

EN - 133: Energy Management

Module 1: Basic electricity framework in India (C-1, L- 05, 5 -S/ D/ T)

Generation, Transmission, Distribution, National grid, interstate and intra-state transmission network, key stakeholders at national and state level, role and responsibilities of key stakeholders.

Module 2: National level Energy Policies / Missions (C-1, L- 05, 5 -S/ D/ T)

National Energy Plan, National Electricity Policy, Tariff Policy, Energy storage policy, Key provisions of Electricity Act 2003 and Regulations, Provisions related to energy management like role and responsibilities of key stakeholders, electricity grid code,

Module 3: Electricity Pricing framework in India (C-1, L- 05, 5 -S/ D/ T)

Various provisions of Electricity Act 2003 which governs the electricity pricing, various methodologies for computation of electricity price for conventional generation and renewable energy technologies.

Module 4: System operation and Electricity Market operation (C-1, L- 05, 5 -S/ D/ T)

system operation in India at national /regional/state level, real time load-generation balance, electricity scheduling and dispatch process, real time deviation management regulations, Reserve requirement, types of reserves, Ancillary services framework, Security constraint Economic Dispatch (SCED) and Security Constraint Unit Commitment (SCUC), Electricity Market in India, Electricity Exchanges, types of electricity markets, Day ahead market (DAM), Real Time Market (RTM), Capacity Market, Market Clearing Price, Area clearing price

Reference Books:

- [1] Energy policy: B.V. Desai (Weiley Eastern).
- [2] Modeling approach to long term demand and energy implication: J. K. Parikh.
- [3] Energy Policy and Planning: B.Bukhootsow.
- [4] International Energy Outlook-EIA annual Publication.
- [5] Heat and Thermodynamics – M.W. Zemansky (McGraw Hill Publication).
- [6] BEE Reference book: no.1/2/3/4.
- [7] Energy Management, Audit and Conservation” by Barun Kumar De
- [8] Guide to Energy Management” by Barney L