



Green Hydrogen Projects and SEZs

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Why in News?

The Indian government is considering amendments to current regulations that could pave the way for **significant fiscal benefits for renewable energy projects focused on producing green hydrogen within Special Economic Zones (SEZs)**.

What are the Key Proposed Amendments?

- **Expanding SEZs for Green Hydrogen Projects:** The Ministry of Commerce is contemplating permitting SEZs to span **multiple non-contiguous areas, specifically catering to green hydrogen initiatives**.
 - Presently, SEZs require a **contiguous land area of 50 hectares or more**. The commerce ministry is open to relaxing this criterion for green hydrogen projects.
 - Allowing multi-locational SEZs will enable developers to use wind energy for which turbines are placed at a considerable distance (250 to 400 metres) from each other.
- **Eligibility for Fiscal Benefits:** The proposed amendment aims to **grant fiscal benefits to renewable energy plants** used for captive consumption within SEZs.
 - Currently, **SEZ rules do allow fiscal benefits only for renewable energy plants set up as SEZ units** and meant for selling power outside of SEZs.
 - However, renewable energy plants become ineligible for benefits when used for **captive consumption**.
- These changes, if approved, will enable **export-oriented green hydrogen ventures to access tax breaks for establishing and operating renewable energy** facilities dedicated to green hydrogen production.

Note

Captive consumption refers to the utilization of goods or services within the premises of the producing entity or within a designated area, without their transfer or sale to external markets.

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NATIONAL GREEN HYDROGEN MISSION

NODAL MINISTRY

- ▶ Ministry of New and Renewable Energy

COMPONENTS OF NGHM

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

GH₂ 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.

OBJECTIVE

- ▶ Decarbonise energy/industrial/mobility sector
- ▶ Develop indigenous manufacturing capacities
- ▶ Create export opportunities for GH₂ and its derivative

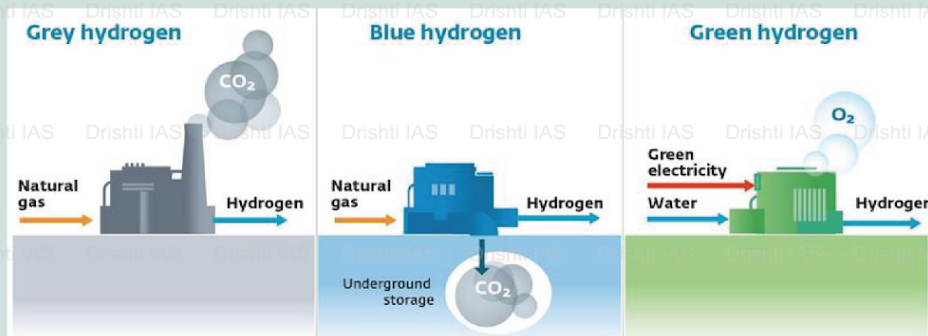
Expected Outcomes by 2030

- ◆ At least 5MMT GH₂ annual production
- ◆ Rs 1 lakh crore fossil fuel import savings
- ◆ 6 lakh jobs
- ◆ 50MMT CO₂ 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 (GH₂) is made by splitting water through an electrical process called electrolysis, using an electrolyser powered by renewable energy (RE).



What is a Special Economic Zone?

- **About:** A **Special Economic Zone (SEZ)** is a geographical region that has economic laws that are **more liberal than a country's domestic economic laws**.
 - The category 'SEZ' covers a broad range of more specific zone types, including, but not limited to:
 - Free Trade Zones (FTZs)
 - **Export Processing Zones (EPZs)**

- Free Zones (FZs)
- Industrial Estates (IEs)
- India was one of the first in Asia to recognize the effectiveness of the Export Processing Zone model in promoting exports, with **Asia's first EPZ set up in Kandla, Gujarat in 1965.**
- **SEZs in India: Special Economic Zones Policy** in India was announced in April 2000 to enhance foreign investment, creation of employment opportunities and provide an internationally competitive and hassle-free environment for exports along with the **development of infrastructure facilities.**
 - All laws of India are applicable in SEZs **unless specifically exempted as per the SEZ Act/ Rules.**
 - Each Zone is headed by a Development Commissioner and is administered as per the **SEZ Act, 2005 and SEZ Rules, 2006.**
 - Units may be set up in the SEZ for manufacturing, trading or for service activity.

UPSC Civil Services Examination Previous Year Question (PYQ)

Q. With reference to green hydrogen, consider the following statements : (2023)

1. It can be used directly as a fuel for internal combustion.
2. It can be blended with natural gas and used as fuel for heat or power generation.
3. It can be used in the hydrogen fuel cell to run vehicles.

How many of the above statements are correct?

- (a) Only one
- (b) Only two
- (c) All three
- (d) None

Ans: (c)

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