

Hydrogen valleys

November 21, 2022

In news– The DST under the Clean Hydrogen Mission of “Mission Innovation” has set in motion the process of identifying and setting up at least 3 Hydrogen Valleys by 2030.

About the Hydrogen(H₂) Valley-

- The H₂ Valley’s objectives are to combine a complete hydrogen value chain (production, storage, and transportation) to reach critical scale and unlock learning curve effects. India has committed to facilitate the delivery of three clean hydrogen valleys in India by 2030.
- The valleys will be set up in three phases.
 1. The first phase (2023-2027) of the project will develop, deploy, and demonstrate small-scale hydrogen valleys, which produce more than 500 tonnes of green hydrogen annually.
 2. The second phase (2028-2033) will involve upscaling of the hydrogen valleys with production of more than 5000 tonnes of renewable hydrogen per year.
 3. The third phase (2034-2050) of the project will involve low-carbon hydrogen technologies being adopted in hard-to-decarbonise sectors, such as cement and steel.
- **A “Hydrogen Valley” is a geographical area a city, a region, an island or an industrial cluster – where several hydrogen applications are combined together into an integrated hydrogen ecosystem** that consumes a significant amount of hydrogen, improving the economics behind the project.

Kochi Green Hydrogen (KGH₂) Hub-

- **India Hydrogen Alliance (IH₂A) and the government of Kerala have recently announced** the proposal to build the

Kochi Green Hydrogen (KGH2) Hub.

- The proposal envisages **potential capital expenditure of USD 575 million, to build a 60-tonnes per day (TPD) green hydrogen plant with a 150 MW Electrolyser**, Storage and Infrastructure, which could achieve giga-watt scale and build the hydrogen economy in Kerala.
- IH2A's KGH2 Hub plan is **modelled after the Hydrogen Valley projects in the EU**, to create production, storage, transmission and end-use infrastructure for green hydrogen (in compressed gas and liquified form) within a 50-km radius cluster in Kochi.
- **The plan focusses on the transport use-case in the first phase, aligning with the state government's plans for zero-emission transport**, to power Hydrogen-ICE retrofitted bus fleets of 60 buses and build the required infrastructure.
- In the second phase, industrial demand for green hydrogen from refineries, fertilizer and chemical plants is expected to drive capacity expansion and scale-up the KGH2 hub.
- **Green Hydrogen is part of Kerala's Net Zero Pathway.**
- The Kochi Green Hydrogen Hub is the first of its kind in the country, in its current form and scale.

Further

reading:

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