

ET-MACE

NEWSLETTER

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Sabah's commitment towards the carbon-neutral nation

Presently Sabah has embarked on green initiatives towards the sustainability and to address climatic change. Thus, Sabah Renewable Energy Rural Electrification (Roadmap Convergence (2022-2030) is outlined to optimize RE deployment and connect climate change mitigation with the local economies and environmental stewardship.

Driven by this, Sabah Electricity Sdn Bhd aims to increase the RE generation from 15% to 40% in three years. Ultimately, to phase diesel out of Sabah's energy mix and achieve net zero emissions by 2050.

RE Benefits



New Job Opportunities

Provide new & stable job markets and to empower people in rural areas.



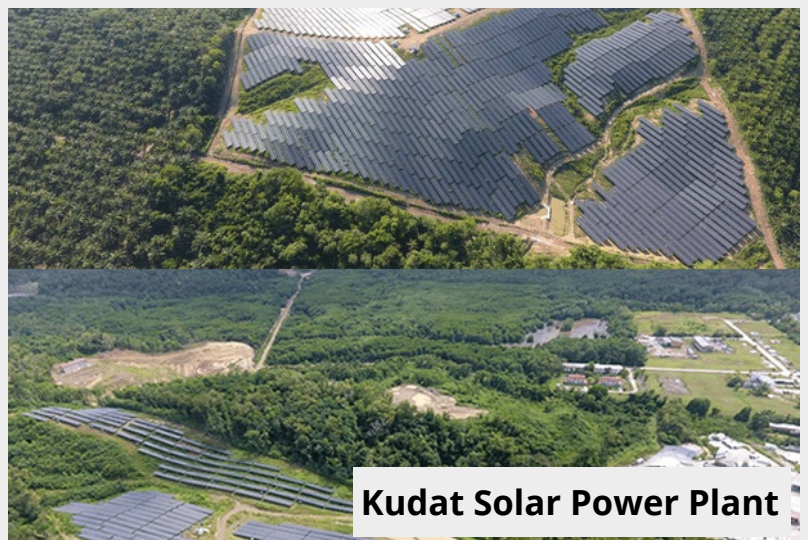
Reduces Energy Disputes

stable energy market leads to less conflict over key non-RE sources such as oil and coal.

Further, solar energy has been geared up in Sabah as a way to cater small micro communities there. Not only that, the Federal Government would also look into the wind power as well as hydropower dams' development in future. To date, mini dams have been developed but with an insufficient energy for state-wide. Overall, an integration of several REs is promising as what has been experienced in Central and South American countries that do not merely rely on single type of biofuel, but rather a combination of biofuel, hydro, solar and wind.

Governmental agencies that contribute to the transition energy include the Ministry of Energy, Green Technology and Water, Energy Commission (Suruhanjaya Tenaga), and Malaysia Energy Centre (Pusat Tenaga Malaysia). Whereas, Malaysia's regulatory framework includes the following:

1. 1974 Petroleum Development Act
2. 1975 National Petroleum Policy
3. 1980 National Depletion Policy
4. 1990 Electricity Supply Act, 1993 Gas Supply Acts
5. 1994 Electricity Regulations
6. 1997 Gas Supply Regulation
7. 2001 Energy Commission Act governs Malaysia's regulatory framework



Kudat Solar Power Plant

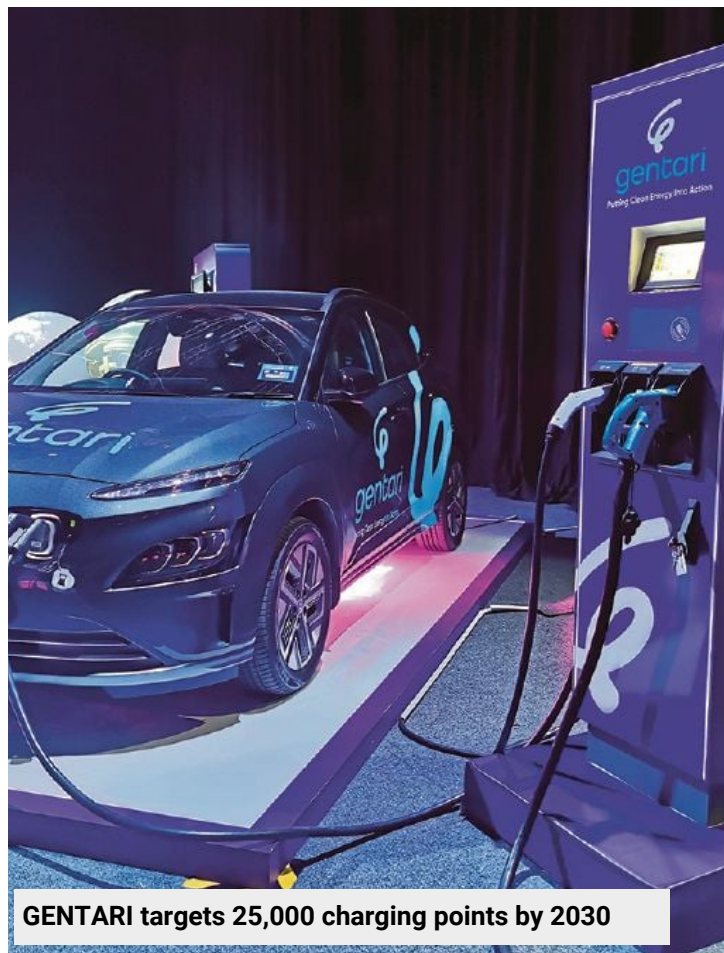
GENTARI

Putting Clean Energy into Action

Currently, **decarbonization and sustainability** have become central topics for the Energy Transition. In fact, energy transition has gained great momentum from various stakeholders - Government, activists, investors, local stakeholders, employees, as well as customer. Hence, Gentari Sdn. Bhd. (GENTARI) that is wholly owned by PETRONAS aspires to be an integrated net zero solution provider to create a greater value, connect businesses, and make the journey to net zero simpler. Here, **three** cores are introduced - renewables, hydrogen (H2), and green mobility solutions.

Towards the acceleration of renewables, GENTARI focuses 30 to 40 GW energy capacity by 2030 via commercial and industrial project in Asia Pacific, utility-scale projects in solar and onshore/offshore wind across Malaysia, Asia Pacific, and EU. Beside, energy storage capability is also one of the focus by GENTARI.

GENTARI also aims to be the scale clean hydrogen producer and go-to industrial partner, as well as supplying up to 1.2 MTPA. Lastly, as green mobility solution provider, GENTARI targets to capture 10% market share across the key market in Asia Pacific.



GENTARI targets 25,000 charging points by 2030

Overall, GENTARI will contribute to Malaysia's economic, talent, and environmental goals.

- Spur economic growth and industry development.
- Development of high value talents.
- Supports the Malaysia's net zero emission.

PETROS: Commitment to Net Zero 2050

As a state-owned oil and gas exploration firm in Sarawak, PETROS take the role of harnessing and utilizing its own natural resources in a sustainable way. While doing so, PETROS focus on the four (4) of the 17 United Nations Sustainable Development Goals (UNSDG), including **SDG 7** (Ensure access to affordable, reliable, sustainable and modern energy for all), **SDG 8** (Promote sustained, inclusive & sustainable economic growth, full & productive employment, and decent work for all), **SDG 13** (Take urgent action to combat climate change and its impacts), and **SDG 17** (Strengthen the means of implementation and revitalize the Global Partnership for Sustainable Development).

To achieve net zero emission by 2050, there will be no continuous flaring and venting from any of the PETROS operations. Therefore, the company will be leveraging on the Carbon Capture, Utilization, and Storage as part of their decarbonization strategy. To ensure an effective implementation, dual key enablers have been identified, which are:

- Development of a specific regulation outlining the life cycle of CCUS, including liabilities.
- Technical know-how and expertise for CCUS management and execution., including establishment of hubs.

PETROS



Gas hubs to be developed in Miri, Samalaju, Bintulu, and Kuching

Energy Transition Malaysia Alliance (ET-MAce) Roundtable Discussion

On 25th July 2022, the second roundtable discussion among the ET-MAce council members had been carried out at the Sarawak Energy Berhad (SEB) headquarter, in Kuching. This 4-hours discussion was started by a welcoming remark by YBhg Datu Sharbini Suhaili, the CEO of SEB. During his speech, the recap of the first ET-MAce roundtable discussion that involves an exchange of ideas and perspective on the way forward for the energy transition in Malaysia along with the corresponding key driver and readiness for energy transition was presented, and followed by an opening remark by Prof Ir Dr Shahir Liew.

First presentation entitled 'Socio-economic impact of energy transition in Malaysia' was done by Dr Dionysia Kibat, from SMJ Sdn Bhd. In her sharing, energy transition is an enabler for the sustainable development and climate resilience. With a right strategy, energy transition has potential to contribute up to an incremental RM50-60 billion in Malaysia's GDP per annum and 200,000-300,000 jobs, with investments costs of only <1% of GDP. In addition, a total of RM 350-400 billion of investments within 30-years period will be required to enable the Net Zero pathway 2050, where the funding could be from combination of public, private, and others. Though, strong social safeguard needs to be prioritized, to ensure protection of rights, cost of the energy transition is not disproportionately incurred on low-income households, and an equitable distribution of cost and benefits across regions, people groups, and others. Overall, these safeguards are key foundational enablers to build their credibility on energy transition, enhance confidence level, and to gain greater acceptance.

Mr Peter Godfrey from the APAC-Energy Institute talked about challenges and opportunities towards the energy transition. The challenges include the energy trilemma involving energy accessibility, energy security and environmental sustainability. The key issues addressed in the context of energy transition include the following:

- What can the industry do to accelerate the transition towards net zero?
- How is the translation from big pledges to action going?
- What can regulation do to help accelerate the transition?
- How can countries build climate adaptation resilience into their long-term plans?
- What role does FinTech have in transitioning to net zero?

Thus, actions required by the Government include: overcome "green premium", infrastructure development, foster business model and technology innovation, risk management, promote efficiency and continuous improvement, and cultivate public's support.

Datu Sharbini Suhaili further presented about the hydropower energy in Sarawak's journey towards the transition energy. Several hydro-power dams have been developed; in Batang Ai (1985), Bakun (2011), Murum (2014), as well as the incoming one in Baleh (2027). These hydroelectric projects (HEP) are developed in accordance to the Int. Commission on Large Dams standards and guidelines, to ensure they are built and operated safely, efficiently, economically, as well as environmentally and socially equitable.

Contribute to the Malaysian Government's target of reducing the nation's carbon emission intensity by

45% by the year 2030

72% reduction in the carbon intensity has been attained since year 2010.

Dr Raslan (MIGHT) shared that Malaysia that presently faces not only the energy transition challenges, but along with the global crisis in war, health, economic, and food will result in a disruption in the energy transition. Hence, energy transition will require new approaches and multi-prong strategies. This include:

- Collaboration and cooperation
- New RE-mixed solutions
- Balancing energy demand and supply
- Balancing investment in technology and cost reduction of decarbonization
- Energy storage, carbon capture, carbon pricing, and enabler eco-systems
- Fairness and regulation

Here, energy transition foresight deals with an exploration of future possibilities for a better decision making and build national capacity in foresight & future thinking. Thus, a systematic and structured methodologies to conduct the energy transition foresight can be through a horizon scanning, Interview and expert panel, workshop/focus groups, and wind tunneling. Other methods are inclusive of PEST (Political, Economic, Social, Technological) and FIRST (Funding, Infrastructure, Regulation, Skill and Talent, Technology) analysis.



SILVER BULLETS TO ACCELERATE TOWARDS SOUND ENERGY TRANSITION: FROM RENEWABLES' PERSPECTIVE

Development of a holistic energy system architecture that incorporates security (reliability, affordability, accessibility), net-zero carbon, and value creation elements for Malaysia by 2050.

KEY STRATEGIES

- Development of a single-grid system through integration of multiple grids into the singular system.
- Increasing targeted funding, incentives, and subsidies to expedite the energy transition in emerging economies.
- Development of "green & renewable city" as a prototype showcase.
- Leveraging and prioritization on the existing technologies against newer technologies to expedite the energy transition.

1 STRATEGIC INFRASTRUCTURES ENABLER

- Future proofing the smart grid and microgrid under the purview of TNB.
- Continuous stakeholder engagement of choice of infrastructures to cater the streamline RE technologies effectively.

SUCCESS INDICATORS:

- Compatibility of a system with other systems.
- Synergizing to the International Energy System Integration standards for flexible and efficient integration of RE & carbon emission reduction.



DISCLAIMER:

- Indication of key result manager by 2025-2035.
- Others indicates the Post-2035.

2 STRATEGIC DIGITALIZATION ENABLER

- Integration of blockchain technology for facilitation of immutable data management.
- Employment of data capturing technology on RE.
- Enabling public access to detailed statistics and data related to RE.

SUCCESS INDICATORS:

- Provision of reliable & accessible data management system

3 STRATEGIC ENABLER: INVESTMENT FUNDING

- Collaborative/matching funding by the key energy players in Malaysia.
- Expanding scope for Malaysian Electricity Supply Industries Trust Account funding, as this funding is currently accessible by energy producer only.

SUCCESS INDICATORS:

- Designing a "shadow pricing" scheme to introduce the mean cost of renewable energy produced.
- Designing a framework that provides returns on investment (ROI) clarity to potential investors.
- Invigorating domestic and international investors' confidence in realized investment in RE deployment in Malaysia.
- Establishment of the Green Investment Banks (GIB) to separate financial institution that balance risk & reward differently while spotlighting 'sustainability' initiatives.

4 STRATEGIC ENABLER: GREEN WORKFORCE

- Expansion of scopes for green jobs' guidelines.
- Provision of upskilling courses in the 'sustainability' domain regardless of the background discipline.
- Analytical skills.
- Increased collaboration in technology and analysis.

SUCCESS INDICATORS:

- Successful migration from fossil fuel-based industry to RE industry
- Provision of a lifelong learning, training, as well as development, and upskilling modules for workforce
- High demand of green talents (green workers) that supports environmental sustainability.