

ESD.934, 6.974

Engineering, Economics and Regulation of the Electric Power Sector

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Homework HW7

Question 1 (*Retail markets and tariffs*)

- A. Briefly (1 page is enough, write more if you prefer and you have enough information) describe the basic characteristics of the retail market in the power system of your choice. Are there default tariffs? And any last resource tariff scheme?

As a bonus in this question (I know it is difficult, sometimes impossible, to find this information): Could you explain how the default tariff, or any applicable tariff in your system, is computed?

- Consider a power system with a flat default tariff that is recalculated every year and where the consumers have the possibility of switching back and forth (from default tariff to the offer of any retail supplier or buying directly from the market at spot price) at any time, with no charges for switching, just giving one week advance notice. As a consumer, can you figure out a scheme to fool the system in your benefit? As a regulator, can you figure out a mechanism to avoid that the system could be fooled?
- Are tariffs that differentiate by utilization factors discriminatory? How about those tariffs that apply Ramsey pricing to allocate the costs of promotion of energy efficiency or support to renewable energies or any other regulated charges?

Question 2 (*Capacity mechanisms*)

- Describe the method (if any) that has been adopted in the power system of your choice to promote investment in new generation capacity. No method is also a method. Provide your evaluation of this method and suggest the approach that you consider is most adequate to achieve an adequate level of generation capacity in your system. Justify your answer.
- Assume now that the regulator of a hypothetical country C (not the country of your choice) has decided to adopt the method of reliability options or something similar, like the forward capacity mechanism in ISO New England. The regulator asks for your advice to design the specific rules in the implementation of the method. You realize that the structure of the market in country C has a high level of horizontal concentration and, therefore, the periodic auctions that are required by the method have a high risk of being manipulated by the largest agents, resulting in very high prices for the capacity. What changes would you introduce in the method of reliability options in order to eliminate, or to mitigate at least, this problem?

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