

# GREEN HYDROGEN (SERIES I): FRAMEWORK AND DEVELOPMENTS IN INDIA



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## **I. INTRODUCTION**

Green hydrogen has emerged as one of the catalysts in the goal to achieve carbon neutrality and combat climate change. Green hydrogen is produced either through electrolysis of water using renewable electricity, separating hydrogen molecules from oxygen, or from biomass through thermochemical and biochemical routes. Production of hydrogen using renewable energy is an environmentally benign alternative to hydrogen production using fossil fuels owing to the zero-emission of carbon in the process.

India, recognizing the immense potential in the green hydrogen sector and its environmental benefits, has implemented a number of steps to decarbonize its economic growth path and meet the targets established following the Paris Agreement. The Paris Agreement was adopted on December 12, 2015, at the United Nations Climate Change Conference of Parties 21 to set out a global framework for avoiding dangerous climate change. India ratified the agreement on October 2, 2016. Keeping in view its obligations under the Paris Agreement, India formally proposed the National Hydrogen Energy Mission in the Union Budget for the financial year 2021-22. Further, India has also pledged to achieve Net Zero emissions by the year 2070 at the United Nations Climate Change Conference of Parties 26 held at Glasgow in November 2021.

In order to attain the intended objective of attaining net zero emissions by the year 2070, and boost the production, usage, and export of green hydrogen and its derivatives, the government of India approved the National Green Hydrogen Mission in January 2023 ("**Green Hydrogen Mission**"). The Green Hydrogen Mission acknowledges the numerous challenges faced by India in its goal to promote the green hydrogen sector including unfavorable cost economies, lack of harmonized standards and regulations, lack of technology and research and development (**R&D**), supply challenges and cost enabling infrastructure challenges. The Green Hydrogen Mission also emphasizes that driven technology advancements, reduction in costs of renewable energy and electrolyzers and aggressive national strategies can make green hydrogen cost-competitive in applications across sectors.

To achieve the goals envisioned under the Green Hydrogen Mission, it is imperative to establish an infrastructure and regulatory framework conducive to the delivery of renewable power, as well as the storage, transportation, and utilization of green hydrogen for diverse applications. This needs to be coupled with development of accelerated technological advancements.

India's commitment to the widespread adoption of green hydrogen is underscored by a series of policies and strategic initiatives both at the central and the state level. Several policies and frameworks have been notified by various state governments in order to aid the government of India with its green hydrogen initiatives.

## **II. INITIATIVES UNDERTAKEN BY THE CENTRAL GOVERNMENT**

The central government has been proactive in recognizing the challenges faced by the green hydrogen sector in India and has notified numerous regulatory and policy measures to address such challenges which are discussed as follows:

### **A. Green Hydrogen Policy**

The Ministry of Power ("**MoP**") notified the first green hydrogen policy on February 17, 2022 ("**Green Hydrogen Policy**") laying out various incentives and facilitation measures to make green hydrogen lucrative for the stakeholders. Under the Green Hydrogen Policy, the government provided, *inter alia*, the following incentives:

- waiver of Inter-State Transmission System ("**ISTS**") charges for a period of 25 years for the projects commissioned before June 30, 2025;
- expedited process for granting open access for sourcing renewable energy; and

- banking of unconsumed renewable power for a period of 30 days.

In a similar vein, on April 5, 2023, the Ministry of New and Renewable Energy (“**MNRE**”) issued a memorandum on waiver of inter-state transmission system charges for green hydrogen and its derivatives wherein it extended the period of exemption on ISTS charges to those green hydrogen units that are commissioned until December 31, 2030. The waiver would continue for a period of 25 years from the date of commissioning of the green hydrogen plant. This waiver of charges has been extended to electricity generated from solar, wind, pumped storage hydropower, battery energy storage system, or any hybrid combination of these. The hydro power projects commissioned before March 2019 were excluded from receiving the incentive.

The Green Hydrogen Policy further prescribed that the renewable energy used for the manufacture of green hydrogen would also be counted towards fulfillment of renewable purchase obligation (“**RPO**”).

## **B. RE Open Access Rules**

In line with Green Hydrogen Policy and its incentives, the MoP, in June 2022, notified the Electricity (Promoting renewable energy through Green Energy Open Access) Rules, 2022 (“**RE Open Access Rules**”). Under the RE Open Access Rules, green hydrogen and green ammonia have been included for the fulfilment of RPO obligations by entities such as licensees, captive users and open access consumers.

## **C. Green Hydrogen Mission**

The MNRE unveiled the guidelines for the implementation of the Green Hydrogen Mission with the objective to:

- achieve a production capacity of at least 5 million metric tons of green hydrogen per annum by the year 2030;
- support the replacement of hydrogen produced from fossil fuel sources with green hydrogen in ammonia production and petroleum refining; and
- use green hydrogen driven synthetic fuels to replace fossil fuels in various sectors including transport, shipping and aviation.

The Green Hydrogen Mission proposed to implement the mission in a phased manner with an initial outlay of Rs. 19,744 crores, of which Rs. 17,490 crores have been allocated towards the Strategic Interventions for Green Hydrogen Transition (“**SIGHT**”) programme, Rs. 1,466 crores will be utilised for pilot projects for green hydrogen, Rs. 400 crores will be invested for R&D, and the remaining Rs. 388 crores will be invested towards other components of the Green Hydrogen Mission such as establishing green hydrogen hubs, skill development, public awareness and stakeholder outreach, international cooperation and creation of a robust regulatory framework, safety codes and quality standards. This would support domestic manufacturing of electrolyzers and production of green hydrogen by providing direct financial incentives and undertaking risk mitigation measures such as diversification in supply chains; diversification of technology options; optimization of location of renewable energy and green hydrogen production plants to mitigate operational level risks; risk sharing framework in procurement, facilitating projects to access FDI, bond markets etc. along with demand creation in identified sectors to cater financial and market risks.

## **D. SIGHT Phase I Guidelines**

Recently on June 28, 2023, MNRE notified the guidelines for the implementation of the SIGHT programme (“**SIGHT Phase I Guidelines**”) comprising of 2 components namely, (i) incentive scheme for electrolyser manufacturing; and (ii) incentive scheme for green hydrogen production. The SIGHT Phase I Guidelines aim to provide incentives for electrolyser



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manufacturing and production of green hydrogen based on production capacities to the selected electrolyzers and green hydrogen manufacturers. The following incentives have been offered under the SIGHT Phase I Guidelines:

(i) Electrolyser manufacturing:

Component I of the SIGHT Phase I Guidelines provide incentives for a period of 5 years from the date of commencement of electrolyser manufacturing on the basis of the manufacturing capacity of the successful bidder. The base incentive for electrolyser manufacturing has been defined for 5 years, being Rs. 4440/kW for the first year, which will be reduced on an annual basis, to Rs. 3700/kW in the second year, Rs. 2960/kW in the third year, Rs. 2220/kW in the fourth year and Rs. 1480/kW in the fifth year.

(ii) Green hydrogen production:

Component II of the SIGHT Phase I Guidelines offers incentives for a period of 3 years from the date of commencement of the production of green hydrogen. The incentive has been capped at Rs. 50/kg in the first year, Rs. 40/kg in the second year, and Rs. 30/kg in the third year.

These incentives under the SIGHT Phase I Guidelines will be disbursed to the successful bidders on an annual basis after verification of the claim by the Solar Energy Corporation of India (**SECI**), the implementing agency for the SIGHT Phase I Guidelines. For availing these incentives, the manufacturers will be selected through the process of competitive bidding in the manner detailed in the SIGHT Phase I Guidelines. Recently, in July 2023, the SECI invited bids for the selection of producers for setting up production facilities for green hydrogen and manufacturers for setting up manufacturing capacities for electrolyzers in India under the SIGHT Phase I Guidelines.

There are also various policies and regulations notified by the state governments to address the challenges in the production of green hydrogen and incentivize manufacturers to adopt green hydrogen as a form of renewable energy.

### **III. INITIATIVES UNDERTAKEN BY VARIOUS STATE GOVERNMENTS**

The measures adopted by state governments range from grant of concessions, exemptions, and subsidies, to framing a regulatory framework that is conducive to establishing infrastructure for the delivery of renewable energy and spurring green hydrogen investment. The objective is to make green hydrogen production/manufacturing economically viable with an aim to ultimately create a sustainable market for green hydrogen and its derivatives. We now discuss some of the key policy measures taken by the state governments to create a demand-supply chain for green hydrogen and its derivatives.

#### **A. Andhra Pradesh**

The Andhra Pradesh government, recently on June 20, 2023, notified a dedicated Green Hydrogen and Green Ammonia Policy, 2023 which will remain in force for a period of 5 years or until a new policy is issued. The policy aims, *inter alia*, to generate a production capacity of 0.5 million tons per annum of green hydrogen and 2 million tons per annum of green ammonia and set up green hydrogen/ green ammonia equipment manufacturing facilities in the state.

## **B. Gujarat**

In May 2023, the revenue department of the Gujarat government issued the draft Policy 2023 for leasing the government fallow land to set up manufacturing facilities for production of green hydrogen using non-conventional sources of energy such as solar, wind, wind solar hybrid energy. The policy provides for a 40-year lease period for the installation of such energy projects for green hydrogen production. It allows any unit or company to apply for land allotment under the Policy 2023 for a production of at least 1 lakh metric tons per year. The Gujarat Power Corporation Limited will identify government waste, fallow and non-fertile land and create a land bank for leasing out land under the policy. The terms of the lease, energy accounting, and other incentives provided in the policy are discussed in Table 1 below.

## **C. Odisha**

In 2022, the government of Odisha issued two policies, the Renewable Energy Policy, 2022, (“**RE Policy, 2022**”) and the Industrial Policy Resolution, 2022 (“**IPR, 2022**”) in alignment with the objectives of the Green Hydrogen Mission. The RE Policy, 2022 intends to boost the production of green hydrogen/ green ammonia to meet the demands of the petrochemical, fertilizer and steel industry, long haul transport, city gas distribution, and export. It requires distribution companies (DISCOMS)/ Grid Corporation of Odisha (GRIDCO) to supply power for hydrogen production at such cost plus margins as determined by the Odisha Electricity Regulatory Commission. The policy requires creation of a renewable energy fund. The government aims to come up with a dedicated policy for development of green hydrogen/ ammonia in the state. The RE Policy, 2022 will remain effective till March 31, 2030, or until replaced with another policy. All the incentives provided under the RE Policy, 2022 will be in accordance with the Green Hydrogen Mission and the national policies announced from time to time. It also provides that additional incentives may be provided as per the Green Hydrogen Mission and under the IPR, 2022 until the government of Odisha releases a separate policy for promoting the production of green hydrogen/ ammonia.

Additionally, the IPR, 2022 lays out the granting of competitive and best in class financial incentives to all desired industries in the state. The IPR Policy, 2022 classifies the industries into 4 categories i.e., priority sectors, thrust sectors, negative sectors, and all other sectors. The priority sectors and the thrust sectors have been recognized as desirable sectors. Among other industries, green hydrogen and green ammonia has been categorized as a thrust sector. The incentives laid out under this policy for thrust sectors include exemption from payment of electricity duty and reimbursement of power tariff. The IPR, 2022 will remain effective for a period of 5 years from its enforcement or until substituted by another policy.

## **D. Rajasthan**

While Rajasthan Electricity Regulatory Commission (Terms and Conditions for tariff determination from Renewable energy resources) (First Amendment) Regulations, 2023 will come into force from the date of their publication in the official Gazette, it lays out various policy measures with respect to green hydrogen such as specified green energy tariffs, incentives related to cross-subsidy surcharge and additional surcharge.

## **E. Uttar Pradesh**

Similarly, the state of Uttar Pradesh, in 2022, released the draft Green Hydrogen Policy with the aim to facilitate investments in production facilities and manufacturing units as well as encourage innovation to reduce costs, advance infrastructure development, stimulate market creation through incentives, and develop a skilled workforce for the production of green hydrogen and green ammonia. The policy lays down several incentives for the green hydrogen sector such as tax exemptions, capital expenditure subsidy etc., as elaborated in Table 1 below. The incentives provided in this draft policy are in addition to the incentives provided by the government under the Uttar Pradesh Solar Energy Policy, 2022. Furthermore, the incentives provided by the central government for production of green hydrogen and ammonia will also apply to the state. This policy will remain operational for a period of 5 years or until the government amends or replaces the policy, from the date of its publication in the official gazette.

## **F. Kerala**

The Kerala government, in its budget for the financial year 2023-24, allocated funding for several green initiatives intending to become a 100% renewable energy dependent state by 2040 and achieve net carbon neutrality by the year 2050. The budget allocated Rs. 200 crores for the establishment of green hydrogen hubs in Kochi and Thiruvananthapuram in the coming 2 years.

## **IV. WAY FORWARD**

As discussed, the state governments have welcomed India's goal for green energy transition and become a global hub for the production of green hydrogen. Various policies have been framed at the central and the state level to promote the said goal. Several industry stakeholders have also embraced this goal. However, all this remains dependent on the effective and timely implementation of the schemes and regulatory measures introduced by the governments to incentivize the domestic manufacturers and minimize the cost of associated renewable energy. The industry believes that the schemes such as SIGHT Phase I Guidelines incentivizing the manufacturing of electrolyzers and green hydrogen production, subsidizing or removing existing tariffs and non-tariff barriers for production/manufacturing of green hydrogen, will play a crucial role in promoting cost competitiveness of green hydrogen production in India.

In a recent International Conference on Green Hydrogen, 2023, organized by the MNRE, the industry experts raised issues and sought assistance from the central and the state governments with respect to the cost of acquiring land, transmission costs, etc. It can be seen that there still remain several hurdles that are essential to overcome, to achieve the objectives envisioned under the Green Hydrogen Mission such as: exorbitant cost of green hydrogen production and associated renewable energy, lack of infrastructure, storage and distribution facilities, creation of demand etc.

The initiatives have also received a positive response from the industry as can be evidenced by the interest shown by the major entities in taking up green hydrogen projects. In February 2023, the European Investment Bank signed a MOU with India Hydrogen Alliance to develop large scale green hydrogen hubs and projects across India and to provide indicative funding of 1 billion euros subject to the approval from the government of India. Similarly, major power players like ACME

have also undertaken various green hydrogen and ammonia pilot projects in different parts of India. Several pilot projects are also being undertaken to achieve the goal envisioned under the Green Hydrogen Mission by entities such as Oil India, Larson and Toubro, Thermal Power Corporation Limited etc.

Recently on July 5, 2023, the MNRE released the draft R&D roadmap for the green hydrogen ecosystem in India. It entails initiatives for research and innovation to promote hydrogen production, storage, and transport in India and lays out a hydrogen framework and end-use applications of the R&D activities. The roadmap proposes strategies to promote R&D in the form of projects focusing on the impact of research on the promotion of green hydrogen production in the form of mid-term and long-term projects. It also proposes a public-private partnership framework for R&D (Strategic Hydrogen Innovation Partnership- SHIP) in India by establishing a dedicated R&D fund with inputs from industry and government institutions as well as venture capital for the short-term and long-term commitment towards the green hydrogen sector.

While efforts have been made by the central government and various states towards promoting the production of green hydrogen and ammonia by way of incentivizing, regulatory framework, and ease of doing business, it is yet to be seen if the policies and incentives are adequate to address the challenges of high production costs. Some of the challenges that are yet to be addressed by the governments pertain to the loss of energy at every stage of production of green hydrogen; water and electricity shortages that may be caused due to the redirection of clean power and water to manufacture green hydrogen; high cost of hydrogen as compared to other alternatives acts as an obstacle in creating a demand in the market; steady and inexpensive supply of renewable energy; limited natural resources such as land and demineralized water for the manufacture of green hydrogen.

The central government and state governments need to take coordinated measures to address the practical challenges concerning the green hydrogen sector. The involvement of major industrial entities will also be crucial in pivoting the path to a green future and reducing India's reliance on fossil fuels. Therefore, measures such as setting up green hydrogen plants in public private partnership models, ensuring long term funds at low interest rates etc., can be effective in accelerating the shift to green hydrogen.



## End Notes

1. A case for equity as India bets big on green hydrogen, Business Today, <https://www.businesstoday.in/industry/energy/story/a-case-for-equity-as-india-bets-big-on-green-hydrogen-375908-2023-04-03>.
2. Budget Speech 2023-2024, Government of Kerala, [https://budget.kerala.gov.in/keralabudgetdoc/2023\\_24/dbe/BudgetSpeech\\_English.pdf](https://budget.kerala.gov.in/keralabudgetdoc/2023_24/dbe/BudgetSpeech_English.pdf).
3. Draft R&D Roadmap For Green Hydrogen Ecosystem in India, [https://mnre.gov.in/img/documents/uploads/file\\_f-1688557917362.pdf](https://mnre.gov.in/img/documents/uploads/file_f-1688557917362.pdf).
4. Draft Uttar Pradesh Green Hydrogen Policy, October 2022, [https://upneda.org.in/MediaGallery/UPGH2\\_policy\\_II.pdf](https://upneda.org.in/MediaGallery/UPGH2_policy_II.pdf).
5. Electricity (Promoting renewable energy through Green Energy Open Access) Rules, 2022, [https://www.acma.in/uploads/ciculer-attachement/Electricity%20\(Promoting%20Renewable%20Energy%20through%20Green%20Energy%20Open%20Access\)%20Rules,2022.pdf](https://www.acma.in/uploads/ciculer-attachement/Electricity%20(Promoting%20Renewable%20Energy%20through%20Green%20Energy%20Open%20Access)%20Rules,2022.pdf).
6. File No. 238/4/2023-P and RA, Memorandum On Waiver Of Inter-State Transmission System Charges For Green Hydrogen And Its Derivates [https://india-redirector.com/public/tender\\_uploads/wind\\_utility\\_policy-642ebb388719c.pdf](https://india-redirector.com/public/tender_uploads/wind_utility_policy-642ebb388719c.pdf).
7. Government of Andhra Pradesh, GO MS/16/2023/ENE01-Energy, Andhra Pradesh Green Hydrogen & Green Ammonia Policy (2023).
8. Government of Gujarat, Resolution no. JAMAN/3923/197/A.1, Policy 2023 for leasing the government fallow land for green hydrogen production using non-conventional sources of energy such as solar, wind, wind solar hybrid energy, [https://www.eqmagpro.com/wp-content/uploads/2023/05/New-GR-for-Green-Hydrogen-08-05-2023-English\\_compressed.pdf](https://www.eqmagpro.com/wp-content/uploads/2023/05/New-GR-for-Green-Hydrogen-08-05-2023-English_compressed.pdf)
9. Ministry of New and Renewable Energy, 353/ 39/ 2023- NT, Scheme Guidelines for Strategic Interventions for Green Hydrogen Transition (SIGHT) program (June 28, 2023).
10. National Green Hydrogen Mission, Ministry of New and Renewable Energy, Government of India, [https://mnre.gov.in/img/documents/uploads/file\\_f-1673581748609.pdf](https://mnre.gov.in/img/documents/uploads/file_f-1673581748609.pdf).
11. Notification No. 23/02/2022- R&R, Green Hydrogen and Ammonia Policy, Ministry of Power, Government of India (February 17, 2022), [https://powermin.gov.in/sites/default/files/Green\\_Hydrogen\\_Policy.pdf](https://powermin.gov.in/sites/default/files/Green_Hydrogen_Policy.pdf).
12. Paris Agreement, European Commission, [https://climate.ec.europa.eu/eu-action/international-action-climate-change/climate-negotiations/paris-agreement\\_en#:~:text=The%20Paris%20Agreement%20sets%20out,it%20to%201.5%C2%B0C](https://climate.ec.europa.eu/eu-action/international-action-climate-change/climate-negotiations/paris-agreement_en#:~:text=The%20Paris%20Agreement%20sets%20out,it%20to%201.5%C2%B0C).
13. RERC (Terms and Conditions for Tariff determination from Renewable Energy Sources)(First Amendment) Regulations, 2023, <https://jmkresearch.com/wp-content/uploads/2023/05/Rajasthan-Renewable-Energy-tariff-2.pdf>.
14. Resolution No. 12300-IND-HI2-POL-0006/2019, Industrial Policy Resolution 2022, Government of Odisha, <https://eicelectricityodisha.nic.in/DownloadForm/Industrial%20Policy%20Resolution%202022%20Odisha.pdf>.
15. Resolution no. No.11757-ENG-HYD-HYDRO-0009/2022/En, Odisha Renewable Energy Policy, 2022, Government of Odisha, [https://energy.odisha.gov.in/sites/default/files/2022-12/3354-Energy%20dept\\_1.pdf](https://energy.odisha.gov.in/sites/default/files/2022-12/3354-Energy%20dept_1.pdf).
16. Three day conference on Green Hydrogen (ICGH) 2023 concludes in new Delhi, Press Information Bureau, <https://pib.gov.in/PressReleaselframePage.aspx?PRID=1937993>.

**Table 1: INITIATIVES BY STATES: COMPARATIVE ANALYSIS**

A comparative analysis of the incentives provided by various states for manufacturing, production of green hydrogen and green ammonia is provided hereinbelow:

	<b>Andhra Pradesh</b>	<b>Gujarat</b>	<b>Odisha</b>	<b>Rajasthan</b>	<b>Uttar Pradesh</b>
<b>Tax</b>	<p><b>Paragraph 9(i) of the Andhra Pradesh Green Hydrogen and Green Ammonia Policy 2023</b></p> <p>The policy provides that the developers will receive a 100% reimbursement of net SGST revenue from sale of green hydrogen/ammonia within the state, for a period of five years after the commercial operation date.</p>	<p>The draft Policy 2023 does not provide any incentive with respect to payment of tax.</p>	<p><b>Paragraph 4.5.4 of the Industrial Policy Resolution 2022 Odisha</b></p> <p>The Resolution provides for reimbursement of 100% of net SGST paid, subject to the limit of 200% of the cost paid towards plant and machinery.</p>	<p>The Rajasthan Electricity Regulatory Commission (Terms and Conditions for tariff determination from Renewable energy resources) (First Amendment) Regulations, 2023 does not provide for any incentive with respect to payment of tax.</p>	<p><b>Paragraph 5.1 (1) of the Uttar Pradesh Green Hydrogen Policy Draft 2022</b></p> <p>The draft policy provides for 100% reimbursement of SGST for green hydrogen/ ammonia production.</p>
<b>Electricity duty</b>	<p><b>Paragraph 9(ii) of the Andhra Pradesh Green Hydrogen and Green Ammonia Policy 2023</b></p> <p>The policy provides for 100% exemption from electricity duty for the power consumed for production of green hydrogen/ammonia from renewable energy plants for a period of five years from the commercial operation date.</p>	<p>The draft Policy 2023 does not provide any incentive with respect to payment of electricity duty.</p>	<p><b>Paragraph 4.5.2 (b)(iv)(1) of the Industrial Policy Resolution 2022 Odisha</b></p> <p>The Resolution provides for 100% exemption from payment of electricity duty for a period of twenty years from the date of commencement of commercial production.</p>	<p>The Rajasthan Electricity Regulatory Commission (Terms and Conditions for tariff determination from Renewable energy resources) (First Amendment) Regulations, 2023 does not provide for any incentive with respect to payment of electricity duty.</p>	<p><b>Paragraph 5.1 (1) of the Uttar Pradesh Green Hydrogen Policy Draft 2022</b></p> <p>The policy provides for exemption from payment of electricity duty to all new industrial units set up in the state for a period of ten years.</p>

			<p><b>Paragraph 4.5.2 (b)(iv)(2) of the Industrial Policy Resolution 2022 Odisha</b></p> <p>The Resolution provides for reimbursement of Power Tariff of Rs.3.00 per unit consumed and purchased from local DISCOMs/ GRIDCO for a period of twenty years from the date of commencement of commercial production.</p>		
Stamp duty	<p><b>Paragraph 9(viii)(b) of the Andhra Pradesh Green Hydrogen and Green Ammonia Policy 2023</b></p> <p>The policy provides for 100% exemption from the payment of stamp duty for green hydrogen/ammonia production, consumption, storage and transportation.</p>	<p>The draft Policy 2023 does not provide any incentive with respect to payment of stamp duty.</p>	<p><b>Paragraph 10(6) of Odisha Renewable Energy Policy 2022</b></p> <p>The Resolution provides that no stamp duty will be applicable on purchase or lease of land, land conversion charges, and registration charges for renewable energy projects.</p> <p><b>Paragraph 4.5.1(g) of the Industrial Policy Resolution 2022 Odisha</b></p> <p>The Resolution provides that no stamp</p>	<p>The Rajasthan Electricity Regulatory Commission (Terms and Conditions for tariff determination from Renewable energy resources) (First Amendment) Regulations, 2023 does not provide for any incentive with respect to payment of stamp duty.</p>	<p><b>Paragraph 7(1) of the Uttar Pradesh Green Hydrogen Policy Draft 2022</b></p> <p>The policy provides for 100% exemption from the payment of stamp duty for green hydrogen/ammonia production, consumption, storage, and transportation.</p>

			duty will be applicable on (i) transfer of land or shed by government, IDCO, and private industrial estate to new industrial units in the thrust sector; (ii) purchase of fresh land by the existing industrial units in the thrust sector.		
<b>Transmission cost</b>	<p><b>Paragraph 9(iii) of the Andhra Pradesh Green Hydrogen and Green Ammonia Policy 2023</b></p> <p>The policy provides that subject to a maximum of INR 10 lakhs per MW/year of installed electrolyser capacity, 25% of the intrastate transmission charges will be reimbursed to the developers for a period of five years from the commercial operation date.</p>	The draft Policy 2023 does not provide any incentive with respect to payment of transmission cost.	<p><b>Paragraph 4.5.2 (b)(iv)(3) of the Industrial Policy Resolution 2022 Odisha</b></p> <p>The Resolution provides that the state transmission charges for renewable energy consumed for manufacturing of green hydrogen/ammonia will be exempted/reimbursed for a period of 20 years from the date of commencement of commercial production.</p>	The Rajasthan Electricity Regulatory Commission (Terms and Conditions for tariff determination from Renewable energy resources) (First Amendment) Regulations, 2023 does not provide for any incentive with respect to payment of transmission cost.	<p><b>Paragraph 7(3)(b)(ii) of the Uttar Pradesh Green Hydrogen Policy Draft 2022</b></p> <p>The policy provides for 50% exemption from payment of intra-state transmission charges for renewable electricity provided for producing green hydrogen/ammonia.</p>
<b>Cross-subsidy surcharge</b>	<p><b>Paragraph 9(iv) of the Andhra Pradesh Green Hydrogen and Green Ammonia Policy 2023</b></p> <p>The policy provides that for a period of five years from the date of</p>	The draft Policy 2023 does not provide any incentive with respect to payment of cross subsidy surcharge.	<p><b>Paragraph 4.5.2 (b)(iv)(3) of the Industrial Policy Resolution 2022 Odisha</b></p> <p>The Resolution provides that the cross-</p>	<p><b>Paragraph 3(2) of the RERC (Terms and Conditions for Tariff determination from Renewable energy Sources) (First Amendment) Regulations 2023</b></p>	<p><b>Paragraph 7(3)(b)(iii) of the Uttar Pradesh Green Hydrogen Policy Draft 2022</b></p> <p>The policy provides for 100% exemption from cross-subsidy charges for</p>

	<p>commissioning, the cross-subsidy surcharge, as applicable for the energy intensive industry category, will be reimbursed on the energy drawn from the renewable energy plants located within the state.</p>		<p>subsidy surcharges &amp; additional surcharges for the renewable energy consumed for manufacturing of green hydrogen and green ammonia, will be exempted/ reimbursed for a period of 20 years from the date of commencement of commercial production.</p>	<p><b>(Public Notice) Rajasthan</b></p> <p>The Regulation provides that the cross-subsidy charges and additional surcharges will not be applicable if green energy is utilised for production of green hydrogen and green ammonia.</p>	<p>renewable electricity provided for producing green hydrogen/ammonia</p>
<p><b>Renewable purchase obligation (RPO)</b></p>	<p><b>Paragraph 9(vi) of the Andhra Pradesh Green Hydrogen and Green Ammonia Policy 2023</b></p> <p>The policy, in consonance with the Green Hydrogen Policy, provides that the renewable energy consumed for the production of green hydrogen/ammonia will be counted towards the RPO compliance of the consuming entity.</p> <p>Any energy consumed beyond the obligation of the producer will be counted towards the RPO compliance of APDISCOM in the area where the project is located.</p>	<p>The draft Policy 2023 does not provide any incentive with respect to the RPO compliance of any entity.</p>	<p>The Renewable Energy Policy 2022 and the Industrial Resolution Policy, 2022 does not provide any incentive with respect to RPO compliance of any entity.</p>	<p><b>Paragraph 6 (Regulation 94A (6)) of the RERC (Terms and Conditions for Tariff determination from Renewable energy Sources) (First Amendment) Regulations 2023 (Public Notice) Rajasthan</b></p> <p>The regulation provides that if green energy is purchased from a distribution licensee or from renewable energy sources other than the distribution licensee, beyond the obligation of obligated entities, will be counted towards the RPO compliance of the distribution licensee.</p>	<p>The Uttar Pradesh Green Hydrogen Policy Draft 2022 does not provide for any incentive with respect to RPO compliance of any entity.</p>



<p><b>Land</b></p>	<p><b>Paragraph 9(vii)(a) of the Andhra Pradesh Green Hydrogen and Green Ammonia Policy 2023</b></p> <p>The policy provides that the nodal agency will allocate government land for development of green hydrogen and green ammonia plant, on a priority basis at a lease rate of INR 31,000 per acre per year with 5% escalation every two years during the period of the project.</p> <p><b>Paragraph 9(viii)(a) of the Andhra Pradesh Green Hydrogen and Green Ammonia Policy 2023</b></p> <p>The policy also provides for a 100% exemption from the payment of land use conversion charges for green hydrogen/ammonia production, consumption, storage and transportation.</p>	<p><b>Paragraph 3 and 7(i) of the Policy 2023, Revenue department, Government of Gujarat</b></p> <p>The policy provides that a 40-year land lease period will be provided for the installation of solar, wind, and wind-solar hybrid projects to produce green hydrogen. The policy further provides that the annual rent of the land allotted by the government will be Rs. 15,000 per hectare, which will be increased by 15% every three years.</p>	<p><b>Paragraph 4.5.1 (j) of the Industrial Policy Resolution 2022 Odisha</b></p> <p>The Resolution provides that the land will be provided at a special subsidised rate of 50% of the concessional industrial rate for new industrial units in thrust sectors if such units create direct employment for not less than 1000 state domiciled people.</p>	<p>The Rajasthan Electricity Regulatory Commission (Terms and Conditions for tariff determination from Renewable energy resources) (First Amendment) Regulations, 2023 does not provide for any incentive with respect to lease or sale of land for green hydrogen/ammonia production.</p>	<p><b>Paragraph 5.2(10) of the Uttar Pradesh Green Hydrogen Policy Draft 2022</b></p> <p>The policy provides that the government will provide adequate land at concessional rates for green hydrogen and green ammonia production.</p> <p><b>Paragraph 7(1) of the Uttar Pradesh Green Hydrogen Policy Draft 2022</b></p> <p>The policy provides for 100% exemption from payment of land tax and 100% exemption from the payment of land use conversion charges.</p>
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