TATA Motors' Hydrogen Bus

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Tata Motors launched the future of mass public transportation at its Pune facility and took another step in the direction of green technology and mobility solutions. The company launched the Starbus Electric 9m, Starbus Electric 12m and the Starbus Hybrid 12m range of buses which are designed, developed, powered by alternate fuels and made in India. The company says will be a good for smart cities. The company also showcased the country's first Fuel Cell bus (12m), LNG Powered bus (12m), and an 18m Articulated bus.

The Hydrogen Powered Starbus Fuel Cell bus is a zero-emission mass transport solution, for inter-city commute and has been developed in partnership with ISRO (Indian Space Research Organization). Combining hydrogen gas and oxygen, the fuel cell produces electricity to power the electric motor, with water and heat as a byproduct. This is the first time an Indian manufacturer has ventured in this direction. As far as Electric buses are concerned, Tata Motors finds a rival in the form of Ashok Leyland who recently revealed the Circuit series of all-electric buses which was in fact India's first of its kind.

TATA Motors & ISROhave jointly developed a Bus operated by Hydrogen and is pollution free. It is a green effort and is a gift for the conservation of the environment.

Zero pollution

It's a CNG-type bus. Hydrogen in bottles at high pressure is stored at the top of the bus and there would be zero pollution. The hydrogen cells were a spin-off of the cryogenic technology that ISRO had been developing for the last few years, the Bangalore-headquartered ISRO officials said. "That's not exactly the cryogenic technology...(It's) liquid hydrogen handling and that's where ISRO has some expertise," they said.

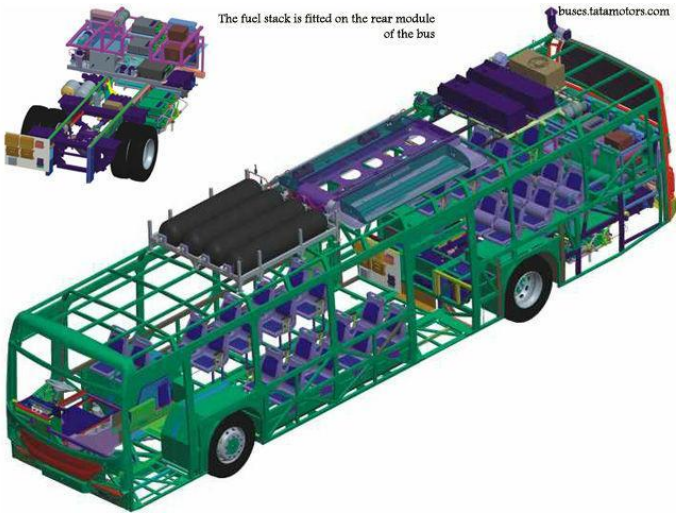
Fuel Cell Power System

TML successfully completed design and development of Fuel Cell Power System (FCPS) for bus application starting from 20Kw to 120Kw with co-operation of ISRO.

Earlier, several trials have been completed and generated high quality power up to 120Kw without any untoward incident. Periodic technical and progress monitoring committee formed of TML and ISRO team guided the project continuously

How the technology works

The fuel cell technology makes it a clean and silent bus on-road. Hydrogen is stored in compressed form, which combines with oxygen from the air to generate electricity, and gives water vapor as the only emission.



This electricity is used to charge the battery to power the motor of the bus. A number of fuel cells are combined to form a fuel cell stack, which is placed in the rear module of the bus.

ISRO, Tata Motors develop India's first fuel cell bus

For the first time in the country, a Hydrogen-powered automobile bus has been developed by Tata Motors and Indian Space Research Organization after several years of research.

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ISRO team generated technical specifications

An ISRO team had generated technical specifications for all the elements and general specifications for the bus. ISRO and TML entered into anMoU in 2006 to design and develop an automobile bus using hydrogen as a fuel through fuel cell route.

The team ensured all safety measures for handling hydrogen in the bus.

Design and development

Tata Motors Research Centre (TMRC) premises were used for the design and development of fuel cell power system in cooperation with ISRO and DSIR support.

TML had set-up a fuel cell power system test lab with all safety measures recommended by safety committee of ISRO at Bangalore and later on at LPSC Mahendragiri.

Best Regards.

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