

# World Bioenergy Congress and Expo

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## Electricity generation by refined biogas from municipal solid waste

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We have a special project proposed and negotiating with Kalamassery Municipal Corporation (neighboring and satellite city of Kochi, biggest city and business capital of Kerala state, India) for treating its solid waste. Municipal Corporation has its own dumping yard, which is in the mid of highly populated area, national highway and railway station. Very important point is that this yard is on the river side, in which river is utilized for drinking water supply by water authority and industrial water supply for more than 20 major industries. Now many people are suffering due to this dumping yard. Our project proposes to collect segregated waste from the sources by effective utilization of "Kumbasree", cooperative groups from ladies supported by government are collecting the waste from individual houses as organic and inorganic by providing different color plastic containers to each house to collect plastic, organic, metallic & diapers waste. We will set up a modern plant to produce refined biogas and electricity as a final product. Plant will be set up in the municipal land to achieve "Zero Waste" as the target. Initial separation of the organic waste will be done on a conveyor belt to ensure it is 100% organic. Then, it will be crushed as slurry and sent to primary storage tank. This slurry will be pumped to series of horizontal bio-reactors. Gas formed shall be compressed and passed through cross flow scrubber to get 95-98% pure methane.  $\text{CO}_2$  &  $\text{H}_2\text{S}$  shall be separated by the refining process. This refined gas will be utilized for electric power generation. Final waste from the reactors shall be separated into solid and liquid. Solid will be sold as organic fertilizer and liquid will be sold as organic pesticide. All inorganic waste will be segregated and utilized for recycling. The ultimate Zero Waste target will be achieved.

### Biography

Muhammed Khader Karunnappilli completed his BTech in Mechanical Engineering from Mahatma Gandhi University, Kerala and Piping Engineering from IIT Bombay. He is a major stake holder of Clear Vision Group of Companies for contracting in KSA, UAE & India. Petrocare is a consultancy service in India in the field of Engineering and Waste Management. He attended waste management summits conducted by CII & Saudi Environment Forum.

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