

NATIONAL GREEN HYDROGEN MISSION

Important IAS Exam Topics by Shashank Sajwan

- India has the fastest growing Renewable Energy capacity in the world.
- India has set its sight on becoming **energy independent by 2047** and achieving **Net Zero by 2070**.
- The National Green Hydrogen Mission **aims to provide a comprehensive action plan for establishing a Green Hydrogen ecosystem** and catalysing a systemic response to the opportunities and challenges of this sunrise sector.
 - **Green Hydrogen:** produced using renewable energy
 - **Black/Brown Hydrogen-** this process involves transforming coal into gas.
 - **Blue Hydrogen** is the hydrogen produced from hydrocarbons where the emissions generated from the process can be captured and stored.
 - Green hydrogen currently accounts for **less than 1% of global hydrogen** production due to it being expensive to produce.
 - **Nodal Ministry: Ministry of New and Renewable Energy**
- **India currently imports over 40%** of its primary energy requirements, worth over USD 90 billion every year.
- **Objective of the Mission** is to make India the Global Hub for production, usage and export of Green Hydrogen and its derivatives.
 - To achieve the above objectives, the Mission will build capabilities to produce at least **5 Million Metric Tonne (MMT)** of Green Hydrogen per annum by 2030, with potential to reach 10 MMT per annum with growth of export markets.

PHASES

- **PHASE I (2022-23 to 2025-26)**
 - The focus of Phase I will be on creating demand while enabling adequate supply by increasing the domestic electrolyser manufacturing capacity
- **PHASE II (2026-27 to 2029-30)**
 - Depending upon the evolution of costs and market demand, the potential for taking up commercial scale Green Hydrogen based projects in steel, mobility and shipping sectors will be explored.
- The initial outlay for the Mission will be **Rs.19,744 crore**, including an outlay of Rs.17,490 crore for the SIGHT programme, Rs.1,466 crore for pilot projects, Rs.400 crore for R&D, and Rs.388 crore towards other Mission components.
- **Following likely outcomes by 2030:**

- Development of green hydrogen production capacity of at least 5 MMT (Million Metric Tonne) per annum with an associated renewable energy capacity addition of about 125 GW in the country
- **Over Rs. Eight lakh crores in total investments**
- Creation of over **Six lakh jobs**
- **Cumulative reduction in fossil fuel imports** over Rs. One lakh crore
- Abatement of nearly 50 MMT of annual greenhouse gas emissions

SUB-SCHEMES

- **Sub Schemes:**
 - **Strategic Interventions for Green Hydrogen Transition Programme (SIGHT):**
 - It will fund the domestic manufacturing of electrolyzers and produce green hydrogen.
 - **Green Hydrogen Hubs:**
 - States and regions capable of supporting large scale production and/or utilisation of hydrogen will be identified and developed as Green Hydrogen Hubs.