



MODELING OF LARGE ELECTRICAL POWER SYSTEMS UNDER ENERGY MARKET CONDITIONS

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ABSTRACT

Aim of this paper is to incorporate energy market principles in large power system modeling process. The paper describes application of nodal and zonal energy price formation algorithms and interaction of power systems on energy import/export issues. The tool of the research is LDM-TG information technology, which is developed by the Institute of Physical Energetics, Latvia. The information technology provides the opportunity to perform dynamic optimization of system development together with operational state calculations. The authors discuss the possibilities to optimize long-term sustainable development of large power systems under energy market conditions. The paper considers a test case with ENTSO-E and IPS/UPS power system model calculations, including sustainable development optimization, cost and benefit evaluation, power flow calculation and risk assessment.