1. There are many challenges in sustainably scaling up renewable energy in India. Analyse. Also, discuss what can be done to address these challenges.

Answer :

The government of India has set up a target of installing 175 GW capacity of renewable energy by 2022. Out of 175 GW, 100 GW is to come from solar capacity and 60 GW from wind. As of Feb, 2018, a total capacity of 65 GW has been installed in the country. However, India faces many challenges in scaling up renewable energies such as:

- **Transmission infrastructure** : It is far from prepared to handle the kind of solar power being injected.
- **Less demand from consumers :** Renewable energy in India is driven more by targets, governmental supports and simple economics than a consumer push for being green.
- **Inability to meet peak demand :** Variabilities in sun rays and blowing wind may not help meet the
- peak demand by contributing capacity at the right time. Also, fluctuation in output due to climatic
- conditions leads to instability of the power grid infrastructure and may lead to its failure.
- **Low prices** : Falling solar prices is also a problem and DISCOMS don't want to be locked into a bad deal.
- **Technological barriers** : Concerns related to panel quality and lifespan especially in the hot tropical Indian conditions.
- **Low investment**s : Need of more investment is stifled by inability to attract private players as well as high interest rates.

Government has taken a number of measures to promote renewable energy like provisions of Renewable Purchase Obligations, development of solar parks and Ultra Mega solar power projects, development of power transmission through Green Energy Corridor projects, permitting 100 percent FDI through automatic route etc.

To tackle the challenges more measures are required such as:

- **Transparency in pricing :** There is need to address the system level costs of Renewable energy in a more transparent manner.
- **Enhance grid capacity :** More focus on the smart grids and demand response system for robust transmission system as well as quick digitization of grids in all states should be a priority.
- **Improve transmission :** Green Energy Corridor needs to be significantly widened so as to accommodate 50 more ultra-mega solar parks. Also, cross-state Renewable energy power flows should be made easier since it would be concentrated in handful of windy and sunny states.
- **Better regulation** : By developing expertise among decision-makers, increasing coordination between relevant authorities as well as developing holistic regulatory and infrastructural strategy using resource assessment and mapping.
- **Skill development** : Lack of technical skills for grid operation and management should be tackled by creating a comprehensive capacity-building plan.

Thus, an ecosystem is needed to be created through partnerships between government, utilities anddevelopers to ensure significant scaling up of renewables.

PRACTICE QUESTIONS

Answer the following Questions

1. The policies and indicators introduced by the government, in recent times, to finance urban development in India are key in addressing the existing challenges. Discuss with special reference to municipal bonds.

(150 words)

2. With a number of issues continuing to be a roadblock, a large section of India's rural population is still 'financially excluded'. Discuss. Analyse how these issues can be addressed and the measures taken by the government and RBI recently in this regard.

(150 words)