Interruptible Contracts as an Approach for Electrical Energy Consumption Regulation

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Introduction. Heating season of 2014/15 was one of the most challenging for the whole independent history of Ukraine. Disproportion of electricity production and demand of power system came up to the critical point. It led to practice of rolling blackouts. Issues with procurement of natural gas and coal cause threat for energy supply security of Ukraine. It was the main subject of Ukrainian Security and Defense Council's consideration.Council's decrees were implemented by presidential and Cabinet Council's decrees [1]. Materials and methods. It is known that current situation with lack of manoeuvrable capacities leads to increasing of usage of big thermal power plants. Due to this there is a possibility to regulate daily load curve, which is irrational in the context of decreasing of lifetime of power-generating unit and usage of primary resources as well. Global experience proves that there are effective cooperation mechanisms between suppliers and vendors for balanced demand and proposal on the energy market [2]. One of the most effective methods is practice of interruptible contracts. It is contracts that allow interruptions to electric service in exchange for either an overall reduction in the price of electricity delivered, or for financial compensation at the time of interruption. Results. According to [3] one presented a model that quantifies the value of interruptible contracts. The model is built on a structural model of electricity prices, where price is determined by stochastic models for supply and demand of electricity. The model accounts for fluctuations to demand due to temperature changes, and fluctuations to supply due to outages and transmission congestion. The interruptible contracts are priced from the point of view of a distributor of electricity that has the obligation to provide electricity to all its customers. The distributor needs to rely on the spot market to satisfy at least a part of the electricity demand, and we have shown that the interruptible value and the optimal interruption policy depend critically on the amount of generation available to the distributor at a fixed price. In the absence of forward contracts or ownership of generating assets, the interruptible contracts are the most valuable, and the distributor interrupts aggressively. As more generation is available for a fixed price, the value of interruptible contracts diminishes, and interruption occurs at higher expected loads. Conclusions. Researches have shown, that interruptible contracts could be implemented on to Ukrainian electricity market and supply problems associated with spikes of price and demand. It does not matter the type of market – monopoly or competitive market. That's why, interruptible contracts are the valuable instrument of regulation for Ukrainian reality.

References.

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