KEMENTERIAN TENAGA DAN SUMBER ASLI

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Your opinion

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Malaysia-made green energy solution

TRANSITIONING from fossil fuel-based electricity generation to exploiting palm biomass would, in the short term, represent the single greatest energy revolution in Malaysia; the technology is robust and can be implemented relatively easily and cost-effectively. Tenaga Nasional and the government should take a serious look at it.

Recent discussions I have had about solutions to decarbonise Malaysia brought out many different solutions. An article last month at a motoring portal noted the increase of hybrid cars in Asean neighbours like Thailand, Cambodia and Singapore. I believe that while hybrids can be very beneficial in reducing petrol consumption, Malaysia remains a highly cost-sensitive car market, so expensive technologies that would reduce energy consumption would make pushing hybrids challenging.

In fact, a widespread move to pure electric vehicles (battery powered vehicles, or EVs) would be nonsensical currently in Malaysia, not only due to the cost issue but particularly because of the makeup of the current Malaysian electricity grid which would be used to charge all those batteries. According to an article in *The Star* reporting on Tenaga Nasional Bhd data ("TNB's ambitious green energy plans", Sept 11; online at bit.ly/star_tnbgreen), nearly two-thirds of Tenaga's electricity is generated from coal as of 2020. Hydro, biofuels and renewables like solar and wind currently make up a small proportion (under 5%), with natural gas and petroleum making up the balance. EV owners may feel righteous about driving a clean car but, as a matter of fact, they are simply moving the pollutant generation from the point of use to distant, centralised power plants overwhelmingly still burning fossil fuels.



Green energy: Oil palm biomass is a readily available energy source that Malaysia should make use of. — Filepic/The Star

One solution I propose, as have many others, is to exploit palm oil. Palm oil has received a great deal of criticism lately, especially from abroad. It is not this letter's purpose to heap on more criticism. Instead, I am coming from a position of pragmatism: It is an abundant resource already in widespread use; there's huge and established infrastructure, know-how, jobs and invested land around it; and it's fully domestic.

Palm oil has a multitude of uses, but I am particularly interested in what's left over after the oil has been squeezed out of the fruit kernels. I am also interested in old and unproductive trees that are cut down; here I can also add old rubber and other crop trees. Combined, this immense quantity of available biomass is currently not being used to its greatest advantage. At worst, it is being burned in open fires, buried or left in pools leading to incredible air, ground and water contamination.

This residual biomass – which does not compete for food and other value-added products – can be added as fuel to much of the existing coal-fired generating infrastructure with some modifications. Natural gas turbines can also be outfitted with gasification units to turn the solid biomass into combustible gases that can be burned by themselves or blended with the aforementioned natural gas.

State-of-the-art combined cycle gas turbine power plants – like the one in Pasir Gudang, Johor – can operate with incredible efficiencies, exceeding 60%, on natural gas, and are perfect marriage partners with gasifiers fed with biomass. Gasification technology is mature, robust, and has been in long-time, widespread use in Europe and South Africa, to name only two examples.

Following this proposal to its logical and practical conclusion would be the single greatest green energy revolution and among the top economic transformation factors in Malaysia. It would be a pragmatic, realistically achievable, rapidly realisable, cost-effective and eminently sourced-from-Malaysia solution that both Malaysians and the whole world can benefit from. I urge the industry and political leaders of the country of my birth to look closely at it and make it happen.

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