

ET-MACE

NEWSLETTER

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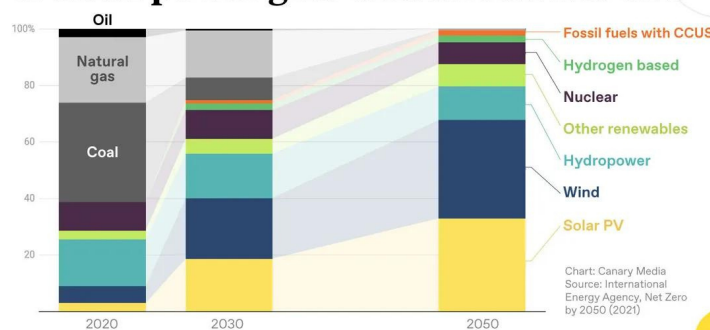
Energy Transition Game-changer for Acceleration

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Group for High Technology

Globally, almost 768 million people are living without electricity. Thereby, energy transition from fossil-based systems to renewable energies (RE) is imperative. Nevertheless, the **path toward the end-state remain still has a huge uncertainty** as energy outlook reports on fossil fuel elimination by 2050 has not been published yet thus far.

In Malaysia, clear targets are established in terms of the energy security, affordability, and sustainability. While demand is projected to increase from 0.6% p.a. in 2021-2030 to 1.8% p.a. in 2030-2039, supply has been expected to boost by 44% in post-2030. Herein, energy security can be achieved via the reliability and diversification of fuel mix. Indeed, realization of The ASEAN Power Grid (APG) that connect Laos-Thai-Peninsular Malaysia-Singapore and Sabah/Sarawak-Kalimantan is an initiative to improve access to energy. Beside, to achieve sustainability, governments' aspiration target 31% RE in energy capacity mix, reduce strong dependency on coal, 8% energy efficient, and no nuclear technology. Overall, these actions prove the strong Governmental commitment towards the carbon neutrality.

A clean power grid would look like this



Nevertheless, barriers for the RE implementation are related to coal dependency, rising energy demand, failure to develop CCS for fossil fuel, inadequate infrastructures development, among others.

Malaysia: Preferred Sustainable Investment Destination

Wan Hashimah Wan Salleh
Director, Green Technology Division, MIDA

Aligning with the sustainability and energy transition, the Malaysian Investment Development Authority has conducted several strategies and incentives to build up a sustainable investment ecosystem. Over the years (2001-2022), greener incentives that have been introduced cover RE generation (i.e., solar, biomass, hydro, energy efficiency, & energy conservation, apart from the tax allowance and exemption, assets' purchasing, green service, building/township, & datacenters, along with green certifications and EV-saving vehicles.

Due to the initiatives, total number of green projects in Malaysia has shown a significant improvement; where total of 2,332 projects have been approved which equivalent to RM 14.9b investments. Selection of green projects to be incentivized include these factors: economic (cost-benefit), location (rural areas are prioritized), job creating and training, types of technologies, etc.

Overall, global investors interested in such initiatives that are readily available in Malaysia, hence, it is imperative for introducing policies that can be aligned with these companies.



***“How do you
envision the
Energy Utilization
in Malaysia by
2030?”***

Things to ponder

How to support:

- Malaysia target of 31% RE share in the nation's power capacity mix by 2025 and 40% by year 2035.
- Reduce carbon emission intensity from power sector by 45% in 2030, and by 60% in 2035 in Malaysia.

OUR aspiration



Circular Economy

Catalyst for Malaysian energy transition impetus. Under strategic development, results in affordability, viability, & gain public acceptance by 40%. The strategic development includes politic, facilities, and infrastructures.

Green and clean energy

Energizing green and clean energy generation as prime drivers towards reliable, affordable, and accessible RE for the carbon footprint reduction by 2030.

Hydrogen (H₂) as energy transporter & prime driver to energy transition.

Energy efficiency

50% reduction in carbon intensity via high renewable energy & low carbon generation source & technologies (i.e., hydro) of 45% by 2050.

Reliability, affordability, accessability



Malaysia's Agenda Towards the Transition Energy

Presently, transition to renewable energy is growing at rather a slow pace, hence necessitates further work to be done. Energy transition is not simply about increasing the renewable energy within the energy mix, but it should focus on a broader perspective in dealing with energy as a whole. Herein, an **optimization in energy efficiency** plays a significant role in the country, as such, further improvement in current grid is pivotal. Moreover, a strategic development in energy system in terms of **energy management control system** is also part of initiatives that need to be sought after.

Other core focuses towards the energy transition include: Short- medium-, and long term **policies; incentivization; business model; decarbonization strategies and automated technologies;** and a new **Circular Economy**.

Sarawak's Initiatives in Transition Energy

in terms of the geographic aspects, Sarawak is located within Borneo whereby there are huge resources for the renewable energy.

In Sarawak, hydropower energy has been given a priority towards the energy transition, since a total of 50 potential sites have been identified. Thereby, the hydrocarbon that dominated 90% of energy mix is reduced in 2020, where 68% is attributed by the renewable hydropower. There will also be an addition of 1,285 MW of hydropower to the grid, and is expected to complete in year 2027.

Apart from hydro powers, the Sarawak's Green Energy Agenda also focuses on hydrogen (H2) economy, electric vehicles mobility, as well as net energy metering.

SUSTAINABILITY & RENEWABLE ENERGY FORUM

10 & 11 December, 2019

Borneo Convention Centre Kuching (BCCK)
Sarawak, Malaysia

www.saref2019.com

REGISTER NOW!

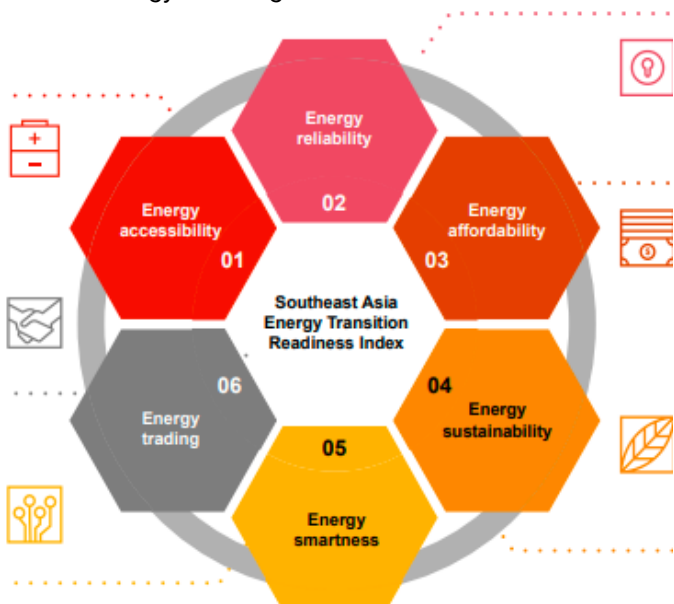
Besides, promotion in other kinds of RE including biomass and solar will be incorporated too. Currently Sarawak is in the process to build up the floating solar in the Batang Ai hydro dam. First integrated H2 production plant & refuel station had been built in Kuching, back in 2019.

Other initiative in accelerating the transition energy is by launching the **Sustainability and Renewable Energy Forum (SAREF)** to localize conversation regarding renewable energy in South East Asia and to allow much greater participation from the various corporates and stakeholders.

Criteria to Readiness for Transition

In terms of **energy accessibility and reliability**, Malaysia is considered mature as ~100% energy is readily accessible to the resident. Further, having >40% energy reserve proves high energy reliability in Malaysia. Not only that, with regard to **energy affordability**, Malaysia's low score index at 2.4% reflects to affordable energy system. Though, the energy **sustainability** that scores > 500 (developing) should be improved.

For **Energy Smartness** that measure the technology within a country, Malaysia that scores 40-75 is considered established. To ensure more sophisticated energy system, development of smart grid, meter, and other new technologies needs to be continued. Lastly, in terms of the **Energy Trading**, Malaysia is said established due to an interconnection between Thailand and Singapore to enable trading. Nevertheless, more development in energy security and transition will be required. On top of that, the interconnection between East and West Malaysia that is a long-term goal needs to be established as well.



KEY SUCCESS INDICATORS AND MEASURES



Financial and economic related

- Total allocations for new investments in the RE sector.
- Reduction in the traditional fossil-fuel industrial sectors (i.e., coal).
- Number of companies involved in the Environmental, Safety, & Governance (ESG) investing and regulatory compliance.
- Number of sales for the electric vehicles (EV) consumption.
- Higher return on investment (ROI) in solar photovoltaic (PV) installations among residents.
- Setting up the target for energy efficiency.
- Provision of incentives by the Government.

Facilities and Infrastructures

- Number of capacity building for carbon dioxide storage.
- Number of certified green building index to cater for influx of RE capacities & enhance connectivity.
- Improvement in Energy Transition Index (ETI) rankings.

Communities

- Human capital development in RE technology know-how.
- Reskilling/ upskilling local expertise.
- Perception level of public awareness and acceptance.

“A TRANSITION IN CLEAN ENERGY IS ABOUT MAKING AN INVESTMENT IN OUR FUTURE” ”



Group discussions during the Workshop 1 in TNB Research, June 2022.



SWOT ANALYSIS

STRENGTH

- Rich in RE resources as well as natural gas.
- Availability of financial incentive for RE growth and to build clean building or smart home.
- Identification of FIVE (5) focus area for energy transition (TNB Research).
- Progressive REs development. Eg., Hydropower plants in Sarawak, solar industry development in Sabah.
- Governance and policies availability.
 - National Energy Policy (1979)
 - Five Fuel Policy (2001)
 - National RE Policy (2010)

OPPORTUNITIES

- Conversion of unused oil rig for CO2 capture.
- Funding initiatives from the Government.
- Subsidy for the rural electrification and peak electricity utilization.
- Hydrogen as potential fuel.
- Competitive and affordable electricity prices in Sarawak. Potential for solar, geothermal, and OPEC in Sabah.
- Deployment of public-private partnership in RE movement.
- ASEAN partnership and interconnectivity.

WEAKNESS

- Policy enforcement and regulatory issues for new technology in RE industry.
- Lack of infrastructures.
- Insufficient local expertise in RE.
- Public consumers' reluctance for higher pricing & reliance to subsidies for premium energy.
- Uncertainty & non-priority of RE by consumers.
- Risk management & utilization opportunities of assets bounded to local geographical regions.
- Reliance to fossil fuels and natural gas.

THREAT

- Energy trilemma.
- Geopolitical stability and energy security in the region.
- High investment cost and risks in RE and green technologies.
- Presence of large coal-power plants that still in operation.
- High pricing of crude oil.
- Regulatory control is under the respective state government.

