The Integration of High Share of RE in SEA: Lessons Learned and Forecast from GIZ

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Deutsche Gesellschaft
für Internationale
Zusammenarbeit (GIZ) GmbH

Power Sector Outlook of Southeast Asia

Renewable capacity in SEA is rising!

NIKKEI ASIAN REVIEW

Southeast Asia's energy majors pivot sharply to green power

Renewables tapped to feed region's steep rise in power demand

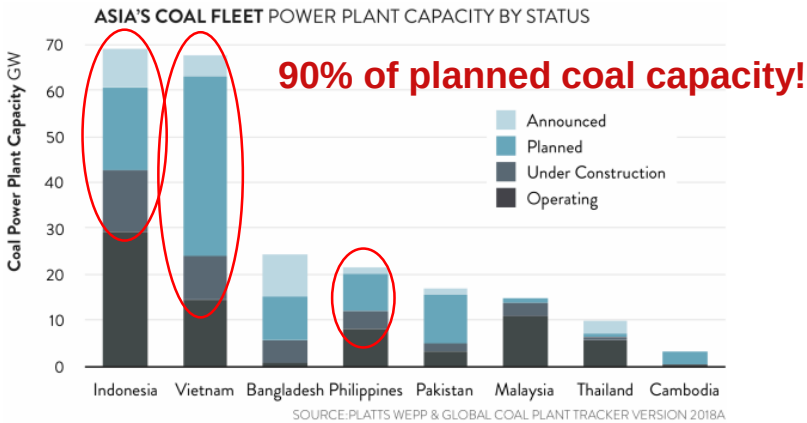
YOHEI MURAMATSU, JUN SUZUKI and YUJI OHIRA, Nikkei staff writers
APRIL 15, 2019 07:45 JST

PT Pertamina Geothermal Energi workers rotate a valve at Karaha geothermal well in Tasikmalaya, Indonesia. The Southeast Asian nation's geothermal potential is second in the world only to the U.S. © Reuters

BANGKOK/JAKARTA/TOKYO -- Southeast Asian energy companies, long dependent on fossil fuels, are rapidly turning to renewable energy to answer the mounting demand for electricity in the fast-developing region.

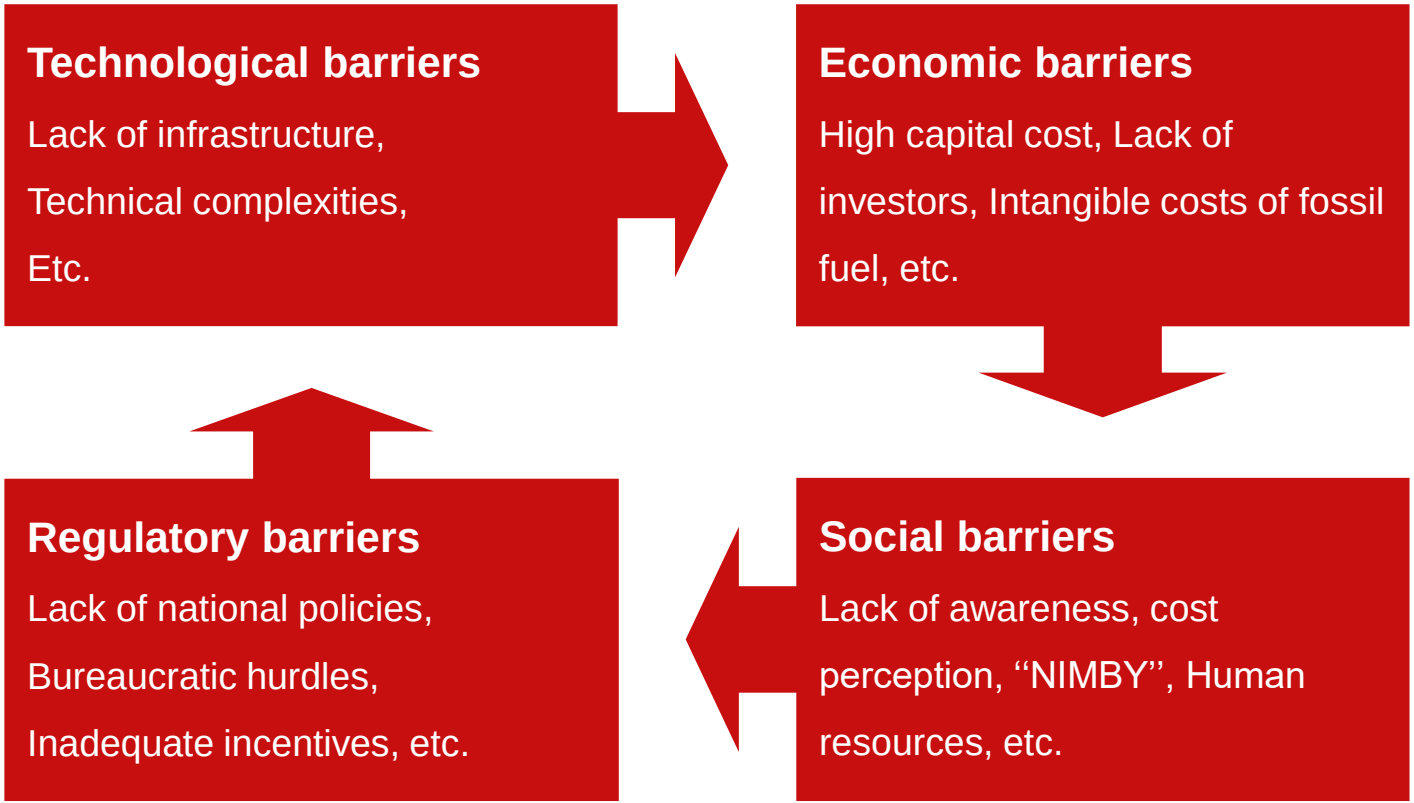
But fossil fuel still dominate the sector.

All major projections (IEA, ACE, ERIA, etc.) point out that coal and natural gas will still dominated the power sector up to 2040.



Data Source: IEA

Barriers to RE Deployments



GIZ Philippines: Toward Optimal Fiscal Incentives for RE

Renewable Energy Country Diagnostics (RECD Model)

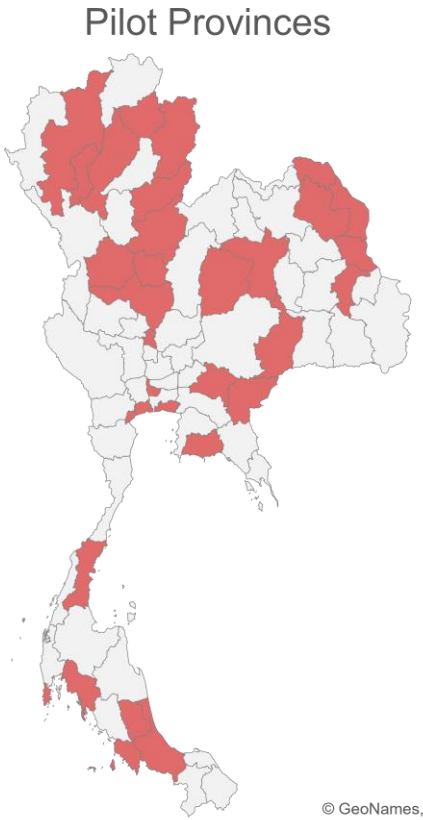
- GIZ has developed a VRE investment modeling tool.
  - Problems: suboptimal pricing and placement of PV and wind facilities
  - Quantify the economic benefits of adding VRE (a function of time and space) into the system.
  - Estimate a ranking of VRE sites in terms of their value to the system
- Policy recommendation
  - **Change FiT into spatial auctions or nodal auctions**
  - Case Study: Negros island's PV oversubscription

Hourly generation composition under transmission constrains
Source: GIZ

GIZ Thailand: Standardizing Subnational RE Planning

Integrated Provincial Energy Planning Platform (IPEPP) and Provincial Energy System Modeling Tool (PEMT)

- GIZ is currently supporting the formation of online subnational energy planning tool.
- Enabling Thai Provincial Energy Offices to make informed and optimum decisions in energy planning, savings, monitoring etc.
- **This tool allows for high-resolution modelling energy scenarios, where input values can be adjusted and optimized by the operators.**

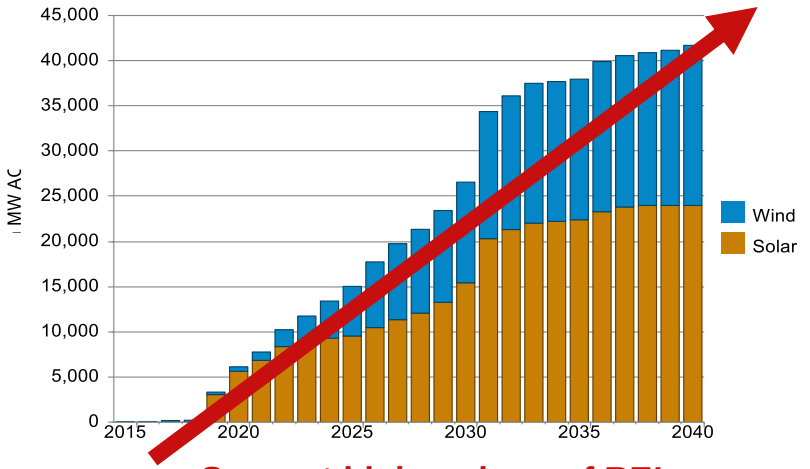


GIZ Vietnam: Assisting Smart Grid Implementation

Smart Grids for Renewable Energy and Energy Efficiency (SGREEE)

- Legal and Regulatory Framework Advisory
  - Support the development of regulations for SG tech and RE grid integration
  - Initiate stakeholders dialogue
- Capacity Development
  - Establish a knowledge network on SG tech and innovative power system.
- Technology Cooperation

Estimated Wind and Solar Installations in Vietnam



Support higher share of RE!

Data source: Rystad Energy RenewableCube, August 2019

Upcoming project: Clean, Affordable and Secure Energy for SEA (CASE)

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Goal

To support regional partner countries to build a future energy system that provides reliable and affordable energy to the people while increasing ambition to comply with the Paris Agreement.

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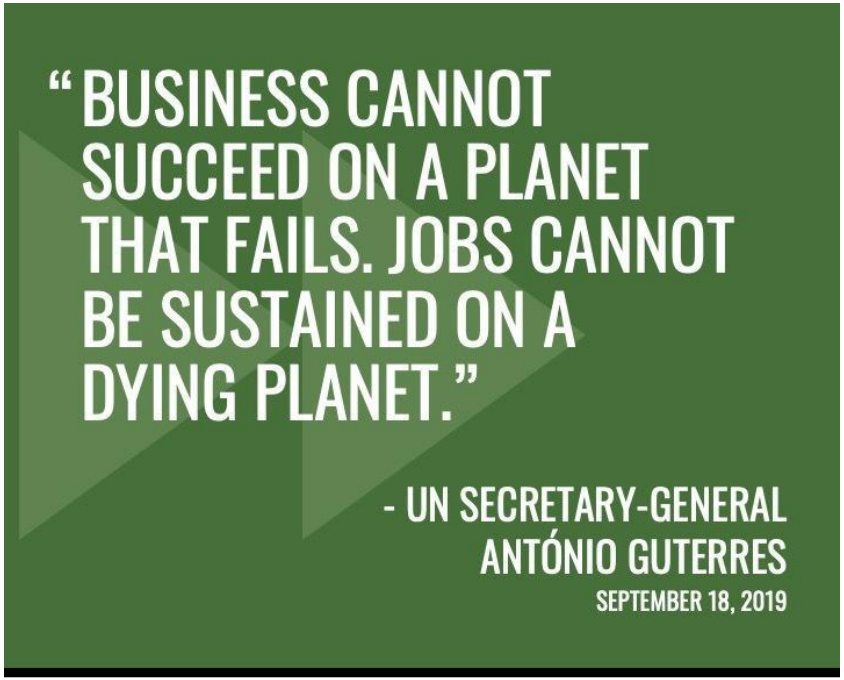

Image source: United Nations