

Workshop: Strategies for risk mitigation using financial tools

Chairman: Dieter Reichelt, ETH Zurich, Power Systems Group / Director Technische Betriebe Kreuzlingen, Switzerland

Summary of the session

An efficient risk management is the key to successful business in an open market. To respect the specific characteristics of electricity markets, existing methods and tools have to be adjusted accordingly. When modelling physical power portfolios the properties of physical assets, particularly the flexibility of hydro power plants, and the uncertainty of electricity prices have to be taken into account. .

The risk management will give a comprehensive view of the portfolio including both physical and financial positions. Besides the valuation of the portfolio it is also crucial to determine the risks of the portfolio position (VaR and PaR). Using energy derivatives, specific hedging strategies can be defined according to the expected development of market price and volatility.

Investments in power plants are characterized by large amounts of money and long depreciation periods. Uncertainties in the future development of power prices and fuel costs are a big challenge for the currently used valuation methods as e.g. the discounted cash flow method. The application of real options theory to energy assets offers a new dimension in the valuation and hedging of long term power production assets.

Invited speakers and key topics for the session

Emphasis is laid on the practical application of methods and tools for risk management. The speakers listed below have been invited for this session.

1. Modelling of uncertainties to valuate hydro pumped storage power plants
B. Lötscher, ewz, Switzerland
2. Risk management for physical portfolios
B. Mo, Sintef, Norway
3. Risk transfer and hedging strategies using derivatives
D. Reichelt, ETH Zürich and Technische Betriebe Kreuzlingen, Switzerland
4. Real options for the valuation of flexibility and spreads
G. Koeppel, ETH Zürich, Switzerland

All speakers have long experience in the area of portfolio and risk management.

Dr. Dieter Reichelt is a private lecturer at ETH Zurich, giving a course on “portfolio and risk management in open power markets”. He is the director of a municipal utility (Technische Betriebe Kreuzlingen) in Switzerland, where he is responsible for the electricity and natural gas purchase. Before joining his current position, Dieter Reichelt was the head of risk management and power economics of a large Swiss utility. He was the convenor of the Cigré Task Force “Portfolio and risk management for power producers and traders in an open market”.

Beat Lötscher is now with Elektrizitätswerk der Stadt Zürich (ewz). Before, he led the risk management group of the trading and sales division of the largest Swiss power producer.

Dr. Birger Mo is with SINTEF Energy Research. His area of work includes risk management and its application to physical portfolios. The result of his research is summarized in various papers.

Gaudenz Koeppel is a PhD-Student at ETH Zurich. Part of his research includes using real options for valuation of power stations and storage applications