



# Task Force for Coal-Based Hydrogen Production

## Why in News

Recently, the Union Government constituted a **Task force and Expert committee** to prepare a road map for **coal-based hydrogen production (Black Hydrogen)**.

- The Task Force is also responsible for **coordination** with the [Coal Gasification Mission](#) and [NITI Aayog](#).

## Key Points

### ▪ Coal-Based Hydrogen Production:

#### ◦ About:

- Coal (one of the [Hydrocarbon Fuels](#)) is one of the important sources of hydrogen making apart from natural gas and renewable energy through [Electrolysis](#).
- **However**, Coal has not been encouraged in hydrogen production because of the fear of [Carbon Emission](#) while extracting hydrogen via coal.

- Almost 100% of hydrogen produced in India is through natural gas (Grey Hydrogen).

#### ◦ Benefit:

- Cost of hydrogen produced from coal can be **cheaper and less sensitive to imports**.

#### ◦ Challenge:

- Production of hydrogen from coal will have challenges in terms of **high emissions** and [CCUS \(Carbon capture, utilisation and storage\)](#) will play an important role.

- **Carbon monoxide and carbon dioxide** formed during the coal to hydrogen process have to be trapped and stored in an environmentally sustainable manner (CCS and CCUS).

### ▪ Hydrogen Economy:

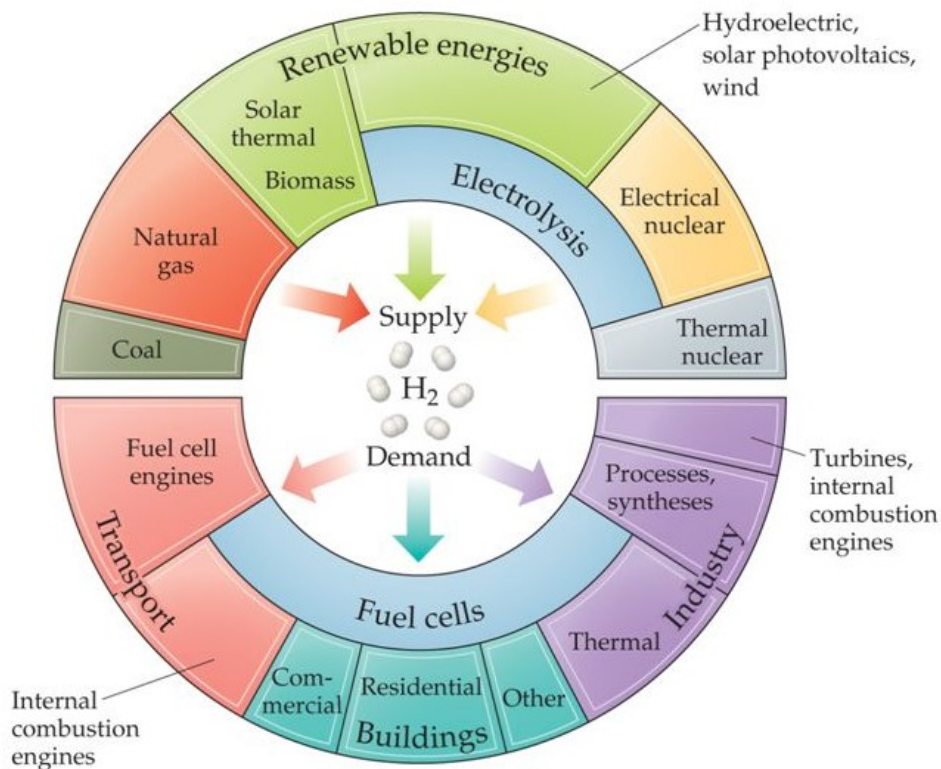
- It is an economy that **relies on hydrogen as the commercial fuel** that would deliver a substantial fraction of a nation's energy and services.
- Hydrogen is **a zero-carbon fuel** and is considered **an alternative to fuel and a key source of clean energy**. It can be produced from **renewable sources of energy such as solar and wind**.
- It is an **envisioned future** where **hydrogen is used as fuel for vehicles, energy storage and long-distance transport of energy**. The different pathways to use hydrogen economy includes hydrogen production, storage, transport and utilization.

- In 1970, the term '**Hydrogen Economy**' was coined by **John Bockris**. He

mentioned that a hydrogen economy can replace the current hydrocarbon-based economy, leading to a cleaner environment.

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# The Hydrogen Economy



## ▪ Present Scenario:

- The **current global demand for hydrogen is 70 million metric tons**, most of which is being produced from fossil fuels- **76% from natural gas and 23% from coal** and remaining from the electrolysis of water-- consumes 6% of the global natural gas and 2% of the global coal.
  - This results in CO<sub>2</sub> emissions of around 830Mt/year out of which only 130Mt/year is being captured and used in the fertilizer industry.
- Currently, **much of the hydrogen produced is used for oil refining (33%), ammonia (27%), methanol production (11%), steel production (3%) and others.**

## ▪ Related Initiatives:

- [National Hydrogen Energy Mission.](#)
- [Hydrogen Fuel Cell Based Vehicles.](#)
- [Green Hydrogen Mobility project.](#)

**Source: PIB**

