

National Green Hydrogen Mission – Pilot Projects

Case study for:

Demand-Side Subsidies & Tax Credits

Disclaimer

The Industrial Transition Accelerator (ITA) recognises its activities must not be a vehicle for individuals or organisations to reach unlawful business agreements, exchange competitively sensitive information, or engage in other aspects of anti-competitive behaviour. Therefore, ITA's policy is to take appropriate measures to comply with US antitrust laws and foreign competition laws, and the ITA expects the same from its members when acting on behalf of the ITA or participating in ITA activities.



Case Study: National Green Hydrogen Mission – Pilot Projects (1/2)



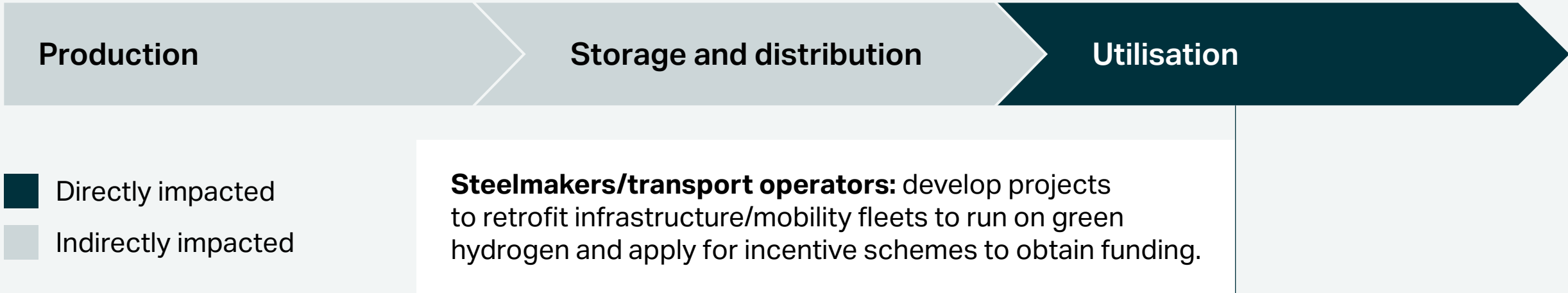
Adopted: 2023

Applies to: industry and transport

- The **National Green Hydrogen Mission** was implemented with the aim of making India a global hub for the production, use and export of green hydrogen and derivatives, and to become self-reliant through increased use of domestic clean energy. The mission includes a mix of policies including: proposed mandatory quotas; competitive bidding processes for the production and procurement of hydrogen derivatives through the Strategic Interventions for Green Hydrogen Transition (SIGHT) programme; and the development of green hydrogen hubs supporting large scale production and utilisation.
- As part of this, the Indian Government is supporting **pilot projects with targeted sectors** - steel, shipping and port infrastructure, long range heavy mobility, and hydrogen production through the provision of [grants for users](#):

Hydrogen value chain

Stakeholders impacted



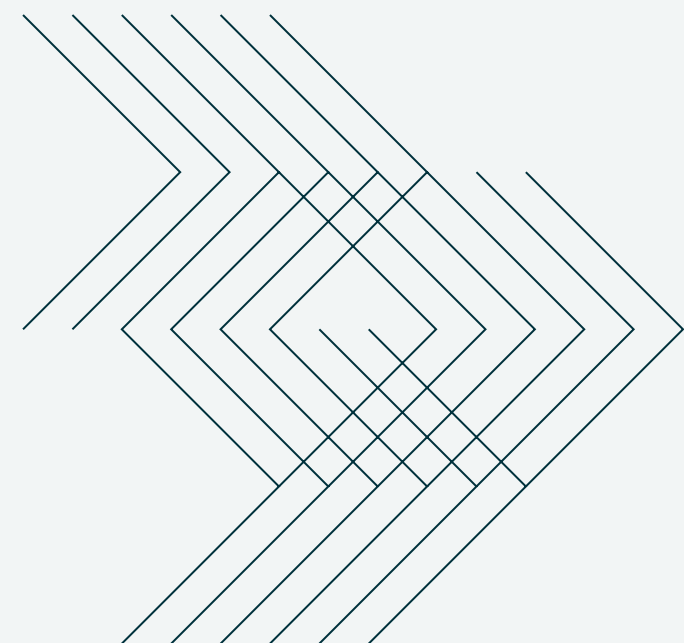
- [Low carbon steel projects](#): ₹455 crore (\$55m) up to FY2029-30
 - Eligible projects cover: 100% hydrogen in DRI using vertical shaft/kiln; use of hydrogen in blast furnaces; switching fossil fuels with hydrogen in DRI processes; and any other innovative use of hydrogen for reducing carbon emissions in iron and steel production
 - Funding is capped at 50% of the total project costs and will be used for capital equipment and preparing detailed project reports.
- [Shipping](#): ₹115 crore (\$14m) up to FY2025-26
 - Eligible projects cover: retrofitting ships to run on green hydrogen fuels; or developing bunkering and refuelling facilities at ports for such fuels
 - ₹80 crore (\$10m) allocated for the capex of vessels running on clean fuels, while the remaining funds will be used to develop refuelling infrastructure in at least one port by 2025.

Impact

- **Low carbon steel:** India's Ministry of Steel, through its implementing agency, MECON, issued a Request for Proposal (RFP) in June – July 2024, calling for proposals for the use of hydrogen in steel. [Only one bid was received](#), submitted by a consortium led by the India Institute of Minerals and Materials Technology (IMMT), where they will use 100% hydrogen-based DRI.
- **Shipping:** A [scheme](#) was announced in February 2024 supporting the retrofitting of ocean-going and inland waterway vessels with green methanol, green ammonia or hydrogen fuel cell-based propulsion systems. This includes the conversion of at least two ships of the Shipping Corporation of India (SCI) to run on hydrogen derivatives by 2027.

Case Study: National Green Hydrogen Mission – Pilot Projects (2/2)

Key challenges/risks



1 Uncertainty of demand for the scheme

- The recent RFP launched for the steel sector only saw one bid for the fund, indicating some hesitation by steelmakers for adopting green hydrogen. In a recent survey conducted by [Ramboll and the Climate Group](#), steel and concrete buyers cited cost as the biggest barrier to large scale adoption of low emission steel. With cost a key concern for buyers, steelmakers may have more uncertainties on the return on investment for upgrading infrastructure to produce decarbonised emission steel - even with a subsidy scheme in place. As such, more complementary policies or technical advisory may be needed to increase the confidence of steelmakers and encourage them to apply for the scheme. Furthermore, with the implementation of one project demonstrating the success of low emission steel using hydrogen, more steelmakers may be encouraged to follow suit.

2 Limited impact on overall green premium

- Even with the subsidy for retrofitting/developing infrastructure to support hydrogen consumption in steelmaking or shipping, the steel and shipping companies would still need to finance part of the project. For steel, this is at least 50% of the total project costs. The companies would also need to finance the increased operational expenses, including the cost of green hydrogen (which is higher than its grey counterpart), land acquisition costs and any other costs associated with operational transformation (e.g. upskilling workforces to operate new equipment).
- States are developing their own demand-side support policies for green hydrogen consumption, to complement national policies. For instance, [Haryana](#) is planning to provide 50 rupees/kg (\$0.60) of green hydrogen used in industrial processes including steelmaking for five years. [Punjab](#) is also planning to provide a subsidy of 50 rupees/kg (\$0.60) for consuming green hydrogen in an initial shortlist of 10 industries - to be defined.