

## **Methane biogas production in Malaysia: challenge And future plan**

### **ABSTRACT**

Biomethane is a sustainable energy that is produced from an organic and renewable resource. As the second-largest oil palm producer in the world, palm oil mill effluent (POME) is the primary source of biomethane generation in Malaysia. POME is the by-product of palm oil extraction and is extensively employed as a feedstock for the production of biomethane. Malaysia has an equatorial environment with humid and hot weather; this climate is conducive to the cultivation of numerous agricultural crops. A considerable number of agricultural wastes and residues are produced by agricultural crops, however, only 27% of them are used as fuel or to create useable products. Several publications have been published on the production of biomethane from POME; nevertheless, additional research is required on the use of other bioresources and technologies for biomethane production in Malaysia. In addition, there is a lack of comprehensive information on the future development of biomethane production in Malaysia; thus, to fill this gap, this review paper focuses on the challenges and future of Malaysia, which puts an emphasis on POME and also includes other alternative options of bioresources that can be the future feedstock for biomethane production in Malaysia. To the best of our knowledge, this is the first paper to provide a comprehensive overview of the biogas trend in Malaysia in terms of challenges and current biomethane development, as well as detailed information on a number of leading companies that are currently active in Malaysia biogas industry.