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Scheme Guidelines for implementation of Pilot projects for use of Green Hydrogen in steel sector under the National Green Hydrogen Mission

The Ministry of New and Renewable Energy (“**MNRE**”), *vide* notification dated February 2, 2024, issued the ‘Scheme Guidelines for implementation of Pilot projects for use of Green Hydrogen in Steel Sector under the National Green Hydrogen Mission’ (“**Scheme**”).

The National Green Hydrogen Mission (“**Mission**”) is an initiative aimed at fostering the adoption of green hydrogen as a clean and sustainable energy source across various sectors of the economy. In alignment with this Mission, the Scheme have been formulated to facilitate the integration of green hydrogen technologies in steel manufacturing processes. The primary objective of these guidelines is to support the deployment of pilot projects within the steel sector for utilizing green hydrogen as an alternative energy source. This initiative aims to reduce carbon emissions, enhance energy efficiency, and promote sustainable practices in the steel industry.

Salient Features

1. Projects intending to develop pilot scale/ demonstration plants for replication of technology will be supported and encouraged.
2. Pilot projects in the steel sector will be implemented through the Ministry of Steel (“**MoS**”), who will finalise the Scheme Implementing Agencies (“**SIA**”). Further, the MoS will also prepare a transparent and competitive framework for selection of the pilot projects.
3. The SIA will share knowledge and outcome of the pilot projects through project completion reports, monitoring reports, workshops and publications to propagate findings and lessons from the pilot projects.
4. The Scheme would primarily fund the capital equipment required for use of hydrogen in the iron and steel manufacturing process. However, expenses on account of production of hydrogen, land, etc. will not be funded.
5. A Steering Committee under the co-chairpersonship of Secretary, MoS and Secretary, MNRE, will oversee the scheme and its projects, ensure their successful implementation and recommend adjustments as needed. It will also make suggestions to resolve difficulties arising in interpretation of the Scheme.
6. A Project Appraisal Committee (“**PAC**”) will assess project proposals for recommending sanction of funds, monitor the projects quarterly, and advice MNRE on release of the central financial assistance. Such financial support for projects will be evaluated and granted, basis the needs, merits and feasibility of each project. The PAC will monitor sanctioned projects for allocation of funds based on the project progress and send recommendations to MNRE for disbursement of Central Financial Assistance.

7. The calls for proposals will indicate a suitable timeline for completing the project, with an extension of up to 1 (one) year, which may be granted basis adequate justification, with the approval of the Steering Committee, without imposition of any penalty. Further extension beyond 1 (one) year will only be granted with the approval of MNRE, with appropriate penalties (to be specified by SIAs in calls for proposals). Projects encountering unjustified delays or failing to adhere to objectives/provisions of the Scheme/Mission may be cancelled/short-closed by the MNRE in consonance with the Steering Committee.
8. MoS will issue the Scheme for safeguarding of any intellectual property rights which may be generated through projects funded under the Scheme. Such guidelines may also be part of the call for proposals issued by the SIAs.

Funding and Disbursement

Funding of the approved projects must not exceed 50% of the total cost of the project. However, for consortium of Independent Steel Producers and Direct Reduced Iron (“DRI”) industry or associations of DRI industry, the funding may be increased to 70% of the project cost, subject to sanction of the PAC.

The funds may be disbursed to the selected entities in the following manner:

1. 20% at the time of issue of letter of award;
2. 70% as per the milestones specified in the calls for proposals;
3. 10% upon project completion.

The total budgetary outlay for implementing the scheme is INR 455,00,00,000 (Indian Rupees four hundred and fifty-five crore) until the financial year 2029-30.

Implementation Approach

4. **Selection of application areas:** Pilot projects will be set up in the steel sector, implemented through the MoS and the SIAs. The SIAs will issue calls for proposals for the projects and eligible entities would include CPSUs, SPSUs, private sector, state corporations, Indian research and development institutions, research labs, academic institutions, joint ventures/partnerships/consortiums of such entities.
5. **Evaluation and award:** The proposals will be evaluated by a PAC according to the criteria mentioned in the call for proposals. The selected entity will be issued the letter of award by the SIA, upon receipt of approval from MNRE. Pilot projects must focus on the integration of green hydrogen production, storage, transportation, and utilization within steel manufacturing processes.
6. **Execution and commissioning:** Work must be executed as per the approved scope of work.
7. **Technical and regulatory approvals:** The selected entities will be solely responsible for obtaining the safety, environment and regulatory approvals as per requirements.
8. **Testing and certification:** The selected entities must get necessary testing and certification compliance from concerned agencies.
9. **Project completion:** Within 1 (one) month from project completion, the SIAs will submit the project completion report to the PAC. Such report will include technical aspects of the project, technical issues faced during the project, outcome of the project with respect to data collection and recommendations for future projects basis know-how generated from the completed project.

Conclusion

In the last decade, Indian steel industry has significantly expanded, and surpassed Japan to become the world’s second largest producer of crude steel. However, steel industry is also one of the leading producers of carbon dioxide, contributing

to 12% of the CO2 emissions in the country. Use of green hydrogen in the steel manufacturing process will pave the way for improved energy efficiency, reduction in operating costs and improvement in the quality of steel production. The Scheme represent a significant step towards realizing the objectives of the Mission. By promoting the adoption of green hydrogen technologies, the steel industry can mitigate its environmental footprint while enhancing competitiveness and sustainability. Through collaborative efforts and targeted investments, the pilot projects will pave the way for widespread adoption of green hydrogen across the steel sector, driving India towards a cleaner and greener future.

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- Legislative, Regulatory and Policy reforms;
- Public Procurement;
- Compliance and Strategy;
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This Prism has been prepared by:



Vishnu Sudarsan
Partner



Sugandha Somani Gopal
Partner



Samrat Chakraborty
Associate

		
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