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Policy Watch – India's Wind Energy Potential

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As per a report by Fitch Solutions Macro Research, **India is likely to install 54.7 GW of wind capacity by 2022 against the 60 GW target set by the government.** It has also been found that the **land acquisition issues and grid bottlenecks** will lead to delays to project implementation in the wind sector.

The country has set an ambitious target of installing **175 GW of renewable energy capacity by the year 2022**, which includes 100 GW from solar, 60 GW from wind, 10 GW from bio-power and 5 GW from small hydro-power.

Wind Energy Potential of India

- India was one of the early starters in wind energy compared to other nations especially developing nations. It is at the **fourth position internationally** in overall wind generation capacity.
- India has **potential of about 60 GW on wind**. It is quite likely that it would go up substantially because over the time some of the old wind power stations that have very low capacity could be replaced with wind turbines which have higher capacity.
- There is **another unexplored area, which is in the oceans**. Across the world, exploration from this area, is at nascent stage. India has a bit of problem because on eastern side it has a lot of cyclones which hit the coast. Probably, it can explore **wind energy on the western side**.
 - India is a country having around 7,700 km long coastline and in all of its exclusive economic zones, it has enough opportunity to harness wind energy.
 - It is found by the National Institute for Wind Energy (based in Chennai) that western states have larger potential in terms of a stable, steady and a speedy windflow starting from **Gujarat, Maharashtra, Karnataka to Tamil Nadu and Andhra Pradesh**.
 - In offshore wind energy sector, the Government of India has already allocated Rs. 10,000 crores as the initial seed money from clean energy fund, which is basically collected from coal cess.

Policies Related to Wind Energy in India

- Initially, the Government had the National Wind Power Policy but subsequently both the onshore and offshore wind policies were developed.
 - For offshore wind energy, India has a very vibrant policy which came up in October 2015, known as **National Offshore Wind Energy Policy framework**. The objective is to develop the offshore wind energy in the Indian Exclusive Economic Zone (EEZ) along the Indian coastline.
- **A Solar-Wind Hybrid policy was issued in May 2018**. The main objective of the policy is to provide a framework for promotion of large grid connected wind-solar photovoltaic (PV) hybrid system for optimal and efficient utilization of wind and solar resources, transmission infrastructure and land. The wind - solar PV hybrid systems will help in reducing the variability in renewable power generation and achieving better grid stability.

Problems in the Wind Energy Sector

- **For the past three years, there has been a lull in the wind power sector.** In 2016-17, India added around 5.5 GW; in 2017-18, it came down to 2 GW.
 - Initially, the growth in the wind energy sector picked up because of the incentives in generation, accelerated depreciation and taxation. **The Government has gradually taken these incentives away.**
 - The lowest bidding price in solar energy is Rs 2.23 per unit whereas in the wind energy, it is about Rs 4.50. **Investors find investment in solar energy sector more lucrative.**
- Policies related to wind energy being still in transition phase.
- The Government of India came with framework with respect to auctioning in December 2017. There is a **ceiling of tariff imposed on every auction**. Winds being region specific, **achieving the particular tariff rate becomes difficult.**
- General challenges with respect to distribution companies (discom risks), for instance, curtailment in power generation, delayed payments to energy producers etc.

Challenges in Harnessing Offshore Wind Energy

- **Offshore entails lot of data collection** before one actually ventures into it. For instance, Germany before it started its first few projects, took eight years of time to collect the metocean data and the geological data.
- For producing wind energy from offshore, **a lot of investment is required** in developing the support infrastructure.
- Presently, Europe is the leader in offshore. The tariffs there is equivalent to what India's onshore tariff is. **Europe's offshore wind energy was supported over the years by incentives. Such a support is missing in India.**
- There is a concern that who would put money on offshore given the **production of solar energy right now being so cheap and onshore wind sector itself not as developed.**

Way Forward

- India needs to **delink grid development with energy generation.**
- **The Government of India needs to trust the market.** It is the market which has led to low tariffs for solar as well as the wind, so imposition of ceiling leads to arbitrary curtailment of free flow of market mechanism.

The government has become prisoner to the proposition that prices or tariffs have to go only down. India's economic history shows that tariffs go up and down whether it is in real estate or in oil sector. In a competitive market situation when for any number of reasons, if price go up, government should learn to live with that.

- **India should first fully exploit onshore potential** and it should also utilize next few years for creating all the data that any investor would require before investing in the offshore wind energy sector.

Firstly, India needs to replace inefficient windmills at older sites with new windmills.

- At each stage of harnessing energy from winds, **India needs competitive private investment to drive the progress.**
- There is a **merit in developing solar and wind in a complementary manner.** From grid security perspective, as compared to solar, wind is better in monsoon and night. Also, such a system will require a lower investment.
- The way India has developed its solar energy sector, it needs to think on those lines for the wind energy sector as well.

India is well on track in achieving its paris commitments. India rather should take a challenge of being among the top five countries in the world in getting rid of fossil fuels in the energy sector. Renewable energy is absolutely free and considering wind energy in particular, India has enough opportunity to capitalize untapped potentials both in the offshore and the onshore.