

## General Studies-3; Topic: Energy

### Green Energy in India

#### 1) Introduction

- India launched the world's largest renewable energy expansion programme and aims to achieve 175 GW capacity of renewable energy by 2022.
- The country is taking national actions plans to abide by its duty under the Paris Agreement
- Projects like electrifying Rural India is also focused on using clean energy.

#### 2) 'Renewables 2017' Report

- India's renewable energy expansion is set to overtake that of the European Union for the first time by 2022.
- The installed renewable energy generation capacity in the country would also double by then, says a report titled 'Renewables 2017' released by the International Energy Agency.
- Solar photo voltaic (PV) and wind together would represent 90% of India's capacity growth in the coming years
- India, China and the United States will account for two-thirds of global renewable expansion by 2022, the report said.

#### 3) Opportunities

- Renewable energy offers an opportunity to build a new low-carbon energy world.
- Harnessing it will make India an energy-independent economy.
- Over 300,000 Indians could find jobs in the wind and solar industry over the next five years if the country works towards its 2022 target.
- Rooftop solar industry is most labour-intensive
- India is placed in the second spot in the "Renewable energy country attractiveness index" by EY
- Renewable energy is the only way to meet energy demand of 1.32 billion people in the country.
- There are reasonable potential to develop offshore wind projects along the Tamil Nadu and Gujarat coasts.

#### 4) Need to promote Green Energy

- Energy consumption results in 77 percent of India's greenhouse gas emissions.
- Pollution in cities is already at critical levels.
- Raising population out of poverty and the subsequent rural-urban migration will substantially increase India's carbon emissions in the years to come.
- Volatility concerns regarding dependence on oil imports from West Asia
- India's rapid growth is largely dependent on its energy supply.

#### 5) Concerns / Challenges

- The U.S. withdrawal from the Paris Agreement and refusal to contribute to the Green Climate Fund threatens low-cost financing
- Solar panel waste disposal
- Integration of renewable plants with existing energy infrastructure
- Security and maintenance of nuclear facilities

- Land availability, power evacuation infrastructure, and Renewable Purchase Obligation (RPO) compliance are other major challenges in meeting solar targets
- Lack of employees trained with the skills needed to construct and operate solar plants.
- In 2016, local solar cells and modules manufacturers struggled in the face of cheap imports
- Falling tariffs affect the cost competitiveness of pre-existing Renewable Energy projects according to rating agency ICRA.

### 6) Way Forward

- Along with the capacity addition, the country needed to build smarter grids for integrating renewables
- Create storage capacity so that the system is not disrupted and assets are not stranded
- Developing the infrastructure needed to increase connectivity to remote renewable energy sites
- The Indian government should continue developing and integrating renewable capacity with its neighbours.
- International examples show that effective net-metering implementation can increase rooftop solar adoption by as much as 50%
- Provide greater impetus to rooftop solar to create renewable energy jobs
- Promote a strong domestic solar module manufacturing industry
- Bring offshore wind energy and large hydro-electricity projects under the ambit of renewable energy, which will scale up the target of 175 gigawatts of green power capacity by 2022.
- India will need financial and technological support from the world to achieve its target and do more.

