

# India's First Hydrogen Cell Powered Ferry Launched by Govt. of India

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## Context

On Wednesday, during a virtually held event, the Prime Minister of India, Narendra Modi, officially unveiled the first hydrogen ferry to be made in India. The ferry, built by Cochin Shipyard Limited (CSL), will be used for transportation in Varanasi, Uttar Pradesh. The hydrogen fuel cell technology in the vessel was developed by Pune-based KPIT Technologies in conjunction with the Council of Scientific and Industrial Research Labs, under the Ministry of Science and Technology.

## About Hydrogen Cell

- A vehicle that is powered by a hydrogen fuel cell like the Honda Family LC is highly efficient and free of pollution. The fuel cell's simple construction includes two electrodes and a centre of electrolyte that allows hydrogen to arrive at the anode, while air goes to the cathode. This spectacular process breaks up hydrogen molecules into protons and electrons. Then the latter move along an external circuit, making electricity.
- Finally, these elements meet oxygen again at the cathode. This produces water plus heat.
- The reason why fuel cells are not very popular in India to date is due to expensive costs, lack of infrastructure, technical problems, regulatory shortcomings etc. To cope with these hurdles, India's National Hydrogen Policy aims at firmly planting India in the production, use and export of green hydrogen and its by-products on a world scale.

## About Ferry Fuelled by Hydrogen Cell

- Its passenger space is an air-conditioned area that can take up to 50 people, a catamaran stretching 24 metres. Different from traditional boats, the Hydrogen vessel doesn't need a common battery for electrical energy storage.
- It uses five 40-kilogram cylinders of hydrogen fuel to power the ship up to eight hours.
- Additionally, the vessel has a 3kW solar panel. Although worldwide hydrogen fuel cell technology for maritime use is still in the process of being developed, this ferry gives India a lead in making hydrogen a sustainable fuel choice of marine industry.
- The vessel is powered by a 50kW PEM fuel cell, along with quick-adjusting Lithium-Ion Phosphate batteries. PEM fuel cells are more ideal for use in automotive applications because they have a lower operating temperature, weigh less and are smaller.
- The boat is environmentally friendly, with no emissions or noise. It consumes less energy because it doesn't have moving parts.
- It also requires less maintenance compared to combustion boats.

**Source:** [The Indian Express](#)

### ***UPSC Mains Practice Question***

***Q.Elucidate the use of Hydrogen Cell Powered Ferry in contribution for the Goal of 17 Sustainable Development Goal (SDG).***