# भारत सरकार/Government of India
# नवीन और नवीकरणीय ऊर्जा मंत्रालय
# Ministry of New & Renewable Energy

## Major Achievements/Initiatives in Renewable Energy Sector during May 2014- April 2015

### 1. Targets for Renewable Energy Capacity Addition Up-scaled

The targets for capacity addition under various sources of renewable energy proposed to be revised form 30,000 MW by 2016-17 to 1,75,000 MW by 2021-22 as detailed below:

Capacities in MW

| Source | Installed capacity at the end of 11th Plan | Capacity addition Target for 12th Plan (2012-17) | Revised Targets for 2022 |
|---|---|---|---|
| Solar Power | 941 | 10,000 | 1,00,000 |
| Wind power | 17,352 | 15,000 | 60,000 |
| Small Hydro | 3,395 | 2,100 | 10,000 |
| Biomass Power | 3,225 | 2,900 | 5,000 |
| **TOTAL** | **24,914** | **30,000** | **1,75,000** |

*Likely Outcome:* Additional of RE capacity on this scale will help in achieving the Government's objective of providing power 24x7 to all, ensuring energy security and in compliable of 15% share of renewable energy in energy mix by 2022 as envisaged in NAPCC.

### 2. First Renewable Energy Global Investors Meet & Expo (RE-INVEST) 2015

The Meet & Expo organized in New Delhi from 15-17 February 2015 was inaugurated by the Honourable Prime Minister of India. The Event has been a tremendous success as it attracted

around 3,000 participations from a wide range of stakeholders – Investors, Banks, Project developers, including Ministerial and Government delegations from Germany and the U.K. and industry delegations from several countries including China.

*Outcome:* The most significant outcome of the 3-day event was the signing of Green Energy Commitments by various public and private sector companies and proprietorship firms to invest in the country's renewable energy sector in the five year period from 2015 - 2019. The commitments were invited for any quantum of generation, starting from 1 MW in any renewable sector. It is heartening to note that this initiative by the Government was met whole-heartedly, with a total commitment of an astounding 266 GW being made by the Power Producers in the solar energy, wind energy, small hydro and bio energy sectors. The manufacturing sector also witnessed substantial commitment of 41 GW being made by the stakeholders (Solar: 5,050 MW, Wind: 36,350 MW) and significantly, commitments were also made by Financial Institutions for financing renewable projects. RE-INVEST has laid a strong foundation for the penetration of renewable energy in India in the coming years.

**3. Scheme for development of Solar Parks and Ultra Mega Solar Power Projects :**

The Government has approved on 10th December, 2014 a Scheme for setting up of 25 Solar Parks, each with the capacity of 500 MW and above and Ultra Mega Solar Power Projects to be developed in next 5 years in various States and will require Central Government financial support of Rs 4050 crore. These parks will be able to accommodate over 20,000 MW of solar power projects.

Approval for setting up of 17 Solar Parks, with capacity of 12,759 MW, is given in 12 so far. They are: Gujarat, Madhya Pradesh, Telangana, Andhra Pradesh, Karnataka, Uttar Pradesh, Meghalaya, Punjab, Rajasthan, Tamil Nadu, Kerala and Odisha. These solar parks will be developed in

collaboration with State Governments and their agencies. Total Central Financial Assistance (CFA) amounting to Rs 172.50 crore have been released to SECI under Scheme during 2014-15 (31.3.2015)

*Likely Outcome:* The proposed 25 solar parks will accommodate the projects of over 20000 MW. These parks will not only attract private investment in the sector but would also lay the foundation of massive expansion of solar energy in the identified States, which in turn would replace the fossil-based fuels and help in reduction of carbon emissions. Indirectly, it will also provide a boost to solar penal manufacturing in the country.

**4. Setting up of over 300 MW of Grid-Connected Solar PV Power Projects by Defence establishments and Para Military Forces with viability gap funding**

Under this Scheme over 300 MW of Grid-Connected and Off-Grid Solar PV Power Projects will be set up by Defence Establishments under Ministry of Defence and Para Military Forces under Ministry of Home Affairs (MHA) with Viability Gap Fund (VGF) under the Jawaharlal Nehru National Solar Mission (JNNSM) in five years that is from 2014 to 2019. Under the Scheme there is a stipulation of mandatory condition that all PV cells and modules used in the solar plants set up under this Scheme will be made in India. To implement this Scheme a provision of an amount of Rs 750 crore for MNRE from the National Clean Energy Fund has been earmarked.

The solar project developers will be provided VGF based on the bid. The bidders will be selected on the basis of bids for minimum VGF requirement for the project with commitment to supply solar power at Rs. 5.50/KWh for 25 years. However, the upper limits of the VGF are as follows:

Category-I: Rs.2.5 crore/MW for project capacity up to 5 MW or 30% of the project cost whichever is lower;

Category-II: Rs. 2 crore/MW for project capacity greater than 5 MW up to 25 MW or 30% of the project cost whichever is lower; and

Category-III: Rs. 1.5 crore /MW for project capacity greater than 25 MW or 30% of the project cost whichever is lower.

*Likely Outcome:* Besides adding 300 MW capacity of solar power, the scheme is likely to popularize the use of solar power in defence and para military establishments which have a vast potential in this area. In particular, it will promote the use of solar power in such establishments in remote areas thereby reducing the use of diesel and in turn carbon emission. The stipulated mandatory condition that all PV cells and modules used in the solar plants set up under this Scheme will be made in India will boost the domestic manufacturing of these products in India.

**5. Implementation of Scheme for setting up 1000 MW of Grid Connected Solar PV Power projects by CPSUs and GoI organisations with Viability Gap Funding :**

The Government has also approved the Scheme for setting up of 1000 MW of Grid-Connected Solar PV Power Projects with VGF (Viability Gap Fund) support of Rs.1000 crore, by CPSUs under various Central/State Schemes, in three years period from 2015-16 to 2017-18. The Scheme will have a mandatory condition that all PV cells and modules used in solar plants set up under this Scheme, will be made in India. The CPSUs and Government of India organisations like NTPC, NHPC, CIL, IREDA, Indian Railways, etc. are coming forward to set up solar power projects.

*Likely Outcome:* About 1000 MW capacity of solar power will be available in next 3 years. The use of solar power in CPSUs will produce the demonstration effect and likely to pave the way for its wide use in private establishments. The stipulated mandatory condition that all PV cells and modules used in the

solar plants set up under this Scheme will be made in India will boost the domestic manufacturing of these products in India.

**6. Scheme for Development of Grid Connected Solar PV Power Plants on Canal Banks and Canal Tops :**

MNRE launched a Scheme for Development of Grid Connected Solar PV Power Plants on Canal Banks and Canal Tops in the country during the 12th Plan period at an estimated cost of Rs. 975 crore and with Central Financial Assistance (CFA) of Rs. 228 crore. The objective of this scheme is to achieve gainful utilization of the unutilized area on top of Canals and also the vacant Government land along the banks of Canals wherever available, for setting up Solar PV power generation plants for feeding the generated power to Grid and to set up a total capacity of 100 MW solar PV power projects.

The Solar PV Power Plants on Canal Banks and Canal Tops with 50 MW capacities under each category have been approved to 8 States (Gujarat, Andhra Pradesh, Karnataka, Kerala, Uttar Pradesh, Punjab, Uttarakhand and West Bengal). First instalment of Rs 69 crore eligible @40% of CFA was released to SECI during 2014-15 under the scheme for onward disbursal to the State Implementing Agencies.

*Outcome:* Besides adding solar power capacity of 200 MW, the scheme is likely to achieve gainful utilization of the unutilized area on top of Canals and also the vacant Government land along the banks of Canals wherever available, for setting up Solar PV power generation plants for feeding the generated power to Grid

**7. Financing Roof top Solar PV:**

The Department of Financial Services under the Union Finance Ministry has advised all banks to encourage home loan/home improvement loan seekers to install roof top solar PVs and

include the cost of equipment in their home loan proposals just like non solar lighting, wiring and other such fittings. Apart from this, the RBI has issued instructions to all Scheduled Commercial Banks that the loans sanctioned by banks directly to individuals for setting up off-grid solar and other off-grid renewable energy solutions for households will be covered under Priority Sector lending.

Besides above, as per RBI's circular dated 23.4.2015, banks can now provide loans up to a limit of Rs 15 crore to borrowers for solar, biomass, wind and micro-hydel power generation and also for RE based public utilities like street lighting systems and remote village electrification are covered under priority sector lending.

*Outcome:* Enhanced availability of bank credit for RE projects as they are now eligible for lending within the mandatory 40% of their net bank credit directed for priority sectors.

**8. Restoration of Accelerated Depreciation (AD) Benefits to Wind Power Projects :**

After significant harm was done to the wind sector due to withdrawal of AD with effect from 1.4.2012, it has been restored on 18.7.2014. This decision of the Government will help in creating a robust manufacturing base for wind turbines in the country.

**9. Scaling up of a programme of Solar Pumps:**

Ministry of New & Renewable Energy (MNRE) has a scheme for providing subsidy for solar pumps. This Scheme has been integrated with the Ministry of Agriculture and Ministry of Drinking Water Supply so that drip irrigation, water harvesting etc. are combined with solar pumps to give a complete solution to the farmer. Out of targeted one lakh pumps, 15,330 numbers of pumps are allocated to Ministry of Drinking Water Supply, 54,394 to State Nodal Agencies and remaining 30,000 to NABARD for implementation. During 2014-15, total solar

pumps sanctioned to 22 States are:

- 60,236 sanctioned to States for irrigation purpose.
- 15,330 sanctioned to States for drinking water supply
- 30,000 allocated through NABARD.

Total financial assistance of Rs 353.50 crore released to States and NABARD under the programme during 2014-15

*Outcome:* About one lakh solar power pumps powered through clean energy (i.e. Solar Power) instead of conventional energy are likely to be added during 2 years. 85,000 farmers will be benefited with under scheme for irrigation purposes. Besides, drinking water problem will be solved for more than 7.6 lacs family through 15,330 Solar pumps for drinking water.

**10. Classification of Renewable Projects from Red to Green Category:**

On the request of MNRE, Ministry of Environment and Forests has decided that classification of Solar, Wind and Small Hydro Projects be out of Red Category and in Green Category under Central and State Pollution Control Boards. CPCB has issued an amendment in the categories of industries, according to which the Wind and Solar power projects of all capacities and Small Hydro projects of <25 MW capacity have been put in Green category, i.e. the project developers to obtain clearance from SPCB to "establish and operate" only once in the beginning.

**11. Enhancement in MNRE's Budget by 65.8% in Regular Budget, 2014-15:**

The Budget Estimate of the Ministry is increased by 65.8% to Rs.2519 crore in the Regular Budget passed by the Parliament in July from Rs.1,519 crore provided in the Interim Budget. Clean Energy Cess on coal has been increased from Rs 50 per tonne to Rs 100 per tonne so that

adequate funds are available for financing, *inter-alia*, Renewable Energy projects.

**12. Unnat Chulha Abhiyan Programme**

Since the problem in rural areas of the country is relatively more acute, a new scheme for developing and deploying improved biomass cooking stoves to provide evacuation of cooking energy solution in rural and semi-urban areas using biomass fuel has been initiated as the Unnat Chullah Abhiyan (UCA) Programme for 12th Plan period. Targets of about 3.5 lakh improved cookstoves were allocated to various States/UTs along with the disbursal of subsidy amounting to Rs 11.75 crore during 2014-15.

*Outcome:* Energy access is not only essential at the household level, but is also very critical to the provision of basic minimum infrastructure such as hospitals, schools and industries among others. For a country like ours, developmental goals and energy access are very closely linked and "Universal Energy Access" as a goal is necessary not just for each household but also for the associated sectors in the economy that will play an important role in economic development. UCA Programme will develop and deploy improved cook-stoves for providing cleaner cooking energy solutions in rural, semi –urban and urban areas using biomass as fuel for cooking launched. This will save rural women from the carcinogenic fumes emitted when traditional fuels are burned.

**13. Setting up a JVC for undertaking the First Demonstration Offshore Wind Power Project in the country along the Gujarat Coast:**

An MOU was signed on 1st October, 2014 for setting up a Joint Venture Company (JVC) to undertake first Demonstration Offshore Wind Power Project in the country along the Gujarat coast. The signatories of the MoU were Ministry of New and Renewable Energy (MNRE), National

Institute of Wind Energy (NIWE), and Consortium of partners consisting of National Thermal Power Corporation (NTPC), Power Grid Corporation of India Ltd (PGCIL), Indian Renewable Energy Development Agency (IREDA), Power Finance Corporation (PFC), Power Trading Corporation (PTC), and Gujarat Power Corporation Ltd (GPCL). The JVC will undertake detailed feasibility study and necessary steps as deemed necessary for implementation of the first offshore demonstration wind power project.

*Outcome:* This demonstration project will laid the foundation for the development of off-shore wind energy in the country.

## 14. Conclave on R& D in New and Renewable Energy

MNRE organized a one-day "Conclave on R& D in New and Renewable Energy" on 5th August 2014 at New Delhi with a view to review the progress of on-going Research, Development and Demonstration Projects in New and Renewable Energy funded by MNRE and seek the views from experts for taking further steps for faster development of technology for commercialization. The conclave was inaugurated by Hon'ble Minister of Power, Coal and New and Renewable Energy, and was also addressed to Principal Scientific Adviser to Government of India. A Compendium on R&D Projects funded by MNRE was released on the occasion. Around 200 participants including the Principal Investigators and scientists working in R&D projects, researchers, eminent experts on the related subjects, industry representatives associated with R&D, policy makers attended the conclave.

*Outcome:* The Conclave laid a strong emphasis on strengthening R&D Programme in new and renewable energy for faster development of technologies for commercialization to achieve the installable potential in the sector for meeting growing energy needs.

## 16. Formation of an Association of Renewable Energy Agencies of States (AREAS)

To promote the interaction amongst the State Nodal Agencies (SNAs) implementing the renewable energy programmes to enable them to learn from each other's experiences and share their best practices, MNRE took an initiative in consultation with SNAs and formed an Association of Renewable Energy Agencies of States (abbreviated as "AREAS), registered as a society on 27 August 2014, under Society Registration Act 1860. It has now been decided to create an initial corpus with a contribution of Rs 5 crore by MNRE to encourage SNAs to mobilize matching contribution of equal amount to the corpus from their respective States. The corpus so created will be invested in financial instruments like fixed deposit etc. and interest earned will be used by the AREAS in meeting its day-to-day expenses as also undertaking some of the activities as listed in the MoA and Rules and Regulations of the Society. Addendum/amendments to this effect have been incorporated in the HRD Programme of the Ministry. MNRE has already released Rs 3.96 crore as its contribution to corpus being maintained by IREDA.

## 17. IREDA's Achievements

- *Introduction of New Schemes*
  - Introduced Bridge Loan Scheme against Viability Gap Funding for Solar Power Projects
  - Introduced Short Term Loan Scheme Facility against MNRE Subsidy for Solar Thermal Water Heating Systems and Generation Based Incentive for wind projects.
- *Strengthening of Institutional Arrangement for RE Financing*
  - Signed MoUs with IIFCL & PFC-GEL for working together for the development of RE in India through co-financing.

- Signed new lines of credit for 100 million Euro with AfD, France and 30 billion Yen with JICA, Japan.

➢ *Diversification*

- Signed MoU with Solar Energy Corporation of India & Kerala State Electricity Board for development of 50 MW solar parks at Kasangad district for the benefit of the rural area of Kerala state.

- Signed MoU with NTPC, PFC, PGCIL, PTC and GSPCL for development of Offshore Wind Power in India.

➢ *Operational Highlights*

- Sanctioned first ever term loan of ₹ 43 crores for solarisation of 600 telecom towers.

- Sanctioned first ever small hydro power of 2 MW capacities in the State of Jammu & Kashmir.

- Sanctioned first ever a term loan of ₹ 61 crore for 132 KV power evacuation facility in Himachal Pradesh for hydro power projects owned by HPSEB and established by private project developer.

- Extended IREDA loan repayment from 10 years to 15 years i.e. door to door will be around 17 years to 20 years.

- Strengthened IREDA's appraisal system by upgrading Credit Risk Rating Model through technical assistance from KfW, Germany.

## 18. SECI's Achievements

➢ *750 MW VGF scheme under JNNSM Phase II, Batch I:* financial Closure of 640 MW projects was achieved.

Commissioning of 130 MW has been done in various Indian states.

- *Solarisation of Indo-Pak Border:* RfS for setting up of grid connected Solar PV Project of 5 MW each in Rajasthan and Gujarat were released in Oct, 2014. Subsequently, LOI has been issued for the Rajasthan project and work is in progress.
- *Solar PV Project Works/Studies Undertaken*: MoUs were signed with IREDA, CIL and THDCIL for 50 MW, 1000 MW and 250 MW respectively. Tripartite Agreements have been signed for setting up 50 MW each on behalf of THDCIL and IREDA in the State of Kerala on 31st March, 2015.
- *Solar Parks:* SECI signed MoU with the State Designated Agencies for 4 states, viz. Andhra Pradesh, Karnataka, Madhya Pradesh, Kerala and Uttar Pradesh for Development of Solar Parks. JVCs have been incorporated with for the Solar Parks in Andhra Pradesh and Karnataka. JVC incorporation is in advanced stages for solar parks in Madhya Pradesh and Kerala.
- *Power Trading:* Expression of Interest for the support services for the purpose of facilitation of Trading of Power was floated. SECI started Trading of Unbundled Solar Power on 24th March, 2015.
- *Rooftop PV Projects:* MoUs have been signed with Andaman and Nicobar administration, Airports Authority of India (AAI), Delhi Development Authority (DDA) and CPWD for development of Rooftop PV projects. 60 MW of projects are under various stages of implementation and about 12 MW have been commissioned. Letter of Intent (LOI) was issued for Rooftop Grid Connected PV of cumulative capacity 32.5 MW. RfS for another 24 MW was released.
- *Off-grid segment* : 400 Solar Street Lighting Systems have been installed in Bokaro district in Jharkhand. 32000 solar lanterns have been distributed across different

states. Limited Tender has been released for Implementation of Mini Grid SPV Plants in 3 villages in Haryana.

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