



AUGUST 2024
EDITION

SECTOR SPECIFIC REPORT

RENEWABLE ENERGY

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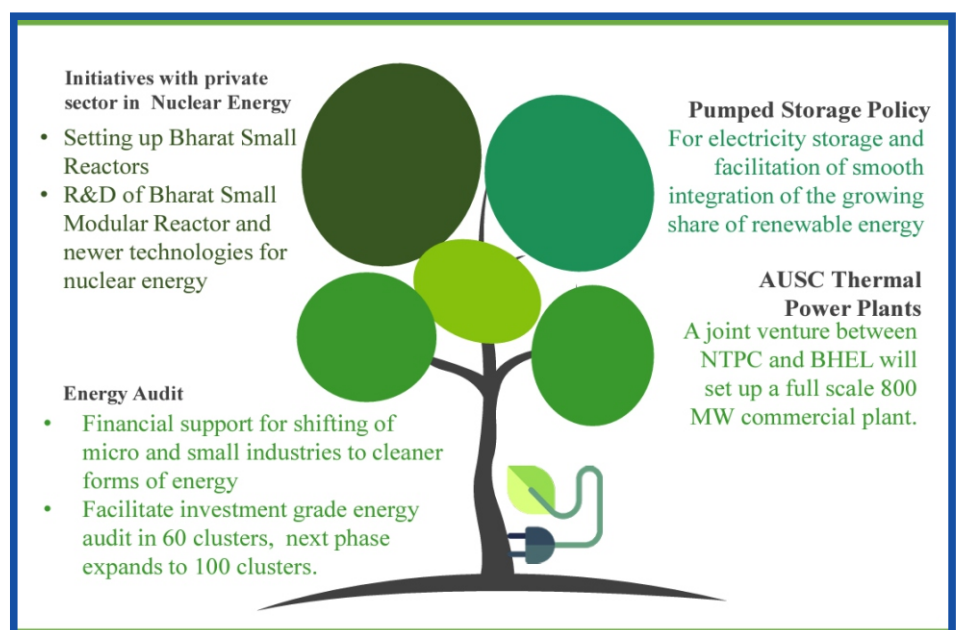


01

The Ministry of New and Renewable Energy Receives Higher Budgetary Allocation under Union Budget 2024-25

For FY 2024-25, the Ministry of New and Renewable Energy (MNRE) has received a **budgetary allocation of Rs19,100 Crore**. This has marked a **near double increase in financial allocation from Rs7,848 crore revised estimate of FY 2023-24**. The major key green initiatives brought under the budget will strengthen India's energy security efforts and achieve its climate targets within the time frame.

KEY GREEN ENERGY INITIATIVE UNDER UNION BUDGET 2024-25



Source: <https://www.indiabudget.gov.in/doc/bh1.pdf>

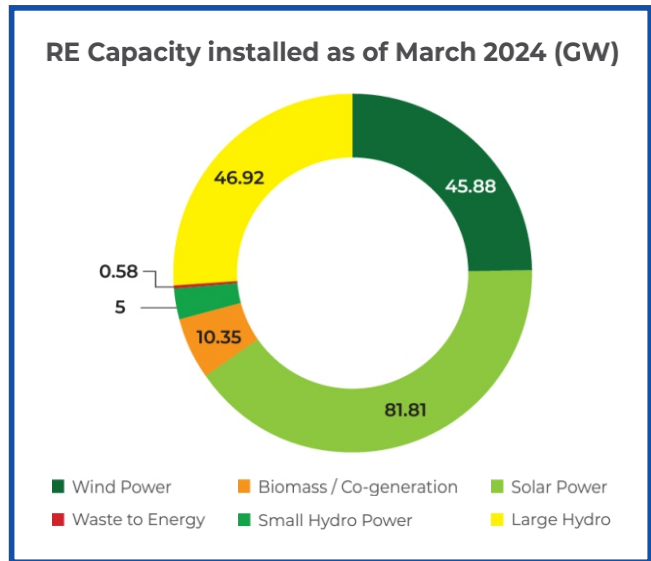
This substantial boost in budgetary allocation reflects the Indian government's commitment to expanding the ambit of the clean energy sector. It will ensure a smooth energy transition from fossil fuels and move forward toward a low-carbon economy.

KEY WAYS TO ACHIEVE INDIA'S ENERGY TRANSITION

- Shifting to non-fossil sources for electricity generation
- Shifting to electricity for final consumption

The allocation reflects a broader commitment to addressing challenges in increasing the renewable energy capacity in India, including improving energy storage solutions and reducing dependency on imported critical minerals essential for renewable technologies.

A substantial portion of this increase has been directed toward solar energy initiatives. The total allocation for the solar energy sector stands at ₹16,394.75 Crore which also includes the PM Surya Ghar Scheme. Out of this, the grid-connected solar power segment has received ₹8,500.35 Crore marking a 79% rise from the previous year's revised estimates.



Source: <https://static.pib.gov.in/WriteReadData/specificdocs/documents/2024/may/doc2024510336301.pdf>



Source: <https://www.businesstoday.in/union-budget/story/union-budget-2024-energy-transition-key-focus-area-solar-nuclear-pump-storage-on-radar-438400-2024-07-23>

The increase in funding is expected to play a crucial role in India's goal of achieving 500 GW of renewable energy capacity by 2030. Under the budget R&D initiatives related to the green hydrogen mission received encouraging support including incentives to companies producing and utilizing green hydrogen. The support will provide diversification to India's existing renewable energy mix and help the country reach 5 million metric tons of green hydrogen production annually by 2030.

Table 3: All-India installed capacity (in GW)

Source	June 2024		March 2032 Projected	
	Capacity	In %	Capacity	In %
Solar	85	19%	365	42%
Coal	218	49%	260	30%
Wind	47	10%	122	14%
Large Hydro (>25 MW)	47	11%	62	7%
Gas	25	6%	25	3%
Nuclear	8	2%	20	2%
Biomass	11	2%	16	2%
Small Hydro (<=25 MW)	5	1%	5	1%
Diesel	1	0%	-	-
Total	446	-	874	-
Pumped Hydro Storage	-	-	27	-
Battery Storage	-	-	47	-

Sources: Installed Capacity Report for June 2024, Central Electricity Authority; National Electricity Plan Generation Vol. I, May 2023, Central Electricity Authority; PRS.

Budget 2024-25 and India's Environmental Vision: Watching Climate Action



Addressing the intermittency in renewable energy generation, the budget focuses on developing energy storage solutions that include establishing a policy framework for pumped hydro storage and supporting the deployment of battery storage systems. These initiatives are crucial for accelerating India's transition to a low-carbon economy, ensuring energy security, and positioning India as a leader in the global renewable energy market over the years.

PM SURYA GHAR

Free Electricity Scheme




02





PM Surya Ghar Scheme All Set to Provide Free Electricity to Indian households


The **PM Surya Ghar Muft Bijli Yojana (PM-SGMBY)** is an ambitious initiative launched by the Government of India in **February 2024** as part of the interim budget announcement for FY 2024-25. It aimed at expanding the adoption of rooftop solar installations and significantly increasing the penetration of solar energy across India.

PM Surya Ghar

Muft Bijli Yojana

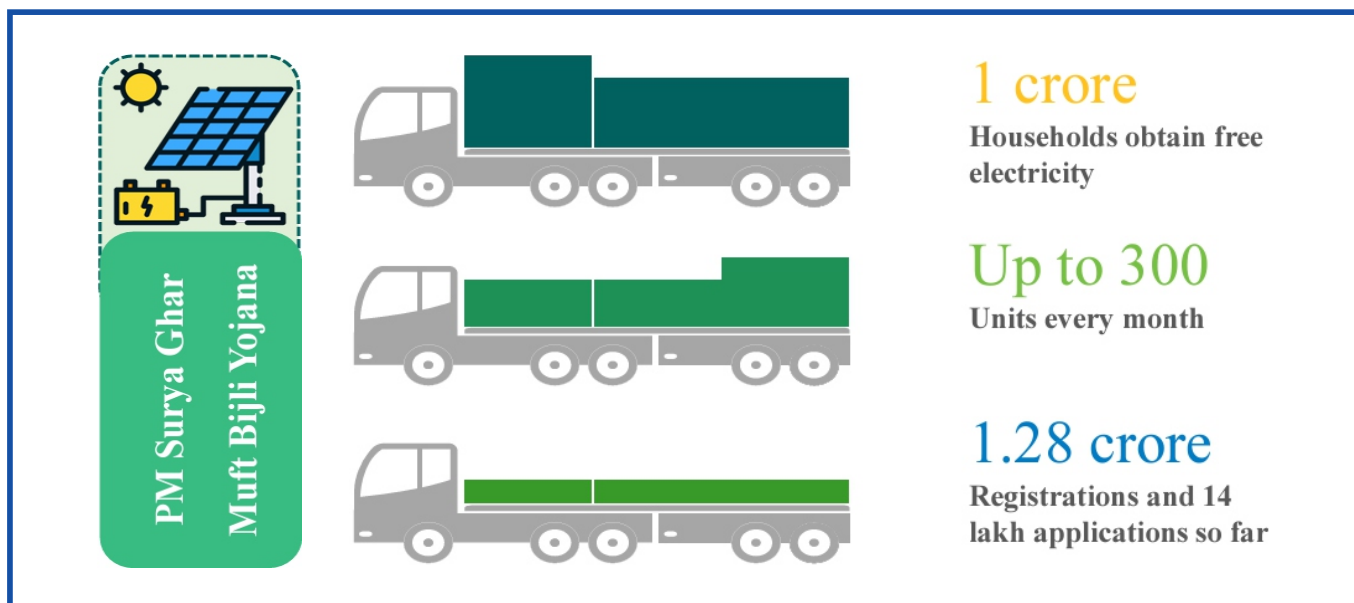


-  **Free electricity** for households.
-  Reduced **electricity costs** for the government.
-  Increased use of **renewable energy**.
-  Reduced **carbon emissions**.



The scheme is part of the broader effort to increase the share of renewable energy in India's energy mix and provide affordable, sustainable power to households. **It has been allocated a significant budget of ₹75,000 Crore, to be spent over three years, ending in 2027.** This initiative is a key component of India's broader efforts to achieve its renewable energy targets and to empower households with the ability to generate electricity on their own.

KEY DETAILS



Source: <https://www.indiabudget.gov.in/doc/bh1.pdf>

The government provides financial incentives and subsidies to Indian households to reduce the initial cost of installing rooftop solar systems, especially benefiting middle and lower-income households.

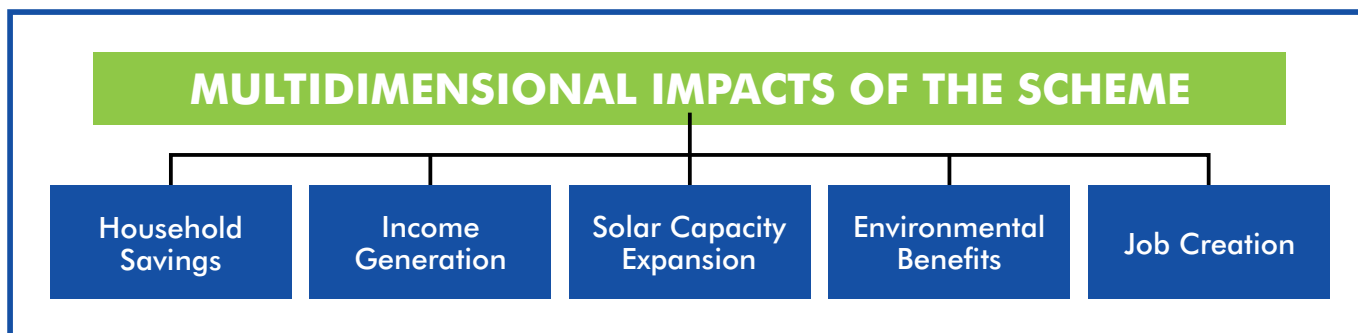
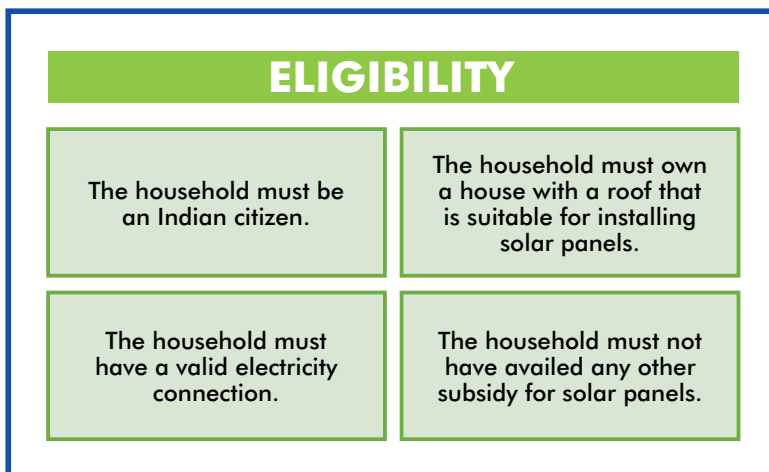
FINANCIAL SUPPORT AND SUBSIDIES

Average Monthly Electricity Consumption (units)	Suitable Rooftop Solar Plant Capacity	Subsidy Support
0-150	1-2 kW	₹ 30,000/- to ₹ 60,000/-
150-300	2-3 kW	₹ 60,000/- to ₹ 78,000/-
>300	Above 3 kW	₹ 78,000/-

Source: <https://static.pib.gov.in/WriteReadData/specificdocs/documents/2024/aug/doc2024812373601.pdf>

The scheme primarily targets to bring solar power directly to households, reducing electricity bills and enhancing energy security. **The focus is on both urban and rural India, with special emphasis on regions where access to reliable electricity is limited.**

The scheme has a simple process for registration, application, and subsidy disbursement through a dedicated online portal. It is expected to significantly contribute to achieving **India's renewable energy targets, particularly 500 GW of installed renewable energy capacity by 2030**. Along with this, playing a crucial role in reducing carbon emissions and promoting sustainable energy practices.



The scheme has been well-received by people, but **it also faces challenges related to its implementation, such as delays in subsidy disbursements, technical barriers, consumer awareness, etc.** By streamlining these aspects by ensuring smoother execution the scheme is expected to bring multifaceted benefits to India's energy quest including Environment Sustainability and Clean Energy transition.



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03

Notification of Scheme Guidelines to Develop Standards and Regulatory Framework for the Green Hydrogen Sector

Recently, on **4th July 2024**, MNRE notified guidelines for the development of a comprehensive regulatory and standards framework in the green hydrogen sector. The idea is to come up with guidelines to identify funding gaps and provide required support to existing/new testing facilities for a strengthened value supply chain of Green Hydrogen and its derivatives.

OBJECTIVES OF THE SCHEME

To identify the gaps in the existing testing facilities for components, technologies and processes in the Green Hydrogen value chain including derivatives.

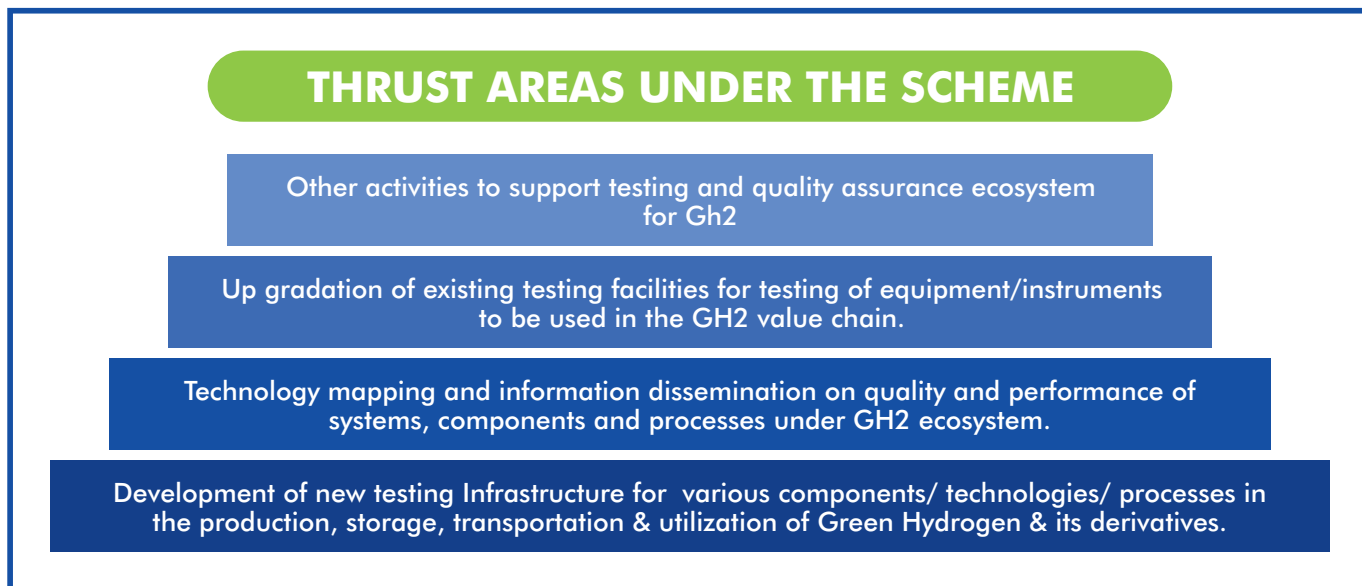
To create new testing facilities/infrastructure to test, validate and certify components, technologies and processes being used in the value chain of Green Hydrogen & its derivatives.

To upgrade existing testing facilities available with different testing agencies.

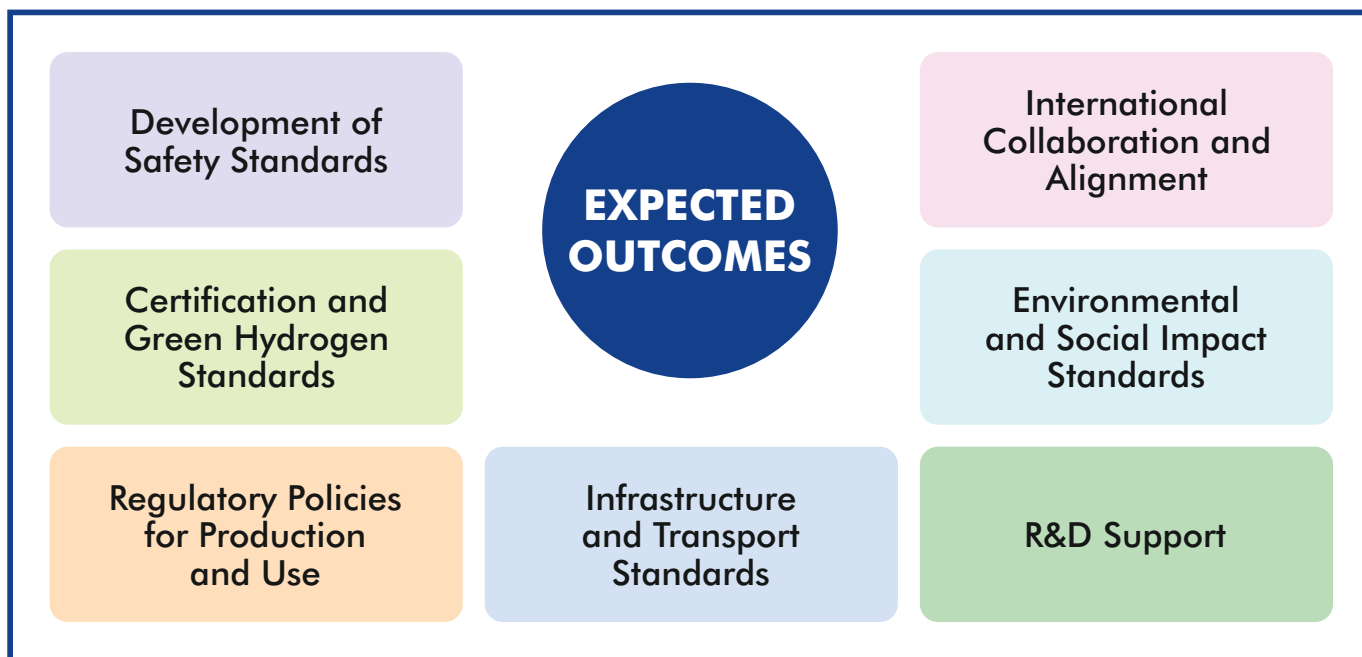
To ensure safe and secure operations of equipment/instruments used in the Green Hydrogen Value Chain.

To encourage private as well as government entities Participation for establishment world class testing facilities in India.

It will address the existing gaps in testing facilities in terms of components, technologies, and processes including infrastructure and institutional support. For this, **a budget allocation of Rs200 Crore has been earmarked till FY 2025-26 under the implementing agency of the National Institute of Solar Energy (NISE)**. It will create an enabling ecosystem to support robust quality testing for Green Hydrogen in the country.



The conducive regulatory environment will establish stringent safety protocols and standards in line with global best practices. The standards will cover the entire hydrogen value chain, including production facilities, pipelines, storage tanks, and end-use applications. These standards will address both technical and safety aspects to ensure its seamless integration with existing energy infrastructure.



As per the scheme guidelines, MNRE disburses capital costs for equipment including installation and commissioning at various stages. The quantum of work completed, break-ups, and frequency of fund disbursement will depend on milestones achieved by the various entities such as government, non-government, etc.

STAGewise DISBURSEMENT DETAIL OF CENTRAL FINANCIAL ASSISTANCE

Installment	Milestone	Percentage of CFA to be released
1st Instalment	On Selection	20%
2st Instalment	On milestones basis*	70%
3rd Instalment	On completion	10%
	Total	100%

Source: <https://cdnbbsr.s3waas.gov.in/s3716e1b8c6cd17b771da77391355749f3/uploads/2024/07/202407042082639305.pdf>

Through this, the government will focus on achieving Atmanirbharta in the Clean Energy sector by leveraging the potential of key enablers. **The objective is to align India's Green Hydrogen standards with global benchmarks.** Efforts have been made to reduce India's dependence on fossil fuels and lead towards decarbonization of the Indian economy since **the launch of the National Green Hydrogen Mission in January 2023.**

Through this, the MNRE also brought the provision to safeguard intellectual property rights like publications, patents, etc. It will establish India as a leader in the Green Hydrogen economy while ensuring safety, sustainability, and global competitiveness with the minimum carbon footprint in the future.



Source: <https://mnre.gov.in/national-green-hydrogen-mission/>

BIOENERGY



04

Revision of CFA Rate to Address Financial Viability under the 'National Bioenergy Programme'

The revision of the Central Financial Assistance (CFA) rates under India's **National Bioenergy Programme** was introduced to enhance the viability and attractiveness of bioenergy projects. **These CFA rates are intended to lower the capital cost of bioenergy projects, making them more financially viable and attractive to investors and developers.**



Source: <https://pib.gov.in/PressReleasePage.aspx?PRID=2035112>

The **Central Financial Assistance (CFA) Rate under the 'National Bioenergy Programme'** is a financial support mechanism provided by the Government of India to promote the development and adoption of bioenergy projects across the country. It promotes sustainable practices in energy generation and encourages the adoption of bioenergy technologies, for the successful implementation of the National Bioenergy Plan.



SUBPLANS UNDER NATIONAL BIOENERGY PLAN

Waste to Energy Programme

Biomass Programme

Biogas Programme

The revised CFA rates focus on various components within the bioenergy sector, including biogas, biomass, and waste-to-energy projects. This aims to promote decentralized energy production and encourage more widespread adoption of biogas technology, particularly in rural areas, and be used as a cleaner alternative to fossil fuels in transport and industrial applications.

CATEGORIES FOR CFA RATE REVISION

Biogas Plants

Compressed Biogas Plants

Biomass-based Cogeneration

Waste-to-Energy Projects

By providing higher financial assistance for smaller biogas plants and agro-residue-based cogeneration, the revisions aim to create additional income sources for farmers and rural communities. This is part of a broader strategy to tackle urban waste management issues while leveraging the potential of bioenergy present in the country.

QUICK HIGHLIGHTS FROM BIOENERGY POTENTIAL IN INDIA

14 GW

Of power can be generated through bagasse-based cogeneration.

750 Million

Metric tonnes of biomass can be generated by India annually.

The revision also aligns with the government's broader push to incentivize the use of sustainable practices in energy generation, reducing the environmental impact of energy production through bioenergy.

ADVANTAGES OF BIOENERGY

- **Abundant Availability**
- **Minimum Investment**
- **Reduction in Waste and Filth**
- **Promotion to Circular Economy**
- **Scientific Utilization of Available Resources to Achieve Maximum Benefits**

These revisions in CFA rates under the National Bioenergy Programme are part of the government's larger effort to increase the share of bioenergy in India's renewable energy mix. It will support the development of a sustainable, low-carbon economy in India and adapt waste-to-energy technologies efficiently.



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05

GOI Issued Scheme Guidelines under the 'SIGHT Programme'

The **Strategic Interventions for Green Hydrogen Transition (SIGHT) Programme** is a key component of India's **National Green Hydrogen Mission**, which is aimed at driving the country's green hydrogen economy. The SIGHT Programme provides targeted support to foster the development of Green Hydrogen technologies and infrastructure.

The **MNRE** is responsible for overseeing the implementation of the **SIGHT Programme**. Its primary objective is to accelerate the development, deployment, and commercialization of Green Hydrogen technologies across various sectors, including industry, transportation, and energy.

SUPPLY INCENTIVISATION

STRATEGIC INTERVENTIONS FOR GREEN HYDROGEN TRANSITION (SIGHT)

-  **Supports Domestic Manufacturing of Electrolysers**
-  **Offers Incentives on Production of Green Hydrogen**

The infographic features a background image of an industrial facility. At the top right, there is a logo for the Ministry of New and Renewable Energy, Government of India. The text is presented in white and blue boxes against a dark blue background.

Source: <https://mnre.gov.in/national-green-hydrogen-mission/>

MAIN OBJECTIVES OF THE SCHEME

Make Green Hydrogen cost-competitive compared to traditional fossil fuels.

Encourage widespread use of Green Hydrogen and its derivatives across various sectors.

Maximize production of Green Hydrogen, a clean fuel produced from renewable electricity and water.

The SIGHT Programme provides financial incentives to domestic manufacturers of electrolyzers, which are crucial for producing green hydrogen. The program offers incentives for industries that adopt Green Hydrogen in their processes, particularly in sectors such as steel, cement, and refineries. It is open to companies and research institutions engaged in Green Hydrogen production, electrolyser manufacturing, and related R&D activities focussed on improving efficiency and cost-effectiveness.

The program provides financial assistance through a combination of grants, subsidies, and soft loans. **Under the Union Budget 2024-25, a substantial budget of ₹19,744 Crore has been allocated to the program.** This allocation is a significant part of the overall funding provided under India's National Green Hydrogen Mission to achieve its set outcomes by 2030.

KEY COMPONENTS OF THE SIGHT PROGRAMME



EXPECTED OUTCOME OF NATIONAL GREEN HYDROGEN MISSION

Development of Green Hydrogen production capacity of at least 5 MMT annually with an associated renewable energy capacity addition of about 125 GW

Over Rs.8 Lakh Crore Investment

Creation of 6 Lakh Jobs

Cumulative reduction in fossil fuel imports over Rs1 lakh Crore

Abatement of nearly 50 MMT of annual greenhouse gas emissions

The program is targeted to play an instrumental role in establishing India as a global leader in green hydrogen technology and play a major role in value supply chain. The targeted financial support and fostering innovation under "SIGHT" aims to reduce the cost of green hydrogen and make it a viable and sustainable alternative to traditional energy sources in the country.



Eminent's Insight

“ As India advances towards its ambitious renewable energy goals, it's vital that all States participate equally. This approach will not only prevent excessive investments in grid infrastructure but also promote equitable green growth, generate jobs, and enhance energy security.

Mr Chandra Bhushan
CEO and President
International Forum for Environment, Sustainability & Technology (iFOREST) ”



RESOURCES

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