**Syllabus subtopic:** Science and Technology- Developments and their Applications and Effects in Everyday Life.

**Prelims and Mains focus:** about the concept and its benefits; about SPV cells; India’s efforts at tapping solar energy

**News:** South Central Railway (SCR) has become the first on Indian Railways to come up with the concept of ‘Energy Neutral’ railway stations.

**What does it mean?**

The SCR is now capable of meeting 100% energy requirements by tapping natural solar power through Solar Photo Voltaic (SPV) panels commissioned on about 13 station buildings. The total capacity of solar panels installed at the 13 ‘energy neutral’ stations is 99 kWp with the cost incurred, being around Rs.50 lakh.

**What are the benefits?**

- The anticipated energy generation from these stations comes to around 1.3 lakh units annually and it is expected that solar power will also lead to savings of Rs.13 lakh each year.

- In addition, the generation of clean solar energy will help reduce carbon footprints to the tune of 1,170 tonnes per annum.

- All the power needs of 13 stations like lighting, fans, pumps and other electrical appliances are met through the solar energy generated and this is bringing down the net traditional energy consumption at these stations to zero.

**About the Energy neutral station concept**

- This eco-friendly concept is based on the principle of developing railway station buildings with total solar power tapping capabilities.
commensurate to exact load requirements of those particular stations.

- This is done by installation of SPV panels on the rooftops which are integrated with the on-grid or off-grid solar energy plants to derive power supply to the entire station.