



## Green Energy and Jobs

**Prelims:** Renewable Energy, Solar Energy, Decentralized Renewable Energy.

**Mains:** Green Energy and Jobs.

### Why in News?

According to a news study, **India's solar and wind energy sectors added 52,700 new workers**, an eight-fold increase from financial year 2021-22.

- The study was jointly conducted by the [Council on Energy, Environment and Water \(CEEW\)](#), NRDC India (Natural Resources Defence Council India), and Skill Council for Green Jobs (SCGJ).

### What are the Highlights of the Study?

- **Statistics:**
  - Nearly **99% of the new workforce** (52,100 workers) were employed in the [Solar Energy](#) Sector, with the [Wind Energy](#) sector registering very small growth (600 new workers).
  - India's solar and wind energy sectors jointly employed 1,64,000 workers as of FY'22, showing a 47% increase from FY'21. **84% of this workforce is in the solar energy sector.**
  - However, there has been a **"huge shortage" of workers trained in upstream manufacturing segments** such as making polysilicon, ingots, wafers and cells. The bulk of the current jobs are in assembling solar modules.
    - This segment is the focus of the recently launched Rs. 19,500 crore (USD 2.43 billion) [Production-Linked Incentive \(PLI\) scheme, which targets 65 GW of domestic manufacturing capacity.](#)
- **Potential:**
  - If these trends continue, new on-grid solar (238 GW) and wind (101 GW) capacities can **potentially create about 3.4 million temporary and permanent jobs.**
- **Recommendations:**
  - The skilling programmes must catch up with the new requirements arising from sectors such as solar module and battery manufacturing and hybrid projects.

### What are the Potential and Challenges of Green Energy in India?

- **Potential:**
  - India has abundant natural resources, including **solar, wind, hydro, and biomass, which can be harnessed to produce renewable energy.**
  - Moreover, India's rapidly growing population and **economy create a huge demand for energy**, which can be met in part by using green energy sources.
- **Potential Benefits:**
  - **Reduction in Emissions:** The use of green energy sources can significantly **reduce the amount of greenhouse gas emissions** in the atmosphere, which will help to mitigate

the impacts of climate change.

- **Energy Security:** India is **heavily dependent on imported oil and natural gas**, which makes it vulnerable to price shocks and supply disruptions. Green energy sources can reduce this dependence and increase energy security.
- **Rural Electrification:** Many rural areas in India **still lack access to electricity**, which can be provided by **decentralized green energy sources**, such as solar panels and small-scale wind turbines.
- **Employment:** The green energy sector has the potential to create millions of new jobs in India, particularly in areas such as renewable energy production, energy efficiency, and grid integration.

▪ **Challenges:**

- **Cost:** Even though the cost of renewable energy technologies has come down in recent years, they are **still more expensive than traditional energy sources** such as coal and natural gas.
- **Grid Integration:** Integrating renewable energy sources into the existing energy grid can be challenging, **particularly in terms of managing fluctuations in power generation** and ensuring grid stability.
- **Lack of Investment:** Although there has been a recent increase in investment in the green energy sector in India, there is **still a lack of investment in renewable energy projects**, which limits the sector's ability to grow and create jobs.
- **Skilled workforce:** There is a shortage of skilled workers with the necessary training and experience to work in the green energy sector, which can limit the sector's ability to grow.
- **Land Acquisition:** Acquiring land for renewable energy projects can be a challenge, as it **requires the cooperation and consent of local communities**, who may be resistant to change.

## What are the Steps Taken to Promote Green Energy?

- [Pradhan Mantri Sahaj Bijli Har Ghar Yojana \(SAUBHAGYA\)](#)
- [Green Energy Corridor \(GEC\)](#)
- [Faster Adoption and Manufacturing of \(Hybrid &\) Electric Vehicles \(FAME\)](#)
- [International Solar Alliance \(ISA\)](#)
- [National Green Hydrogen Mission](#)

## Way Forward

- The potential for green energy in India is substantial, but the country **must address the challenges to fully realize that potential.**
  - With the right policies, investment, and training opportunities, the **green energy sector in India could play a major role in driving economic growth**, reducing GHG emissions, and improving energy security.
- Collaboration of public and private sectors is essential to provide the necessary investment and training opportunities.
  - The government could incentivize private sector investment by providing tax breaks, subsidies, and other benefits.
  - At the same time, **private sector companies could provide training and development programs to help workers acquire the skills** they need to succeed in the green energy sector.

## UPSC Civil Services Examination Previous Year Question (PYQ)

**Q.** Write a note on India's green energy corridor to alleviate the problem of conventional energy. **(2013)**

[Source: TH](#)

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