

A review of renewable energy sources, sustainability issues and climate change mitigation

By

Dushyant Singh Rathore

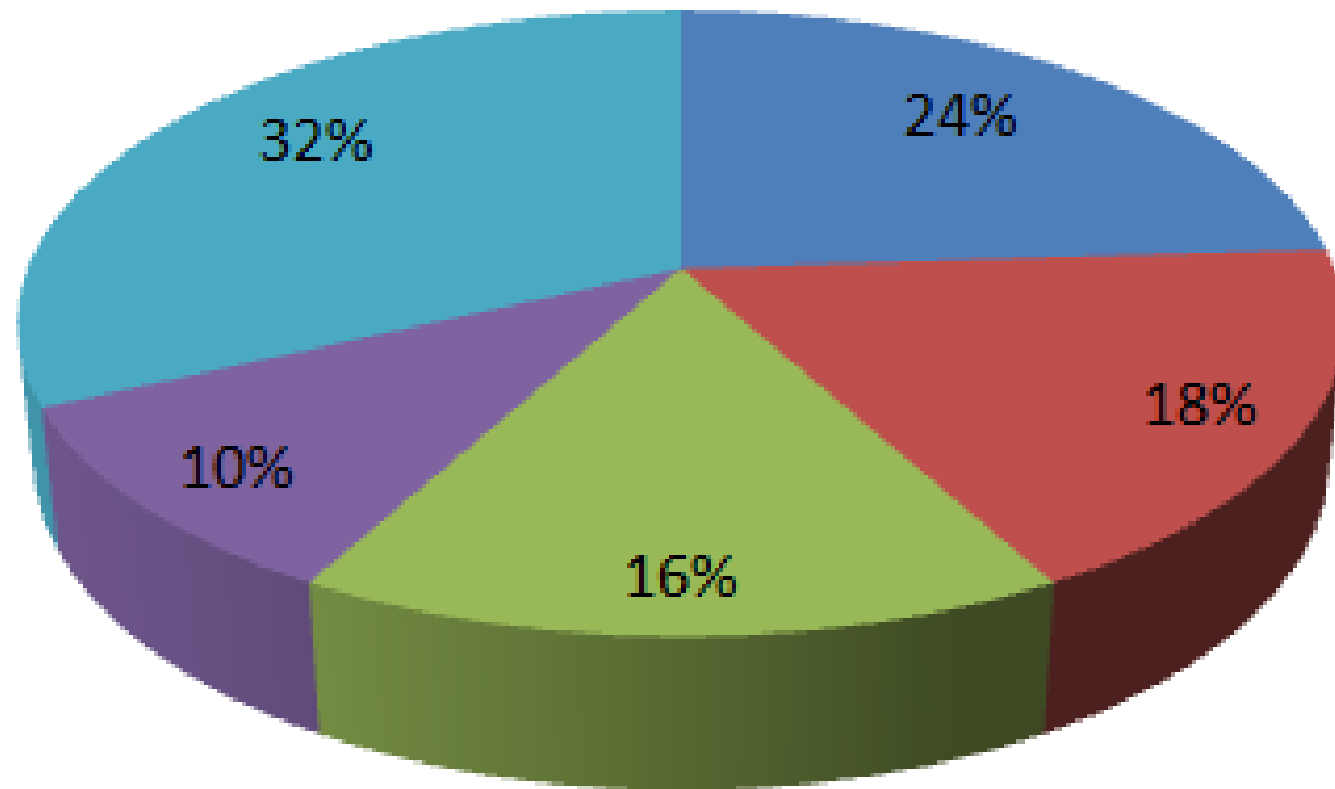
MBA (Rural Management)

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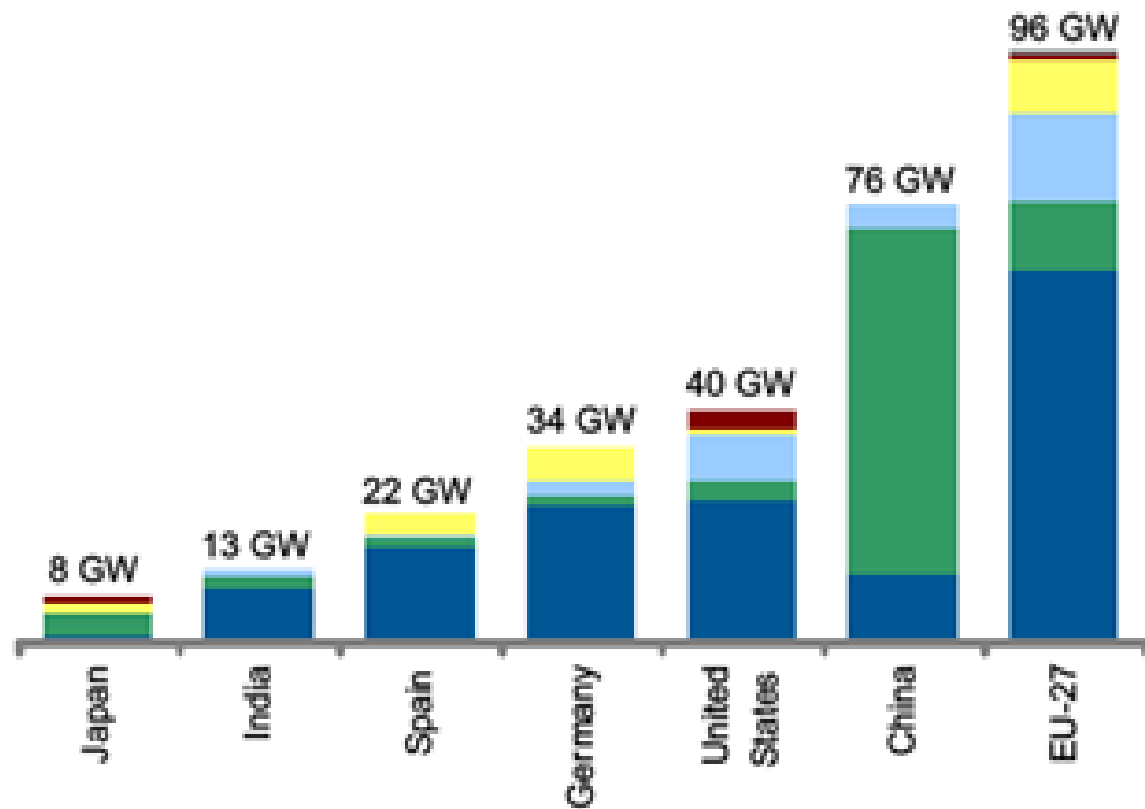
Background

- Fossil fuels—coal, oil, and natural gas—do substantially more harm than renewable energy sources by most measures, including air and water pollution, damage to public health, wildlife and habitat loss, water use, land use, and global warming emissions.
- At the national level, at least 30 nations around the world already have renewable energy contributing more than 20 percent of energy supply. National renewable energy markets are projected to continue to grow strongly in the coming decade and beyond.
- The need for energy and its related services to satisfy human social and economic development, welfare and health is increasing

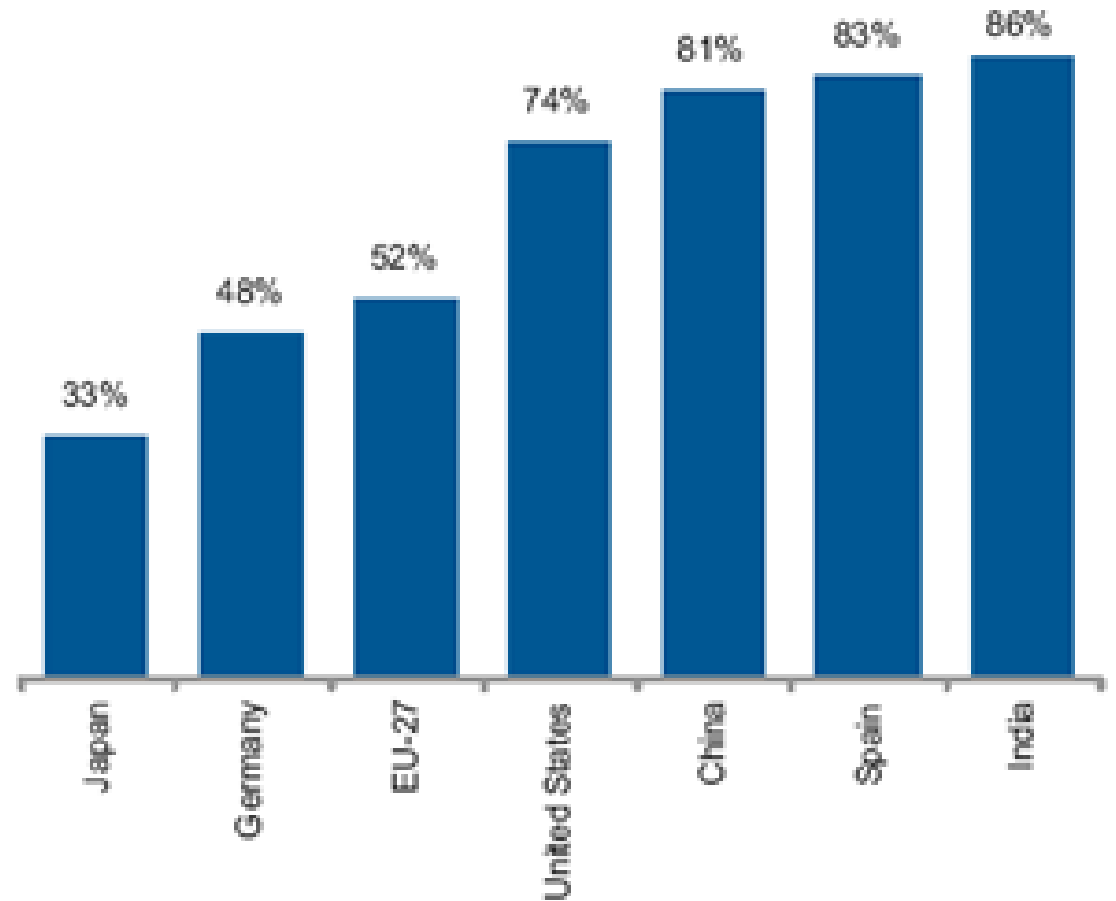


- Solar Energy
- Wind Energy
- Biomass
- Geothermal Energy
- Hydroelectric Energy

**Renewable Electric Power Capacity (GW)
Existing as of 2008**



**% Increase in Renewable Electric Power Capacity from
2005 – 2008**

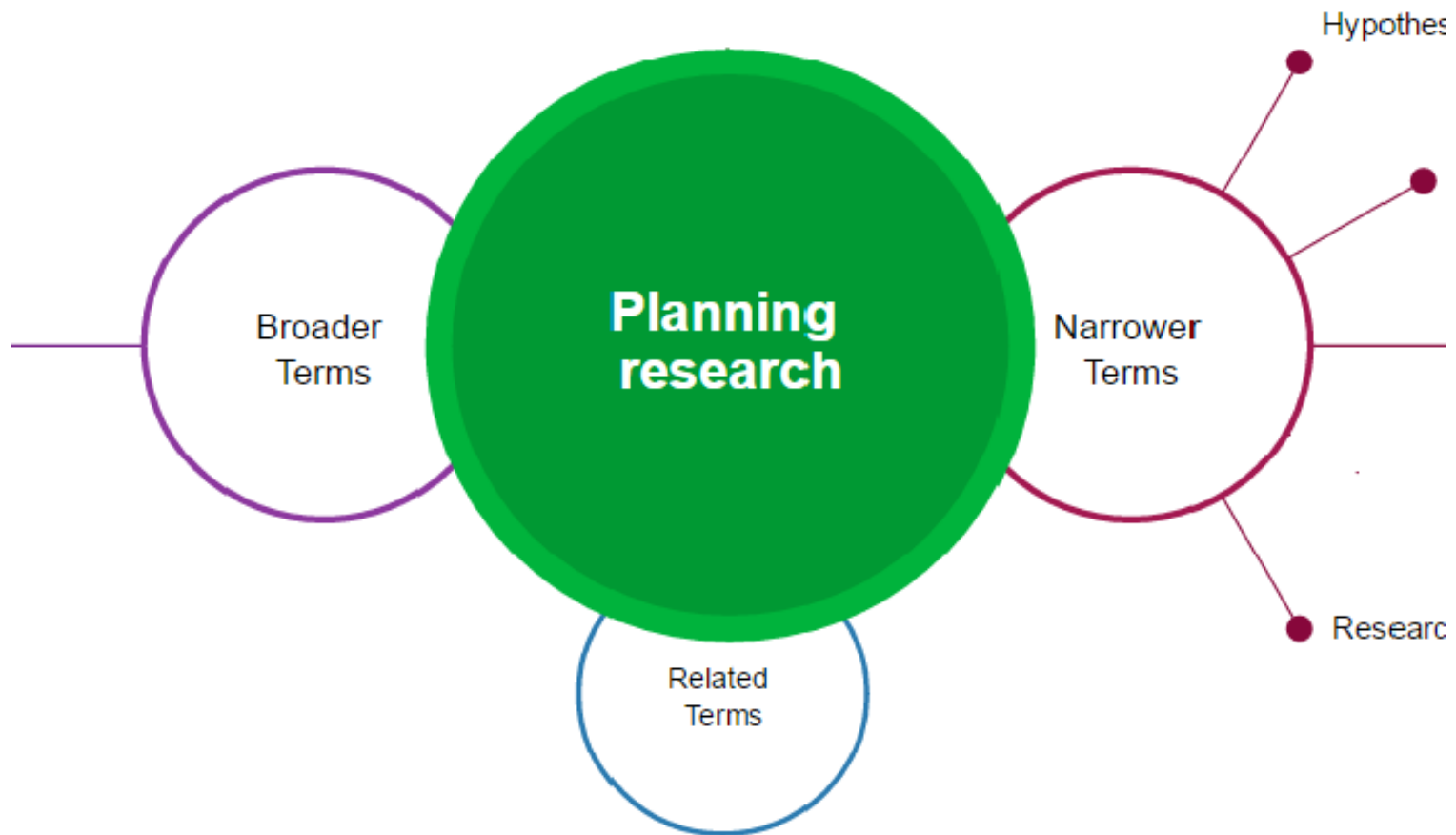


■ Wind ■ Small hydro ■ Biomass ■ Solar ■ Geothermal ■ Tidal

Source: DBCCA analysis, 2010; REN21, "Renewables Global Status Report," 2006 and 2009.

Objectives

- ❖ To review Renewable energy sources and technology
- ❖ To review the role of renewable energy sources in mitigating climate change and its impact.



Methodology



Result and discussion

- Renewable energy sources used in energy generation helps to reduce greenhouse gases which mitigates climate change, reduce environmental and health complications associated with pollutants from fossil fuel sources of energy
- Renewable energy sources replenish themselves naturally without being depleted in the earth; they include bioenergy, hydropower, geothermal energy, solar energy, wind energy and ocean (tide and wave) energy



Hydropower

- Hydropower is an essential energy source harnessed from water moving from higher to lower elevation levels, primarily to turn turbines and generate electricity



Bioenergy

- Bioenergy is a renewable energy source derived from biological sources. Bioenergy is an important source of energy, which can be used for transport using biodiesel, electricity generation, cooking and heating

Solar energy

- The word “direct” solar energy refers to the energy base for those renewable energy source technologies that draw on the Sun’s energy directly



Geothermal energy

- Geothermal energy is obtained naturally from the earth's interior as heat energy source. The origin of the heat is linked with the internal structure of the planet and the physical processes occurring there



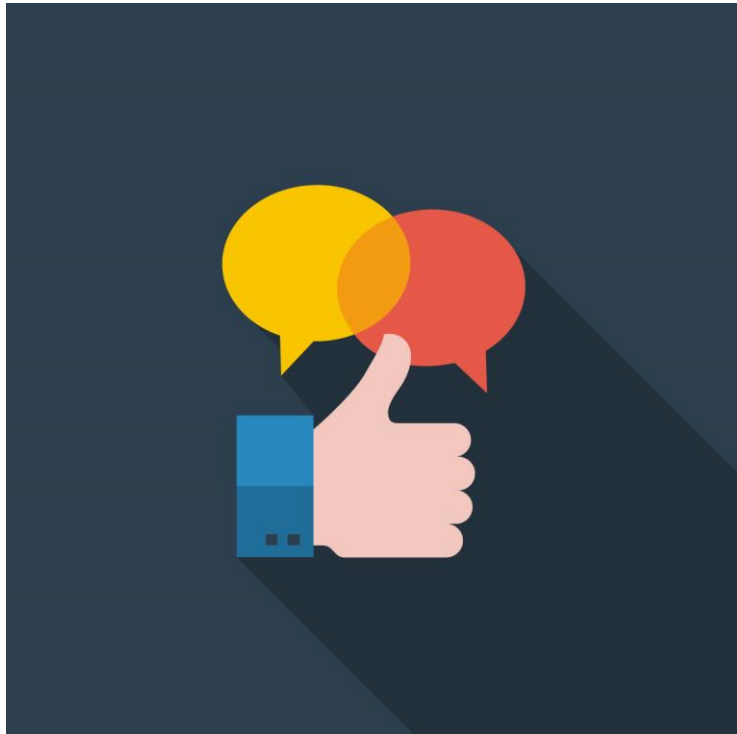


Wind energy

- **The emergence of wind as an important source of the World's energy has taken a commanding lead among renewable sources.**



Recommendation



•	All sectors and regions have the potential to contribute by investing in Renewable energy technologies and policies to help reduce it.
•	Reducing our carbon footprint through the changes in lifestyle and behaviour patterns can contribute a great deal to the mitigation of climate change.
•	Research into innovations and technologies that can reduce land use and also reduce accidents from renewable energy sources and the risk of resource competition, for example in Bioenergy where food for consumption competing with energy production.
•	Enhancing international cooperation and support for developing countries towards the expansion of infrastructure and upgrading technology for modern supply and sustainable energy services as a way of mitigating climate change and its impacts.

Thanks

