



RENEWABLE ENERGY

SUMMARY

India stands at 5th position for overall installed renewable energy capacity in the world. ¹

India is among the top three nations in the world which are leading the global renewable energy growth. ²

India has the 4th largest wind power capacity in the world. In December 2019, wind power installed capacity stood at 37.5 GW. ³

India has the 5th largest solar power capacity in the world. Solar Energy capacity increased to 33.7 GW in December 2019. ³

Biomass power includes installations from biomass combustion, biomass gasification and bagasse co-generation, for which capacity stands at 9.8 GW as of December 2019. ³

Power consumption clocked double digit YoY growth of 12.1 per cent in October, buoyed by recovery in commercial and industrial activity as compared to a growth of 4.6 per cent in September, 2020

REASONS TO INVEST

Economic growth, increasing prosperity, a growing rate of urbanization and rising per capita energy consumption is contributing to increasing demand for energy in the country.

The National Solar Mission was launched in 2010. The objective of the mission is to establish India as a global leader in solar energy. The target of National Solar Mission has been up-scaled to 100 GW from 20 GW of grid connected solar power by 2022. ³

India has a wind potential of more than 300 GW (at hub height 100 meter), solar potential of ~750 GW, assuming 3% wasteland is made available, Small Hydro potential of ~20 GW, and Bio-energy potential of 25 GW. ³

As per the Paris Accord on Climate Change, the Government of India has set a target of adding 175 GW of renewable power by 2022, which includes 100 GW from solar, 60 GW from wind, 10 GW from biomass and 5 GW from small hydro power. This will offer massive investment opportunities across the value chain. ⁴ This has further extended to 450 GW by 2030.

India aims to achieve 40% of installed power generation capacity from non-fossil fuel sources and reduce emission intensity of GDP by 33-35 % from 2005 level by 2030. With the accomplishment of these ambitious targets, India will become one of the largest Green Energy producers in the world, surpassing several developed countries. ⁴

India submitted its Intended Nationally Determined Contribution (INDC) to the UNFCCC, on its goal of installing 175 gigawatts (GW) of renewable power capacity by 2022 by setting a new target to increase the country's share of non-fossil-based installed electric capacity to 40 percent by 2030. ¹⁰

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RECENT ANNOUNCEMENTS

21st December 2020: MOU was signed between National Solar Federation of India and Vietnam Clean Energy Association to promote the exchange of knowledge, best practices, information between Indian and Vietnamese solar power industries and to explore new business opportunities to promote solar power in India and Vietnam.

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7th December 2020: New Biogas Application Web Portal and Mobile App under New National Biogas and Organic Manure Programme (NNBOMP) was launched to bring transparency in procedures.

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7th December 2020: SJVN Limited, a PSU under Ministry of Power has entered an MoU with Indian Renewable Energy Development Agency Ltd. (IREDA) to driving sustainable development of the country.

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4th December 2020: MNRE issues Guidelines for Implementation of Feeder Level Solarisation under Component-C of PM-KUSUM Scheme.

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8th November 2020: Hon'ble minister Shri R K Singh of Power and New & Renewable Energy and Skills drive to bring India in more energy access with a target of 450 GW by 2030 and through reduction of prices and use of clean fuels

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26th November 2020: Hon'ble PM Shri Narendra Modi inaugurated the virtual 3rd Global Renewable Energy Investment Meeting and Expo (RE-Invest 2020). This aims to accelerate the worldwide effort to scale up the development and deployment of renewable energy and connect the global investment community with Indian energy stakeholders.

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STATISTICS

A total of 7,591.99 MW renewable energy capacity has been added in the country during 2019-20 (till December 2019).³

The Solar power capacity has increased by more than 14 times from 2630 MW to 37505MW in in the last five years as of December 2019.³

In the year 2018-19, 62.036 Billion Units of energy were generated from wind power.³

Power generation potential from agricultural and agro-industrial residues in India is estimated to be around 18,000 MW while the potential of surplus power generation through bagasse cogeneration in sugar mills is estimated at around 8,000 MW. Thus, the total estimated potential for biomass power is about 26,000 MW.³

The electricity generation during the month of September 2020 from renewable sources was 1,20,273 MU as against the generation of 1,15,991 MU during September 2019, showing a growth of 3.69%.¹¹

The total of 763.47 MW of Renewable Energy capacity was added in November, taking the cumulative installed RE capacity to 90.39 GW.¹⁶

GROWTH DRIVERS

An investment of INR 1810.56 cr for 210 MW Luhri Stage-I Hydro Electric Project located on river Satluj was approved by Hon'ble PM Shri Narendra Modi. Through this project 758.20 mn units of electricity will generate annually. This will result in direct & indirect employment to around 2000 persons, which will boost socio-economic development of the State.

India has attracted \$ 64 bn Foreign investment and made India 4th largest and fastest-growing economy in the world. By 2022 share of RE will expand to 220 GW.

PM-KUSUM Scheme to enable greater solar energy generation in the farm sector. The size of solar plant has been reduced to enable participation of small farmers.¹⁵

Hon'ble Prime Minister, Shri Narendra Modi has given its approval to introduce the Production-Linked Incentive (PLI) Scheme in High Efficiency Solar PV Modules Sector through the Ministry of New and Renewable Energy of with an financial outlay of INR 4500 cr over a five-year period for Enhancing India's Manufacturing Capabilities and Enhancing Exports – Atmanirbhar Bharat.

In RE-Invest 2020, Hon'ble PM Narendra Modi focused that the renewable energy capacity in India is currently 136 Giga Watts, which is about 36% of our total capacity.¹⁷

Pradhan Mantri Kisan Urja Suraksh Evam Uttan Mahabhayan (PM-KUSUM) Scheme achieved enhanced solar capacity of 30.8 GW by 2022 with the revised central financial support of INR 34,035 cr.¹⁸

On 21st December 2020, MOU was signed between India's Atomic Energy Regulatory Board (AERB) and Vietnam Agency for Radiation and Nuclear Safety (VARANS) to promote mutual cooperation between the regulatory bodies of the two countries in the fields of radiation protection and nuclear safety.¹⁹

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FDI POLICY

FDI up to 100% is permitted in the renewable energy sector under the Automatic route and no prior Government approval is required.⁵

The cumulative FDI equity inflow in the Non-Conventional Energy industry is USD 9,686.09 mn during the period April 2000 to September 2020. This constitutes 1.94% of the total equity inflow received in all the sectors during the same period.⁶

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SECTOR POLICY

The Ministry of New and Renewable Energy notified the National Wind-Solar Hybrid Policy in 2018 with an objective to provide a framework for promotion of large grid connected wind-solar PV hybrid system for efficient and optimal utilization of wind and solar resources, land and transmission infrastructure. The policy aims to encourage new technologies, methods and wayouts involving combined operation of wind and solar PV plants. The Policy seeks to promote new hybrid projects as well as hybridisation of existing wind/solar projects. ³

The 'Central Public Sector Undertaking (CPSU) Scheme Phase – II aims to set up a 12 GW grid-connected Solar photovoltaic (PV) Power projects. The eligible organizations are Government Producers (PSUs/ Govt. Organs.) which are under administrative control or have 50% shareholding of Central / State Government. The support offered by the central government is VGF of up to INR 70 lakhs/ MW; actual VGF decided through bidding for VGF required. ⁹

The Central Finance Assistance (CFA) under the Biogas based Power Generation and Thermal Application Programme (BPGTP) varies from INR 25,000 per kW to INR 40,000 per kW for power generation as per the generation capacity slab and INR 12,500 per kW to INR 20,000 per kWe for thermal applications respectively. ³

Under the 'Programme on Energy from Urban, Industrial and Agricultural Waste/Residues' Scheme, Central Financial Assistance (CFA) for projects of different categories is given in the form of capital subsidy to the promoters and in the form of Grants-in-Aid for other activities, as given below: ³

Biogas generation : INR 1 cr per 12000 cum/day (Max. INR 10 cr/project) ;

BioCNG generation (including setting of Biogas plant): INR 4 cr per 4800Kg/day (Max. INR 10 cr/project)

Power generation based on Biogas (including setting of Biogas plant): INR 3 cr per MW (Max. INR10 cr/project)

Biomass Gasifier:

INR 2,500 per kWe with dual fuel engines for electrical application

INR 15,000 per kWe with 100% gas engines for electrical application

INR 2 lakh per 300 kW for thermal applications.

Under the 'Development of Solar Parks and Ultra Mega Solar Power Projects' scheme, the Ministry provides Central Financial Assistance (CFA) of up to INR 25 lakh per solar park for preparation of Detailed Project Report (DPR). Beside this, CFA of up to INR 20.00 lakh per MW or 30% of the project cost, including Grid-connectivity cost, whichever is lower, is also provided on achieving the milestones prescribed in the scheme. ³

DEENDAYAL UPADHYAYA GRAM JYOTI YOJANA (DDUGJY)¹³

The Ministry of Power launched this scheme with the following components:

- i. To separate agriculture and non-agriculture feeders to facilitate DISCOMs in the judicious rostering of supply to agricultural & non- agricultural consumers in rural areas.
- ii. Strengthening and Augmentation of Sub Transmission & Distribution infrastructure in rural areas and metering at Distribution Transformers, Feeder and consumers end in rural areas.
- iii. The erstwhile rural electrification scheme was subsumed in DDUGJY as a separate rural electrification component and the approved outlay of the erstwhile scheme has been carried forward to the DDUGJY.

The total outlay of Deendayal Upadhyaya Gram Jyoti Yojana (DDUGJY) was INR 75893 cr and subsidy was INR 63027 cr. ¹³

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FINANCIAL SUPPORT

HIGHLIGHTS OF BUDGET 2020-21 ⁷

The total budgetary allocation for FY 2020-21 towards the Ministry of New and Renewable Energy is INR 5753 cr.

The total allocation towards central sector schemes and projects is INR 5646 cr.

INVESTMENT OPPORTUNITIES

A Cooperation Agreement was signed between Ministry of New and Renewable Energy, India and Ministry for Energy, Utilities and Climate of the Kingdom, Denmark on strategic cooperation in the field of Renewable Energy with focus on Offshore Wind Energy. The areas of cooperation include forecasting and scheduling of off-shore wind; measures to develop and sustain a highly efficient wind industry, onshore as well as offshore; technical capacity building for management of offshore wind projects; measures to ensure high quality of wind turbines, components, and certification requirements. ⁸

Research, Development and Demonstration (RD&D) is one of the core requirements for the growth of New & Renewable Energy. Ministry of New & Renewable Energy (MNRE) supports RD&D to develop new and renewable energy technologies, processes, materials, components, sub-systems, products & services, standards and resource assessment so as to indigenously manufacture new and renewable energy systems and devices. ³

The 'Grid Connected Solar Roof Top Programme' aims to achieve a cumulative capacity of 40 GW from Rooftop Solar (RTS) Projects by the year 2022. The programme will be implemented with the total central financial support of INR 11,814 cr through DISCOMs. ⁹

In order to attract the large investment for the development of the Offshore wind energy sector in India, the Government of India under the 'National Offshore Wind Energy Policy' has announced to develop 5 GW of offshore wind energy project by 2022 and 30 GW by 2030. ³

[Explore projects to invest in Renewable Energy sector >](#)

FOREIGN INVESTORS

Enercon (Germany)
Vestas (Denmark)
Applied Materials (US)
Asian Development Bank
Enel (Italy)
Gamesa (Spain)
Orix (Japan)
Nordex (Germany)
Mudajaya (Malaysia)

AGENCIES

1. Ministry of New and Renewable Energy (MNRE)
2. National Institute of Solar Energy (NISE)
3. National Institute of Wind Energy (NIWE)
4. Sardar Swaran Singh National Institute of Bio-Energy
5. Skill Council for Green Jobs
6. Solar Energy Corporation of India (SECI)

KEY ACHIEVEMENTS

The cumulative Solar pumps installed for the last 7 years is 246,074. ³

Under the Off-Grid and Decentralised Solar Programme, more than 74 lakh solar lanterns and study lamps; more than 17 lakh home lights have been distributed. ³

More than 6.80 lakh streetlights have been set up in the villages of India and more than 2.46 lakh Solar PV Pumps have been installed in the rural areas for irrigation and drinking water purposes. ³

Under the 'Ladakh Renewable Energy Initiative (LERI)' implemented by MNRE, the Ladakh Renewable Energy Development Agency (LREDA) has completed the implementation of 500 Commercial Green Houses (CGHs) in the Leh region with a total cost of INR 10.34 cr. ³

Solar Energy Corporation of India (SECI) has awarded 1440 MW capacity after e-reverse auction under Solar – Wind Hybrid policy.

CPSU Scheme Phase II launched with VGF funding with 922 MW awarded under Tranche I and 1104 MW awarded under Tranche II

12 biogas based projects have been commissioned with a power generation capacity of 212 kW and corresponding biogas generation capacity of 1805 m3 per day. ¹²

The total electricity generation from renewable sources in the country in September 2020 was 1,20,273 MU as against the generation of 1,15,991 MU during the corresponding period last year, showing a growth of 3.69%. ¹³

NTPC Ltd is a PSU under the Ministry of Power that has been serving the country for the past 45 years. The current power producing capacity of 62 GW, NTPC plans to become a 130 GW company by the year 2032. For the cleaner source of energy, NTPC plans to achieve 32,000 MW of capacity through renewables or 25% of its overall power portfolio at the beginning of the next decade. ¹⁴

The total of 406.22 MW of Renewable Energy capacity was added in October, taking the cumulative installed RE capacity to 89.63 GW.

SOURCES

1. Ministry of New and Renewable Energy, <https://mnre.gov.in/>
2. IREDA to Create a Green Window for Green Energy Finance, Ministry of New and Renewable Energy, PIB, <https://www.pib.gov.in/PressReleasePage.aspx?PRID=1595888>
3. Annual Report 2019-20, Ministry of New and Renewable Energy, https://mnre.gov.in/img/documents/uploads/file_f-1597797108502.pdf
4. Year-End Review 2019, MNRE, PIB, <https://www.pib.gov.in/PressReleasePage.aspx?PRID=1598948>
5. Consolidated FDI Policy, https://static.investindia.gov.in/s3fs-public/2020-09/FDI%20Policy%202020%20revised_18%20Sept%202020.pdf
6. Factsheet on FDI - April 2000 to September 2020, Department for Promotion of Industry and Internal Trade, https://dipp.gov.in/sites/default/files/FDI_Factsheet_June20_23Sept2020.pdf
7. Expenditure Budget, Ministry of New and Renewable Energy, <https://www.indiabudget.gov.in/doc/eb/sbe70.pdf>
8. Cabinet approves Cooperation Agreement between India and Denmark in the field of Renewable Energy with focus on Offshore Wind Energy, PIB, <https://www.pib.gov.in/PressReleasePage.aspx?PRID=1570599>
9. Schemes, Ministry of New and Renewable Energy, <https://mnre.gov.in/solar/schemes/>
10. Annual Report 2019-20, Ministry of New and Renewable Energy, https://mnre.gov.in/img/documents/uploads/file_f-1597797108502.pdf
11. Ministry of New and Renewable Energy, https://powermin.gov.in/sites/default/files/uploads/Monthly_Summary_for_the_Cabinet_concerning_Ministry_of_Power_for_the_month_of_Sep_2020.pdf
12. Annual Report 2019-20, Ministry of New and Renewable Energy, https://mnre.gov.in/img/documents/uploads/file_f-1597797108502.pdf
13. Ministry of New and Renewable Energy, Monthly Report https://powermin.gov.in/sites/default/files/uploads/Monthly_Summary_for_the_Cabinet_concerning_Ministry_of_Power_for_the_month_of_Sep_2020.pdf
14. PIB Release, <https://www.pib.gov.in/PressReleasePage.aspx?PRID=1670598>
15. PIB Release, <https://www.pib.gov.in/PressReleasePage.aspx?PRID=1672580>
16. Ministry of New and Renewable Energy, https://mnre.gov.in/img/documents/uploads/file_f-1607587283931.pdf
17. PIB Release, <https://www.pib.gov.in/PressReleasePage.aspx?PRID=1676191>

18. Ministry of New and Renewable Energy, https://mnre.gov.in/img/documents/uploads/file_f-1607587283931.pdf

19. PIB Release, <https://www.pib.gov.in/PressReleasePage.aspx?PRID=1682467>

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