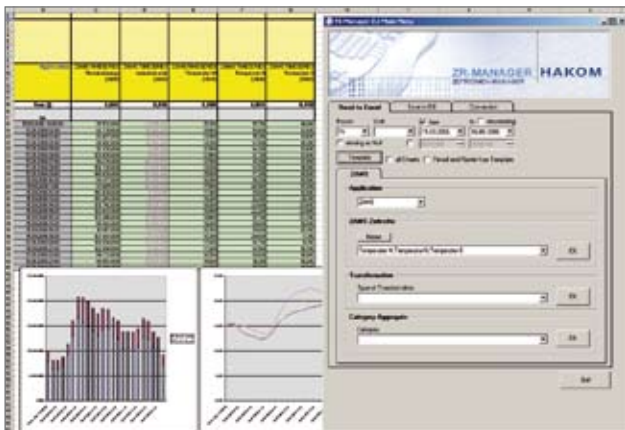


### TSM -Time series manager

#### Energy data management

TSM is a software analysing and evaluating time series relevant for the energy market.



The tool can be used by energy providing enterprises in various fields; for this purpose the HAKOM Framework – an extensive functions library for managing time series – provides additional functionality for specific tasks.

TSM administers the following data in multiple grids, units, and levels of aggregation:

- Meter data
- Load profiles
- Meteorological data
- Calendar information
- Consumption forecasts
- Price information
- Conversion factors

#### Data management performance

TSM is based on efficient relational data bases and was developed by help of the latest Microsoft tools. With TSM a central and powerful data base, which can also be used for very large data volumes, is at your disposal.

#### Standard user interface

By the integration of the user interface in Excel as a plug-in the full range of functions of a standard solution in spread sheet administration is available.

#### Process automation

TSM disposes of a scripthost, which makes the full automation of time series based processes possible.

#### Experienced producer

HAKOM has gained long-term practical experience in the field of energy data management. Since the liberalisation of the energy market in 2001 the product has been in operative use in various renowned Austrian and German energy providing enterprises.

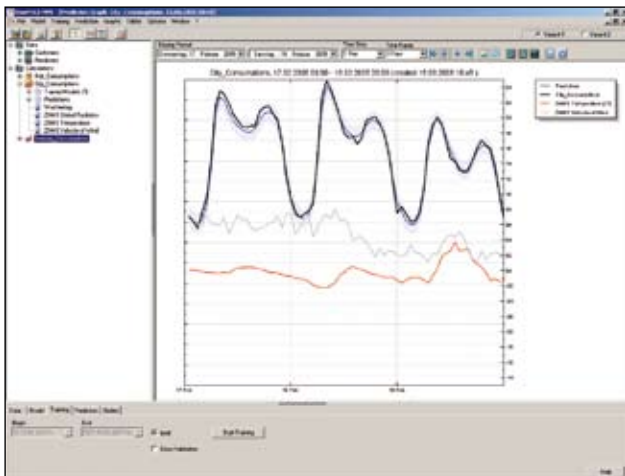
#### Integration in standard systems of other producers

Within the framework of our partnership with the Robotron GmbH in Dresden, the market leader of Energy Data Management Systems in Germany and Switzerland, TSM is also available as an integral part of the Robotron eCount product line.

### MPE

#### Energy consumption forecasts

MPE (Meta Predictor Energie) is a forecasting tool which has asserted itself as a universal tool for exact energy consumption prognoses within the last years.



Three main criteria, which are ideally merged in MPE, are responsible for this performance:

- Usability
- Run-time performance
- Forecasting precision

#### Innovative procedure

A multi-variate regression procedure is used, by which also the non-linear influences of various meteorological data can be considered in great detail. An approved procedure for data compression guarantees very short training times, whereby the system produces exact forecasts under even most difficult conditions.

This enables you to control:

- structural changes through changing customers or seasonal effects
- intraday requirements on automation and run-time reaction
- complex customer structures with a high number of models

#### Quick model development

Within the shortest possible time MPE can be adjusted to any consumption structure. The generation of the model is simple with a graphical user interface, the factors influencing the model are neither limited in number nor in combination possibilities.

The handling of the software is carried out by familiar Windows 'drag&drop' functions. Special mathematical expertise is not necessary.

#### Multiple application

As cycle- and trendvalues can be integrated even very precise long-term forecasts can be achieved.

MPE is scalable and open. Data management takes place on a central data base server; processing is done either on the client computer or – in case of automatic tasks – on the server.

#### Full integration in the HAKOM Framework

MPE is available as a fully integrated tool in the HAKOM Framework. For pre- and post processes for meter data and supply management the HAKOM TSM is available.

#### Successful solution packages

EnerPULS MPE, which consists of HAKOM TSM and MPE has proved highly successful with numerous Austrian and German customers in the electricity and gas markets.

The combination of both HAKOM and the Munich meteorologic AG combines process know-how and long-term experience in the energy market with excellent competence in the field of mathematical procedure development. MPE is also available as an integral part of the products of Robotron GmbH in Dresden.