

电力市场条件下地市级电网优化购电模型

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摘要

为了通过优化购入地方发电厂的电量来降低购电成本, 提出了一种新的购电优化数学模型。该模型以从多个地方发电厂购入电量总成本最小化为目标, 以供求平衡、发电厂最大出力、输电线路最大传输容量限制、变电站主变压器最大承受能力以及网损等因素为约束条件。该模型已应用于福建省某地区电网的实际购电过程中, 实际算例分析验证了该模型的正确性和可行性。

关键词 [地方发电厂; 优化购电模型; 电力市场](#)

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Research on Optimized Model of Electric Power Purchased by Regional Power Network in Electricity Market Environment

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Abstract

In order to reduce the cost for purchasing electric power, a new mathematical model of power purchase optimization is proposed. In this model, minimized total cost of purchasing electric power from regional power plants is taken as objective function; the balance between power supply and demand, maximum outputs of power plants, restraint of maximum transmission capacity of transmission lines, maximum sustaining ability of main transformers in substations and network loss are taken as constraint conditions. The correctness and feasibility of the proposed model are validated by calculation examples. The proposed model is applied to practical power purchase in a regional power network.

Key words [regional power plant; optimization of power purchasing model; electricity market](#)

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