

Renewable Energy

EC802C

Contacts: 3L

Credits: 3

Classification of Energy Sources (2)

Advantages of Non Conventional Energy Sources over Conventional Sources Economics, Impact on Environment Electricity Generation from Non Conventional Energy Sources:

Solar Energy: (12)

Solar radiation and its Characteristics, Solar Collector: flat Plate, focusing, Solar Energy use for water heating, Solar thermal power generation, Hybrid solar power

Principle of energy conversion in solar cells, Photovoltaics, Different types of PV Cells, Mono-poly crystalline and amorphous Silicon solar cells. Design of PV array. Efficiency and cost of PV systems.

Wind Energy: (7)

Wind as energy source, Design of Wind turbine, Selection of site of Wind farm, characteristics of different types of wind generators used with wind turbines

Hydel Energy: (2)

Electricity generation from micro hydel plants, location, auxiliaries and associated problems.

Bio Energy: (4)

Resources and conversion process: bio gas conversion, bio gas plant, bio mass gasifier. co generation

Bio diesel; (2)

Sources, usability and advantages over mineral product,

Tidal Energy: Principle, selection of site, Economics and future prospect (2)

Wave Energy: Principle , selection of site and future prospect (2)

Geo thermal Energy: Principle , location , economics and prospect (2)

Fuel Cells: (5)

Principle of fuel cells, Different types of fuel cells, advantages and limitations Magneto hydrodynamics energy conversion: (2)

Principle, Economics and environmental aspect of MHD generation