RE for Thailand Data Centers

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Lecturer Profile

Dr Kanchit Ngamsanroaj is an executive committee for IEEE Power and Energy Society Chapter, Thailand Section and working group/task force member for IEEE Blockchain in Energy Standards. He is presently the expert level 12 - power plant for the office of the governor, Electricity Generating Authority of Thailand. He has been working with EGAT for more than 30 years with experiences on power plant construction projects, power plant simulator project, operation and maintenance of power plants, water management and power system study. He has gained strong expertise and experience in managing international and local activities. He is an external expert for Graduate School, Faculty of Engineering, Chiang Mai University, and external mentor and a senior visiting researcher for the College of Engineering and Computing, University of South Carolina, USA. He has successfully advised many PhD., and Master's graduates. He published over 50 papers in International Journals and Conference Proceedings. He has rich experiences as technical advisors to the Thailand academic institutes in engineering fields. He has wide experience in developing and managing technical and academic collaboration projects between utility and external sectors in foreign countries on hydro power plant i.e. Japan, Bhutan, and Laos. He has received several domestic and international awards recognizing his outstanding performance. His research interests include:

- Operation and Maintenance of Hydropower Plant
- Power System Operation and Planning
- Hydropower Development
- Power System Analysis
- Smart Grid Technology
- Energy Management System
- Microgrid and Battery Energy Storage
- Renewable Energy Technology
- Distributed Energy Resource
- Data Analytics in Electric Power Industry
- Transactive Energy

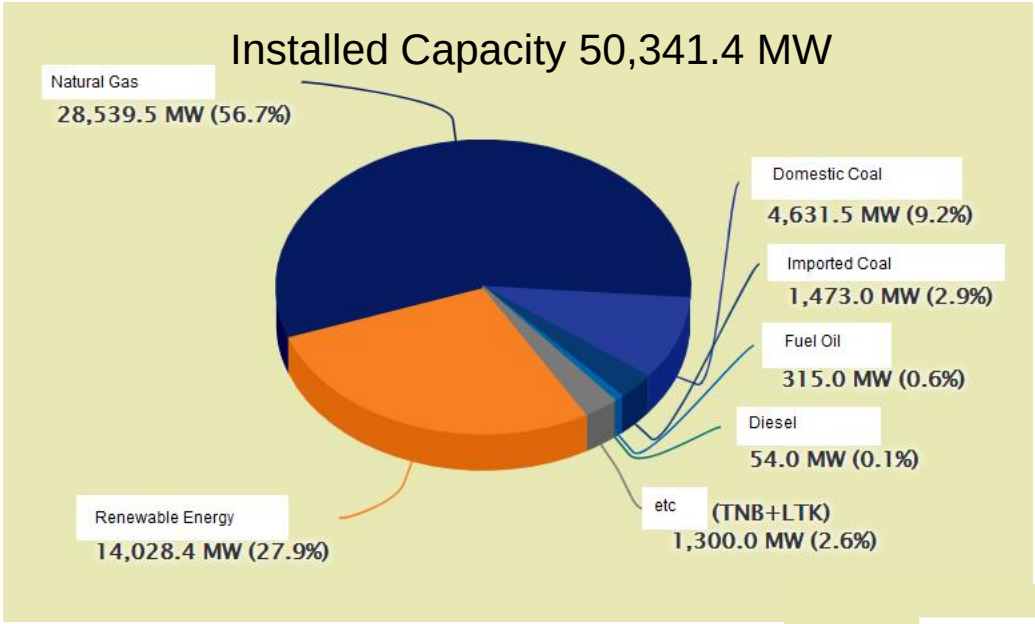
Disclaimer

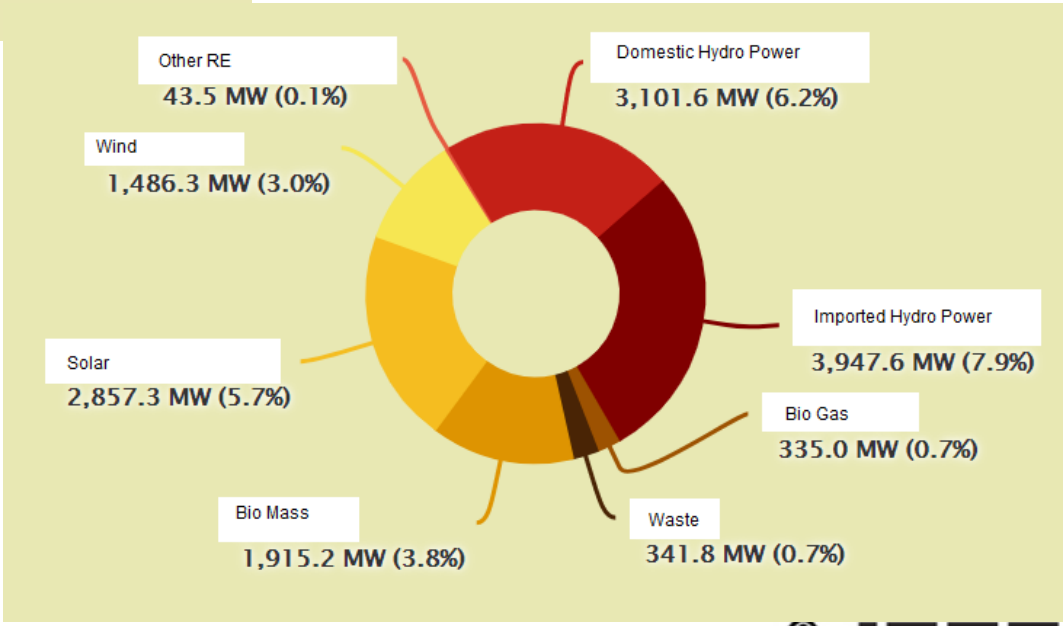
- The views expressed herein are the speaker's, and do not necessarily reflect the views of the IEEE PES or any other organizations.
- Event datasets and graphs are still in an R&D stage. This presentation is based on available data at the current time, and may be modified pending further updates.

Agenda

- Hydro Power Development in Thailand
- Conceptual Idea of RE for Thailand Data Center
- Q&A

Power Generation by Fuel Type





Thailand's PDP

PDP2018 (Rev.1)

Renewable Energy

32.5%

25,086.3 MW

At 2037

Solar

19.1%

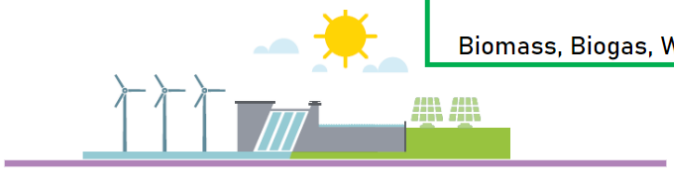
Wind

3.9%

Others

9.5%

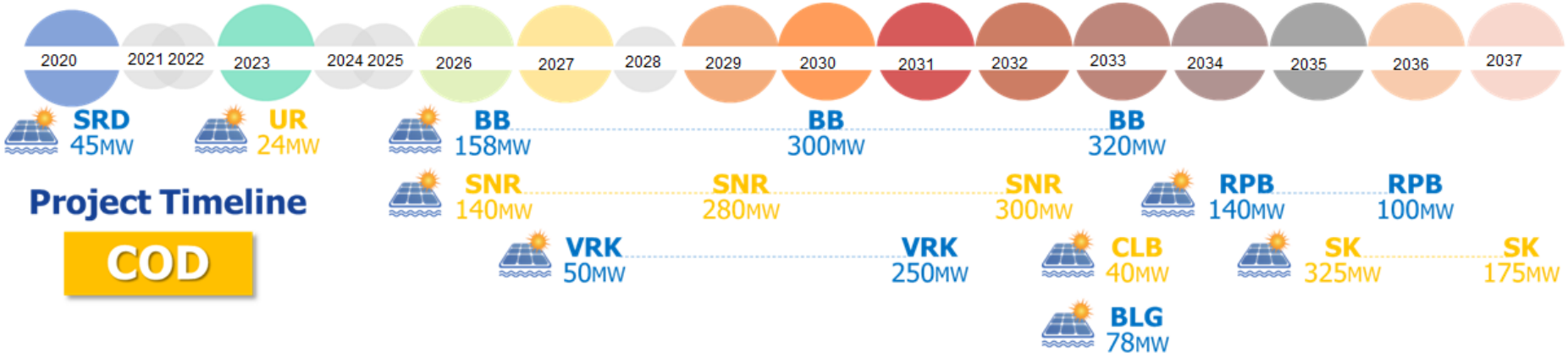
Biomass, Biogas, Waste, Small Hydropower



PDP2018 Rev1

Floating Solar with Hydro

Floating Solar with Hydro



9 Dams for 16 Projects of 2,725 MW

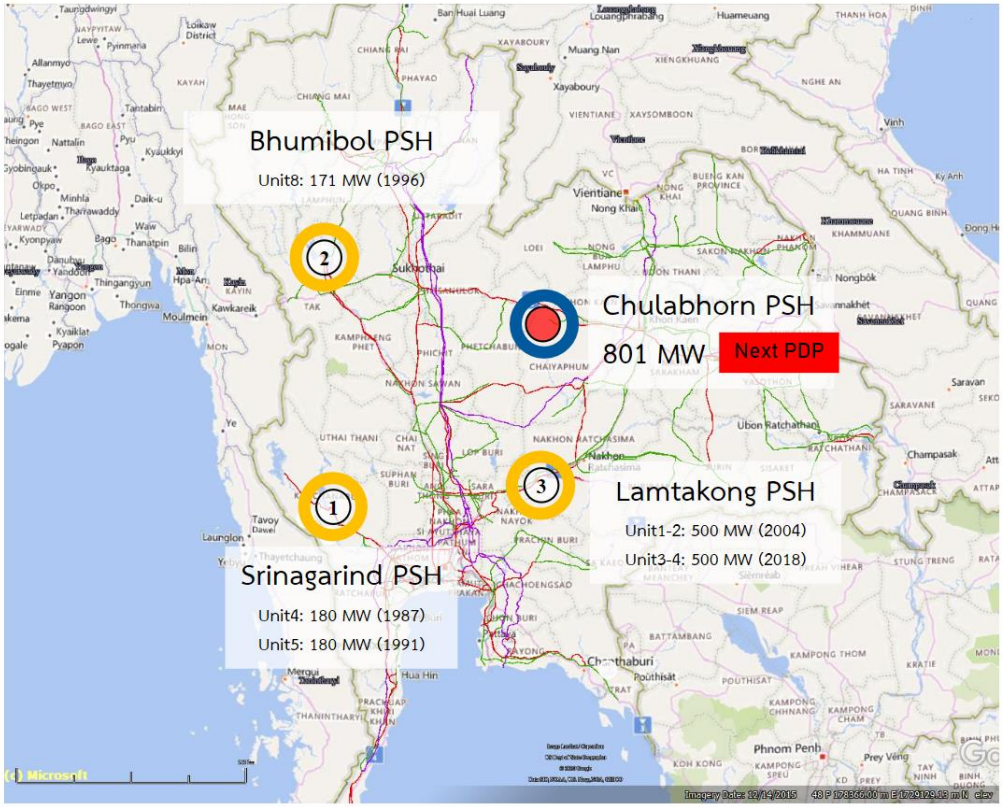
PDP2018 Rev 1

Small Hydro Power Development Project of EGAT

24 Projects of 69 MW

EGAT

EGAT's Pumped Storage Hydropower Projects

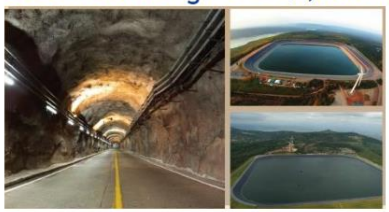


1,531 MW

1.Srinagarind#4-5 (360MW)

2.Bhumibol#8 (171MW)

3.Lamtakong#1-4 (1,000MW)



Cr. :Dr. Kullachai Tantayopin of EGAT

Conceptual Framework

Accommodating power

Proving the percentage of renewable energy in the power used

Allocating power to consumers

Distribution Utilities

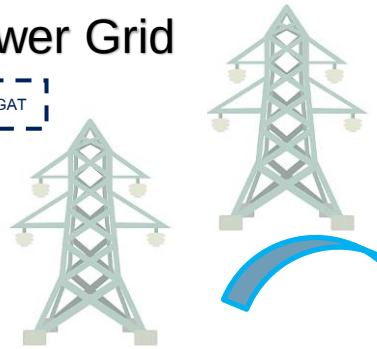
PEA

MEA

Consumer

Power Grid

EGAT



Data Center

Tracing power generation, retailing, and consumption

EGAT

IPP

SPP

VSPP

Proving the power source

Power Generation

Flow of renewable energy information

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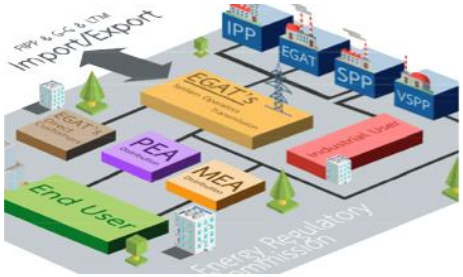
Future market in Thailand

Competitive Market Approach

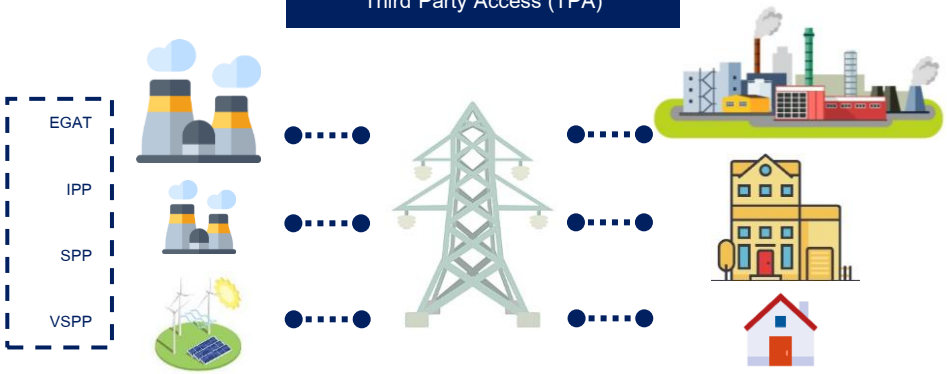


Enhanced

Single

Buyer

Third Party Access (TPA)



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