GOVERNMENT OF INDIA
MINISTRY OF NEW AND RENEWABLE ENERGY
LOK SABHA
UNSTARRED QUESTION NO. 4262
ANSWERED ON 26/03/2025

4262. SHRI ANIL YESHWANT DESAI
SHRI RAVINDRA DATTARAM WAIKAR
SHRI NARESH GANPAT MHASKE
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SMT. SHAMBHAVI
SHRI RAJESH VERMA

Will the Minister of NEW AND RENEWABLE ENERGY be pleased to state:

(a) the progress of the National Green Hydrogen Mission (NGHM) along with its key objectives in making India a global leader in clean hydrogen production;
(b) the details of financial incentives and policy support being provided to green hydrogen start ups, electrolyzer manufacturers, and renewable energy firms involved in hydrogen production;
(c) the manner in which Government plans to integrate solar, wind and green hydrogen technologies to achieve India's net-zero carbon emission goals by 2070 along with the efforts made towards making India as green energy hub;
(d) the status of international collaborations and joint ventures with countries like Japan, Germany and UAE in the field of green hydrogen and fuel cell technology; and
(e) the manner in which National Green Hydrogen Mission contributes to employment generation, industrial decarbonization and reducing India’s dependence on imported fossil fuels?

ANSWER

THE MINISTER OF STATE FOR NEW & RENEWABLE ENERGY AND POWER

(SHRI SHRIPAD YESSO NAIK)

(a)& (b) The Government of India is implementing the National Green Hydrogen Mission, with an objective to make India a global hub of production, usage and export of green hydrogen and its derivatives.

Strategic Interventions for Green Hydrogen Transition (SIGHT) is a key component of the Mission which provides financial incentives for production of green hydrogen and electrolyser manufacturing.

i. Incentive scheme for green hydrogen production
   - 8,62,000 tonnes per annum of Green Hydrogen production capacity awarded to 18 companies, out of which 3500 tonnes per annum capacity is based on biomass based production pathways.

ii. Incentive scheme for Electrolyser Manufacturing
   - 3000 MW per annum of electrolyser manufacturing capacity awarded to 15 companies out of which 100 MW capacity has been allocated for indigenously developed stack technology for smaller units.

iii. Scheme Guidelines for Implementation of SIGHT Programme – Component – II: Incentive for Procurement of Green Ammonia Production (under Mode – 2A) and Component – II: Incentive for Procurement of Green Hydrogen Production (under Mode – 2B), under the Mission have been issued on 16th January 2024.

Additionally, scheme guidelines have also been issued for implementing green hydrogen-based pilot projects in the steel, shipping, and road transport sectors.

i. Total three pilot projects have been sanctioned in the steel sector.

ii. Five pilot projects are sanctioned in road transport sector consisting total of 37 vehicles (buses and trucks), and 9 hydrogen refueling stations. These vehicles will run on 10 different routes across the country viz., Greater Noida – Delhi – Agra, Bhubaneshwar – Konark – Puri, Ahmedabad – Vadodara – Surat, Sahibabad – Faridabad – Delhi, Pune – Mumbai, Jamshedpur – Kalinga Nagar, Thiruvananthapuram – Kochi, Kochi – Edappally, Jamnagar – Ahmedabad, and NH-16 Visakhapatnam – Bayyavaram.

Other steps taken to achieve the green hydrogen production target by 2030, are as follows:

i. Green Hydrogen/Green Ammonia Plants commissioned on or before 31.12.2030, and which utilize renewable energy for the production of green hydrogen or green ammonia, have been granted exemption from the payment of Inter State Transmission System (ISTS) charges for a period of 25 years, starting from the date of commissioning of the project.

ii. Duty benefits under Section 26 of SEZ Act, 2005 have been allowed to the units for installation as well as O&M of renewable energy equipment exclusively for captive consumption of the unit.

iii. Exemption has been granted from Approved List of Models & Manufacturers (ALMM) for Solar PV Modules and Revised List of Models & Manufacturers (RLMM) for Wind Turbine models requirements for Renewable Energy plants located inside an Special Economic Zone (SEZ) or Export Oriented Unit (EOU) and supplying power exclusively for production plants of Green Hydrogen (or its derivatives), which are located inside an SEZ or set up as an EOU.

(c) The Government of India has taken several steps towards integrating solar, wind and green hydrogen technologies to achieve India's net – zero carbon emission goals by 2070 and making India as green energy hub, as given at **Annexure I**.

(a) The Government is undertaking bilateral cooperation on Hydrogen with a number of countries including Germany, Japan and UAE. The list of existing cooperation frameworks with these countries in the field of Green Hydrogen is provided as **Annexure II**.

(b) India's green hydrogen production capacity is likely to reach 5 Million Metric Tonnes (MMT) per annum by 2030, contributing to reduction in dependence on import of fossil fuels. Achievement of Mission targets is expected to reduce a cumulative ₹ 1 lakh crore worth of fossil fuel imports by 2030. This is likely to leverage over ₹8 lakh crore in total investments and create over 6 lakh jobs.

Nearly 50 MMT per annum of CO_2 emissions are expected to be averted through production and use of the targeted quantum of green hydrogen.

Annexure I

Annexure referred to in reply of part (c) of the Lok Sabha Unstarred Question No. 4262 to be answered on 26th March 2025.

The Government of India has taken several steps towards integrating solar, wind and green hydrogen technologies to achieve India's net – zero carbon emission goals by 2070 and making India as green energy hub. These include, inter – alia, the following:

- Ministry of New & Renewable Energy (MNRE) has issued Bidding Trajectory for issuance of RE power procurement bids of 50 GW/annum by Renewable Energy Implementing Agencies (REIAs) [REIAs: Solar Energy Corporation of India Limited (SECI), NTPC Limited, NHPC Limited, SJVN Limited] from FY 2023-24 to FY 2027-28.
- Foreign Direct Investment (FDI) has been permitted up to 100 percent under the automatic route.
- Inter State Transmission System (ISTS) charges have been waived for inter-state sale of solar and wind power for projects to be commissioned by 30th June 2025, for Green Hydrogen Projects till December 2030 and for offshore wind projects till December 2032.
- To boost RE consumption, Renewable Purchase Obligation (RPO) followed by Renewable Consumption Obligation (RCO) trajectory has been notified till 2029-30. The RCO which is applicable to all designated consumers under the Energy Conservation Act 2001 will attract penalties on non-compliance. RCO also includes specified quantum of consumption from Decentralized Renewable Energy sources.
- Project Development Cell for attracting and facilitating investments has been set up.
- Standard Bidding Guidelines for tariff based competitive bidding process for procurement of Power from Grid Connected Solar, Wind, Wind-Solar Hybrid and Firm & Dispatchable RE (FDRE) projects have been issued.
- Schemes such as Pradhan Mantri Kisan Urja Suraksha evam Utthaan Mahabhiyan (PM-KUSUM), PM Surya Ghar Muft Bijli Yojana, National Programme on High Efficiency Solar PV Modules, New Solar Power Scheme (for Tribal and PVTG Habitations/Villages) under Pradhan Mantri Janjati Adivasi Nyaya Maha Abhiyan (PM JANMAN) and Dharti Aabha Janjatiya Gram Utkarsh Abhiyan (DA JGUA), National Green Hydrogen Mission, Viability Gap Funding (VGF) Scheme for Offshore Wind Energy Projects have been launched.
- Scheme for setting up of Solar Parks and Ultra Mega Solar Power projects is being implemented to provide land and transmission to RE developers for installation of RE projects at large scale.
- Laying of new transmission lines and creating new sub-station capacity has been funded under the Green Energy Corridor Scheme for evacuation of renewable power.
- Electricity (Rights of Consumers) Rules, 2020 has been issued for net-metering up to five hundred Kilowatt or up to the electrical sanctioned load, whichever is lower.
- "National Repowering and Life Extension Policy for Wind Power Projects, 2023" has been issued.
- "Strategy for Establishments of Offshore Wind Energy Projects" has been issued indicating a bidding trajectory of 37 GW by 2030 and various business models for project development.

- The Offshore Wind Energy Lease Rules, 2023 have been notified vide Ministry of External Affairs notification dated 19th December 2023, to regulate the grant of lease of offshore areas for development of offshore wind energy projects.
- Standard & Labelling (S&L) programs for Solar Photovoltaic modules and Grid-connected Solar Inverters have been launched.
- To augment transmission infrastructure needed for steep RE trajectory, transmission plan has been prepared till 2030.
- "The Electricity (Late Payment Surcharge and related matters) Rules (LPS rules) have been notified.
- Electricity (Promoting Renewable Energy Through Green Energy Open Access) Rules, 2022, has been notified on 06th June 2022 with objective of ensuring access to affordable, reliable, and sustainable green energy for all. Green Energy Open Access is allowed to any consumer with contract demand of 100 kW or above through single or multiple single connection aggregating Hundred kW or more located in same electricity division of a distribution licensee.
- Green Term Ahead Market (GTAM) has been launched to facilitate sale of Renewable Energy Power through exchanges.
- Government has issued orders that power shall be dispatched against Letter of Credit (LC) or advance payment to ensure timely payment by distribution licensees to RE generators.
- The Ministry of New and Renewable Energy (MNRE) is also implementing the National Green Hydrogen Mission, with an objective to make India a global hub of production, usage and export of Green Hydrogen and its derivatives.

Annexure II

Annexure referred to in reply of part (d) of the Lok Sabha Unstarred Question No. 4262 to be answered on 26th March 2025.

S. No.	Country	Brief objective(s)	Areas of Cooperation
1.	Germany	Joint Declaration of Intent (JDI): (**02nd May, 2022**) An Indo-German Green Hydrogen Task Force was establised to preapre a Green Hydrogen Roadmap to strengthen mutual cooperation in production, utilization, storage and distribution of Green Hydrogen through building enabling frameworks for projects, regulations and standards, trade and joint research and development (R&D) projects. The task force finalsied the Indo-German Green Hydrogen Roadmap, which was exchanged on 25 Oct 2024 between India and Germany.	Promotion of public and private investment in production, transport and consumption of green hydrogen and its derivatives.
2.	UAE	Memorandum of Understanding (MoU): (**13th January, 2023**) To promote discussion and Cooperation between the Parties in the Potential Areas of Cooperation in the Spectrum of Green Hydrogen Development and Investments in India and the UAE	Green Hydrogen development, deployment and its value chain

In addition to the above, a text under Joint Declaration of Intent on Clean Hydrogen and Clean Ammonia between India and Japan has been finalized. As part of the India-Japan Energy Dialogue, Green Hydrogen is also an area of Cooperation under the Joint Working Group on Renewable Energy.