Regulatory Framework

In a significant move for the progress of the National Green Hydrogen Mission, the government has notified the Green Hydrogen Standard for India. The standard issued by the Ministry of New and Renewable Energy (MNRE), Government of India outlines the emission thresholds that must be met in order for hydrogen produced to be classified as 'Green', i.e., from renewable sources. The scope of the definition encompasses both electrolysis-based and biomass-based hydrogen production methods.

After discussions with multiple stakeholders, the Ministry of New & Renewable Energy has decided to define Green Hydrogen as having a well-to-gate emission (i.e., including water treatment, electrolysis, gas purification, drying and compression of hydrogen) of not more than 2 kg CO_2 equivalent / kg H_2.
The notification specifies that a detailed methodology for measurement, reporting, monitoring, on-site verification, and certification of green hydrogen and its derivatives shall be specified by the Ministry of New & Renewable Energy.

The notification also specifies that the Bureau of Energy Efficiency (BEE), Ministry of Power shall be the Nodal Authority for accreditation of agencies for the monitoring, verification and certification for Green Hydrogen production projects.
The notification of the Green Hydrogen Standard for India can be accessed here.

Government issues Pilot Project Guidelines for utilizing Green Hydrogen in Steel Sector. The Government of India has come out with guidelines for undertaking pilot projects for using green hydrogen in the steel sector. The guidelines, named "Scheme Guidelines for implementation of Pilot projects for use of Green Hydrogen in the Steel Sector under the National Green Hydrogen Mission", have been issued by the Ministry of New & Renewable Energy (MNRE) on 2nd February, 2024.

Under the National Green Hydrogen Mission, along with other initiatives, MNRE will implement pilot projects in the Steel Sector, for replacing fossil fuels and fossil fuel-based feedstock with Green Hydrogen and its derivatives. These pilot projects will be implemented through the Ministry of Steel and the Implementing Agencies nominated under this Scheme.

Three areas have been identified as thrust areas for the pilot projects in the steel sector. These are use of Hydrogen in Direct Reduced Ironmaking process; use of Hydrogen in Blast Furnace; and substitution of fossil fuels with Green Hydrogen in a gradual manner. The scheme will also support pilot projects involving any other innovative use of hydrogen for reducing carbon emissions in iron and steel production.

The scheme envisages that considering the higher costs of green hydrogen at present, steel plants could begin by blending a small percentage of green hydrogen in their processes, and increasing the blending proportion progressively, with improvement in cost-economics and advancement of technology. The guidelines also note that upcoming steel plants should be capable of operating with green hydrogen, thus ensuring that these plants are able to participate in future global low-carbon steel markets. The scheme will also consider greenfield projects aiming at 100% green steel.

The use of Green Hydrogen and its derivatives in the steel sector, through the proposed pilot projects, will lead to the development of necessary infrastructure for use of Green Hydrogen in the Iron & Steel industry, resulting in establishment of a Green Hydrogen ecosystem in the steel sector. The utilization of green hydrogen in the steel industry is expected to increase over the years, with the expected reduction in its production cost.

The Scheme Guidelines can be accessed here.