AMCH4 NON CONVENTIONAL ENERGY ENGINEERING

PART-I SOURCES

UNIT-1 DIRECT SOLAR

1.1 Introduction, The Solar Energy Supply,
1.2 History of Direct Solar Energy Utilization,
1.3 Technologies Based on Capture of Heat from Sunlight,
1.4 Technologies for Converting Solar Energy to Electricity

UNIT-2 WIND ENERGY

2.1 Introduction, How does the wind Blow? ,
2.2 Using the Wind, Power in the Wind,
2.3 Design of Windmills, Wind Turbine Sizes, Future of Wind Power,
2.4 Research and Development, Wind Sites and Properties, Storage, the Indian Scenario.

UNIT-3 WAVE ENERGY

3.1 Introduction, Wave Energy Generation, Wave Energy Conversion Devices,
3.2 Advantages and Disadvantages of Wave Energy, Wave Energy and India.

UNIT-4 TIDAL ENERGY

4.1 Introduction, Main Types of Tidal Power Generation Systems,
4.2 Potential of Tidal Power and Present Status of its Utilization

UNIT-5 GEOTHERMAL ENERGY

5.1 Introduction, History and Present Extent of Utilization,
5.2 Energy Extraction,
5.3 Geothermal Fields in India, Major Limitations

UNIT-6 SMALL HYDRO

6.1 Introduction: What is Small Hydro?
6.2 A Brief history, Potential of Small Hydro in India,
6.3 Engineering Consideration, Incentives for Small Hydro, Technologies Available,
6.4 The Thrust is Great, Environmental Impacts.

PART-II ENVIRONMENTAL IMPACT

UNIT-1 ENVIRONMENTAL IMPACT OF RENEWABLE ENERGY SOURCES

1.1 Introduction, Are Non- Conventional Energy Sources Environmentally Benign?
1.2 Biomass Energy- Centralized (Large Scale) Systems, Biomass Energy
1.3 Dispersed Systems, Ocean Thermal Energy.

Reference Books:

1. Non-Conventional Energy System" by S K Agarwal
2. Non-conventional Energy Systems" by K M Mital