Compressed Biogas (CBG) from vegetable market waste – Potential and opportunities for vehicular fuel in india

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India is moving towards attaining energy security and independence. With a target to meet 40% of all energy from renewable energy source under the Nationally Determined Contribution (NDC) of the Paris Agreement, increased focus has been given on renewable energy sources and the use of renewable fuels.

The present report enumerates policies, programmes and plans for capturing huge potential in converting organic waste to Compressed Biogas (CBG) (>90% methane) as vehicular fuel in India.

India has a focus to meet at least 40% of current CNG consumption with CBG by 2025. The CBG has the potential to positively impact the country's air pollution as well as carbon footprint. CBG is capable of reducing Greenhouse Gas (GHG) emission by 60-80%, depending upon feedstock used.

Two key developments in the last five years make the current scenario attractive for CBG as vehicular fuel. There has been an increase in CNG-based vehicles since 2014, from 1.47 million to 3.28 million in 2019. The Ministry of Transport and Highways have approved the use of CBG as an alternative to CNG. Enabling policy and regulatory framework with advanced technical support helps in scaling up the conversion of various organic waste into CBG and other valuable by-products such as bio-CO2 and organic fertilisers.

The paper seeks to understand the current opportunities for CBG in India and the challenges present, both policy and technological, that need to be overcome to meet the 2025 target.

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