

## 电力市场

### 市场环境下的分时电价对系统最优负荷备用容量的影响分析

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#### 摘要:

电力市场采用分时电价后, 每个时段的负荷量将发生变化, 同时会对负荷缺电成本以及可中断负荷赔偿费用产生影响, 进而影响系统可靠性以及备用购买情况。针对分时电价对负荷缺电成本以及可中断负荷赔偿费用的影响, 以每个时段的购买备用容量社会成本最小为目标, 采用概率方法建立了计及分时电价影响的系统动态负荷备用购买模型, 并通过算例对不同时段的最优负荷备用购买情况进行了研究。结果表明, 社会成本在低谷时段较分时电价实施前有所增加, 而高峰时段则有所减少。同时可中断负荷受分时电价影响, 其购买量在低谷时段降为最低, 高峰时段则为最多, 所建模型可以较好地反映分时电价对负荷备用容量购买情况的影响。

**关键词:** 分时电价 概率密度 可中断负荷 发电侧备用容量

### The Influence Analysis of Time-of-use on Optimal Load Reserve Capacity in Market Environment

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#### Abstract:

The introduction of time-of-use (TOU) strategy will change the load quantity value per hour. In addition, it also influences on unserved energy cost and compensation cost of interruptible load. Consequently, the system reliability and reserve purchasing situation will be changed. In allusion to the influence of TOU strategy on unserved energy cost and compensation cost of interruptible load, taking the minimal social cost for purchasing reserve capacity in each time interval, a dynamic reserve purchasing model, in which the influence of TOU price is taken into account, is established by probability method, and the reserve purchasing situations in varius time intercalars are researched by calculation example. Research results show that the social cost in valley load period increases to some extent than the implementation of TOU strategy, and that in peak load period decreases. Meanwhile, due to the influence of TOU price, the purchase quantity of interruptible load drops to the lowest in the valley load period and rises to the highest in peak load period, thus the established model can well reflect the influence of TOU price on reserve purchasing situation.

**Keywords:** time-of-use (TOU) price probability density interruptible load reserve capacity of generation side

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##### 本文关键词相关文章

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