Energy-Water-Food-Climate Nexus in SEA

2023 0616 Deep Dive Workshop

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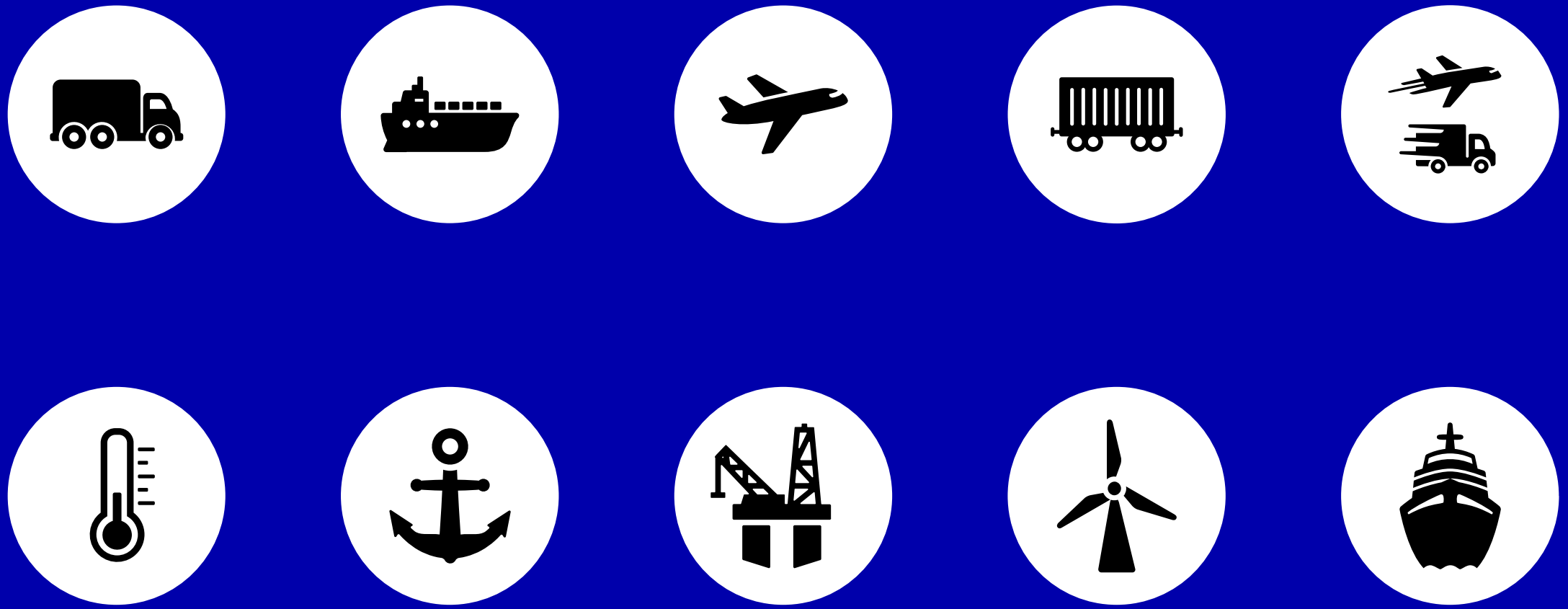
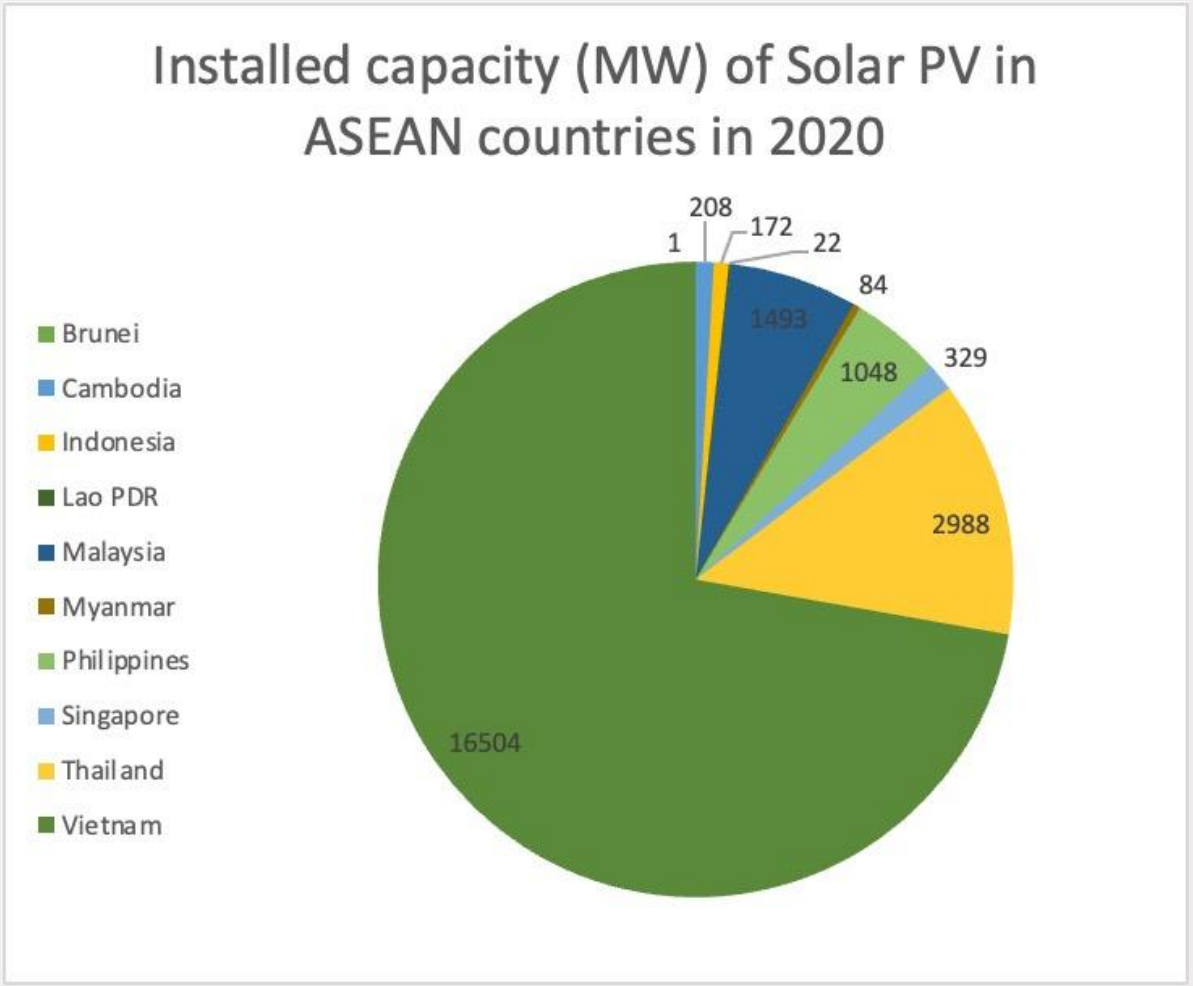
BLUE WATER SHIPPING

Solutions within



As of 2020,



Source: IRENA (2021)

By 2030, just ten years after

ASEAN will deploy 241 GW by 2030

10 GW per year for Indonesia (24.18 GW), Vietnam (17.86 GW), Thailand (11.15 GW) until 2050

Philippines projection is +10 GW until 2030, no further policy push yet for beyond 2030

Energy Policies

1. Philippines: RE Act (RA 9513) and the Philippine Energy Plan
2. Myanmar: National Electrification Plan (NEP)
3. Malaysia: National RE Policy and Action Plan
4. Thailand: Alternative Energy Development Plan (AEDP)
5. Indonesia: National Energy Policy (Kebijakan Energi Nasional, KEN)
6. Vietnam: PDP8
7. Singapore: Singapore Energy Storyy
8. Laos: PDP and RE Development Strategy (REDS)
9. Brunei: Brunei Energy White Paper
10. Cambodia: Cambodia Energy Policy andPDP
11. Timor-Leste: Strategic Development Plan

Policy links between solar power; food and water security

- Agricultural Restructuring Plan (ARP) for Vietnam
- National Agrofood Policy for Malaysia
- Solar-Powered Irrigation Systems (SPIS) for the Philippines
- Solar Pumping Initiative for Cambodia
- SolarNova Programme for Singapore
- Brunei Vision 2035

Agrivoltaic Potential for SEA

1. High Solar Radiation	relatively high with an average value of 5 kWh/sqm
2. Agricultural Dominance	Indonesia alone has ~38 million ha of agricultural land. Land in SEA is abundant for agriculture
3. Solar Installation	241 GW installed capacity by 2050
4. Rural Population	30-50% of populations in SEA are still living in rural areas with the exception of Singapore being majority urban
5. Continuous gov't support	Governments in SEA have been increasingly aggressive to support both REs and agriculture to nurture the nexus

*while there is no hard policy that prioritizes food or energy over the other in any country for now, there are several stringent policies in all countries that have multi-layer approvals and analysis on land conversion for energy

Solar direct contributions to the nexus in the Philippines

1. Floating Solar and Fish Farming
    - SNAP's Floating Solar Project in Magat hydroelectric dam
    - Several floating solar test beds in Laguna Lake
    - EDC Floating Solar Farm in the Burgos reservoir

2. Agri-Solar
    - DA's Solar-Powered Irrigation Systems launched to support rice farmers by using solar panels to power water pumps for reliable source of irrigation
    - Agrivoltaics Project in Cagayan State University and Isabela State University where solar panels were installed over farmland at campus. The project is evaluating the effects on crop yield analysis and viability of dual-use farming.

Thank you for listening

Please feel free to ask questions