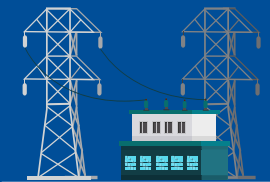




The policy provides a **single window clearance** for setting up green hydrogen production as well as a facility for producers to bank any surplus renewable energy generated for up to 30 days and use it as required, by paying relevant banking charges. The power ministry has mentioned that energy plants set up to produce green hydrogen/ammonia would be given connectivity to the grid on a **priority basis**. Discoms may also procure renewable energy to supply green hydrogen producers but will be required to do so at a concessional rate which will only include the cost of procurement, wheeling charges and a small margin as determined by the

state commission. Such procurement would also count towards an obligated entity's **Renewable Purchase Obligation (RPO)** under which it is required to procure a certain proportion of its requirements from renewable energy sources.

In addition, manufacturers of green hydrogen and/or green ammonia shall be allowed to set up bunkers near Ports for storage of Green ammonia for export / use by shipping. There are other measures for ease of setting up projects as indicate in figure below.

### Key Features of the policy

Incentive/Initiative group	Incentives
 <p><b>01 Power transmission measures</b></p>	<ul style="list-style-type: none"> <li>• ISTS network connection for GH/GA plants to be granted on priority</li> <li>• GH/GA plants shall be granted open access for sourcing electricity within 15 days of application</li> <li>• ISTS transmission costs shall be waived off for all green hydrogen and ammonia production plants commissioned before June 30, 2025, for a period of 25 years.</li> <li>• Renewable energy banking shall be permitted for a period of 30 days at limited<sup>1</sup> charges set by state commissions</li> <li>• Distribution licensees shall only charge procurement charges, wheeling charges, and a small margin as determined by the state commission on electricity supplied to GH/GA plants.</li> </ul>
 <p><b>02 Ease of doing business</b></p>	<ul style="list-style-type: none"> <li>• Land in RE parks can be allocated towards green hydrogen/green ammonia plants</li> <li>• Manufacturing zones are to be set up by the Government of India where GH/GA plants can be set up</li> <li>• Manufacturers shall be allowed to set up bunkers for GH/GA storage near ports at applicable charges</li> <li>• A single portal is to be established by MNRE for all statutory clearances concerning manufacturing, storage, and transportation of hydrogen. All clearances are to be provided in a swift manner possibly within 30 days of application.</li> </ul>
 <p><b>03 Demand-side measures</b></p>	<ul style="list-style-type: none"> <li>• Renewable energy used in GH/GA production shall be counted towards the renewable purchase obligation of the consuming entity. RE consumed beyond the obligation of the producer shall be counted towards RPO of the obligated entity</li> <li>• MNRE may aggregate demand from different consumers and have consolidated bids for the procurement of GH/GA. This could help create competitive prices for GH.</li> </ul>

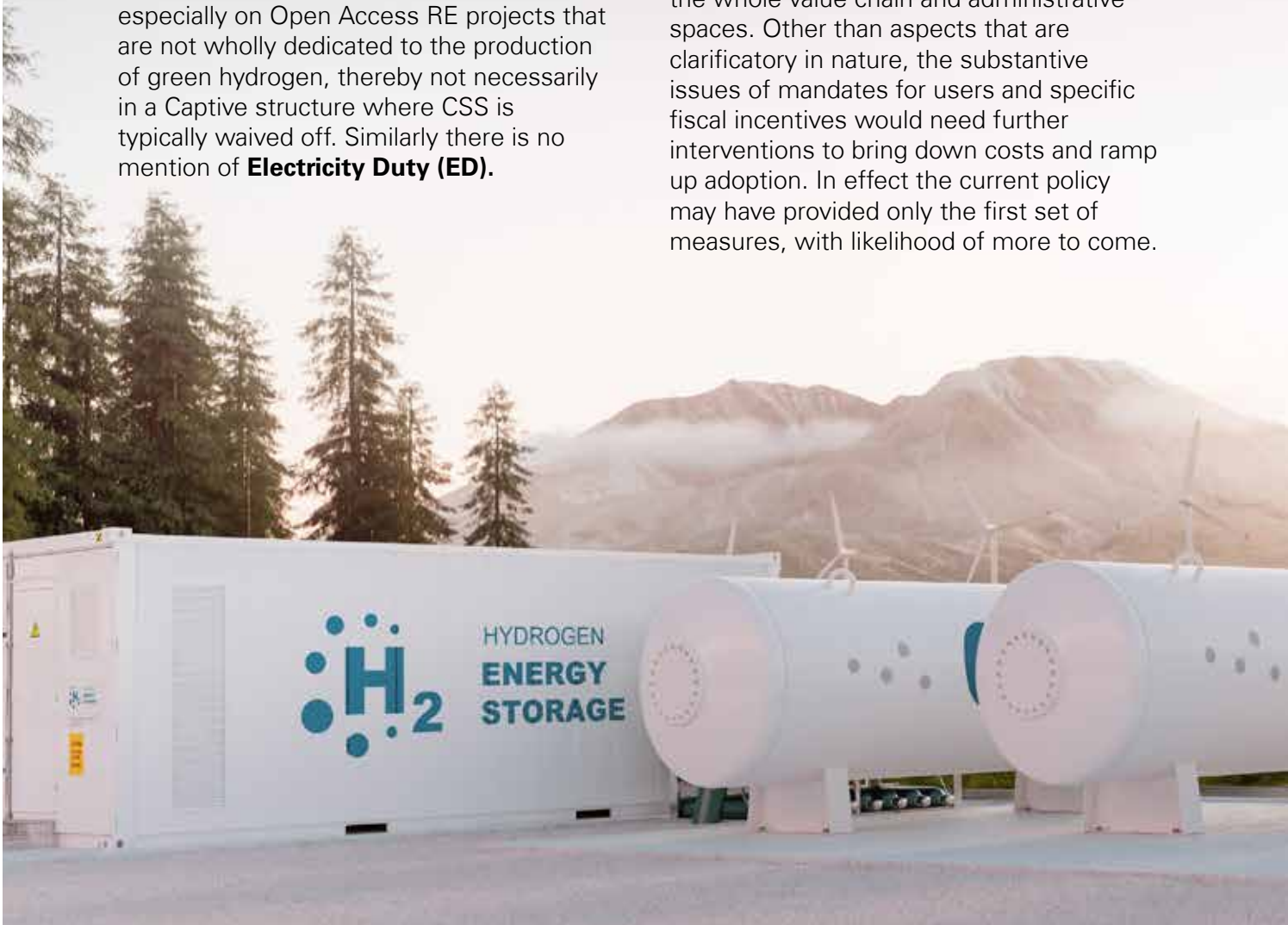
1. Banking charges shall not be more than the cost differential between the average tariff of RE bought by the distribution licensee in the previous year and the average market clearing price in the day ahead market during the month in which RE has been banked.



## Stakeholders have welcomed the Green Hydrogen Policy; however, some gaps do remain.

1. The implementation of **banking provision is unclear**. The mechanics of that need to be understood since there is no framework for banking for ISTS connected facilities. In practice elements of the chain may come under the purview of State authorities. How they react to the policies needs to be seen since the Electricity Act, 2003 only requires State regulators to be guided by the National Electricity Policy and Tariff Policy.
2. Further, the mechanism for the **charges the energy banking** will entail, even if fully implemented by the states need to be understood.
3. There is **no clarity on the application of Cross Subsidy Surcharge (CSS)**, especially on Open Access RE projects that are not wholly dedicated to the production of green hydrogen, thereby not necessarily in a Captive structure where CSS is typically waived off. Similarly there is no mention of **Electricity Duty (ED)**.
4. The **policy is silent on demand mandates** for sectors such as fertiliser and refineries which was widely expected. It has been hinted that this will come through subsequently in second phase of announcements.
5. The policy also does not provide any specific **fiscal incentive for electrolyser manufacturing** which would be critical to facilitate ecosystem development and self-sufficiency.
6. The policy does not materially attempt to address costs of renewable energy production or the costs of electrolysis other than through banking.

The green hydrogen space cuts across the whole value chain and administrative spaces. Other than aspects that are clarificatory in nature, the substantive issues of mandates for users and specific fiscal incentives would need further interventions to bring down costs and ramp up adoption. In effect the current policy may have provided only the first set of measures, with likelihood of more to come.





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**Several industry partnerships and early-stage tenders have been announced over 2021-22 involving state-run PSUs as well as private engineering and renewable energy leaders in India**

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# 04 Green hydrogen production cost getting closer to grey hydrogen

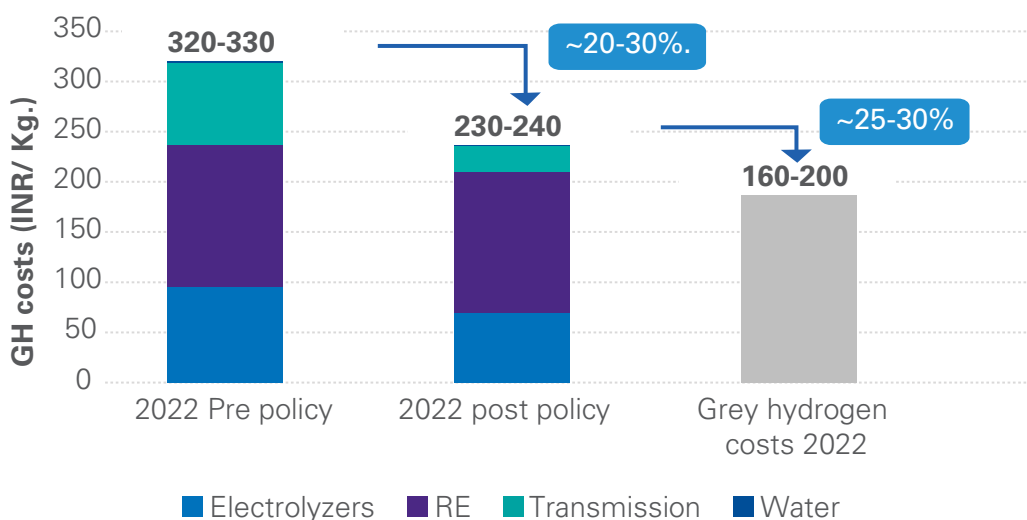
As per KPMG estimates, the National Hydrogen Policy could result in reduction of green hydrogen production costs by ~20-30 per cent to INR 230-240 per kg basis the measures announced (provided issues such as banking are sorted out).

As per KPMG in India estimates, current grey hydrogen costs of INR 160-200/ kg hydrogen consider a natural gas input cost of USD 10-13/MMBtu, possibly rising further due to the price movements seen in the immediate term. (Gas costs considered include weighted average of Asian LNG and Domestic gas costs with 50:50 split as per current consumption data for India).

Various policy and technical measures can reduce current green hydrogen production costs further, such as incentives on capex, aggregation of demand and bulk deployment, improved efficiencies, waivers on STU charges and cheaper renewable energy costs.

As per KPMG in India estimates, by 2030, green hydrogen costs in India could potentially fall to as low INR 160-170/ kg bringing parity with grey hydrogen and other competing fossil fuels in various end uses. To achieve this, it is important for India to have a well-rounded strategy for addressing levers for cost reduction. Some policy recommendations in this regard are provided herein.

**Estimated GH Production Costs pre- and post- India H<sub>2</sub> Policy**



Source: KPMG India Analysis



**In our estimates, the gap between green hydrogen and fossil-fuel based Grey Hydrogen may close significantly to 25-30 per cent, supported by policy measures as well as rising input Natural Gas costs (~USD 10-13/ MMBTU or even higher depending on source) driving costs of Grey Hydrogen upwards in the immediate term.**