



INTERNATIONAL PARTNERSHIP FOR HYDROGEN AND FUEL CELLS IN THE ECONOMY

IPHE Country Update June 2020: India

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Covered Period	October 2019 to June 2020

1. New Initiatives, Programs, and Policies on Hydrogen and Fuel Cells

Nil for this period.

2. Hydrogen and Fuel Cell R&D Update

MNRE's Research, Development and Demonstration (RD&D) programme on Hydrogen Energy and Fuel Cells focuses on: hydrogen production from renewable routes; development of materials and techniques for safe and efficient storage of hydrogen; development of indigenous and affordable fuel cells; and, demonstration of hydrogen and fuel cell technologies in various nice applications.

- Projects are being supported in premier universities, research institutions and industries.
- Ongoing projects include pilot scale hydrogen production facility through biomass gasification at Indian Institute of Science, and development of LT-PEM Fuel Cells at the International Advanced Research Centre for Powder Metallurgy and New Materials (ARCI) – Centre for Fuel Cell Technology.
- Department of Science and Technology is also funding basic research projects in Hydrogen and Fuel Cell.

3. Demonstration, Deployments, and Workforce Developments Update

- i. MNRE is developing a collaborative proposal to demonstrate hydrogen fuel cell vehicles in Leh as part of the initiative to make the high altitude region of Ladakh a "Carbon Neutral Destination". In April 2020, NTPC Ltd., a public sector entity launched a global expression of interest for fuel cell buses and cars for the project in April.
- ii. Indian Oil Corporation is implementing a project on H-CNG fuelled city transport buses in Delhi. The H-CNG generation plant has been commissioned and pilot run of 50 buses is expected to commence once the pandemic situation improves.
- iii. Indian Oil Corporation has also brought out a tender for 15 fuel cell buses to be sourced indigenously.

4. Events and Solicitations

Nil for this period.



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5. Investments: Government and Collaborative Hydrogen and Fuel Cell Funding

For the period 1 April 2020 to 31 March 2021, there is a provision of INR 200 Million (USD 2.8 Million) for hydrogen energy and fuel cell related activities in the MNRE budget.

6. Regulations, Codes & Standards, and Safety Update

MNRE is coordinating with the Ministry of Road Transport & Highways (MoRTH), Bureau of Indian Standards (BIS), and Petroleum and Explosives Safety Organization (PESO) to put in place a regulatory framework for deployment of hydrogen and fuel cell technologies in India.