

IIT-D test drive a success, biogas-fuelled car a reality

Manash Pratim Gohain | TNN

New Delhi: The latest models launched at the 12th Auto Expo 2014 are by now common knowledge among vehicle enthusiasts but few are aware that IIT Delhi has successfully tested India's first biogas-fuelled passenger car.

Compressed biogas was tested on a regular CNG car for over 15,000km. The best news was for the environment — the emissions were lower than CNG. Also, existing CNG vehicles need not undergo any modification to be compatible to CBG.

The water-scrubbing-based biogas upgrade and compression/bottling system developed at the campus is now patented with IIT-D, promising a green and low cost fuel for automobiles and cooking. The project is being developed by Biogas Development and Training Centre, Centre for Rural Development and Technology, IIT Delhi, and is being sponsored by ministry of new and renewable energy.

■ "IIT-D has developed a



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small scale biogas upgrading system using water scrubbing technology (20 m³/h system). The system consists of a water scrubbing column and methane-enriched biogas compression system. Commercial viability of the biogas purification and bottling plant can be attained above 500m³/d capacity. Its payback period ranges from one to four years depending upon capacity of plant, cost of raw material for gas production and selling price of CBG," Prof. Virendra Kumar Vijay, heading the project, said.

There is no significant change in mileage of the vehi-

cle fuelled with CBG (24.11km/kg) as compared to CNG (24.38km/kg).

Vijay added, "We tested the regular CNG car on CBG for more than 15,000km. The fuel economy and mass emission of the vehicle fuelled with CBG with 93% methane and compressed natural gas were evaluated. Emissions such as CO, HC and NO_x are found to be marginally higher with CNG than CBG."

Worldwide, biomass accounts for over two-thirds of all renewable energy supplies. Among biomass sources, biogas is an interesting option with a large potential, offering many exciting possibilities to supplement existing fuels, thereby reducing our dependence on fossil fuels.

"The total potential of biogas from all sources has been estimated to be 48,382 million cubic metres a year. Assuming 50% of total upgraded biogas is used in transport sector and 50% in cooking sector, bottled biogas can fulfill 43.4% of the total transport sector demand and 41.7% of cooking sector needs," Vijay said.

