Malaysia's Green Oil

Turning biomass into liquid gold

OFTEN heralded as a land blessed with plentiful natural resources, one of Malaysia's primary exports is palm oil - of which it is among the world's largest producers. Refined from the fruit of the oil palm tree, this commodity is one of the most versatile around as it can be used to produce food, pharmaceuticals, or fuel.

What, however, is often overlooked is the potential of oil palm biomass - the shells or empty fruit bunches (EFBs) that are left behind after the fruit have been extracted. Often discarded or used as low value composed or burnt as a form of – admittedly inefficient - fuel, there has been lots of talk about harnessing the potential of EFBs, but little breakthroughs.

That is until now… Because, one company in Malaysia is set to make waves, not just in the country but all over the region, thanks to its innovative process where oil palm biomass - once considered as waste - is transformed into highly efficient fuel. Formed to take advantage of the abundance of biomass in the country - Malaysia produces an average of 20 million tonnes of EFBs per year - Premium Renewable Energy (Premium RE) is setting itself up as a company to watch in the coming years.

There are a number of reasons which help lend credence to the aforementioned claim - these include the technology used and the partnerships that Premium RE has formed to ensure the viability of its plans. However, not only does the company have the technical capacity to bring its vision into fruition, it also has the expertise to ensure success.

That is because its recently appointed Managing Director and CEO is none other than a man who is synonymous with the power generation industry in Malaysia - Ahmad Jauhari Yahya. Having been the Managing Director and CEO of Malakoff Corporation - the country's largest independent power producer (IPP) with an installed capacity of more than 7,000MW - for 16 years, as well as a past President of Penjanebas (the Association of IPPs in Malaysia), he is bringing his vast know-how and experience in the field to Premium RE.

A PROVEN TECHNOLOGY

According to Mr Ahmad Jauhari, the present method of grinding and then burning EFBs in a boiler to generate energy is an extremely wasteful process, as only up to a maximum of 19% of the total potential energy content is converted into power. However, thanks to a process known as Rapid Thermal Process (RTP™), Premium RE is able to more than double that yield from oil palm biomass.

A technology created and patented by Canadian company Ensyn Technologies, RTP™ uses a process known as fast pyrolysis where the EFBs are placed under high heat in a zero oxygen environment - very much the same way that charcoal is produced from wood. As there is no oxygen, the EFBs do not combust but instead undergo chemical and physical changes.

The end result is what is known as pyrolysis oil or bio oil - a storable, transportable and energy rich fuel. It has production yields of about 70% from dry EFBs and gives more than 40% of the EFBs total potential energy output for power generation. This makes it the most efficient form of fuel for power generation from oil palm biomass currently known. As a partner of Ensyn Technologies, Premium RE holds the exclusive rights to commercialise this technology in Malaysia as well as the other parts of the region.

TRULY EFFICIENT, TRULY GREEN

EFBs - which were once considered as inefficient sources of energy at best or waste at worst - are now given a new lease of life as feedstock for a highly efficient and extremely sustainable form of fuel. Furthermore, work is underway to optimize the extraction on certain high value fine chemicals from pyrolysis oil and to upgrade pyrolysis oil so that it can be used as a "drop-in" green automotive and aviation transport fuel, thus easing dependency on petroleum derived fuels.

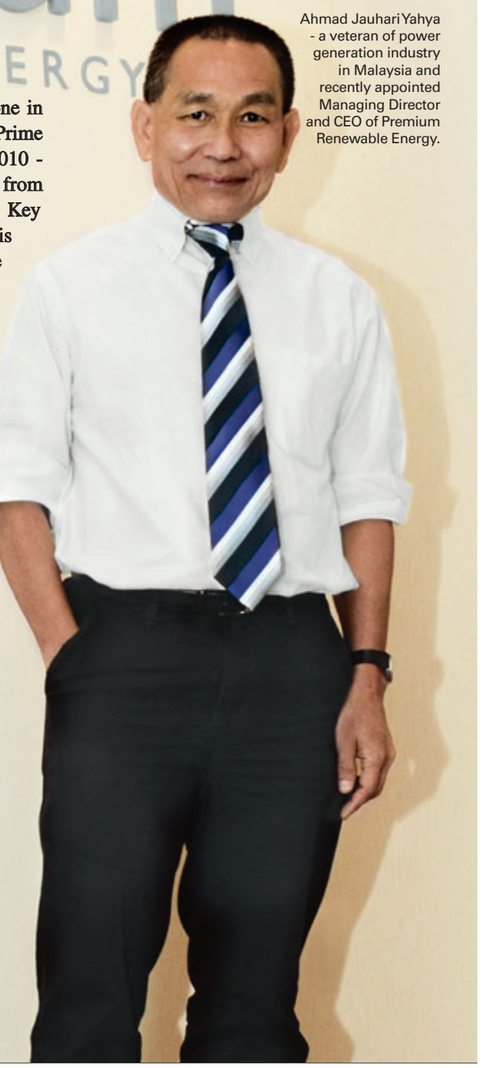
Mr Ahmad Jauhari also highlighted that one of the main differences between pyrolysis oil and palm oil biodiesel is that EFBs are not part of the food chain. This is notable because it addresses the ethical problem of using food sources such as palm oil and corn - for ethanol - in the production of fuel.

EMPOWERING THE EAST

Premium RE was part of the first 9 EPPs and the only one in the nine to roll-out an EPP in Sabah announced by the Prime Minister during the ETP Roadmap Launch in October 2010 - a result of it and its technology receiving the thumbs-up from an independent assessment by the Palm Oil National Key Economic Area Laboratory facilitated by PEMANDU. This is therefore a source of pride for Mr Ahmad Jauhari and the team at the company.

Furthermore, one of the main problems plaguing the East Coast of Sabah is that the peak demand for power is higher than peak production. Therefore, the plant - which will be located near oil palm estates (Sabah is the site of Felda's largest estates i.e. Felda Sahabat) - is set to help resolve that situation i.e.to produce pyrolysis oil as a green fuel for efficient power production. In doing so, not only will Premium RE help generate much needed power, it will also play a vital role in the development of one of Malaysia's most resource-rich but underdeveloped states.

All the signs point to a bright and positive future for Premium Renewable Energy, as it ticks all the right boxes. The technology is already in place, the partnerships - both foreign and local - have already been established, and now with Ahmad Jauhari Yahya as its Managing Director and CEO, it has a man for whom power generation is second nature at its helm. Certainly industry watchers and the general public will not go wrong by making Premium Renewable Energy the one to watch.



Ahmad Jauhari Yahya - a veteran of power generation industry in Malaysia and recently appointed Managing Director and CEO of Premium Renewable Energy.

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