

Energy transition means for Thailand?

**Energy transitions in Southeast Asia
BETD official side event**

19 March 2021

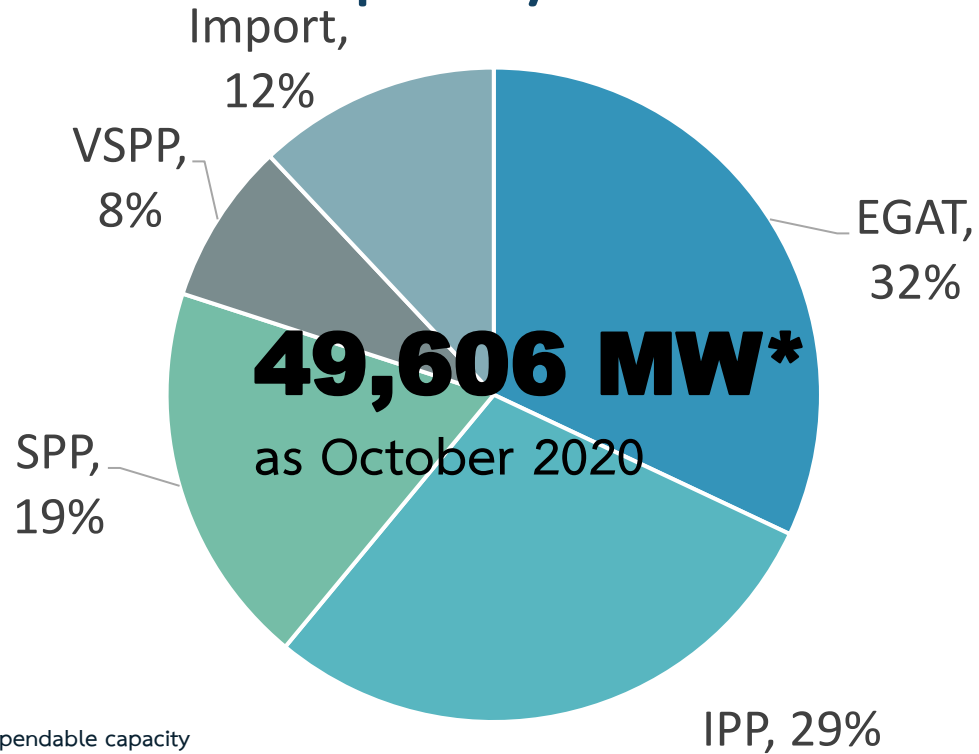


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- ❑ Current situation of Thai power sector
- ❑ What energy transition means for Thailand?
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Current situation of Thai power systems

Installed capacity



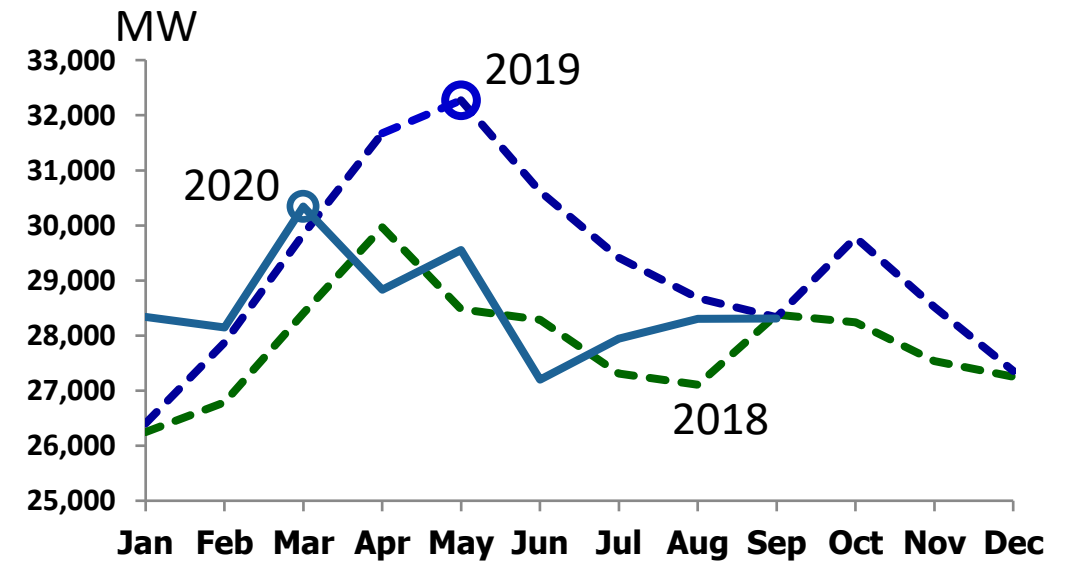
* IPS not included

** Not consider dependable capacity

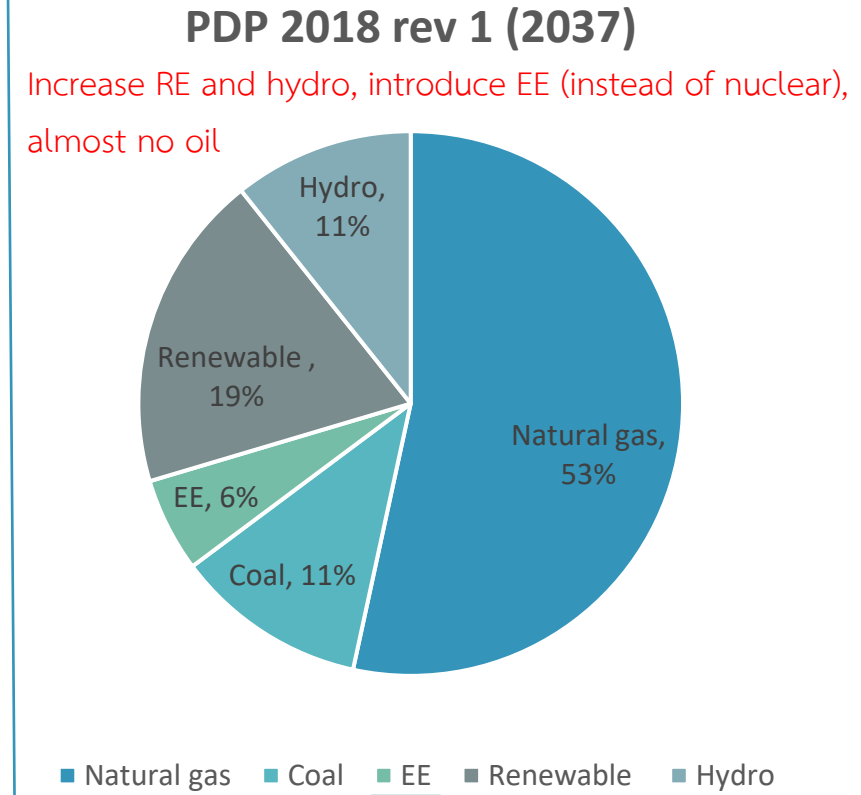
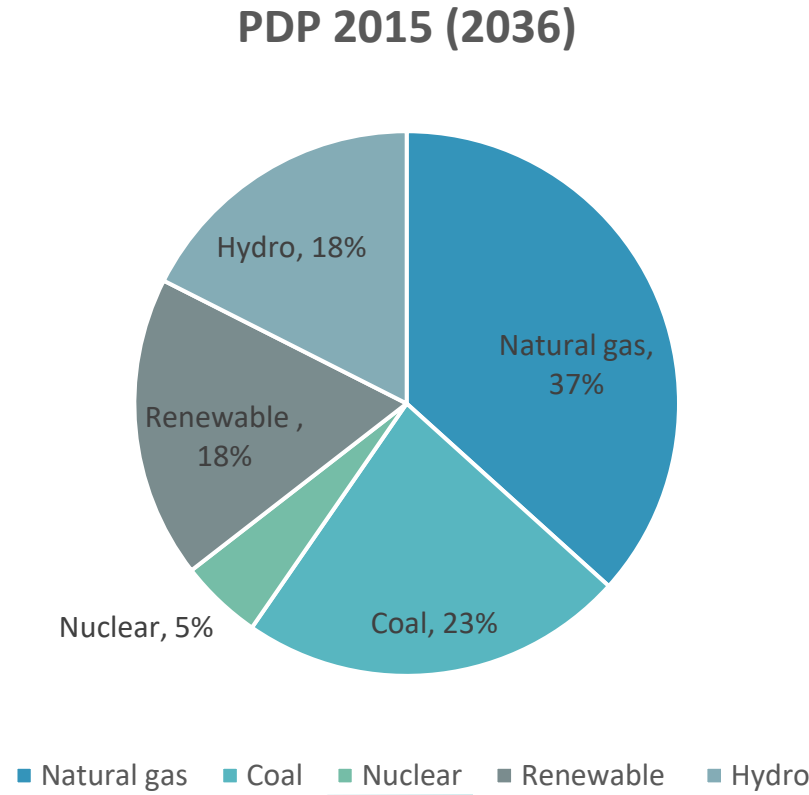
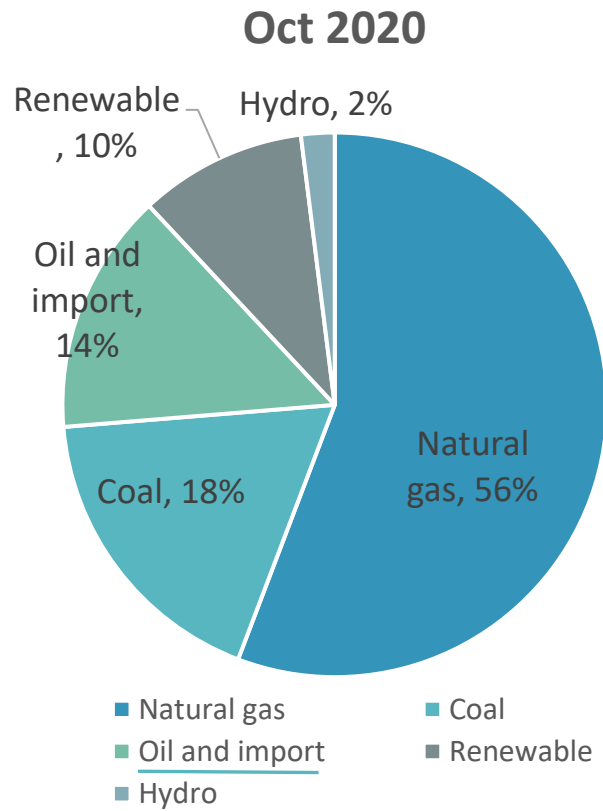
Source: EPP0

Peak demand

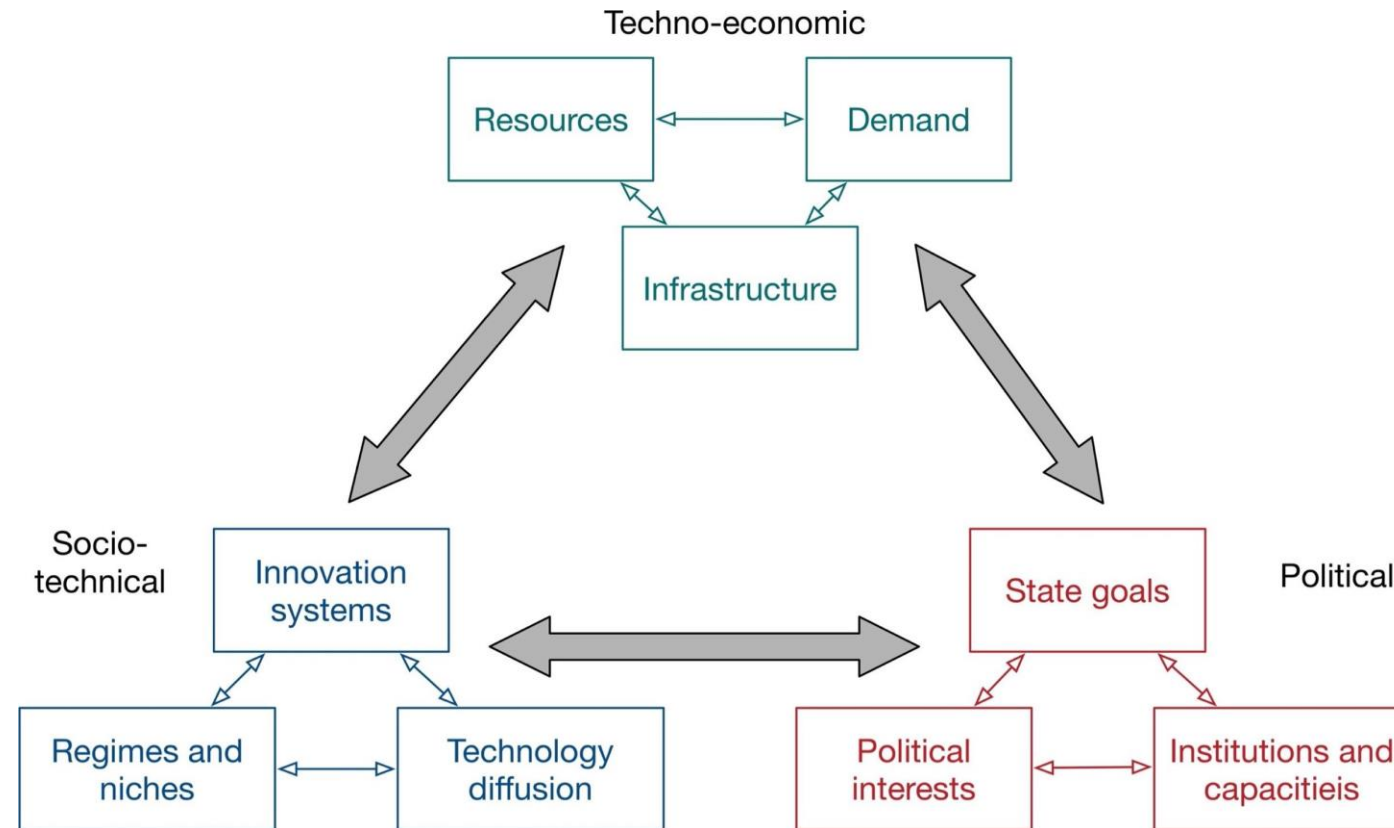
- In 2019, 32,273 MW
- In 2020, 30,342 MW (Reserve 38%**)



Generation mix: 2020 vs. 2036 vs. 2037



Shaping energy transition



Source: Cherp et al., 2018

What energy transition means for Thailand?

Clean electricity generation and efficient electricity consumption

Renewable energy (solar, biomass, waste, etc.)



System flexibility



Other new technologies (EE, Demand response, storage, EV)



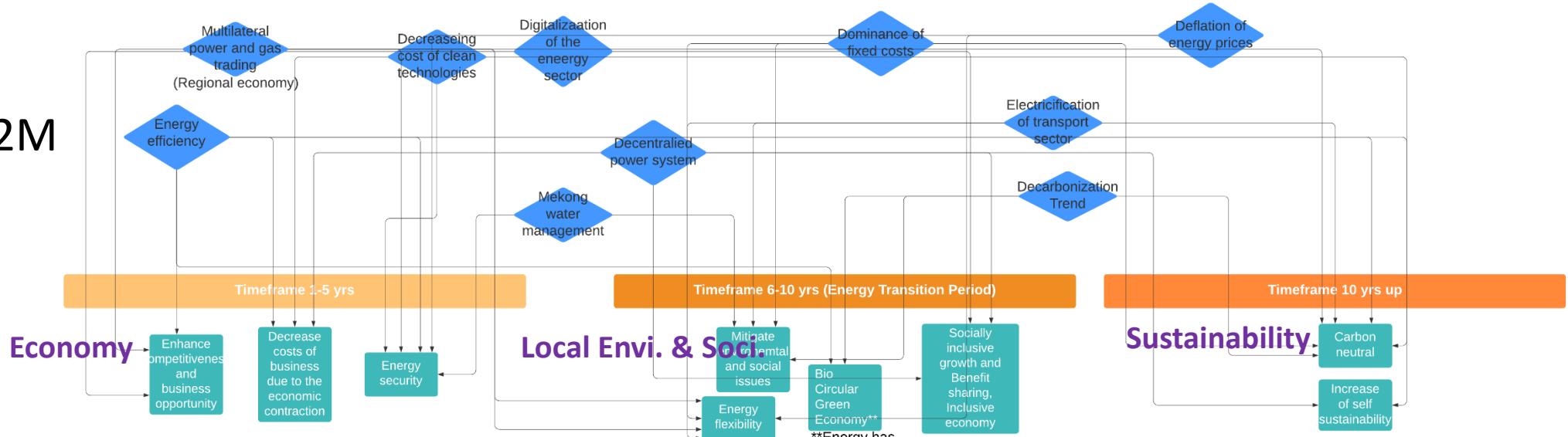
Sustainability growth

(Affordability, Security, Inclusive economy)

Driver/Trend

6D2E2M

Vision



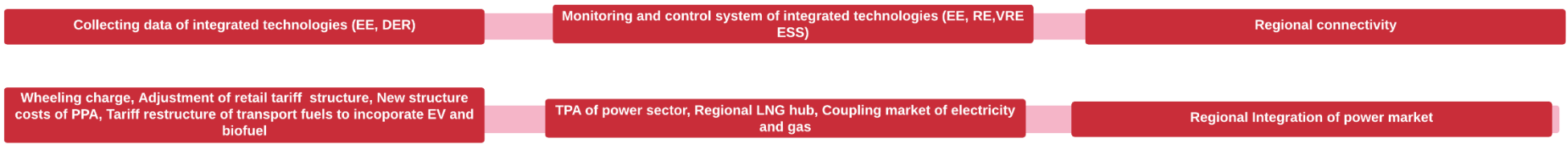
Technologies

- Distributed Energy Resources (DERs)
- Energy Efficiency Management System
- Prosumer, RE, VRE, ESS
- Electrification and Decarbonisation of Transport Sector

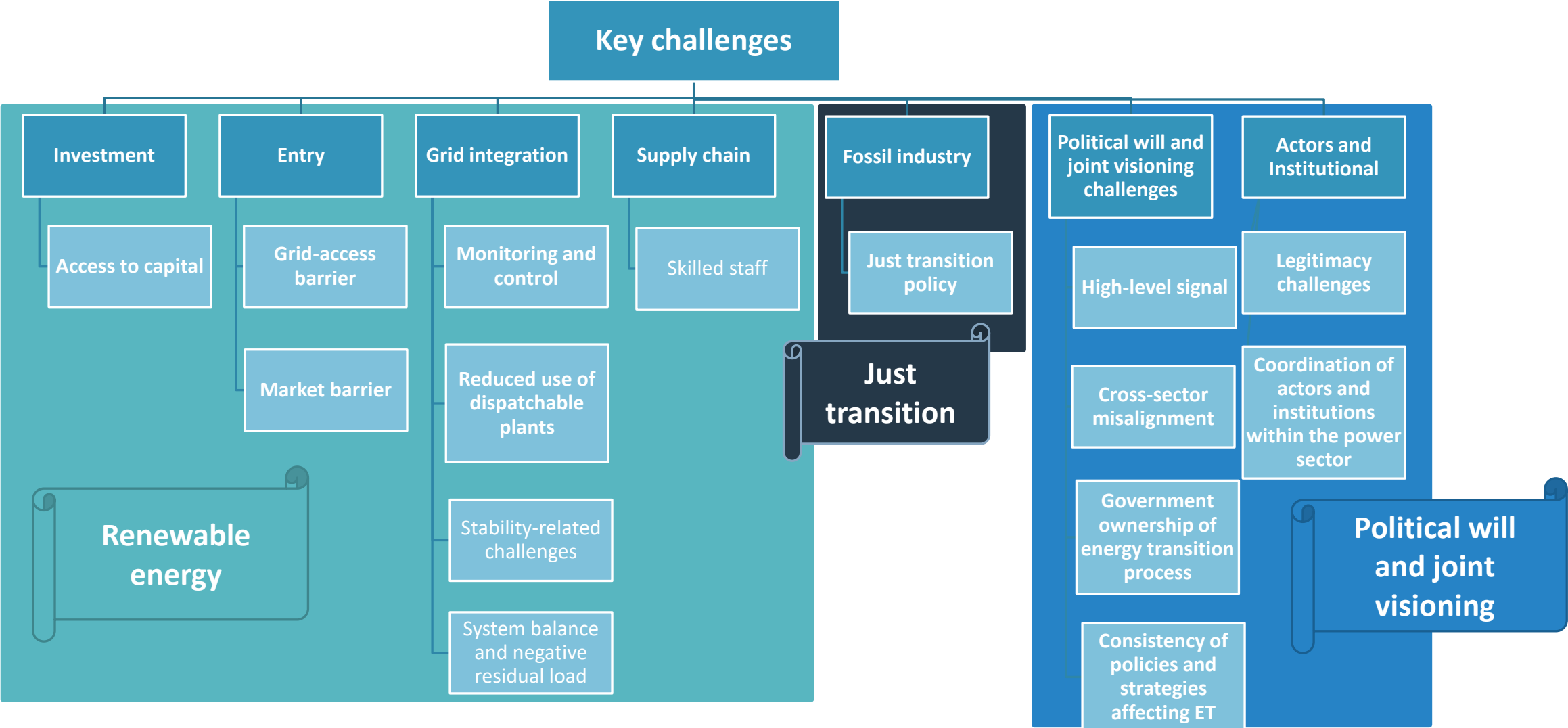


Infrastructure and institution

- Grid Modernisation for integrating DERs and EV
- Market Reform for Local and Regional Integration (Power and Oil, Gas)

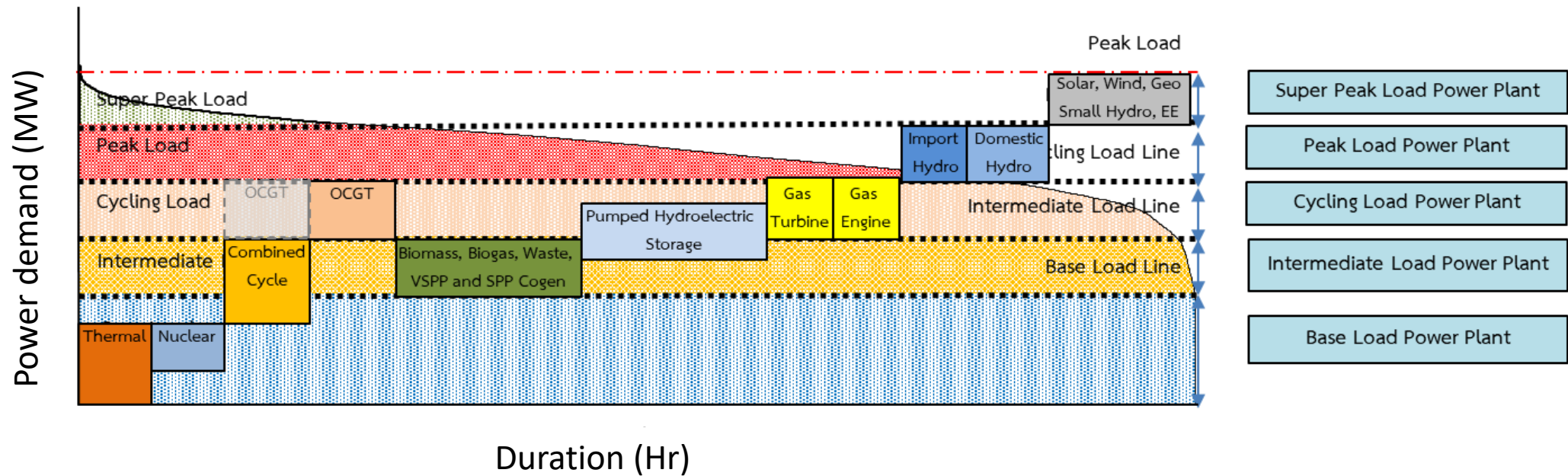


Key challenges clustered into 3 groups

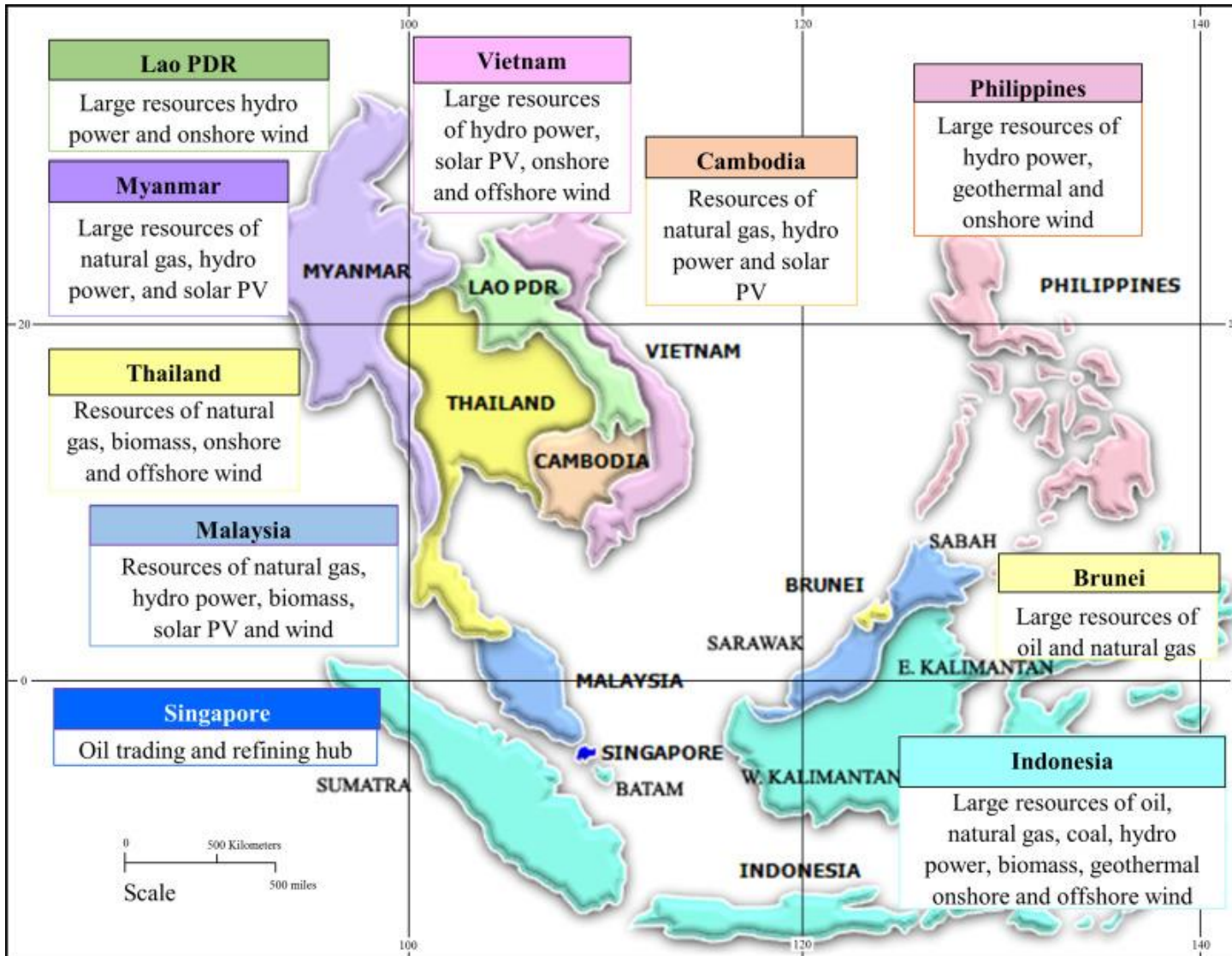


How to achieve the goal (in terms of technical issues)?

System flexibility: Generation type



Source: Kulyos Audomvongseree, “แนวทางการจัดทำแผนพัฒนากำลังผลิตไฟฟ้าสำหรับระบบที่มีพลังงานหมุนเวียนในสัดส่วนสูง” iEEE slides (in Thai)



How to achieve the goal (in terms of technical issues)?

System flexibility:
Regional Grid
Integration

Source: Tofael Ahmed et al, "ASEAN power grid: A secure transmission infrastructure for clean and sustainable energy for South-East Asia", 2017

Key takeaway

Energy transition

- Balance 3 angles of technology, socio-economic, and politic
- Not an easy process
- Require collaboration across sectors

Thank you!

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