

Diehl Metering

Press release, 2021.07.16

Why District Heating is crucial to addressing the issues behind Earth Overshoot Day

Earth Overshoot Day marks the date when humanity's consumption of natural resources exceeds the planet's capacity to regenerate those resources in that year. In 2021, it falls on July 29. If we want to avoid an environmental catastrophe, we must find ways to ensure the date arrives later and later every year. Energy consumption, as one of the biggest contributors to resource depletion, is a key area where we can make gains in reducing our carbon footprint – and district heating in particular could have a fundamental role in helping to move back the date of Earth Overshoot Day.

Energy-related emissions

Today, nearly 50 percent of worldwide energy-related greenhouse gas emissions are caused by heating and cooling. Furthermore, within the European Union, heating and cooling account for approximately half of annual final energy consumption.

This means the heating and cooling sector has a major impact on Earth Overshoot Day, and must bear significant responsibility for the date moving forward nearly every year since 1970. But the good news is that the sector also offers considerable potential to move the date back. If we can optimize the way we produce and consume heating and cooling, we can reduce their negative impact on the planet.

District heating, a sustainable solution

One technology with proven potential for decarbonizing energy is district heating. The solution consists of generating heat in a central location and distributing it through a pipe circuit to buildings for space heating and domestic hot water. The key to optimizing sustainability in district heating is to use renewable energy sources, such as solid biofuel, geothermal and waste heat from industry. In this way, heat is collected and stored for local distribution rather than being generated by fossil fuels. Indeed, it is estimated that waste heat from power plants and industry in Europe could cover the entire European heat demand if it were collected in district heating systems.

Today, district heating represents around 10% of Europe's total energy consumption for space heating. By 2051, this figure could realistically reach 50%. The solution therefore offers extensive scope to move back the date of Earth Overshoot Day.

Optimizing district heating

The potential of district heating may be considerable – but it can only be realized if it is managed and consumed efficiently. District heating utilities can benefit from a wide range of solutions and services to ensure their network is operating optimally. As a provider of smart metering solutions, Diehl Metering is a specialist in the domain, and knows how to address challenges such as high flow temperatures, leaks and sub-optimal consumer heating behavior.

The company offers a wide range of solutions to empower district heating utilities to be less wasteful and more sustainable. This includes SHARKY ultrasonic heat meters and flow sensors, which precisely measure flow rates in the forward and return pipes, and IZAR data management software, which analyzes and presents network data in an easy-to-understand dashboard. In this way, utilities can quickly detect and address anomalies such as leaks and inefficiencies such as low temperature spreads.

To take full advantage of these solutions, utilities can work with Diehl Metering to plan a fully-compliant and future-proof network. In this way, they can be sure their network is tailored for their individual wishes, needs and expectations, both now and in the future.

Worldwide experience

Through its portfolio, Diehl Metering has helped a number of district heating customers around the world to optimize their networks. For over a decade, it has worked with Izmir Jeotermal, which operates one of the world's largest geothermal district heating networks, to implement remote data reading, automate billing and enable network optimization.

Diehl Metering's teams have also helped Danish district heating company Støvring Kraftvarmeværk to reduce water loss by 10 m³ per day and cut its CO₂ emissions by 80%. As a result of energy efficiency gains, the utility now makes cost savings of around €67,000 per year.

Another milestone for Diehl Metering was its work with district heating and water supplier Brønderslev Forsyning. Through a fixed network solution, it helped this Danish utility to lower the average return temperature in its distribution network by 3°C, significantly reducing wasted energy. In addition, an innovative smartphone app empowers the utility's customers to follow their consumption patterns and change their habits to further increase network efficiency. Overall, Brønderslev Forsyning has reduced its annual costs by €60,000.

Looking ahead, one of the major developments in district heating is to reduce flow temperature in the entire network. If utilities can continue to deliver efficient heating at lower temperatures, they will further reduce energy waste and increase production efficiency based on renewables. Through the support of companies like Diehl Metering, district heating utilities can seize these opportunities. In so doing, they will make an important contribution to reducing our carbon footprint and moving back the date of Earth Overshoot Day.

About Diehl Metering

Diehl Metering is a worldwide leader in the design, manufacture and supply of smart metering solutions. With over 150 years of experience, we empower utilities, municipalities and industries to take control of their infrastructures, bringing new efficiencies to the way they manage water and energy.

Our extensive range of services and solutions includes data-driven insights, IoT connectivity, fully-flexible software, and seamless intelligent metering. We also utilise artificial intelligence to boost performance and deliver cost savings for our customers.

Headquartered in Germany, we are a family-owned business with an international reach. We are proud to maintain our founding principles of quality, reliability and customer proximity while proactively shaping a better future for our customers and the communities they serve. Our approach is to think global and act local. By anticipating trends and remaining agile, we adapt and develop our strategy with our customers and for them.

In supporting their long-term growth, we also contribute to the sustainability of the planet, crafting innovations that enable our customers to make ever better use of the natural resources we all rely on.