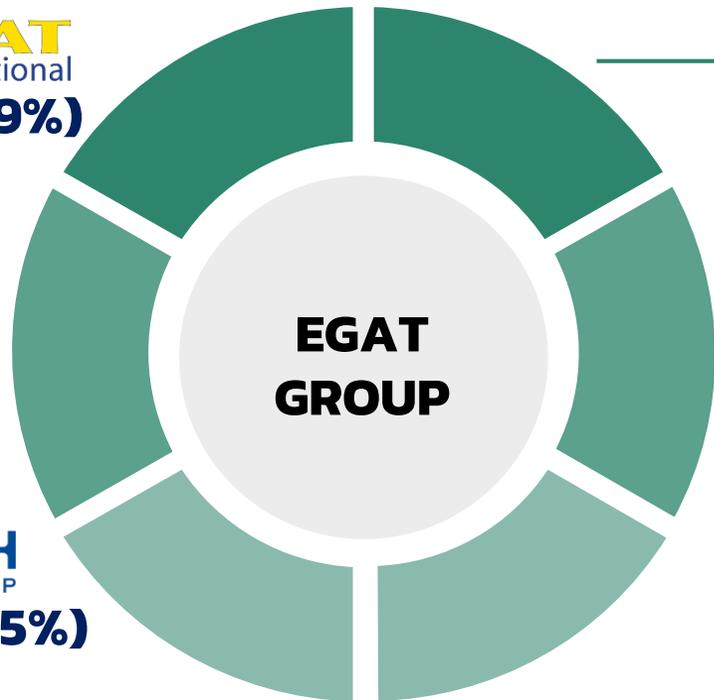
- Focuses mainly on electricity business (from different kinds of fuels) in Thailand and abroad
- Energy-related business (Energy Service, Coal Mining and Oil Pipeline)



6

District Cooling System and Power Plant Company Limited (DCAP) (35%)

- generate and sell electricity and cooling water to the Suvarnabhumi International Airport
- developing solar energy in the area of Suvarnabhumi International Airport





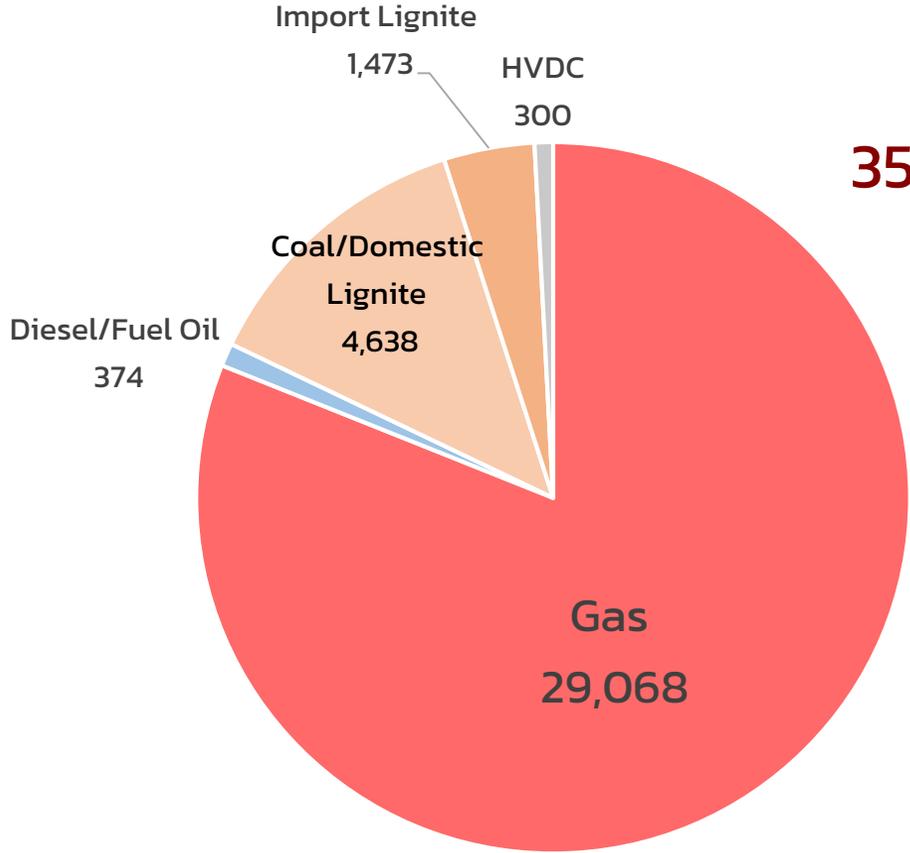
An overview of renewable energy in Thailand

Contract Capacity by Fuel Type in 2021

Total Contract Capacity of 3 Utilities system

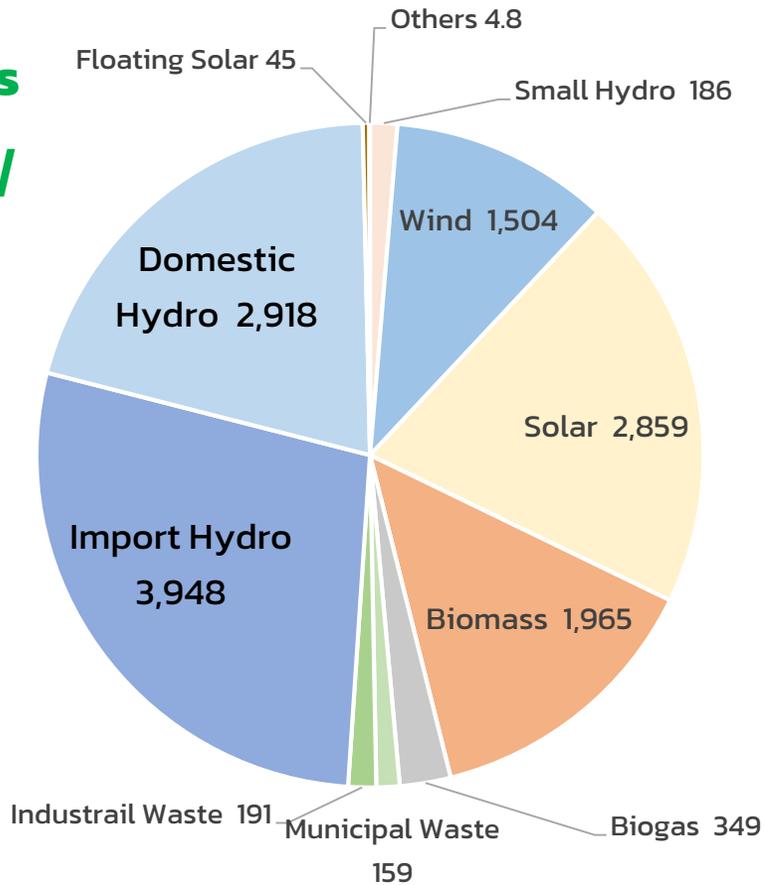
49,982 MW

*excluding 1,000 MW PSH



Fossil
35,853 MW

Renewables
14,129 MW



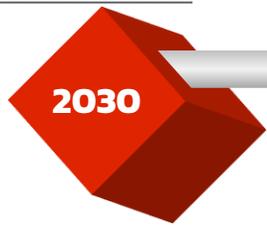
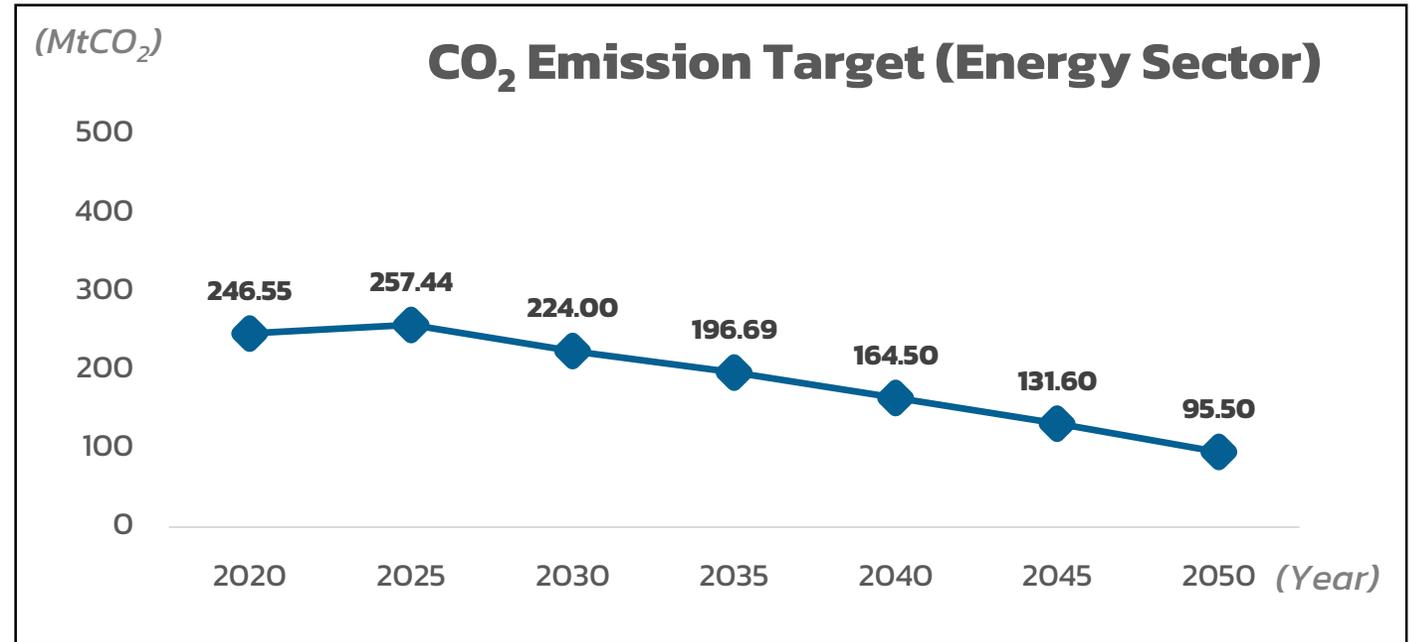
Remarks: Others = Geothermal and Waste Heat

Thailand's National Goals and Targets



(AFP photo)

On 1 November 2021, the COP 26 under UNFCCC in Glasgow, United Kingdom, the Prime Minister Prayut Chan-o-cha emphasized that **Thailand will be addressing climate change using every means possible, in order to achieve carbon neutrality in 2050, and net zero emissions on or before 2065.**



NDC Target 20-25% (COP21)
 Thailand's first NDC indicates an emission reduction of 20% from the projected BAU level by 2030
 (Reduced by **111 MtCO_{2eq}**)

NDC Target 40% (COP26)
 Thailand's NDC indicates an emission reduction of 40% from the projected BAU level by 2030
 (Reduced by **222 MtCO_{2eq}**)

Carbon Neutrality (COP26)
 The CO₂ emission in the energy sector is projected to be approximately **95.50 MtCO₂** in 2050

Net Zero Emission (COP26)
 The GHG emission in the energy sector is projected to be approximately **50.70 MtCO_{2eq}** in 2065



NEP : Policy Direction

- **≥ 50% of Renewables** for new capacity
- **≥ 30% increase in energy efficiency**
- **30% increase in EV** by 2030
- **Energy industry restructuring 4D1E**

**National Energy Plan
(NEP)**

**To Achieve
Carbon Neutrality in 2050
and GHG net zero emission in
2065**



Electricity



- Renewables and Grid modernization
- GHG Reduction
- Carbon capture utilization and storage

Gas



- LNG infrastructures
- Open access gas network

Oil



- Euro 5,6
- Oil infrastructures
- Promote low carbon fuels

Alternative Energy



- Support decentralized renewable energy
- Renewable control and trading platform
- Promote Biomass and hydrogen fuel

Energy Efficiency



- 40% reduction in energy intensity by 2050
- Support energy efficiency technologies
- Energy management infrastructures



Renewable Procurement Targets

Between 2022 and 2030

3,168 MW



Solar (Ground mounted)

1,000 MW



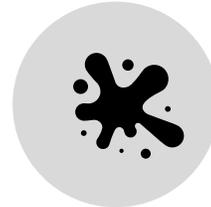
Solar + Battery

1,500 MW



Wind

584 MW



Biogas

266 MW



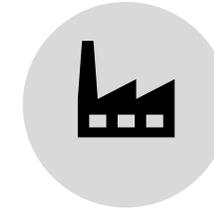
Biomass

436 MW



Municipal solid waste

200 MW



Industrial waste

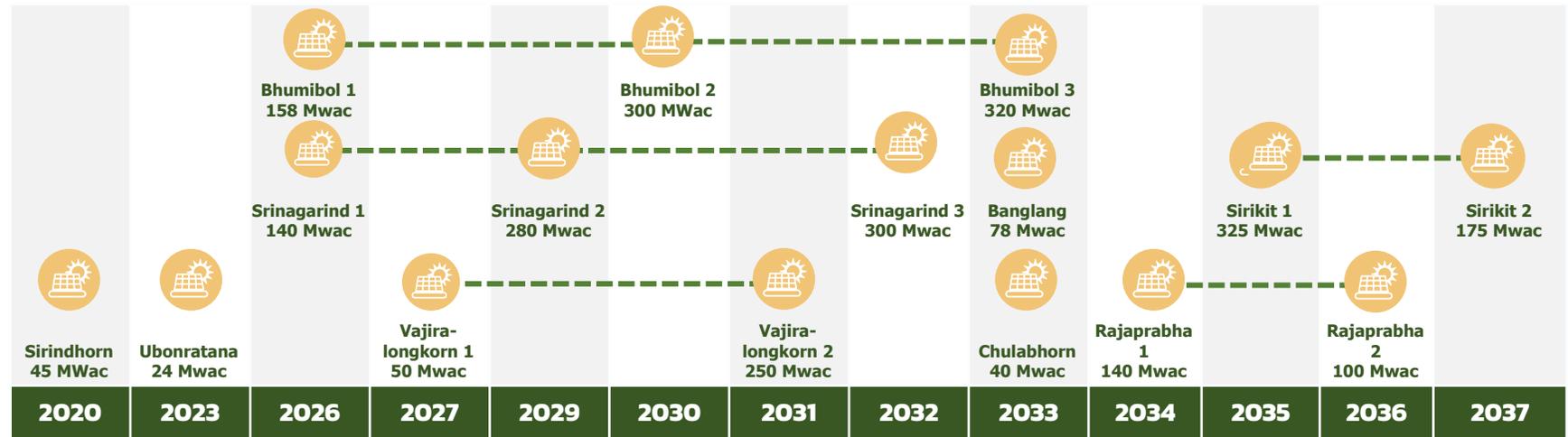
Total 7,154 MW

(RE procurement targets is in accordance with Draft Power Development Plan)

EGAT's RE Development Plan

PDP2018 Rev. 1

Floating Photovoltaic
with Hydro Power Plants
2,725 MW



EGAT's Hydro Floating Solar Potential

Regarding to Thailand's **Carbon Neutrality target**, the **reassessment** on floating solar hybrid power plant has been **supported** in line with **National Energy Plan** and expected to **increase** total capacity from **2,725 MW**.

In addition, the floating solar hybrid power plants which can be developed in **EGAT's 10 dams** have their **potential total capacity of 10,416 MW**.



Government Policies to support RE

(Yr2022–2030)

Feed-in Tariff (FiT) is approved by the National Energy Policy Council (**NEPC**) to financially promote **renewable energy**.



Solar (Ground mounted)

Size: Any

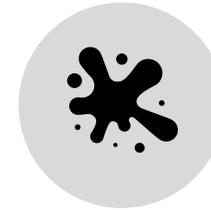
FiT 2.1679 THB/kWh
for 25 years



Wind

Size: Any

FiT 3.1014 THB/kWh
for 25 years



Biogas

Size: Any

FiT 2.0724 THB/kWh
for 20 years



Biomass

Size: Any

FiT 2.7972 THB/kWh
for 20 years



Solar + Battery

Size: 10–90 MW

FiT 2.8331 THB/kWh for 25 years



Municipal solid waste

Size: ≤ 10 MW

FiT 5.08 THB/kWh
for 20 years

Size: 10–50 MW

FiT 3.66 THB/kWh
for 20 years



Industrial waste

Size: ≤ 10 MW

FiT 6.08 THB/kWh for 20 years



THANK YOU