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Driving the clean energy transition in ASEAN: The potential for collaboration

Singapore
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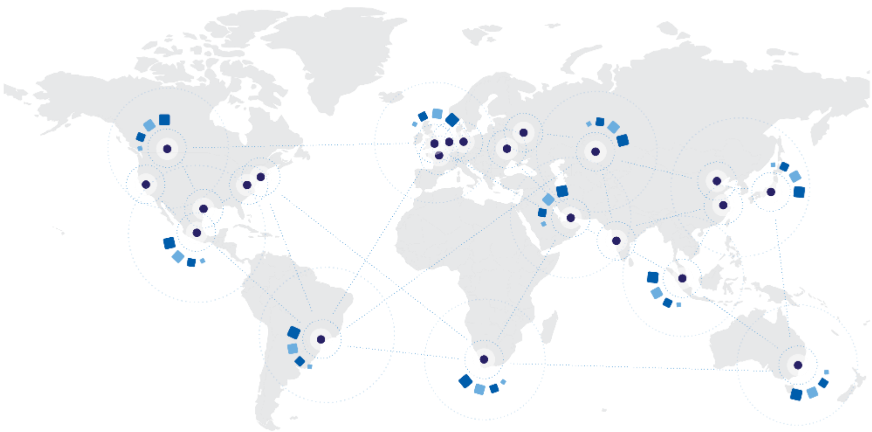

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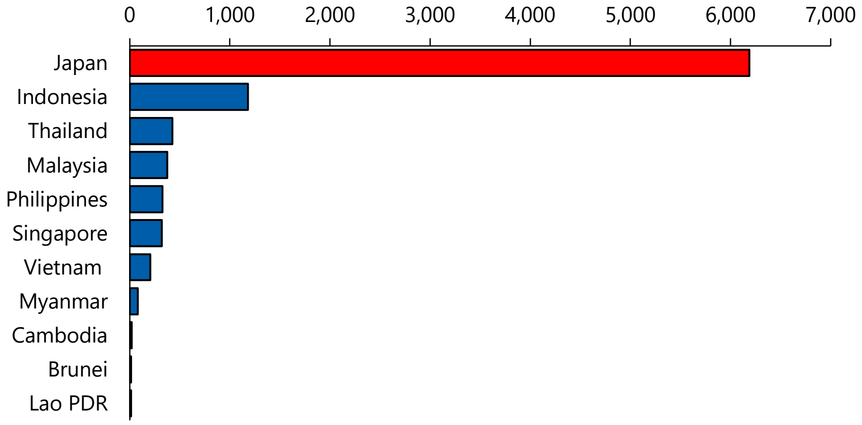
Disparate economic circumstances

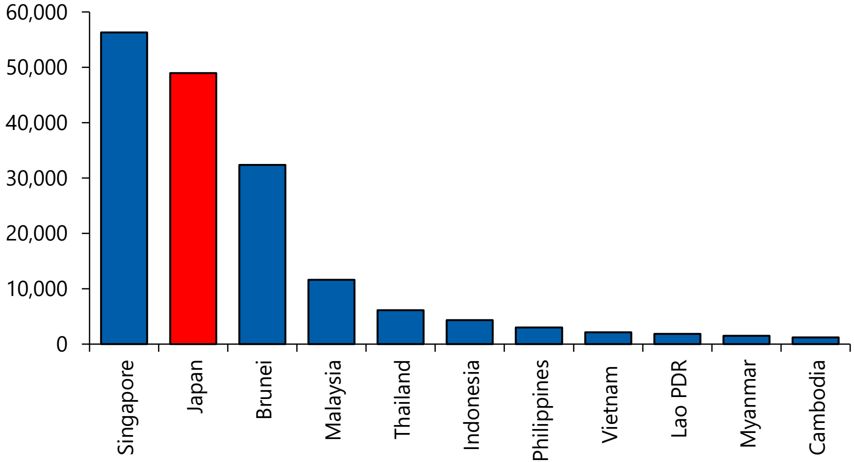
- Economic activity in ASEAN as a whole is around half of Japan's.
- The region is largely comprised of lower-middle income countries.
  - **Impacts raising of capital for the energy transition and willingness-to-pay for low carbon technologies**

GDP in 2020 (constant 2010US$, million)



Notes:
— World Bank

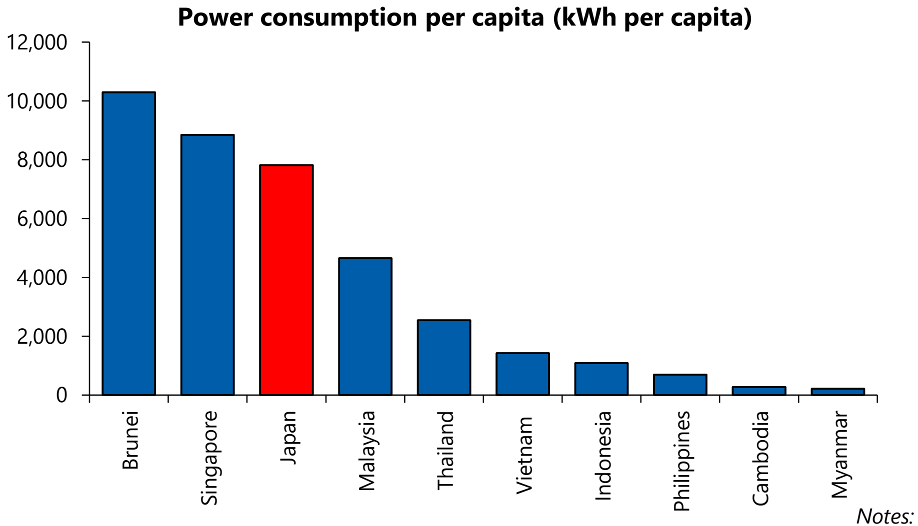
GDP per capita in 2020 (constant 2010US$)



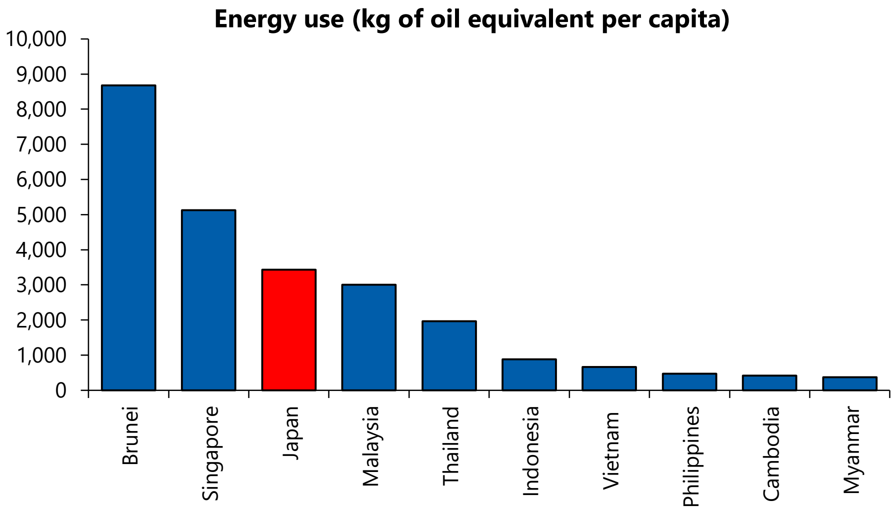
Notes:
— World Bank

Energy consumption in ASEAN

- Japan's emphasis on energy efficiency (EE) as a policy tool has in part allowed for lower per capita use of energy than its income level would suggest.
    - **EE is thus an important means of lowering energy demand and hence engendering emissions reduction.**

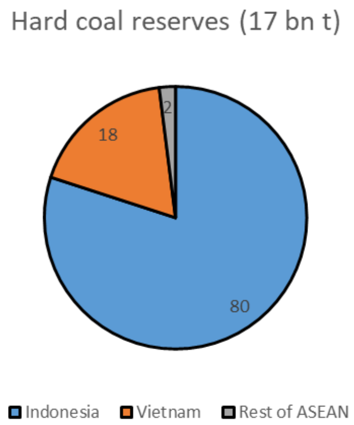


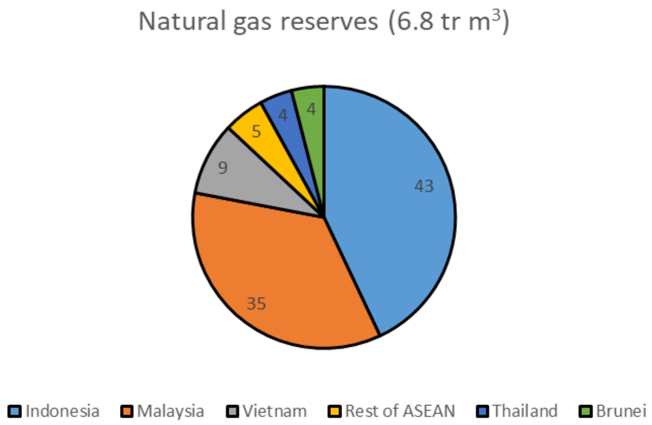
Notes:
— World Bank, latest data available is from 2014

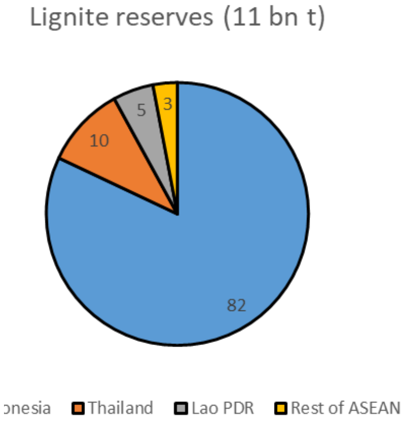


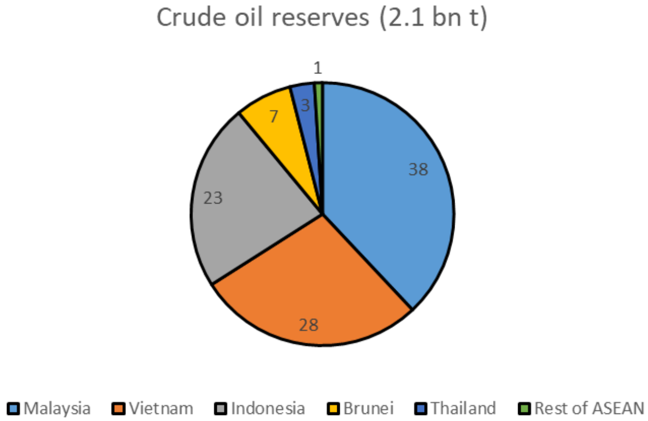
Notes:
— World Bank, data for Lao unavailable, data is from 2014

Heterogeneity in endowments





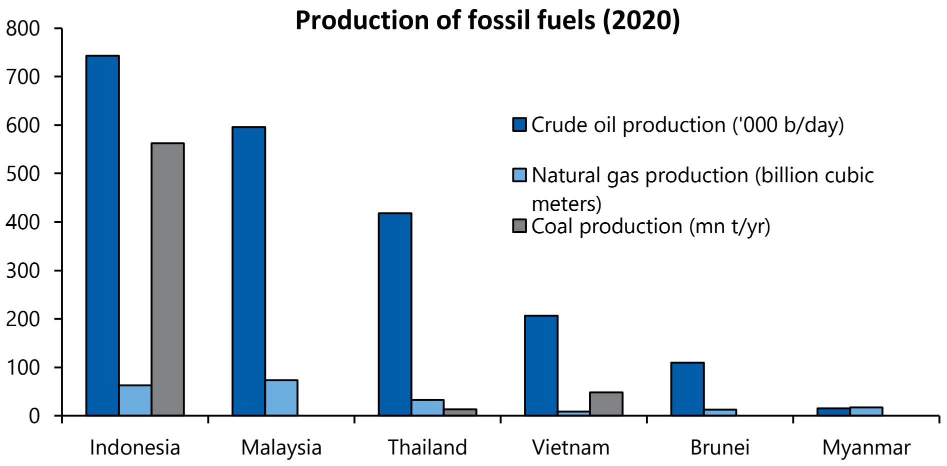




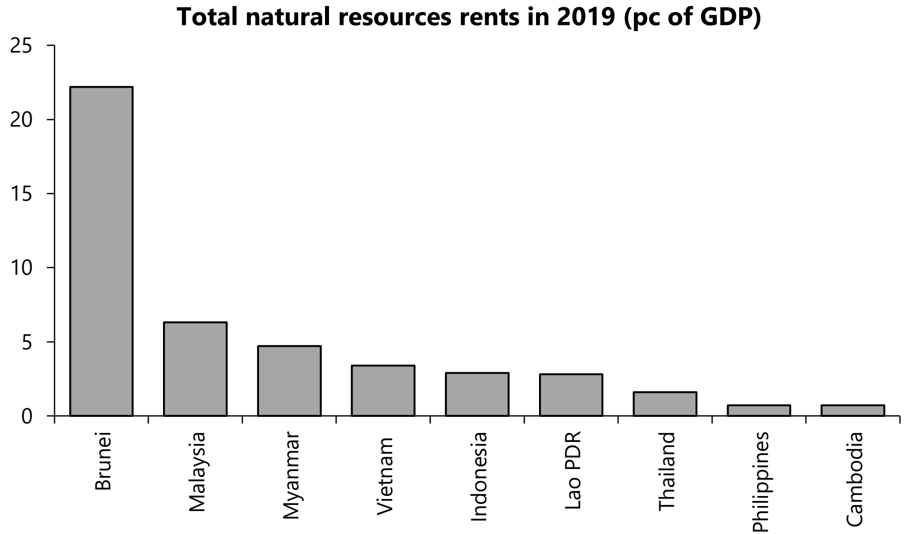
Source: ACE

Heterogeneity in endowments (2)

- Natural resource endowments have shaped the economies in SEA. Governments are dependent on the sector for its finances.
  - **The transition to a lower carbon economy would need to manage this dependence.**



Notes:
— BP Statistics



Notes:
— World Bank

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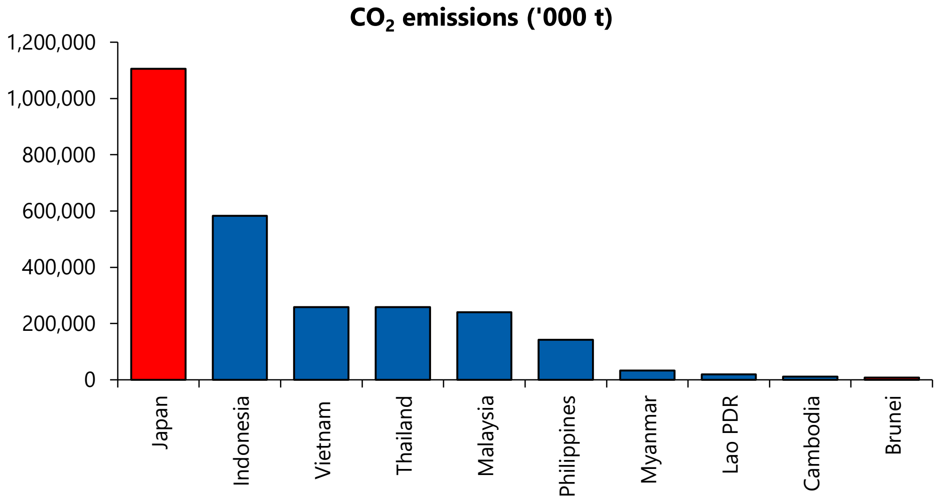
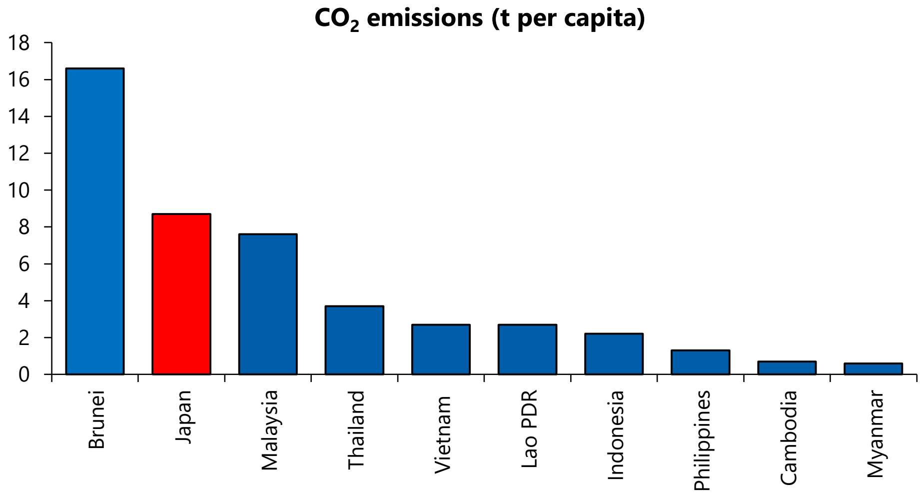
Carbon dioxide emissions

- As the region is reliant of fossil fuels, contribution to the global carbon dioxide emissions has been growing



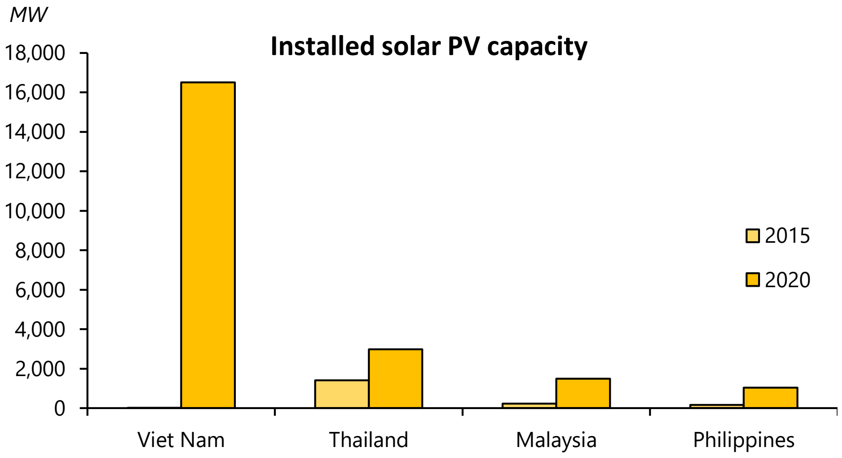
Notes:
— World Bank, 2019 data



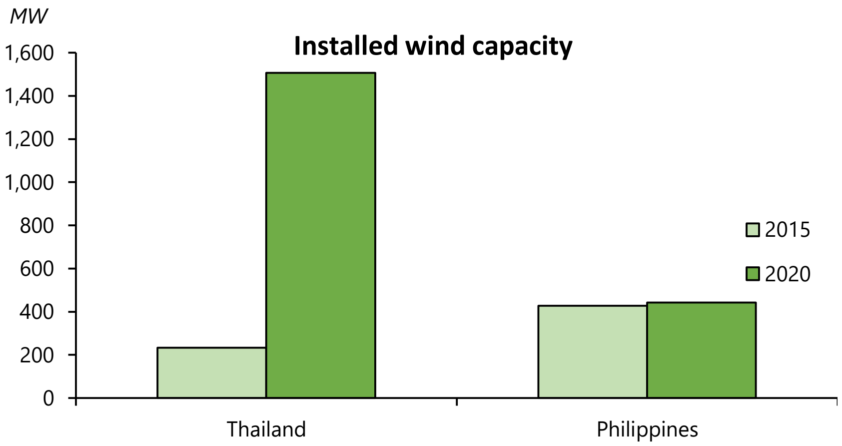
Notes:
— World Bank, 2019 data

Nevertheless, renewables are fast progressing

- Policymakers have been looking to accelerate the uptake of renewables and decarbonize the grid.



Notes:
— Country statistics



Notes:
— Country statistics

Accelerating the transition: Synergies with Japan

Target	Offshore wind roadmap	Fuel ammonia roadmap	Hydrogen roadmap	Roadmap for the shipping industry
2030	10GW	3mn t	3mn t	Commercialization of zero-emissions ships
2040	30 - 45GW			
2050		20mn t	20mn t	Conversion of ships to run on low carbon fuels

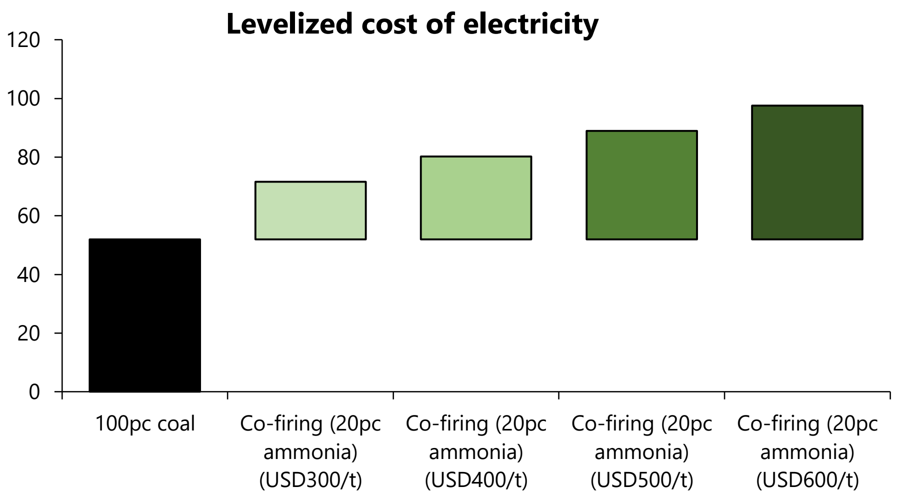
Source: Japan's Green Growth Strategy

Accelerating the transition: Synergies with Japan (2)

- **Technology** will play a key role in achieving net zero targets, some of which are being trialed/driven by Japan/Japanese firms.
  - E.g. Ammonia co-firing in coal-fired power plants.

- ASEAN could become a **test-bed** for these nascent technologies accelerating their path towards economic viability.

- The lowering of costs over time would improve the economics of decarbonization in ASEAN.



Notes:
— Argus estimates, illustrative

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Concluding thoughts

- Multitude of technologies would help ASEAN get to the net zero target
  - Continue promoting renewables such as wind and solar where economically viable.
  - Energy efficiency needs to be a policy tool in certain sub-sectors.
- View the energy transition as an opportunity to grow the macroeconomy via the creation of new industries.
- Enable the energy transition by allowing test-bedding of novel technologies in ASEAN.
  - Test beds help quicker uptake of a technology in a jurisdiction once proven.
- Produce roadmaps for decarbonization that specify how net zero targets are to be achieved.

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