



News Release

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IIT Bombay and HSBC India come together to facilitate innovative Green Hydrogen solutions

Energy efficient green hydrogen generators, indigenous hydrogen storage systems for commercial vehicles, alternative combustion burners to improve air quality, are some of the initiatives under incubation

Transitioning to sustainable and clean energy sources is pivotal in the global battle against climate change. Green hydrogen, with its cross-industry applications, including transportation, will play a crucial role in the global energy landscape. The IIT Bombay and HSBC India Green Hydrogen programme, aimed at accelerating the development and deployment of green hydrogen technologies, saw a large number of innovative project proposals received from 6 IITs, the National Institute of Technology and Indian Institute of Science, Education and Research. Out of these, six projects have been shortlisted for incubation at IIT Bombay, through a stringent process by a Steering committee comprising industry experts and senior faculty from the institute.

These breakthrough technologies and solutions presented by researchers, scientists, and students from institutions across India address key challenges in green hydrogen production, storage, transportation, and utilization. They range from developing indigenous hydrogen storage systems that will help reduce significant carbon emissions from commercial vehicles to cost effective and sustainable hydrogen generators and alternative burners which will improve air quality that has been an alarming issue in most metros in India. These solutions will be incubated at the IIT incubation centre, nurtured, and refined for commercial readiness by the end of the programme period and comprehensively supported to build scale and enhance reach.

Commenting on the initiative, **Hitendra Dave, CEO, HSBC India**, said, "We believe that Green hydrogen is a necessary lever to achieve a low carbon economy. Our partnership with IIT Bombay reflects this belief and is also in line with our global commitment to sustainability. It is overwhelming to see the great response to this programme and the innovative ideas that we have received. We look forward to working with IIT Bombay to nurture these six innovations to make Green Hydrogen a cost-effective, scalable, and sustainable proposition."

Prof. Shireesh Kedare, Director, IIT Bombay, said, "IIT Bombay is honoured to join forces with HSBC India in a transformative endeavour to drive India toward energy independence by setting up a thriving green hydrogen economy. This collaboration underscores our firm commitment to supporting the Indian government's visionary National Green Hydrogen Mission which positions green hydrogen not just as a sustainable fuel, but as a cornerstone of the country's future energy landscape. By driving groundbreaking research with wide-ranging applications—from transportation to industrial energy—this partnership is set to catalyze a cleaner, self-reliant India, and elevate our role as a leader in the global green energy movement."



Unveiled by Union Minister for Finance and Corporate Affairs, Smt Nirmala Sitharaman in 2023, this 3-year project aims to develop innovative projects to position green hydrogen as a strategic alternative fuel that has application across industries and create a strong green hydrogen economy to help India achieve energy independence and support the government's mission to provide policy support for a global green hydrogen transition.

Green Hydrogen not only helps the environment but is also economically viable, creates employment in new green sectors and enhances energy security by diversifying energy sources. The Indian government has committed to promoting green hydrogen under its National Green Hydrogen Mission, highlighting its potential as a future fuel alternative. It envisions developing a green hydrogen production capacity of at least 5 million metric tonnes per year by 2030. This ambitious goal is set to bolster the country's renewable energy capacity by approximately 125 GW, contributing significantly to the reduction of carbon dioxide emissions and the realisation of India's net-zero vision.

An outline of the 6 shortlisted projects is as follows:

Project 1 – Utilise earth-abundant materials to make hydrogen production both sustainable and cost-effective. The knowledge gained from this study will help create a cleaner, more sustainable energy future.

Project 2 - Develop a prototype hydrogen generator that can produce 5 litres of hydrogen per minute, with an energy efficiency of over 80%, and reduce production costs by around 30%

Project 3 - Develop a locally designed multi-stack alkaline electrolyzer aimed at producing green hydrogen in a cost-effective manner. The outcome will contribute to lowering the cost of green hydrogen, making it a more viable and sustainable alternative for various industrial and energy applications.

Project 4 – Develop completely indigenous hydrogen storage systems across India. This creates an opportunity for the automobile industry to increase the number of hydrogen-powered vehicles in both light and heavy-duty segments of the Indian transport sector. It will also help reduce the significant carbon emissions from commercial vehicles, contributing to a cleaner environment.

Project 5 – Develop a burner that offers a viable and sustainable alternative to traditional combustion processes, which will improve air quality, benefit public health, and help reduce the carbon footprint.

Project 6 - Create a tool that provides precise guidance on safely blending of hydrogen with natural gas for secure transportation. This will help reduce reliance on carbon-based fossil fuels.



HSBC India and Sustainability

HSBC India's strategy to support sustainable economic growth, focuses on Community Investment (CSR interventions), Sustainable Operations, Sustainable Finance and Sustainability Risk.

The strategy is delivered through a combination of programmes, collaboration, and partnerships. We believe it requires a concerted effort between business, governments and other stakeholders on policies and programmes to support transition to a more sustainable future.

HSBC Bank India

The Hongkong and Shanghai Banking Corporation Limited in India offers a full range of banking and financial services through 26 branches across 14 cities.

HSBC is one of India's leading financial services groups, with around 42,000 employees in its banking, investment banking and capital markets, asset management, insurance, software development and global resourcing operations in the country. It is a leading custodian in India. The Bank is at the forefront in arranging deals for Indian companies investing overseas and foreign investments into the country.

HSBC Holdings plc

HSBC Holdings plc, the parent company of HSBC, is headquartered in London. HSBC serves customers worldwide from offices in 60 countries and territories. With assets of US\$3,099bn at 30 September 2024, HSBC is one of the world's largest banking and financial services organisations.

About IIT Bombay

About IIT Bombay Indian Institute of Technology Bombay, set up in 1958 as the second IIT, is recognised worldwide as a leader in the field of engineering education and research. The Institute was granted the status of 'Institution of Eminence' by the Ministry of Education (the then Ministry of Human Resources Development) on July 9, 2018. IIT Bombay is reputed for the quality of its faculty and the outstanding calibre of students graduating from its undergraduate and postgraduate programmes. The Institute has 17 academic departments, 36 (Centres/ Programmes/ Academic facilities/ Hubs/ Externally funded centres and Labs), three schools and three Interdisciplinary programmes. Over the last six decades, more than 70,000 engineers and scientists have graduated from the Institute. It is served by more than 715 faculty members considered not only amongst the best within the country but also highly recognised in the world for achievements in the field of education and research. On June 4, 2024, IIT Bombay was ranked 1st in India and 118th in the world in the Quacquarelli Symonds (QS) World University Rankings for 2025.

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