**Livo Vehviläinen**: Applying mathematical finance tools to the competitive Nordic electricity market; Helsinki University of Technology, Institute of Mathematics, Research Reports A475 (2004).

**Abstract:** Deregulation of electricity industry has introduced competitive electricity markets that are similar to financial markets. Application of mathematical finance requires careful consideration of special characteristics of electricity markets. This thesis models competitive electricity markets with the methods of mathematical finance. Fundamental problems of finance are market price modelling, derivative pricing, and optimal portfolio selection. The same questions arise in competitive electricity markets. Transparently applicable theoretical models will be more important in the increasingly competitive economy.

## AMS subject classifications: 91B28, 60G35

**Keywords:** mathematical finance, electricity markets, risk management, derivative pricing, stochastic modelling

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