NATIONAL GREEN HYDROGEN MISSION : ENVIRONMENT

NEWS : Launch of Pilot projects in Steel Sector under the National Green Hydrogen Mission

WHAT'S IN THE NEWS ?

The Union Government has approved three pilot projects under the National Green Hydrogen Mission to explore green hydrogen's role in steel production.With a total financial support of ₹347 crore, these projects aim to advance clean energy technologies and reduce carbon emissions in the steel sector.The initiative aligns with India's goals for self-reliance and global clean energy leadership.

National Green Hydrogen Mission :

- **Approval Date**: Approved by the Union Cabinet on January 4, 2023.
- **Budget**: ₹19,744 crore allocated.
- **Objective**: To make India a global hub for green hydrogen production, usage, and export.
- **Production Target**: 5 million metric tons (MMT) of green hydrogen annually by 2030.

Key Components:

1. **Demand Creation**: Promoting exports and domestic use of green hydrogen.
2. **SIGHT Programme**: Providing incentives for electrolyser manufacturing and green hydrogen production.
3. **Infrastructure**: Setting up Green Hydrogen Hubs for production and distribution.
4. **Regulatory Framework**: Developing standards for the green hydrogen industry.
5. **Research & Development**: Encouraging innovation through public-private partnerships.
6. **Skill Development**: Training workforce in green hydrogen technologies.

Economic Impact:

- **Investment Potential**: Over ₹8 lakh crore in investments by 2030.
- **Job Creation**: Estimated 600,000 new jobs.
- **Import Reduction**: Saving ₹1 lakh crore in fossil fuel imports by 2030.

NATIONAL GREEN HYDROGEN MISSION

NODAL MINISTRY

- Ministry of New and Renewable Energy

OBJECTIVE

- Decarbonise energy/industrial/mobility sector
- Develop indigenous manufacturing capacities
- Create export opportunities for GH_2 and its derivative

COMPONENTS OF NGHM

- Strategic Interventions for Green Hydrogen Transition Programme (SIGHT)
- Strategic Hydrogen Innovation Partnership (SHIP) (PPP for R&D)

GH_2 is not commercially viable at present; current cost in India is around ₹350-400/kg. The National Hydrogen Energy Mission aims to bring it down under ₹100/kg.

Expected Outcomes by 2030

- Atleast 5MMT GH_2 annual production
- Rs 1 lakh crore fossil fuel import savings
- 6 lakh jobs
- 50MMT CO_2 annual emissions averted
- ₹ 8 lakh crore investment

HYDROGEN AND GREEN HYDROGEN

Hydrogen is the most common element in nature but exists only in combination with other elements. It has to be extracted from naturally occurring compounds (like water).

Green Hydrogen (GH_2) is made by splitting water through an electrical process called electrolysis, using an electrolyser powered by renewable energy (RE).

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