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