

Diehl Metering 代傲表计

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Why District Heating is crucial to addressing the issues behind Earth Overshoot Day 为什么集中供热对解决地球超载日背后的问题至关重要

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.

地球超载日是指人类对自然资源的消耗超过地球当年再生能力的日期，2021 年，这一天落在 7 月 29 日。如果要避免产生环境灾难，人类必须想方设法每年不断将这一天的到来向后推迟。能源消耗是资源耗竭的首要因素，也是我们通过减少碳排放获得回报的关键领域，尤其是，集中供热可以在帮助推迟地球超载日方面发挥根本作用。

Energy-related emissions 与能源相关的排放

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.

今天，全球与能源相关的温室气体排放接近 50% 是由供热和供冷引起的。而且在欧盟范围内，供热和供冷大约占全年能源消耗总量的一半。

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.

这意味着，供热和供冷部门对地球超载日有着重大影响，自 1970 年以来这一天几乎每年都会提前，该领域应对此承担主要责任。但好消息是，该领域有着巨大的潜力能够将这一天推迟。如果能优化供热和供冷的生产和消耗方式，就可以降低它们对地球的不良影响。

District heating, a sustainable solution 集中供热是可持续的解决方案

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.

集中供热已被证明是一项具有去碳化能源潜力的技术，该技术包括集中制热，并通过管网配送到建筑物中，用于室内供暖和供应家用热水。提高集中供热的可持续性，关键在于使用可再生的能源，例如固体生物燃料、地热和工业余热。这样，热量可以被收集和储存起来用于区域供热，而不再需要燃烧化石燃料。

料。事实上，据估计，如果将欧洲发电厂和工业产生的废热收集到区域供热系统中，可以满足整个欧洲的供热需求。

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.

目前，集中供热约占欧洲室内供热能源消耗总量的 10%。到 2051 年，这个数字实际能达到 50%，因此这种解决方案可以有效推迟地球超载日的到来。

Optimizing district heating 优化集中供热

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.

集中供热的潜力可谓巨大，但只有对其进行有效地管理和消费，才能实现它的潜力。集中供热公司可以利用各种解决方案和服务，确保管网高效运行。作为智能计量解决方案提供商，代傲表计是该领域的专家，知道如何应对水流温度高、泄露和不良消费习惯等问题。

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.

公司提供多种解决方案帮助集中供热公司减少浪费，提高可持续性。这包括 SHARKY 超声波热量表和流量传感器，可以准确测量供水管和回水管中的流速，IZAR 数据管理软件用于分析管网数据，并通过简单易懂的面板进行呈现。通过这种方式，公共事业公司可以迅速检测和解决泄露等问题，以及低温扩散等低效率行为。

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.

要充分利用这些解决方案，公共事业公司可以与代傲表计合作，规划完全合规且能满足未来需要的管网。这样，公共事业公司可以确保管网完全符合自己的愿望、需要和预期，不论现在还是将来。

Worldwide experience

全球经验

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.

代傲表计的产品组合已经帮助世界上许多集中供热客户优化管网。Izmir Jeotermal 运营着世界上最大的地热集中供热管网之一，十多年来，代傲表计与该公司持续合作，实施远程抄表，实现自动抄表，并优化供热管网。

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.

代傲表计的团队还帮助丹麦集中供热公司 Støvring Kraftvarmeværk 将每天的水损失降低了 10 m³，CO₂ 排放量降低了 80%。随着能源效率提高，该公司目前每年可以节省大约 67000 欧元的成本。

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.

代傲表计的另一个里程碑是与集中供热和供水公司 Brønderslev Forsyning 的合作。借助固定抄表解决方案，代傲表计帮助这家丹麦公共事业公司将分配管网中的平均回水温度降低了 3°C，显著减少了能源浪费。此外，创新的智能手机应用让该公司的客户能够跟踪自己的消费模式，改变消费习惯，从而进一步提高管网效率。整体上，Brønderslev Forsyning 的年成本降低了 60000 欧元。

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.

未来，集中供热的一个重要发展是降低整个管网中的水流温度，如果公共事业公司能够以更低的温度继续提供高效的供热服务，他们将进一步减少能源浪费，基于可再生资源提高生产效率。在代傲表计等公司的支持下，集中供热公司可以抓住这些机会。在此过程中，他们将对减少碳排放、推迟地球超载日做出重要贡献。