

Usage of New-Age Fuel In 2023

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Context:

Green Hydrogen has the potential to become a major source of energy. It will be helpful in dealing with climate change.

Synopsis:

The Govt Charts Course For Usage of New-Age Fuel, plans to implement the Green Hydrogen Consumption Obligation (GHCO) in fertilizer production and petroleum refining. This would reduce the country's dependence on fossil fuels for producing hydrogen and enable a smooth transition towards green hydrogen.

Background:

1. A draft note prepared for the Union cabinet said that fertilizer plants and oil refineries may have to mandatorily use green hydrogen in their operations.
2. The aim is to cut the nation's dependence on fossil fuels and promote the generation of clean energy.
3. Currently, Around 54% or 3.6 mmt of India's annual hydrogen consumption of 6.7 mmt is utilized in petroleum refining and the rest in fertilizer production.
4. This is, however, 'grey' hydrogen produced from fossil fuels such as natural gas or naphtha.
5. India's total hydrogen demand is expected to touch 11.7 million metric tonnes (mmt) by 2029-30 from the current 6.7 mmt.

About Green Hydrogen:

1. Green hydrogen is produced by splitting water into hydrogen and oxygen using an electrolyzer that may be powered by electricity from renewable energy sources such as wind and solar.
2. Hydrogen can be used for both fuel cell and internal combustion engines. It is also being leveraged for applications in sectors such as chemicals, iron, steel, transport, heating and power.

What Does The Draft Cabinet Note Say?

1. The government plans to implement the Green Hydrogen Consumption Obligation (GHCO) in fertilizer production and petroleum refining. This would be similar to what was done with renewable purchase obligations (RPO).
2. RPOs require electricity distribution companies to buy a fixed amount of renewable energy to cut reliance on fossil fuels.
3. GHCO is proposed to be raised from 0.15% in 2023-24 to 0.25% in 2024-25 and 0.5% in 2025-26.

4. Subsequently, it may be raised to 1.5%, 3.5% and 6.5% in 2026-27, 2027-28 and 2028-29, respectively, with the 10% mark targeted for 2029-30.
5. The proposal involves leveraging the country's large landmass and low solar and wind tariffs to produce low-cost green hydrogen.

Way Ahead:

1. The mandatory adoption would help in reducing the current cost of green hydrogen produced by electrolysis. It would reduce the cost to Rs. 160 per kg by 2029-30 while its current price is Rs. 350/kg.
2. The government is also aiming to extend the production-linked incentive (PLI) scheme for manufacturing electrolyzers to produce green hydrogen.
3. Indian companies, including Reliance Industries Ltd, have been gearing up to leverage opportunities presented by the transition to cleaner energy.
4. RIL has announced plans to build an electrolyzer giga factory and a fuel cell giga factory as part of its pivot towards clean energy.



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