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## Use biomass as energy alternative

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THE country's biomass is an underdeveloped asset. Many have written about the immense economic potential of biomass, especially those from the palm oil industry.

Conversion to energy is one. But there are many other value-adding potential. The National Biomass Action Plan has long been launched but implementation is lethargic.

To revitalise the biomass economy in Malaysia, and deal with the lethargy, several key strategies could be employed.

Given Malaysia's rich resources, including agricultural and forestry waste, a stronger biomass economy could bring environmental benefits while boosting rural economies and industries. Budget 2025 should incorporate the necessary incentives to energise the biomass sector.

Policy and regulatory support are obviously needed. One thing to do is to introduce or increase subsidies, tax exemptions and financial incentives for companies investing in biomass technologies. This is normal when a new industry is created.

It is also important to simplify the process for obtaining permits and licences for biomass production plants, which often face bureaucratic hurdles. Regulatory agencies must facilitate, not create, roadblocks. Implementing certification schemes that reward companies using biomass for energy and thus reducing carbon emissions is also a good strategy.

Much of the drivers of the biomass business lie in technology. Investment in R&D is crucial. We should encourage collaboration among government, universities, and the private sector to innovate biomass conversion technologies, such as turning palm oil waste, rice husks and other agricultural residues into bioenergy.

On technology and innovation, we need to invest in advanced biomass conversion technologies. This is where we must promote research into more efficient biomass-to-energy technologies, such as pyrolysis, anaerobic digestion, and gasification, to make biomass energy more cost-effective. Not to mention encouraging the integration of IoT (Internet of Things) and AI (artificial intelligence) in the monitoring and optimisation of biomass energy systems, enhancing productivity and minimising waste.

Many have advocated bio-energy beyond just electricity. We need to explore and promote the use of biomass for producing liquid biofuels, biochemicals and other high-value products, such as bioplastics and fertilisers. This involves developing a circular economy approach where biomass waste from one industry is used as input for another, thus reducing landfill waste and enhancing overall sustainability.

We must not forget incentives for market development and export. We should strategise to tap into international markets, especially in Europe, where demand for sustainable biomass for



energy production is high. This could create a significant export industry for Malaysia, especially for products like wood pellets or bioethanol.

Palm oil processing residue, such as empty fruit bunches and palm kernel shells, can be used for bioenergy and biobased products. We should focus on turning palm oil waste into high-value biomass energy and products that could help both the biomass and palm oil sector.

We can collaborate with international organisations like the Global Bioenergy Partnership to access best practices, funding, and technology for boosting the biomass economy. We can also partner with countries that have advanced biomass economies, such as Finland or Sweden, to learn from their successes and failures.

Energising the biomass economy in Malaysia would require both top-down initiatives, such as policy reforms, as well as grass-roots engagement, with support for local industries and innovation. Developing a robust biomass sector can help reduce reliance on fossil fuels and create new economic opportunities, contributing to Malaysia's sustainability goals.

Budget 2025 should address the need to further incentivise the lethargic local biomass economy.

**Prof Datuk Dr Ahmad Ibrahim**  
**Tan Sri Omar Abdul Rahman Centre for Science, Technology, and Innovation Policy Studies & International Institute For Science Diplomacy and Sustainability**  
 UCSI University  
 Associate Fellow, Ungku Aziz Centre  
 Universiti Malaya