



HAKOM

EnerPULS OPAL-Power Plant Optimization System

EnerPULS OPAL is a software platform for the generation of optimised power station schedules including the possibility of extracting distributed heat.

The product consists of two modules:

- **FAPLMAN:** schedule manager – assistant for generating optimised power station schedules
- **OPAL:** two-stage fully configurable optimisation procedure

The base is formed by a relational data base, the software was developed on the basis of Microsoft VisualC++ components.

The product has been used by Austrian electricity providers and electricity traders for over ten years.

Functions for energy traders and production

- Optimisation of production schedules

Features FAPLMAN

- Graphical and tabular selection of balance conditions for distributed heat, electricity consumption forecasts and spot market price forecasts
- Pre-selection of power station parameters (operation mode, availability and restraints etc)
- Selection and graphical or tabular review of optimised power station schedules
- Audit trail of user input and results

Features OPAL

- Calculation of square cost functions by regression on the basis of measured data
- Two-stage fully configurable optimisation process
- Phase One: Unit commitment by dynamic programming
- Phase Two: Square optimisation of load dispatch on the basis of profit functionals
- Time series-oriented consideration of sub-conditions (operation mode, primary energy costs, load dispatch restrictions etc)



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- Output of all results as time series of HAKOM – Framework (applied input and output energy divided into electricity and distributed heat production), individual processing by ZRM time series manager is possible
- Interface to EnerSPOT (spot market manager) for direct marketing of power station capacities at the spot market of EEX

Technical requirements

Server

- Oracle 8.1.7 or higher/SQL Server 2000
- Windows 2000
- Oracle Client 9i
- Oracle OLEDB Provider 9i

Client

- Windows 2000 or XP
- Internet Explorer 6.0
- Oracle OLEDB Provider 9i
- Office 2000 Professional (or higher)