



India's First Indigenous Hydrogen Fuel Cell Passenger Vessel Begins Commercial Service in Varanasi; Sarbananda Sonowal Flags Off Maiden Run Maiden

“Hydrogen-Powered Passenger Vessel Sets Sail on Ganga, Marking a Major Push Toward Net-Zero Waterways Under Modi Government:” Sarbananda Sonowal

Nation's First Hydrogen Fuel Cell Catamaran Ship Showcases Zero-Emission, Indigenous 24-Meter with Clean Propulsion ferries with 50 seat capacity

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India marked a major step in its green maritime push as Union Minister for Ports, Shipping and Waterways (MoPSW) Sarbananda Sonowal flagged off the commercial operation of the country's first fully indigenous hydrogen fuel cell passenger vessel at Namohat, Varanasi today.

The vessel is the first in India to demonstrate hydrogen fuel cell propulsion in a maritime setting and features fully indigenous technology. It operates on a Low Temperature Proton Exchange Membrane fuel cell system that converts stored hydrogen into electricity, releasing only water as a byproduct.

Speaking on the occasion, the Union Minister Sarbananda Sonowal said, “Under the dynamic and visionary leadership of Prime Minister Shri Narendra Modi ji, India is witnessing a transformative shift toward clean, sustainable and self-reliant transportation systems. The launch of our first indigenous hydrogen fuel cell vessel is a shining example of the Prime Minister's commitment to Make in India and the transition to green mobility across all sectors. This milestone also strengthens the wider mission of rejuvenating and preserving our sacred Ganga. As we advance cleaner technologies on our waterways, we are not only promoting innovation but also ensuring that development goes hand in hand with ecological responsibility. Today's achievement reflects the Prime Minister's unwavering resolve to build a greener, more prosperous maritime future for our nation.”

Owned by Inland Waterways Authority of India (IWAI), the vessel was built by Cochin Shipyard Ltd (CSL). The vessel enters service following the completion of trial operations. The rollout aligns with the government's commitment to reach net-zero emissions by 2070 and supports MoPSW's efforts to advance clean, sustainable fuels across India's inland waterways.

The start of commercial service for the hydrogen fuel cell vessel marks a major milestone in India's effort to build a cleaner and more sustainable maritime ecosystem. Under the leadership of Prime Minister Narendra Modi and Union Minister Sonowal, IWAI is pushing the adoption of advanced green technologies and alternative fuels as part of Maritime India Vision 2030 and the Maritime Amrit Kaal Vision 2047.

Adding further, Sarbananda Sonowal said, "The successful deployment of this hydrogen fuel cell vessel reflects the deep commitment of our ministry to accelerate India's transition toward clean and sustainable waterways. I congratulate Cochin Shipyard Ltd. for delivering this pioneering vessel and the Inland Waterways Authority of India for taking it into commercial service after rigorous trials. This achievement is a testament to our resolve to meet India's net-zero targets by 2070 and to integrate cutting-edge green technologies across the inland water transport sector. Guided by Prime Minister Shri Narendra Modi ji's transformative Maritime India Vision (MIV) 2030 and the long-term roadmap of Maritime Amrit Kaal Vision (MAKV) 2047, we are steadily shaping a modern, energy-efficient and environmentally responsible maritime ecosystem for the country."

Designed as a 24-meter catamaran for urban transit, the boat can carry 50 passengers in an air-conditioned cabin and runs at a service speed of 6.5 knots. Its hybrid energy system combines hydrogen fuel cells, batteries and solar power, enabling up to eight hours of operation on a single hydrogen fill. The vessel is certified by the Indian Register of Shipping.

To operationalise the pilot vessel FCV Pilot-01, IWAI, Cochin Shipyard Ltd. and Inland and Coastal Shipping Ltd. have signed a tripartite agreement outlining technical support, operations and oversight. The agreement includes financial terms, safety procedures, monitoring mechanisms and provisions for periodic inspections during the pilot phase.

The hydrogen fuel cell vessel introduced in Varanasi brings several key benefits to urban water transport, including noise-free travel for commuters and pilgrims, zero smoke and zero pollution with only water as emissions, and reduced road congestion through faster mobility via waterways. It is also expected to boost local tourism and job opportunities while positioning Varanasi among the world's first cities to adopt hydrogen-powered passenger transport. Technically, the fully air-conditioned 50-seater vessel can operate for up to eight hours on stored hydrogen, runs at a speed of 7 to 9 knots, and is powered entirely by indigenous, eco-friendly technology that ensures safe and efficient operations.

The maiden vessel run — a five-kilometer trip from Namohat to Lalitahat — ferried an entourage of ministers, senior officials among others signalling the commercial operations of Hydrogen fuel powered passenger vessel on river Ganga (National Waterways 1).

Along with Union Minister Sarbananda Sonowal, a distinguished lineup of leaders including Minister of State (Independent Charge) Ravindra Jaiswal, Transport Minister Dayashankar Singh, and Minister of State (Independent Charge) Dr. Daya Shankar Mishra 'Dayalu' from Govt of Uttar Pradesh. Several MLAs — Awadhesh Singh, Neelkanth Tiwari, Dr. Sunil Patel, Saurabh Srivastava, Anil Rajbhar, Neel Ratan Singh, and Tribhuvan Ram—were present, in addition to Ashok Kumar Tiwari, Mayor of the Varanasi Municipal Corporation. Senior officials from the Ministry including Vijay Kumar, IAS, Secretary, MoPSW, Sunil Paliwal, IAS, Chairman, IWAI among others from the Ministry, IWAI and Govt of Uttar Pradesh were present.

Following the introduction of hybrid electric catamarans, the deployment of the hydrogen fuel cell vessel reinforces IWAI's long-term plan to modernise and decarbonise the country's inland water transport network.



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