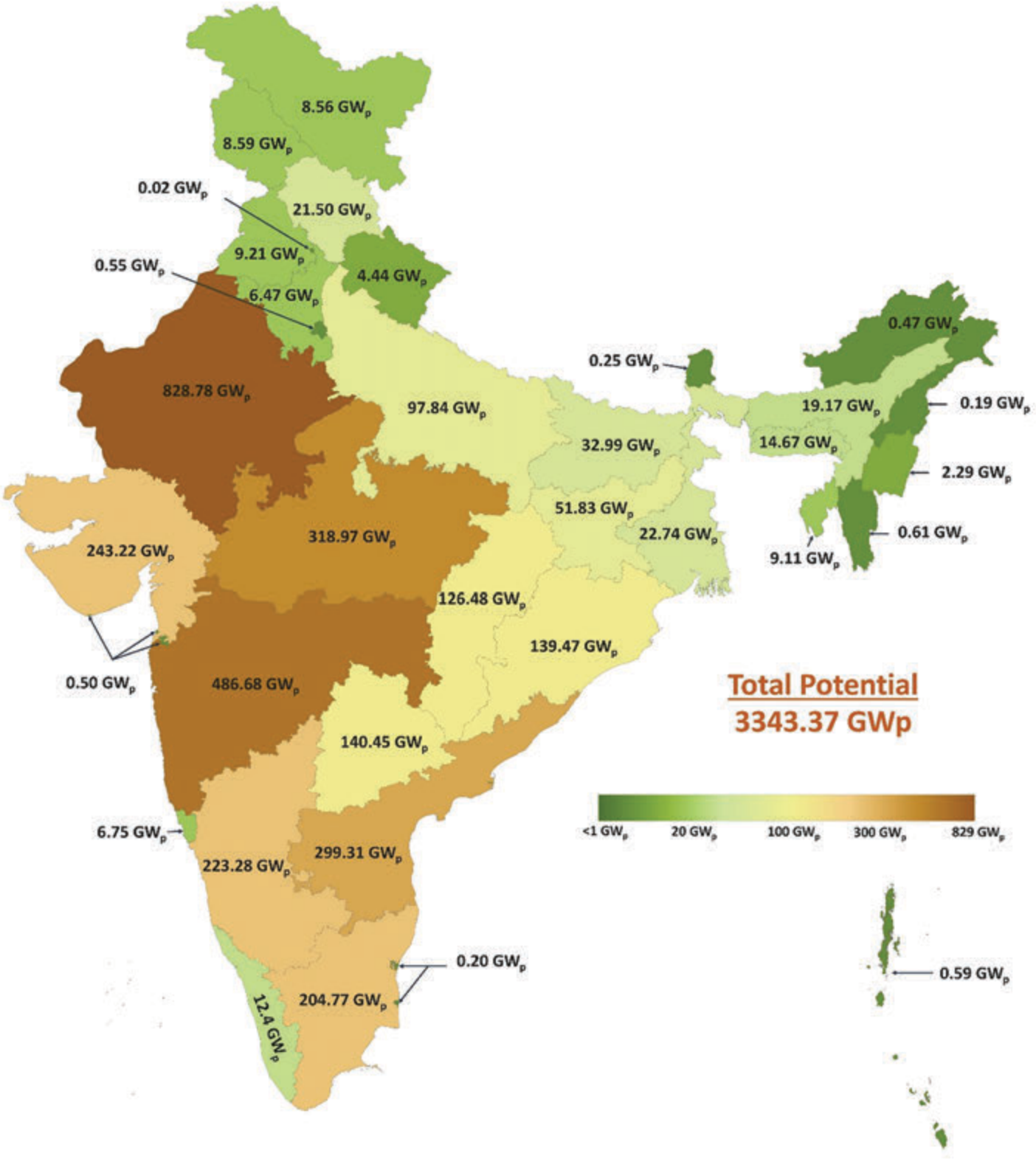


Fig. 9.2: Solar Potential Map of India 2025 (Ground Mounted) assessed by NISE

9.1.3.2 Green Hydrogen Mobility study

On 11.12.2025, NISE & Toyota Kirloskar Motor (TKM) exchanged MoU to Advance Green Hydrogen Mobility in India, in the august presence of Shri. Pralhad Joshi, Hon'ble Union Minister for New & Renewable Energy and Shri. Shripad Yesso Naik, Hon'ble Minister of State for New & Renewable Energy. The collaboration directly supports India's long-term vision under the National Green Hydrogen Mission by demonstrating real-world feasibility of Toyota's Fuel-Cell Electric Vehicles (FCEVs) 'Mirai' in Indian conditions-climate, driving cycles, traffic, and fuel-quality variations.

Fig. 9.3: MoU exchange between NISE and Toyota

9.1.3.3 Limitations of indoor characterization for estimating outdoor power generation of bifacial PV modules

Field-level performance assessment of bifacial PV modules is challenging due to variability in albedo and the lack of standardized performance metrics. Energy yield of bifacial PV modules is often estimated from indoor STC measurements. However, if key real-world factors are not accounted for, these estimates carry significant uncertainty. This study aims to identify and quantify the parameters that drive inaccuracies when outdoor energy prediction relies on indoor measurements. Currently, IEC TS 60904–1-2:2024 provides two standardized indoor measurement methods: dual side illumination and the equivalent irradiance (GE) method. In this study, the performance of a bifacial PV module was measured in outdoor conditions with various simultaneous front and rear irradiance, and the outdoor measured power was compared with the estimated power as per the GE method. It was found that there is a deviation in the measured and estimated power of around 26% at low irradiance and around 15% at high irradiance. Efforts were made to identify the key reasons for the deviation, and it was found that the direct-to-diffuse irradiance ratio, angle of incidence (AoI), temperature and the difference in spectrums of the front and rear illumination significantly impact bifacial PV module performance under outdoor conditions. Considering all the factors influencing the performance of bifacial PV modules, the GE formula is modified to GE_Modified. By using GE_Modified, the deviation in the measured and estimated power was reduced to around 15% in the low irradiance region and around 7% in the high irradiance region. A detailed sensitivity analysis of influencing parameters was also performed, where the impact of individual parameters was demonstrated. The research will support the solar PV community for accurate estimations of bifacial PV module performance under outdoor operating conditions, using data derived from indoor measurements.

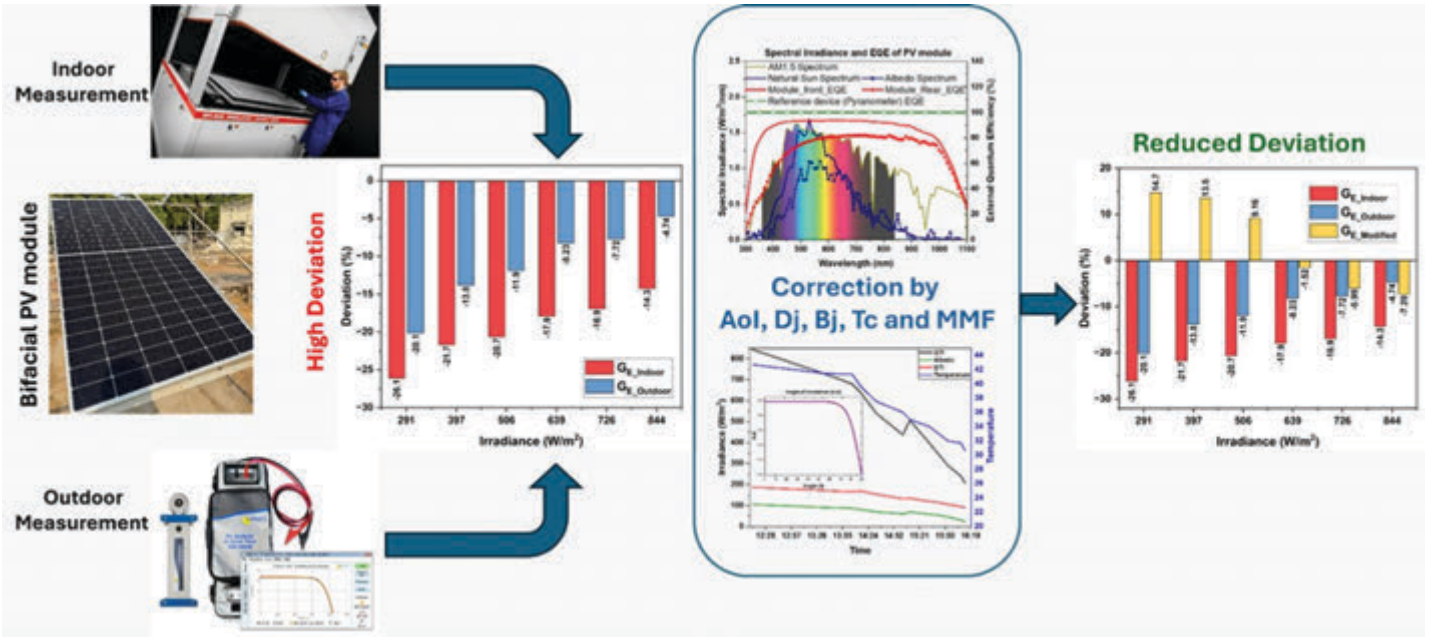


Fig. 9.4: Reduction of deviation in outdoor and indoor measurement by incorporating various factors

9.1.3.4 Test Setup for Reliability & Performance Evaluation

Fig. 9.5: Reliability test set up at NISE

NISE has established a state-of-the-art test and R&D facility to evaluate the reliability, durability, and performance of AC/DC solar water pumping systems from 1 HP to 10 HP, simulating total dynamic heads up to 200 meters under controlled yet realistic conditions representative of diverse Indian field environments, including saline and muddy water. The facility features two dedicated test slots (2" and 3") as shown in Fig. 9.5 equipped with pressure transmitters, actuator valves, digital flow meters, and an integrated agitator (pH 7.5–8.4) to ensure standardized performance verification, long-term reliability assessment, and comparative evaluation of Cast Iron and Stainless Steel pump materials. Testing of 5 HP cast iron pumps has been completed, and comparative analysis of 10 HP systems is currently in progress.

9.1.3.5 Inclusion of Solar-Based Reciprocating Pumps in PM KUSUM Scheme

For the PM KUSUM scheme and for the promotion of Innovative Solar Pumps, NISE has aligned its initiatives with MNRE's testing guidelines dated 22.03.2023, which now include positive

displacement (reciprocating/piston) pumps, and a proposal incorporating these technology updates is under internal review to support diversification of pump technologies and improved irrigation efficiency. The draft specifications suggested IP68 protection for submersible SPV pump controllers, reduced PV array capacity requirements for positive displacement pumps compared to centrifugal systems across 3 HP to 10 HP ratings. Field evaluations at eight operational sites in Mysore, with systems in service for over two years, confirmed reliable performance across drip, flood, and sprinkler irrigation, including efficient operation at low irradiance levels (~160 W/m^2), with no major O&M issues reported. The PDP field inspection in Rajasthan was completed in September 2025; however, re-testing is currently in progress following manufacturer upgrades to replace sub-19% efficiency PV modules with ≥19% compliant modules, after which the final test results and performance outcomes will be documented.

9.1.3.6 Solar-Powered Micro-Irrigation: Field Study and Outcomes

To promote sustainable water management and climate-resilient agriculture, NISE has taken up a study to evaluate the feasibility and functional reliability of a portable, solar-powered micro-irrigation systems utilizing surface water sources such as shallow ponds or farm tanks. A solar-powered water distribution unit was integrated with a drip irrigation network. System operated effectively with a single solar panel, delivering consistent water output for drip irrigation under real-world field conditions. The facility is currently demonstrating winter crops such as spinach, fenugreek, peas, etc., as illustrated in Figure 9.6. The site is being utilized for stakeholder engagement, capacity building, and on-field validation of solar water pumping and micro-irrigation systems under real farming conditions. A comprehensive draft report documenting system performance, outcomes, and operational insights has been prepared and is currently under review for finalization and dissemination.

Fig. 9.6: Solar Micro-Irrigation Demo Farm at NISE

9.1.3.7 Techno-Economic and Impact Assessment of Solar Cold Storage integrated with Thermal Energy Backup

An MoU was signed between NISE and CLASP India, an international nonprofit organization, on 27.08.2025, for taking up techno-economic and impact assessment studies of Solar Cold Storage integrated with thermal energy backup. NISE and CLASP jointly initiated policy research activities and engaged various stakeholders for field inputs, including UNDP, AEEE, IDCG, Ckinetics,

GIZ, CLEAN, ADB, WRI, E4A, and representatives from industry. This work will subsequently be published as a research report on sectoral mapping of solar cold rooms, including policy recommendations for the Government of India.

9.1.3.8 Experimental Studies on RDF Drying Using Low Temperature (<100°C) Solar Thermal Collectors- in collaboration with NCB

NISE and National Council for Cement and Building Materials (NCB) have jointly undertaken an experimental study on drying of Refuse Derived Fuel (RDF) using low-temperature solar thermal collectors, with the objective of improving fuel quality for cement kilns. The study was designed as a high-impact pilot demonstration project of national importance, focusing on energy efficiency, waste-to-energy integration, and reduction of fossil fuel consumption in the cement sector.

9.1.4 Testing and Standardization Activities

NISE has established the NISE Testing and Calibration Facility (NTCF) offering evaluation and testing services for Solar Cells, PV Modules, Solar Water Pumping System, Inverters, Charge Controllers, Batteries, Advanced Lighting System and calibration services for Pyrheliometer and Pyranometer. The facility is maintained as per ISO 17025:2017 and is also by BIS for PV Module Testing as Type 2 category facility. The lab is also offering calibration of reference PV module as per IEC 60904 and other relevant standards. It is one of the premier facilities which can provide spectral response data of full size PV module. The Module Testing and Calibration Facility of NISE was inaugurated by Shri. Pralhad Joshi, Hon'ble Union Minister for New & Renewable Energy on 22.04.2025.

Fig. 9.7: Inauguration of Solar PV Module Testing and Calibration Facility at NISE

Solar Radiation Calibration Laboratory (SRCL) at NISE calibrate solar radiation measuring sensors from the National solar radiation network of MNRE. The absolute cavity radiometer at NISE has recently participated in the international pyrheliometer comparison event at World Radiometric Centre Davos organized during the month of September 2025 in Switzerland, facilitating its traceability to the World Radiometric Reference (WRR).

9.1.5 Industrial Research and Technical Consultancy

Industrial Research and Technical Consultancy division at NISE stands as a cornerstone for advancing solar technology implementation across industry, private and government sectors. As a dedicated knowledge hub, we are committed to fostering widespread adoption of high-quality solar technologies through our tailored consultancy services. Our expert team is ready to support solar industry professionals, developers, and technology users in various technical aspects, ensuring the best outcomes for projects. NISE has offered consultancy services on technical vetting, field inspection and field testing for solar projects in the year 2025-26. NISE is also providing technical support to Solar Energy Corporation of India (SECI) for the testing and verification under the implementation of PLI scheme. NISE technical team was also engaged in the technical audit of solar photovoltaic power parks implemented by Rewa Ultra Mega Solar, Madhya Pradesh. NISE team was also involved in the testing of solar power plants installed by Industry and other Government Departments.

9.1.6 Capacity Building and Outreach Activities

The Skill Development Division of the National Institute of Solar Energy (NISE) plays a pivotal role in addressing this demand by designing and conducting training programs for a wide array of stakeholders including industry professionals, government officers, public sector units, academic institutions, and international participants. In FY 2025–26, NISE strengthened its role as a Centre of Excellence by delivering a total of 15 training programs catering to the needs of both national and international stakeholders. These training sessions were conducted in various formats—offline, online, and hybrid—ranging from introductory to advanced level. A total of 927 participants (including 694 international participants under ITEC programs and 233 national participants) benefited from the training initiatives of NISE.

During the year, NISE also facilitated exposure visits for a total of 1,058 visitors, comprising of 207 international visitors, 251 Government officials, 337 students, and 263 private-sector officials. During these visits, participants were exposed to NISE's latest research, testing facilities, and ongoing initiatives in solar and renewable energy, gaining first-hand insights into India's advancements in solar energy sector.

9.1.7 NISE Incubation Support Program for Start-ups in Renewable Energy (RE) Sector

In order to support Start-Ups in RE sector, NISE established an Incubation Cell on 23.05.2025. NISE collaborated with Atal Incubation Centre (AIC), IIT Delhi and National Solar Energy Federation of India (NSEFI) and issued a Call for Proposals on 25.06.2025, seeking proposals for incubation Start-Ups at NISE. Out of 82 proposals received across different RE categories, NISE evaluated each through a multi-stage scrutiny process, following which 20 start-ups were selected for incubation at NISE. These Start-Ups will be provided access to state-of-the-art testing facilities, technical mentorship and co-working and incubation space at NISE.

9.1.8 Implementation of Government Schemes and Programmes

9.1.8.1 Suryamitra Skill Development Programme

The Suryamitra Skill Development Programme, launched by MNRE in 2015, is a flagship initiative aimed at building a skilled workforce for the solar energy sector. The programme provides comprehensive training in the design, installation, operation, and maintenance of solar PV systems through a decentralized network of Training Centres, with strong outreach in rural and semi-urban areas. Currently operational across 30 States, the programme has trained 5,666 Suryamitras during April–December 2025, with 4,077 additional candidates presently undergoing training, supporting India's renewable energy transition and quality assurance objectives.

9.1.8.2 Solar Water Pumping Training (Varunmitra Skill Development) Programme

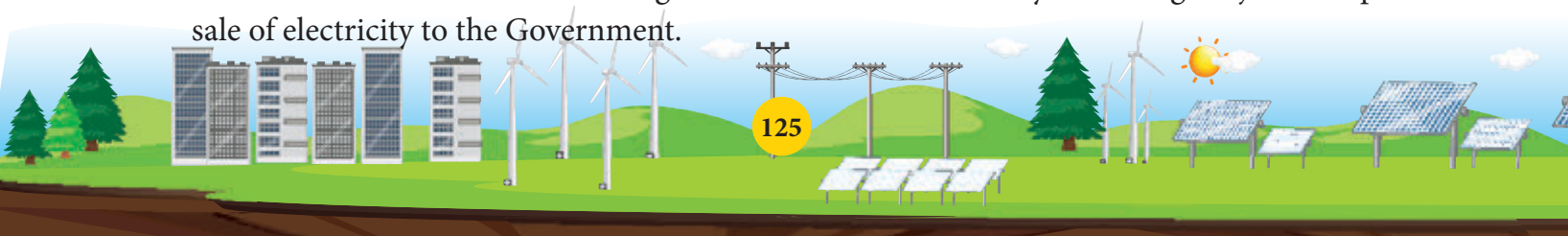
Solar PV water pumping systems play a vital role in promoting sustainable and energy-efficient irrigation under the PM KUSUM scheme. To support large-scale deployment and ensure reliable installation and maintenance, the Varunmitra Programme was introduced as a complementary initiative to the Suryamitra Skill Development Programme, focusing on skill development in the design, installation, commissioning, operation, safety, and maintenance of solar water pumping systems. Currently operational across 16 States, the programme has trained 90 candidates during April–December 2025, with 420 additional candidates presently undergoing training, contributing to India's renewable energy transition and quality assurance objectives.

9.1.8.3 Upskilling and Reskilling (PM Surya Ghar: Muft Bijli Yojana)

To support the ambitious objectives of the PM Surya Ghar: Muft Bijli Yojana and meet the growing demand for a skilled residential solar workforce, NISE developed a structured training programme, which was officially approved by MNRE for implementation. During the period April - December 2025, the programme successfully trained 2,601 Solar PV Installers, while 2,871 additional candidates are currently undergoing training, thereby strengthening workforce capacity, ensuring quality rooftop installations, and supporting India's Residential Solar Adoption transition.

9.1.8.4 Approved List of Models and Manufacturers

To ensure reliability of Solar PV products and to protect the consumer interests and ensure better energy security of the country, MNRE on 02.01.2019, has issued "Approved Models and Manufacturers of Solar Photovoltaic Modules (Requirements for Compulsory Registration) Order, 2019". The order provides for the enlistment of eligible models and manufacturers of solar PV cells and modules complying with the BIS Standards and publishes the same in a list called the "Approved List of Models and Manufacturers" (ALMM). Only the models and manufacturers included in this list will be eligible for use in Government/ Government assisted Projects/Projects under Government Schemes & Program, installed in the country, including Projects setup for the sale of electricity to the Government.



NISE has been designated as an implementation support agency for processing applications and carrying out inspections, verifications, and quality checks on behalf of MNRE. During the year, 88 inspections (which includes New Application, Renewal, Model Addition, & Capacity Addition) of various PV module manufacturing plants have been conducted by NISE and about 70 GW/year of module manufacturing capacity has been added to the ALMM list. During the same period, NISE carried out 12 inspections of PV cell manufacturing plants, adding a capacity of 24 GW/year to the ALMM list.

As on 31.12.2025, a total of 137 PV module manufacturing plants are enlisted in ALMM (ALMM List-I) with a cumulative installed manufacturing capacity of about 144 GW/Year (144,289 MW/Year) and a total of 12 PV cell manufacturing plants are enlisted in ALMM (ALMM List-II) with a cumulative installed manufacturing capacity of about 24 GW/Year (23,954 MW/Year).

9.1.8.5 Production Linked Incentive (PLI) Scheme: National Programme on High Efficiency Solar PV Modules

Under this Scheme, NISE extends technical support to Solar Energy Corporation of India (SECI) for verification and validating the qualitative and quantitative requirements of setting up of solar PV cell and PV module manufacturing facility in India under the PLI (Tranche II) scheme. In 2025-26, NISE has initiated the technical visits to PLI manufacturers, and testing of PV modules as a part of the requirements of the PLI scheme.

9.1.8.6 National Green Hydrogen Mission Testing Scheme

NISE is the Scheme Implementing Agency (SIA) for the National Green Hydrogen Mission (NGHM) Testing Scheme notified by MNRE on 04.07.2024, titled "Funding of testing facilities, infrastructure, and institutional support for development of Standards and Regulatory framework under the National Green Hydrogen Mission," with a total cost outlay of Rs 200 crores for 2024-2026. During the first round, NISE floated Call for Proposal (CfP) on 15.08.2024 and based on technical merit and strategic relevance, five leading institutions were selected for establishing advanced hydrogen testing and validation facilities: Gujarat Energy Research and Management Institute (GERMI), Bharat Heavy Electricals Limited (BHEL), National Metallurgical Laboratory (NML), Sardar Swaran Singh National Institute of Bio-Energy (SSS-NIBE), and The Automotive Research Association of India (ARAI).

To further expand the testing network across additional regions and application domains to address the growing demand for hydrogen testing infrastructure, NISE has issued the 2nd CfP on 11.08.2025. The review and evaluation of applications received under the 2nd CfP are currently underway.

9.1.8.7 National Green Hydrogen Mission Start-Up Scheme

NISE is the Implementing Agency for the NGHM Start-Up Scheme for supporting Pilot Project in innovative Green Hydrogen production/utilization technologies. The Call for Proposal for the Scheme was launched by Hon'ble Union Minister of New and Renewable Energy, Shri Pralhad Joshi during the 1st Annual Green Hydrogen R&D Conference on 11.09.2025, with a total outlay of Rs. 100 Crores and a maximum support of 5 Crores per Start up. NISE has received more than 100 applications against the call and are being evaluated.

Fig. 9.8: Launch of NGHM Start Up Scheme

9.1.9 Administration and Finance

The Government of India has sanctioned 41 regular posts for NISE, including the post of Director General. The affairs of NISE are managed by a Governing Council (GC), chaired by Secretary, MNRE (ex-officio President, NISE), in accordance of rules, regulation and bylaws of the society, which are duly approved by administrative Ministry i.e. MNRE. Secretary MNRE is president of Society (NISE) and Director General is Principal Executive Officer of the Society (NISE).

The funds of the Society are managed by following Sources:

i. Core Grants made by Government of India for furtherance of the objects of Society.
ii. Contribution from other Sources like various projects.
iii. Income from Investments.
iv. Receipts of the society from revenue generation activities like ALMM, Testing, Consultancy, Skill development activities etc.

NISE is following the General Financial Rules 2017, Fundamental and Supplementary Rules and such other rules (mutatis mutandis) as applicable to Central Government.

9.2 National Institute Of Wind Energy (NIWE)

9.2.1 NIWE is a technical arm of the Ministry for fostering the growth of wind energy development in the country. The main technical activities include Measurement and Mapping of wind resource assessment; preparation of Indian Standards; Testing and Certification of wind turbines and associated components and sub-systems; information dissemination; human resource development. In addition, NIWE offers various consultancy services and support to the wind stake holders for promoting healthy and orderly growth of wind turbines installation in India.

9.2.2 Offshore Wind Development

A. Met-Ocean measurements in Gulf of Khambat and Gulf of Mannar

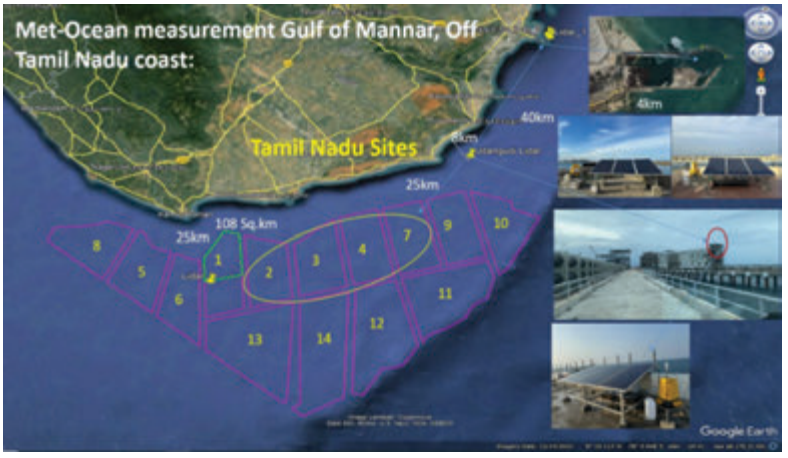


Fig. 9.9: LiDAR installed at VOC port and Udangudi, Gulf of Mannar, Tamil Nadu

The MNRE has sanctioned project Met-Ocean Measurements at Gulf of Khambat and Gulf of Mannar for Fostering the Growth of Offshore Wind in the Country to NIWE with the objective of quantifying the wind potential of such regions towards demarcating the offshore wind energy blocks. Under the project, as per the approval of the Project Monitoring Committee directions, 3 sites have been identified to map offshore wind resource in Gulf of Mannar, Tamil Nadu coast. NIWE has identified suitable locations for deploying the Offshore Lidar at VOC port (4 to 5 km from the sea shore) and Udangudi Thermal Coal jetty (8 to 9 km from the sea shore) which together with the measurements at sub-zone 1 will cover wind profile of the Tamil Nadu coast. The one year wind measurement campaign has been completed.

B. Offshore studies/ survey in Sub-Zone 1 in Gulf of Mannar off Tamil Nadu coast

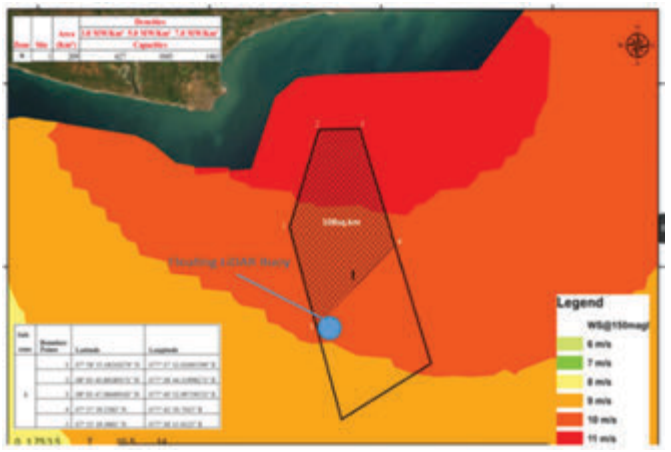


Fig. 9.10: Location for Floating LiDAR Buoy at Gulf of Mannar, Tamil Nadu

NIWE has initiated the offshore wind resource assessment and geophysical & geotechnical investigation for development of offshore wind farm of 500 MW at sub zone 1 Gulf of Mannar off Tamil Nadu coast under Model A. The floating buoy system first of its kind in India was successfully deployed at Sub-zone-1 Gulf of Mannar, Off Tamil Nadu coast during October 2024.The data collection for Wind together with Oceanographic Measurements are underway. The Geophysical survey including bathymetry, side scan sonar and sub-bottom profiler has been carried out during February 2025 over an area of approximately 108 sq.km at sub zone 1 Gulf of Mannar off Tamil Nadu coast.

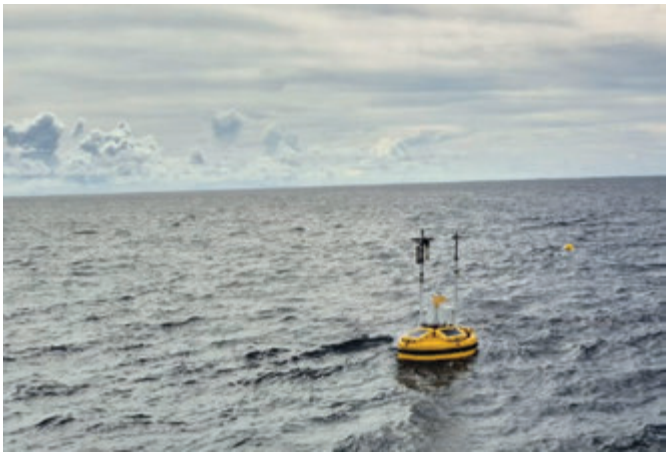


Fig. 9.11: Floating Buoy deployed at Gulf of Mannar, Tamil Nadu

Fig. 9.12: Grab sampling at 15 locations

9.2.3 Wind & Solar Resource Measurements

a. **Wind Resource Assessment Studies in Andaman & Nicobar Islands:** Under the National Wind Monitoring Programme, NIWE has installed and commissioned 4 nos of wind monitoring stations at Bharatpur, ShaheedDweep in South Andaman and Sigmundera, Long Island in North & Middle Andaman and at Mangluthkhaman in Port Blair in Andaman and Nicobar Islands. The one-year data has been successfully collected and analyzed for benefit of the Wind stake holders.

Fig. 9.13: 100m WMS installed at Bharatpur

b. **LiDAR based Offshore Wind Measurement at Kadamat Island, Lakshadweep:** As a step towards greening of Island, NIWE has installed LiDAR (Light Detection and Ranging) to carry out Offshore measurement at Kadamat Island in Lakshadweep. The data collected will provide useful pointers in promoting two weather driven renewables (wind & solar) for replacing the diesel generating sets thereby minimizing the cost of energy generation.

c. **Wind & Solar Resource Assessment Studies at Ladakh:** NIWE has also installed 4 nos of 100-meter wind monitoring stations and two solar Radiation Resource Assessment (SRRA) at Leh, Ladakh. The measurements have been completed and provides useful insights in better understanding the site-specific locations for estimating the energy generation.

Consultancy Project

The Wind Resource Assessment has been completed for 13 projects for estimating the Energy Yield Assessments for grid connected wind turbines. The wind resource team is also providing technical due diligence to GRIDCO for promoting the wind energy technology in the State of Odisha.

9.2.4 Wind Turbine Testing Station (WTTS)

NIWE has successfully cleared the Desktop Surveillance Audit in June 2025 pertaining to wind turbine type testing assignments strictly in accordance with ISO/IEC 17025:2017 (for the disciplines of Electrical and Mechanical testing as per the existing scope of accreditation).

- Presently, testing assignment on Acoustic Noise Measurement as per IEC 61400-11:2018 (CSV) for the wind turbine model INOX DF/3000/145 – 3.0 MW Power Booster Mode (3.3 MW) with Rotor Blade Type SR71 V2 (T-Bolt), Hub Height 100 m, IEC WT Class IIIB, located in Gujarat. Measurements for the same is underway.

9.2.5 Standards And Certification

Certification

- NIWE has obtained International Accreditation for the certification services as per the requirements of ISO/IEC 17065 standard from the National Accreditation Board for Certification Bodies (NABCB), Quality Council of India (QCI) which is valid up to 2027.
- NIWE has issued accredited Type Certificates for 6 Wind Turbine models of 5 Indian wind turbine manufacturers.
- NIWE has obtained International Accreditation for Inspection Services from NABCB as Type 'A' Inspection Body as per the requirements of ISO/IEC 17020 which is valid up to 2027.
- The Accredited Services of both Type Certification and Inspection offered by NIWE will benefit the wind industry to obtain such services within India in line with International best practices.

Standards & Regulation

NIWE is involved in the preparation of Indian standards on wind turbines by supporting Bureau of Indian Standards (BIS). BIS ETD 42 committee till date has finalized Thirty-Two Indian standards on wind turbines.

Revised List of Models and Manufacturers of Wind Turbines (RLMM) renamed to –Approved List of Models and Manufacturers ALMM (Wind):

Standards and Regulation division, which is part of the ALMM (Wind) committee, has been providing support to MNRE in verification of documentation submitted along with application

and in handling ALMM (Wind) related works. During the period (from 01.04.2025 to 30.09.2025), the review of documentation has been completed for 17 ALMM (Wind) applications of various wind turbine models and the review comments have been submitted to MNRE / ALMM (Wind) Committee.

Prototype Wind turbine Models:

NIWE is implementing MNRE guidelines on installation of prototype wind turbine models in India which facilitates the installation of Prototype wind turbine models to carry out the Type Testing for obtaining type certificate. NIWE has formulated a committee to take a suitable decision on issuing the recommendation letters in connection with grid synchronization. During the period (from 01.04.2025 to 30.09.2025), NIWE has issued the recommendation letter in connection with grid synchronization for one prototype wind turbine model, with a rated capacity 4200 kW for the purpose of Type Testing and also issued the revised recommendation letter in connection with grid synchronization for one modified prototype wind turbine model, with a rated capacity of 3300 kW for the purpose of Type Testing.

9.2.6 Research And Development

NIWE, in association with the University of Massachusetts Amherst (UMass), Ocean Energy Pathway (OEP), completed a draft study on Best Practices for Community Engagement in Offshore Wind Projects in Tamil Nadu for establishing mutually beneficial research projects and other activities of mutual interest and benefit with an objective to develop a practical guide for Indian planning authorities with focus on effective community engagement (throughout offshore wind project phases) for fostering the growth of offshore wind in India.

9.2.7 Skill Development And Training

NIWE has conducted one National Training Course and 2 Special Courses on “Wind Energy Technology”, wherein 40 participants from 9 States and 1 Union Territory were trained in National Training Course.

9.2.8 Vayumitra Skill Development Programme (VSDP)

MNRE has sanctioned the Vayumitra Skill Development Programme (VSDP) Phase-II project with a new QP "Wind Farm Engineer" to NIWE wherein it is planned to train about 1125 no. of trainees (900-Participants, 210 Trainers & 15 Master trainers). The programme is scheduled to be conducted in 38 batches (30+7+1); covering eight windy States (Rajasthan, Gujarat, Maharashtra, Karnataka, Tamil Nadu, Andhra Pradesh, Telangana, Madhya Pradesh & Kerala) by the end of March, 2026.

9.2.9 Student Visit To NIWE Campus

NIWE has arranged and coordinated the campus visits to create awareness and to motivate towards research on wind energy, achieving the indigenization and also to create awareness about

the activities and services of NIWE among the students. 266 students were benefitted during the period April to September 2025.

9.2.10 NIWE-Academic Associate Programme (NIWE-AAP)

The NIWE-AAP aims to encourage students and provide an opportunity to choose renewable energy as their career option. To create awareness in the field of renewable energy research among the young talented Sciences, Management and Engineering students NIWE invites applications for the NIWE-AAP. The duration of the Internship is two weeks to six months. About 182 applications were received. Of those, 62 students had enrolled and 38 students successfully completed their internships. Currently, 6 students are undergoing the internships.

9.3 Sardar Swaran Singh National Institute Of Bio-Energy (SSS-NIBE)

9.3.1 SSS-NIBE Kapurthala, an autonomous institution under MNRE, is dedicated to advanced research, development, and training in the bioenergy sector, actively contributing to policy and technology promotion. The institute is pioneering the production of Sustainable Aviation Fuel (SAF) through the hydrothermal cracking of used cooking oil (UCO) NIBE team is also working on Microalgal Biofilm Bioreactor (MBB) for integrated wastewater treatment and biohydrogen conversion, and valorizing Paddy Straw (PS) through Hydrothermal Liquefaction (HTL) to produce bio-oil using silica-rich ash as a catalyst.

9.3.2 Ongoing R&D focuses on several key areas across its divisions. The Biomass Division completed the Livestock-waste energy atlas of India and is developing a Smart Hybrid Biogas Plant (SHBP), which uses priority-based algorithms and integrated heat sources (solar, biomass, waste heat) to maintain constant digester temperature. The Biochemical Conversion Division is focused on upgrading biogas via Microbial Electro methanogenesis (ME), biologically converting CO_2 into CH_4 using electroactive microbes under external potential. They are also optimizing Second-Generation (2G) bioethanol production from sugarcane bagasse using ammonia-based pre-treatment and Simultaneous Saccharification and Co-Fermentation (SSCF). Furthermore, research is being conducted on CO_2 sequestration using algal species like Chlorella.

9.3.3 For decentralized power generation, SSS-NIBE established a Solid Oxide Fuel Cell (SOFC) test bench to research the use of biofuels (biogas/producer gas). The institute is also synthesizing advanced carbon materials, such as Activated Carbon and Carbon Quantum Dots from bamboo, for applications in energy devices like supercapacitors. Collaborative projects are focused on optimizing the mixing and feeding of coal and agro-wastes for co-milling in thermal power plants and enhancing rural livelihoods through the dissemination of improved cookstoves in Punjab. During 5th International Conference on Recent Advances in Bio-Energy Research held at SSS-NIBE in October 2025, the institute logo unveiled by Hon'ble Minister Shri Shripad Naik.

9.3.4 Division Wise R&D Progress

9.3.4.1 Biomass and Energy Management Division

The Biomass and Energy Management Division has launched various initiatives in the areas of biomass resource mapping, biomass supply chain management, and biomass valorization over the last year.

9.3.4.1.1 Development of Livestock-waste energy atlas of India

To promote scientific utilization, this study mapped the state-wise availability of livestock waste using data from the 2012 and 2019 Livestock Census covering cattle, buffalo, pigs, poultry, sheep, and goats. The biogas generation potential from these wastes was calculated, along with estimates for power generation, CBG for transport, and LPG/fuelwood replacement for cooking. Results indicate annual biogas potentials of 31,603 Mm^3 (2012) and 33,689 Mm^3 (2019), mainly contributed by cattle waste. Among states, Uttar Pradesh, Rajasthan, and Madhya Pradesh showed the highest contributions. For 2019, the total livestock waste offered an estimated potential of 7122 MW of power, 13.5 million tons of CBG, and 15/13.5 million tons of LPG/fuelwood replacement.

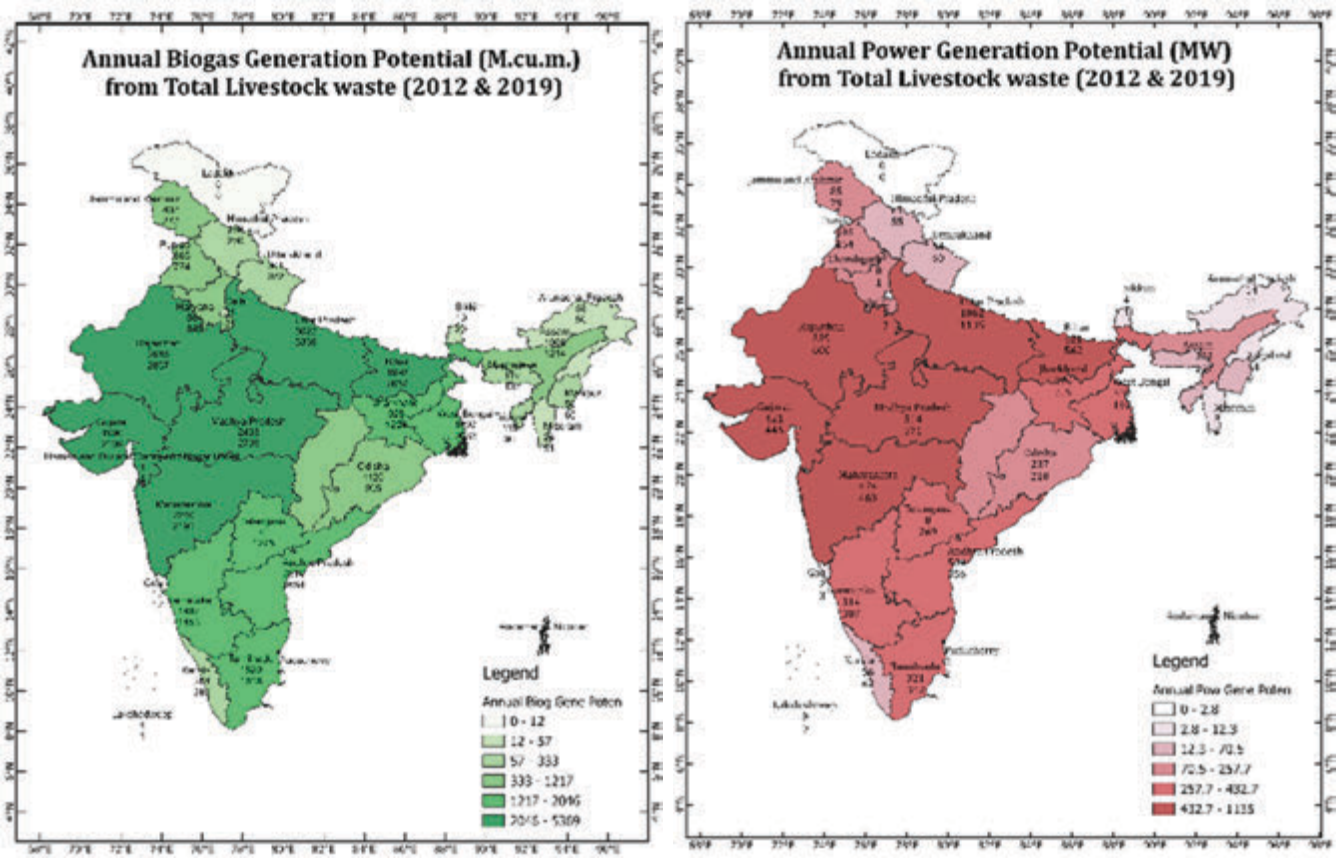


Fig. 9.14: Annual bio-energy and power generation potential from total livestock

9.3.4.1.2 Smart Hybrid Biogas Plant

SSS-NIBE is developing a Smart Hybrid Biogas Plant (SHBP) to address the challenge of maintaining constant digester temperatures in anaerobic digestion. The system features an in-house automation setup with priority-based algorithms for precise temperature control and efficient energy management. By integrating solar, biomass, and waste heat sources, SHBP ensures sustainable and economical operation. It uses advanced heating methods, including dual heating coils and phase change materials (PCM), to reduce lag time and improve efficiency.

Fig. 9.15: Smart hybrid pilot-scale biogas plant

9.3.4.2 Biochemical Conversion Division

During FY 2024-25, several externally funded and in-house R&D projects were taken up by the research team in the division. Major focused area includes biogas production from different feedstocks, biogas upgradation via microbial electromethanogenesis, development of enzyme cocktail for enhanced sugar recovery through enzymatic saccharification of various lignocellulosic biomass, 2G ethanol from different feedstocks, biohydrogen production from organic waste, lignocellulosic biorefinery, wastewater treatment using microalgae and algal biorefinery, etc.

9.3.4.2.1 Optimizing Biogas Production from Napier Grass using a Thermophilic Anaerobic Digestion Consortium

A research work has been carried out to further enhance the biogas production from Napier grass using a thermophilic consortium THERMI-NIBE V.1 at 52˚C.The optimization of solid loading and inoculum concentration has been done using the Biomethane Potential Analyser (BMP). Further, experiments have been conducted to check the impact of supplementation and voltage on biomethane production.

9.3.4.2.2 Upgradation of Biogas via Microbial Electro methanogenesis

A jacketed double chambered bioreactor (H-type cell) has been designed and fabricated for the upgradation of biogas via microbial electro methanogenesis (ME). The study on ME is being conducted using an in-house developed thermophilic consortium, i.e., THERMI-NIBE

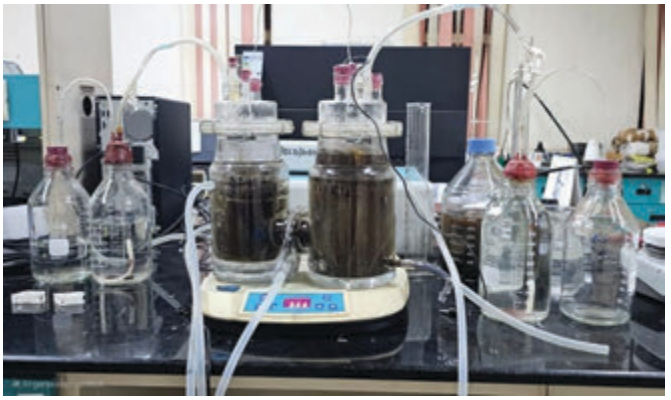


Fig. 9.16: Reactor set-up for biogas upgradation via microbial electromethanogenesis

V.1. In this process, carbon dioxide (CO_2), a major component of raw biogas, is biologically converted into methane (CH_4) through the action of electroactive microbes under the influence of external potential. The ongoing optimization is expected to significantly improve the sustainability and economic feasibility of biogas purification through bio electrochemical means.

9.3.4.2.3 Enhanced 2G-Bioethanol Production from Sugarcane Bagasse using simultaneous saccharification and co-fermentation (SSCF)

The research was focused on optimizing second-generation (2G) bioethanol production from sugarcane bagasse using a cost-effective and sustainable bioconversion strategy. The process began with an ammonia-based pre-treatment (10% v/v at 85°C for 24 h) to disrupt the lignocellulosic structure and enhance enzyme accessibility. This was followed by Simultaneous Saccharification and Co-Fermentation (SSCF) using both commercial enzymes (Cellic CTec2 and Htec2) and an in-house developed enzyme cocktail, along with a thermotolerant yeast strain Kluyveromycesmarxianus FKS.A1 capable of fermenting both glucose and xylose.

9.3.4.2.4 CO2 sequestration using Algal Biorefinery

The experiments on understanding the relation between pH and dissolved CO2 in water and BG-11 media have been studied. The key observations are that the pH decreases with the increasing dissolved CO2 concentration in water. The dissolved CO2 concentration is very crucial for the algal cultivation. The experiments for testing the CO2 sequestration performance of Dunaliella and Chlorella species were done. The Dunaliella is a halotolerant species usually found in highly saline water, while Chlorella is a freshwater alga. Both are distinct in nature. It has been found that Chlorella in the flask suspended culture has high CO2 sequestration efficiency.

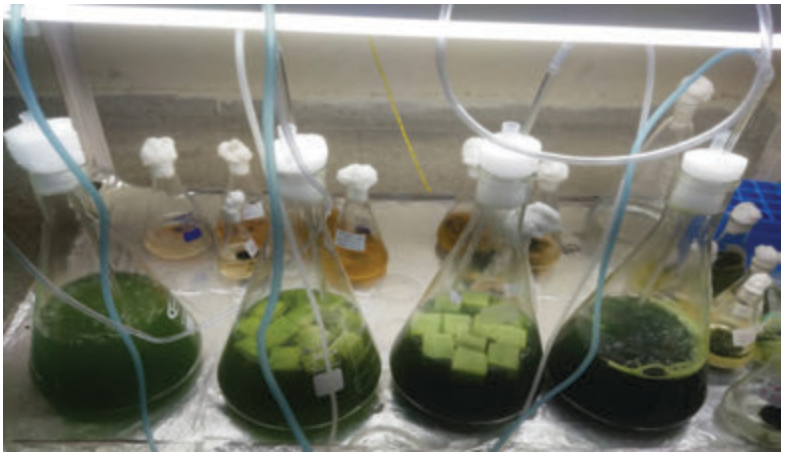


Fig. 9.17: Biomass growth and attachment resulting in biofilm formation in the sponge media

9.3.4.2.5 Hydrothermal cracking of used cooking oil into sustainable aviation fuel

The increasing demand for sustainable aviation fuel (SAF) has driven the exploration of renewable feedstocks and innovative conversion technologies. Current work investigates the hydrothermal cracking of used cooking oil (UCO) as a viable pathway for producing SAF, utilizing its high triglyceride content. Hydrothermal cracking, conducted under subcritical water conditions, facilitates the breakdown of long-chain fatty acids in UCO into shorter hydrocarbons suitable for jet fuel applications.

Waste Cooking Oil *Hydrothermal Cracking* *Biocrude*

Fig. 9.18: Conversion of waste cooking oil into biocrude using hydrothermal cracking reaction in a high-temperature high-pressure reactor

9.3.4.2.6 Design and Development of Microalgal Biofilm Bioreactor

Presently, the research team is designing and developing a Microalgal Biofilm Bioreactor (MBB) for an integrated wastewater treatment and biomass conversion into biohydrogen under a biorefinery approach. Under this, project, a lab-scale MBB reactor is designed that has double layered cotton fabric (Muslin cloth) as a carrier material. The study showed 80% nitrate and 95% phosphate removal in the biofilm system, with dried biomass productivity up to 3.98g/m2 in a 10-day study period. The biofilm formation efficiency of the isolated native microalgal strains from the Industrial area canal, based on nutrient removal efficiency and biomass yield in the developed MBB, is in progress.

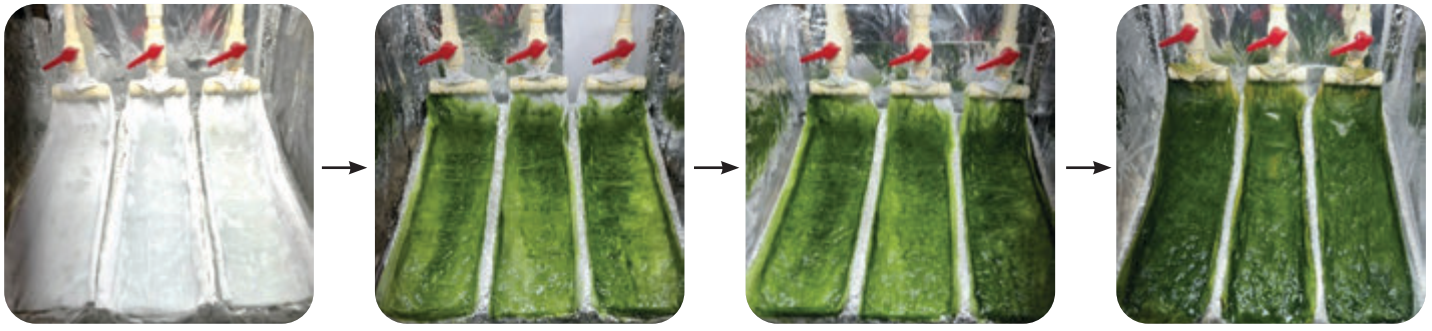


Fig. 9.19: Biofilm-supported algal culture for industrial wastewater treatment

9.3.4.3 Chemical Conversion Division

The Chemical Conversion Division at SSS NIBE aims to transform waste lignocellulosic biomass into valuable chemicals through various processes. These include Slow Pyrolysis to produce biochar, Hydrothermal carbonization (HTC) / Hydrothermal Liquefaction (HTL) for biomass conversion to biochar and Biochar activation for diverse applications, Bio-oil production and its conversion into high-value chemicals. Additionally, the division conducts catalytic transformations of

different lignocellulosic biomass components (Cellulose, Hemicellulose, Lignin) into high-value chemicals. Feasibility studies are also underway for upgrading Biogas to Hydrogen via catalytic steam or dry methane reforming. In the FY 2024-25 Chemical Conversion Division has initiated the following research activities:

9.3.4.3.1 Paddy straw valorisation through hydrothermal liquefaction processes for the production of bio-oil

After China, India is the world's second-largest producer of paddy. India produces 98 million tonnes of paddy, yielding approximately 130 million tonnes of straw. Farmers in Punjab face the annual challenge of managing nearly 20 million tonnes of paddy straw (PS). Paddy straw contains components such as cellulose, hemicellulose and lignin that could be utilized for production biofuels/chemicals, and can be substituted the uses of fossil fuel. Furthermore, the PS biomass is renewable, sustainable, carbon neutral and it is abundant in the earth. In this study, hydrothermal liquefaction/carbonization of PS was investigated to produce bio-oil/value-added chemicals and biochar.

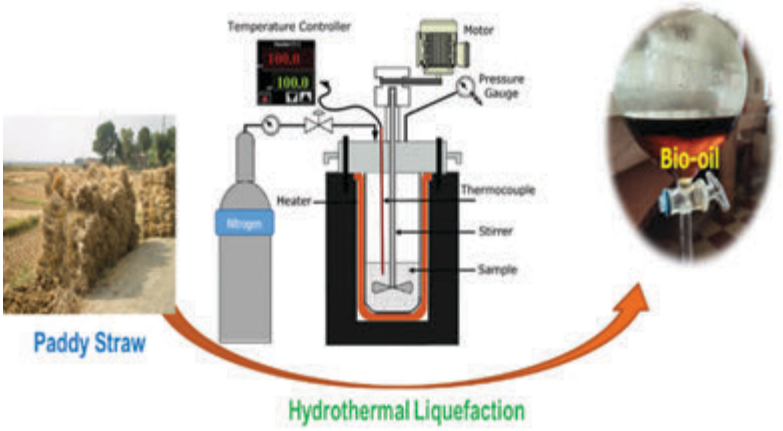


Fig. 9.20: Schematic of HTL of PS

9.3.4.3.2 Hydrothermal liquefaction for bio-oil production:

In this study, Silica-rich ash derived from PS was used as a catalyst. The PS ash, a low-cost agricultural byproduct, can serve as a catalyst in various applications. It is produced by heating paddy straw at 600°C for 5 hours, which removes the organic matrix from the silica backbone, leaving silica-rich ash containing approximately 78% silica with small amounts of impurities. A series of batch experiments were conducted at temperatures between 230-270°C for reaction times ranging from 15 to 45 minutes, with and without the silica-rich ash catalyst, using water and water-ethanol solvent mixtures. The bio-oil obtained with the catalyst displayed the highest area percentage of 4-ethyl phenol among all the samples.

9.3.4.3.3 Comprehensive characterization of sawdust-derived biochar for energy applications

The potential of timber industry waste, sawdust, for producing porous, carbon-rich biochar was explored through carbonization for energy applications. This study optimized sawdust carbonization to achieve biochar with enhanced calorific value and yield. Using response surface methodology, carbonization conducted at 200–500°C for 30–180 minutes showed a maximum calorific value of 5893.29 kcal/kg (45% higher than raw biomass) and a biochar yield of 47.26% under optimized conditions of 500°C for 42 minutes.

9.3.4.3.4 Integrated Processing of Rice Straw for Moisture-Repellent Fibers

This research project proposes a novel, integrated approach that extracts cellulose-rich fibers through alkaline delignification, valorizes hemicellulose and lignin coproducts, and utilizes ash-derived silica for sol-gel modification—imparting water repellency and durability to the regenerated fibers.

9.3.4.4 Electrochemical Division

The Electrochemical Process Division at SSS-NIBE is actively conducting research on utilizing both conventional and underexplored biomass sources to synthesize carbon materials for energy device applications, such as supercapacitors.

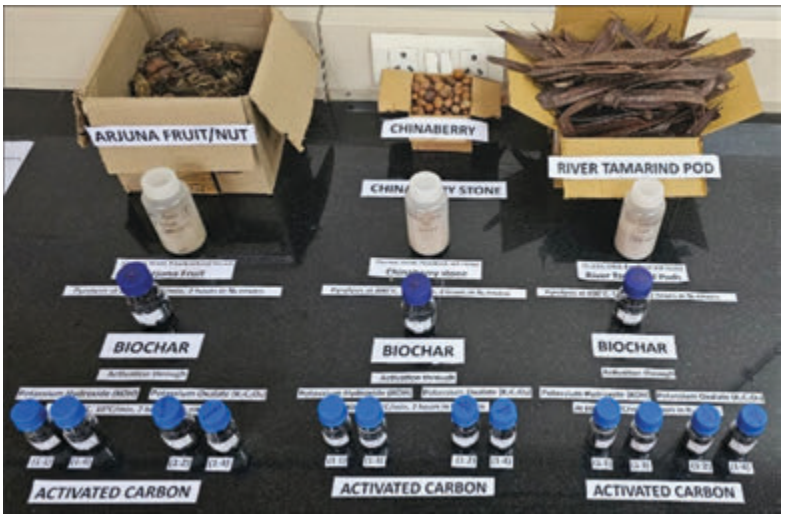


Fig. 9.21: Biomass-derived Activated Carbon through Chemical Activation

9.3.4.4.1 Synthesis of activated carbon from bamboo

The production of activated carbon (AC) from bamboo involves a structured process that ensures the transformation of bamboo into a highly porous material suitable for hydrogen storage. Initially, bamboo materials undergo preparation, which includes cleaning and cutting into suitable sizes.

Fig. 9.22: Synthesis of Carbon Quantum Dots from bamboo

9.3.4.4.2 Exploiting residual biomass for bioenergy and bioplastic production

The residual biomass and raw biomass were examined for different parameters and it was observed that calorific value of the residual biomass (pigment extracted) was much higher (5303.384 Cal/gm) as compared to that of the raw biomass with pigments (4403.996 Cal/gm). Similarly, the CHNS(O) analysis demonstrated that residual biomass has higher C/N and C/H ratio. These results reflected superior lipid content in the residual biomass, thus can be used as promising substrate for bioenergy production. In order to reduce the dependence on plastic, the research was undertaken to utilize residual biomass for bioplastic production.

9.3.4.4.3 Solid Oxide Fuel Cell (SOFC) test bench - A futuristic, sustainable, decentralised power generation

SOFC test bench was established in collaboration with CSIR-NAL, Bangalore, at SSS-NIBE for conducting research activities. This is one of SSS-NIBE's journey routes toward harnessing cutting-edge technology for clean and sustainable energy generation. The institute is working biofuels, such as biogas/producer gas, which are potential fuels for Solid Oxide Fuel Cells (SOFCs) instead of pure hydrogen. The R&D division is also exploring other areas of research in collaboration with CSIR-NAL, such as the preparation of anode-supported cells, preparation of electrolyte-supported cells, enhancement of oxygen vacancies in cathode electrode material, and modelling of fuel cell stacks.

Fig. 9.23: SOFC test bench

9.3.4.5 Thermo-Chemical Division

9.3.4.5.1 Design and Development of the laboratory-Scale Experimental Biomass (Agro Residue) Based Downdraft gasifier (1kg/hr)

A laboratory-scale downdraft biomass gasifier has been finalized based on detailed technical calculations to support experimental research in biomass-to-hydrogen conversion via gasification. The system is designed to facilitate controlled studies of the agro-residue based gasification process, enabling evaluation of key operational parameters, optimization of reaction conditions, and precise characterization of syngas composition. A Purchase Order (PO) has been released for its fabrication and installation. This setup will serve as a critical platform for generating insights essential for process scale-up and for advancing sustainable hydrogen production technologies.

9.3.4.5.2 CFD Modelling of Cyclone Combustor for Producer Gas/ Biogas

The cyclone combustor is designed to burn raw producer gas/biogas. The combustor has tangential fuel and air inlets that caused a swirling flow inside it in order to facilitate fuel-air mixing. The preliminary combustor simulation has been done to get insights over the temperature, velocity, and pressure drop along the length of the combustor. This system is designed to burn the producer gas and biogas produced from the thermal conversion of raw biomass.

9.3.5 Sponsored / External Funded Projects

9.3.5.1 Advanced microalgal biorefinery approach for recycling of domestic sewage/ waste water for cleaner and greener Himalayan region

A project has been funded by National Mission on Himalayan Studies (NMHS), Ministry of Environment, Forest & Climate Change, Govt. of India for 3 years starting in July 2023. The project cost is INR 96.75 Lakhs. NIT, Hamirpur and Jal Shakti Vibhag, Hamirpur are the collaborating partner in the project.

9.3.5.2 Exploration of Lignocellulolytic enzymes producing thermophiles from hot springs of Western Himalayan region for biorefinery applications

The project 'Exploration of Lignocellulolytic enzymes producing thermophiles from hot springs of Western Himalayan region for biorefinery applications' is funded by DST under KIRAN scheme. A thermophilic lignocellulolytic gram positive bacterium Bacillus licheniformis (NIBE – 23) has been screened out of all the isolates from Western Himalayan Region for its potential with the highest cellulolytic enzyme activity. The project has been bound up in October 2024.

9.3.5.3 Complete Heating and Emission Analysis of Raw Biomass and Pellets during Combustion (NMB-3 of SG-1)

The ongoing project is funded by the Central Power Research Institute (CPRI), investigates the thermal and emission behavior of biomass and coal blends for energy applications. Biomass samples collected from seven northern Indian states were analyzed for moisture, ash, volatile matter, elemental composition, and calorific value, revealing notable regional variations due to agro-climatic differences.

9.3.5.4 Dissemination of Improved Cookstoves Among SC Community of Punjab

A project funded by PSCST (2024–2025) aims to disseminate improved cookstoves among the SC community of Punjab to enhance rural livelihoods. Two villages in Jalandhar district—Fateh Jalal and Khaira Majha—were selected for their proximity to SSS-NIBE, enabling effective field testing. Meetings were held with village representatives to identify households using traditional cookstoves, and 10 households per village were selected. Accordingly, 30 cookstoves have been disseminated in two villages. Subsequently, SSS-NIBE is monitoring the field performance of the improved cookstoves to assess their impact and efficiency.

9.3.5.5 To Optimize Coal and Agro-Wastes Mixing and Feeding for Co-Milling for Thermal Power Plants with Minimum Changes to Installed Systems and Operations

The project funded by the Department of Science and Technology (DST) was initiated to optimize coal and agro-waste mixing and feeding for co-milling in thermal power plants with minimal system modifications. The project aims to collect operational data from power plants (e.g., NTPC Dadri), develop a DEM-CFD coupled simulation facility, and characterize coal and biomass samples from across India. Equipment such as an HGI tester and a high-performance workstation has been procured to support these studies.

9.3.5.6 Project No. 223/2/2019-Waste to Energy-Part (2): Densification of agro-waste and assessment for its application in the gasifier

Significant progress was achieved toward completing the objectives of the project, activities included procurement and installation of necessary instruments and setup of an 8 kW agro-residue-based downdraft gasifier with genset, demonstrated by M/s Enersol Biopower, Jaipur.

9.3.5.7 Complete Ash Analysis of Biomass Pellets and Co-Combusted Fuels

The study focused on biomass co-firing with coal in thermal power plants to enhance combustion efficiency and reduce emissions while addressing operational challenges. Different agro-residues—paddy straw, wheat straw, maize stalk, mustard straw, and bajra stalk—were blended with coal (0–20% biomass) to analyze their chemical composition and effects on boiler performance.

9.3.6 5th International Conference on Recent Advances in Bio-Energy Research (ICRABR-2025)

The 5th International Conference on Recent Advances in Bio-Energy Research (ICRABR-2025) commenced on 06.10.2025 at the Sardar Swaran Singh National Institute of Bio-Energy (SSS-NIBE), Kapurthala. The four-day conference (6th–9th October 2025) provides a premier platform for researchers, industry leaders, and policymakers to discuss emerging technologies and future pathways in bioenergy.

The inaugural session was graced by Hon'ble Shri Shripad Naik, Minister of State for New and Renewable Energy and Power, as Chief Guest, who also unveiled the new logo of SSS-NIBE, symbolizing innovation and sustainability. An MoU between IIT Ropar and SSS-NIBE was signed to promote collaborative research in biomass and bioenergy. Shri Santosh Kumar Sarangi, Secretary, MNRE (virtual), and Prof. Rajeev Ahuja, Director, IIT Ropar, attended as Guest of Honour.

Fig. 9.24: SSS-NIBE institute logo unveiled by Hon'ble Minister Shri Shripad Naik

Hon'ble Minister Shri Shripad Naik highlighted India's vast bioenergy potential from crop residues, MSW, and livestock waste, emphasizing government initiatives such as the National Bioenergy Programme, SATAT, SAMARTH Mission, and GOBARdhan, and noted that 20% ethanol blending has been achieved ahead of schedule. Shri Santosh Kumar Sarangi emphasized bioenergy's role in decarbonisation and energy security, highlighting MNRE support exceeding ₹1,000 crore. Prof. Ahuja stressed interdisciplinary collaboration, green hydrogen, and indigenous technology development.

Former Director General, SSS-NIBE, Dr Sridhar outlined conference activities and ongoing research initiatives. The session concluded with a vote of thanks by Dr. Anil Kumar Sarma, Co-Chair, ICRABR-2025.

9.3.7 Vigilance Awareness Week

SSS-NIBE observed "Vigilance Awareness Week-2025" (VAW) from 27.10.2025 to 02.11.2025 with Theme: "Vigilance: Our Shared Responsibility". During this, all officers, staff, research scholars and other participated in the "Integrity Pledge", Quiz and Debate completion at Dr. A.P.J. Abdul Kalam Auditorium, SSS-NIBE.

9.3.8 Constitution Day Celebration

The institute celebrated the Constitution Day on 26.11.2025 in Dr. A.P.J. Abdul Kalam Auditorium, SSS-NIBE. During the event a pledge ceremony was organized.

9.3.9 Joining of New Director General

Dr. Sangita M. Kasture has taken additional charge as Director General of the Institute with effect from 20.11.2025 to lead the institute. She is an Adviser at Ministry of New and Renewable Energy (MNRE) and brings her expertise in Bioenergy and advance biofuels by promoting Industrial Bioenergy projects and innovations for last 15 years.

Fig. 9.25: Dr. Sangita M. Kasture, Director General

Shortly after assuming charge, Dr. Kasture strengthened academic and research collaboration by signing a Memorandum of Understanding (MoU) with the **Dr. B.R. Ambedkar National Institute of Technology (NIT), Jalandhar** to work together on advanced bioenergy research, education and sustainable clean energy solutions.

9.3.10 Collaboration

During the year 2024-25, SSS-NIBE signed MoUs with various institutions to facilitate collaborative research and exchange of students for academic work. The MoU's signed are:

Fig. 9.26: Collaboration done by SSS - NIBE

1. MoU between SSS-NIBE and Organic Recycling System Limited (ORS) was signed on 8.11.2024 to collaborate on sustainable technology development. SSS-NIBE and ORS join hands to propel Napier Grass Based Anaerobic Digestion Process for Biogas Generation. The strategic partnership aims to maximize biogas potential of Napier Grass Advancing India's Renewable Energy Agenda.
2. NDA between SSS-NIBE and Bansco Energies LLP, Hisar has been signed on 30.04.2024 to develop 30m3 biodigester for Napier grass to biogas on indigenous developed technology.

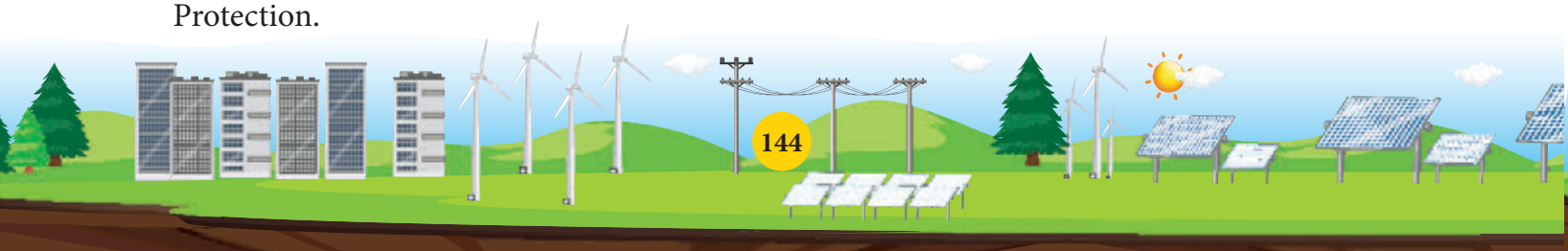
3. MoU between SSS-NIBE and MNRE: for Financial Year 2024-25 was signed between Secretary, MNRE and DG, SSS-NIBE.
4. MoU was signed between SSS-NIBE and CPWD on 11.12.2024.
5. MoU was signed with Energreen Technologies LLP, Chennai on 14.01.2025 for collaboration on the development of Bio-CNG plants across the country.
6. MoU with PSCST: In a significant step towards promoting sustainable energy solutions and fostering scientific collaboration, Sardar Swaran Singh National Institute of Bio-Energy (SSS-NIBE), Kapurthala, signed a Memorandum of Understanding (MoU) with Punjab State Council for Science & Technology (PSCST), Chandigarh. The MoU signing ceremony took place on 23.04.2025 at the premises of SSS-NIBE, Kapurthala.
7. MoU with PAU: SSS-NIBE, Kapurthala and PAU, Ludhiana have signed a MoU on 17.03.2025 at PAU, Ludhiana for collaboration on Bio-Energy Research, Academic programs and capacity building. This partnership aims to promote sustainable utilization of agricultural residue for energy production and soil nutrient amendment.
8. A tri-party Non-Disclosure Agreement (NDA) was signed among three parties, namely SSS-NIBE, Kapurthala; DCM Shriram Limited, New Delhi and Chem Process Systems Pvt. Ltd. Ahmedabad on 25.03.2025. DCM Shriram Ltd. and Chem Process Systems Pvt. Ltd. visited the Institute during March 24-25, 2025 to demonstrate 2G ethanol technology developed at SSS-NIBE.
9. MoU signed between NIBE and The Dr. B.R. Ambedkar National Institute of Technology (NIT), Jalandhar to work together on advanced bioenergy research, education and sustainable clean energy solutions.

9.3.11 NABL Accreditation

In a significant stride towards quality assurance and standardization, three characterization techniques (solid biofuels: bomb calorimeter and CHN analyzer and Gaseous biofuels: Biogas/ BioCNG), received the NABL (National Accreditation Board for Testing and Calibration Laboratories) accreditation in January 2025. This accreditation validates the precision, reliability, and competence of our laboratory practices. This achievement marks a key milestone in ensuring that our laboratory continues to maintain excellence in testing and research infrastructure.

9.3.12 Publications

Overall, 45 publications demonstrate significant multidisciplinary research in bioenergy, waste management, and clean energy transition were published. Out of which 28 were research journal articles and 17 book chapters/books/conference papers. The journal articles cover diverse topics such as biogas production, biomass valorization, bioenergy systems, catalytic conversion, and renewable energy technologies, appearing in reputed journals like Environmental Science and Pollution Research, Critical Reviews in Biotechnology, and Process Safety and Environmental Protection.



9.4 Solar Energy Corporation Of India Limited (SECI)

Solar Energy Corporation of India Ltd. (SECI), a Navratna Central Public Sector Enterprise (CPSE) under the Ministry of New and Renewable Energy (MNRE), continues to play a pivotal role in India's renewable energy expansion. As the country transitions toward a low-carbon economy, SECI serves as the principal public sector organization responsible for the conceptualization, development, and implementation of large-scale renewable energy projects across India. Its strategic initiatives encompass solar, wind, hybrid, energy storage, and green hydrogen domains, driving innovation and market transformation.

SECI's efforts align with India's nationally determined contributions (NDCs) and the vision of achieving Net Zero by 2070. Through transparent competitive bidding, robust payment security mechanisms, and innovative business models, SECI has emerged as a trusted intermediary between renewable energy developers and power distribution companies (DISCOMs), enabling efficient project execution and affordable green power supply.

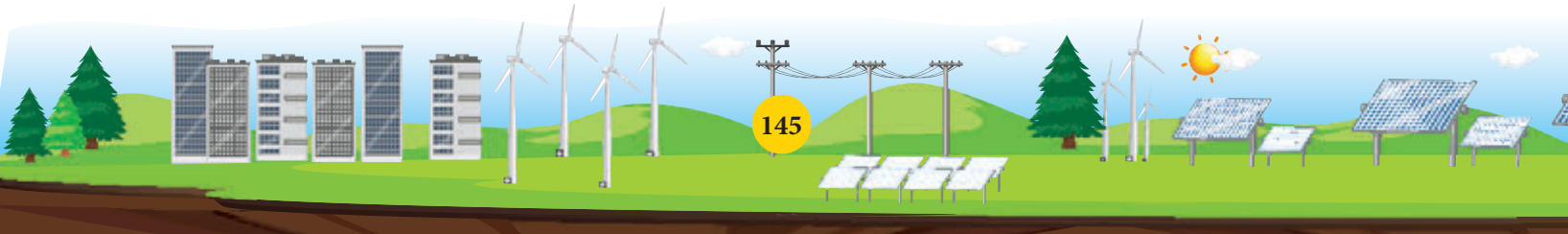
9.4.1 Major Highlights:

- Under its scheme tenders, SECI added 7.19 GW of Solar and 0.77 GW of Wind capacity (including hybrid components) which accounts for over 16% and 12%, respectively of the national capacity additions in FY 2025-26.
- SECI's landmark Green Ammonia tender under the SIGHT Scheme, targeting decarbonization of India's fertilizer sector discovered record-low prices, with bids as low as ₹49.75/kg, significantly lower than the international benchmark of ~₹110 per kg.
- SECI crossed milestone of 65 GW of Power Sale Agreements for Renewable Energy Projects, paving the way for India's Clean Power Transition. The milestone reflects SECI's leadership in advancing India's clean energy transition.
- SECI received an 'Excellent' rating for its performance under the Memorandum of Understanding (MoU) with the Ministry of New & Renewable Energy (MNRE) for FY 2024-25, scoring 97.36 out of 100. The rating was issued by DPE in January 2026, reflecting SECI's commitment to operational excellence and corporate governance standards.
- SECI successfully issued its maiden Debentures on the National Stock Exchange (NSE), raising ₹600 crore. The issue received an overwhelming response — 43 bids totaling ₹2,156.75 crore were received against the issue size of ₹600 crore, reflecting strong investor confidence.

9.4.2 Business Activities

9.4.2.1 Accelerating RE Expansion through Market Investments

SECI serves as the lead implementing agency for renewable energy projects in India, driving progress towards the nation's NDCs. Acting as the market interface between renewable energy developers and power off-takers, SECI facilitates project development through transparent, tariff-



based e-bidding on both pan-India and state-specific scales. As of 31.03.2026, SECI has awarded over 80 GW of RE capacity under its tenders, of which over 39 GW has been commissioned, accounting for ~14% of India's total non-fossil installed capacity.

Innovative Renewable Energy Supply Models: SECI has pioneered next-generation renewable energy procurement frameworks that integrate solar, wind, and energy storage technologies. These projects ensure higher reliability, better grid management, and enhanced capacity utilization factors (CUF). By encouraging co-located hybrid projects and round-the-clock renewable energy supply, SECI is enabling greater grid flexibility and optimized land use. As of 31.03.2026, SECI has awarded 13.12 GW under Hybrid/Peak Power/RTC/FDRE categories, with 2.939 GW commissioned.

Energy Storage Systems (ESS): Energy Storage Systems are central to addressing the intermittency challenges of renewable energy. By integrating large-scale battery storage with solar and wind assets, SECI ensures round-the-clock power availability and improved power quality. Such initiatives contribute to grid security and operational efficiency.

9.4.2.2 Emerging Areas:

National Green Hydrogen Mission: Under the National Green Hydrogen Mission implemented by MNRE, SECI is playing a key role in developing large-scale hydrogen and ammonia production capacities. India is well-positioned to emerge as a global hub for clean fuels, and SECI's tenders are helping build this ecosystem. SECI has awarded the following capacities under the SIGHT Scheme till 31.03.2026:

Technology	Awarded Capacity
Electrolyser Manufacturing	3,000 MW
Green Hydrogen Production	8,62,000 MT
Green Ammonia Production & Supply	7,24,000 MT

SECI's landmark Green Ammonia tender under the SIGHT Scheme targeting decarbonization of India's fertilizer sector discovered record-low prices, with bids as low as ₹49.75/kg.

PLI Scheme for High Efficiency Solar PV Modules: The Production Linked Incentive (PLI) Scheme for High Efficiency Solar PV Modules is one of the flagship manufacturing initiatives of the Government to strengthen domestic capability and reduce import dependence. SECI, as implementing agency for Tranche-II, has awarded 11 manufacturers for 39,600 MW cumulative capacity with an approved PLI outlay of ₹13,937.54 Cr.

9.4.2.3 Govt. Schemes handled by SECI:

SECI is involved in implementing various other schemes of MNRE, such as Solar Park scheme, VGF scheme, CPSU Scheme etc. As part of these initiatives, SECI takes on the responsibility of

disbursing Central Financial Assistance (CFA) to project implementing agencies. The disbursement of funds is based on achieving pre-defined milestones set forth by the respective schemes.

9.4.2.4 CAPEX Projects (Operational):

Project	Location	Capacity
Solar + BESS	Chhattisgarh	100 MW + 40 MW/120 MWh
BESS Project	Lakshadweep Islands	1.7 MW + 1.4 MWh
Solar Project	Badi Sid, Rajasthan	10 MW
Rooftop Solar	Andaman & Nicobar	1 MW
Solar Project (DRDO)	Karnataka	10 MW

The above operational projects collectively demonstrate SECI's technical expertise in designing and managing diverse RE solutions ranging from on-grid solar to battery-integrated systems. These initiatives also contribute to regional energy access and emission reduction.

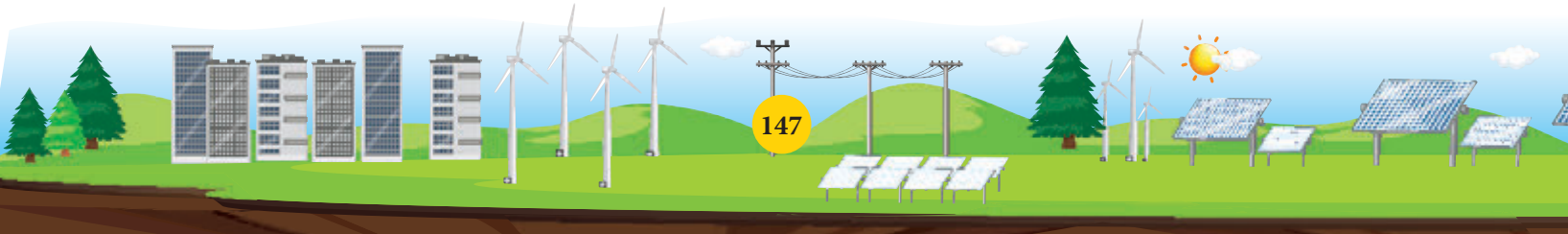
Under Implementation Projects:

Type	Location	Capacity
Floating Solar	Getalsud, Jharkhand	100 MW
Solar + BESS	Leh, Ladakh	25 MW
Solar (DCR)	Ramagiri, Andhra Pradesh	300 MW
Solar (DCR)	Dhar, Madhya Pradesh	200 MW
BESS	Nandiyal, Andhra Pradesh	1200 MWh

These projects are in advanced stages of development and reflect SECI's expanding project portfolio in varied terrains, including high-altitude and remote locations. Such initiatives also facilitate localized economic growth and green employment generation.

9.4.2.5 Project Management Consultancy (PMC): SECI provides PMC services for renewable energy projects undertaken by public sector and government entities. Its expertise spans feasibility analysis, bid process management, construction monitoring, and commissioning. Over 350 MW capacity has been successfully commissioned through this model till 31.03.2026. The Corporation is also exploring expansion of PMC services to international assignments, leveraging its experience in utility-scale projects.

9.4.2.6 Power Trading: SECI holds a Category-I Power Trading License, facilitating pan-India renewable energy trade. It acts as an intermediary procurer of RE power, executing PPAs with developers and corresponding PSAs with DISCOMs and other entities. Cumulative PSAs over 65 GW have been signed with various States/UTs and other buying entities. During FY 2025-26, trading volumes increased by 23.46 % to reach 62807 million units, reflecting robust operational growth.



9.4.3 Financial Performance

Highlights of Financial performance for fiscal year 2025-26, with comparative position of the previous year, are mentioned below-

Standalone Financials

Particulars	FY 2024-25	FY 2025-26	% increase in FY 2025-26 over 2024-25
Revenue from Operations (Rs. Cr.)	15185.1	18,446.80	21.48%
Net-Worth (Rs. Cr.)	3313.32	3,777.95	14.02%
Profit Before Tax (PBT) (Rs. Cr.)	671.95	772	14.89%
Profit After Tax (PAT) (Rs. Cr.)	501.92	578.53	15.26%

9.5 Indian Renewable Energy Development Agency Limited (IREDA)

9.5.1 Background

Indian Renewable Energy Development Agency Limited (IREDA) is a Navratna Central Public Sector Enterprise (CPSE) under the administrative control of the Ministry of New and Renewable Energy (MNRE). Established in 1987 as a Public Limited Government Company and registered as a Non-Banking Financial Institution (NBFI), IREDA is dedicated to promoting, developing, and financing projects in the fields of renewable energy, energy efficiency, and energy conservation. Guided by its motto "Energy for Ever", IREDA plays a pivotal role in driving India's clean energy transition.

9.5.2 Financial & Operational Performance

The key financial and operational highlights for FY 2025-26 are summarized below:

a. During the Financial Year 2025-26, IREDA has achieved highest-ever loan sanctions of ₹51,883.36 Crore, registering an increase of 9.34% over the previous year's sanctions of ₹47,453.11 Crore and highest ever loan disbursements of ₹ 34,945.67 Crore with a growth of 15.84% over the previous year's disbursement of ₹ 30,167.87 Crore.

b. The revenue from operations increased to ₹ 8,309.00 Crore, registering a growth of 23.23% over the previous year's revenue of ₹ 6,742.41 Crore.

c. Profit Before Tax (PBT) and Profit After Tax (PAT) increased to an all-time high of ₹ 2,336.92Crore (11.08% increase over last year) and ₹ 1,873.34 crore (10.29% increase over last year) respectively at the end of FY 26.

d. The loan book of the Company has grown from ₹76,281.65 Crore as on 31st March, 2025 to ₹ 93,068.71Crore as on 31st March, 2026 registering a growth of 22%.

e. The loans sanctioned during Financial Year 2025-26 would support power generation capacity addition of 6,975 MW, RE Equipment Manufacturing of 24,100 MWp per annum, Biofuel Ethanol production of 100 KLPD, Biomass (CBG) 15 TPD, Lithium-ion Cell Manufacturing 1.00 GWh and Biomass Pellet Manufacturing of 10.50 TPH.

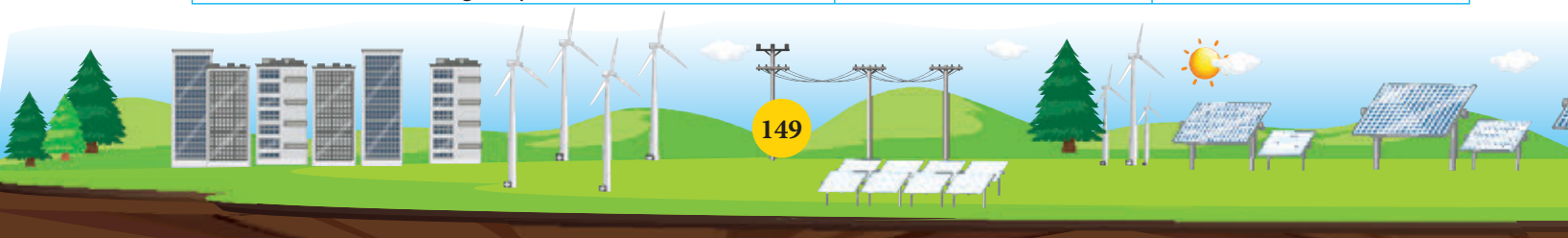
Sector-wise loan sanctions, disbursements, and cumulative achievements as of 31.12.2025 (FY 2025-26) are shown below:

Sector-Wise Break-up of Loan Sanctions and Disbursements during FY 2025-26 as on 31.12.2025

Sector	Sanctions	Disbursements
Solar Energy	9,344.85	5,386.15
Wind Power	1,256.49	480.84
Hydro Power	94.88	203.44
Biomass Power & Cogeneration	682.50	687.50
Short Term Loan	500.00	535.55
Electrical Vehicle (EV)	200.00	70.68
Biomass (Briquetting, Gasification & Methanation from Industrial Effluents)	103.86	148.58
Loan Facility to State Utilities	10,550.00	8,700.00
Hybrid Wind & Solar	3,510.47	1,022.57
Ethanol	281.00	1,797.44
Manufacturing	11,507.33	4,380.84
Waste to Energy		13.99
Miscellaneous (Transmission Lines, Emerging Technology, Guarantee Assistance)	2,068.63	1,475.71
Total	**40,100.01**	**24,903.30**

Sector-Wise Break-up of Cumulative Loan Sanctions and Disbursements as on 31.12.2025

Sector	Sanctions	Disbursements
Solar Energy	69,921.23	43,460.87
Wind Power	39,537.56	28,749.26
Hydro Power	22,361.66	13,483.04
Biomass Power & Cogeneration	6,322.88	4,279.15
Energy Efficiency & Conservation	1,381.71	441.54
Waste to Energy	1,144.93	732.09
National Clean Energy Fund (NCEF)	156.57	127.14
Bill Discounting	181.97	161.76
Bridge Loan	223.86	152.90
Short Term Loan	13,584.35	8,410.62
Electrical Vehicle (EV)	2,258.17	1,317.59
Biomass (Briquetting, Gasification & Methanation from Industrial Effluents)	1,166.04	818.52
Guaranteed Emergency Credit Line (GECL)	565.1	539.84



Loan Facility to State Utilities	54,912.00	51,545.00
Hybrid Wind & Solar	8,739.05	4,093.35
Ethanol	10,709.55	8,466.79
Manufacturing	28,335.70	10,276.04
Miscellaneous (Transmission Lines, Emerging Technology, Guarantee Assistance)	16,513.33	3,932.34
Total	2,78,015.65	1,80,987.84

9.5.3 Resource Base

The total borrowings of IREDA stood at ₹ 77,845.63 Crore as on March 31, 2026 as against ₹ 64,740.31Crore in the previous year. During the Financial Year 2025- 26, IREDA has mobilized ₹31,913.63 Crore from both domestic and foreign currency borrowings.

Net Worth of the Company placed at ₹ 13,781.35 Crore at the end of the Financial Year 2025-26, registering an increase of 34.24 % over the previous year's Net Worth of ₹10,266.16 Crore. The authorized and paid-up capital of IREDA stood at ₹6,000 crore and ₹ 2,809.23 respectively at the end of Financial Year 2025-26.

9.5.4 MoU with MNRE

IREDA has signed a Memorandum of Understanding (MoU) with the Ministry of New and Renewable Energy (MNRE), setting key performance targets for the Financial Year 2025–26. The Company's performance for the Financial Year 2024–25 has been rated "Excellent." This achievement marks the fifth consecutive year that IREDA has received the highest rating, underscoring its unwavering commitment to operational excellence and adherence to the highest standards of corporate governance.

9.5.5 MNRE Schemes

IREDA is the Implementing Agency for the four MNRE Scheme / Programmes, namely:

a. National Programme on High Effciency Solar PV Modules under Production Linked Incentive, Tranche-I

b. Central Public Sector Undertaking Scheme Phase II for setting up grid-connected Solar PV projects under Tranche III

c. Programme on Energy from Urban, Industrial & Agricultural Wastes/Residues as part of the National Bioenergy Programme, Phase I

d. Solar & Wind Generation Based Incentive (GBI) Schemes

9.5.6 Human Resource Development

A motivated and skilled workforce forms the foundation of IREDA's high-performance culture. To fully leverage its human capital, the company continues to invest in specialized training

and capacity-building programs offered by reputed institutions / organizations. IREDA has strengthened its human resources by inducting talent across various functional areas, aligning workforce expansion with the organization's growing operational requirements in the renewable energy sector. The addition of skilled professionals has introduced fresh perspectives, fostered innovation, and enhanced operational efficiency, further reinforcing IREDA's commitment to transparency, excellence, and sustainable growth.

IREDA nurtures a safe, inclusive, and enabling work environment that supports both professional and personal growth. To promote employee well-being, the company conducts daily yoga and meditation sessions, along with regular preventive health check-ups. During the year, IREDA celebrated several key events, including International Yoga Day, Hindi Pakhwada, and International Women's Day. The company also actively participated in the Swachhata Hi Seva 2025 campaign under the theme 'Swachhotsav', organizing a range of cleanliness and awareness activities.

IREDA remains committed to providing equal growth opportunities for women, in line with the Government of India's vision of gender inclusivity. Women employees continue to play significant roles in key functional and strategic areas across all hierarchical levels. Representing 23.35% of the total workforce, women employees have made valuable contributions to the organization's continued success.

The company strictly adheres to the Government of India's reservation policy for Scheduled Castes, Scheduled Tribes, Other Backward Classes, Persons with Disabilities, and Economically Weaker Sections, meticulously maintaining the prescribed reservation rosters. Employee relations remained cordial and harmonious throughout the year, with no loss of man-days reported.

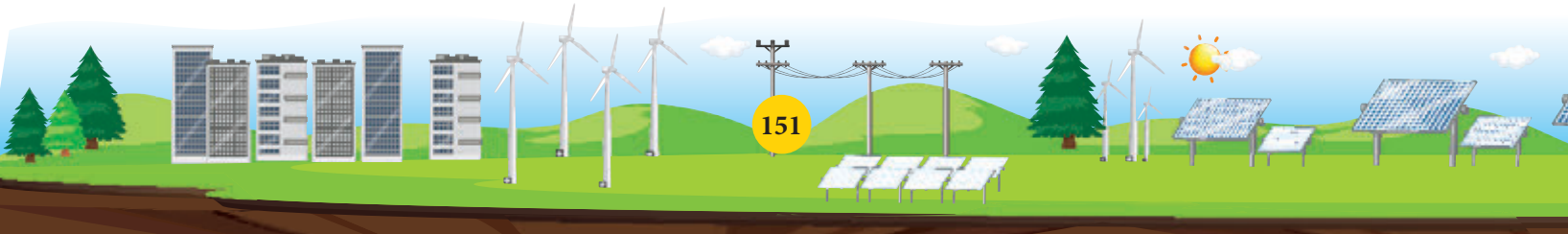
As on 31.12.2025, the Company has 227 fulltime employees comprising of 211 Executives (including 02 Board Level Executives) and 16 Non-Executives.

9.5.7 Corporate Social Responsibility

IREDA, being committed to operate and grow in a socially and environmentally sustainable manner, endeavours to optimally contribute towards the welfare of society at large. Under its CSR Policy and in alignment with the communally responsible regulatory framework prescribed by the Government of India, IREDA invests its resources in projects that are economically, socially, and environmentally sustainable.

In line with this commitment, IREDA continues to enhance its value creation for society by supporting sustainable community and environmental projects in the areas of healthcare, nutrition, renewable energy, energy efficiency, clean technologies, and other initiatives contributing to the social and environmental development of the country.

For the Financial Year 2025-26, a **CSR Budget of ₹ 3,260.45 Lakhs** has been allocated. As on **31st December 2025**, an amount of **₹ 1595.08 Lakhs** has been sanctioned from this budget.



During the Financial Year 2025-26, the Company has undertaken the following activities/projects under its CSR initiatives, as summarized in the table below:

	CSR Initiatives undertaken by IREDA during the year 2025 - 26 (1st April, 2025 to 31st December, 2025)	
S. No	Description	₹ / Lakhs
1	Financial assistance to Samphia Foundation, Kullu, Himachal Pradesh towards operational expenses of two (2) Mobile Medical Vans for running the "Therapy on Wheels" Program for serving children with disabilities	54.30
2	Financial assistance through M/s Rajasthan Electronics & Instruments Limited (REIL) for Supply / Installation / Commissioning and Maintenance of 100 kWp Off-Grid SPV Power Plant (Car Port Structure Type) at BSF Longewala, Jaisalmer, Rajasthan	137.40
3	Financial assistance to M/s Bhagwan Mahaveer Child Welfare Trust for providing primary education to remote and slum area children via 25 nos. of Single Teacher Schools in Jaipur, Rajasthan	22.50
4	Contribution to the Indian Institute of Technology, Delhi towards procurement, performance evaluation, testing, and showcasing a Compressed Bio-Gas (CBG) Car to visitors from across the nation and world.	20.00
5	Financial assistance to M/s. Divya Pragati Sewa Sansthan for organizing four Health Check-up Camps in Rural Areas of District- Unnao, Lucknow, Uttar Pradesh.	10.34
6	Financial assistance to M/s SLS Trust towards supply and installation of solar Power Systems at Govt. Woman's College, Rairangpur, Govt. (SSD) Girl's High School, Rairangpur, Govt. Girl's High School, Rairangpur and Skill Training Hub, Pahadpur in Mayurbhanj district, Odisha	167.35
7	Financial assistance to Jila Civil Social Responsibility Association (JCSRA) for Procurement of necessary Medical Equipment for Community Health Centres (CHCs) of Aspirational District Siddharthnagar, Uttar Pradesh	305.75
8	Financial assistance to The Central Govt. Employees Consumer Cooperative Society Ltd. (Kendriya Bhandar) for supply and installation of 45 kW grid solar power system at water pumping station near Podar International School, Old Goa	28.85
9	Financial assistance to Jetvan Vipassana Meditation Centre for supply and installation of 50 kW Off-Grid solar power system at Vipassana Meditation Centre, Shravasti, Uttar Pradesh	39.75
10	Financial assistance to The Central Govt. Employees Consumer Cooperative Society Ltd. (Kendriya Bhandar), towards supply and installation of Solar Water Coolers with RO Water Purifiers in 11 nos. of Government Schools of Mayurbhanj district, Odisha	96.00
11	Contribution of Rs. 50,00,000/- from CSR funds of IREDA for FY 2025-26 to India International Centre (IIC), New Delhi for supporting and developing artistic and cultural activities, traditions with special emphasis on Young & Budding Artistes.	50.00

12	Financial assistance to Samphia Foundation, Himachal Pradesh towards installation and operationalizing a Community Radio Station (Radio Kullu 90.4 FM) at Kullu, Himachal Pradesh	35.40
13	Financial assistance to The Central Govt. Employees Consumer Cooperative Society Ltd. (Kendriya Bhandar) towards procurement and installation of 11 Ice-Lined Refrigerators (ILRs) in the Community Health Centers (CHCs) and Primary Health Centers (PHCs) across Solan District, Himachal Pradesh	97.71
14	Financial assistance to The Central Govt. Employees Consumer Cooperative Society Ltd. (Kendriya Bhandar) towards supply and installation of Smart Classes in 21 Schools across the aspirational district of Chandauli, Uttar Pradesh.	98.09
15	Financial assistance to M/s Doctors For You (DFY) towards supply and delivery of Electric Vehicles to be utilized at Homi Bhabha Cancer Hospital & Research Centre, Muzaffarpur, Bihar	118.45
16	Financial assistance to The Central Govt. Employees Consumer Cooperative Society Ltd. (Kendriya Bhandar) towards supply and installation of Hemodialysis Machines and other medical equipment in District Hospital Rajgarh and Civil Hospital, Biaora, Madhya Pradesh.	133.14
17	Financial assistance to The Central Govt. Employees Consumer Cooperative Society Ltd. (Kendriya Bhandar) towards supply and installation of Smart Classes in 20 Schools across the aspirational district of Balrampur, Uttar Pradesh.	93.42
18	Financial assistance to Vinayaka Institute of Emergency Medical Sciences for supply and installation of five (05) Dialysis machines at hospitals in Sikkim (two units at Jorethang CHC, Sikkim and three units at District Hospital, Soreng Sikkim)	86.63
	Total	1595.08

9.5.8 Awards

IREDA's contribution towards development and promoting Renewable Energy Sector in the country has been recognized with the following awards:

a. CMD, IREDA was conferred with the prestigious 'CMA ICON 2025' award by The Institute of Cost Accountants of India on 23.06.2025. Director (Finance), IREDA, was also felicitated with a Certificate of Appreciation.

b. IREDA bagged the Excellence in Cloud Adoption Award, Digital Transformation leader of the Year and Digital Security Leader of the Year Award at 10th India PSU IT Awards 2025 by Governance Now.

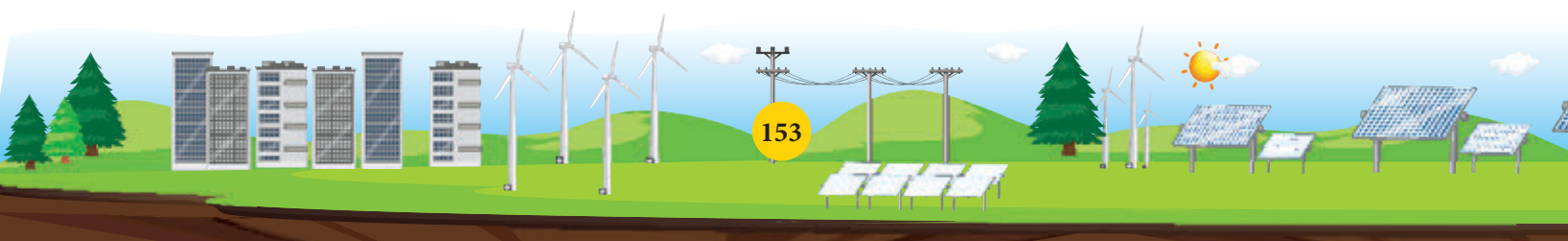


Fig. 9.27: IREDA signed MoU with MNRE for Financial Year 2025-26

Capacity Building, Awareness & Outreach Programme

10.1 Information And Public Awareness Programme

10.1.1 India stands 4th globally in terms of renewable energy installed capacity including large hydro. The Ministry has worked systematically for putting in place facilitative policies and programmes for achieving the goal. In order to percolate the initiatives, benefits and usage of renewable to the masses, information dissemination and publicity is essential. In this background, I&PA programmes for renewable energy are conceptualized and developed for implementation.

10.1.2 The main objective of I&PA Programme is to Create awareness and disseminate GoI's plans and programs in New & Renewable Energy area to the society at large through various media. The Programme is implemented using Government channels viz. (i) Central Bureau of Communication (CBC) (ii) National Film Development Corporation (NFDC); (iii) Doordarshan; (iv) All India Radio (AIR); (v) State Nodal Departments/Agencies for renewable energy; and (vi) NGOs/ Academic institution, etc., and participation in exhibitions of national importance by the Ministry and also through other relevant Institutions/Organizations.

10.1.3 During the year 2025, the Ministry implemented a Renewable Energy media strategy that included organizing major events, providing financial support to State Nodal Agencies through IREDA, extending logo support to renewable energy events, producing short films on key schemes showcased at the World Expo in Osaka and PM sector review, and carrying out extensive publicity through social media, FM radio.

10.1.4 To strengthen the existing programme in the evolving information age, the Ministry of New and Renewable Energy continues to expand its presence across social media platforms including Facebook, Instagram, LinkedIn, YouTube, and Twitter. A dedicated Social Media Cell is operational and actively disseminates accurate and timely information to citizens, industry stakeholders, and researchers. Over the past year, the Cell has implemented structured content strategies such as the A–Z Renewable Energy Knowledge Series, scheme awareness campaigns, and milestone announcements related to solar, wind, green hydrogen, and bioenergy initiatives. The Cell has also enhanced engagement through initiatives such as interactive quizzes, myth-vs-fact posts, and success stories highlighting

beneficiaries of flagship programmes such as PM KUSUM and PM Surya Ghar: Muft Bijli Yojana. Through regular monitoring of analytics and weekly performance reporting, the Social Media Cell has improved content optimization, strengthened outreach to a highly niche follower base comprising industry professionals and renewable energy users, and increased citizen awareness of Ministry schemes, missions, and achievements. These efforts have contributed to better public understanding of renewable energy initiatives and their positive impact on India's sustainable development goals.

10.2 Human Resource Development

10.2.1 Capacity building and skilling are crucial in renewable energy (RE) for meeting ambitious climate goals, driving economic growth by creating green jobs, ensuring project success through skilled installation and maintenance and achieving energy security etc. Human Resource Development (HRD) Programme of MNRE aims to institutionalize the renewable energy education and training to meet the requirement of qualified and trained manpower in the country. HRD Programme supports trainings for manpower at all levels including promoting higher studies and research courses by providing Fellowships to students and research scholars in R&D and academic institutions in Renewable Energy. Support is also provided to R&D and academic institutes for up-gradation of their laboratories for conducting higher degree courses at the Post-Graduate and Doctoral levels in New and Renewable Energy. Under Short-term training programmes of HRD scheme, Skill Development Programmes, namely ***Suryamitra***, ***Varunmitra***, ***Vayumitra*** and ***Jalurjamitra*** were implemented to train the workforce for installation, commissioning, operation and maintenance of renewable energy projects. Ministry has also sanctioned Jaiv Urja Mitra programme for Agri-Residue Aggregator, Biomass Depot Operator, Technicians (O&M) for CBG and Pellets/Briquettes manufacturing considering the potential employment opportunities in rural areas.

Various components of the HRD scheme are as follows:

a. Support to educational and other training organizations for conducting short-term trainings on various aspects of Renewable Energy with focus on skill development at all levels. Skill development programmes such as Solar PV Technician (Suryamitra), Solar Water Pumping Technician (Varunmitra) Wind Power Plant Technician (Vayumitra) and Small Hydro Power Plant Technician (Jalurjamitra).

b. National Renewable Energy Fellowship (NREF) Scheme for pursuing M.Sc./M.Tech/ PhD/ PDF degree courses.

c. Support to higher educational institutions for laboratory upgradation.

d. National Renewable Energy Internship scheme (NREI).

e. Renewable Energy Chair.

10.2.2 National Renewable Energy Fellowship Scheme

MNRE continued its support to students and scholars for pursuing higher studies such as M.Sc, M.Tech, Ph.D courses in Renewable Energy through ongoing fellowships in selected educational institutions by providing fellowships or stipend under NREF Scheme. In Financial Year 2025-26, MNRE continued its support by providing 62 nos. fellowships (ongoing 46 fellowships and new 16 no. fellowships i.e 6 JRF, 9 M. Tech and 1 no. RA) till December 2025 to scholars and students for pursuing higher studies in selected educational institutions under NREF Scheme. The fellowship payments are released through Direct Benefit Transfer (DBT). The list of institutes supported by fellowships is given in Table 10.1

Table 10.1: Details of Institutes supported for fellowships for FY 2025-26

S. no.	Name of Department/Institute
1	Indian Institute of Technology, Kanpur
2	Indian Institute of Technology, Roorkee
3	Centre for Energy Studies, Savitribai Phule Pune University, Pune
4	Department of Applied Sciences and Humanities, Jamia Milia Islamia University
5	CSIR-National Physical Laboratory (NPL), New Delhi
6	Cochin University of Science & Technology, Kochi
7	Department of Green Energy Technology, Pondicherry University
8	Department of Energy, Tezpur University, Assam
9	National Institute of Bio Energy/NIT Jalandhar
10	National Institute of Solar Energy (NISE)

10.2.3 Skill Development Programmes and Trainings

The short-term training component of HRD programme, focuses on creation of skilled/trained technicians making them industry ready for installation, operation and maintenance of various RE projects. All the skill development programmes are residential programmes for the duration of 45 – 90 days. These programmes are 100% funded by MNRE as per guidelines of M/o Skill Development and Entrepreneurship (MSDE). Training cost per trainee is about Rs.55,000/- to 79,000/- in these programmes. Assessment and certification is done by Skill Council Green Jobs (MSDE skill council) and uploaded on Skill India portal.

(a) **Solar PV Technician (Suryamitra Skill Development) Programme :** Solar PV Technician (Suryamitra) training was initiated by the Ministry in 2015 to develop work force to meet the demand of solar energy sector. The programme is implemented by about 400 training institutes on Pan-India basis through National Institute of Solar Energy, Gurugram. These trainings are being organized through empanelled Training Centres and partner organizations

in different states across the country empanelled through a transparent process by NISE. In Financial Year 2025-26, training of 2550 no. of Suryamitras were allocated to NISE. In FY 2025-26, 5666 no. of Suryamitras were trained and training of 4077 no. of Suryamitras is undergoing. A cumulative 66351 nos. of Suryamitras have been trained as on December 2025 out of which 33705 no. candidates got employment.

Table -10.2 State wise list of trained and employed manpower under Suryamitra Skill Development Programmes (up to 31.12.2025)

S. No.	State/UT	No. of Suryamitras	
		Trained	Employed
1	Andaman and Nicobar Islands (UT)	0	0
2	Andhra Pradesh	2364	1335
3	Arunachal Pradesh (NER)	150	21
4	Assam (NER)	1710	970
5	Bihar	2276	1300
6	Chandigarh (UT)	291	191
7	Chhattisgarh	2477	1343
8	Dadra and Nagar Haveli and Daman & Diu (UT)	0	0
9	Delhi	719	336
10	Goa	321	202
11	Gujarat	3567	2104
12	Haryana	1710	735
13	Himachal Pradesh	564	203
14	Jammu and Kashmir (UT)	1532	529
15	Jharkhand	936	510
16	Karnataka	2281	959
17	Kerala	1018	561
18	Ladakh (UT)	46	24
19	Lakshadweep (UT)	30	0
20	Madhya Pradesh	6938	3396
21	Maharashtra	5273	2879
22	Manipur (NER)	150	50
23	Meghalaya (NER)	60	44

24	Mizoram (NER)	0	0
25	Nagaland (NER)	60	0
26	Odisha	2927	1360
27	Pondicherry (UT)	149	61
28	Punjab	878	485
29	Rajasthan	6001	3256
30	Sikkim (NER)	30	20
31	Tamil Nadu	4351	2304
32	Telangana	3987	2297
33	Tripura (NER)	238	73
34	Uttar Pradesh	7294	2896
35	Uttarakhand	1235	639
36	West Bengal	4622	2246
Total:	66351	33705	

(a) **Varun-mitra Programme:** Ministry supported Solar Water Pumping Technician Training Programmes (***Varunmitras***) on Solar Water Pumping Systems to National Institute of Solar Energy (NISE), Gurugram. These training programmes are being organised by NISE with various partner institutions such as Government Institutions, Engineering Colleges, Polytechnics and Other affiliated institutions, which have been empaneled through Expression of Interest (EOI). Total 1366 Nos. of ***Varunmitras*** were trained under Solar water pumping Technician training programme including training of 90 no. of ***Varunmitras*** in FY 2025-26 up to December, 2025. Another, 60 candidates are undergoing training.

(b) **Vayu-mitra Skill Development Programme:** Vayumitra Skill Development Programme (VSDP) Phase -1 was launched to train Wind Power Plant Technicians for Wind Energy Projects. National Institute of Wind Energy (NIWE), Chennai has implemented these trainings. The programme has been completed in March 2025 with successful training of 2160 candidate and 281 trainers. State wise trained and employed vayumitras are shown below:

Table -10.3 State wise list of trained and employed manpower under Vayu-mitra Skill Development Programmes (Phase-1)

S. No.	State/UT	No. of Suryamitras	
		Trained	Employed
1	Gujarat	210	80

2	Karnataka	30	0
3	Madhya Pradesh	120	93
4	Maharashtra	600	195
5	Rajasthan	360	113
6	Tamil Nadu	840	565
	Total	2160	1046

Vayumitra Skill Development Programme (VSDP phase II)-"Wind Farm Engineer" has been started with the revised qualification pack for training of 1125 number of candidates for the period of 2025-26 to National Institute of Wind Energy (NIWE), Chennai. Under this programme 15 Master trainers and 54 trainers were trained as on 31.12.2025.

(c) Jal-Urjamitra Skill Development Programme: Ministry has launched the Jal-Urjamitra Skill Development Programme to train technicians for maintenance of Small Hydro Power Projects with a target to develop over 1700 no. of skilled manpower for the period of 5 years i.e. FY 2021-22 to 2025-26. Hydro and Renewable Energy Department, Indian Institute of Technology, Roorkee is coordinating the programme. HRED, IIT Roorkee has empanelled 18 Training Centres (TCs) to impart training under Jal Urjamitra skill development programme. Up to December 2025, 931 no. of candidates and 66 no. of trainers have been trained and training of 540 Jal urjamitras are undergoing. State wise list of Jalurjamitras is given in table 10.4.

Table - 10.4: State wise list of trained and employed manpower under Jal-urjamitra skill development programmes (up to 31.12.2025)

S. No.	State/UT	No. of Jal Urja Mitra	
		Trained	Employed
1	Andhra Pradesh	120	26
2	Arunachal Pradesh	29	24
3	Himachal Pradesh	44	0
4	Karnataka	53	42
5	Maharashtra	90	49
6	Odisha	270	218
7	Tamil Nadu	85	0
8	Uttarakhand	240	153
	Total	**931**	**512**

10.2.4 National Renewable Energy Internship Scheme (NREI)

Under the National Renewable Energy Internship (NREI) programme, the Ministry provides internship opportunity to students pursuing under-graduate, post graduate degree or research scholars enrolled in recognized institutions or universities within India or abroad, as Interns to understand the various activities/policies/schemes in RE sector. In FY 2025-26, 53 no of students perusing B.Tech, M.Tech, M.A, MBA, LLB ,B.Voc on RE etc. have successfully completed internships in MNRE and in its institutions while 26 internships are ongoing as on December, 2025.

10.2.5 Third party evaluation of HRD Scheme

For further continuation of HRD scheme beyond 31.03.2026, the scheme has to be evaluated by Third party as per MoF guidelines. Based on RfP, M/s Forvis Mazars Advisory LLP, Gurugram was selected through QCBS Mode. An independent evaluation study has been undertaken to assess the impact, efficiency and sustainability of HRD programme of the Ministry implemented during the period i.e FY 2021-22 to 2025-26. Division has several of meetings with third party Agengy. Agency has submitted final draft report.

The report provides an evidence-based assessment of high employment outcomes of skilled manpower, strong trainee satisfaction, significant earning potential, catalyst for entrepreneurship, development of qualified manpower through fellowship and internship programmes. They also highlighted operational gaps and suggest refinements in one or two components for the next HRD programme.

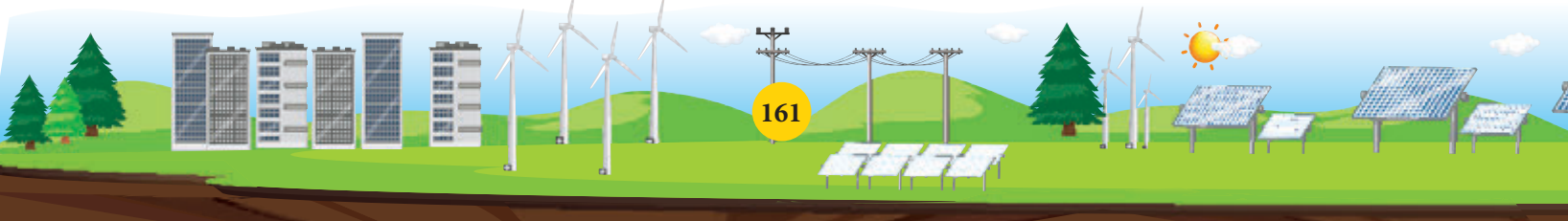
This analysis reveals an urgent need for strengthening the HRD program of MNRE to leverage the programme's proven strengths in job creation to seize the historic opportunity of India's green transition.

10.3 Capacity Building and Training Initiatives under Mission Karmayogi

The Ministry of New and Renewable Energy (MNRE) has made significant progress in enhancing its capacity-building efforts, guided by the comprehensive vision of Mission Karmayogi. Launched in September 2020, Mission Karmayogi, also known as the National Programme for Civil Services Capacity Building (NPCSCB), is designed to modernize and empower India's civil services through a competency-based approach. By shifting focus from rules to roles, the mission promotes effective governance and service delivery through structured learning and continuous performance analysis.

10.3.1 Learning on iGoT Platform

The Integrated Government Online Training (iGOT) Karmayogi platform, offering diverse learning modes including online, offline, and blended, plays a pivotal role in scaling these efforts across the Ministry. Ministry achieved 100% onboarding of its employees and its institutions,



encompassing both regular and contractual staff, with all officers actively participating in a range of learning programs. A total of 10,290 learning hours have been logged, and the Ministry has successfully enrolled 9,348 courses, with 6,806 course completions. This reflects a completion rate of approximately 72.80%, demonstrating a robust learning culture within MNRE. Special workshops were conducted for MTS both regular and contractual staff of the Ministry.

10.3.2 Rashtriya Karmayogi Programme

The Rashtriya Karmayogi Program for Central Government Personnel is a part of Mission Karmayogi rolled out by Capacity Building (CBC). It has a 2-fold goal i.e. Inside goal-Developing Seva Bhaav and rediscovering one's inner purpose & Outside goal-Serving national goals & serving all stakeholders better. Under Phase-1 of the programme two ministry officials- Shri Sanjay Kumar Shahi, Scientist-E and Shri S.R. Meena, Scientist-E have been trained as Master Trainers who further trained the officials of MNRE in batches of 30 to 35 each.

MNRE has completed Phase I of the Rashtriya Karmayogi Large Scale Jan Seva Programme under Mission Karmayogi by covering 193 officials of MNRE in six batches facilitated by CBC-designated above Master Trainers of MNRE – covering all levels of MNRE staff — from Directors to MTS/ staff card drivers, ensuring inclusive participation. A felicitation ceremony was conducted for Top learners of MNRE under Mission Karmayogi on 16.06.2025 where all the winners felicitated by Secretary, MNRE.

Fig: 10.1 Rashtriya Karmayogi Large Scale Jan Seva Programme under Mission Karmayogi

10.3.3 Know Your Ministry (KYM Module)

One of the key activities under Mission Karmayogi is the development of the Know Your Ministry (KYM) module — a short, online induction training course for employees posted within various Ministries, Departments, and organizations. A comprehensive KYM module for the Ministry

has been developed, showcasing its history, policies, schemes, and other key information. Eleven modules have been prepared for MNRE, which are currently in the beta stage. After finalization, the modules will move to the gold stage, following which HRD discussed with different divisions and agencies & finalized module for beta stage.

10.3.4 Mandatory Courses on iGoT Platform

As per DoPT guidelines, Ministry identified mandatory annual course completion and comprehensive assessment framework on iGOT Karmayogi Portal for all employees. The status of course completion for mandated courses and the assessment performance of the employee will be directly fetched from iGOT portal and reflected in the APARs of the employees from the reporting period 2025-26 (corresponding to the APAR cycle of 2026-27). Accordingly, the Ministry in consultation with CBC, has identified relevant courses on the iGOT platform for officers (at each level) of the Ministry and assigned these courses to all the employees at each level.

10.3.5 Domain Course development for iGoT

The Ministry is in the process of developing domain-specific courses. Of these, four courses are being developed by IIT Roorkee and two by National Institute of Wind Energy (NIWE). Additionally, two courses have been developed on Green Hydrogen under NGHM of MNRE, at the Karmayogi Bharat studio.

10.3.6 Capacity building of attached Institutions and PSUs

Ministry facilitated a dedicated workshop in collaboration with capacity building commission to orient attached organizations on developing their ACBP-Lite versions and encouraged nomination of officials to suitable courses.

10.3.7 Lecture session on Women in Business: Opportunities and challenges

The Ministry of New & Renewable Energy organised a lecture on "Women in Business: Opportunities & Challenges - Insights of Successful Business Women" at Atal Akshay Urja Bhawan, New Delhi on 21.08.2025.

The speakers, Dr. Rashi Gupta (Vision Mechatronics), Ms. Vaishali Nigam Sinha (Renew Foundation) & Dr. Vidya Murkumbi (Shree Renuka Sugars) shared their journeys of overcoming challenges and encouraged women to take bold steps in building enterprises and creating opportunities for the next generation.

Shri Santosh Sarangi, Secretary, MNRE applauded the eminent speakers for leading with grace, breaking barriers, and being true role models. He highlighted how women are driving change in business & entrepreneurship and inspiring future leaders with their vision.

Fig:10.2 Lecture session on Women in Business: Opportunities and challenges

10.3.8 Fourth National Conference of Chief Secretaries

The 4th National Conference of Chief Secretaries was held on 13th to 15th December 2024. The theme for this National Conference was "Promoting Entrepreneurship, Employment & Skilling - leveraging the Demographic Dividend". One of the sub-themes/pillars under this theme is "Opportunities in Green Economy" which includes Skilling and Job Creation in the Renewable Energy Sector. MNRE was the nodal agency for this theme and Secretary led the presentation session.

NITI Aayog has forwarded the minutes of the meeting of the 4th National Conference of Chief Secretaries along with the action points of Ministry which includes RE Skills and Job session (16 Nos) and Thematic session (2 Nos.) points. The action taken report of the action items are being updated on the CS conference portal regularly.

The following Sixteen Action Points were covered:

i. Strengthening industry participation in training
ii. Planning for hyper localized jobs in RE concentrated districts
iii. Use of ITIs and polytechnics and other institutes for RE skilling
iv. Integration of green skills with state skilling missions
v. Development of state renewable energy job portals
vi. Policy & Support for Entrepreneurship
vii. Enhance women participation in RE skilling, employment and Entrepreneurship in RE
viii. Encouragement of start-ups in solar O&M, biomass supply chains
ix. Plugging regional gaps
x. Strengthening trainer certification

The action taken under the major action points such as identification of 100 RE concentrated districts, 100 training institutes as RE institutes etc. were presented by NITI Aayog along with ATR of other ministries during 5th National Conference of Chief Secretary held on 27th to 29th December 2025.

One of the action points is that the Industries / Associations were requested to host a workshop to identify HR Policies and other interventions and women's participation in RE. Accordingly, Ministry conducted a "**National Conference on Skill Development for Renewable Energy Workforce**" to discuss the strategies for development of Renewable Energy Workforce for inclusivity, Resilience and empowerment (REWIRE) on 20.06.2025, in association with National Solar Energy Federation of India (NSEFI).

Fig: 10.3 National Conference on Skill Development for Renewable Energy Workforce

10.4 Vigilance

The Vigilance Division of the Ministry of New and Renewable Energy (MNRE) handles complaints against officers of the Ministry in accordance with CVC/DoPT guidelines. The Division also examines complaints against Board-level officers of two CPSUs, namely the Indian Renewable Energy Development Agency Limited (IREDA) and the Solar Energy Corporation of India Limited (SECI), and supervises vigilance work in organizations under its purview, namely three autonomous bodies: the National Institute of Solar Energy (NISE), the National Institute of Wind Energy (NIWE), and the Sardar Swaran Singh National Institute of Bio-Energy (SSS-NIBE). The Vigilance Division is also entrusted with the task of maintaining and scrutinizing Annual Performance Appraisal Reports (APARs) and Immovable Property Returns (IPRs) of officials within the Ministry.

The complaints received by the Vigilance Division during the year 2025 were examined in accordance with the applicable rules and guidelines, and necessary actions were taken wherever violations of rules were found.

The "Vigilance Awareness Week, 2025" was observed in the Ministry from 27.10.2025 to 02.11.2025. This year's theme for the Vigilance Awareness Week was "Vigilance: Our Shared Responsibility." During the week, the Integrity Pledge was administered to all staff and officers by the Secretary, MNRE. Banners and posters related to Vigilance Awareness Week, 2025 were displayed. Various activities, including a poster-making competition and a quiz competition, were conducted during the week. Additionally, a training session on Cyber Security was also organized.

Efforts were made to promote awareness among citizens and officials about complaints under the Public Interest Disclosure and Protection of Informers (PIDPI) Act.

Fig: 10.4 Vigilance Pledge 2025

10.5 Library

The Library of the Ministry of New and Renewable Energy acts as a reference center and knowledge house in the field of renewable energy. At present 12,987 books (including gifted books) are available in the library covering diverse subjects such as Renewable Energy, Climate Change, Natural Sciences, Sustainable Development, History, Sociology, Indian Literature, Computer Science, etc. The collection in the library also includes books of general interest like food, cooking, sculpture, painting, mountaineering, etc. Currently, the library is subscribing 100 Licenses of Magzter Digital Reading platform for the officers of this ministry.

(ii) The Library Committee constituted in the Ministry scrutinizes and recommends the books, periodicals etc. for procurement by the library.

(iii) The library is also subscribing to 35 Magazines & 23 Newspapers in Hindi and English languages. The library is using cloud based library software e-granthalaya version 4.0 for accessing the Library Catalogue to library users, Circulation (issue-return) and Membership Management etc.

10.6 E-Governance/Information Technology (IT) Initiatives

10.6.1 The ministry aims to digitize it's all activities through use of the IT tools. MNRE has developed and is maintaining following web portals and Mobile apps for transparency in operations and better service delivery to stakeholders under Digital India Initiative of the Government of India:

I. Details of various portals being developed/ have been developed by MNRE.

(a) Ministry's Official Website (https://mnre.gov.in): Ministry's official website has been redesigned and redeveloped in SWAAS (Secure, Scalable, Sugamya (Accessible) cloud service) platform. The new website was made live in October 2023. It is a bilingual website (Hindi and English) for information on all its schemes, physical achievements and division officers.

(b) National Portal for Rooftop solar (https://solarrooftop.gov.in): An online portal with simplified procedure for residential consumers to have flexibility to get the rooftop solar plant installed by themselves or through vendor of their choice. This portal has been developed to simplify the procedure for Rooftop Solar Programme. The portal has been integrated with DBT, SANDES, PRAYAS, and NGO DARPAN.

(c) Human Resource Development (HRD) Portal (https://hrd.mnre.gov.in): A portal developed to institutionalize renewable energy education and training to meet the requirement of qualified and trained manpower in the country under five different schemes. Beneficiaries can submit online applications/proposals for following programmes:

i. Short term trainings and skill development in renewable energy

ii. Fellowships for higher studies and research in renewable energy

iii. Enhancement of Renewable Energy education and training infrastructure

iv. Renewable Energy Chair

v. National Renewable Energy Internship Programme

(d) CCDC (Concessional Custom Duty Certificate) Wind (https://ccdcwind.gov.in): This portal is for issuance of concessional custom duty certificate for import of components required for manufacturing of wind turbines.

(e) Biourja Portal (https://biourja.mnre.gov.in/): Portal for digitization of the Biomass (Scheme to support Manufacturing of Briquettes, Pallets, and Promotion of biomass-based cogeneration in industries) and Waste to Energy (Programme on Energy from Urban, Industrial and Agricultural Waste/Residues) program. Facilitates the grant of subsidies for plants for waste to energy scheme & biomass scheme under national bioenergy programme for the duration for FY 2021-22 to 2025-26.

(f) **Biogas Portal (https://biogas.mnre.gov.in/):** This portal has been developed for beneficiaries to submit applications for installation of small and medium biogas plants.

(g) **Research and Development (R&D) Portal (https://research.mnre.gov.in):** R&D portal facilitates online submission and processing of renewable energy related R&D proposals.

(h) **PM KUSUM Portal (https://pmkusum.mnre.gov.in):** The portal has been developed for implementation and monitoring of PM KUSUM scheme, which is meant for farmers.

(i) **National Green Hydrogen Portal (https://nghm.mnre.gov.in):** NGHM portal has been developed as a central point of information and data dissemination for those interested in the journey of India towards becoming a global green hydrogen hub.

(j) **Akshay Urja Portal (https://akshayurja.gov.in):** This portal acts as a central repository for renewable energy data such as RE potential, installed RE capacities, & Generation. The portal provides features such as data analysis and report generation regarding power potential, installed capacity and power generation in respect of solar, wind, small hydro, bio energy & waste-to-energy plants, and off-grid components.

(k) **ALMM Portal:** The portal is being developed to manage procedural framework for the implementation of MNRE's Approved Models and Manufacturers of Solar Photovoltaic Modules. It will enable manufacturers to include their PV products in the ALMM list by modules of new applications, add additional models at existing facilities, setting up a new manufacturing facility, add Co-ALMMs and Renewals.

(l) **National Renewable Energy Portal (NREP) (https://nrep.mnre.gov.in):**

Solar Parks: Monthly Progress Report of Solar Parks being setup in India

Solar Power: Details and status of Tenders floated for Renewable Energy Plants

Green Energy Corridor – Phase II: Physical/financial progress of the projects

SHP: The small hydro power portal is being developed and made live to facilitate the application regarding the small hydro power.

(m) **Intra MNRE (https://intramnre.mnre.gov.in):** The portal has been developed for managing services being used in MNRE premises such as management of inventory, IT assets, canteen, conference room booking, vehicle management etc. Conference Room and Vehicle booking modules have already been launched. Role based dashboards are being developed for MNRE Officers for details on budget and physical achievements (overall, division wise and scheme wise).

(n) **Gati Shakti (https://gatishakti.mnre.gov.in):** The portal has been developed to map the layers and coordinates of the large-scale projects above 50 MW under solar, wind, hybrid (solar and wind), solar parks, solar PV manufacturing plants across India.

(o) **Renewable energy equipment imports monitoring system (REE-IMS) (https://reeims.mnre.gov.in):** The Renewable Energy Equipment Import Monitoring System (REE-IMS)

facilitates the submission and monitoring of applications and enables the generation of self-approved certificates for imported solar and wind components.

(p) **eHRMS:** e-HRMS is a common application tool for personnel management activities such as leave, posting, promotion, transfer, maintenance of service book, etc. It automates and digitizes the human resource processes, enhancing efficiency and transparency within the government organisation. It provides a user-friendly interface to access and manage various HR-related tasks such as Promotion, Transfer/Posting, Role Management, Bill Reimbursements, Leave applications, Circulars/OMs/Orders, and more. It is designed to ensure data privacy and security.

(q) **eOffice:** In a step forward for paperless work in office space, the Ministry has fully implemented eOffice which is meant for effective processing and online movement of files and receipts/ letters. It aims to contribute significantly towards transforming the core of the Government working which eventually would bring desirable values of transparency, efficiency, accountability, and faster decision-making.

II. Cyber awareness activities organised by IT Division during the year 2025 which are as follows:

i. An awareness and training session on Zoho Mail was organized on 25.09.2025 to familiarize officials with secure email usage and best practices. Key aspects such as phishing prevention, password security, data protection, and effective utilization of the official email platform were covered.

ii. A comprehensive training course on eOffice File Management system (eFile) was made available on the Karmayogi Bharat Platform for all the officials and staff of MNRE.

iii. In accordance with the directions of the Central Vigilance Commission (CVC), National Cyber Security Awareness Month & Vigilance Awareness week was observed in the Ministry from 27.10.2025 to 02.11.2025. The following activities were organized under this:

(a) A Cyber Awareness workshop was conducted on 22.10.2025 for Ministry officials in coordination with CERT-In and I4C. The session emphasized cyber hygiene, safe digital practices, emerging cyber threats, and preventive measures to safeguard official data and IT infrastructure. It also included interactive discussions to address participants' queries.

(b) Cyber Awareness Quiz- A Cyber Awareness Quiz was organized on 23.10.2025 in MNRE to reinforce learning from the awareness sessions. The quiz encouraged active participation and helped assess officials' understanding of cybersecurity concepts in an engaging manner. The first prize was of Rs.5000/-, Second prize was of Rs.3500/-, Third prize was of Rs.2000/- and there were 10 consolation prizes of Rs. 500/- each.

(c) Do's and Don'ts and Cyber Security tips were notified on social media handle of the Ministry & Digital Screen and Standees.

iv. MNRE in coordination with NIC organized a 5-day basic level training and certification programme on "Cyber Security" for Power Professionals through National Power Training Institute (NPTI), Faridabad. The one-week residential training was held from 3rd -7th February 2025 at NPTI Faridabad Premises.

v. Awareness Session on "Navigating the Digital Highway: Safeguarding the Online Journey" on 11.02.2025 - Ministry of Electronics and Information Technology (MeitY) organised an Awareness Session for Government employees on the topic: "Navigating the Digital Highway: Safeguarding the Online Journey" through C-DAC Hyderabad on 11.02.2025 from 11 AM - 12 PM through Virtual Instructor-Led Training (VILT) mode to sensitize them about the safe use of internet and best practices for cyber hygiene for securing the critical assets, identify & mitigate common cyber threats and safeguard themselves from emerging cyber risks.

vi. Cyber Security Awareness Session" in the Ministry of New and Renewable Energy on 4.08.2025 at 03.00 PM - The IT Division of Ministry of New and Renewable Energy (MNRE) organised a " Cyber Security Awareness Session", on Monday 04.08.2025, at 1500-16:30 hrs. The session highlighted to educate officials on cyber security best practices for online safety, recognizing cyber threats, and protecting personal and organizational data etc.

10.7 Right to Information

10.7.1 The Ministry is implementing the Right to Information (RTI) Act, 2005 as per the laid down guidelines of Department of Personnel and Training (DoPT), Central Information Commission. The Procedure / other details regarding seeking information under RTI Act, 2005 are available at the MNRE website www.mnre.gov.in.

10.7.2 The Progress Report in terms of RTI Application or First Appeals received, disposed-of as well as pendency during the period (01.01.2025 to 31.12.2025) is given in the following Table:

Table - 10.5 RTI Applications / Appeals of the Ministry for the Period 01.01.2025 to 31.12.2025

Item	Received	Disposed off	Pending as on 31.12.2025
RTI Applications	834	796	38
First Appeals	66	61	05

10.7.3 The 3rd Party Transparency Audit proactive disclosure was uploaded on the Ministry's website (https://mnre.gov.in), which contained information as required under the Section 4 of the RTI Act, 2005. It also contains the details of the Department's functions along

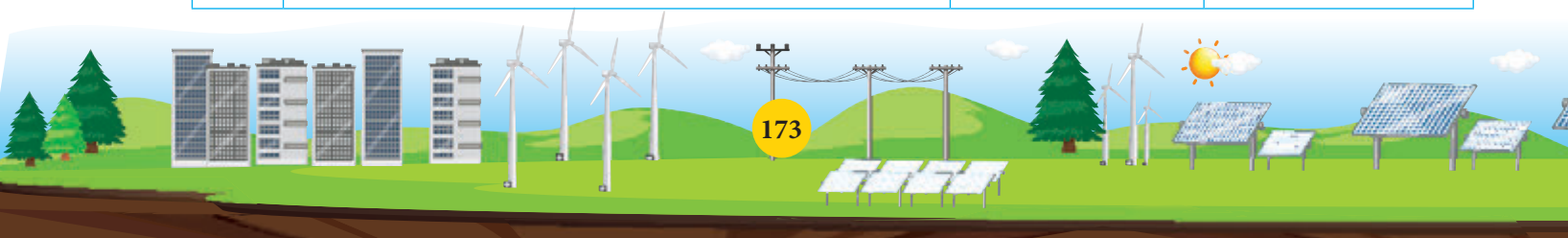
with its functionaries etc. as required under section 4(1) (b) of the RTI Act, 2005.

10.7.4 The Ministry has designated Central Public Information Officer (CPIO) and First Appellate Authorities (FAA) to respond the RTI applications and first Appeals in accordance with subjects assigned to them. The list of CPIOs and FAAs is given in the following table. Nodal officer of RTI coordinates all the physical and online applications and persuades the CPIOs and FAAs to reply them within the stipulated time lines.

Table - 10.6 List of Designated Central Public Information Officers (CPIOs) and First Appellate Authorities (FAAs) (as on 31.12.2025)

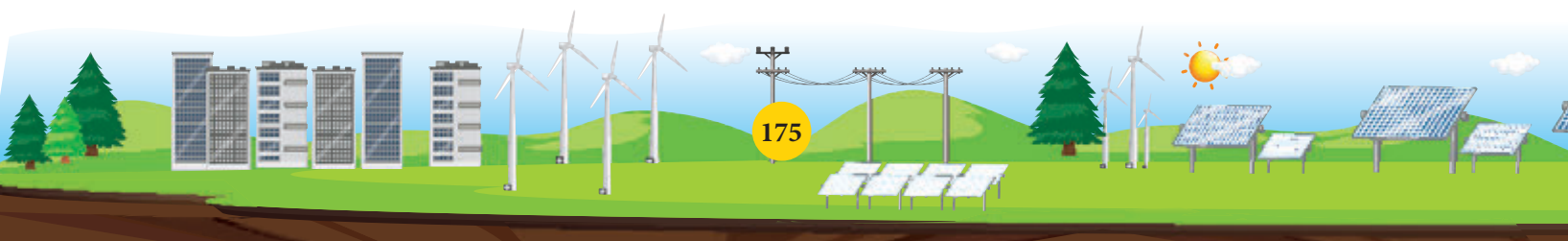
S. No.	Subject	Name of CPIOs & Designation (Shri/Ms./Mrs.)	Name of FAAs & Designation (Shri/Ms./Mrs.)
1.	i. Regular updation of E samiksha portal & other portals including updation of Budget announcements ii. PMO matters	Shobhit Srivastava, Scientist 'E'	J. Rajesh Kumar, EA
2	i. Comments on EFC Notes, Cabinet & CCEA Notes /Concept paper received from other Ministries/ Departments, EGoS, SGoS etc. ii. All matters related to NITI Aayog monitoring including annual PM Infrastructure Sector review & Output Outcome Monitoring Framework (OOMF) iii. DBT related matters iv. FDI related matters	Shri S.R. Meena, Scientist 'E'	J. Rajesh Kumar, EA
3	Administration I, II, III	Suman Kumar, US	Pankaj Gupta, DS
4	1 Coordination works under Sh. Pankaj Saxena, Scientist 'G' 2. GST related matters	Ayush Gupta, Scientist 'C'	Rampal Singh, Director
5	National Green Hydrogen Mission	Shri Prashant Dwivedi Scientist 'C'	Sujit Pillai, Scientist 'F'
6	i Scheme for Development of Solar Parks and Ultra Mega Solar Power Projects ii New Solar Power Scheme (for PVTG Habitations/ Villages) under Pradhan Mantri Janjati Adivasi Nyaya Maha Abhiyan (PM JANMAN) and JGUA	Shri P V Tarun Saketh, Scientist 'C'	A. S. Parira, Scientist 'E'

7	Policy and Regulatory Matters	Pradeep Kumar, US	J K Jethani, Scientist 'F'
8	Energy Storage; E-mobility; State Resource Adequacy Planning; Electricity Planning & Survey (EPS)	P.N.B.V Chalapathi Rao Scientist 'D'	J K Jethani, Scientist 'F'
9	Circular Economy, PM Gati Shakti; National Infrastructure Pipeline (NIP)	Arun Kumar Choudhary Scientist 'C'	P.N.B.V Chalapathi Rao Scientist D
10	i Rooftop Solar; ii Solar City	Aditya Narayan Prajapati Scientist 'C'	Anubhav Uppal, Scientist 'D'
11	i. Transmission ii. Green Energy Corridor	Tushar Pandey, US	Tarun Singh, Scientist 'E'
12	i Monitoring of tendering (other than REIAs) and commissioning of solar capacity in the country. ii Solar Projects in Ladakh including PMDP iii Solarization of Konark iv All Technical Matters related to NISE v OSOWOG Study related matters	Aravindh MA, Scientist 'D'	A. S. Parira, Scientist 'E'
13	Lab Policy & Standards Quality Control; Development of RE in North East	Raj Kumar Bhawariya, Scientist 'C'	Hiren C Borah, Scientist 'E'
14	Biomass;	P M Barik, Scientist 'D'	S. K. Shahi, Scientist 'E'
15	Small Hydro Power	Raj Kumar Bhawariya, Scientist 'C'	S. K. Shahi, Scientist 'E'
16	Waste to Energy	Bikash Kumar Upadhyay Scientist 'C'	Gaurav Mishra, Scientist 'F'
17	Biogas	Bikash Kumar Upadhyay Scientist 'C'	Gaurav Mishra, Scientist 'F'
18	PM KUSUM Scheme	Yaurav Yadav, US	Nikhil Gakkhar Scientist 'D'
19	HRD & Training including ITEC Innovation Centre	Rajat Yadav, US	Vasanta V. Thakur, Scientist 'E'



20	Wind Energy	Rishikesh Vaishnav, Scientist 'C'	Vikram Dhaka Scientist 'D'
21	R&D; Geothermal Energy; Greening of islands; New Technology including Solar Thermal; Solar Power Cold Storage; RE in UTs; NTPC Bundling Scheme; NTPC EPC Scheme; Green Buildings	Priya, Scientist 'D'	Anil Kumar, Scientist 'E'
22	Information Technology (IT) & Digitization	Gitanjali Virmani, US	Priya, Scientist 'D'
23	CPSU Govt. Producer Scheme, Grid Solar Power, Solar and Invertor Manufacturing matters, Renewable Energy Industry Promotion and Facilitation Board (REIPFB), Coordination for resolving Solar Manufacturers and Developers Issue, Solar PLI Scheme, Guidelines and Standard Bidding Documents for Solar, FDRE, All technical matters of SECI, ALMM	Mohd. Azmal Mansoori, Scientist 'C'	Sanjay Karndhar, Scientist 'E'
24	Climate Change and Coordination with MoEF & CC,	Tarun Valecha, Scientist 'C'	Suman Chandra, Director
25	I & PA; Media / social media	A.K Manish, US	Aseem Kumar, Director
26	Vigilance, Lokpal & Lokayukt	Saurabh Mukherjee, US	Aditya Pratap Singh, Director
27	NSM	Deepak, Khatwani, US	Arun Kumar, Scientist 'D'
28	i Solar Off Grid, Vibrant Village Programme & Solar Villages ii Old Scheme-Rooftop PV and Small Solar Power Generation Programme (RPSSGP) iii Old schemes -VGF (500MW, 2000MW & 5000MW) & Demo GBI. iv Defence Scheme	Sachin Meena Scientist 'C'	Arun Kumar, Scientist 'D'
29	International Relations (IR) & ISA	Saurabh Mukherjee, US	Aseem Kumar, Director
30	Parliament related matter; Public Grievances Cell; Legal Cell	Ajit Kumar Dung Dung, US	Rampal Singh, Director

31	IFD	Geetha Raja, US	Kailash Chand, DS
32	Audit; Budget Monitoring; Library and RTI Matters	Mala Ram Sonwal, Deputy Director	Rampal Singh, Director
33	Cash Section	Sunita Sajwan, US	Pankaj Gupta, Director
34	Official Language	Sheeba Jayaraj Dy. Dir.	Rampal Singh, Director
35	Pay and Accounts Office (PAO); Budget	Santosh Arora, Sr. Accounts Officer	Ameesh Aggarwal, DCA



India And Globe: International Cooperation

11.1

The International Relations (IR) Division of the Ministry has been continuously engaging with various stakeholders, including Ministries/Departments of the Government of India, Indian Missions, Foreign Diplomatic Missions located in India, Multilateral International Organizations and Agencies, Regional Groupings and development banks, among others, to promote international cooperation in the field of Renewable Energy.

11.2

Joint Working Groups (JWGs) meetings, Task-force meetings, and Bilateral and Multilateral meetings were organised to identify, select, and formulate joint activities. Senior Ministry officials led these meetings and events. Details of the JWGs held during FY 2025-26 are as follows:

Fig.11.1: India's international engagements on RE

S.No.	Name of Meeting	Date
1.	4th JWG meeting between India and Japan on Renewable Energy (held in virtual mode)	23 January 2025
2.	5th JWG meeting between India and the United Kingdom on Renewable Energy (held in hybrid mode, New Delhi)	24 January 2025
3.	4th India-UK Energy Dialogue held in New Delhi	10 February 2025
4.	2nd JWG meeting between India and Tajikistan on Renewable Energy (held in virtual mode)	18 February 2025
5.	1st Joint Working Committee (JWC) meeting between India and Egypt on Cooperation in the Field of Renewable Energy (held in virtual mode)	18 March 2025
6.	4th Meeting of the India - Norway Task Force on Energy (held in New Delhi)	28 April 2025
7.	2nd JWG meeting between India and Portugal on Renewable Energy (held in hybrid mode)	4 June 2025
8.	11th India-Japan Energy Dialogue (held in virtual mode)	25 August 2025
9.	JWG meeting on Renewable Energy under the India - Australia Energy Dialogue (held in virtual mode, New Delhi)	15 September 2025

10.	2nd Steering Committee Meeting of the India - Germany Platform for Investments in Renewable Energy Worldwide (held in virtual mode, New Delhi)	17 September 2025
11.	2nd JWG meeting between India and Sri Lanka on Renewable Energy (held in virtual mode)	23 September 2025
12.	5th Meeting of the India-Australia Energy Dialogue in New Delhi	16 October 2025
13.	8th Joint Working Group meeting in the India-Denmark Energy Partnership (held in virtual mode)	3 December 2025

Fig.11.1: India's international engagements on RE

11.3

The Ministry has taken several initiatives for promotion of Renewable Energy. The Ministry has signed Memoranda of Understanding (MoUs), Joint Declarations of Intent (JDIs) with various countries and institutes in the field of Renewable Energy.

The following Bilateral Cooperation Agreements and Understandings have been signed by the Ministry of New and Renewable Energy in FY 2025-26:

i. Memorandum of Understanding with the Ministry of Mines and Energy of Brazil on Co-Operation in the Field of Renewable Energy on 08.07.2025.

ii. Joint Declaration of Intent with the Ministry of Economy, Trade and Industry of Japan on Clean Hydrogen and Clean Ammonia on 25.08.2025.

iii. Memorandum of Understanding with the Ministry of Energy and Natural Resources of the Royal Government of Bhutan on Co-operation in the field of Renewable Energy on 11.11.2025

iv. Memorandum of Understanding with the Ministry of Energy and Mineral Resources of the Government of the Hashemite Kingdom of Jordan on Co-operation in the field of Renewable Energy on 16.12.2025.

Some of the prominent bilateral/multilateral engagements in the financial year include the following:

i. A high-level meeting between the Hon'ble Minister, Ministry of New & Renewable Energy India and H.E. Ed Miliband, Secretary of State for the UK Department for Energy Security & Net Zero was held in New Delhi on 10.02.2025. In course of the Fourth India - UK Energy Dialogue, the two sides agreed to continue the bilateral cooperation in RE, particularly for round-the-clock power supply, expanded renewable energy deployment, and decarbonisation (with focus on offshore wind, energy storage, MSMEs and green data centres).

ii. A high-level meeting between Hon'ble Minister, Ministry of New and Renewable Energy with Ms. Teresa Ribera Rodriguez, Executive Vice-President, Clean, Just and Competitive Transition and Mr. Dan Jorgensen, Commissioner, Energy and Housing of the European Union was held in New Delhi on 28.02.2025. It was discussed that going forward, India and EU will work towards expanding and deepening cooperation including through the India-EU TTC in clean energy, as well as work to intensify cooperation in specific areas clean hydrogen, offshore wind, solar energy. Subsequently, an India-EU Green Hydrogen Forum was also held on the sidelines of the World Hydrogen Summit & Exhibition, 2025 held in Rotterdam, Netherlands from 19th – 23rd May, 2025. It was also decided to deepen the cooperation in the framework of the International Solar Alliance (ISA).

iii. The Ministry of New & Renewable Energy, in partnership with the International Solar Alliance (ISA), convened a workshop on decentralized solar applications at Atal Akshay Urja Bhawan, New Delhi on 09.09.2025. The event, chaired by the Hon'ble Minister of State for Power and New & Renewable Energy, brought together representatives from 17 countries, including Ambassadors and High Commissioners from seven Latin American and Caribbean nations. Sessions led by MNRE officers showcased India's experiences under schemes such as PM KUSUM and PM-Surya Ghar Muft Bijli Yojana, alongside solar mini-grids for rural livelihoods.

iv. On 15.10.2025, a closed-door India-Australia Business Roundtable was hosted in New Delhi, co-chaired by H.E. Chris Bowen, MP, Australian Minister for Climate Change and Energy and the Secretary, MNRE. The Discussions focused on collaboration in advanced renewable technologies, agrivoltaics, grid modernisation, digital energy systems, and regional clean energy partnerships, including cooperation through the International Solar Alliance and joint R&D initiatives in next-generation technologies. The Roundtable was followed by a brief bilateral meeting on 16.10.2025 between the Hon'ble Minister of New and Renewable Energy and H.E. Chris Bowen, MP, Australian Minister for Climate Change and Energy. During the bilateral meeting the Recommendation Report of India-Australia Green Hydrogen Taskforce was launched.


Fig. 11.2: India-Australia Business Roundtable and Bilateral meeting

11.5

The Ministry also participated in various International Events and Conferences during the year, some of which are indicated below:

i. A delegation led by Secretary, MNRE participated in the World Hydrogen Summit & Exhibition, 2025 in Rotterdam, Netherlands, from 19th – 23rd May, 2025.

ii. Participation in the 33rd European Biomass Conference & Exhibition, 2025 at Valencia, Spain from 9-13 June, 2025.

iii. A delegation led by Secretary, MNRE participated in the European Hydrogen Week Conference 2025 at Brussels, Belgium, from 29th September – 3rd October, 2025.

iv. Representation of the Ministry at the Thirteenth Session of the Conference of the Parties (CoP-30), the Twentieth Session of the Conference of the Parties serving as the Meeting of the Parties to the Kyoto Protocol (CMP-20) and Seventh Session of the Conference of the Parties serving as the Meeting of the Parties to the Paris Agreement (CMA-7) from 8-21 November, 2025, in Belem, Brazil.

11.6

Engagement with International Solar Alliance (ISA): The Eighth Session of the ISA Annual Assembly was held on 28.10.2025 in New Delhi. The Hon'ble President of India, H. E. Smt. Droupadi Murmu delivered the keynote address at the Assembly session during the high-level session of the assembly. Shri Pralhad Joshi, Hon'ble Minister of New and Renewable Energy in his capacity as President of the ISA Assembly, co-chaired the 8th Assembly session along with H. E. Mr. Benoit Faraco, Special Envoy for Climate, French Ministry for Europe and Foreign Affairs representing the Co-President of the ISA Assembly. The 8th ISA Assembly witnessed the participation of 550 high-level delegates from 137 countries and 36 organisations attended the Assembly session, including 30 Ministers and Vice Ministers from Member countries.

The Assembly launched five major ISA knowledge products, including reports on solar market trends, skills, floating solar, and integrated photovoltaics. Key outcomes included the operational roadmap for the OSOWOG (One Sun, One World, One Grid) global grid, the signing of the Global SIDS Initiative Declaration, the introduction of ISA's Global Capability Centre and Academy for skills development, and the unveiling of the SUNRISE Community of Practice for circularity in solar and battery waste. On the sidelines of the Assembly, the Hon'ble Minister also held a series of bilateral meetings with counterparts from Antigua & Barbuda, Commonwealth of Dominica, Eswatini, Liberia, Maldives, Papua New Guinea, St. Kitts & Nevis, Somalia, Solomon Islands, discussing ways to deepen cooperation in solar innovation, energy resilience, and capacity building.

Promotion Of Official Language – Hindi

12.1 Introduction

The Ministry of New and Renewable Energy (MNRE) is committed towards promoting the use of Hindi in Official Work. With a view to accelerate the use of official language in official work and with a view to increase awareness amongst employees with regard to the Official Language Policy of the Government of India, Rajbhasha Division has been set up in MNRE. Its functions are as follows:

i. Translation work: Various documents of the Ministry including those to be laid in Parliament such as Parliamentary Questions, Parliamentary Assurances, papers related to Standing Committees and other Parliamentary Committees, Private Member Bills, Calling Attention Notices, Budget related documents, Demands for Grants, Annual Reports, Notifications, General Orders, Advertisements, Tenders, MOUs/ MOAs, Cabinet Notes, Suo Moto Statements/ Speeches and other documents received from Office of the Minister (NRE) and Office of Minister of State (NRE) and Press releases etc. are translated regularly by Rajbhasha Division of the Ministry.

ii. Implementation of the Official Language Policy of the Union; Official Languages Act, 1963; Official Languages (Use for Official Purposes of the Union) Rules, 1976; Directions/ Instructions issued by the Government from time to time regarding the use of Official Language Hindi; Annual Programme issued by the Department of Official Language, MHA every year for transacting the official work of the Union in Hindi and Presidential Orders issued on the recommendations of the Committee of Parliament an Official Language constituted under the Chairmanship of Hon'ble Minister of Home Affairs.

Presently, Rajbhasha Division is under the administrative control of Scientist-G (equivalent to the level of Joint Secretary), assisted by Director, Deputy Director (OL) and Assistant Director (OL). The Rajbhasha Division consists of one Deputy Director (OL), one Assistant Director (OL), two Senior Translation Officers, two Junior Translation Officers, one Private Secretary and one Steno-D. The Rajbhasha Division monitors the implementation of Official Language Policy in the Ministry as well as in all Offices/Institutes/PSUs under its administrative control. It is playing a leading role in the direction of implementation of official language Hindi in the Ministry. There is a perpetual growth in the work of Official Language Hindi in the Ministry and it is expected that in the near future, the Ministry will achieve targets set by the Department of Official Language in the direction of implementation of OL Policy of the Government.

12.2 Compliance of Official Languages Act, 1963

During the year 2025-26, concerted efforts were made to ensure proper compliance of the provisions of Official Languages Act, 1963 and Rules framed thereunder.

12.3 Promotion of Official Language Hindi

In view of effective implementation of Official Language Policy and to create conducive environment for the officials to do more work in Hindi, various programmes and schemes are being undertaken, which include the following:

i. With a view to ensure effective implementation of Official Language Policy of the Govt. of India in the Ministry, certain check-points as per the provisions of Official Language Policy have been made and circulated for compliance.

ii. Website of the Ministry is bilingual (Hindi/English) and is being updated from time to time.

iii. Hindi books are purchased in the Ministry by the library and efforts are made to achieve the targets laid down by the Department of Official Language, Ministry of Home Affairs.

iv. Addresses of Nodal Agencies have been prepared in Hindi.

v. All documents included under section 3(3) of the Official Languages Act 1963, including Press Releases, Tender Notices, Rules, General Orders, Notifications, Cabinet Notes, Parliament Questions and other Documents to be laid in the Parliament are presented bilingually.

vi. Letters received in Hindi are invariably replied in Hindi and Rule 5 of the Official Language Rules, 1976 is fully complied with.

vii. Website of the Ministry opens in Hindi.

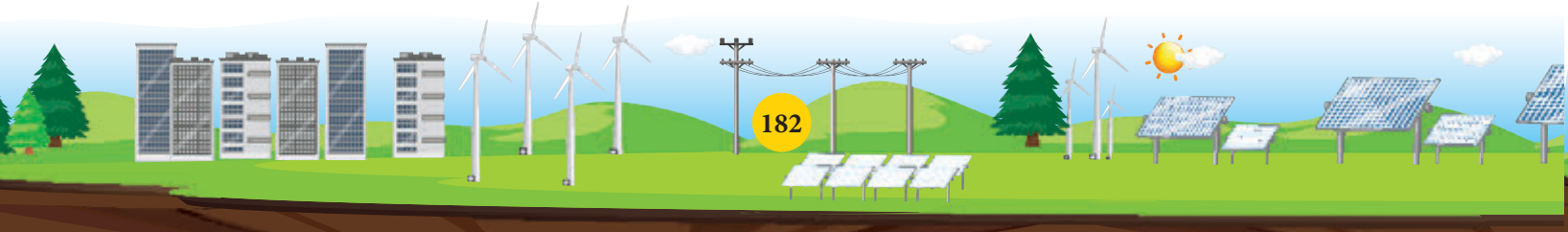
viii. To provide instant translation facility in e-office, E-Kanthasth tool has been added to the Ministry's E-Office.

12.4 Implementation of Official Language Policy

During the year 2025-26, various measures were taken for effective implementation of Official Language Policy in the Ministry. As per the Quarterly Progress Report for the quarter ended 31th December 2025, the percentage of Hindi correspondence with offices in regions designated as A, B and C was 81.30%, 80.70% and 59.11% respectively. Continuous efforts are being made to encourage progressive use of Hindi in official work, not only in the Ministry but also in its autonomous institutions and PSUs.

12.5 Official Language Implementation Committee

In Order to review the progress made in the implementation of Official Language policy, quarterly meetings of Official Language Implementation Committee are held. Discussions are held on quarterly progress reports received from various Sections and Divisions of the Ministry and other organisations i.e. IREDA, SECI, NIWE, NISE and NIBE. The Sections and Divisions of



the Ministry and Organizations under the administrative control of the Ministry are advised to achieve the targets specified by the Department of Official Language, Ministry of Home Affairs.

12.6 Hindi Workshops

Rajbhasha Division of the Ministry is regularly organising a quarterly Hindi workshop as per the guidelines released by the Department of Official Language.

12.7 Hindi Fortnight & Prize Distribution Ceremony

With a view to create awareness and to increase the use of Hindi in official work, Hindi Fortnight was observed in the Ministry during 14th to 29th September, 2025. A number of competitions were held and there was active participation by officers and staff of the Ministry. As many as 42 officers and staff members belonging to Hindi and non-Hindi speaking categories were given cash awards and certificates based on their performances, by the Secretary, MNRE during the prize distribution ceremony held on 27.10.2025. Hindi Fortnight was also observed in various autonomous institutions and PSUs of the Ministry. Necessary instructions were issued to them for effective and extensive promotion and propagation of Hindi.

12.8 Hindi Salahkar Samiti

Hindi Salahkar Samiti of the Ministry has been constituted in August 2025 and its gazette notification has also been uploaded on MNRE's website. Hindi Salahkar Samiti works under the Chairmanship of Union Minister (NRE) with the main objective to advise the Ministry regarding progressive use of Hindi in its official work.

12.9 Inspection Of Subordinate Offices

With a view to assess the status regarding progressive use of Official Language, inspections of all 5 offices (IREDA, SECI, NISE, NIWE & NIBE) under the administrative control of the Ministry were carried out during the year and remedial measures were suggested for compliance of Official Language Policy of the Union in their offices.

Fig. 12.1: *Hindi Fortnight Prize Distribution Ceremony organised on 27.10.2025 under the Chairmanship of Secretary, MNRE.*

Annexure I

Ministry Of New And Renewable Energy (Administration)

Table 1: As on 31.12.2025, the sanctioned and in-position strength in MNRE is as follows:

GROUP	A	B	C	D
SANCTIONED	137	82	84	303
IN POSITION	89	65	70	224
SC	12	10	13	35
ST	4	3	7	13
OBC	15	14	16	44
PwBD	0	2	4	5

National Institute Of Wind Energy (NIWE)

Table 2: Group-wise Sanctioned and In-Position Posts in NIWE as on 31.12.2025 are as follows:

No. of Posts	Group			Total
	A	B	C	
Sanctioned	18	13	17	48
In Position	12	07	16	35
SC	04	02	05	11
ST	01	-	-	01
OBC	05	03	11	19
PH	-	-	-	-

Indian Renewable Energy Development Agency (Ireda)

Table 3: Employees Staff strength of IREDA as on 31.12.2025 is as under: -

Classification	Board Level	Group A	Group B	Group C	Group D	Total
In Position	02	211	00	16	00	227
SC	00	20	00	03	00	23

ST	00	07	00	01	00	08
OBC	00	42	00	03	00	45
Physically Handicapped	00	06	00	01	00	07

Total Sanctioned Strength (below Board level) is 305.

Sardar Swaran Singh – National Institute Of Bio-Energy (Sss-Nibe)

Table 4: Group-wise sanctioned and in-positioned posts in SSS-NIBE as on 31.12.2025 are as follows:

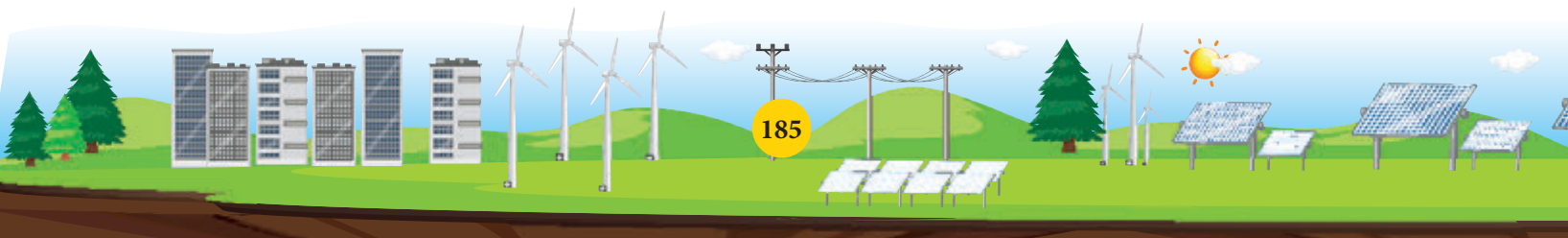
Group	Board	07	00	01	00	08
Level	A	B	C	D	Total	45
Sanctioned	1 (DG)	20	1	4	0	26
In Position	0 (DG)	10	1	4	0	15
SC	-	-	-	-	-	-
ST	-	-	-	-	-	-
OBC	0	2	0	0	0	2
PH	-	-	-	-	-	-

Note – Recruitment is under process for the vacant post.

National Institute Of Solar Energy (Nise)

Table 5: Group-wise sanctioned and in-positioned posts in NISE as on 31.12.2025 as follows:

S. no.	Name of the post	Level	No. of Sanctioned Posts			Filled up Post		No. of Vacant Posts		
			Technical	Admin	Total	Technical	Admin	Technical	Admin	Total
1.	Director General	14	01	00	01	01	00	00	00	00
2.	Deputy Director General	13A	03	00	03	03	00	00	00	00
3.	Director	12	02	01	03	02	01	00	00	00
4.	Deputy Director	11	06	02	08	06	02	00	00	00
5.	Administrative Officer	11	-	01	01	00	01	00	00	00
6.	Assistant Director	10	07	02	09	07	02	00	00	00
7.	Office Secretary	9	-	01	01	00	00	00	01	01
8.	Office Secretary-I	8		03	03	00	00	00	03	03



9.	Executive Officer	8	04	-	04	00	00	04	00	04
10.	Executive Assistant-I	7	08	-	08	03	00	05	-	05
	Total		31	10	41	22	06	09	04	13

Solar Energy Corporation Of India (Seci)

Table 6: Group-wise sanctioned and in-position posts in SECI Staff as on 31.12.2025

Group	A	B	C	D	Total
Sanctioned	275	42	Non-Optional		317
In-position	138	19			157
SC	14	1			15
ST	6	1			7
OBC	28	7			35
PH	1	2			3

Pay And Accounts Office, Ministry Of New And Renewable Energy

Table 7: Group-wise sanctioned and in-positioned posts in Pay & Accounts Office, MNRE is as on 31.12.2025

Group	A	B	C	Total
Sanctioned	04	12	6	22
In-position	03	08	04	15
SC	00	02	00	02
ST	00	00	00	00
OBC	01	03	00	04
PH	00	00	00	00

Annexure II

Details and Status of 22 C&AG paras pending in the Ministry are as follows:

S.N.	Year	Report No	Chapter No	Para No	Subject	Action Taken
1	2021	7 of 2021	3	3.2.2.2	Other significant savings at minor-head/sub-head level	ATN to be furnished
2				3.2.2	Analysis of Savings	
3	2022	31 of 2022	4	4.2.2.2 Annexure 4.3A	Other significant savings at minor-head/ sub-head level	
4				4.11	Misclassification of interest as deduct recovery	ATN furnished
5				4.7	Non-surrender and surrender of savings on last day of the financial year	ATN furnished
6				4.2.2.2	Other significant savings at minor-head/ sub-head level	ATN vetted by Audit
7				4.2.2	Analysis of Savings	
8			3	3.2.4	Documentation of Guarantees and yearly review	ATN furnished.
9	2023	21 Of 2023	4	4.2.2.2 Annexure 4.3B Sl. No. 99 to 101	Other significant savings of ₹100 crore or more at Minor/Sub head level	ATN furnished.
10				4.6 Annexure 4.7 Sl. No. 38	Non-surrender and surrender of savings on last day of the financial year	
11				4.2.2 Annexure 4.2 Sl. No. 40	Analysis of Savings-Segment Wise	
12	2025	4 Of 2025	4	4.4.1..	Injudicious re-appropriation from/to minor/sub-heads	ATN to be furnished
13				4.3.1	Unnecessary supplementary provisions	
14				4.2.2.4	Non surrender of savings	
15				4.2.2.3	Significant savings at minor-head/sub-head level - 100 crore or more	
16				4.2.2.2	Significant savings at segment level - Revenue Voted	
17			3	3.4.3	Internal controls on assets including receivables - Government Investments	

18		16 of 2025	4	4.2.2.3.	Significant savings at minor/sub-head level	
19				4.2.2.3	Significant savings at minor/sub-head level	
20				4.2.2.2	Significant Savings at Segment level	
21				4.2.2.1	Significant savings at Grant/ Appropriation level	
22		13 of 2025	Full Report	Full Report	Solar Parks and Ultra Mega Solar Power Projects Description: The Comptroller and Auditor General in their report highlighted the various issues arising in implementation of the Solar Parks like land, acquisition, regulatory clearances etc. and the associated delays. The report recommended MNRE to ensure timely resolution of various issues like land acquisition, finalization of DPR, transmission issues with Central / State Transmission Utility, Project Developer identification, etc., during development of parks. The report also commended good practices in some States like Karnataka, Gujarat and Rajasthan for completion of the Solar Parks.	ATN furnished

2. Currently, there is no PAC para is pending in the Ministry.

Annexure III

Grants In Aid To States And Voluntary Organisations

Table 1: Funds released to implementing Agencies under HRD Programme in from 01.01.2025 to 31.12.2025

Sr. No.	Sanction No.	Agency Name	Sanction Date	Amount (in Rs.)
1.	342-11/4/2023-HRD	National Institute of Solar Energy, Gurugram	10.06.2025	7,00,00,000/-
2.	342-11/1/2022-HRD	Indian Institute of Technology, Roorkee	19.06.2025	1,00,00,000/-
3.	342-11/1/2025-HRD	National Institute of Wind Energy, Chennai	01.08.2025	1,00,00,000/-
4.	342-11/4/2023-HRD	National Institute of Solar Energy, Gurugram	11.09.2025	5,00,00,000/-
5.	342-11/1/2022-HRD	Indian Institute of Technology, Roorkee	09.10.2025	1,00,00,000/-
6.	342-11/4/2023-HRD	National Institute of Solar Energy, Gurugram	28.10.2025	3,00,00,000/-
7.	342-11/6/2020-HRD	National Institute of Wind Energy, Chennai	25.11.2025	1,00,00,000/-
8.	342-11/1/2022-HRD	Indian Institute of Technology, Roorkee	09.12.2025	1,00,00,000/-
9.	342-11/2/2024-HRD	National Institute of Solar Energy, Gurugram	22.12.2025	9,00,00,000/-

Table 2: Grant given to State PIAs of more than Rs. 50 Lakh in Green Energy Corridor from 01.01.2025 to 31.12.2025

Grant given to State PIAs of more than 50 lakh in Green Energy Corridor from 01.01.2025 to 31.12.2025					
S. No.	Sanction No.	Project/ Organization Name	State	Fund released	
				Sanction Date	Amount (Rs. in lakh)
Green Energy Corridor Phase-I					
1	1/7/2015-EFM	Transmission Corporation of Andhra Pradesh Limited (APTRANSCO)	Andhra Pradesh	25.03.2025	1187.40*

2	1/7/2015-EFM	Transmission Corporation of Andhra Pradesh Limited (APTRANSCO)	Andhra Pradesh	28.04.2025	1162.09**
Green Energy Corridor Phase-II					
3	367-12/2/2023-GEC (Part-1)	Uttar Pradesh Power Transmission Corporation Limited (UPPTCL)	Uttar Pradesh	26.06.2025	47757.40
4	367-12/2/2025-GEC	Kerala State Electricity Board Limited (KSEB)	Kerala	28.11.2025	4928.00
5	367-12/2/2024-GEC	Karnataka Power Transmission Corporation Limited (KPTCL)	Karnataka	29.12.2025	1746.48
6	367-12/2/2023-GEC (Part-1)	Uttar Pradesh Power Transmission Corporation Limited (UPPTCL)	Uttar Pradesh	29.12.2025	12755.10
	Total				**69536.47**

*As the FY 2024-25 ended on 31.03.2025, APTRANSCO could only utilize Rs. 25,30,883/- and amount Rs. 11,62,09,117/- remained unutilized.

** Rs. 11,62,09,117/- is balance CFA of previous sanction to APTRANSCO

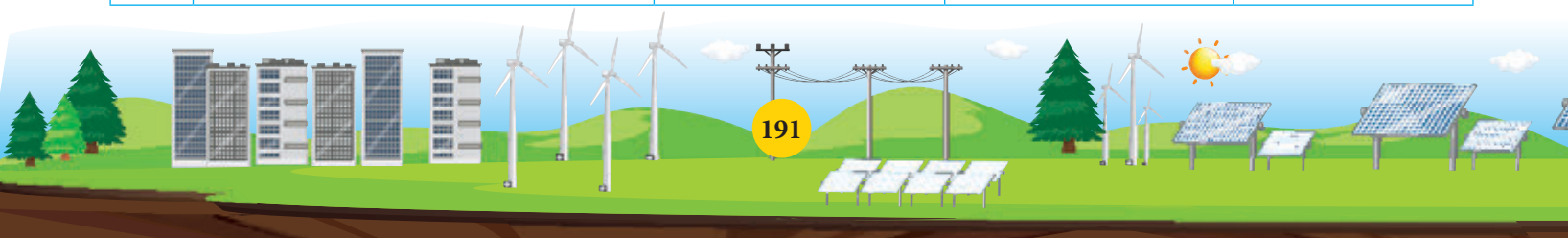
Table 3: CFA released under Solar Park to various Park Developers from 01-01-2025 to 31.12.2025

Sl. No.	State	Solar Park	CFA Released under Solar Park Scheme (in INR)
1	Andhra Pradesh	1400 MW Ananthpuram -I, NP Kunta	26,88,16,200
2	Andhra Pradesh	500 MW Ananthpuram - II Solar Park	9,00,00,000
3	Andhra Pradesh	1000 MW Kadapa Solar Park	48,00,00,000
4	Andhra Pradesh	300 MW Ramagiri Solar Park	21,60,00,000
5	Chhattisgarh	100 MW Rajnandgaon Solar Park	3,00,00,000
6	Gujarat	600 MW GIPCL Khavda Phase 1	28,14,90,000
7	Gujarat	1200 MW GIPCL Khavda Phase 2	25,63,05,000
8	Jharkhand	100 MW Getalsud Solar Park by SECI	7,30,00,000
9	Jharkhand and West Bengal	755 MW GVREL Floating solar park	55,00,00,000
10	Kerala	105 MW Kasargod Solar Park	8,56,20,000
11	Kerala	100 MW Kasargod Solar Park (Phase-II)	2,72,88,000
12	Madhya Pradesh	550 MW Agar Solar Park	22,07,25,000
13	Madhya Pradesh	500 MW Neemuch Solar Park	13,26,84,750

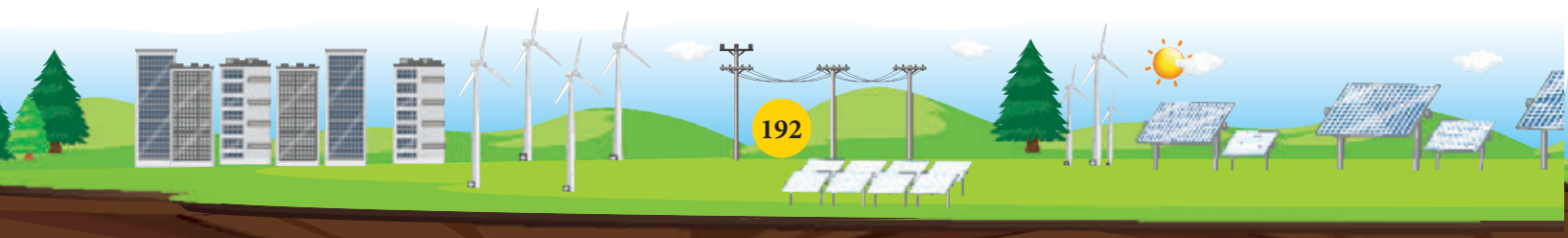
14	Madhya Pradesh	450 MW Shajapur Solar Park	22,50,00,000
15	Madhya Pradesh	630 MW Barethi Solar Park	50,40,00,000
16	Odisha	40 MW NHPC Solar Park	2,98,00,000
17	Rajasthan	1000 MW Pugal Solar Park Phase-I	35,45,40,000
18	Rajasthan	100 MW Pugal Phase II Solar Park	35,54,26,000
19	Rajasthan	925 MW Nokh Solar Park	27,75,00,000
20	Uttar Pradesh	440 MW, Uttar Pradesh Solar Park	1,41,74,782
21	Uttar Pradesh	65 MW Kalpi Solar Park	1,17,00,000
22	Uttar Pradesh	800 MW Chitrakoot Solar Park	58,23,12,000
	Total		**5,06,63,81,732**

Table 4: PM KUSUM – Fund released above Rs. 50 Lakh from 01.01.2025 to 31.12.2025

S. No.	Sanction Number	State Name	Date	Amount (Rs.)
1	32/7/2024-SPV Division	Arunachal Pradesh	01-01-2025	1,30,00,000
2	32/11/2025-SPV Division	Uttar Pradesh	12-02-2025	2,25,00,000
3	32/6/2024-SPV Division	Maharashtra	13-02-2025	10,49,00,000
4	32/6/2024-SPV Division	Maharashtra	13-02-2025	14,84,00,000
5	32/62/2023 SPV Division	Rajasthan	20-03-2025	18,65,84,764
6	32/694/2022-SPV Division	Haryana	04-03-2025	8,22,06,214
7	32/8/2024-SPV Division	Haryana	11-03-2025	48,21,00,000
8	32/8/2024-SPV Division	Haryana	11-03-2025	72,00,000
9	32/61/2023-SPV Division	Uttar Pradesh	10-03-2025	43,48,00,000
10	32/11/2025-SPV Division	Uttar Pradesh	12-02-2025	27,89,00,000
11	32/61/2023-SPV Division	Uttar Pradesh	10-03-2025	3,13,00,000
12	32/15/2025-SPV Division	Gujarat	04-03-2025	3,70,25,982
13	32/19/2025-SPV Division	Gujarat	19-03-2025	10,08,10,684
14	32/3/2024 SPV Division	Tamil Nadu	20-03-2025	2,83,30,576
15	32/51/2024-SPV Division	Maharashtra	04-03-2025	98,45,16,750
16	32/17/2024 SPV Division	Maharashtra	04-03-2025	5,33,00,000
17	32/17/2024 SPV Division	Maharashtra	04-03-2025	63,22,00,000
18	32/17/2024 SPV Division	Maharashtra	04-03-2025	8,71,00,000



19	32/6/2024-SPV Division	Maharashtra	13-02-2025	84,95,00,000
20	32/6/2024-SPV Division	Maharashtra	24-03-2025	33,58,01,523
21	32/6/2024-SPV Division	Maharashtra	24-03-2025	41,48,39,143
22	32/73/2023 SPV Division	Tripura	19-03-2025	3,85,00,000
23	32/51/2024-SPV Division	Maharashtra	12-02-2025	15,85,08,000
24	32/52/2024-SPV Division	Uttar Pradesh	13-02-2025	3,84,00,000
25	32/44/2023-SPV Division	Kerala	24-03-2025	1,64,64,943
26	32/17/2022-SPV Division	Tripura	25-03-2025	5,45,97,748
27	32/635/2022-SPV Division	Arunachal Pradesh	25-03-2025	60,56,945
28	32/19/2025-SPV Division	Gujarat	05-05-2025	47,03,47,008
29	32/15/2025-SPV Division	Gujarat	05-05-2025	14,23,47,877
30	32/31/2024-SPV Division	Karnataka	05-05-2025	31,22,02,317
31	32/31/2024-SPV Division	Karnataka	05-05-2025	1,25,17,358
32	32/31/2024-SPV Division	Karnataka	05-05-2025	86,93,797
33	32/8/2024-SPV Division	Haryana	05-05-2025	51,35,00,000
34	32/26/2025-SPV Division	Assam	06-05-2025	1,41,00,000
35	32/39/2024-SPV Division	Odisha	06-05-2025	4,08,80,000
36	32/41/2024-SPV Division	Uttarakhand	06-05-2025	5,28,11,312
37	32/30/2025-SPV Division	Tamil Nadu	06-05-2025	2,61,83,750
38	32/44/2023-SPV Division	Kerala	08-05-2025	4,85,05,718
39	32/35/2024-SPV Division	Uttarakhand	08-05-2025	1,82,26,768
40	32/51/2024-SPV Division	Maharashtra	13-05-2025	1,75,45,65,750
41	32/6/2024-SPV Division	Maharashtra	13-05-2025	3,10,77,00,000
42	32/6/2024-SPV Division	Maharashtra	13-05-2025	16,31,00,000
43	32/29/2025-SPV Division	Jharkhand	15-05-2025	12,85,00,000
44	32/29/2025-SPV Division	Jharkhand	15-05-2025	3,20,00,000
45	32/17/2024-SPV Division	Maharashtra	15-05-2025	29,46,00,000
46	32/17/2024-SPV Division	Maharashtra	15-05-2025	4,44,00,000
47	32/17/2024-SPV Division	Maharashtra	15-05-2025	3,46,00,000
48	32/15/2024-SPV Division	Uttar Pradesh	15-05-2025	7,25,00,000



49	32/72/2023-SPV Division	Gujarat	27-05-2025	97,88,675
50	32/51/2024-SPV Division	Maharashtra	28-05-2025	2,72,12,22,000
51	32/8/2024-SPV Division	Haryana	05-05-2025	1,35,00,000
52	32/52/2024-SPV Division	Uttar Pradesh	03-06-2025	12,68,00,000
53	32/21/2020-SPV Division	Karnataka	09-06-2025	92,01,066
54	32/21/2020-SPV Division	Karnataka	09-06-2025	87,23,622
55	32/49/2024-SPV Division	Rajasthan	09-06-2025	9,28,56,784
56	32/15/2025-SPV Division	Gujarat	10-06-2025	49,46,69,247
57	32/39/2025-SPV Division	Punjab	11-06-2025	8,86,00,000
58	32/39/2025-SPV Division	Punjab	11-06-2025	2,04,00,000
59	32/3/2024-SPV Division	Tamil Nadu	26-06-2025	2,26,96,145
60	32/60/2023-SPV Division	Uttar Pradesh	27-06-2025	1,80,00,000
61	32/62/2023-SPV Division	Rajasthan	30-06-2025	58,14,07,437
62	32/62/2023-SPV Division	Rajasthan	30-06-2025	17,65,40,296
63	32/8/2024-SPV Division	Haryana	30-06-2025	81,17,00,000
64	32/8/2024-SPV Division	Haryana	30-06-2025	1,87,00,000
65	32/19/2025-SPV Division	Gujarat	30-06-2025	87,24,93,858
66	32/38/2025-SPV Division	Madhya Pradesh	30-06-2025	7,94,78,185
67	32/35/2025-SPV Division	Tripura	09-07-2025	7,43,00,000
68	32/43/2024-SPV Division	Maharashtra	22-07-2025	15,36,00,000
69	32/43/2024-SPV Division	Maharashtra	22-07-2025	3,05,00,000
70	32/43/2024-SPV Division	Maharashtra	22-07-2025	1,65,00,000
71	32/51/2024-SPV Division	Maharashtra	28-07-2025	72,60,48,750
72	32/46/2025-SPV Division	Maharashtra	29-07-2025	86,85,00,000
73	32/46/2025-SPV Division	Maharashtra	29-07-2025	14,71,00,000
74	32/46/2025-SPV Division	Maharashtra	29-07-2025	9,80,00,000
75	32/47/2025-SPV Division	Maharashtra	31-07-2025	26,05,00,000
76	32/47/2025-SPV Division	Maharashtra	31-07-2025	4,41,00,000
77	32/47/2025-SPV Division	Maharashtra	31-07-2025	2,94,00,000
78	32/48/2025-SPV Division	Maharashtra	31-07-2025	17,36,00,000
79	32/48/2025-SPV Division	Maharashtra	31-07-2025	2,94,00,000
80	32/48/2025-SPV Division	Maharashtra	31-07-2025	1,96,00,000

81	32/15/2025-SPV Division	Gujarat	13-08-2025	31,36,03,684
82	32/51/2024-SPV Division Part (1)	Maharashtra	14-08-2025	93,76,92,000
83	32/25/2024-SPV Division	Himachal Pradesh	18-08-2025	72,47,000
84	32/4/2023-SPV Division	Uttar Pradesh	22-08-2025	21,14,19,202
85	32/37/2025-SPV Division	Manipur	27-08-2025	78,38,000
86	32/39/2025-SPV Division	Punjab	08-09-2025	1,73,00,000
87	32/39/2025-SPV Division	Punjab	08-09-2025	1,05,00,000
88	32/51/2024-SPV Division	Maharashtra	15-09-2025	1,82,69,84,250
89	32/13/2020-SPV Division	Jharkhand	15-09-2025	55,80,423
90	32/18/2024-SPV Division	Jharkhand	06-10-2025	1,08,00,000
91	32/44/2025-SPV Division	Maharashtra	06-11-2025	7,67,00,000
92	32/44/2025-SPV Division	Maharashtra	06-11-2025	7,58,00,000
93	32/39/2025-SPV Division	Punjab	10-11-2025	2,46,00,000
94	32/64/2025-SPV Division	Ladakh	03-12-2025	1,49,23,000
95	32/43/2024-SPV Division	Maharashtra	05-12-2025	1,41,00,000
96	32/43/2024-SPV Division	Maharashtra	05-12-2025	94,00,000
97	32/61/2025-SPV Division	Jharkhand	05-12-2025	3,04,00,000
98	32/65/2025-SPV Division	Karnataka	12-12-2025	7,49,76,489
99	32/40/2025-SPV Division	Rajasthan	12-12-2025	4,68,88,937
100	32/18/2025-SPV Division	Karnataka	12-12-2025	2,55,35,160
101	32/13/2024-SPV Division	Mizoram	12-12-2025	1,72,62,009
102	32/8/2024-SPV Division	Haryana	26-12-2025	85,88,00,000
103	32/8/2024-SPV Division	Haryana	26-12-2025	2,28,00,000
104	32/43/2024-SPV Division	Maharashtra	29-12-2025	8,37,00,000
105	32/44/2025-SPV Division	Maharashtra	31-12-2025	52,40,00,000
106	32/44/2025-SPV Division	Maharashtra	31-12-2025	1,31,00,000
107	32/44/2025-SPV Division	Maharashtra	31-12-2025	4,20,00,000
108	32/44/2025-SPV Division	Maharashtra	31-12-2025	45,50,00,000
109	32/51/2024-SPV Division	Maharashtra	31-12-2025	90,85,80,750
110	32/51/2024-SPV Division Part (1)	Maharashtra	31-12-2025	1,08,23,29,500
111	32/51/2024-SPV Division-Part(2)	Maharashtra	31-12-2025	6,02,93,62,500

Table 5: Funds released under New Solar Power Scheme (for PVTG Habitations/Villages) under PM JANMAN from 01.01.2025 to 31.12.2025

(Rs. in Lakhs)

Sl. No.	Sanction Number	Implementing Agency	State	Funds Released	
				Date	Amount in Rs.
1	32/22/2024-SPV Division	APEPDCL, Visakhapatnam	Andhra Pradesh	31.01.2025	36,60,000
2	32/4/2024-SPV Division	TREDA, Tripura	Tripura	17.03.2025	5,96,05,000
3	32/32/2024-SPV Division	JBVNL, Ranchi	Jharkhand	18.03.2025	2,86,08,384
4	32/6/2025-SPV Division	CESC, Mysore	Karnataka	26.03.2025	62,65,000

Table 6; State Wise Expenditure under PM Surya Ghar Muft Bijli Yojana from 01.01.2025 to 31.12.2025

State	No. of Beneficiaries	Amount of CFA Released (in crores)
ANDAMAN and NICOBAR ISLANDS	136	1.15
ANDHRA PRADESH	67,908	525.82
ARUNACHAL PRADESH	1	0.01
ASSAM	55,706	475.68
BIHAR	11,424	88.22
CHANDIGARH	643	4.91
CHHATTISGARH	14,421	111.79
GOA	957	7.59
GUJARAT	279,541	2,204.44
HARYANA	36,034	264.64
HIMACHAL PRADESH	5,020	42.96
JAMMU and KASHMIR	14,980	128.23
JHARKHAND	1,205	9.35
KARNATAKA	10,300	85.29
KERALA	119,324	931.79
LADAKH	891	7.64
LAKSHADWEEP	583	5.00
MADHYA PRADESH	61,043	475.23
MAHARASHTRA	275,009	2,197.51

MANIPUR	604	5.17
MEGHALAYA	16	0.10
MIZORAM	664	5.64
NAGALAND	117	0.98
NCT OF DELHI	4,002	33.56
ODISHA	21,757	166.74
PUDUCHERRY	1,614	12.43
PUNJAB	7,055	54.89
RAJASTHAN	87,830	684.35
SIKKIM	15	0.12
TAMIL NADU	34,412	261.84
TELANGANA	18,253	145.46
THE DADRA AND NAGAR HAVELI AND DAMAN AND DIU	438	3.41
TRIPURA	1,515	12.74
UTTARAKHAND	39,448	338.34
UTTAR PRADESH	247,401	1,896.00
WEST BENGAL	339	2.53
TOTAL	**1,420,606**	**11,191.53**

Table 7: Funds released under 750 MW VGF Scheme (Phase-II Batch-III) to Solar Energy Corporation of India Ltd (SECI) from 01.01.2025 to 31.12.2025.

SI. No	Sanction Number	Agency Name	Sanction Date	Amount Rs. (in Rs)
1	F.NO. 32/7/2017-Solar Energy Group (Gen Component)	SECI	18.06.2025	₹ 10,64,99,983.00
2	F. No. 32/7/2017-Solar Energy Group (SC component)	SECI	18.06.2025	₹ 2,62,84,242.00
3	F. No. 32/7/2017-Solar Energy Group (ST Component)	SECI	18.06.2025	₹ 3,54,88,775.00
4	F.NO. 32/7/2017-Solar Energy Group(Gen.Com)	SECI	26.09.2025	₹ 3,54,99,995.00
5	F. No. 32/7/2017-Solar Energy Group (SC.Com)	SECI	26.09.2025	₹ 87,61,414.00
6	F. No. 32/7/2017-Solar Energy Group (St.Com)	SECI	26.09.2025	₹ 1,18,29,591.00

Table 8: Funds released under 2000 MW VGF Scheme (Phase-II Batch-III) to Solar Energy Corporation of India Ltd (SECI) from 01.01.2025 to 31.12.2025.

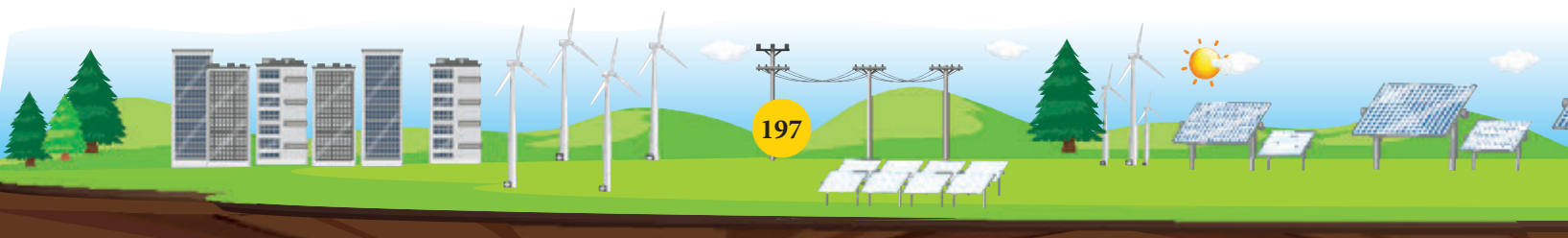
SI. No	Sanction Number	Agency Name	Sanction Date	Amount Rs. (in Rs)
1	283/70/2017-Grid Solar-Part(1)(Gen.Com)	SECI	28.05.2025	₹ 3,44,23,376.00
2	283/70/2017-Grid Solar-Part(1)(SC.Com)	SECI	28.05.2025	₹ 73,75,474.00
3	283/70/2017-Grid Solar-Part(1)(ST.Com)	SECI	28.05.2025	₹ 31,46,510.00
4	283/70/2017-Grid Solar(Gen.Com)	SECI	25.06.2025	₹ 4,01,35,587.00
5	283/70/2017-Grid Solar(SC.Com)	SECI	25.06.2025	₹ 90,68,844.00
6	283/70/2017-Grid Solar(ST.Com)	SECI	25.06.2025	₹ 36,75,129.00
7	283/70/2017-Grid Solar(Gen.Com)	SECI	3.12.2025	₹ 8,76,21,161.00
8	283/70/2017-Grid Solar(SC.Com)	SECI	3.12.2025	₹ 1,97,98,457.00
9	283/70/2017-Grid Solar(ST.Com)	SECI	3.12.2025	₹ 80,23,281.00
10	283/70/2017-Grid Solar(Gen.Com)	SECI	23.03.2026	₹ 1,98,98,556

Table 9: Funds released under DEMO GBI Scheme to Solar Energy Corporation of India Ltd (SECI) from 01.01.2025 to 31.12.2025

SI. No	Sanction Number	Agency Name	Sanction Date	Amount Rs. (In Rs)
1	283/61/2018-GRID SOLAR(Gen.Com)	SECI	07.07.2025	₹ 28,44,957.00

Table 10: Funds released under RPSSGP Scheme to Solar Energy Corporation of India Ltd (SECI) from 01.01.2025 to 31.12.2025.

SI. No	Sanction Number	Agency Name	Sanction Date	Amount Rs. (in Rs)
1	32/6/2017-Solar Energy Group(Gen.Com)	SECI	05.05.2025	₹ 7,32,50,043.00
2	32/6/2017-Solar Energy Group(SC.Com)	SECI	05.05.2025	₹ 1,72,14,353.00
3	32/6/2017-Solar Energy Group(ST.Com)	SECI	05.05.2025	₹ 1,25,09,728.00
4	32/6/2017-Solar Energy Group(Gen.Com)	SECI	19.06.2025	₹ 31,59,36,131.00
5	32/6/2017-Solar Energy Group(SC.Com)	SECI	19.06.2025	₹ 7,82,12,278.00
6	32/6/2017-Solar Energy Group(ST.Com)	SECI	19.06.2025	₹ 3,39,71,432.00
7	32/6/2017-Solar Energy Group(Gen.Com)	SECI	30.09.2025	₹ 29,57,51,557.00
8	32/6/2017-Solar Energy Group(SC.Com)	SECI	30.09.2025	₹ 7,40,01,788.00



9	32/6/2017-Solar Energy Group(ST.Com)	SECI	30.09.2025	₹ 5,47,11,166.00
10	32/6/2017-Solar Energy Group(Gen.Com)	SECI	23.03.2026	₹ 23,39,59,222.00

Table 11 Funds released to Indian Renewable Energy Development Agency Ltd. (IREDA) for payment of interest on Government of India Fully Serviced Bonds from 01.01.2025 to 31.12.2025.

Sl. No.	Sanction Number	Agency Name	Sanction Date	Amount (Rs.)
1.	340-12/2/2018-IREDA	IREDA	30-01-2025	₹ 22,14,13,333
2.	340-12/2/2018-IREDA	IREDA	13-02-2025	₹ 8,40,56,831
3.	340-12/2/2018-IREDA	IREDA	21-02-2025	₹ 31,53,11,918
4.	340-12/2/2018-IREDA	IREDA	30-07-2025	₹ 21,84,00,055
5.	340-12/2/2018-IREDA	IREDA	18-08-2025	₹ 8,29,12,877
6.	340-12/2/2018-IREDA	IREDA	02-09-2025	₹ 32,05,38,082

Table 12 The Private, voluntary organizations and State PIAs received grant of more than Rs. 50.00 lakh during the period of 01.01.2025 to 31.12.2025

					Funds released		
Sl. No.	Sanction No.	Project	State/UT	Organization /Agency	Date	Amount (Rs. in Lakh)	Remarks
1	20(38)2008-SHP (Vol-V)	Setting up of Small Hydro Power projects by Kargil Renewable Energy Development Agency (KREDA) in UT of Ladakh under 'Ladakh Renewable Energy Initiative' (LREI) project	UT of Ladakh	Kargil Renewable Energy Development Agency (KREDA)	04.02.2025	202.04	Release of next installment of CFA
2	20(38)2008-SHP (Vol-V)	Setting up of Small Hydro Power projects by Kargil Renewable Energy Development Agency (KREDA) in UT of Ladakh under 'Ladakh Renewable Energy Initiative' (LREI) project	UT of Ladakh	Kargil Renewable Energy Development Agency (KREDA)	04.02.2025	152.00	Release of next installment of CFA

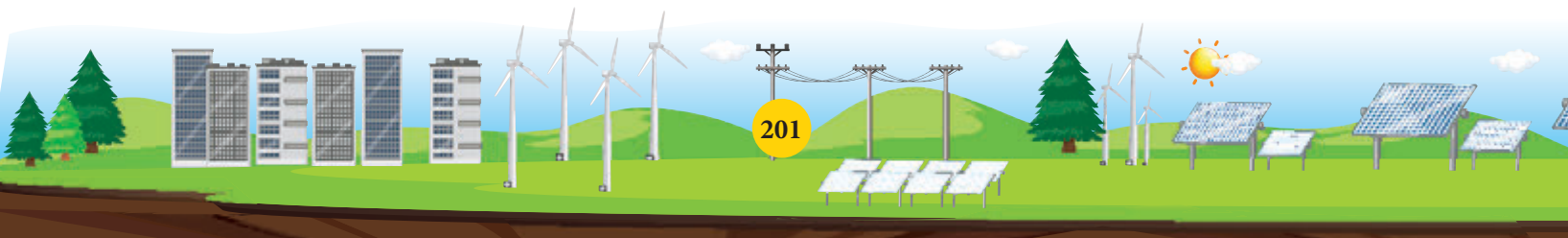
3	6/4/2015-SHP	Setting up of SHP-V project at Chainage 9900m (3x0.75 MW) in Bahadurpur Village on Miyagam Branch Canal in Chhota Udepur District of Gujarat by Sardar Sarovar Narmada Nigam Ltd. (SSNNL)	Gujarat	Sardar Sarovar Narmada Nigam Ltd. (SSNNL)	16.05.2025	78.75	Release of final installment of CFA
4	286/51/2017-SHP	Setting up of Mukerian SHP (2x9 MW) project in Gurdaspur District of Punjab by Punjab State Power Corporation Ltd. (PSPCL)	Punjab	Punjab State Power Corporation Ltd. (PSPCL)	19.05.2025	143.75	Release of final installment of CFA
5	287/19/2018-SHP	Setting up of Holi-II (2x3.50 MW) SHP project in Chamba District of Himachal Pradesh by M/s OM Energy Generation Pvt. Ltd.	Himachal Pradesh	M/s OM Energy Generation Pvt. Ltd.	27.06.2025	125.00	Release of final installment of CFA
6	287/78/2017-SHP	Setting up of Khandaleru (2x3 MW) SHP project in Nellore district of Andhra Pradesh by M/s Khandaleru Power Company Ltd.	Andhra Pradesh	M/s Khandaleru Power Company Ltd.	30.06.2025	375.00	Release of final installment of CFA
7	287/21/2019-SHP	Setting up of Awa SHP (4.50 MW) project in Kangra district of Himachal Pradesh by M/s Awa Power Co. Pvt. Ltd.	Himachal Pradesh	M/s Awa Power Company Pvt. Ltd.	26.08.2025	76.25	Release of final installment of CFA

8	287/250/2017-SHP	Setting up of Neogal SHP (4.50 MW) project in Kangra district of Himachal Pradesh by M/s Awa Power Co. Pvt. Ltd.	Himachal Pradesh	M/s Neogal Power Company Pvt. Ltd.	26.08.2025	76.25	Release of final installment of CFA
9	286/6/2017-SHP	Setting up of New Karnah (3x4 MW) SHP project in Karnah Tehsil of Kupwara district, Jammu & Kashmir by Jammu & Kashmir State Power Development Corporation Ltd. (JKSPDC)	Jammu & Kashmir	Jammu & Kashmir State Power Development Corporation Ltd. (JKSPDC)	10.09.2025	700.00	Release of 3rd installment of CFA
10	286/17/2017-SHP	Setting up of Tlawva SHP (5 MW) project in Champhai District of Mizoram by Power & Electricity Department, Mizoram	Mizoram	Power and Electricity Department, Mizoram	22.09.2025	70.00	Release of 4th and final installment of subsidy
11	289/52/2017-SHP	R&M of 2x12 MW River Bed Generating Units of Bhadra SHP in Bhadravati, Shimoga district of Karnataka by Karnataka Power Corporation Ltd. (KPCL), Karnataka	Karnataka	Karnataka Power Corporation Ltd. (KPCL)	15.10.2025	68.11	Release of 3rd and final installment of subsidy
12	286/48/2017-SHP	Setting up of Poringalkuthu SHP (24MW) project in Thrissur District of Kerala by Kerala State Electricity Board (KSEB)	Kerala	Kerala State Electricity Board (KSEB)	05.12.2025	200.00	Release of 4th and final installment of subsidy

13	286/122/2017-SHP	Setting up of Tsutsung Yongki (2x500 kW) SHP project in Mokokchung District of Nagaland by Department of New and Renewable Energy (DNRE), Nagaland	Nagaland	Department of New and Renewable Energy (DNRE), Nagaland	12.12.2025	50.00	Release of 4th and final installment of subsidy
14	286/169/2017-SHP	Setting up of Ponglefo (2x500 kW) SHP project in Kiphire District of Nagaland by Department of Power, Nagaland	Nagaland	Department of Power, Nagaland	12.12.2025	75.00	Release of 4th and final installment of subsidy
15	286/5/2017-SHP	Setting up of SHP-III at Chainage 32940m (3x5 MW) project in Nani-Kumad village, Ahmedabad district of Gujarat on Saurashtra Branch Canal by Sardar Sarovar Narmada Nigam Ltd. (SSNNL)	Gujarat	Sardar Sarovar Narmada Nigam Ltd. (SSNNL)	23.12.2025	200.00	Release of 4th and final installment of subsidy
16	287/25/2017-SHP	Setting up of Temghar (4 MW) SHP project in Pune District of Maharashtra by M/s Suvas Holdings Ltd.	Maharashtra	M/s Suvas Holdings Ltd.	26.12.2025	300.00	Release of full and final eligible subsidy, on reimburs-ement basis

Table 13: Fund Released to Implementing Agencies under CPSU Scheme Phase II during the period 01.01.2025 to 31.12.2025.

Sl. No.	Sanctioned Order	Agency Name	Sanction Date	Amount (Rs)
1	302/4/2017-GRID SOLAR(iii)	SECI	30.03.2025	64,00,000
2	302/4/2017-GRID SOLAR	SECI	05.06.2025	1,67,87,413
3	302/4/2017-GRID SOLAR(i)	SECI	05.06.2025	3,25,62,077

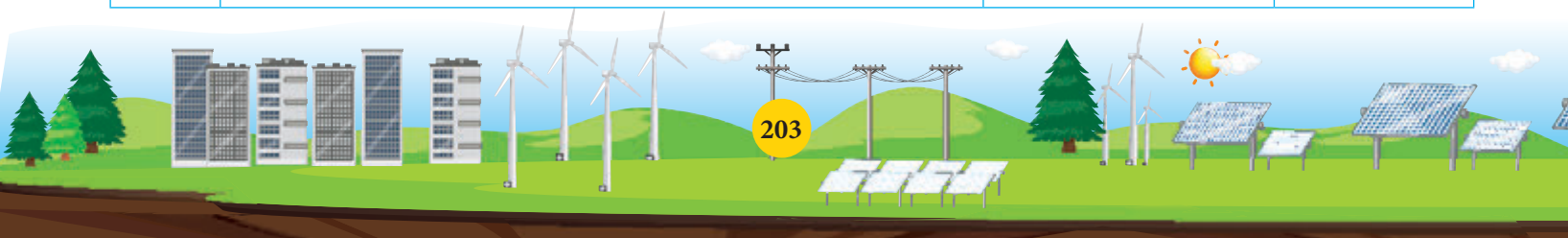


4	302/4/2017-GRID SOLAR(ii)	SECI	05.06.2025	4,39,65,058
5	302/4/2017-GRID SOLAR(iii)	SECI	05.06.2025	13,19,36,865
6	302/4/2017-GRID SOLAR-Part(4) (i)	SECI	24.12.2025	18,90,87,150
7	302/4/2017-GRID SOLAR-Part(4) (ii)	SECI	24.12.2025	14,29,55,400
8	302/4/2017-GRID SOLAR-Part(4) (iii)	SECI	24.12.2025	72,84,57,450
9	302/4/2017-GRID SOLAR-Part(5) (i)	SECI	24.12.2025	1,23,97,427
10	302/4/2017-GRID SOLAR-Part(5) (ii)	SECI	24.12.2025	52,88,360
11	302/4/2017-GRID SOLAR-Part(5) (iii)	SECI	24.12.2025	5,78,62,213

Table 14 Funds release to implementing Agencies under Biogas Programme from 01-01-2025 to 31.12.2025

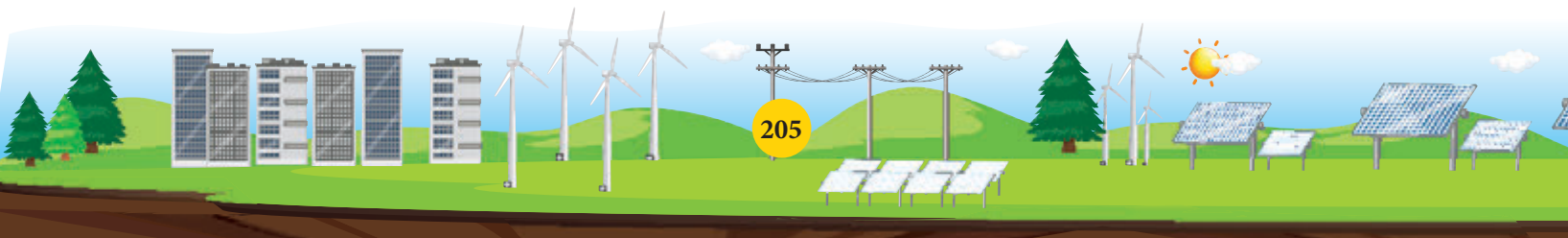
Sl. No	PIA/Beneficiary	Date of Release	Total subsidy released (in Rs.)
1	CREDA, Raipur	08.01.2025	292600
2	MPSAIDC, Bhopal	11.02.2025	1722000
3	MPSAIDC, Bhopal	04.03.2025	14350000
4	MPSAIDC, Bhopal	04.03.2025	2870000
5	BDTC, MPUAT, Raj.	28.02.2025	3530100
6	APEDA, Itanagar	04.03.2025	150000
7	APEDA, Itanagar	04.03.2025	2640000
8	APEDA, Itanagar	04.03.2025	294000
9	RDD, Maharashtra	04.03.2025	25468690
10	RDD, Maharashtra	04.03.2025	585879
11	CREDA, Raipur	03.03.2025	881050
12	CREDA, Raipur	04.03.2025	4090800
13	CREDA, Raipur	04.03.2025	1938300
14	KIIT, Bhunbaneswar	04.03.2025	1119250
15	BDTC, DAV, Indore	07.03.2025	4706800
16	RDD, Maharashtra	22.03.2025	31776000
17	KVIC, Mumbai	21.03.2025	13214350
18	NDDB Mrida Ltd, Anand(Gujarat)	22.03.2025	110000

19	OREDA, Bhubaneswar	22.03.2025	400000
20	PEDA, Chandigarh	28.03.2025	7591150
21	BDTC, IIT, Guwahati	26.03.2025	880000
22	RDD, Pauri, (U.K.)	22.03.2025	2258500
23	Directorate Agri. , State Govt. of Kerala	26.03.2025	383000
24	NDDB Mirda Ltd	29.03.2025	1500000
25	Directorate of Agri. State Govt. of Haryana	30.03.2025	1148000
26	Biogas Development and Training Centre (BDTC), IIT Delhi	25.06.2025	2450000.00
27	Biogas Development and Training Centre (BDTC), IIT Delhi	26.06.2025	2450000.00
28	Devi Ahilya Vishwavidyalaya (DAVV)	26.06.2025	1639750.00
29	Devi Ahilya Vishwavidyalaya (DAVV)	26.06.2025	50000.00
30	Odisha Renewable Energy Development Agency(OREDA)	27.06.2025	1396400.00
31	Odisha Renewable Energy Development Agency(OREDA)	27.06.2025	25000.00
32	Odisha Renewable Energy Development Agency(OREDA)	30.06.2025	31000.00
33	Odisha Renewable Energy Development Agency (OREDA)	30.06.2025	31000.00
34	BDTC, IIT, Delhi	30.06.2025	250250.00
35	BDTC, KIIT, Bhubaneswar	03.07.2025	1856250.00
36	National Biogas Manure and Management Programme (NBMMP)	09.07.2025	2393390.00
37	National Biogas Manure and Management Programme (NBMMP)	09.07.2025	7118050.00
38	Tripura Renewable Energy Development Agency (TREDA)	11.07.2025	5331038.00
39	Tripura Renewable Energy Development Agency (TREDA)	11.07.2025	2763000.00
40	Tripura Renewable Energy Development Agency (TREDA)	11.07.2025	957000.00
41	Tripura Renewable Energy Development Agency (TREDA)	11.07.2025	847000.00
42	Tripura Renewable Energy Development Agency (TREDA)	11.07.2025	44000.00
43	National Dairy Development Board (NDDB)	01.08.2025	29180450.00
44	National Dairy Development Board (NDDB)	01.08.2025	1642200.00
45	National Dairy Development Board (NDDB)	01.08.2025	38828500.00
46	Tripura Renewable Energy Development Agency (TREDA)	12.08.2025	1359000.00
47	Odisha Renewable Energy Development Agency(OREDA)	12.08.2025	468450.00
48	Odisha Renewable Energy Development Agency(OREDA)	12.08.2025	200000.00



49	Biogas Development and Training Centre (BDTC) KIIT , Bhubaneswar	13.08.2025	1181260.00
50	Biogas Development and Training Centre (BDTC) KIIT , Bhubaneswar	13.08.2025	347911.00
51	Biogas Development and Training Centre (BDTC) KIIT , Bhubaneswar	18.08.2025	1406967.00
52	Biogas Development and Training Centre (BDTC) KIIT , Bhubaneswar	18.08.2025	1684324.00
53	MPSAIDC, Bhopal	08.09.2025	8711800.00
54	MPSAIDC, Bhopal	08.09.2025	3917500.00
55	MPSAIDC, Bhopal	08.09.2025	6180000.00
56	Tripura Renewable Energy Development Agency (TREDA)	12.08.2025	68000.00
57	Tripura Renewable Energy Development Agency (TREDA)	12.08.2025	608000.00
58	Uttarakhand Renewable Energy Development Agency (UREDA)	15.09.2025	2756500.00
59	Uttarakhand Renewable Energy Development Agency (UREDA)	15.09.2025	892500.00
60	Uttarakhand Renewable Energy Development Agency (UREDA)	15.09.2025	357000.00
61	Kaira District Co-Operative Milk Producers' Union Ltd. (Amul Dairy), Anand.	17.09.2025	6908500.00
62	Kaira District Co-Operative Milk Producers' Union Ltd. (Amul Dairy), Anand.	17.09.2025	110000.00
63	Kaira District Co-Operative Milk Producers' Union Ltd. (Amul Dairy), Anand.	17.09.2025	1100000.00
64	BDTC Devi Ahilya Vishwavidyalaya (DAVV)	23.09.2025	2865350.00
65	BDTC Devi Ahilya Vishwavidyalaya (DAVV)	23.09.2025	22000.00
66	BDTC Devi Ahilya Vishwavidyalaya (DAVV)	23.09.2025	22000.00
67	M/s Om Chicks(I) Private Ltd (MEDA)	13.10.2025	4200000.00
68	M/s Rajani Kantilal Umap (MEDA)	13.10.2025	4200000.00
69	Uttar Pradesh New and Renewable Energy Development Agency (UPNEDA)	21.10.2025	2286100.00
70	M/s Trimurti Pavan Pratisthan (MEDA)	21.10.2025	1237500.00
71	Dadra & Nagar Haveli	31.10.2025	396000.00
72	Zorabian Sales	31.10.2025	2475000.00
73	Rajas Dairy Farm	12.11.2025	1237500.00

74	IIT Delhi	24.11.2025	430250.00
75	Indo Count	24.11.2026	8200000.00
76	Chhattisgarh State Renewable Energy Development Agency (CREDA), General Category Component 2024-25	04.12.2025	1383300.00
77	Chhattisgarh State Renewable Energy Development Agency (CREDA), SC Category Component 2024-25	04.12.2025	178000.00
78	Chhattisgarh State Renewable Energy Development Agency (CREDA), ST Category Component 2024-25	04.12.2025	643500.00
79	Venco	04.12.2025	4200000.00
80	New National Biogas and organic Manure Programme (NNBOMP) General Category Component 2020-21	08.12.2025	77853500.00
81	New National Biogas and organic Manure Programme (NNBOMP) SC Category Component 2020-21	08.12.2025	2716000.00
82	New National Biogas and organic Manure Programme (NNBOMP) ST Component 2020-21	08.12.2025	2893000.00
83	Milky Mist Dairy Food Pvt. Ltd	09.12.2025	8200000.00
84	Sanjay Kumar Kalvakuntla	09.12.2025	4200000.00
85	SKM Egg Products Export India Limited	09.12.2025	9000000.00
86	New National Biogas and organic Manure Programme (NNBOMP) General Category Component 2019-20	09.12.2025	41373500.00
87	New National Biogas and organic Manure Programme (NNBOMP) SC Category Component 2019-20	09.12.2025	0.00
88	New National Biogas and organic Manure Programme (NNBOMP) ST Component 2019-20	09.12.2025	1050000.00
89	Rural Development Department, Maharashtra (F.Y. 2023-24) General Category Component	09.12.2025	28255450.00
90	Rural Development Department, Maharashtra (F.Y. 2023-24) SC Category Component	09.12.2025	2731600.00
91	Rural Development Department, Maharashtra (F.Y. 2023-24) ST Category Component	09.12.2025	2155600.00
92	M/s. Kalinga Breeding Farms Private Ltd	04.02.2026	8200000.00
93	Mrs. Archana Sunil Kadappati, Kadapatti Dairy Farm	04.02.2026	1237500.00
94	Telangana State Renewable Energy Development Corporation Ltd (F.Y. 2023-24 and 2024-25) General Category Component	18.12.2025	225550.00
95	Telangana State Renewable Energy Development Corporation Ltd (F.Y. 2024-25) SC Category Component	18.12.2025	25000.00
96	Punjab Energy Development Agency(PEDA) 2024-25	22.12.2025	21698450.00



97	Biogas Development and Training Centre (BDTC) KIIT, Bhubaneswar	23.12.2025	96000.00
98	Rural Development Department, State Govt. of Maharashtra under General Category Component (F.Y. 2022-23)	31.12.2025	7584832.00
99	Rural Development Department, State Govt. of Maharashtra under SC Category Component (F.Y. 2022-23)	31.12.2025	895000.00
100	Rural Development Department, State Govt. of Maharashtra under ST Category Component (F.Y. 2022-23)	31.12.2025	822000.00

Table15 Funds released to implementing agencies under RE-RTD Programme as on 01.01.2025 to 31.12.2025

Sr. No.	File No.	Project Title	Project Institute Name	Date	Sanction Amount (Rs.)
1.	31/2/2019-Solar R and D	"Flexible Perovskite Solar Cells and Intermediate Module"	Indian Institute of Technology Bombay, Powai, Mumbai	11.02.2025	40,00,000
2.	313-21/9/2022- Solar R and D	Centre of Excellence titled "Research and development of Ultra Low head and Hydrokinetic Turbines and performance prediction of small hydro turbine models"	IIT Roorkee	27.08.2024	25,00,000
3.	313-21/4/2024- Solar R and D	"Scale-up of Perovskite Tandem Solar Cells (Phase I)"	Indian Institute of Technology Bombay	16.06.2025	14,83,00,000
4.	353/5/2020-New Technology	"Green Hydrogen Mobility Projects at Leh".	NTPC Ltd. Noida, U.P.	19.06.2025	1,72,85,241
5.	313-21/11/2022-Solar R and D	"National Centre for Photovoltaic Research and Education (NCPRE) - Phase III"	Indian Institute of Technology Bombay	21.07.2025	3,91,09,576
6.	313-21/5/2024-Solar R and D	"Perovskite Solar Modules"	Indian Institute of Technology Bombay	16.06.2025	2,00,00,000
7.	313/08/2025- R and D COORD	"Harnessing of Geothermal Energy from Arunachal Himalaya"	Centre for Earth Sciences and Himalayan Studies, Department of Sciences and Technology, Government of Arunachal Pradesh	24.07.2025	1,00,00,000

8.	313/7/2025-Solar R and D COORD	"Pilot Integrated Commercial Geothermal Energy of 450 KWH by retrofitting unproductive oil and gas wells: Raageshwari Gas field, Barmer, Rajasthan"	IIT Madras	01.08.2025	1,00,00,000
9.	313-21/9/2022-Solar R and D	Centre of Excellence titled "Research and development of Ultra Low head and Hydrokinetic Turbines and performance prediction of small hydro turbine models"	IIT Roorkee	11.08.2025	3,50,00,000
10.	313/11/2025-R and D COORD	"Demonstration of power generation using integrated Solar-Geothermal Energies"	Pandit Deendayal Energy University	11.08.2025	7,00,000
11.	313/10/2025-R and D COORD	"A Pilot Project on Study and Testing of Shallow Geothermal Energy Potential in India"	IIT Delhi	17.09.2025	30,00,000
12.	226/2/2018-Wind	"Integrated Wind and Solar Resource Assessment through Mapping and Measurements"	National Institute of Wind Energy, Chennai	29.09.2025	1,21,95,000
13.	313/9/2025- R and D	"Design and Development of Geo Thermal Cooling for Air Conditioning System in 20x20x10 ft Room"	OTBI, Osmania University, Hyderabad	03.10.2025	1,00,000
14.	313/29/2025- R and D COORD	"Design and Development of Power Back up of 1 - 5kWh based on Sodium ion Cell operable at sub-Zero temperature for renewables"	Indian Institute of Technology, Roorkee, Uttarakhand	29.12.2025	70,00,000
15.	313/36/2025- R and D COORD	"Next Generation Energy Storage: Industrial scale manufacturing of Low-Cost High Temperature Latent Heat Storage Using Chloride Salts as the Storage medium"	Indian Institute of Technology Jodhpur	29.12.2025	20,00,000

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