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National Green Hydrogen Mission

Successful implementation to ensure reduced usage of fossil fuel & GHG emissions; however, nascent stage necessitates Government intervention

January 2023

CLIMATE CHANGE

The biggest crisis of our time

Overview

National Green Hydrogen Mission to help reduce fossil fuel dependance and GHG emission, also will help India to benefit from growing global demand.

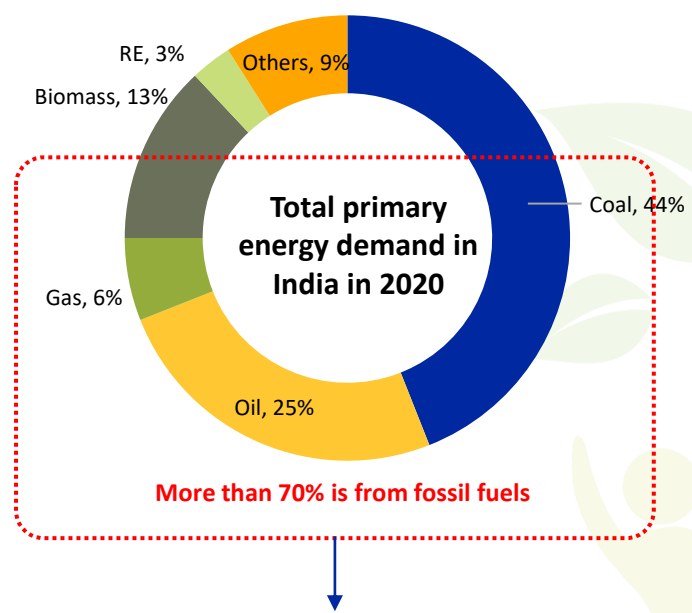
However, regular interventions by the Government are needed to ignite the process and provide the required impetus to this emerging sector

- More than 70% of India's primary energy demand is met through fossil fuels. To reduce fossil fuel dependence and benefit from the growing global demand for green hydrogen, the Government of India (GoI) has announced its National Green Hydrogen Mission. The Cabinet has approved an initial outlay of Rs. 19,744 crore.
- The Ministry of New and Renewable Energy (MNRE) has formulated guidelines for the National Green Hydrogen Mission in January 2023. Considering the nascent stage of the sector, phased development has been proposed. Also keeping in mind the involvement of various ministries, the governance structure has been planned for effective project implementation.
- The share of green hydrogen in total hydrogen production in India is expected to increase to 50% (from nil) by 2030. A major shift in demand is expected towards sectors like transportation, power, steel etc initially. In its second phase, the Mission also plans penetration across all potential sectors including railways, aviation etc. to achieve deep decarbonisation of the economy.
- For successful implementation of the mission, Government needs to provide capex of Rs 8-9 trillion, to achieve targeted green hydrogen production of 5 MMT. Further scale-up in production for exports will need additional investments. Additionally, estimated investments in electrolysers would be sensitive to the commodity price cycle.
- Expected investments in the mission will provide enabling conditions to reduce fossil fuel imports by ~3-8% by 2030.
- The targeted reduction of 50 MMT Green House Gases (GHG) emission by 2030 is expected to form ~5% of the 1BT emission reduction target taken at COP26 as a part of five-pronged strategy (Panchamrit) to deal with climate change.
- In a nutshell, the National Green Hydrogen Mission is a step towards the Net Zero target and regular interventions by the Government are needed to ignite the process and provide the required impetus to this emerging sector.

*Source: ICRA Research, Note - * Please refer Climate Series reports on - https://www.icraresearch.in/Research/SubscribeSector/5*

Green hydrogen to help reduce fossil fuel consumption and imports

Exhibit: Total primary energy demand in India, 2020



Green Hydrogen Mission launched to reduce fossil fuel usage

- Green hydrogen, produced using renewable energy, has the potential to play a key role in low-carbon economic pathways.
- As the global consensus towards Net Zero gathers momentum, the demand for green hydrogen and its derivatives is set to rise.
- To benefit from growing global demand for Green Hydrogen, India had announced the National Green Hydrogen Mission in February 2022. The objective is to become a leading producer and exporter of green hydrogen.
- Recently, the Cabinet has approved an initial outlay for the mission of Rs 19,744 crore.
- The Ministry of New and Renewable Energy (MNRE) has issued a document for the scheme guidelines for implementation.

Source: IEA, MNRE, Niti Ayog, ICRA Research

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