

DISTRICT ENERGY MANAGEMENT
Real-time monitoring and proactive decision making

CUSTOMER CASE



TERMIS Provides District Heating for 0.5 Million Copenhagenerers



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|--|
| Customer |
| Copenhagen Energy |
| Country |
| Denmark |
| System Integrator |
| COWI A/S |
| Application |
| TERMIS and TERMIS Operation |
| Data |
| Number of consumers |
| 500,000 |
| Piping |
| Steam: 170 km ~ 105 miles Hot Water: 1,150 km ~ 711 miles |
| Maximum effect |
| Steam: 500 MW Hot Water: 1,000 MW |
| Heat source |
| Purchase of residue heating |
| Reduced CO₂ |
| "Equivalent to the removal of 105,000 cars off the streets" |

Copenhagen Energy, owner and operator of one of the largest steam and hot water based district heating systems in the world, has used TERMIS for more than 10 years.

The city of Copenhagen has a population of 600,000 and the Copenhagen Energy steam and hot water distribution systems go all the way back to 1925 and has grown over the years into one of the world's largest district energy systems.

The Challenge

A desire to become more efficient

A demand for high levels of efficiency, reliability, and optimization, as a direct result of the size and age of the Copenhagen district heating system, called for action. In addition, Copenhagen Energy continuously faces resource demanding tasks in the form of system renewals and expansions. In 2006 it looked at converting its steam based system into a hot water system.

The Solution

Plan, design, optimize... TERMIS

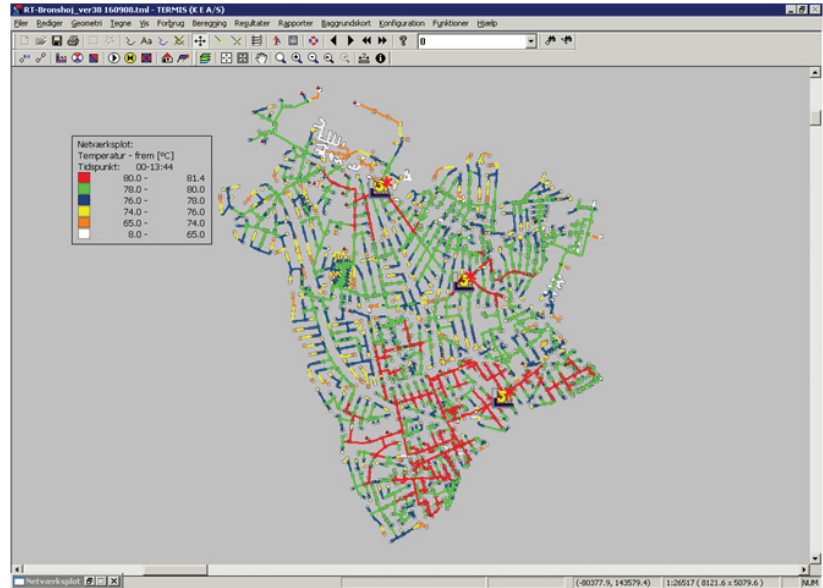
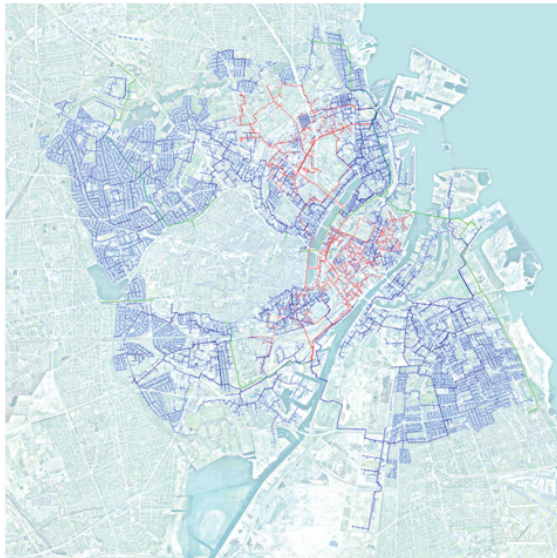
TERMIS was chosen because of its fulfilling features as a planning, design, and optimization tool. Enabling the identification and quantification of strategies, TERMIS proved suitable for increasing efficiencies, reducing operating costs, and cutting emission. Copenhagen Energy employs TERMIS to provide decision-ready information that allows its entire staff to make the best possible decisions.

The Result

Prepared for the future

Copenhagen Energy underlines the importance of the comprehensive functionality and user friendliness that TERMIS provides. With TERMIS, the Copenhagen Energy

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“It would be fair to say that TERMIS has been the source of cost savings amounting to USD 25 million and a key driver that has kept the price of sustainable heating at one of the lowest levels in the global market place.”

*Magnus Foged,
 Head of department, Engineering group
 at Copenhagen Energy*

“In a near future we will be able to see the actual temperature and pressure in the whole net, which is really useful when dealing with customers and optimizing the system on a daily basis.”

*Daniel Lindblom, Project manager
 at Copenhagen Energy*

“After implementing the tool, Copenhagen Energy will save approximately 10 mio DKK per year due to lower heat loss in the net.”

*Daniel Lindblom, Project manager
 at Copenhagen Energy and
 Søren Christensen, Project Manager
 at COWI*

team has designed four milestone hydraulic and thermal model scenarios for the years 2010, '15, '20, and '30. However, as much as TERMIS is used for long term planning, the much is it used in the day-to-day design changes for expanding the network for new customers, maintenance and analysis of losses, analysis of equipment failures and break downs, and in analyzing bottlenecks.

Consumer Advantages

Real-time benefits

The real-time functionality of TERMIS ensures that the consumers experience the highest possible reliability levels.

User Advantages

Intuitive user interface

The very intuitive TERMIS user interface is an important attribute when it comes to training. The engineers at Copenhagen Energy were impressed by how little training they actually needed to master TERMIS on their own. Furthermore, even complex models are processed in a matter of seconds, providing fast calculation and simulation results. All of which saves time.

The Future

Implementing Temperature Optimization

The TERMIS Temperature Optimization module is in the process of being deployed and the initial conclusions advocate for significant cost savings as well as O&M benefits.