

## SOLUTION BRIEF



# Plant Scheduler

**Reduce the energy costs and CO<sub>2</sub> emission with 2-5%**

### Savings and other benefits

Reduction in CO <sub>2</sub> emission	2-5%
Reduction in fuel cost	2-5%

### Powered by TERMIS Operation

The module uses the TERMIS model. This ensures:

Correct calculation of **time delays** in the network

Correct calculation of **heat accumulation**, ensuring correct optimization, for example in the morning

Correct calculation of **heat loss**

Easy, quick and **affordable start-up**

The automatic Plant Scheduler module from 7-Technologies minimizes the operational cost of the district energy network. The best possible production scenario is chosen to ensure minimum production cost, taking into account heat loss and the amount of heat that has to be supplied to the consumers in the net.

The Plant Scheduler module encompasses the accumulated heat loss and energy consumption in the network, the hydraulic constraints as defined in TERMIS and the forecasted load as result of predicted outdoor temperature and wind conditions.

### Operational Cost Savings

The automatic Plant Scheduler reduces your energy costs with approximately 2-5%, depending on the flexibility and the variation in fuels. Thus, improving not only your economy, but also reducing the CO<sub>2</sub> emission.

The use of the Plant Scheduler will see fewer boiler start-ups. As a result of this the maintenance will be reduced leading to an extension of the life span of these units.

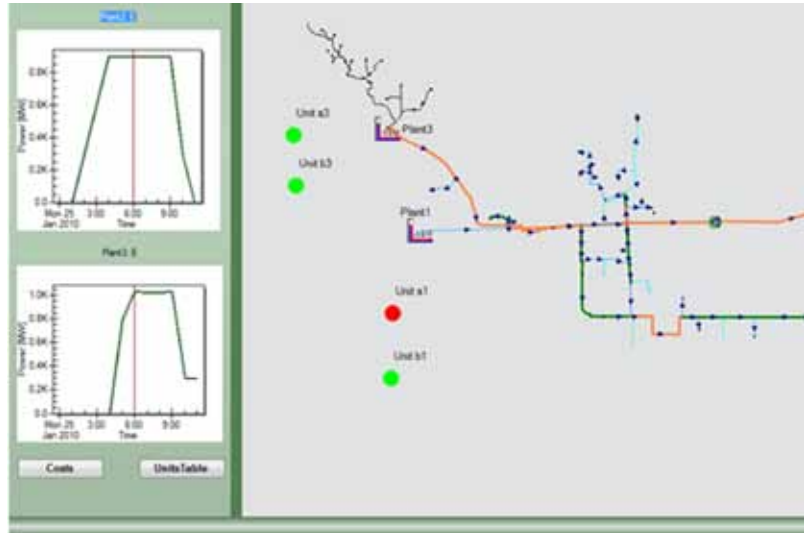
The system can be completely embedded in your SCADA system and be provided by your usual supplier. This allows for an uninterrupted supplier support and you can work with the supplier you usually do business with.

The module requires limited or no intervention. The module is in operation around the clock. Save money all the time – every single day of the year.

### Plant Optimization Technology

The automatic Plant Scheduler module uses SCADA data from the district energy network, creating the best possible basis for the optimization.

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### TERMIS Real-Time

Your existing TERMIS model can be utilized directly. If you are using an alternative modeling tool, this model can be directly and easily transformed into TERMIS. Implementation of the Plant Scheduler requires no knowledge about the operation of TERMIS.

The TERMIS Real-Time functionality can be added, enabling a full and dynamical presentation of temperature, pressure and flow in the network. This gives you the perfect overview and tells you a lot about the operation of your network.

The TERMIS Real-Time functionality can also be utilized to send calculated data into the SCADA system. This expands the overview and may postpone or eliminate the requirement for adding new, costly measurement points.

Worldwide TERMIS Operation is today the most widely used simulation tool for district energy networks.

The module allows for common operational changes and adjustments such as valves being opened or closed, consumers with varying consumption, and variation in load during weekends and holidays.

Unusual operational interruptions, such as boilers being out of operation, will also be included in the calculation to provide the best status possible for the operation at all time.

TERMIS Plant Scheduler continuously performs a load prediction for example based on a weather forecast downloaded from the Internet.

Based on the input stated in the preceding and knowledge of the network capacity, defined constraints, etc., the Plant Scheduler provides the Operator with a schedule for the operation of the plants. Based on a production cycle of 24 hours, the schedule defines which plants to be used and which boilers.

The Plant Scheduler can also be linked directly to the SCADA system, starting or stopping the units automatically.

The algorithm takes into account that the plants have different boilers with different fuel costs and different minimum operation time and start-up costs.