MA04-006 - SIMOPT/ENERGY

Abstract

This project aims at developing mathematical methods for optimal risk management for energy producers and traders in liberalized energy markets. The deregulation of energy markets results in an increased need for methods of short and medium term decision making under the uncertainty of future demands, costs, prices and capacities. In an integrated view, production decisions as well as risk hedging decisions will be modelled simultaneously.
Modern hedging instruments like forwards, swaps and options can be used in an optimal mix of risk management tools to avoid high volatilities and financial disaster. The mathematics behind the optimal decision making under uncertainty involves new methods of multiperiod stochastic optimisation and combined simulation/optimisation algorithms.

Keywords:
stochastic optimization, electricity markets, risk management,mixed integer programming, dynamic programming

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Status: Completed (01.07.2005 – 30.04.2008)

Further links to the persons involved and to the project can be found under
https://wwtf.at/funding/programmes/past/ma/MA04-006/