

Oil palm biomass wastes as renewable energy sources in Malaysia: potentials and challenges

ABSTRACT

This paper reviews the potentials and challenges of using Oil Palm Biomass Wastes (OPBW) as Renewable Energy (RE) source in Malaysia. The OPBW mainly includes Palm Oil Mill Effluent (POME) and Empty Fruit Bunches (EFB). From the present review, the major potentials of OPBW consist of their large availability, being a major sources of lignocellulosic materials for industrial, being economically viable, being a solution to the disposal problem and cost-benefit. The challenges of using OPBW as RE source are being a high dependency on the availability of the OPWB, unfair subsidies given to RE based fuel, the use of POME that produces methane, substantial amount of under-utilization of lignocellulosic wastes from OPBW, the need for further studies on the correct selection of generation plant size, and not economically competitive. Overall, the challenge is to make the OPBW as a reliable, profitable and sustainable RE industry. Based on the present review mainly from Malaysia, there are definite potentials/advantages of using OPBW as RE source in Malaysia. Ways and suggestions on these practical issues on how to reduce problems facing the use of OPBW as RE source in Malaysia should be investigated and addressed before the large scale utilization of OPBW as RE source can be anticipated in Malaysia.