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Supporting Energy Transition and Decarbonisation in District Heating Sector

Newsletter #6

September 2026

SET HEAT

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Foreword

Three years of cooperation have produced investment plans, practical tools and a clearer understanding of what district heating transition requires

Welcome to the final SET_HEAT project newsletter. Since October 2023, our partnership has worked with district heating companies, municipalities, researchers and local stakeholders in Croatia, Lithuania, Poland and Romania to address a shared challenge.

Four cities. Four district heating companies. Eight model investment projects. Fifteen investment plans. One common appraisal method, and four very different answers. This is what three years of SET_HEAT work says to anyone planning the same investments elsewhere. The main part of the SET_HEAT project has come to an end. The consortium is launching the post-project phase focussed on the dissemination and replication of the solutions developed during the project.

Over three years, SET_HEAT supported the development of 15 investment plans for district heating systems operated by four companies, covering contexts from smaller local networks to major urban systems. The planning process combined infrastructure assessments, mapping of renewable and waste heat resources, hourly system simulations, financial and environmental evaluation, and stakeholder engagement. This work provided a practical basis for identifying investment opportunities and understanding the conditions needed to turn them into viable projects.

The findings reveal the scale and complexity of the transition. Future district heating will increasingly collect heat from multiple sources dispersed across the urban environment. Connecting these resources requires suitable network temperatures, electricity infrastructure, thermal storage, land, commercial agreements and coordinated operation. Network modernisation and building improvements must progress together, while controllable heat sources remain essential for security of supply.

The project's main lesson is that successful transition depends on economic, regulatory and organisational conditions as much as on technology. The pathways studied indicate that the assessed 2028 and 2035 efficiency milestones can be reached in many systems, but often under demanding conditions. Meeting prescribed heat-source shares does not automatically deliver the lowest costs or emissions. Investment decisions therefore need to consider actual operating conditions, electricity-market exposure and environmental performance across the wider energy system.

Financing and public confidence are equally decisive. Most assessed transition programmes require external support, with grants, concessional finance and risk-sharing arrangements helping to close investment gaps. Higher heat tariffs alone cannot provide a sufficient or socially acceptable solution. For consumers, progress will be judged through everyday outcomes: dependable heating, thermal comfort, transparent prices and visible local benefits. Affordability and meaningful engagement must remain integral to implementation.

We thank all partners, participating companies, stakeholders and contributors for their commitment. The next task is to advance our plans through detailed development, financing and implementation, and to keep adapting them as local conditions change. The project concludes, but the shared work of transforming district heating continues.



SET_HEAT Project Coordinator
Jacek Kalina Ph.D. D.Sc.
Professor at Silesian University of Technology

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DH Synergy Hub News

DH Synergy Hub connects European projects to accelerate district heating decarbonisation

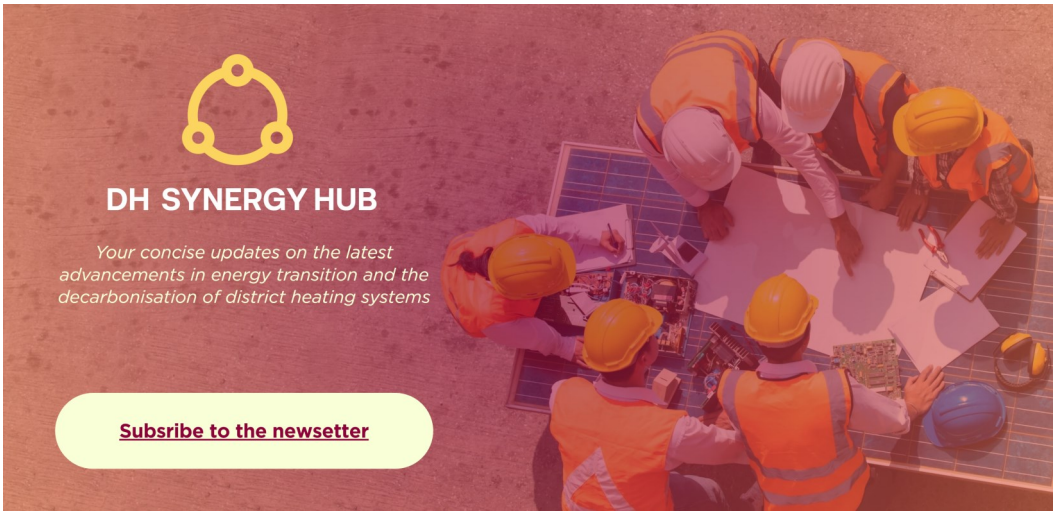
A voluntary partnership brings together expertise, practical experience and policy dialogue to support cleaner heating across Europe. Established in March 2024, the DH Synergy Hub brings together sister EU-funded projects working to integrate low-grade renewable energy and waste heat into high-temperature district heating systems. The initiative creates a shared platform for exchanging knowledge and supporting the transition of existing networks towards more sustainable heat supply.

Projects contributing to the Hub's activities include SET_HEAT, SupportDHC, Low2HighDH, ENABLE DHC, HeatMineDH, DHC SwEEtch and Green Heat Life. Through joint events and communication, the initiative connects complementary approaches to transformation planning, investment preparation and the challenges facing district heating operators.

Cooperation has taken practical form through public webinars and workshops. The "Transforming Europe's DHC Networks" webinar on 17 March 2025 compared planning approaches across participating projects and regions. A subsequent workshop in Brussels on 26 February 2026 explored policy and investment conditions for the heating and cooling transition, including gaps between European ambitions and implementation within Member States.

The Hub's work extends beyond technical solutions. Its joint agenda also addresses access to finance, supportive regulation and the uptake of project results. By bringing project teams into dialogue with policymakers, industry and financial stakeholders, the initiative supports the conditions needed to turn decarbonisation plans into investments.

A shared newsletter provides updates on project developments, webinars, workshops and innovations, making this collective knowledge accessible to a wider audience. District heating operators, municipalities, researchers and other interested organisations are invited to follow the initiative and participate in its knowledge-sharing activities.



DH Synergy Hub establishes its website at:
https://canva.link/dh-synergy-hub-page

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SET_HEAT — Key Facts and Lessons Learned

Three-year EU Life Programme co-funded project delivered replicable investment models, planning resources and evidence on the conditions needed to turn decarbonisation ambitions into viable projects. The project concluded on 30 September 2026, completing three years of collaborative work to support district heating transition in Croatia, Lithuania, Poland and Romania. Coordinated by the Silesian University of Technology, the project brought together 12 partners from five EU Member States, combining utility experience, academic expertise and industry knowledge. The work involved ECO S.A., Gijos, HEP-Toplinarstvo and Bucharest's CMTEB, addressing systems ranging from smaller local networks to major urban infrastructures.

SET_HEAT's contribution extends beyond technology selection. The project combined infrastructure diagnostics, heat mapping, hourly production simulations, financial and environmental assessments, and risk analysis. Training, workshops, webinars, guidelines and planning tools strengthened the participating organisations' capacity to prepare and evaluate complex investment programmes. Cooperation with sister projects through the DH Synergy Hub broadened opportunities to exchange experience and replicate results.

The central lesson is that district heating decarbonisation requires coordinated change across technology, infrastructure, finance and governance. Local renewable and waste-heat resources are often dispersed, available at low temperatures and controlled by different organisations. Using them effectively requires network adaptation, reliable data, storage, electricity connections and long-term agreements with heat suppliers. Seasonal storage can substantially improve flexibility, but land constraints and cost limit its deployment, particularly in dense urban areas.

The studies also demonstrate that meeting prescribed heat-source shares does not automatically achieve the lowest operating costs or emissions. Production scheduling, electricity prices, power-sector emissions and the interaction between heat pumps, boilers and cogeneration can materially change outcomes. Investment appraisal must therefore examine whole-system performance under realistic operating conditions.

Financing emerged as a decisive barrier. Most assessed transition pathways did not provide acceptable returns under conservative assumptions without external support. Grants, concessional lending, guarantees, appropriate tariff frameworks and risk-sharing arrangements











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SET_HEAT works with NET-ZERO POLAND

2026-05-28 NEWS

Projects collaborate for clean energy future

The energy transition is a multidimensional and multisectoral process. Therefore, SET_HEAT joined forces with NET-ZERO Poland, a project that develops and examines the energy pathways for Poland. On May 28, 2026, SET_HEAT contributed to the Stakeholder and Advisory Board Meeting of the NZP project with a presentation titled "Energy Transition in the District Heating Sector - Identifying Limitations and Risks of Investment Processes.





The Net-Zero Poland is an ambitious Polish-American research project aimed at developing detailed pathways for Poland to achieve net-zero greenhouse gas emissions by 2050. The project is funded by the Quadrature Climate Foundation and is being carried out by a consortium comprising the Silesian University of Technology, Princeton University, the Institute of Energy, and Carbon-Free Europe.

Read more about the NET ZERO POLAND project at https://netzeropoland.pl/

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2026 Annual SET_HEAT Project Meeting

Partners of the EU LIFE co-funded SET_HEAT project gathered at the Silesian University of Technology on 17–18 June 2026 for their third Annual Project Meeting and General Assembly. They met in Gliwice to summarise the project and advance district heating investment plans. The third annual meeting combined practical lessons from PEC Gliwice with coordinated work on financial assessments, investment planning and the project's long-term impact.

The two-day event focused on completing the analytical and planning work needed to support district heating transition in Croatia, Lithuania, Poland and Romania, with particular attention to financial viability and investment plans for 15 district heating systems. The meeting began with a study visit to PEC Gliwice, hosted at the invitation of the company's President and SET_HEAT Advisory Board member, Krzysztof Szaliński. Partners explored practical experience in planning and implementing a long-term energy transition programme. Discussions centred on the Green Energy Park programme, encompassing a 12 MWth solar thermal field, a 21 MWth waste-to-energy plant and a 12 MWth wastewater-source heat pump. The visit provided an opportunity to connect SET_HEAT's planning methodologies with the challenges of delivering major infrastructure investments.
The programme continued with a project review day and a strategic planning day. Partners examined progress on district heating business models, financing opportunities, initial financing plans and an integrated project assessment software tool. They also reviewed local stakeholder workshops and the development of financial viability studies and final investment plans.





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Srategic Eenergy Collaboration in Poland

2026-06-18 NEWS

POLISH-DANISH EXPERT GROUP EXPLORES DISTRICT HEATING'S ROLE IN ELECTRICITY MARKETS

SET_HEAT Project Partners DBDH, ECO and SUT collaborate with Gullev DH Advisory, Høje-Taastrup Municipality, Danish Trade Council in Warsaw within the project titled Srategic Eenergy Collaboration in Poland. The project is financed by the Danish Energy Agency.

This project strengthens strategic collaboration between municipalities and district heating (DH) companies in Poland. It supports the three representative cities of Grudziadz, Jelenia Góra, and Lubin in developing robust, long-term heat plans that link local development with the green transition. A special focus is on the integration of DH and the electricity system. The facilitated in-depth Danish-Polish discussions help to transfer Danish experience with CHP, largescale heat pumps, electric boilers and heat storage to Poland. The strong networks of the project participants will ensure broad impact and inspire more Polish cities to take ambitious action through long-term strategic planning.

On 15–16 June, the informal Polish-Danish Expert Group held its first in-person workshop in Copenhagen. The group brings together experts from transmission system operators, district heating utilities, technology companies, think tanks, and universities. Their shared focus is to accelerate the process of enabling Polish district heating systems to access electricity markets from spot markets to ancillary services. In Copenhagen meeting, the group discussed how district heating systems in Poland can gain access to electricity markets, and what can be learned from Danish experience with flexibility, heat pumps, electric boilers, and heat storage. There was also a study tour to Danish electrified DH systems.







Read more about the project at:

https://dbdh.org/tfe-poland-ii-strategic-energy-collaboration-in-poland/

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New open-access articles

The SET_HEAT project is continuing to contribute to the critical mass of knowledge. Selected results from the SET_HEAT project have been published in open access scientific and professional journals:

Giedrė Streckienė, Martin Piskulov: **Performance Simulation of an Unglazed Transpired Solar Collector: Two-Dimensional and Three-Dimensional Analysis**. Energies 2026, 19(2), 481; https://doi.org/10.3390/en19020481

Kalina J., Pohl W., Kostowski W, Sachajdak A., Craiciu C., Viscotel L: What Can **We Do in Bucharest? The Issues of Decarbonising Large District Heating Systems**. Energies 2026, 19(2), 716. https://doi.org/10.3390/en19030716



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Article

What Can We Do in Bucharest? The Issues of Decarbonising Large District Heating Systems

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Abstract

District heating systems are central to Europe's decarbonisation strategy and its 2050 climate-neutrality objective. However, district heating is deeply embedded in the socio-economic system and the built environment. This makes compliance with policy targets at the local level particularly challenging. The issues are attributable to two factors. Firstly, the process is characterised by a high degree of complexity and multidimensionality. Secondly, there is a scarcity of local resources (e.g., land, surface waters, waste heat, etc.). In Bucharest, Romania, the largest district heating system in the European Union, the process of decarbonisation represents a particularly complex challenge. The system is characterised by large physical dimensions, high technical wear, heavy dependence on natural gas, significant heat losses and complex governance structures. This paper presents a strategic planning exercise for aligning the Bucharest system with the Energy Efficiency Directive 2023/1791. Drawing on system data, investment modelling, and local resource mapping from the LIFE22-CET-SET_HEAT project, the study evaluates scenarios for 2028 and 2035 that shift heat generation from natural gas to renewable, waste heat, and high-efficiency sources. The central objective is the identification of opportunities and issues. Options include large-scale heat pumps, waste-to-energy, geothermal and solar heat. Heat demand profiles and electricity price dynamics are used to evaluate economic feasibility and operational flexibility. The findings show that the decarbonisation heat supply in Bucharest is technically possible, but financial viability hinges on phased investments, interinstitutional coordination, regulatory reforms and access to EU funding. The study concludes with recommendations for staged implementation, coordinated governance and socio-economic measures to safeguard heat affordability and system reliability.

Keywords: district heating; energy transition; decarbonisation; renewable energy sources; waste heat; strategic planning; investment planning

Check for updates

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1. Introduction

Existing European district heating systems are undergoing a profound transformation to meet the EU's 2050 decarbonisation goals. The revised Energy Efficiency Directive (EED) [1] establishes that by 2028, efficient district heating (DH) systems must supply into the district heating network (DHN) at least 5% of heat from renewable sources (RES). By 2035, 35% of heat supplied to DHN must be from either RES or waste heat sources (WHS),



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Article

Performance Simulation of an Unglazed Transpired Solar Collector: Two-Dimensional and Three-Dimensional Analysis †

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† This paper is an extended version of our paper "Performance Simulation of an Unglazed Transpired Solar Collector: Two-Dimensional and Three-Dimensional Analysis" presented at the 20th Conference on Sustainable Development of Energy, Water and Environment Systems, Dubrovnik, Croatia, 5 October 2025.

Abstract

The growing depletion of fossil fuel resources and rising energy costs underscore the need for efficient renewable energy technologies, such as unglazed transpired solar collectors (UTSCs). UTSCs harness solar energy to preheat outdoor air, thereby improving building energy efficiency and reducing reliance on conventional heating systems. This study presents a computational fluid dynamics (CFD) analysis of UTSC performance under Lithuanian winter conditions (ambient air temperature −2.64 °C, solar irradiance 733.45 W/m², wind speed 1.93 m/s) using two- and three-dimensional models developed in ANSYS FLUENT. The 3D model simulates a realistic wall fragment with multiple repeating sheet metal profiles and an air gap, while the 2D model represents a longitudinal section applicable to generic UTSC configurations. Both models were validated against experimental data and used to evaluate airflow velocity, pressure distribution, and air temperature rise. The results indicate overall thermal efficiencies of 54.32% for the 3D model and 54.07% for the 2D model, demonstrating that simplified 2D models can achieve comparable accuracy while significantly reducing computational cost. These findings highlight the potential of high-resolution CFD modelling for optimizing UTSC design and enabling faster, more reliable assessments for integration in industrial and commercial building applications.

Keywords: solar energy; unglazed transpired solar collector (UTSC); computational fluid dynamics (CFD); temperature distribution; heat transfer

Check for updates

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1. Introduction

Mitigating carbon emissions in the building sector is essential for addressing climate change and reducing greenhouse gas emissions [1]. Traditional building solutions face sustainability challenges that encompass not only energy efficiency but also economic and social dimensions [2]. Today, this sector is undergoing a profound transformation driven by the integration of renewable energy sources—such as solar, wind, hydro, and biofuels—into building systems [3]. In recent years, the capacity of these technologies has grown rapidly, supported by favourable policies and declining costs of renewables [4].

Solar thermal technologies play a key role in improving building energy performance [5]. Among solar energy solutions, collectors offer significant potential for heating and cooling due to their high availability and ease of use. They are generally classified into five types: unglazed, glazed flat-plate, evacuated tube, large-scale thermal, and concentrating collectors [6]. Each type offers specific advantages and opportunities for efficiency

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News from District Heating Companies

2026-07-01 NEWS

ECO Jelenia Góra is building a strategic partnership to support the transformation of district heating

ECO Jelenia Góra has commenced cooperation with partners from Denmark as part of the international project 'Strategic Energy Cooperation in Poland', funded by the Danish Energy Agency under the TFE programme and implemented by the Danish District Heating Council and HVAC Consultancy (Gullev DH Advisory). The project aims to support the green transition of the Polish district heating sector by strengthening strategic cooperation between district heating companies, local authorities and other key local stakeholders. Through Danish-Polish knowledge exchange and practical dialogue, the initiative seeks to support the development of long-term, integrated and implementable energy planning methods in Polish cities. Representatives of Danish institutions and industry experts visited the ECO Jelenia Góra combined heat and power plant. The meeting took the form of a study visit and marked the first stage in building a long-term partnership based on the exchange of knowledge and experience.



2026-06-26 NEWS

ECO Malbork is carrying out a project to modernise the district heating infrastructure, worth over 14 million PLN

ECO Malbork is modernising the town's district heating infrastructure with support from European Funds under the 'European Funds for Infrastructure, Climate and the Environment 2021–2027' programme. As part of the project, approximately 1.2 km of the existing duct network will be modernised by replacing it with modern pre-insulated pipes. The works will be carried out, amongst others, on Jagiellońska, Żeromskiego, Kopernika, Mickiewicza, on Narutowicza Square, Kotarbińskiego Street and Aleja Wojska Polskiego," says Jan Hałuszczak, Chairman of the Management Board of ECO Malbork. "In addition, the worn-out district heating substation in the building at 10–11 Jagiellońska Street will be replaced. Modern equipment will ensure greater operational efficiency of the system and better regulation of heat supply parameters. ECO Malbork has already constructed a section of over 900 metres of new district heating network with pipe diameters ranging from DN 200 to DN 250. The project has improved the hydraulic performance of the municipal di-



2026-06-10 NEWS

New PLN 70 million investment in Opole: The ECO Group is replacing coal with gas in a new combined heat and power plant

The ECO Group is commissioning its second combined heat and power plant in Opole. By generating electricity and heat in combination using gas instead of coal, the reduction in primary energy consumption will amount to over 4,500 tonnes of coal saved annually. CO_2 emissions will be reduced by over 35,000 tonnes per year compared with a system of separate heat and electricity production.



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Summary of the investment plan for ECO

2026-09-30 NEWS

The investment plan for ECO's district heating transition programme links Opole investment plan with opportunities across eight other Polish cities

SET_HEAT studies combined renewable energy, recovered heat, electrification and storage, highlighting the technical, financial and organisational changes needed to deliver reliable, affordable heating. The investment plan developed for Opole, Poland, sets a comprehensive transformation pathway of the district heating system operated by Energetyka Cieplna Opolszczyzny S.A. (ECO) in the city. Alongside this detailed plan, a broader project catalogue harness opportunities in Sulechów, Gubin, Żary, Jelcz-Laskowice, Kutno, Malbork, Tarnobrzeg and Jelenia Góra, demonstrating the potential to adapt shared technological solutions to different local heating systems.

In Opole, the programme comprises twelve projects in two phases, with major transformation assets intended to operate by the end of 2034. The plan identifies an overall capital requirement of approximately EUR 113.6 million in constant 2025 prices, subject to reconciliation of detailed investment and financing budgets. The transition addresses a predominantly coal- and gas-based system supplying around 50,000 consumers through approximately 153 kilometres of network.

The proposed portfolio combines a connection to a 7 MW municipal waste-to-energy plant, two 8 MW electric boilers, heat recovery from the Odra cement plant and modernised gas cogeneration. Further investments include a 12 MW wastewater-source heat pump, up to 5 MW of distributed air-source heat pumps, recovery of heat from existing gas engines and additional industrial sources, and a 250,000 m^3 seasonal pit thermal store. An alternative scenario also incorporates heat from local biogas facilities.

Under the modelled operating regime, the programme reduces coal consumption by approximately 82% and CO_2 emissions by 40%. Renewable energy and waste heat provide 37.5% of network heat, rising to 81.0% when high-efficiency cogeneration is included. These results support the plan's assessed 2035 efficiency objectives, although narrow margins require additional resilience against outages, source unavailability and changes in operating conditions.

The wider ECO catalogue of investment plans cover eight other, smaller, systems: Sulechów addressed with two air-source heat-pump projects; Gubin addressed with an electrode boiler directly connected to renewable electricity generation, supported by hot-water storage; Żary addressed with wastewater and combined air/water-source heat pumps, with thermal storage; Jelcz-Laskowice addressed with wastewater and combined air/water-source heat pumps, alongside distributed waste-heat recovery; Kutno addressed with wastewater heat recovery, distributed waste-heat sources and geothermal heating; Malbork addressed with wastewater- and river-water-source heat pumps; Tarnobrzeg addressed with wastewater heat recovery, thermal storage and solar thermal generation; Jelenia Góra addressed with distributed waste-heat recovery, wastewater and combined air/water-source heat pumps, and three geothermal concepts.

Across the entire programme, introducing distributed heat sources changes network hydraulics, temperature requirements and production scheduling. Delivery therefore depends on pipeline adaptations, digital monitoring, electricity connections, land and permits, and dependable agreements with external heat suppliers. Storage and coordinated controls must align heat production with customer demand and electricity-market conditions while maintaining winter supply security.

Financing is a decisive challenge. Implementation of the plan therefore requires a coordinated combination of public support, concessional finance, cost control, sustainable heat-purchase contracts and regulated cost recovery that protects customer affordability.

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Summary of the investment plan for HEP

HEP TOPLINARSTVO d.o.o.

2026-09-30 NEWS

HEP investment plans outline district heating transition across Zagreb, Osijek and Sisak

SET_HEAT studies identify approximately EUR 149 million of proposed investments, combining large-scale electrification, recovered heat, geothermal energy and thermal storage with solutions tailored to three distinct heating systems. The investment plans establish complementary transition pathways for the district heating systems operated by HEP-Toplinarstvo in Zagreb, Osijek and Sisak. The plans address different starting conditions, from Zagreb's predominantly natural-gas-based supply to Sisak's substantial existing biomass contribution. The three plans provide HEP with a practical basis for phased investment, linking local resources and existing assets with the broader transformation of Croatia's heating infrastructure. Together, they demonstrate the scale of infrastructure investment, operational change and coordination required to reduce fossil-fuel dependence while maintaining reliable and affordable heating.

Zagreb's proposed programme, estimated at approximately EUR 120 million, addresses Croatia's largest district heating system, serving more than 105,000 customers through around 286 kilometres of network. Five projects combine a 21 MW Sava river-water heat pump, a 3.5 MW wastewater -source heat pump, 220 MW of electrode boilers distributed between the TE-TO and EL-TO production sites, and 280,000 m^3 of seasonal thermal storage. The storage facility is central to the operating concept, allowing electricity-based heat production during favourable periods and shifting heat into periods of higher demand. The draft's simulations indicate potential annual reductions of approximately 76.6 million cubic metres of natural gas and 155,000 tonnes of direct CO_2 emissions. Delivery towards the 2035 milestone requires major electricity connections, water and environmental permits, storage land, and confirmation of renewable-electricity accounting and system energy balances.

Osijek's approximately EUR 19.1 million programme, planned for delivery by 2029, builds on existing biomass and gas cogeneration. It comprises a 3.5 MW Drava river-water heat pump, 1.5 MW of industrial waste-heat recovery from chemical and brewery sources, 30 MW of electrode boilers, and a proposed 7,000 m^3 hot-water store. The new heat sources are specified to provide approximately 104.8 GWh annually, equivalent to nearly half of the system's reported 2024 heat production.

Osijek illustrates the close relationship between technology and electricity procurement. Storage enables the electric boilers to operate selectively during lower-price hours, while renewable electricity sourcing strongly influences environmental performance. Industrial heat recovery also requires dependable supply agreements and coordinated integration with existing production.

Sisak's recommended configuration focuses on the smaller remaining fossil-fuel demand after existing biomass cogeneration is dispatched. The optimised proposal combines a 5 MW geothermal installation with 2,000 m^3 of thermal storage, at an estimated EUR 9.94 million. The plan projects an 86% reduction in gas use, while preserving existing biomass output. Geothermal resource confirmation, drilling performance, network integration and careful matching of capacity to seasonal demand are essential before investment commitments.

Across all three cities, implementation extends beyond constructing new heat sources. Lower network temperatures, hydraulic coordination, digital controls, reserve capacity and hourly production scheduling must support the new portfolio. Electricity procurement, industrial partnerships, permitting and financing must progress alongside engineering.

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News from District Heating Companies

gijos
Miesto energetikos ekosistema

Vilniaus šilumos tinklai

2026-06-18 NEWS

Up to EUR 118 million in funding from the Nordic Investment Bank for the modernisation of Vilnius's energy infrastructure

The Nordic Investment Bank (NIB) has signed a loan agreement with AB "Miesto gijos" for up to EUR 118 million. The funding is intended for the modernisation and development of Vilnius's district heating system between 2025 and 2030, as well as the modernisation of heat production. The investments include the modernisation of the city's district heating networks, their expansion into developing neighbourhoods, and the installation of new heating capacity based on renewable energy sources.



Once the investment programme has been implemented, it is planned to reduce heat losses in the network from 13 per cent to 11 per cent by 2030. Furthermore, the district heating networks will be extended to new districts, new customers will be connected, smart meters will be installed, and heat distribution centres will be modernised.

Solutions for heat production are also planned to increase the share of renewable energy – heat production capacity from biofuels will be increased, and heat pumps will be installed to utilise heat recovered from wastewater. Heat storage solutions will also be implemented, allowing heat to be stored during periods of lower electricity prices and used during periods of peak heat demand.

Commenting on the agreement, Gerimantas Bakanas, CEO of AB "Miesto gijos", emphasised the strategic importance of the investment programme for the development of Vilnius's energy infrastructure. "Vilnius is investing in a district heating system tailored to future needs. By modernising the network, reducing heat losses and increasing heat production from renewable energy sources, we are creating long-term value for both the city's residents and businesses. These investments will strengthen energy security, enhance the reliability of the district heating system and help Vilnius consistently pursue a more sustainable energy future. "Funding from the National Investment Bank (NIB) will accelerate this transition and ensure a reliable, efficient and sustainable supply of heat throughout the capital," says Gerimantas Bakanas.

2026-06-05 NEWS

Another important step in creating a more modern and sustainable urban energy ecosystem in Vilnius

Together with the Lithuanian electricity transmission system operator, Litgrid signed a letter of intent to connect 32 MW of electrical equipment to the electricity transmission grid.
This agreement opens up opportunities to implement strategic projects that will help use local energy resources more efficiently, strengthen the interaction between heat and electricity systems, and accelerate the transition to fossil-free solutions.
One of the main goals of such projects is to use electricity flexibly during periods when the market supply is highest and the price is lowest. This will not only allow more efficient integration of renewable energy but also contribute to ensuring a reliable and sustainable city heat demand.

Summary of the investment plan for gijos

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gijos
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Vilniaus šilumos tinklai

2026-09-30 NEWS

The investment plan for Gijos maps out the next stage of district heating transition in the Vilnius area

The complementary plans address two separate district heating systems: Lithuania's largest integrated network in Vilnius and the local network serving Naujoji Vilnia. They combine renewable heat, waste-heat recovery, electrification and thermal storage, addressing the identified needs, such as diversification of heat production with greater operational flexibility and reduced fossil-fuel dependence. The plans provide Gijos with a coordinated basis for advancing investments that support reliable, competitive and progressively lower-carbon heating.

For the integrated Vilnius system, which supplies approximately 2,700 GWh of heat annually through 758 kilometres of network, the proposed first-phase portfolio comprises eight investments with estimated direct capital expenditure of EUR 61.5 million, including network interconnections. Scheduled in the plan for commissioning by the end of 2029, these include a 22 MW biomass boiler, a 10 MW electrode boiler, 23 MW of wastewater-source heat pumps with thermal storage at the Vilniaus Vandenys treatment plant, recovery of heat from industrial and data-centre sources and existing cogeneration infrastructure, and a 7,500 m^3 hot-water storage tank.

The programme builds on a system already supplied predominantly by renewable and local energy sources. Its purpose is to replace remaining fossil-fuel production, recover otherwise unused heat and strengthen Gijos's ability to respond to changing electricity and heat-market conditions. The modelled investment scenario reduces Gijos's natural gas consumption by approximately 44%, avoiding around 28,600 tonnes of direct CO_2 emissions annually. A subsequent development phase considers 200,000 m^3 of seasonal pit thermal storage, subject to further technical and commercial assessment.

In Naujoji Vilnia, an independent network serving apartment buildings and public facilities, the EUR 6.2 million plan focuses on modernising the RK-2 boiler house. Two industrial air-source heat pumps, providing approximately 4.9 MW of heat at an outdoor temperature of 0°C, would operate alongside existing biomass and gas boilers. A 3,000 m^3 storage tank, providing approximately 78 MWh of usable heat storage, would allow production to shift towards favourable electricity-price and temperature conditions.

Heat pumps and biomass are projected to supply around 90% of Naujoji Vilnia's annual heat requirement, with gas retained for peak demand and reserve operation. The financial study estimates a reduction in direct fossil CO_2 emissions of approximately 63%. Electricity reinforcement, coordinated controls and verification of winter performance are essential to delivering these benefits.

The two plans also expose the complexity of implementation. In Vilnius, roughly four-fifths of heat is purchased from independent producers through competitive auctions, so new assets must compete economically for operating hours. In Naujoji Vilnia, performance depends on integrating weather-sensitive heat pumps with existing boilers and storage. Across both systems, electricity prices, network temperatures, future heat demand, connection infrastructure and capital costs strongly influence investment outcomes.

Financial assessments underline the importance of disciplined project preparation. The integrated Vilnius programme's viability depends on market developments and investment support, while Naujoji Vilnia shows positive modelled returns under the financing options examined.

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News from District Heating Companies

Compania Municipală TERMOENERGETICA BUCUREȘTI

2026-09-15 NEWS

Modernisation of the district heating system, integration of renewable energy sources and collaborative financing mechanisms in the Bucharest metropolitan area



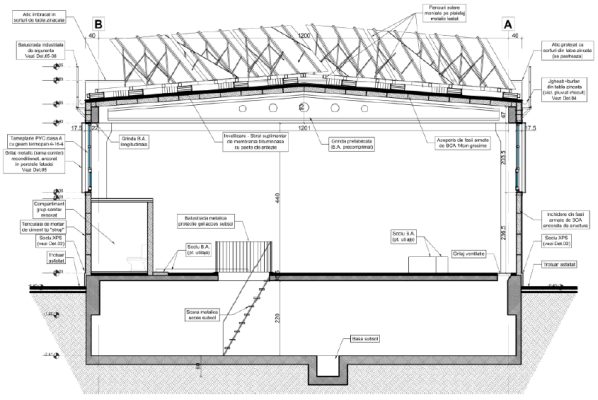
Two weeks before the final date a planning workshop has taken place in Bucharest. Green energy could be used to supply hot water and heating in Bucharest. What solutions have been found for this system?

On 15 September 2026, representatives of Compania Municipală Termoenergetica București S.A. (CMTEB) participated, within the framework of the SET-HEAT project, in the round table entitled “Modernisation of the District Heating System (SACET), Integration of Renewable Energy Sources (RES) and Collaborative Financing Mechanisms in the Bucharest Metropolitan Area”, held in the Council Hall of Bucharest City Hall. The activity aimed to provide a framework for dialogue and cooperation among relevant stakeholders in the energy and district heating sectors, with a view to identifying common directions for the modernisation of the district heating system, the integration of renewable energy sources and the identification of financing mechanisms required for the implementation of future investments. CMTEB’s participation was part of the activities carried out within the SET-HEAT project and was aligned with the company’s objectives regarding the modernisation and increased efficiency of Bucharest’s district heating system.

2026-09-25 NEWS

First rootop solar thermal plant pilots under development

Distributed solar thermal plants located on rooftops play an important role in the Bucharest DH plan. The total potential of solar plants installed at the rooftops of the premises of CMTEB (mainly thermal points) is above 100 MWpeak. During the SET_HEAT projects’ studies, two pilot solar plants have been commissioned at the rooftops of thermal stations, PT Ramuri and PT Fundeni.



These pilot plants are now under construction and will be soon commissioned for full-scale tests.



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Summary of the investment plan for TEB

Compania Municipală TERMOENERGETICA BUCUREȘTI

2026-09-30 NEWS

The investment plan for Bucharest outlines a programme totalling EUR 1.13–1.50 billion, with the aim of transforming district heating in the capital of Romania

The strategy combines significant infrastructure investments, local renewable resources and coordinated delivery, with the objective of improving heating services for approximately 505,000 consumers. Developed within the LIFE22-CET-SET_HEAT Project, the investment plan demonstrates the scale of technical, financial and institutional coordination required to transform a major urban heating system.

The programme addresses the interconnected challenges of reliability, affordability and energy transition across a network extending approximately 3,847 kilometres. Heat production remains almost entirely dependent on natural gas, while ageing infrastructure contributes to reported network losses of 30–40%. Transforming this system therefore requires coordinated investment in heat production, distribution and operation, alongside sustainable commercial and financing arrangements.

The two pathways are estimated to begin with a common investment phase of EUR 281.9 million. This would include rooftop solar thermal installations at around 200 thermal points, 29 MW of air-source heat pumps and initial cogeneration modernisation. The subsequent programme would include a 50 MW lake-water heat pump at Lake Morii and a 90 MW wastewater heat pump at Glina, complemented by geothermal energy, municipal biogas cogeneration and further modernisation of major production assets.

The alternatives represent different approaches to diversification. The first scenario, with an estimated budget of around EUR 1.50 billion, includes the construction of a waste-to-energy plant with an annual processing capacity of approximately 235,000 tonnes of refuse-derived fuel and 1.2 million cubic metres of seasonal thermal storage. The second scenario, with an estimated budget of around EUR 1.13 billion, does not include waste incineration, instead focusing on the expansion of solar thermal and air-source heat pumps, the introduction of heat recovery from metro infrastructure and data centres, and an increase in storage to 1.5 million cubic metres. According to the plan's modelling assumptions, renewable heat is expected to account for approximately 35% of total energy consumption by 2035 in both scenarios.

The delivery process encompasses a wide range of activities, extending well beyond the mere installation of new equipment. Large heat pumps, for instance, necessitate verified water resources, environmental permits, electricity connections, and agreements with source operators. Distributed installations require coordination across multiple sites, while seasonal storage imposes significant land and geotechnical requirements. Network rehabilitation is imperative. The simulations assume losses fall to 15%, underscoring the crucial need for timely improvements to pipelines to ensure the projected benefits are realised.

The plan underscores the necessity for collaborative governance by CMTEB, ELCEN and the Municipality of Bucharest, with the backing of regulators, infrastructure operators and financing institutions. Investment grants are pivotal. Both scenarios attain positive modelled net present values with 36% capital support, though funding across the entire portfolio remains to be secured.

The immediate priorities are as follows: coordinated programme management, detailed feasibility studies, validation of costs and operating assumptions, and project-specific funding and permitting. The plan provides a framework for progressing towards more reliable and diversified heating, while recognising that renewable-energy targets, onsite emissions and wider environmental benefits must be assessed separately.

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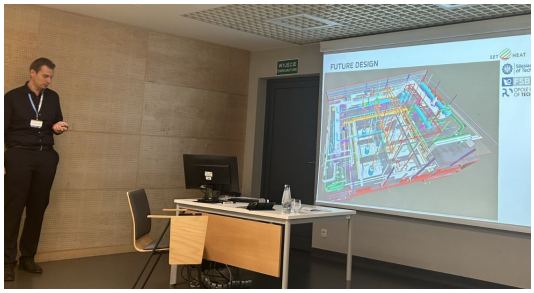
9th CPOTE Conference Special Session: Energy Transition and Decarbonisation in the District Heating Sector

2026-09-25 NEWS

LIFE22-CET-SET_HEAT Project will Organise a Special Conference Session at the 9th International Conference on Contemporary Problems of Thermal Engineering

The SET_HEAT project brought the discussion on clean and resilient heating systems to the international stage during the Contemporary Problems of Thermal Engineering (CPOTE) conference, which took place 23–25 September 2026 in Kraków, Poland. As part of the conference programme, the SET_HEAT project organised a special thematic session dedicated to the challenges and opportunities of decarbonising district heating systems and integrating renewable energy sources into modern energy infrastructure. The session provided a platform to present project results, share practical experiences, and foster dialogue between academia, industry, and policymakers on how to accelerate the heat transition across Europe. Together with CPOTE participants, the SET_HEAT session will explore innovative technical solutions, regulatory frameworks, and investment pathways needed to make the decarbonisation of district heating systems both feasible and scalable.

In total, seven presentations were delivered by the SET_HEAT project consortium partners:



1. Energy transition and decarbonisation in district heating sector – key conclusions from LIFE22-CET-SET_HEAT project.
2. On the road to district heating decarbonisation: model-based temperature reduction in a large 2nd-generation system.
3. Strategies and tools for planning energy transition and decarbonisation of district heating systems in SET_HEAT project.
4. Techno-economic assessment and hydraulic optimization of large-scale river-source heat pump configurations for high-temperature district heating decarbonization
5. Technical and economic analysis of the "lift-and-store hub" concept for seasonal heat storage
6. Influence of frosting conditions on the operational efficiency of air-source heat pump: experimental insights.
7. Integration of solar energy into thermal substations – solutions for efficiency and decarbonization.





Read more about the conference at https://cpote2026.s-conferences.eu/

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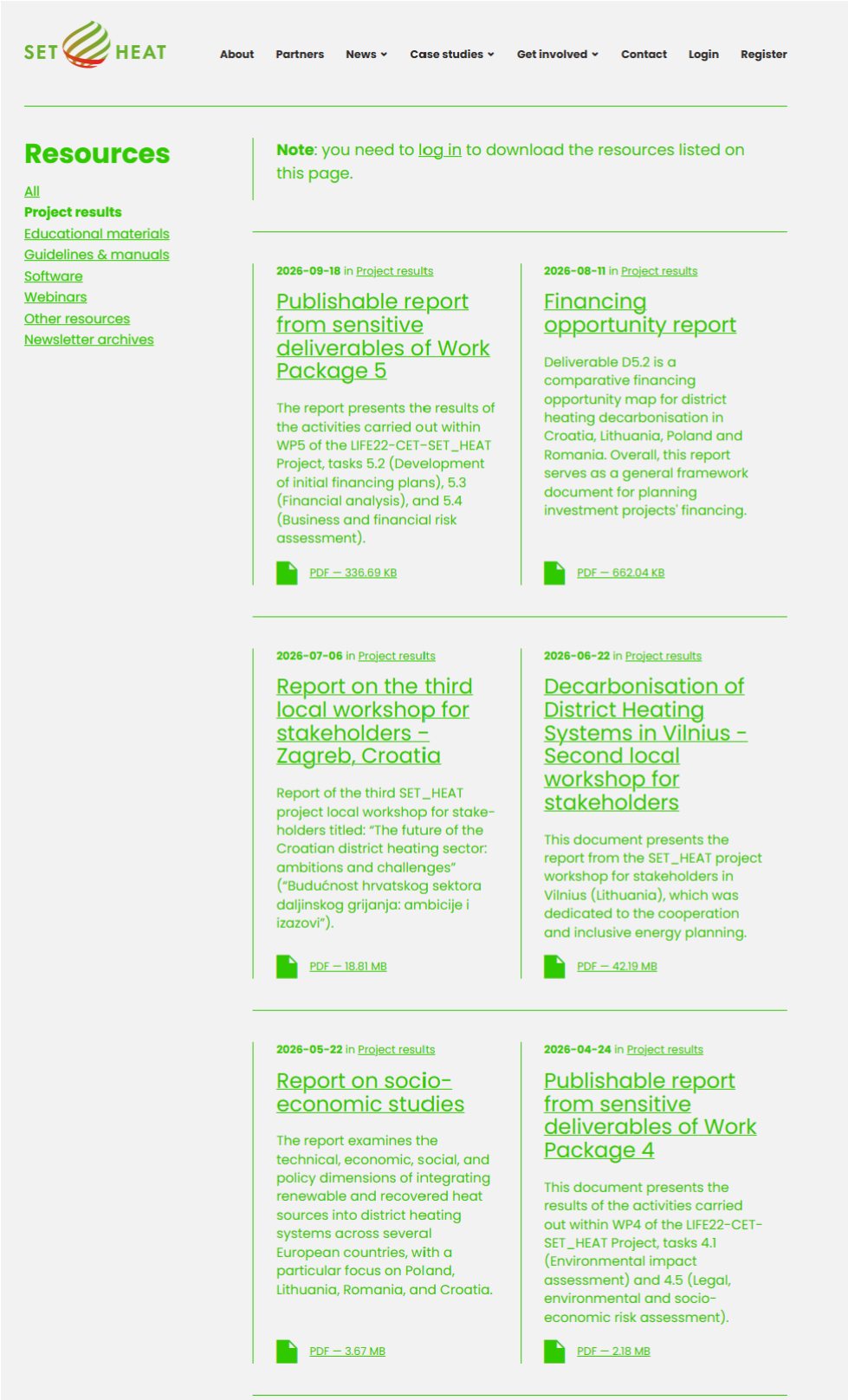
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SET_HEAT knowledge-sharing platform

All public results of the project are available on the online knowledge-sharing platform at https://setheat.polsl.pl/. This hub hosts project deliverables, tools, methodologies, case studies, and publications generated through the project's activities. The knowledge produced within the project is easily accessible and can be used to replicate SET_HEAT's solutions in other regions.



https://setheat.polsl.pl/

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Transfer of knowledge from SET_HEAT to Ukraine

2026-09-29 NEWS

Ukrainian ReWarm project delegation on a study visit to SUT, PEC Gliwice and ECO SA in Gliwice and Opole

As part of the international ReWarm project, a delegation of over 30 people representing Ukrainian central government authorities, local authorities and municipal heating companies visited Gliwice and Opole on 28–29 September. The delegation included, amongst others, representatives of the Ukrainian Ministry of Reconstruction, Infrastructure and Transport, the State Agency for Energy Efficiency (SAEE), as well as senior management from district heating companies in Kyiv, Lviv, Odesa, Cherkasy and Zhytomyr. During the visit, participants were briefed on the results of the SET_HEAT project, as well as on district heating investments being carried out in Gliwice and Opole.

The ReWarm project (Reform of the District Heating Sector in Ukraine) is an initiative launched to provide comprehensive support for Ukraine's municipal district heating sector. Its activities cover two aspects. The first is immediate support and the repair of district heating infrastructure. The second is long-term transformation – decarbonisation, moving away from natural gas towards renewable energy sources (RES), large-scale heat pumps, high-efficiency combined heat and power (CHP), and the implementation of digital tools.

– The energy transition is a huge challenge – not only technical, but above all economic and organisational. At the ECO Capital Group, we base our development on a stable business model that combines cost-effectiveness with the requirements of decarbonisation. "It is an honour for us, and a demonstration of our corporate responsibility, to be able to share our experience with our Ukrainian partners, who are currently facing the difficult task of rebuilding and modernising their energy market," says Paweł Krawczyk, Member of the Management Board for Economic Affairs at ECO SA.

– The continuity and reliability of heat supply, along with the energy transition, are the priorities of our day-to-day work. We are demonstrating specific technological solutions to our guests from Ukraine – ranging from low-emission combined heat and power generation, through large-scale heat pumps, to digital network management. "We believe that our experience will help Ukrainian companies to build a resilient, safe and modern district heating system," adds Mirosław Romanowicz, Member of the Management Board for Operations at ECO SA.







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