



Abang Johari refuels a hydrogen-powered vehicle.



Abang Johari (front fifth left) with a newly-unveiled hydrogen-powered bus.

Transitioning to a reliable and clean energy system

FOLLOWING the launch of Sarawak's first integrated Hydrogen Production Plant and Refuelling Station at the Sarawak Energy Western Regional Office here on May 27, 2019, the state is well on the way along the path of green energy.

The facility – the first of its kind in Southeast Asia – includes a plant built by Sarawak Energy that produces hydrogen through an electro-chemical process called electrolysis, as well as a refuelling station for Sarawak's first hydrogen fuel cell electric buses under the ownership and management of Sarawak Economic Development Corporation (SEDC).



Abang Johari (seventh right) is seen at the ground-breaking ceremony for the Hydrogen Production Plant and Refuelling Station.

Maybe one day, we will be producing hydrogen to the world, especially if producing hydrogen in Sarawak is comparatively cheaper against our peers. If that happens, then we can transform the state to be a net exporter of gas overseas and promote the use of green energy to the world.

Datuk Patinggi Abang Johari Tun Openg, Chief Minister

The construction and operation of the hydrogen production plant and refuelling station was undertaken by Sarawak Energy in collaboration with Linde EOX Sdn Bhd, a subsidiary of Linde Malaysia.

Linde is the technology leader for sustainable hydrogen solutions – from hydrogen production technology to supply competence, fuelling technology, equipment, as well as applications and services.

The collaboration provides a platform for knowledge-sharing and transfer of technology, allowing Sarawak Energy to explore in situ the development of hydrogen as a fuel for the future.

transportation.

The plant was commissioned on a design-and-build basis in accordance with all relevant regulations, codes, standards, and best practices referenced from the design and operation of other international world-class facilities.

As it produces zero emissions, hydrogen is environmentally friendly and, as far as Sarawak's development plan is concerned, green initiatives are top priority.

The Integrated Hydrogen Production Plant and Refuelling Station is in line with Chief Minister Datuk Patinggi Abang Johari Tun Openg's vision to establish an emission-free public transportation system in Sarawak.

Towards this end, the Sarawak government has entrusted Sarawak Energy to spearhead

energy-related research, starting with a feasibility study on hydrogen and fuel cell applications in Sarawak.

Last year marked the first hydrogen-powered bus trial in Kuching. The project was announced in November 2017 followed a month later by the announcement of the first hydrogen mobility trial project for Kuching.

The Chief Minister also announced plans last year to build six more integrated Hydrogen Production Plant and Refuelling Stations across Sarawak – two in Kuching and one each in Sri Aman, Sibul, Bintulu, and Miri.

Currently, SEDC owns three hydrogen-powered buses while Sarawak Energy has two hydrogen-powered Hyundai Nexos.

On top of the two Nexos, Sarawak Energy also has four electric cars and 24 electric scooters as part of its corporate fleet to demonstrate its commitment to greening the transportation sector in Sarawak.

In his winding-up speech in the State Legislative Assembly on Nov 13 last year, Abang Johari touched on Sarawak's transition to a reliable and clean energy system, announcing that the government had approved RM20.3 million for an applied research grant on the hydrogen economy initiative as proof of his commitment to research and development (R&D) funding, which calls for a 21st-century clean transportation initiative.

"This would help modernise our urban infrastructure through new technologies such as fuel cell technology, hydrogen-powered vehicles, and hydrogen powered Autonomous Rapid Transit (ART), which has zero carbon emission.

"In this respect, we have allocated a preliminary sum of RM20 million through Sarawak Economic Development Corporation (SEDC) to start this initiative," he said.

This development, coupled with those in other cutting-edge technology sectors ranging from



Passengers ride on an electric bus.



Photo shows the refuelling station and hydrogen-powered Hyundai Nexos.



Photo shows two electrolyzers at the plant to produce hydrogen gas.

manufacturing to agriculture, will create new jobs and attract new high-value-added industries that can contribute positively to labour revenue productivity, he said.

Abang Johari said the South Korean government's hydrogen roadmap released in January last year pointed out that the Korean hydrogen market is expected to reach 70 trillion won (over RM247.25 billion) by 2050.

He said South Korea had also announced last November that it would build three hydrogen-powered cities by 2022, adding that the plan would see the cities use hydrogen as the fuel for cooling, heating, electricity, and transportation.

"Over the past months, I drove around town in a hydrogen fuel cell powered SUV by a South Korean manufacturer; so far it has been a smooth and quiet ride, and safe to handle," said the Chief Minister, who uses a Hyundai Nexos.

Despite the advances in hydrogen technology across the world, Abang Johari believes more can be done for the advancement of hydrogen technology.

Improving air accessibility

The Sarawak government, under the able leadership of Abang Johari, has been mulling over setting up a state-based airline service to increase air connectivity in Sarawak.

In October last year, he said the proposal to set up an airline service to enhance air

connectivity in Sarawak would not involve any purchase of aircraft but opt for the choice of leasing.

He said leasing would provide a more viable option compared to buying the aircraft, adding that such a decision was made based on past experience.

Earlier last year, at the launch of the AirAsia Sarawak Campaign Livery at Kuching International Airport, Abang Johari said Sarawak was working out the details on a proposal to set up its own airline company.

He said the Sarawak government was trying to revisit the old proposal, where it expressed an interest in taking over MASwings, owned by Malaysia Airlines Berhad, which was reluctant to sell MASwings to Sarawak.

Abang Johari added that Sarawak had a few options to have its own small airline connecting Kuching with other strategic destinations in the region.

Last October, the Chief Minister said Sarawak and Sabah should consider setting up an airline jointly operated by the two states.

He made the proposal after pointing out that tourism is one of the core areas the Sarawak government had outlined in its plan to be a high-income economy by 2030.

The Chief Minister said the tourism sector is where Sarawak can learn from Sabah, adding, "we can put our heads together and think about this (setting up our own airline)".



Abang Johari launches the AirAsia Sarawak Campaign Livery at Kuching International Airport.