

F No. 353/7/2024-NT
Government of India
Ministry of New and Renewable Energy
(Hydrogen Division)

Atal Akshay Urja Bhawan, Lodhi Road,
New Delhi 110003
Date: 15th March 2024

To

The Pay & Accounts Officer,
Ministry of New and Renewable Energy,
New Delhi- 110003

Subject: Scheme Guidelines for setting up Hydrogen Hubs in India under the National Green Hydrogen Mission (NGHM)

Sir/Madam,

I am directed to convey the sanction of the President of India for the implementation of the Scheme for setting up Hydrogen Hubs in India under the National Green Hydrogen Mission (NGHM).

2. Objectives:

Objectives of the Scheme are as follows:

- (i) To identify and develop regions capable of supporting large-scale production and/or utilization of Hydrogen as Green Hydrogen Hubs.
- (ii) Development of Green Hydrogen Projects inside the Hubs in an integrated manner to allow pooling of resources and achievement of scale
- (iii) Enhance the cost-competitiveness of Green Hydrogen and its derivatives vis-à-vis fossil-based alternatives
- (iv) Maximize production of Green Hydrogen and its derivatives in India within the stated financial support
- (v) Encourage large-scale utilization and exports of Green Hydrogen and its derivatives
- (vi) Enhance viability of Green Hydrogen assets across the value chain

3. Implementation Methodology: The Scheme will be implemented as per the detailed Guidelines given at **Annexure**.

4. The expenditure on this scheme will be met from the budget provisions made under the National Green Hydrogen Mission Head.

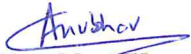
5. The Ministry of New & Renewable Energy (MNRE) and its nominated Scheme Implementing Agencies (SIAs) will be the Implementing Agency for these hydrogen hubs.

6. This issues in exercise of the powers conferred on this Ministry and with the concurrence of IFD vide their Diary. No. 457 dated 15th March 2024.



7. This has the approval of Hon'ble Minister of Power and New and Renewable Energy.

Yours Sincerely,


(Anubhav Uppal)
Scientist D

Enclosed: Annexure

Copy to:

1. All Central Government Ministries and Departments
2. All Members of the Empowered Group under the Mission
3. All Members of the Advisory Group under the Mission
4. CEO, NITI Aayog, Sansad Marg, New Delhi
5. State Nodal Agencies (SNAs) of all States/UTs
6. Major Public Sector Enterprises operating in Renewable Energy/Power Sector
7. Principal Director of Audit, Scientific Audit-II, DGCAR, I.P. Estate, Delhi-11002
8. Director General (Local Bodies), Office of the Comptroller & Auditor General, Deen Dayal Upadhyay Marg, New Delhi
9. Solar Energy Corporation of India (SECI), 6th floor, Plate-B, NBCC office, Block tower-2, East Kidwai Nagar, New Delhi. 110023
10. Indian Renewable Energy Development Agency Limited (IREDA), 3rd floor, August Kranti Bhavan, Bhikaji Cama place, New Delhi-110066

Internal distribution

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2. PS to Hon'ble Minister of State of New and Renewable Energy and Chemicals and Fertilizers
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9. NIC, MNRE for uploading on the MNRE website
10. CA, MNRE for cash Section
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Ministry of New & Renewable Energy (MNRE)
Government of India

Scheme Guidelines for setting up Hydrogen Hubs in India

1. Introduction

- 1.1 The National Green Hydrogen Mission, hereafter mentioned as 'Mission', was launched on 4th January 2023 with an outlay of Rs. 19,744 Crore with an aim to make India a Global Hub for production, usage, and export of Green Hydrogen (GH₂) and its derivatives. It will contribute to India's goal to become Aatmanirbhar (self-reliant) through clean energy and serve as an inspiration for the global Clean Energy Transition. The Mission will lead to significant decarbonisation of the economy, reduced dependence on fossil fuel imports, and enable India to assume technology and market leadership in Green Hydrogen. Along with other initiatives, the Mission envisages large-scale Hydrogen Hubs, which will act as a foundation for the development of the Hydrogen eco-system and will act as backbone of the decarbonisation efforts in the country.
- 1.2 Given the technical and logistical challenges inherent in transporting hydrogen over long distances, a cluster-based production and utilization model would enhance the viability of Green Hydrogen projects in the initial years. This would, in turn, enable economies of scale and convergence of key infrastructure requirements in geographically proximate areas.

2. Hydrogen hub

- 2.1 Para 7.8 of the Mission Document states that the Mission will identify and develop regions capable of supporting large-scale production and/or utilization of Hydrogen as Green Hydrogen Hubs. This scheme for the promotion of Green Hydrogen Hubs will focus on development of supporting infrastructure. The Green Hydrogen Hubs and associated infrastructure will be planned in a manner so as to promote an integrated development of the region. Under the Mission, it is planned to set up at least two such Green Hydrogen hubs by FY 2025-26.
- 2.2 The Scheme will provide support for development of the following core infrastructure at Hydrogen hubs for common services/facilities only (not for any component of individual projects):
- i. Storage and transportation facilities for Green Hydrogen/its derivatives
 - ii. Development or upgradation of pipeline infrastructure
 - iii. Green Hydrogen powered vehicle re-fuelling facility
 - iv. Hydrogen compression and/or liquefaction technologies, as required



- v. Hydrogen storage systems, including bulk liquid, gaseous, materials-based technologies, or subsurface options (e.g., salt caverns, depleted oil and gas fields, unused coal mines etc.)
- vi. Water treatment facility and associated storage facility
- vii. Development of bunkering facilities in case of ports including provision of bunker barges for handling large vessels such as Very Large Crude Carriers (VLCC)
- viii. Infrastructure upgradation for shipping, including expansion of port/jetty infrastructure for exports.
- ix. Power transmission infrastructure to nearest existing grid substation and establishment of new dedicated substations
- x. Land re-development
- xi. Energy Storage to manage RE intermittency
- xii. Effluent Treatment Plants
- xiii. Any other infrastructure required

3. Objectives of the scheme:

- i. To identify and develop regions capable of supporting large-scale production and/or utilization of Hydrogen as Green Hydrogen Hubs.
- ii. Development of Green Hydrogen Projects inside the Hubs in an integrated manner to allow pooling of resources and achievement of scale
- iii. Enhance the cost-competitiveness of Green Hydrogen and its derivatives vis-à-vis fossil-based alternatives
- iv. Maximize production of Green Hydrogen and its derivatives in India within the stated financial support
- v. Encourage large-scale utilization and exports of Green Hydrogen and its derivatives
- vi. Enhance viability of Green Hydrogen assets across the value chain

4. Budgetary outlay: Rs. 200 Crore till FY 2025-26

5. Rationale and the Salient Features

5.1. Hydrogen Hubs will help in boosting hydrogen production, to match domestic as well as export demands, and to achieve large-scale, commercially viable hydrogen ecosystems. This will accelerate the deployment of Green Hydrogen technologies, attract greater investments from the private sector, and promote production and usage of hydrogen to decarbonize the economy. A network of Green Hydrogen producers, users, and supporting infrastructure is a key feature of the Hydrogen Hub.

5.2. It is envisaged that the Hydrogen hubs will have pooling of resources from Government of India, State Governments, Local Government, and the industry - to help the development of the Hydrogen ecosystem in a coordinated manner. Hydrogen hubs will lead to the creation of sufficient job opportunities.



5.3 Salient features of the scheme are as follows:

- i. Hydrogen hub is an identified geographical region where there exists a network of Hydrogen producers, end use (domestic or export) with sufficient supporting infrastructure of Hydrogen storage, processing, and transportation.
- ii. Hydrogen hub might be located inland or near ports to enable exports of Green Hydrogen and its derivatives. Potential locations for such hubs would be regions having clusters of refineries/ fertilizer production plants and other end use industries in close vicinity.
- iii. The Hydrogen hub should have a planned/announced capacity of at least 1,00,000MTPA. Higher production capacity will get priority.
- iv. Leveraging existing infrastructure for Hydrogen production, transportation, storage, and utilisation will be encouraged.
- v. The infrastructure, projects, and key resources will be mapped under the PM Gati Shakti to ensure optimal and coordinated development.
- vi. MNRE may also recognize other locations as Green Hydrogen hubs without any financial support so that they become eligible for other benefits/advantages, if any.

6. Implementation Methodology

6.1. Call for proposals: A Scheme Implementing Agency (SIA) nominated by MNRE will issue Call for Proposals for the projects. The proposals should be submitted directly to SIA. Each submitted project should contain the name of Executing Agency (EA). In case of consortium, a lead agency should be identified, which shall function as Executing Agency.

- (i) The eligible agencies for sending project proposals include CPSUs, State-PSUs, Private sector, State Corporations, Autonomous Bodies, JVs/Partnerships/Consortiums of such entities.
- (ii) The necessary capabilities need to exist with the EAs for taking forward the project towards completion and commercialization.

6.2 Evaluation and award: The proposals will be evaluated in accordance with the detailed criteria specified in the Call for Proposals. Following guidelines would be included in the evaluation criteria of the Call for Proposals:

6.2.1 Planned production of Hydrogen and its derivatives

- i. Green Hydrogen Production approved/ agreement signed or under process
- ii. Natural Resource availability
 - a. Potential for sourcing of RE
 - b. Water sourcing arrangements/availability of water
 - c. In-principal allocation of land from state agency or self-procurement of land



iii. Infrastructure Available and planned: The proposal should list the infrastructure already available at the location. The proposal should include a detailed plan for development of additional infrastructure, as detailed in para 2.2.

6.2.2 Technology, Applications and end-use

- a. Presence of multiple end-use industries: Refining, Steel, Shipping, Transport, Fertilizer, Chemicals, power generation etc.
- b. Current H2 demand in the region and projections for next 5 years
- c. Proximity to an export terminal/demand center
- d. Firm off-take agreements signed (in MT of H2 or H2 derivatives)

6.2.3 Financial commitment

- i. Financial viability of the proposed hub
- ii. Equity investments by the EA
- iii. Funding tied up with the financial institutions

6.2.4 For the evaluation of submitted proposals, appropriate weightage will be provided for each of the above-listed elements and scoring matrix will be as follows –

Parameters	Indicative Weightages
Planned Production capacity	50%
Technology, Applications and End use	20 %
Financial commitment	30 %
Total (%)	100%

6.2.5 Evaluation of Proposals as per above mentioned assessment criteria will be given a weightage of 80%. Rest 20% weightage would be on the basis of presentation made before the evaluation committee to assess the preparedness of applicant and to check and rectify any incongruence /gaps in the proposal. Parameter-wise marking scheme, including quantification/ weightages of sub-parameters will be specified in the Call for Proposal.

6.2.6 The letter of Award shall be issued to the EA by the SIA upon receipt of administrative sanction from MNRE.

6.3 **Execution and commissioning:** Work shall be executed as per the approved scope of work. The SIA shall make all necessary efforts to complete the project, in all aspects, before 31.03.2026.

6.4 **Technical/ Regulatory approvals:** The EA shall be solely responsible for obtaining the safety, environmental and other approvals as required.

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6.5 **Testing and Certification:** The EA shall get necessary testing and certification compliance from concerned agencies.

7. Funding & Disbursement

7.1. The financial support development of at-least two Green Hydrogen hubs with CFA of up to Rs. 100 Crore each will only be for supporting core infrastructure.

7.2. Stages of disbursement of Central Financial Assistance (CFA) are as follows:

S.No.	Stages of Disbursement	Percentage of CFA to be released
1	Date of issue of administrative approval	20%
2	Milestone based disbursement*	70%
3	Completion of construction and commissioning	10%
	Total	100%

*The milestones for disbursement of funds shall be specified in the Call for proposals to be issued by the SIA.

7.3 Funds will be released to EAs by the SIA on the basis of conditions specified in Call for Proposals.

7.4 EA will remit the accrued interest and other charges to Consolidated Fund of India as per rule-230(8) of GFRs 2017.

7.5 SIA will be eligible for service charges at 0.5 % of CFA released under the projects.

8. Timelines and Penalty Provisions

8.1. The grants released shall be exclusively earmarked for the project and should not be diverted for any other purpose.

8.2. The Terms and conditions framed by the SIA for the award of the work shall include suitable provisions, as per the extant Government of India guidelines/directives applicable in the matter, to protect the interest of Government of India (GoI) in the event of EA failing to utilize the grant for the purpose for which it has been sanctioned or fails to complete the project as per DPR.

- 8.3. The Call for proposals should indicate a suitable timeline for completion, of the project. Extension of up to six months may be granted for completion of the project on the basis of adequate justification, with the approval of the Steering Committee, without any penalty. Any extension beyond six months shall only be granted with the approval of the Hon'ble Minister for New and Renewable Energy, with suitable penalties as specified by SIA in the Call for Proposals issued.
- 8.4. MNRE reserves the right to retract sanction or cancel or short-close projects in consultation with the Steering Committee in cases where the SIA faces unreasonable delays or fail to comply with the objectives/ provisions of this Scheme or the Mission.

9. Monitoring framework

9.1. Steering Committee

- 9.1.1. Overall monitoring of the scheme, and evaluation of projects undertaken will be done by a Steering Committee (SC) under the chairmanship of Secretary, Ministry of New and Renewable Energy (MNRE) and comprising of members viz., Mission Director, National Green Hydrogen Mission (NGHM), and any other members as nominated. The Steering Committee shall be responsible for overall monitoring and implementation of this scheme, and suggest modifications and course corrections for its successful implementation.
- 9.1.2. In case of any ambiguity in the interpretation of any of the provisions of this scheme, the decision of MNRE shall be final. The SC will also facilitate/ recommend measures to resolve difficulties, if any.

9.2. Project Appraisal Committee:

A Project Appraisal Committee (PAC) under the Chairmanship of Mission Director, NGHM, shall monitor /review/ evaluate the project proposals and recommended projects for sanction of CFA. The PAC shall monitor sanctioned projects on a quarterly basis for the allocation of funds based upon the progress of the project. The PAC shall send recommendations to MNRE for the release of CFA.

- 9.3. The SIA shall also devise a monitoring mechanism to track the progress under the pilot projects. Quarterly monitoring reports shall be submitted by the SIA to MNRE.

10. Project Completion

- 10.1. SIAs shall submit the Project Completion Report (PCR) to the Steering Committee within one month from the completion of the project. PCR shall include the following:
- i. Technical aspects of the project, including the hardware, software, and other technologies used.



- ii. Technical challenges encountered during the project, and how they were overcome.
- iii. Outcome of the project comprising of technical knowhow generated along with the data collected during the execution of the project.
- iv. Recommendations for future projects, based on the lessons learned from project.

11. Guidelines for safeguard of Intellectual property: The SIA shall issue the necessary guidelines for the safeguard of any Intellectual Property Rights such as Publications, Patents, Registered Designs or Trademarks etc. which are generated through projects funded under this scheme. The guidelines may also be a part of the Call for Proposals to be issued by the implementing agency.

12. Power to amend guidelines: MNRE may make the necessary amendments in the Scheme Guidelines, as and when required, with the approval of the Hon'ble Minister, New & Renewable Energy.



