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Time to scale up R&D on green energy production

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GREEN hydrogen is what the world is after as clean energy, and the way to produce it is to electrolyse water using renewable electricity sources like solar and wind.

Years of research have made possible a safe and efficient hydrogen production system. Many countries are racing ahead to embrace the hydrogen economy, so we should launch our own hydrogen blueprint soon. We do not want to be left behind.

According to experts, there are many economic opportunities emerging on the back of the hydrogen business. We need to be ready to tap such opportunities with the right business strategy and a robust ecosystem for hydrogen technology development.

In the United Kingdom, wind power is being harnessed for hydrogen production. One scheme talks about fitting floating wind turbines with desalination equipment to remove salt from seawater, and electrolyzers to split the resulting freshwater into oxygen and the sought-after hydrogen.

The idea has sparked great interest as governments are looking to embrace greener energy systems within the next 30 years under the terms of the Paris Agreement. Hydrogen is seen as an important component in these systems.

But for that to happen, the production of hydrogen, which emits near-zero greenhouse gas emissions, will need to dramatically increase in the coming decades. It



Exploring green power sources: A speed boat passes along 110m-high offshore wind mills set up in the North Sea near Denmark. Wind power at sea is being explored for clean energy needs in Europe. In Malaysia, we could explore ocean thermal energy. – AP Photo

has been reported that wind turbine maker Siemens is investing US\$145mil into the development of an offshore turbine with a built-in electrolyser. Other engineering companies are doing the same.

These initiatives are mainly due to climate commitments, but economics are also involved. Large-scale hydrogen electrolyzers are becoming more available while the cost of installing wind turbines has fallen dramatically. Many think the time is right to kick-start large-scale

hydrogen electrolysis at sea even though the idea has been around for many years.

In Malaysia, tapping on wind energy is not so viable because of the lower wind speeds here. Scientists are nevertheless working on a different wind turbine technology to do this.

Not many are aware that in the deep seas around Sabah and Sarawak lies a potential energy source waiting to be tapped. This is ocean thermal energy, which is

rapidly gaining interest in the global search for renewables.

A team based in Universiti Teknologi Malaysia is currently conducting research in ocean thermal energy conversion. Sadly, support in terms of funding has not been so strong.

We know energy is critical for the country. We also know that we cannot depend forever on our fossil fuel sources. We need to diversify. It is therefore unfortunate that our energy R&D, as is true for most R&D, is highly fragmented and lacking in focus.

The call for change towards more collaboration has fallen on deaf ears. We will live to regret this unproductive attitude.

We need better coordination of our energy R&D. Most are done in universities, where the motivation is more to publish rather than upscale into an industry of economic standing.

It is time to establish an energy R&D alliance among the active R&D centres, where new initiatives like ocean thermal energy conversion must strongly feature. The alliance must also incorporate industry inputs to remain relevant to the economy.

The only way to make this happen is through strong political will from the very top.

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