



India's Solar Sector

For Prelims: Schemes and programmes for Achieving Renewable Energy Target.

For Mains: India's achievements in renewable energy sector, India's renewables energy targets, challenges and initiatives taken to achieve it.

Why in News?

The centre is set to **come up with rules to pool solar tariffs** and is also aiming to increase bundling of **renewable energy** in existing **thermal Power Purchase Agreements (PPAs)** to boost the procurement of renewable energy.

- The government is **aiming to boost installed renewable energy capacity** to 500 GW (GigaWatts) by 2030.
- A **Power Purchase Agreement (PPA)**, or **electricity power agreement**, is a contract between two parties, one which generates electricity (power generating companies (gencos)) and one which is looking to purchase electricity (**Discoms**).

What is the Issue?

- **Solar tariffs have fallen consistently** over the past decade to a low of under Rs 2 per unit (1 unit = 1 kWh) in December 2020 due to the **falling price of solar panels and lower financing cost**.
- The trend of lower solar tariffs **has led to many many players waiting on tariffs to fall further instead of entering into long term power procurement agreements**.

How can this Step be Helpful?

- A move to pool tariffs could **help speed up procurement of solar power** by addressing concerns among discoms of losing out on lower solar tariffs in the future.
 - The government is planning to pool all solar power procurement in a given period and ask that all buyers pay an average of all the tariffs that are contracted in a pooling period.
- The government's step **to bundle about 10,000 MW of Renewable energy based power with fossil fuel based power over the next 4-5 year** would also **help lower total cost of power procurement for certain discoms**.
 - There are a **number of old thermal power projects that are unviable** because of high variable costs and **don't get dispatched in merit order** and that discoms are forced to pay fixed costs due to requirements under existing PPAs.
 - The centre had in **November 2021 issued guidelines** which **permitted thermal generation companies to supply power** to customers from their renewable energy projects under the existing **Power Purchase Agreements (PPAs)** for coal-based electricity with gains from the bundling of renewable energy to be shared between generators and (discoms) on a 50:50 basis.

What is the Current state of India's Solar Sector?

▪ About:

- The **country's installed Renewable Energy (RE) capacity** stands at 150.54 GW (solar: 48.55 GW, wind: 40.03 GW, Small hydro Power: 4.83, Bio-power: 10.62, Large Hydro: 46.51 GW) as on 30th Nov. 2021 while its nuclear energy based installed electricity capacity stands at 6.78 GW.
- India has the **4th largest wind power capacity** in the world.
- This brings the **total non-fossil based installed energy capacity to 157.32 GW** which is 40.1% of the total installed electricity capacity of 392.01 GW.

▪ Push to RE in the Budget 2022-23:

◦ About:

- To facilitate **domestic manufacturing** for the **ambitious goal of 280 GW of installed solar capacity by 2030**, an additional allocation of 19,500 crore for **Production Linked Incentive** for manufacture of **high efficiency modules** will be made.

◦ Issues:

- Budget estimate for the **Union Ministry of New and Renewable Energy (MNRE)** for 2022-23 showed that the **investment in Solar Energy Corporation of India (SECI)** has been nearly halved — to less than Rs 1,000 crores from over Rs 1,800 crore.
- **SECI** is the only **Public Sector Undertaking** of the Union government working on solar energy and is **currently responsible for the development of the entire renewable energy sector**.
- A **primary issue with the manufacturing of solar PhotoVoltaic (PV) modules** in India over the years has been a **lack of quality**.
 - This **could have been addressed by enhancing research and development** related to technological aspects of fully integrated manufacturing units from polysilicon to **solar PV modules**.
 - However, **any separate allocation for such R&D** has not been announced.

▪ Related Initiatives:

- [Kisan Urja Suraksha evam Utthaan Mahabhiyan \(PM-KUSUM\)](#)
- [International Solar Alliance](#)
- [One Sun, One World, One Grid \(OSOWOG\)](#)
- [National Solar Mission](#)
- [National Offshore Wind Energy Policy](#)
- [Roof Top Solar programme Phase-II](#)
- [National Wind-Solar Hybrid Policy 2018](#)
- [Hydrogen Based Fuel Cells Vehicles](#)

Way Forward

- **Identification of Areas:** Renewable resources specially wind cannot be set up everywhere, they require specific location.
 - Identification of these specific locations, integrating them with the main grid and distribution of powers, a combination of these three is what will take India forward.
- **Exploration:** More storage solutions need to be explored.
- **Agriculture Subsidy:** [Agricultural subsidy](#) should be rectified in order to ensure that only the required amount of energy is consumed.
- **Hydrogen Fuel Cell Based Vehicles and Electric Vehicles:** These are the most suitable options when it comes to shifting towards renewable sources of energy, that's where we need to work upon.

[Source: IE](#)

