Transparency is key

The prerequisite for high energy efficiency and the very foundation of the green transition is transparency. Without frequent meter data, district heating utilities lack knowledge of where and how improvements can be made – and they are unable to evaluate the effect of their actions.

Meeting efficiency targets and running production closer to the limit requires district heating utilities to continuously work on optimising their system all the way to the individual buildings and end users.

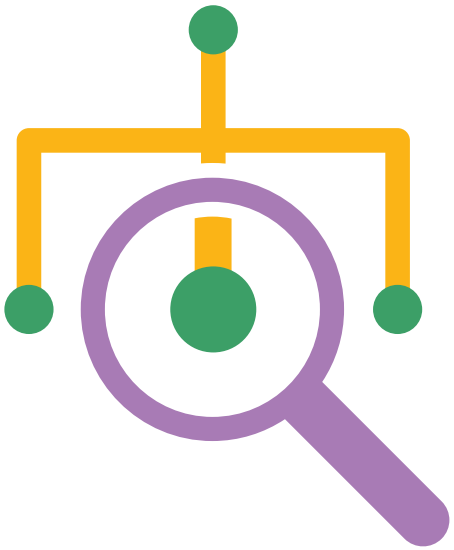
To do so, they must know exactly what is happening in the network – especially at critical points – at all times. Only the frequent data provided by smart metering enables this degree of transparency.

Billing and beyond

Until now, the primary driver for energy metering has been the need for utilities to bill end users for their energy consumption. This need is often met using basic walk-by or drive-by remote reading solutions that allow utilities to go out and collect data without having to disturb the end users. However, meter data can be used much more proactively. With the strong focus on the added value frequent data can provide, fully automatic network solutions are becoming more common and are now available at a reasonable cost.

Smart energy meters give district heating utilities a detailed overview of the actual state of the distribution network by providing precise information about flow and temperatures, which can be combined with additional measurements, such as pressure, in strategically important parts of the network.

This allows utilities to start working specifically on addressing the installations that place the most strain on the network – due to, for example, high return temperatures or high average volume – thereby generating significant energy savings for them and their customers.



The value of data

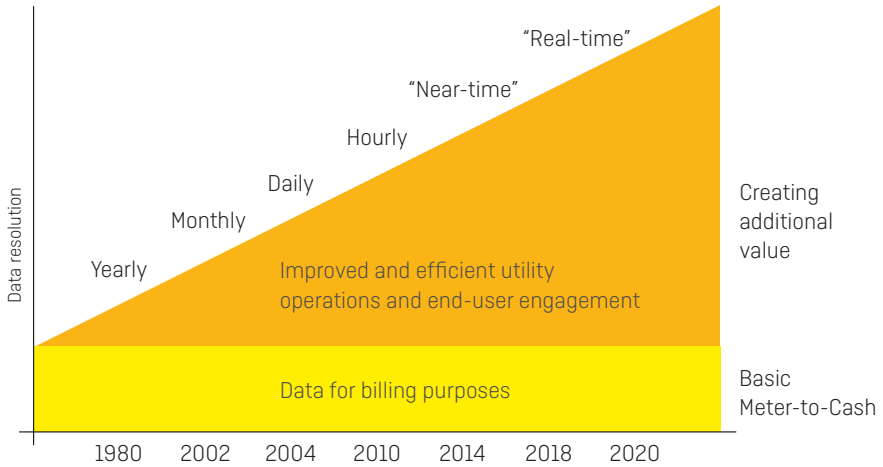
Fundamentally, you cannot optimise what you do not measure. Therefore, smart metering is essential to achieving the goals of the intelligent energy system: low temperatures, high energy efficiency, limited energy waste and a high degree of end-user involvement. In short, the more frequent data a utility has, the more precise its basis for optimisation, and thus, the more value it can create.

For example, metering is necessary to continuously monitor the temperature levels in the network, so that district heating utilities can identify the possibilities and challenges involved in lowering the network temperatures in order to improve the energy efficiency.

Frequent meter data also delivers a range of other benefits including continuous meter surveillance, which enable fast error detection and the introduction of new services to engage end users – the latter of which will be explored in the next section.

Some of the most relevant application areas in terms of improving energy efficiency are

- Identification of faulty or misadjusted substations
- Monitoring temperature levels in the distribution network
- Identification of heat and water loss in the distribution network
- Modelling buildings based on actual heat response and basic weather information
- Leakage detection
- Shaping peak demand to better utilise the existing infrastructure
- Introduction of billing schemes that support a more energy efficient heat supply

Learn more at kamstrup.com/value

Data-based value creation