Integrated Solar Manufacturing Unit

Why in News?

On 8th March 2025, the Chief Minister of Uttar Pradesh laid the foundation stone of Avaada Group's 5 gigawatt (GW) **integrated solar manufacturing unit in Gautam Buddha Nagar (Noida),** and inaugurated a 1.5 GW **solar module manufacturing unit**

- Avaada Group is a leading Indian **green energy** company, headquartered in Mumbai, engaged in **renewable energy generation through solar, wind, pumped hydro and green fuels.**

Key Points

- According to the Chief Minister, this initiative not only strengthens our state's contribution to **renewable energy but also boosts employment and** supports our vision of **a USD 1 trillion economy .**
- This effort contributes to **Uttar Pradesh's goal of reaching 22,000 MW of solar power generation by the year 2026-2027** .
- The Chief Minister described it as an important step towards realising the vision of achieving **net-zero carbon emissions by 2070.**

Renewable Energy

- **About:**
  - Renewable energy is energy derived from natural, replenishable sources such as **solar, wind, hydropower, biomass, geothermal** and **tidal** .
  - These sources are sustainable and environmentally friendly, reducing dependence on fossil fuels.
- **Type:**
  - **Solar energy:** obtained from the sun's radiation using **solar panels or solar thermal systems .**
  - **Wind energy :** Produced by converting the kinetic energy of the wind into electricity using wind turbines .
  - **Hydroelectricity:** Produced using the energy of flowing water (rivers, dams, waterfalls).
  - **Biomass energy:** Made from organic materials such as plant residues and animal waste for heating, electricity and biofuels .
  - **Geothermal energy:** Obtained from the Earth's internal heat (hot water, steam) for electricity production and direct heating .
  - **Tidal and wave energy :** uses the motion of sea water (gravitational pull or surface waves) to generate electricity .
    - Coastal areas like the Gulf of Kutch and the Sundarbans offer potential for tidal energy.