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Where to Invest in the Renewable Energy Capacity for the Industries

Jayanta Bhattacharya

Editor-in-Chief

1. Why to Ramp up Renewable Energy Capacity?

Industries are ramping up renewable energy capacity for several reasons, including:

a. **Cost:** Renewable energy is becoming cheaper, making it a more attractive option. For example, the cost of solar power has dropped by 85% since 2010, and the cost of onshore wind has fallen by 56%.

b. **Substitution:** While the demand for energy is increasing, the supply of non-renewable energy is becoming increasingly uncertain.

c. **Savings on the transportation of fuels:** The industries can save a lot on infrastructure and manpower by sourcing renewable power, closer home.

d. **Climate change:** Renewable energy can help tackle climate change by reducing carbon emissions.

e. **Energy independence:** Renewable energy can help countries become more energy independent.

f. **Job creation:** The move to renewable energy can create new jobs and industries.

g. **Not to be left behind:** The companies being competitive in nature, are adopting renewable energy to be ahead, to get the moral high ground, and to seek the scopes of various innovations- that will help them to create new products and services.

h. **Power bills:** Renewable energy can help stabilize industry power bills.

i. **Decarbonizing economies:** Renewable energy can help decarbonize economies.

j. **Competitiveness:** Renewable energy is becoming more competitive with fossil fuels.

k. **Government support:** Some governments are providing incentives to support the growth of renewable energy.

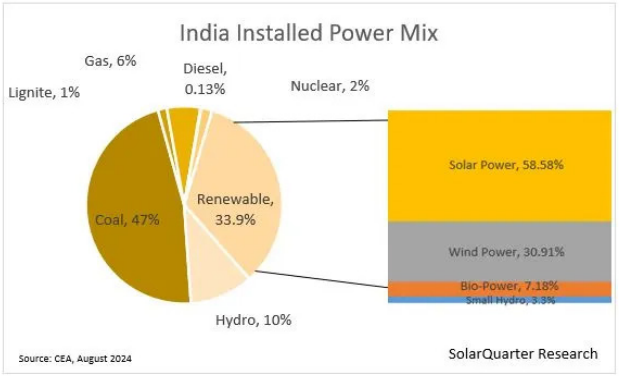


Figure 1. India's current energy mix. (https://www.google.com/url?sa=i&url=https%3A%2F%2Fsolarquarter.com%2F2024%2F09%2F16%2Findias-renewable-energy-hits-33-87-of-total-power-mix-in-august-2024-solar-power-grows-by-24-89%2F&psig=AOvVaw1aU_HElPCM5Ej7SUukN6vI&ust=1728658222023000&source=images&cd=vfe&opi=89978449&ved=0CBQQjRxqFwoTCNDz3u2HhIkDFQAAAAAdAAAAABAE)

2.0 Capacity

The impetus in the industry has also led to the growth of the capacity in the country. For example, India's renewable energy capacity has increased from 76.38 gigawatts (GW) in 2014 to 203.1 GW in 2024, a 165% increase. India's renewable energy capacity has grown significantly in

recent years, and it now ranks fourth in the world for renewable energy capacity. India's renewable energy capacity includes[1]:

The following is the installed capacity for Renewables:

Wind power: 47.19 GW
Solar Power: 89.43 GW
Biomass/Co-generation: 10.35 GW
Small Hydro Power: 5.07 GW
Waste To Energy: 0.60GW
Large Hydro: 46.92 GW

India has set a target to reduce the carbon intensity of the nation's economy by less than 45% by the end of the decade, achieve 50 percent cumulative electric power installed by 2030 from renewables, and achieve net-zero carbon emissions by 2070. India aims for 500 GW of renewable energy installed capacity by 2030. India aims to produce 5 Mn Tonnes of green hydrogen by 2030. This will be supported by 125 GW of renewable energy capacity. 50 solar parks with an aggregate capacity of 37.49 GW have been approved in India. Wind Energy has an off-shore target of 30 GW by 2030, with potential sites identified.

3.0 Transmission

In transmission, India has adopted Extra High Voltage AC and High Voltage DC technologies to the meet the requirements. Transmission capacity in India is more than 29 million circuit kilometres for 500kV HVDC, 756kV, 400kV and 220kV. Power Distribution Utilities are improving their efficiencies by reducing losses, investing significantly in capital and O&M works, IT enabled process improvements and by improving customer service orientation. The Indian electricity sector, in recent times, has witnessed a number of challenges – generating stations either running dry due to poor monsoon or facing shut down due to non-availability of fuel; transmission networks falling prey to either natural calamities or adverse grid disturbances due to defaults by the utilities, thereby causing extensive electricity outages; consumers raising their voices, and sometimes resorting to violent means of protest, against rising electricity prices and unbearably lengthy power cuts in the non-priority areas. The pressure on the conventional sources of electricity generation as well as their environmental and socio-economic implications, have compelled policy makers, thought leaders, investors, utilities as well as consumers to look for the expansion of sustainable non-conventional energy sources.

4.0 Reference

1. https://www.investindia.gov.in/sector/renewable-energy#:~:text=Renewable%20energy%20sources%20have%20a,Wind%20power%3A%2047.19%20GW