

PRESS RELEASE
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Green Hydrogen policy, a positive step towards energy transition plans; to support significant Renewable Energy (RE) capacity addition: ICRA

- *The cost competitiveness of Green Hydrogen would remain contingent upon the reduction in capital cost and an improvement in the energy efficiency level of electrolyser, besides cost of RE procurement*
- *Key measure pertaining to the Green Hydrogen purchase obligation norms is still awaited; further, cost competitive domestic manufacturing value chain for electrolysers also remains critical, in the long run*
- *The switch to use of Green Hydrogen by the fertilizer sector will require a commensurate increase in the subsidy support from the GoI to mitigate the higher cost of production*

The Government of India (GoI) has recently notified a “Green Hydrogen Policy” in February 2022, in line with its strong policy focus on renewable energy, a path of net zero energy transition by 2070. Green Hydrogen is the hydrogen produced through electrolysis of water using renewable energy. The policy comprises several key enabling measures such as, waiver of inter-state transmission charges for projects commissioned till June 2025; fast track timelines for open access approvals; availability of energy banking for 30 days; renewable energy purchase obligation (RPO) applicability for the consuming entities of Green Hydrogen/Green Ammonia; and centralised portal by MNRE for ease of doing business, amongst the other provisions. Majority of the hydrogen demand currently in India pertains to the industrial segment (i.e. refining, fertilisers & chemicals), at about 6 MMT in FY2020, which is projected to grow at a CAGR of 3.5-4% till FY2030, as per ICRA estimates. The consumption of hydrogen is currently met through a steam reforming process of fossil fuels i.e. Grey Hydrogen.

As per the [recent report](#) published by ICRA on Green Hydrogen, **Mr. Girishkumar Kadam, Senior Vice President & Co-Group Head - Corporate ratings, ICRA**, says, *“The policy by the Ministry of Power, Government of India (GoI) for Green Hydrogen has various supportive measures and thus remains a positive step. Even in a scenario of 30% of hydrogen demand to be met through Green Hydrogen by 2030, incremental renewable (RE) capacity requirement is estimated to remain significant at about 60 GW. This is over and above the RE addition to meet all India energy requirements. From the industrial off-taker’s perspective, Green Hydrogen is currently estimated to remain costlier by about US\$ 3.5-4 /Kg against Grey Hydrogen. The cost competitiveness of Green Hydrogen would remain contingent upon the reduction in capital cost and an improvement in the energy efficiency level of electrolyser, besides cost of RE procurement.”*

Under the base case scenario of delivered renewable cost of procurement (including intra-state wheeling and transmission charges in captive mode) at Rs. 3.5 per unit, levelled cost of production for Green Hydrogen is estimated to range between US\$ 5.5–6.0 /Kg. For the co-located projects (Electrolyser and RE capacity at the same location), such cost is estimated to decline by US\$ 0.5-1.0 /Kg due to savings in intra-state open access charges. Further, round-the-clock (RTC) procurement of renewable energy at a cost competitive rate remains extremely critical for improvement in utilisation of electrolyser. In that context, viability of battery storage & availability of energy banking remains important. The cost of RTC power with a storage component is estimated between Rs. 4-6/Kwh, depending on the extent of storage requirement.

Commenting further on the demand from the fertiliser sector, **Mr. Prashant Vasisht, Vice President & Co-Group Head – Corporate Ratings**, said, “With Green Hydrogen being currently costlier as against Grey Hydrogen, switch to use of Green Hydrogen by the fertilizer sector will require a commensurate increase in the subsidy support from the GoI to mitigate the higher cost of production. In case of phosphatic fertilizers, manufacturers may focus on procurement of Green Ammonia instead of Green Hydrogen as the ammonia-manufacturing facility may require significant investments, thus providing opportunity to standalone green ammonia manufacturers too.”

On the policy front, key measures pertaining to the Green Hydrogen purchase obligation norms are still awaited. The Renewable Purchase Obligation (RPO) framework has been a similar regulatory measure, which has supported the RE capacity addition / consumption of renewables by the obligated entities. Further, cost competitive domestic manufacturing value chain for electrolyzers also remains critical, in the long run.

Mr. Vikram V., Vice President & Sector Head – Corporate Ratings, ICRA, further added, “While the announced policy measures in terms of clear timelines for open access approvals & availability of energy banking remain positive, such norms (including the intra-state open access charges) actually vary widely across the states as determined by State Electricity Regulatory Commissions (SERCs). As a result, the consistency in these norms and applicable charges across the states is important to promote the use of open access / banking of RE power for green hydrogen projects. Further, the notification of draft rules by the Ministry of Power, GoI for allowing open access for green hydrogen projects is awaited.”

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