

动力经济

可靠性需求市场中用户的风险决策

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摘要： 市场环境下，用户的身份按其参与市场的方式可分为用电容量的需求方和备用容量的供应方2类。为提高用户收益，该文在对这2种容量不同收益特性及其互补性进行分析的基础上，基于风险管理观点与协调优化理念，提出基于风险的用户可靠性需求决策模型，使用户参与用电市场的确定性收益与参与备用市场的风险性收益之和最大。为加快寻优速度，提出基于灵敏度技术的优化算法。仿真结果表明用户可靠性需求过高或过低都不合适，而应存在最优值。

关键词： 可靠性需求 风险决策 收益 协调优化 风险管理 电力市场

Risk Decision-making for Customer in Reliability Demand Market

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Abstract: The customer has two kinds of identities namely participating in energy market and reserve market in electricity market environment. Different beneficial and supplementary properties for the two kinds of capacities should be utilized to improve customer benefit. In this paper, decision for customer reliability demand is made based on risk management opinion and coordination optimization theory. The objective function of math model is the sum of the deterministic benefit resulting from using power and the risk benefit from interruptible supply. Optimization algorithm based on sensitivity technology is proposed in order to quicken the velocity of optimization. Simulation results are presented to validate that too high or too low in customer reliability demand are both not appropriate and an optimal value should be existed.

Keywords: reliability demand risk decision benefit coordination optimization risk management electricity market

收稿日期 2007-05-22 修回日期 1900-01-01 网络版发布日期

DOI:

基金项目:

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