

COVER STORY: IS MALAYSIA READY FOR THE HYDROGEN ECONOMY?

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Malaysia began exploring the use of hydrogen as an alternative fuel source for the energy sector in the 1990s, with at least two road maps or blueprints introduced along the way.

Progress on the implementation, however, was sluggish. Key targets, such as the installation of hydrogen refuelling stations by 2015, were not achieved, according to a 2019 review of Malaysia's hydrogen economy by researchers from Universiti Teknologi Malaysia (UTM).

There were many reasons the plan did not take off then. One major hurdle was the gargantuan task of developing large-scale supporting infrastructure for hydrogen.

But in recent years, hydrogen is increasingly being considered globally as a potential fuel of the future to decarbonise the energy sector (see “What’s the deal with hydrogen?”). It is seen as a cleaner resource because when hydrogen is burnt to generate energy, it only forms water, unlike fossil fuels, which emit harmful greenhouse gases (GHG).

In Malaysia, Sarawak Energy Bhd launched Southeast Asia’s first integrated hydrogen production plant and refuelling station in 2019. Sarawak’s three buses that use hydrogen fuel cells began servicing routes in 2020.

Meanwhile, Petroliaam Nasional Bhd (Petronas) has struck up partnerships with universities and private companies to explore the generation of hydrogen. Universiti Kebangsaan Malaysia and UTM have various ongoing hydrogen-related research projects.

Now, NanoMalaysia Bhd CEO Dr Rezal Khairi Ahmad wants to take up the challenge and create a new Malaysian hydrogen technology economy road map. He wants to unite the efforts of all the players in the country, quantify the potential economic impact of this industry and drive innovation in hydrogen-related technologies.

NanoMalaysia is a company limited by guarantee under the Ministry of Science, Technology and Innovation (Mosti). It is entrusted with nanotechnology commercialisation activities.

Things are different now, Rezal believes. Globally, companies and governments are vying to use hydrogen as a strategy to reduce carbon emissions and reach net zero emission goals. Oil and gas companies, under immense pressure to decarbonise, are diversifying into blue hydrogen.

“The EU announced its Hydrogen Strategy last year, Japan renewed its commitment to hydrogen energy, while South Korea and Australia announced multimillion-dollar investments in the hydrogen industry,” Rezal points out.

“BP, Shell and ExxonMobil are undergoing this transition. This is unprecedented. That’s why I have confidence that it will be different this time, as the market forces and technology development provide evidence that hydrogen is here to stay. We need to ride the wave and ensure Malaysia can participate and, at least, become a leader for it in the region.”



MOHD SHAHRIN YAHYA/THE EDGE

“The whole idea is to build the future by design, not by chance. In the past, governments or universities tended to create a programme, put some money into it and allow the private sector to come in randomly. The value chain cannot be orchestrated that way.”

Rezal