

UMS teams up with Tumau Gayo to cut down carbon footprint of palm oil mills

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KOTA KINABALU: Universiti Malaysia Sabah (UMS) and Tumau Gayo Energy Sdn Bhd will collaborate to stimulate the performance of palm oil mills that belong to state-owned Sawit Kinabalu.

Yesterday both parties signed a Memorandum of Understanding (MoU) to undertake in designing heat exchangers furnace efficiency and therefore reduce energy consumption and the carbon footprint of palm oil mills.

The MoU was signed by UMS vice chancellor, Prof Datuk Dr Kamaruzaman Haji Ampon and Chairman as well as Chief Executive Officer of Tumau Gayo Energy Sdn Bhd, Datuk Henrynus Amin yesterday.

Through the collaboration, the university will pro-



Dr Kamaruzaman (second left) and Henrynus exchanging documents after signing the MoU.

vide engineers who will be working closely with Tumau Gayo to design the heat exchanger.

The company has a patented Inorganic Aqueous Solu-

tion heat pipe technology with a conductivity level that is 30,000 times faster than conventional copper.

Given its heat conduction capability, the technology has

the potential to be adapted in palm oil mills to improve furnace efficiency and therefore cut down on energy consumption.

According to Dr Ka-

maruzaman, the minimum gain in efficiency of the furnace is estimated to be 10 per cent.

“With the increase in furnace efficiency and the availability of access to biomass fuel for power generation, mills can invest in additional power production capacity to process EFB (empty fruit bunch) at site before transporting the raw material for subsequent product transformation elsewhere,” he explained.

In Sabah there are about 464,000 hectares of oil palm plantations with a quarter owned by the government.

However, oil extracted from the palm consists of only 10 per cent of the total biomass produced at the plantations.

The remaining 90 per cent consists of huge amounts of lignocellulosic materials such as oil palm fronds, trunks and

empty fruit bunches that are often treated as waste.

Whilst the trunks and fronds replenish the organic content of the soil at the plantations, the EFB are concentrated in the mills and present a major cost for disposal.

UMS researchers have been conducting various applied research on the utilisation of EFB.

Technologies are available to convert EFB fibre into paper, composite wood and bio-degradable packaging material.

Translating these technologies into commercial success becomes a challenge when processing the EFB into fibre at the mills is limited by power.

The UMS and Tumau Gayo collaboration therefore seeks to rectify limited power supply by adopting green technology to process the EFB.