

Name:	
Enrolment No:	

UNIVERSITY OF PETROLEUM AND ENERGY STUDIES
End Semester Examination, December 2019

Course: Power Pricing & PPA
Program: MBA Power Management
Course code: PIPM -8003
Instructions:

Semester: Third
Time: 03 Hours
Max. Marks: 100

SECTION A

		Marks	CO
Q 1	Why power sales and purchase agreement is called as Power Purchase Agreement not Power Sales Agreement – explain.	2	CO 1
Q 2	What is current installed capacity of India? How much electricity was generated in financial year 2018-19 in India.	2	CO 3
Q 3	What is the full form of POSOCO, MCP, MCV & ACP?	2	CO 1
Q 4	Explain open access and cross subsidy in power sector.	2	CO 2
Q 5	What is “Distribution and supply” concept in Indian Power Sector?	2	CO 2
Q 6	What is secondary fuel? Differentiate it from primary fuel.	2	CO 2
Q 7	What do you mean by levelised tariff? Explain	2	CO 1
Q 8	Name power secretary of Govt. of India and state of Uttrakhand.	2	CO 1
Q 9	Give full form of FSA, IPDS, PPA and R-APDRP.	2	CO 1
Q 10	What are GCV, SOC, GIS and SHR?	2	CO 1

SECTION B

Attempt any two from given questions in Section B

Q 11	Solar PV tariff are coming down from Rs 18 in 2010 to 2.43 in 2018 – critically evaluate causes and their consequences for power business in India.	10	CO 5
Q 12	Power Sector is moving from monopoly to competition – critically evaluate this statement with few examples.	10	CO 4
Q 13	In spite of large scale integration of renewable, TPP is going to be main or base load care-taker in India for next few decades – examine and evaluate this statement.	10	CO 3 CO 4

SECTION-C

Attempt any two from given questions in Section C

Q 14	Calculate tariff for 4000 MW coal based Ultra Mega Thermal Power Plant (UMPP) in MP assuming all norms and standards as per CERC	15	CO 5
Q 15	Write a model PPA for power purchase and sale between UMPP at Mundra and UPCL for proposed 1000 MW for 25 years in Uttarakhand (Hypothetical case)	15	CO 5
Q 16	Write a model PPA for power purchase and sale between UPCL and UJVNL for 500 MW for 25 years in Uttarakhand	15	CO 5
Q 17	What is Force Majeure in PPA? Critically evaluate problems of Tata’s PPA in case of UMPP at Mundra i.e. CGPL with legal details.	15	CO2 CO5

Section D

(30 marks)

Case study

In the lead up to privatization the Conservative government acknowledged that key parts of the power industry in UK – the national transmission and regional distribution networks – were natural monopolies and that there was no point in trying to create competing networks. It was also not possible to open up the retail end of the industry immediately to full competition as the technical and administrative processes could not be put in place in time. Therefore, in line with the regulatory bodies established to control prices set by the privatized telecom and gas utilities (British Telecom in 1984 and British Gas in 1986), a new regulator was established by the UK Electricity Act of 1989 – the Director General of Electricity Supplies (DGES) who had the support of the Office of Electricity Regulation (Offer).

The main responsibility of the DGES, who was appointed for a five-year term by the government, was to promote competition within the industry. Offer took on around 220 staff around half of whom worked on consumer representation. Again in line with practice in the telecom and gas industries, Offer adopted an “RPI-X” formula to control transmission and distribution prices. This meant that the National Grid Company and the regional electricity companies could only increase their prices in line with inflation (RPI– the retail price index) less an amount, X, set by the regulator. For example, the X factor for transmission prices was initially set at 0% for 1991 and 1992 and then increased to 3% for the period 1993 to 1996. This meant that for each year during that four-year period transmission prices could raise no more than 3% below the rate of inflation. In fact, inflation was below 3% for three of those four years and so transmission prices had to be cut.

The idea of this formula was to encourage companies to improve efficiency and cut costs and it was initially felt that this form of price regulation would be enough to produce the right balance of productivity gains from a combination of restructuring and reorganization and new investment. However, the regulators in both the gas and electricity industries came to the conclusion that price regulation was inadequate for the highly capital-intensive energy sector and that the formula had to be revised to take account of the level of investments being made by the companies. From 1995 the X factor in the electricity industry was set on the basis of the rate of return on investments and this had a significant and immediate impact on prices.

Takeovers and mergers in the energy sector meant that by the end of the 1990s many companies were supplying both gas and electricity to consumers. This was one reason for the provision in the Utilities Act of 2000 to merge the gas and electricity regulators to form **Ofgem – the Office of Gas and Electricity Markets** along with its governing body, the Gas and Electricity Markets Authority (GEMA). GEMA members are appointed by the government and they determine strategy, take all major decisions and set policy priorities.

Ofgem’s main priority is to protect consumers by promoting competition and regulating the monopoly companies

– the national transmission and regional distribution grids. It is funded by the energy companies who are licensed to run the gas and electricity infrastructure. In regulating the two sectors, Ofgem has to take account of the need to ensure adequate investment in the networks. It is also required to help gas and electricity markets and industry achieve environmental improvements as efficiently as possible and take account of the needs of vulnerable customers, particularly older people, those with disabilities and on low incomes.

The licenses issued by Ofgem for the different levels of Electricity Company set out a range of requirements for each company to meet with a common element being a duty to supply the regulator with the information necessary for it to carry out its responsibilities. For the generating companies, for example, this includes a duty to provide information so that Ofgem is in a position to decide whether or not the company has attempted to distort market prices by withdrawing generating plant from operation. Other elements common to some of the licences are requirements not to discriminate among customers. So generators must not discriminate among the customers they supply to and National Grid/Transco must not discriminate in giving companies access to the national grid.

Ofgem conducts investigations of companies that it believes may be breaking the terms of their licence conditions, acting anti-competitively or breaching consumer protection law (Competition Act 1998 and Enterprise Act 2002). Ofgem can also investigate and apply sanctions where a company is found to be in breach of other requirements and standards of performance as laid down by the Electricity Act 1989 and Utilities Act 2000. Should the Authority find that a licence breach or Competition Act infringement has occurred, it has the power to impose large financial penalties, of up to 10% per cent of turnover. In the case of licence breach the 10% applies to the turnover of the company holding the licence whereas with an infringement of the Competition Act the UK group turnover is taken into account. Ofgem has undertaken a number of official investigations of companies over the last four years most of which end with the companies making an undertaking to review and change the practices in question. For example, in 2005 SP Manweb (part of Scottish Power) a distribution network operator was found to be discriminating in the provision of connection services against companies that weren't part of the Scottish Power group. Ofgem accepted a commitment from the company to end this practice. The most recent financial penalty was £700,000 imposed on Powergen in August 2004 for the way it had objected to its customers switching to another supplier. Earlier that year Npower and Scottish Power had both been fined £200,000 each for the same behavior.

However, if consumers or industry groups believe that electricity companies are acting in an anti-competitive way then they can go to the Office of Fair Trading (OFT) rather than Ofgem. One reason for doing this is that the OFT has far greater powers than Ofgem. If OFT is satisfied that a company is harming consumer interests it can take immediate action to order the company to change its behaviour and can instigate a criminal investigation with the ultimate sanction of prison sentences for individuals held responsible for a company's actions (Bowyer 2003).

Electricity distribution companies have a number of performance standards to meet in relation to maintaining supplies, repairing faults and responding to customer complaints. These standards are laid down in parliamentary regulations (latest revisions in 2005) and monitored by Ofgem which can also propose amendments to the regulations. The standards set specific times by which companies must deal with or respond to customer enquiries, complaints or problems of supply and consumers receive compensation if targets are missed. For example, if a company fails to restore supplies after a fault within 18 hours then a domestic customer is entitled to £50 in compensation while a non-domestic consumer is entitled to £100. Companies are also assessed against performance targets, such as their ability to maintain uninterrupted supplies. Ofgem reports on company performance in an annual quality of service report.

Another major change implemented by the Utilities Act 2000 was the setting up of a separate watchdog Energywatch, to represent consumers independently of Ofgem and to make representations to Ofgem on the behalf of consumers. The body is government funded and the chair reports to the Department of Trade and Industry.

Energywatch provides a price comparison service so that consumers can try to work out if they are getting the cheapest electricity and/or gas. It also deals with a range of specific consumer issues such as incorrect bills and other complaints about quality of service. It seeks to do this primarily by taking up issues with the companies themselves.

If it has evidence that there are more fundamental problems for consumers that might be related to the structure of the electricity market then it can take these up with the regulator, Ofgem or with the Office of Fair Trading. Energywatch's most recent major case which Ofgem investigated was a general claim, although based on detailed and specific evidence, that domestic customers were being provided with an inadequate billing service by retail electricity companies, with large numbers of customers reporting incorrect bills and problems in resolving disputes with their electricity company. Although Ofgem did not find that this was a fundamental issue relating to market structure or organization it did make a number of recommendations about how companies should deal with the issue including the writing off of bills that are more than a year old, the setting up of an ombudsman to deal with billing complaints and a call for companies to review their contracts to make sure they are fair. Ofgem said these recommendations would be imposed on companies if they did not voluntarily reform their billing practices.

Q18	What are problems as per given text in power sector in UK.	10	CO 5
Q 19	Analyse these problems as per given text.	10	CO 5
Q 20	Give your suggestions for solving these problems.	10	CO 5