The Government's Green Hydrogen Policy

Why in news?

The Centre has notified the green hydrogen and green ammonia policy aimed at boosting the domestic production of green hydrogen to 5 million tonnes by 2030 and making India an export hub for the clean fuel.

What is green hydrogen?

- Green hydrogen is produced with the help of electrolysis through electricity generated from renewable sources of energy such as solar and wind.
- An electric current then splits the water into hydrogen and oxygen.
- This ensures no greenhouse gas emissions as the only by product of this process is oxygen, making it a great replacement for carbon emitting fuels.

Why is green energy so significant?

> *India's current grey hydrogen production is six million tonnes per annum, which is around 8.5% of global annual production.*

- As of now, 75% of India's energy demand is met by coal and oil, including imports which is expected to increase.
- The green hydrogen, being a sunrise sector, must be tapped to tackle the dependence on fossil fuel and take greater advantage of India's solar capacity.
- Green hydrogen is a crucial weapon in India's arsenal to fight climate change as it improves the long-term energy storage capabilities of renewable energy.
- It is also the most promising solution to decarbonise sectors like cement, steel, and refineries.
- Hydrogen can provide the lowest-cost decarbonization solution for over a fifth of final energy demand by mid-century contributing a cumulated reduction of 80Gt of CO_2 and is thus an essential solution to reach the 1.5°C climate scenario.

- Since hydrogen is the cleanest fuel, it can help India in achieving the target of net-zero carbon emissions by 2070.

How is the policy set to boost domestic production of green hydrogen production?

- **Free power transmission**- The new policy offers 25 years of free power transmission for any new renewable energy plants set up to supply power for green hydrogen production before July 2025.
- It will be possible to set up a solar power plant in Rajasthan to supply renewable energy to a green hydrogen plant in Assam and would not be required to pay any inter-state transmission charges.
- **Change from grey hydrogen**- The move is likely more economical for key users of hydrogen and ammonia such as oil refining, fertiliser and steel sectors which currently use grey hydrogen or grey ammonia produced using natural gas.
- **Boost for exports**- Port authorities will provide land at applicable charges to green hydrogen and green ammonia producers to set up bunkers near ports for storage prior to export.
- It is noted that Germany and Japan could be key markets for green hydrogen produced in India.

What incentives were provided under the policy?

- **Single portal-** The government is set to provide a single portal for all clearances required for setting up green hydrogen production.
- **Parking the surplus**- It also provides a facility for producers to bank any surplus renewable energy generated with discoms for upto 30 days and use it as required.
- **Grid connection**- The power ministry has also said that energy plants set up to produce green hydrogen/ammonia would be given connectivity to the grid on a priority basis.
- **Renewable energy at concession**- Power distribution companies may also procure renewable energy to supply green hydrogen producers at a concessional rate which will only include the cost of procurement, wheeling charges and a small margin as determined by the state commission, under the new policy.
- **RPO fulfillment**- Such procurement would also count towards a state's Renewable Purchase Obligation (RPO).

Renewable Purchase Obligation (RPO) is a mechanism by which the

State Electricity Regulatory Commissions oblige entities to purchase a certain percentage of power from renewable energy sources.

What lies ahead?

- The government is set to come out with mandates requiring that the oil refining, fertiliser and steel sectors procure green hydrogen and green ammonia for a certain proportion of their requirements.
- It was previously noted that the mandate for the refining sector could start at 15-20% of the sectors total requirement.

References

1. https://indianexpress.com/article/explained/explained-green-hydrogen-policy-7779679/lite/
2. https://www.yellowhaze.in/what-is-renewable-purchase-obligation-rpo-and-renewable-energy-certificate-rec/#:~:text=What%20is%20Renewable%20Purchase%20Obligation%20(RPO)%20%3F,power%20from%20renewable%20energy%20sources.