

Prospects of Solar Energy in 21st Century

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Abstract

The human society on this planet is facing acute shortage of energy in order to meet its increasing demand in various sectors. At present, nearly 80% of energy required for human needs, is met from fossil fuels. In view of the fast depletion of these and their significant impact on the environment due to release of large amounts of green house gases and also due to the limited amount of available hydro power, it has been essential to harness energy from renewable sources. In this regard, the solar energy backed by efficient technology can come to our rescue. In this paper, the solar energy technologies developed in recent decades, have been highlighted. The solar energy is being used in two principle ways viz., concentrated solar power (CSP) and photovoltaic (PV). The merits and limitations of solar energy have been indicated. An account of global scenario in application of solar energy has been briefly described and discussed. Some examples of the efforts for harnessing solar energy in developing countries like Saudi Arabia and Nigeria have been incorporated. In view of limited reserves of fossil fuels in India and with ambitious projects for industrial and socio economic developments, it is essential to expedite the efforts and develop appropriate technologies for harnessing solar energy. Recent efforts for developing solar energy in India and the future plans have been summarized.

Key words: Solar energy, concentrated solar power, solar photovoltaic, clean energy, solar updraft tower, solar pond, global scenario, India's solar energy programmes.