

SRI JELUTONG AND SAWIRA BIOGAS POWER PLANT

AGRICULTURAL AND FOOD ENGINEERING TECHNICAL DIVISION

reported by



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Group photos of participants, the biogas plant engineers and Mr. Eric Wong, the head of Renewable Energy of Cenergi SEA



Sawira biogas power plant 1.0 MW (grid connection)

Under the National Key Economic Areas (NKEA) plan by the Government in the 10th Malaysia Plan (2010-2015), the importance of biogas trapping is evident from its inclusion as one of the Eight Entry Point Projects (EPPs) of the palm oil sector.

The biogas capturing project from Palm Oil Mill Effluent (POME) is a good source of renewable energy for various utilisations and applications, inclusive of but not limited to, power generation.

Two technical visits were organised on 21 July, 2018, to Sri Jelutong biogas power plant in Pekan and Sawira biogas plant in Muadzam Shah, Pahang, with a total of 37 participants.

These are green energy power plants integrated with palm oil mills to process oil palm Fresh Fruit Bunches (FFB) and produce Crude Palm Oil (CPO) and Palm Kernels (PK).

Sri Jelutong biogas plant has a capacity of 1.5 MW and has achieved its commercial operation date on 5 October, 2017, whilst Sawira biogas plant has capacity of 1.0 MW and has achieved its commercial operation date on 8 April, 2016.

The power generated is mainly for grid connection Feed-in-Tariff (FiT) purpose. This is a positive move for environmental concerns as greenhouse gas (methane)

is captured and prevented from escaping into the atmosphere. As we are aware, the greenhouse effect of methane gas is 25 times greater than that of carbon dioxide. So methane should be captured and converted into something commercially beneficial.

The 2 palm oil mill biogas plants were constructed and managed by Cenergi SEA, a subsidiary company owned by Khazanah. Mr. Eric Wong, the head of Cenergi SEA RE (Renewable Energy), has been actively involved in most of the biogas plants' SEDA application and approval, biogas plant design, set up, commissioning, operation and maintenance. According to him, the setup of a biogas plant comprises three stages: Biogas capturing, biogas treatment and biogas utilisation.

Biogas capturing refers to the intake of raw material or POME. Biogas treatment refers to the de-sulphurisation and de-humidification of the raw biogas. Lastly, biogas utilisation refers to the FiT grid connection. The control and monitoring systems are brief and accurate as well as supported by the SCADA system, to ease daily operations and maintenance.

During the technical trips, participants raised many curious and technical questions since the setup of the plants was so simple and yet presentable and operationally friendly. The plant engineers and supporting staff answered all the questions patiently.

Participants gained more knowledge about POME biogas power plants after the technical site visits. From the biogas capturing stage, the beauty of the biogas capturing plant was that along with the capturing of methane gas, the wastewater treatment of the POME significantly reduced the BOD and COD by 85% and 90% respectively. ■