

UNIVERSITY OF PETROLEUM & ENERGY STUDIES, DEHRADUN

End-Sem Examination – May 2017–MBA- Power Mgt. –IInd Semester –MDSP 841

Subject Code	Course Title
MBA(PM), MDSP 841 -- Sem- 2nd	Energy Power Trading & Network Administration

Max Marks – 100

Duration – 3 Hours

Course Title – Energy Power Trading & Network Administration

SECTION – A (Each question carries 2 marks) Total Marks in section A = 20 Marks

Answer all questions (10 X 2 Marks = 20 marks)

1. What is current Installed Capacity (IC) of Renewable Energy including small hydro plants in India in total up to March 2017 and what is this in term of percentage of IC?
2. Name Power Secretary and Secretary MNRE of Union Govt. along with Chairman of CERC and UERC.
3. What do you mean by power quality? Explain.
4. Discuss pros and cons of Letter of Credit as payment security mechanism.
5. What do you mean by MCP, MCV, ACP & ACV? Explain.
6. Why it is known as Power Purchase Agreement – not as Power Selling or Power Selling & Purchase Agreement? Explain.
7. Escrow Account in Power–critically evaluates its role for Distribution sector.
8. Critically examine role of the cross subsidy in Uttarakhand power sector.
9. Write full form of UDAY, IPDS, RAPDRP and DDUGJY.
10. Explain CUF, PAF and PLF with relationship among them.

SECTION – B (Each question carries 5 marks) Total Marks in section B =20 Marks

Attempt any four questions

1. Differentiate between transmission charge and wheeling charge.
2. What do you mean by power-factor? What are differences between active and reactive power? How reactive power may be compensated?
3. How the Electricity Act 2003 would help in moving towards market driven tariff from the present cost-based regional based transmission tariff? Critical evaluate its implementation.
4. Presently coal based power station are operating at lower capacity. Give its main reasons.
5. Describe the marginal cost based pricing methods and compare it with avg. cost based pricing method.
6. Explain working of IEX with respect to TAM, DAC & DAM.
7. Roles of LDCs and Grid code –explain and evaluate critically.
8. Differentiate AT&C losses with respect to T&D losses. How commercial loss may be reduced?

SECTION – C ----- 10 marksX4 = 40 Marks (Attempt any four questions)

1. Determine tariff for a 10 MW PV-Solar-plant located in Uttarakhand assuming all parameters and norms as per UERC.
2. Critically evaluate the Electricity Act 2003 for enhancing short term power trading in last 14 years so far with respect to long term power trading.
3. What do you mean by Deviation Settlement Mechanism? Explain salient features of DSM Regulation 2015 by CERC.
4. What are RPO, RGO & REC? Explain methodology for its implementation of RPO & REC in India. Critically evaluate success/failure of REC-mechanism in India till date.
5. Explain various pricing methods for transmission utilities with their pros & cons.
6. Why solar power cost is coming down? Critically evaluate its pros and cons for future growth and development of Indian Power.
7. There is large scale integration of renewable energy is proposed by addition of almost 175 GW in next five years mainly through Solar and Wind power. How it is going to affect grid of Indian power sector? What should be done for its mitigation? Suggest.
8. What is congestion in power sector? Explain how it can be managed? Evaluate for India.

SECTION – D

20 Marks

The Electricity Act, 2003 which came into force from 10th June, 2003 repealed the Indian Electricity Act, 1910; Electricity (Supply) Act, 1948; and Electricity Regulatory Commissions Act, 1998. In view of a variety of factors, financial performance of the successor entities of State Electricity Boards has deteriorated. The cross subsidies have reached unsustainable levels. Most of the states in the country have gone in for reforms which involve unbundling into separate Generation, Transmission and Distribution Companies. To address the ills of the sector, the new Act provides for, amongst others, newer concepts like Power Trading and Open Access.

Open Access on Transmission and Distribution on payment of charges to the Utility will enable number of players utilizing these capacities and transmit power from generation to the load center. This will mean utilization of existing infrastructure and easing of power shortage. Trading, now a licensed activity and regulated will also help in innovative pricing which will lead to competition resulting in lowering of tariffs.

Issues Pertaining to Open Access:-

- a) Freedom to buy/sell, and access to market
- b) Adequacy of intervening transmission
- c) Transmission/wheeling charges
- d) Treatment of transmission losses
- e) Energy accounting, scheduling, metering and UI Settlement.

The present level of inter-regional electricity exchange is still quite limited and the constraints for enhancing the same are the relative lack of commercial awareness with SEBs, lack of proper market mechanism (absence of tariff structure to promote merit-order operation and encourage trading of power), inadequate transmission capacity, lack of statutory provisions for direct sale by IPPs/CPPs/ Licenses outside the State, grid indiscipline and financial viability of State Utilities, among others.

Open Access in Odisha

National Aluminum Company (Nalco), a Maharatna company under Union ministry of Mines, had pitched for allowing 'open access' norms in power trading in Odisha. It was a paradoxical situation that when power was available in the exchanges at Rs two per unit, Nalco was curtailing aluminum production for want of power. Under the circumstances, permission of open access for purchase of power by industry offers a viable alternative. Open access norm in a power transmission network enables industrial buyers to procure electricity from different distribution companies, including private power generators at a negotiated and competitive price. The state energy department is still undecided over allowing open access, as it fears losses in revenue generation.

In November 2011, the Union power ministry had asked all state governments to implement open access norms in power marketing and distribution to bring in competition in the market, which is dominated by debt-ridden distribution companies (discoms), mostly run by state governments and in few states, by private companies.

Open access to CPPs (captive power plants) will facilitate availability of more electrical energy in the market and help containing prices. Nalco's net profit had nosedived to just Rs 5 crore in the second quarter of the current fiscal against Rs 139 crore in the same quarter of 2011-12. The sharp dip in profit was attributed to disruption in power production at its captive power plant, which forced the company to use costlier imported coal and high cost emergency power from the state grid, which increased net operating cost by Rs 149 crore during the quarter.

Power cost plays an important role in aluminum production as it comprises 35 per cent of total cost of the metal output. Most aluminum makers, therefore, depend upon own power plants to reduce the costs.

Besides producing power for industrial use, CPPs also sell additional power to state grid during sufficient availability of coal in summer and yet buy costly emergency power from state in case of poor fuel supply during rainy season. Nalco suggested allowing power banking among CPPs and state grid to tide over the difficult times. If we can develop a mechanism for power banking then the CPPs would export excess energy to the state grid during the dry months (summer) and import the same quantity of electrical energy in the monsoon months.

Answer the following questions in the light of the above case:

Q1. Outline the Challenges of Open access in India in the light of the above case.

Q2. Suggest a roadmap to implement Open access in best manner keeping in view the interest of all stakeholders (Generator/ Discoms/ Trader/ Consumers).