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Hydrogen technology to boost GDP by 2050

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PETALING JAYA: The Malaysian economy is set for greater prosperity come 2050, with the Hydrogen Economy and Technology Roadmap (HETR) enabling the contribution of about RM1.5 trillion to the GDP and creating 200,000 new jobs, said Science, Technology and Innovation Ministry Secretary-General Datuk Dr Aminuddin Hassim.

He told *theSun* that Malaysia is already on track to become a green nation with low carbon emissions, thanks to the recently launched HETR.

"Hydrogen is a clean-burning fuel that produces heat and electricity with only water vapour as a by-product. The HETR ties into the National Energy Policy 2022-2040 and National Energy Transition Roadmap.

"These policies lay the foundation for Malaysia to achieve net-zero greenhouse gas (GHG) emissions by 2050. Even before this, and by 2030, the country would have a GDP contribution of RM60 billion."

He said hydrogen could be made with renewable resources such as solar, wind and hydropower, which Malaysia is rich in.

"Malaysia's strategic landscape enables us to produce high

► Country on track to earn RM1.5 trillion, become green nation with low carbon emissions via clean burning fuel: Ministry

amounts of renewable electricity. This makes it suitable for producing hydrogen.

"In Sabah and Sarawak, hydropower is abundant but in Peninsular Malaysia, solar photovoltaic and ocean energy such as wave and tidal energy could be used to generate it. The renewable electricity is used to power the process that produces hydrogen."

Aminuddin said Sarawak has taken the lead in implementing hydrogen-powered public transit and refuelling infrastructure in East Malaysia, by using the abundance of hydropower available to generate hydrogen.

"Many of Sarawak's local organisations, for instance Sarawak Economic Development Corporation (SEDC) Energy, are generating and using hydrogen.

"SEDC Energy has signed agreements with other local organisations to accelerate the adoption of electrolysers, which use electricity to generate hydrogen.

"It is currently planning to invest in a manufacturing plant and aims to mass produce

electrolysers by 2024."

He said it has also opened a multi-fuel station in Kuching, which supplies hydrogen at the pump for hydrogen fuel cell-powered vehicles.

Aminuddin added that Petronas via Petronas Technology Ventures Sdn Bhd, NanoMalaysia Berhad, UMW Berhad as well as Malaysian Green Technology and Climate Change Corporation are collaborating to establish and operate the first mobile green hydrogen refuelling station in Peninsular Malaysia.

"This collaboration aims to increase hydrogen fuel cell vehicle usage and identify other fiscal and non-fiscal incentives to promote hydrogen vehicles in Malaysia, especially for heavy-duty and long-range use."

He said Tenaga Nasional Berhad (TNB) and Petronas are working together to build a green hydrogen ecosystem.

He added that it would include the supply of green electricity, electrolysers, hydrogen compression, storage and transport.

"TNB is exploring co-firing natural gas with green hydrogen for cleaner power generation in a re-powered project at the Sultan Ismail Power Station in Paka, Terengganu. It is expected to be commissioned by 2030."

Aminuddin said there are also several other projects under way, which involve NanoMalaysia Berhad, a delivery agency under the Science, Technology and Innovation Ministry.

"These projects include the conversion of buses to enable them to use hydrogen as a zero-emission range extender. These projects are expected to be completed between 2024 and 2025."

Aminuddin said there are many opportunities that Malaysia could explore in hydrogen production, and that the country's current hydrogen efforts cover the entire supply and value chain.

"We can achieve the goal of net-zero GHG emissions by 2050 and also produce hydrogen and even equipment and technology for export to other countries.

"Malaysia can lead the development of new hydrogen technologies along the value chain, such as in solid-state based technology."

Malaysia can also anticipate excellent economic growth as the hydrogen industry can bring significant economic value to the country.