Renewables 2022 Global Status Report (GSR 2022)

For Prelims: REN21, National Solar Mission (NSM), National Hydrogen Energy Mission (NHEM), United Nations Climate Change Conference (COP26)

For Mains: Government Policies & Interventions, Environment Pollution and Degradation

Why in News?

Recently the Renewables 2022 Global Status Report (GSR 2022) was released by **REN21 (Renewable Energy Policy Network for the 21st Century).**

- REN21 is a **global collective of renewable energy actors.**
- It includes **scientists, governments such as India's,** non-governmental organisations and members of the industry who collated data on renewable energy installations, markets, investments and policies in countries across the world.

What is Renewables 2022 Global Status Report (GSR 2022)?

- The Renewables 2022 Global Status Report **documents the progress made in the renewable energy sector.**
- It highlights the **opportunities afforded by a renewable-based economy and society,** including the ability to achieve more diversified and inclusive energy governance through localised energy generation and value chains.
- Countries with higher shares of renewables in their total energy consumption enjoy a greater level of energy independence and security.

What are the key Highlights of the Report?

- **Global Overview:**
  - This Report sends a **clear warning** that the **global clean energy transition is not happening**, making it unlikely that the world will be able to meet critical climate goals this decade.
  - Although many more governments committed to **net zero greenhouse gas** emissions in 2021, the reality is that, in response to the energy crisis, **most countries have gone back to seeking out new sources of fossil fuels** and **to burning even more coal, oil and natural gas.**
  - **For the first time, GSR 2022 provides a world map of renewable energy shares by country** and highlights progress in some of the leading countries.
  - In the lead-up to the **United Nations Climate Change Conference (COP26)** in November 2021, a **record 135 countries pledged to achieve net zero** greenhouse gas emissions by 2050.
    - However, **only 84 of these countries had economy-wide targets** for renewable energy, and only 36 had targets for 100 % renewables.
- **India's Performance:**

- **Renewable Energy**: India ranked **third** in renewable energy installations in 2021, **after China and Russia.**
- **Hydropower Capacity: India added 843 MW** of hydropower capacity **in 2021,** raising the total capacity to 45.3 GW.
- **New Solar PV Capacity: India** was the **second largest market in Asia for** new solar PV capacity **and third globally** (13 GW of additions in 2021).
- **Total Installations:** It **ranked fourth for** total installations (60.4 GW), **overtaking Germany** (59.2 GW) for the first time.
- **Wind Power:** India ranked **third globally** for the total installed capacity of wind power (40.1 GW), behind China, the US and Germany.

What are the Initiatives taken by India to Promote Renewable Energy?

- **National Solar Mission (NSM)**: The 100 GW solar ambition at the heart of the world's largest renewable energy expansion programme.
- **The Wind Energy Revolution:** Leveraging **India's robust wind energy sector to boost clean energy manufacturing** and the rural economy
- **National Biofuels Policy and SATAT:** Building value chains to reduce fuel imports, increase clean energy, manage waste, and create jobs
- **International Solar Alliance (ISA):** Harnessing the **infinite power for the Sun** for sustainable human development.
- **Small Hydro Power (SHP):** Harnessing the **power of water to integrate remote communities** into the economic mainstream.
- **National Hydrogen Energy Mission (NHEM): Exploring the commercial viability** of a versatile clean fuel.
- **Production-Linked Incentive (PLI) Scheme: Integrating India into the global clean energy** value chains

What are Hurdles in India's Transitions towards Renewable Energy?

- **Poor Financial Condition of Discoms:**
  - The most important challenge for further scaling up renewables in India is the poor financial condition of power distribution companies (discoms), most of which are owned by state governments. Almost all **renewable energy is purchased by such discoms, resulting in very long and unsustainable payment cycles.**
- **Variability in its Generation:**
  - The variability in its generation **due to weather conditions makes operating the transmission grid a technically demanding task.** Until recently, RE power capacity was small, but now RE projects are producing so much power that they are sometimes required to reduce or switch off generation to ensure that the grid is operating smoothly.
- **Weak Transmission Grid:**
  - The **weak transmission grid in the country has also been a challenge**, especially in the case of RE projects, which are often set up in remote areas, and away from large cities and consumption centres.
    - For example, **ambitious plans to build large solar projects in Leh were recently cancelled** citing weak transmission infrastructure.
- **Nascent Technology:**
  - India **does not possess the required technology** which is **needed in this area**, for example India is dependent on foreign players for import of Photovoltaic solar cells.
- **Impact on Environment:**
  - While RE generation is zero-carbon (barring some biofuels), there are **emissions at other points of its lifecycle**, such as during **raw material extraction and equipment manufacturing.** There are also RE's detrimental impacts on biodiversity and ecology.
- **Shortage of Skilled Personnel:**
  - India's power sector has always faced shortage of skilled personnel, **not only in the private sector but also within DISCOMs,** grid management companies, regulators and policymakers and this problem is being compounded further in the current scenario.
- **Installation Cost Issue:**
  - The **high initial cost of installation** is one of the major hurdles in the development of

renewable energy. Although the development of a coal plant requires high investment, it is known that **wind and solar power plants also require huge investment.**
    - In addition to this, **storage systems of the generated energy are expensive** and represent a real challenge in terms of megawatt production.

Way Forward

- **Global Partnerships:** Global partnerships can open new channels of **support through technology or financial resources being shared.**
- **Distributed Renewable Energy (DRE)**: Distributed RE - in which power from renewable sources is generated near points of use instead of centralised plants - can **help achieve the Global South's ambitious renewable energy targets** as well as increase access to reliable and modern energy, if a favourable regulatory and policy environment is created.
- **RE as a Responsible Energy:** RE shouldn't stand merely for renewable energy but also for responsible energy.
    - To avoid negative impacts, the RE industry must act on four principles:
        - Actively **promoting universal labour, land, and human rights,**
        - Protecting restoring and nurturing **resilient, thriving ecological systems,**
        - Committing to **participatory governance principles,**
        - Recognising that **resilient communities and an inclusive workforce** are critical to their success.
- **Climate Financing: It will help energy-poor countries which need funding** to accelerate their carbon-cutting goals and invest in new technologies to decouple their growth trajectories from fossil fuels.

UPSC Civil Services Examination, Previous year Question (PYQ)

Q. The term 'Domestic Content Requirement' is sometimes seen in the news with reference to (2017)

(a) Developing solar power production in our country.
(b) Granting licences to foreign T.V. channels in our country.
(c) Exporting our food products to other countries.
(d) Permitting foreign educational institutions to set up their campuses in our country.

Ans: (a)

Exp:

- National Solar Mission was **started in 2010** which aims at deploying solar power across the country and also mandates to ensure development across the entire value chain. Hence, developing domestic manufacturing capacity across the value chain is also one of the thrust areas of the Mission.
- To ensure the development of domestic manufacturing,provision of 'Domestic Content Requirement' wasbintroduced under the Mission. The provision required the solar energy producer to use locally manufactured cells. Subsidies were offered to those developers who would use domestic equipments.
- However, India lost the case against the US at WTO as the body ruled that India's Domestic Content Requirement provisions were inconsistent with the international norms.
- **Therefore, option (a) is the correct answer.**

Source: DTE