



Technical visit to Seri Ulu Langat Palm Oil Mill Sdn. Bhd. (SULPOM) 7 MW Biomass Cogeneration Power Plant at Dengkil, Selangor

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In conjunction with the AFEO Energy Tour 2016, a technical visit to Seri Ulu Langat Palm Oil Mill Sdn. Bhd. (SULPOM) 7 MW Biomass Cogeneration Power Plant at Dengkil, Selangor was successfully organized by the Electrical Engineering Technical Division, The Institution of Engineers Malaysia on 23rd September 2016. The visit started with a safety briefing followed by the overview presentation of the Biomass Power Plant by Mr. Yap Hai San, Director of SULPOM Group. SULPOM was established on 21st August, 1979 and started operation in 1984. The biomass and biogas power plants utilise the wastes from palm oil mill to generate electrical. According to Mr. Yap, there are various products and wastes of palm oil mill which can be used as power generation materials. They include palm oil mill effluent (POME), empty fruit bunch (EFB), palm kernel shell (PKS), palm kernel (PK), crude palm oil (CPO) and mesocarp fruit fibres (MF). The Integrated Biomass-based Cogeneration Power Plant has a gross power generation capacity of 7MW with the following power distribution profile:

1. Power export to TNB Grid – 5MW
2. Power export to Integrated Seri Ulu Langat Palm Oil Mill – 0.8MW
3. Parasitic Load of Integrated Biomass-based Cogeneration Power Plant – 1.2MW

The biomass power plant was constructed with the aim to efficiently utilize wastes from palm oil mill to generate renewable energy. This is done by enhancing value of the waste material without being disposed which results in avoidance of unnecessary disposal processes hence ultimately saving costs on the said processes. Another objective of the said power plant is to upgrade and enhance the eco-friendliness of the palm oil mill by reducing methane gas, black smoke emission and odour pollution. The third objective is to create and increase job opportunities for the benefit of the local economy. This is done by adoption of automation technology, transfer of knowledge to the local people as well as reducing dependency on foreign workforce. These objectives are actually indirectly mapped to the National Green Technology Policy which was built on four pillars namely:

1. To seek energy independence and promote efficient utilization
2. To enhance the national economic development through the use of green technology
3. To conserve and minimize the impact on the environment
4. To improve the quality of life for all

Mr. Yap also shared the criteria of implementing a biomass powerplant. Firstly, the proximity of the grid interconnection point is a crucial factor to reduce losses. Ready supply of biomass fuels alongside with appropriate equipment selection are critical to ensure continuity of operation of the power plant. Proper logistic planning should also be in place to ensure effective transportation of biomass energy. After the conclusion of the presentation, a token of appreciation was presented by EETD's Chairman Ir. Yau Chau Fong to Mr. Yap.

The next half of the visit was focused on the tour around the power plant. Participants were briefed by the plant managers and staff throughout the walkthrough starting from the collection of biomass fuels, right up to the power generation. Water treatment technology employed was also shared together with the specifications of various components which include boiler, turbine and generator just to name a few.

The trip ended with a group photo of the participants as shown below

