



# The Energy Headlines

THE ENERGY NEWSLETTER OF MNIT JAIPUR



“The future is green energy, sustainability,  
renewable energy”  
-Arnold Schwarzenegger

## How do you make green hydrogen?

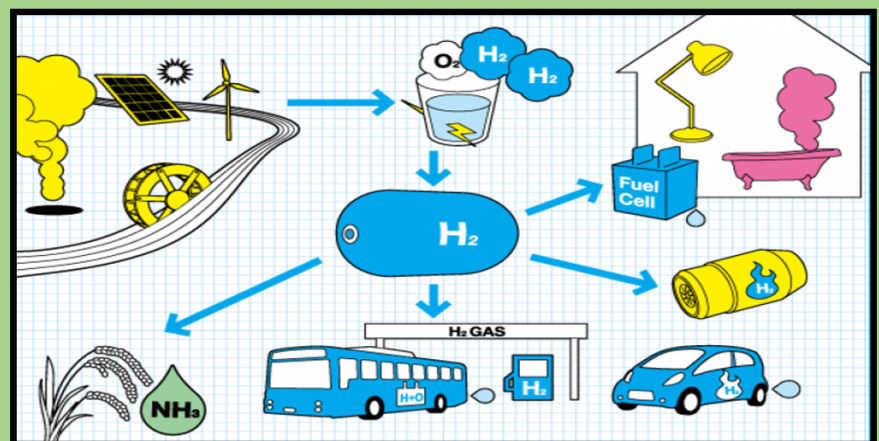
With electrolysis, all you need to produce large amounts of hydrogen is water, a big electrolyze and plentiful supplies of electricity. If the electricity comes from renewable sources such as wind, solar or hydro, then the hydrogen is effectively green; the only carbon emissions are from those embodied in the generation infrastructure.

## What Exactly Is Green Hydrogen?

Green hydrogen, in contrast, could almost eliminate emissions by using renewable energy — increasingly abundant and often generated at less-than-ideal times — to power the electrolysis of water.

## HYDROGEN ENERGY

Hydrogen energy involves the use of hydrogen and/or hydrogen-containing compounds to generate energy to be supplied to all practical uses needed with high energy efficiency, overwhelming environmental and social benefits, as well as economic competitiveness. The world is presently experimenting the dawning of hydrogen energy in all sectors that includes energy production, storage, and distribution; electricity, heat, and cooling for buildings and households; the industry; transportation; and the fabrication of feedstock



- Circular, clean, and beneficial path for energy production and use.
- Widespread use of renewable energies, including
- Production and storage of hydrogen to stabilize the delivery of electric energy, regulating the inherent intermittence associated with renewable energies.
- Production and storage of hydrogen to act as a buffer to increase resilience of a country or region energy system.
- Use of sewage and of urban and rural organic wastes to produce hydrogen and hydrogen-rich gases and compounds.
- Use of hydrogen to decarbonize activities in sectors such as industry, supplying electrical & thermal energies, supplying renewable feedstock produced by conveniently reacting hydrogen with biomasses, energy supply, as combined heat/cooling and power, to buildings and households, thereby introducing the distributed generation of electrical and thermal powers. transportation, including light-duty and heavy-duty vehicles and automobiles for terrestrial, nautical, and aeronautical applications.



- Energy distribution across sectors, countries, and regions using hydrogen and hydrogen-rich gases and compounds as carriers and also hydrogen trading as an energy commodity.
- Facilitating the access to energy in different countries or regions because of local specific options of primary energy source and raw materials to produce hydrogen and also local production of natural hydrogen.

Source: "Hydrogen energy: Sustainable and Perennial." In *Science and Engineering of Hydrogen-Based Energy Technologies*, pp. 1-38. Academic Press, 2019

## CREDITS

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