

SEMESTER-II (Pool-A)

Course Title: Energy Resources- India and World (CHOI-A36)

Number of Credit: - 02

Maximum marks: 50

Unit-I

Energy Units and Conversion- energy units- Mtoe, ktoe, BTU, kWh, GJ, calorie etc., comparison of heat of combustion and energy-mass density of different fuels-Crude Oil, coal, gasoline, diesel, natural gas (GJ/kg, GJ/m³, kg/GJ, m³/GJ)

Unit-II

Availability and potential of energy resources in India-crude oil, natural gas, coal, lignite, solar, wind, hydro, nuclear fuel, biomass etc. Sankey diagram for India- balance and sector wise consumption.

Unit-III

Comparison of land area, population and per capita energy consumption of United States, Germany, United Kingdom, China, Sweden, France, Nepal, Bangladesh, Sri Lanka, Pakistan, Africa and India, World's average per capita energy consumption.

Unit-IV

Interactive Sankey Diagram of world, regions (Africa, Asia, China, OECD, Non-OECD, Europe, Middle East) and India in million of tones of oil equivalent, production and imports, sector wise consumption, analysis on energy imports and exports for India.

Unit-V

Solar Radiation- comparison of World solar radiation map with India solar radiation map-global horizontal irradiation, direct normal radiation, photovoltaic electricity potential, daily totals and yearly totals.

References

1. International Energy Agency, Interactive Sankey Diagram, <https://www.iea.org/sankey/>
2. Energy Statistics 2019, Central Statistics Office, Ministry of Statistics and Programme Implementation, Government of India, http://www.mospi.gov.in/sites/default/files/publication_reports/Energy%20Statistics%202019-finall.pdf
3. Energy Statistics 2018, Central Statistics Office, Ministry of Statistics and Programme Implementation, Government of India, http://mospi.nic.in/sites/default/files/publication_reports/Energy_Statistics_2018.pdf
4. Ministry of New and Renewable Energy, <https://mnre.gov.in/>
5. Bureau of Energy Efficiency, Government of India, <https://beeindia.gov.in/sites/default/files/1Ch1.pdf>

6. Ministry of Power <https://powermin.nic.in/en/content/power-sector-glance-all-india>
7. NITI Aayog, Energising India, <https://niti.gov.in/writereaddata/files/Energising-India.pdf>
8. World Energy Outlook, International Energy Agency <https://www.iea.org/reports/world-energy-outlook-2019>
9. World Energy Statistics <https://yearbook.enerdata.net/>
10. Energy, Hannah Ritchie and Max Roser, Our World in Data, <https://ourworldindata.org/energy>
11. World Bank Energy Use per capita <https://data.worldbank.org/indicator/EG.USE.PCAP.KG.OE>
12. IEA Atlas of Energy <http://energyatlas.iea.org/#!/tellmap/-1118783123>
13. Our World in Data <https://ourworldindata.org/grapher/energy-use-per-capita>
14. U.S. Energy Information Administration <https://www.eia.gov/>
15. Solar radiation maps <https://solargis.com/maps-and-gis-data/overview>