

Successful engagement of citizens and other stakeholders in local heat planning

PlanHeat

Handbook



Contact:

Developed by: Association of Municipalities Polish Network "Energie Cités" with contributions from PlanHeat Consortium

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Glossary of abbreviations

BSR	Baltic Sea Region
CHP	combined heat and power
DH	district heating
EED	Energy Efficiency Directive
EU	European Union
LHCP	local heating and cooling plan
LHP	local heat planning
NDP	National Development Plan
NECP	National Energy and Climate Plan
OSS	One-Stop-Shop
PV	photovoltaics
RES	renewable energy sources
SECAP	Sustainable Energy and Climate Action Plan
WPG	Wärmeplanungsgesetz, The German Heat Planning Act

1. Introduction

Who is this handbook for?

The handbook on effective engagement of citizens and stakeholders in local heat planning (LHP) is designed as a practical guide **to support municipalities** in carrying out LHP processes that actively involve the public—including citizens, local communities, non-governmental organisations, businesses, industry, and other interested stakeholders. It offers guidance on organising information or educational campaigns, public consultations, citizen workshops, and other forms of engagement throughout the municipal heat planning process.

While the content of the handbook is primarily focused on actions feasible at the municipal level, it also provides valuable insights for other actors, such as **national authorities, community groups, citizen associations**, and other organisations. Combining theory and practice, the handbook guides citizen and stakeholder engagement at all engagement levels—from awareness-raising to active cooperation. Its aim is to foster a collaborative planning process in which both local authorities and the public feel ownership of the outcomes and are motivated to implement the local heating plan.

What is LHP?

The heating sector across Europe (including the Baltic Sea Region [BSR]), plays a major role in driving climate change. It accounts for around half of Europe's final energy consumption¹ and remains a major source of greenhouse gases. In 2022, the emissions stemming from the direct use of fossil fuels for heating, hot water and cooking, as well as from the production of electricity and heat consumed in buildings, accounted for 34% of EU's energy-related emissions².

Put simply: reaching the EU's 2050 net-zero target will not be possible without transforming the way we heat and cool our buildings. Yet, the heating sector has been among the slowest to decarbonise¹. One of the most important tools to change this is **LHP—a framework that enables municipalities to design sustainable, affordable, and climate-neutral pathways for their heat supply**. Recognising this, the 2023 recast of the EU Energy Efficiency Directive (EED) introduced a new obligation for Member States: municipalities with more than 45 000 inhabitants must now prepare local heating and cooling plans, in line with strengthened EU climate goals³.

Unlike electricity systems, heating systems are highly diverse and operate on a local level. They range from individual boilers in single



homes, small networks serving housing estates, to large-scale district heating systems covering entire urban areas. Many of these systems are planned, operated, or supported at the municipal level. Moreover, municipalities play a key role in helping residents transition to cleaner heating solutions by providing technical expertise, advice, and access to financial support.

The benefits of modernising heating systems are equally local. Cleaner and more efficient heat supply means better air quality, improved living conditions, and lower energy costs for households. **For these reasons, the transformation of the heating sector cannot be addressed effectively at a centralised level – it must be planned and implemented locally.** Local heat planning provides municipalities with a framework to chart realistic pathways towards a modern, sustainable, and affordable heat supply. In doing so, it not only improves the everyday lives of their residents but also contributes to Europe's wider climate-neutral future.

Why citizen (and other stakeholders) involvement matters?

The involvement of citizens and other stakeholders in LHP is crucial, as it not only strengthens the legitimacy of proposed measures but also supports the effective implementation of planned investments. Such engagement further contributes to improved decision-making, stronger public acceptance of renewable energy projects, shifts in societal behaviour, and greater mobilization of resources for community-driven initiatives. Since participation processes often prioritise businesses, experts, and policymakers over citizens, this **Handbook places particular emphasis on engaging residents** and their organisations, such as community associations, neighbourhood energy co-operatives, and climate action groups.

What does PlanHeat aim to do?

Many municipalities in the BSR – and across Europe – are not yet fully equipped to take on the demanding task of preparing local heat plans. They often face shortages of expertise, limited resources, and a lack of awareness about their long-term role in decarbonising local heating. The **PlanHeat project** addresses this challenge by bringing together municipalities and expert organisations from seven BSR countries to jointly create a transnational manual for LHP. The manual will be organised around five key areas: access to data, available technologies, staff and skills, stakeholder participation, and financial and organisational solutions.



Image: Pixabay

The project started in March 2025 and will conclude in February 2028. It is co-funded by the European Union through the Interreg BSR programme. For more information on the PlanHeat project, its activities, and results, please visit: <https://interreg-baltic.eu/project/planheat/>.

2. Value of stakeholders engagement

Benefits of stakeholder participation

Stakeholder engagement in municipal planning activities, including LHP, can provide multiple benefits. Involving various stakeholders can make the planning and implementation process more thorough, grounded, and impactful. Below is a list of the benefits identified by PlanHeat Partners during the good practice identification process (see [chapter 6](#)).



Source: [Interreg BSR – PlanHeat](#), accessed 9.02.2026.

1. Shifts in awareness and attitudes

The involvement of citizens and local organizations helps raise awareness of energy and climate issues, while encouraging a more responsible approach to sustainable investments.

In **Estonia**, municipal authorities engage apartment associations – the main representatives of building residents – in LHP. This cooperation clarifies decisions about investments, fosters trust between consumers and heating companies, and motivates residents to support renewable solutions.

In **Poland**, engagement projects such as **Warm to See You Citizen Café** and **Heat Lessons** show how awareness-raising and education can be combined to reach both adults and young people. The Warm to See You Citizen Café programme was initiated to educate citizens on energy saving and efficient heat management, provide psychological and legal support, and foster community integration through cultural events and workshops. Meanwhile, the Heat Lessons initiative

"Citizens' involvement helps to inform people about available sustainable options, helps them understand local initiatives, and promotes greater acceptance of sustainable energy solutions."

involved schools in interactive lessons about heating, renewable energy, and responsible energy use. Both projects encouraged people to identify themselves as part of the local energy transition, not just as customers.

In **Finland**, the **Tampere Energy Agency** provides information and trainings to local residents and housing companies. Its **Energy Expert Training** programme equips board members of housing associations to act as intermediaries between citizens and technical planners, raising awareness of energy efficiency and renewable heat options. Such initiatives demonstrate that transparent information and education campaigns can help citizens better understand district heating, leading to higher acceptance and more active participation in modernisation processes.

2. Strengthening local governance

Strengthening local governance involves participation, which ensures that energy decisions are closely aligned with community priorities, facilitates smoother implementation, reduces potential conflicts, and enhances transparency and citizen involvement in planning processes.

In **Germany**, the city of **Rostock** applied the structured engagement model **Project Group Heating Plan** which uses four levels of participation. It spans from strategic core groups to broader citizen assemblies and aims to improve coordination between various participants while simultaneously reducing conflict potential during planning.

In **Latvia**, preparation of the **Riga District Heating Development Plan 2025-2032** included public discussions where citizens and organisations could comment on proposals. The open consultation process enhanced transparency and helped identify potential issues before they delay implementation.

In **Lithuania**, heat planning procedures are legally bound to include public consultation and disclosure. Draft plans must be published on municipal websites and displayed publicly for at least 10 working days, allowing citizens to review and submit comments. This regulated transparency increases accountability and helps municipal planners integrate community input into final investment decisions (see **Sharing information and educating online**).

3. Strengthening cooperation platforms

Various projects have demonstrated that cooperation platforms are essential for promoting dialogue and cooperation between energy suppliers and consumers, enabling the development of innovative services and sustainable energy strategies.

"By engaging meaningfully in planning, communities can provide feedback, identify potential challenges on early stage, and support the development of more effective energy projects."

In **Finland**, many district heating companies maintain customer councils or organise regular meetings with residents to present plans, gather opinions, and discuss new services. These forums have evolved from traditional customer magazines into interactive online platforms and in-person workshops. They are instrumental in developing new business models such as two-way district heating, where customers can sell excess or waste heat back to the network. The model requires high levels of trust, data sharing, and cooperation between consumers and providers—qualities that can only develop through ongoing engagement.

"Stronger cooperation platforms drive innovation in services and promote sustainable energy strategies."

In **Sweden**, decades of open communication and strong consumer protection have created a culture of mutual respect and reliability between providers and customers. Active municipalities such as **Malmö**, **Uppsala** and **Växjö** have developed ambitious climate and energy strategies in which district heating (DH) plays a central role. Municipal energy and climate coordinators often work cross-sectorally within the municipality—e.g. between the environmental department, urban planning and technical management. The city of Malmö is an example of such a cross-sectoral approach. In the project Smart Hyllie the city district will become climate neutral through digital control and district heating from recycled energy.

4. Benefits for climate actions

In many cases, citizen involvement has accelerated renewable integration, improved energy efficiency, and ensured social acceptance of measures that might otherwise meet resistance.

The **Efficient District Heating Label** in **Estonia** is designed to promote renewable energy integration into the heating sector. The Label can help meet the two goals of the district heating sector: to increase the energy efficiency of district heating and to introduce more renewable energy sources (RES) into DH, and the requirements for obtaining it can be gradually increased until Estonia reaches a fully climate-neutral and renewable energy-based district heating system.

"Several initiatives have shown that active participation supports faster progress toward climate neutrality."

In **Lithuania**, strong municipal communication around the conversion from fossil fuels to biomass-based DH helped the public understand the link between renewable energy use and energy security. Polish heating companies have also begun to integrate climate messages into public education. For example, the environmental education programme run by DHC Operators encouraged residents to understand how district heating supports climate neutrality. Activities in Konin led to documented changes in habits regarding the rational use of system heat and optimization of energy, water, and waste con-

sumption. Engaged citizens are also more likely to change consumption behaviour. In several countries, participation in heat planning has been linked to improved energy use habits, support for energy efficient renovations, and greater acceptance of renewable technologies. Over time, this contributes to reduced emissions, higher shares of renewable energy, and improved local air quality.

Challenges of involving citizens in LHP

While planning the stakeholder participation process, it is important to consider potential challenges. Doing so allows for preparing in advance and having ready responses if these challenges occur. The possible challenges to encounter when working with stakeholders are listed below.

1. Engagement and participation barriers

Public engagement in energy and heat planning often faces multiple barriers. Citizens may have limited interest in energy topics, perceive planning processes as overly technical, or struggle to find the time and knowledge needed to participate effectively.

In **Finland**, for example, energy is a relatively small part of household living costs, so residents are often not interested in the topic. In **Estonia**, officials struggle to involve hard-to-reach energy users, such as tenants and socially disadvantaged groups. Furthermore, heat planning is often perceived as highly technical and centralized, which can discourage participation from ordinary citizens who feel they lack the expert knowledge required.

In **Poland**, formal consultation procedures exist but rarely lead to meaningful dialogue, as few citizens read technical documents or understand how they affect their daily lives. **Latvia** also reports challenges reaching residents in smaller municipalities, where awareness of district heating's environmental role is limited.

To overcome these barriers, engagement should focus on concrete local examples, simple messages, and visual communication that connect heat planning to daily comfort, affordability, and climate resilience.

2. Political and institutional challenges

Political and institutional factors play a key role in shaping citizen engagement in energy planning. The stability of engagement often depends on political support. Changes in leadership or shifting municipal priorities can disrupt processes.

"To address these challenges, engagement should emphasize concrete local examples, clear messaging, and visual communication."

"Local governments can maintain credibility by embedding participation in long-term policies and strengthening coordination between key departments."

In **Estonia** and **Latvia**, heat planning is sometimes poorly integrated with social policies, reducing the emphasis on affordability and citizen welfare.

In **Germany**, although the Heat Planning Act sets out participation requirements, municipalities vary greatly in how they implement them, depending on resources and political will. Some, like **Bremerhaven**, have succeeded in institutionalizing dialogue, while others conduct engagement only formally to meet legal requirements. Energy supply companies are not always involved in the LHP process from the beginning. This can lead to a lack of integration between energy policy and social policy at the local level.

To maintain credibility, local governments must embed participation in long-term policies and ensure cross-departmental coordination between energy, environment, and social welfare offices.

3. Need for tailored approaches

Participation tends to favor groups that already have digital skills and are already active, while effective engagement requires adapting methods and messages to reach different social groups, including older people, lower-income households, or those less familiar with digital tools.

Lithuania reports that online consultation processes attract mostly educated citizens, while older or less connected residents are underrepresented.

Estonia faces similar difficulties engaging elderly and lower-income citizens. A one-size-fits-all approach to communication is rarely effective. It is often a challenge to reach and educate various age groups. In Estonia, this requires providing more easily understandable explanations to gain the trust of citizens who may be sceptical or uninterested.

4. Ensuring continuity and long-term commitment

Maintaining momentum for participation over the long term can be difficult. A major challenge is securing stable, long-term funding for social-energy initiatives, as many projects rely on temporary grants or limited municipal budgets. Engagement is often project based and fades after the planning stage.

In **Bremerhaven**, even dedicated citizens' assemblies sometimes shifted discussions to unrelated topics, showing the need for structured communication throughout the process.

By contrast, in **Finland**, continuous programs such as **Energy Expert Training** sustain engagement and keep energy awareness high be-

"Ensuring inclusive participation may require adapting engagement methods beyond digital tools to reach underrepresented social groups."

"Maintaining public interest over time is difficult, especially when implementation stretches over several years."

yond individual projects. Similarly, integrating energy topics into school curricula and municipal advisory services can help institutionalize participation and create long-term habits of involvement.

5. Financial and resource constraints

Finally, many local authorities lack funding and staff for engagement activities. In **Poland**, municipalities must prepare 15-year heat, electricity, and gas supply plans but receive no specific funding for public participation.

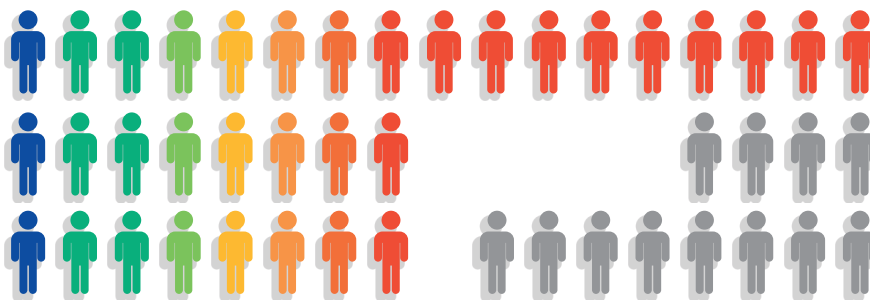
In **Estonia** and **Lithuania**, outreach activities are usually financed from municipal budgets, which restricts their scale and continuity. Some larger cities, such as Vilnius, can apply for national or EU funds to support communication, but smaller towns struggle to maintain regular contact with residents.

Including engagement costs in project budgets and accessing EU-level programs can help ensure consistent, professional participation throughout the planning and implementation phases.

"Including engagement in budgets and accessing EU programs ensures consistent participation from planning through implementation."

Risks of weak or absent engagement

Weak or absent engagement in local heat planning can undermine the legitimacy and acceptance of projects, leading to **resistance or distrust among citizens and stakeholders**.



Without broad involvement, implementation may face delays, legal challenges, or even failure, while valuable local knowledge about community needs, technical conditions, and social barriers may be overlooked. Insufficient participation can **reduce stakeholders' sense of ownership and responsibility**, making them less willing to support or maintain planned measures. Furthermore, the lack of inclusive engagement **increases the risk of inequities**, as some groups may be disproportionately affected or excluded from benefits. Ultimately, plans developed without meaningful participation are less adaptable, less resilient, and face greater challenges in achieving long-term sustainability.

Benefits of stakeholder participation

Shifts in awareness and attitudes:

- + a positive and active attitude towards one's own climate actions, boosting confidence,
- + increased ecological and energy awareness among residents,
- + promotion of modern heating solutions,
- + increased trust and clarification of residents' doubts regarding renovation and efficient heating systems,
- + citizens actively searching for technical solutions,
- + raising awareness and knowledge about energy efficiency.

Strengthening local governance:

- + active participation in the city's strategic policy,
- + increased social engagement and acceptance for modern heating solutions, RES investments, modernization and strategies,
- + facilitated approvals and smoother infrastructure upgrades,
- + faster problem resolution during the implementation phase by direct communication,
- + reduced number of complains and disputes,
- + new ideas for upgrading the heating system.

Strengthening cooperation platforms:

- + ensuring easy and constant access to comprehensive information for residents,
- + identifying different stakeholders and understanding their significance,
- + genuine cooperation between different stakeholders,
- + fostering community engagement and cooperation.

Benefits for climate actions:

- + reduction of CO₂ emissions, reduction of energy demand, increase in the share of RES, reduction of pollutants, better air quality,
- + significant shortening of the time needed to achieve climate neutrality,
- + strengthening social resilience during changes in energy sector and crises,
- + changes in habits regarding rational use of system heat and optimization of energy, water, and waste consumption.

Challenges of involving citizens in LHP

Engagement and participation barriers:

- today's rush and uncertainty,
- lack of time and interest,
- small portion of citizens involved,
- citizens still more rely on individual and not community solutions,
- reluctance from residents and employees to change habits,
- low awareness or engagement in less-organized communities.

Political and institutional challenges:

- political changes that can ruin the results of commonly developed solutions,
- insufficient integration of energy policy with social policy at the local level.

Need for tailored approaches:

- reaching various age groups,
- only more educated and computer literate part of population make use of provided information,
- varying levels of knowledge,
- language barriers with foreign residents,
- need to prepare effective communication.

Ensuring continuity and long-term commitment:

- continuous development of tools and communication methods to address evolving needs,
- lack of systematic approach,
- need for intensive, ongoing communication during construction and system upgrades,
- maintaining good habits among residents and employees and long-time motivation and participation momentum and long-term continuity and integration with school curricula.

Financial and resource constraints:

- initial resident concerns about investment costs,
- the necessity to finance most educational activities from own funds,
- limited or unstable funding for social-energy initiatives.

3. Policy, governance and practical context

European framework

In September 2023, the revised European Energy Efficiency Directive (EED) was published in the EU Official Journal and entered into force⁴. Article 25 of the directive obliges the Member States to "ensure that regional and local authorities prepare local heating and cooling plans at least in municipalities having a total population higher than 45 000"³.

In addition to setting out the required content of local heating and cooling plans (LHCPs), the necessary scope of state support for local authorities, and the overall framework for developing such plans, **the directive emphasizes the active involvement of local and regional stakeholders throughout the planning process**⁵.

According to the directive, Member States are required to ensure that the development and implementation of LHCPs include:

- **active involvement of all relevant regional and local stakeholders**, including the general public and operators of energy infrastructure;
- **consideration of the shared priorities of local communities** as well as the interests of municipal and regional authorities;
- **assessment of the role of energy communities and consumer-led initiatives** in supporting the delivery of local heating and cooling projects;
- **addressing the specific needs of vulnerable households** to ensure equitable access to sustainable heating and cooling solutions;
- **identification of financial mechanisms** that enable consumers to adopt renewable heating and cooling;
- **evaluation of potential synergies with neighboring municipalities or regions** to promote joint investments and enhance cost efficiency.

According to the assessment carried out by Energy Cities in 2024⁶ on the current state of LHCPs in EU Member States, the degree of preparedness varies considerably across the Union. The deadline for implementing the EED into national legal systems was October 2025. Many countries are still not ready to introduce the necessary legislative changes.

In the Nordic countries, planning traditions are well established, originally shaped by concerns over energy security, not the need to decarbonise the sector. In contrast, several other Member States – including the Netherlands, Germany, France, Belgium, Ireland, and



Luxembourg – have only in recent years introduced comprehensive frameworks for local energy and heat and cooling plans, largely in response to climate mitigation objectives. Despite these positive developments, nearly half of EU countries still lack any form of LHCP, underscoring a significant imbalance in progress across the Union.

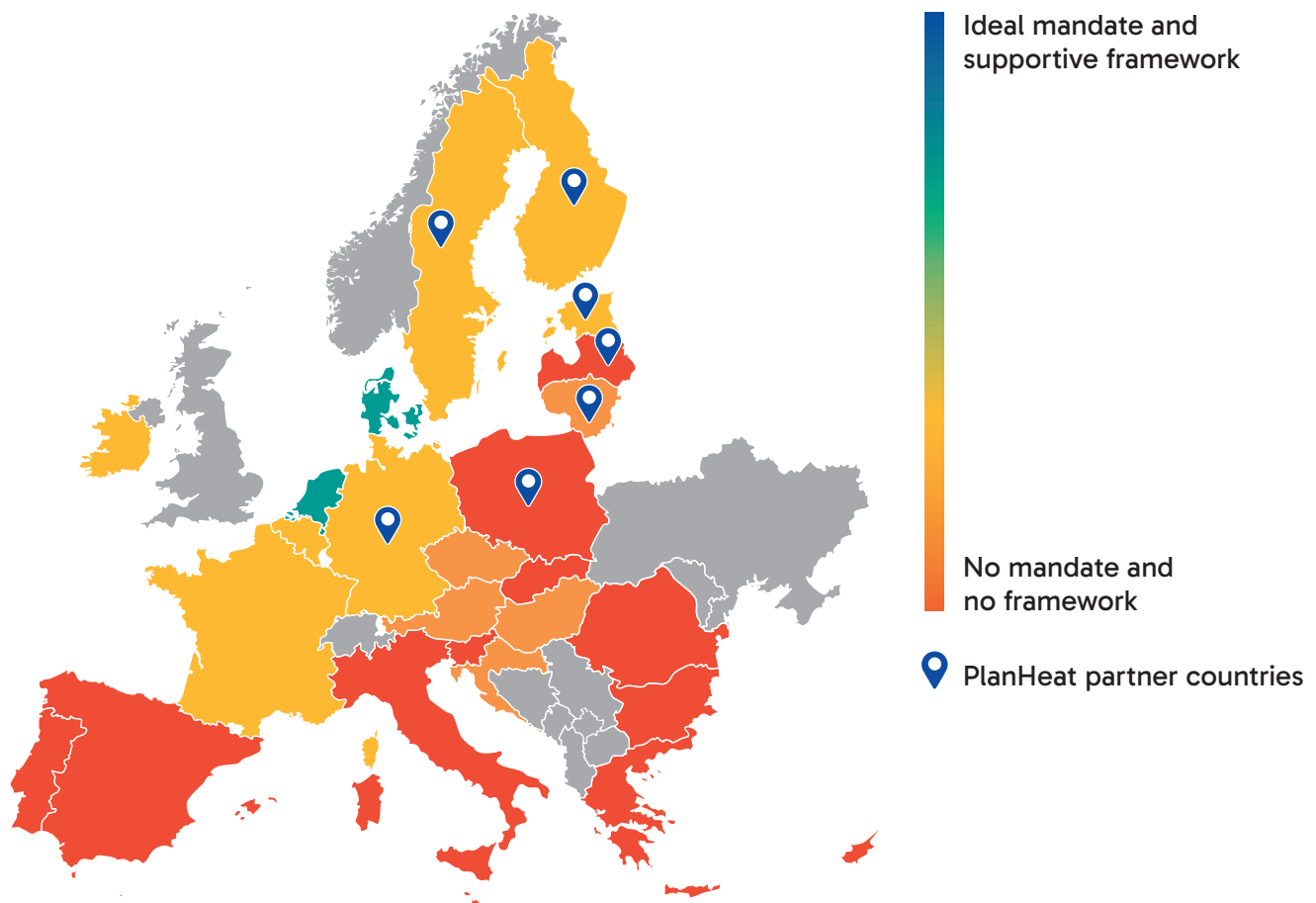


Figure 1 LHP state of play in Europe and in PlanHeat countries

Based on: Energy Cities, [EU Tracker – Local heating and cooling plans](#), accessed: 17.12.2025.

The lack of realistic heating planning in many European countries also implies little public involvement in the development of local low-carbon heating networks and technologies. Among the recommendations put forward by Energy Cities in their analysis, one highlights the need for LHCP methodologies to **be firmly rooted in cooperation**. National legislation should therefore define a methodology that ensures the active involvement of local stakeholders – such as working groups, administrative departments, local energy agencies, utilities and citizens – in the drafting of LHCPs.

Country-level context

Estonia

District heating is a very important part of the Estonian heating economy – **on average 60% of Estonian homes get their heat from DH**, and in some cases domestic hot water too. Both renewable and fossil fuels are used in district heating, and the most commonly used fuels are wood chips (60%), natural gas (20%), waste heat or co-generated heat (16%).

There are approximately 200 DH networks in Estonia and all municipalities have Heat Management Development Plan. Estonia's DH market is regulated by the District Heating Act and the Competition Act, the maximum prices charged in network regions must be approved by the Competition Authority⁷.

According to the 2016 amendments to the Estonian District Heating Act, local authorities are able to create '**district heating regions**'. When such a region is established, all buildings within it must ask for connection to the DH network as a primary heat supply source (if technically feasible and accepted by DH company). Then the heating company is obliged to offer them services and once the offer is accepted, the consumer must use DH, although it is allowed to use other heating technologies in parallel (this is not recommended). The amendments aimed to provide heat producers with guarantees and motivation to expand the use of RES, while reducing the use of fossil fuels⁸.

The national future goal for the Estonian district heating sector is to achieve total climate neutrality. For this share of biomass, waste heat and cogenerated heat must increase and this should be supported with storage technologies. In most district heating regions local biomass is the most suitable option, in some cases also heat pumps.

Municipalities are the main drivers in LHP in Estonia. Normally the local heat plans are prepared by consultation companies. The final LHP consists of several development scenarios and analysis, municipalities together with heat companies and real estate developers make the final decisions. As mostly DH consumers are apartment buildings, then also apartment associations are involved. As the stakeholders who represent citizens' interests the most in the process.

Municipalities can apply for support for different DH related investments, such as network and boiler renovation. Consumers, apartment associations can apply for building renovation support. Support is provided from the national government by Estonian Environmental Investments Centre. Municipalities can also apply for support for LHP preparation.



Finland⁹

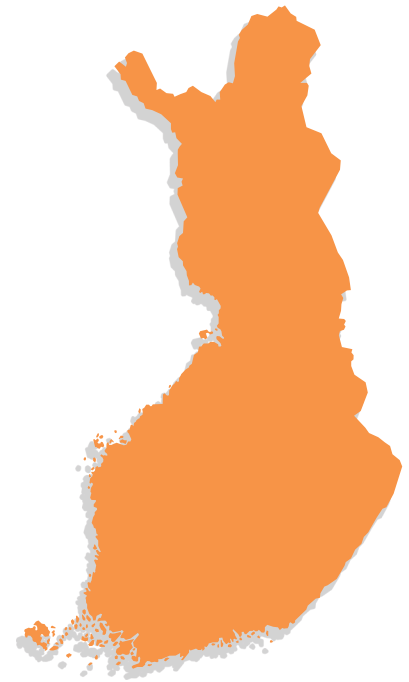
Finland is the largest producer of district heating in the Nordic Countries, relative to the population, DH is the most common heating method. It is produced in heating plants or in combined heat and power (CHP) production processes. Several plants in one network make it possible to adjust production to variable demand and guarantee heat during maintenance disruptions.

The share of renewables, heat recovery and electric boilers was about 73% in 2024. The role of electric boilers is growing rapidly because of the low price of electricity. New production methods, heat pumps and hybrid solutions where heat is produced in other ways than combustion are becoming more common. For example, excess heat, waste water heat and cool water from the Baltic Sea, lakes or even last winter's snow can be used. New trends are solar heat, two-way district heating and lower temperature solutions.

In Finland, electricity and natural gas operations are strictly regulated, while DH is based on competition. The Ministry of Employment and the Economy prepares regulation, and the Energy Authority, the Competition and Consumer Authority and the Safety and Chemicals Agency supervise.

In apartment buildings, DH is the most common form of heating. In addition to DH, these buildings may also have heat pumps that recover heat from exhaust air or wastewater. The housing company's connection to the DH network is voluntary, but in areas where DH is available, it is recommended by the municipalities. The housing company can also terminate its customer relationship with the DH company if it decides to change the heating method.

In Finland, **local energy system planning in new residential areas usually takes place in cooperation between the local municipally owned DH company and the municipality's planners and real estate developers.** The Real Estate Association is an important stakeholder for local DH companies, but cooperation with regular residents generally occurs through a customer relationship. When the DH companies want to cooperate with their customers, they are developing or providing new and upgraded services for customers or otherwise develop their business. Energy companies organize various customer events, and many have some kind of customer council from which the company can ask for opinions and advice. DH companies used to publish customer magazines, which have now mainly been replaced by communication via websites and social media.



Some Finnish cities have an energy office that operates on the One-Stop-Shop (OSS) principle. In Tampere, the OSS (Tampere Energy Agency) is operated by EcoFellows Ltd. (Ekokumppanit Oy), co-owned by the local municipal DH company Tampere Energy Ltd (Tampereen Energia Oy). The Tampere Energy Agency offers advice and expert assistance e.g. to housing companies and to owners of single-family houses or tenants who are interested in energy matters. The Energy Agency also trains members of housing company boards to become Energy Experts (see [Energy Expert Training](#)).

One of the main technological solutions in terms of future stakeholder engagement is two-way DH that refers to a customer, or rather a prosumer, who both buys district heat and sells own surplus or waste heat to the network. The model could be further developed into an open grid for all third-party producers, who could sell their heat to the customers. However, the opening of the grid is a complex process. Utilizing customer produced energy requires co-operation and thus offers opportunities to strengthen customer relationship and develop mutual communication. The demand response may be easier to implement with two-way model as well. However, it can also be challenging for some market participants.

Germany

In 2023, **Germany's heating systems showed a strong reliance on fossil fuels**, with gas central heating at 33.7%, oil central heating at 23%, and **district heating at 15.2%**¹⁰. In the fuel mix used for heat generation, natural gas (49.2%), coal (18.7%), and waste (18.6%) were dominant¹¹.

Germany's heating market is characterized by vertically integrated companies managing generation to distribution¹². District heating networks are widely operated by joint-stock companies, often with significant municipal ownership. Heat prices are set by suppliers and can therefore vary. Since October 2021, providers must publish key information online, though it is often incomplete¹³.

Germany's heating sector is shaped by legislation aimed at climate neutrality by 2045. The Federal Climate Action Law sets sectoral emission reduction targets^{14,15}. So far, 819 municipalities have completed plans, 4 792 are in progress, and 5 143 have provided no information¹⁶. Responsibility for funding shifted to federal states, which offer guides, materials, events, and Q&A sessions. The Competence Centre for the Municipal Heat Transition supports implementation¹⁷. Key actors include the Federal Cartel Office, the German Energy Agency, the Competence Centre, and State Energy and Climate Protection Agencies.



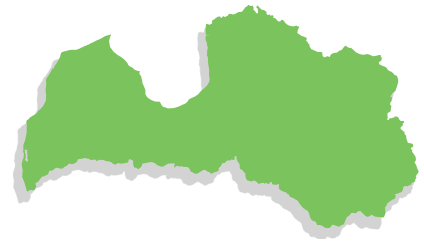
In Germany approximately 14% of households are connected to district heating networks¹⁸. **The Heat Planning Act (Wärmeplanungsgesetz, WPG) specifies the minimum extent to which various stakeholders should be involved in LHP.** The public, all authorities and public agencies should be involved at an early stage and on an ongoing basis. According to the WPG, this includes all operators of an energy supply network located within the planned area, all operators of a heating network located within or adjacent to the planned area, any natural or legal person foreseeable as a future operator of an energy supply network or a heating network within the planned area or who has offered to do so, and other municipalities or associations of municipalities planned as part of the respective local heat plan¹⁹.

For example, in Bremerhaven participation is organized into four groups. The Core Group for strategic development is supposed to establish itself and facilitate the development and consists of public authorities, energy suppliers and the grid operator. The Stakeholder Group assesses practicability and consists of heat recipients including housing associations, building owners' associations, energy consulting companies and chimney sweepers. The Extended Circle represents the general public, which is provided with information about the local heat plan through public events, presentations of plans with opportunities to comment, city district conferences and citizens' assemblies, with the aim of explaining what the local heat plan is and providing information on planned grid expansion. The Communal Circle includes neighboring and surrounding municipalities, which exchange information about the heat planning process and activities and aim to harmonize heating network development.

Additionally, there is the Klima Bau Zentrum, run by the non-profit climate protection agency energiekonsens Bremerhaven gGmbH, which offers support locally for the City of Bremerhaven advising households outside the DH grids and expansion zones. On the national scale, **the Competence Centre for Municipal Heat Transition (Kompetenzzentrum Kommunale Wärmewende, KWW) provides information and support for LHP**, including an overview of the process and the steps within different phases such as preparation, implementation and realization, technologies and infrastructure, actors and participation, data, a guide for LHP, compilation of regulations and support materials in different federal states, practical examples and insights, surveys on how municipalities approach planning and the hurdles they encounter, tools such as model specifications, data compass and service provider directory, as well as events including webinars and conferences.

Latvia

The district heating market in Latvia is well-established, particularly in urban areas, where it serves a significant portion of the residential and service sectors. The total heat consumption for space heating and hot water preparation in Latvia in 2023 was 11 294.90 GWh²⁰, of which 81% came from the residential sector, 6% from industry, and 11% from services and other sectors. Biomass remains a key energy source, especially in rural areas, while the use of fossil fuels has declined. However, the limited adoption of heat pumps and other modern renewable technologies presents potential for further decarbonization and efficiency improvements.



Latvia's National Energy and Climate Plan (NECP)²¹ emphasizes energy efficiency and renewable energy, identifying DH systems as pivotal in achieving these objectives and encouraging modernization and expansion. EU policies, such as the Directive on the promotion of cogeneration, support CHP systems that complement DH expansion. In 2022, several programs were launched to modernize DH networks using RES, offering financial assistance for upgrades and efficiency improvements.

District heating will play a pivotal role in achieving the 2030 and 2050 climate and energy objectives. Latvia aims to phase out natural gas in DH systems, targeting a 68% share of renewables in DH by 2030 as part of a broader strategy to reduce greenhouse gas emissions and achieve climate neutrality by 2050²². Despite these targets, Latvia currently lacks a specific Heat Strategy or national DH targets. The Energy Law is being revised to include energy planning and local heating plans in line with EU directives.

Energy planning at the national level is defined in the Latvian NECP 2021-2030, outlining energy efficiency, renewables, and greenhouse gas reduction targets. The national development plan (NDP) 2021-2027 also determines strategic goals and tasks, including energy priorities in line with environmental sustainability goals. The Energy Law and Renewable Energy Law define the regulatory framework, while the Public Utilities Commission oversees compliance with national policies.

On a local level, **energy planning is included in mandatory municipal sustainability strategies**²³, with some municipalities also developing Sustainable Energy and Climate Action Plans (SECAPs). Joint planning exists in electricity, gas, and district heating, with both state-owned and private heating companies to align goals. **LHP is not mandatory** and only a few municipalities, such as Cēsis²⁴ and Sigulda²⁵, have standalone DH plans. In Riga, a public discussion²⁶ on the district

heating plan 2025-2032 allowed citizens and stakeholders to comment, and the municipality plans further campaigns, educational events, and an Energy Literacy Center.

As district heating is the most common heating source in urban areas, citizen awareness is good, but technical knowledge and involvement in local planning are limited. An exception is Riga, where public discussions were held in May 2025. **Local authorities are the main actors in heat planning, responsible for spatial planning, approving strategies, and coordinating with suppliers.** Larger cities have dedicated energy departments. DH companies operate networks and propose upgrades or fuel changes, while the Ministry of Climate and Energy sets policy and targets. The Public Utilities Commission regulates tariffs and service quality. Other agencies provide data, support innovation, or monitor transparency.

Citizens are mainly affected if they use individual non-renewable heating systems. Policy direction (the EU Green Deal and Fit for 55) clearly indicates that such systems will become more expensive and receive less support in the long term; however, in Latvia, households are currently not widely subject to direct "additional taxes" solely for using individual fossil-fuel-based heating systems. Instead, CO₂-related taxes and excise duties are mainly embedded in fuel prices rather than applied as separate household taxes, while ETS2 (the emissions trading system for buildings) has not yet been fully implemented but is planned, at which point this impact will become much more explicit. **Energy communities allow citizens to collectively move away from fossil fuels**²⁷, but the main responsibility for transitioning to renewable heat lies with district heating suppliers, which are often municipal companies.

Lithuania²⁸

Approximately 57% of heat consumed in Lithuania comes from the district heating sector, considered efficient under the Energy EED. Total heat generation is 10 105.7 GWh, with 12% losses, and 31% from cogeneration. **Over 85% of fuels are renewables and municipal waste**, mostly biomass, which has protected consumers during the energy crisis. Waste incineration CHP plants operate in major cities, and biofuel prices remain much lower than natural gas. Around 70% of DH is used by households, the rest by services and industry.

Lithuania has completed the transition from natural gas to biomass and waste, with the Vilnius CHP commissioning in 2023 securing energy independence as more than 90% of DH is from local renewable sources. Over 40% of underground pipelines have been upgraded,



heat metering is universal, and 70% of meters have remote reading. The State Prices and Energy Control Commission regulates heat supply and pricing, ensuring financial viability and investment capacity of CHP companies.

Amendments to the Law on Heat Economy and reforms such as biomass boiler-houses, CHP plants, and pipeline upgrades were driven by specific incentives and obligations. The updated National Energy Independence Strategy (2024) sets goals for diversification of renewables, expansion of CHP, DH decarbonisation by 2050, and new service offerings.

Despite progress, biomass remains the cheapest option, while alternatives like solar or heat pumps face high investment costs and efficiency limits in winter. Subsidies and regulatory incentives are needed to make new sources viable. Modernisation continues with technologies such as heat storage, smoke cooling with absorption heat pumps, and digitalisation. DH companies, mostly municipal, remain central to planning and development, with municipalities strongly involved as key stakeholders.

Significant information about district heating and local heat planning is provided on the websites of municipal DH companies and sometimes municipalities. These often include Q&A sites and news channels with the latest developments. The new developments in DH are widely discussed in the media.

The average share of households connected to DH in Lithuania is close to 70% (around 750 000). These are mainly residents of multi-apartment houses, but developers of new residential areas are also increasingly interested in connecting individual and terrace houses to DH systems.

The document "The rules for the preparation of special plans for the heat sector" (adopted in 2015 and revised in 2023) requires municipalities to publish draft plans in advance, ensure publicity procedures, and provide opportunities for citizens to submit proposals. Public hearings and consultations must be organized, and the planning organizer is obliged to examine and reply to public proposals.

DH companies in Lithuania are mostly municipal, with municipalities holding over 90% of shares. **Planning is often performed by energy consultants and housing maintenance providers.** According to legislation, the Heat Development Investment Plan is coordinated with the supplier's board of directors or the municipal authority, which also monitors implementation and publishes results every three years.

The revised Law on Heat Economy (2023) requires maintainers of multi-apartment buildings to propose energy-saving measures and report back to owners. It also introduces new heat pricing principles to encourage investment, efficiency, and fair competition. Mandatory heat pricing for independent producers is applied for five years, alongside a new procedure for heat auctions.

Amendments to the law promote long-term planning, decarbonisation, and greater use of renewables and waste heat. A new procedure allows waste heat generators to supply DH systems, giving priority to technologies that reduce greenhouse gas emissions.

Poland

The district heating sector in Poland is fragmented but has undergone consolidation, leaving 398 companies in 2023 with over 22 800 km of networks and 53 GW of capacity. **It still relies mainly on coal (61%),** but renewables are growing, reaching 14.4% in 2023 and in some regions exceeding 30-40%²⁹. Poland's updated National Energy and Climate Plan set goals for heating to be covered by district heating and low- or zero-carbon sources by 2040, with renewables reaching over 60%³⁰. A key priority is phasing out coal in households and ensuring 85% of large systems meet efficiency standards by 2030³¹. Transformation, financed by EU and national funds, will require investments worth hundreds of billions of PLN.



Future priorities include decarbonisation, expansion of CHP systems, waste heat use, and transition to smart low-temperature systems. Digital tools like Supervisory Control and Data Acquisition and Advanced Metering Infrastructure support optimisation, **while stakeholder dialogue is essential for retrofits, cost-sharing, and technology choices.**

District heating plays a key role in supplying heat to medium and large cities and is an important part of Poland's national energy system. In 2021, **54.8% of households used district heating for space heating**, up from 41.5% in 2012³². Poland's Energy Policy to 2040 sets a target of connecting 70% of households in urban municipalities to district heating networks³¹.

In Poland, public participation in local heating planning is limited and mostly procedural. The main avenue for involvement is a 21-day public consultation mandated by law, allowing residents to submit written comments on municipal energy plans. However, due to the technical nature of these documents and lack of targeted outreach, engagement remains low. **Local governments, tasked with drafting these plans, often struggle with limited budgets and capacity, which**

restricts both plan quality and community involvement. Cooperation with local heat providers usually centres on data sharing rather than strategic coordination or public dialogue.

At the national level, the Energy Regulatory Office publishes detailed annual reports on network infrastructure, production, fuel mix, and emissions³³. Statistics Poland collects regional energy data, though gaps exist, particularly in areas relying on individual heating systems.

As Poland gradually moves toward low-carbon heating, residents are increasingly viewed as active partners rather than passive consumers. Beyond formal consultation requirements, community engagement initiatives are starting to be introduced at the municipal, regional, and national levels, reflecting a growing recognition of their importance to a successful transition. A modern approach to promoting district heating focuses on public engagement through wide-reaching information and education campaigns; inclusive consultations; workshops involving residents, NGOs, experts, and local authorities; support programmes like energy advisory services, warm islands and protections for vulnerable groups.

Sweden

DH is the most common form of heating in Sweden, covering 52% of residential energy use. Around 90% of apartment buildings use it, while the share is lower for premises and single-family homes. Networks exist in 285 of 290 municipalities, with 25 000 km of pipes and yearly deliveries of about 55 TWh.

Carbon dioxide and energy taxes have driven a shift from fossil fuels to bioenergy. Subsidies in 2006-2010 accelerated the phase-out of small oil boilers. Support programmes like the Climate Investment Programme and Climate Leap finance energy efficiency and grid expansion, especially in smaller communities. Pilot bio-CCS plants are running, with Stockholm Exergy aiming to capture 800 000 tonnes of CO₂ annually. Prices rose to historic highs in 2023-2024 due to higher bioenergy costs. Since deregulation in 1996, pricing has been free, but legislation in 2008 strengthened customer rights. The monopoly system still limits external suppliers, though industrial waste heat provides 8% of supply.

Municipalities are legally responsible for developing local energy plans, though involvement varies. Active municipalities such as Malmö, Uppsala and Växjö have ambitious strategies where district heating plays a central role. Malmö runs the Smart Hyllie project, aiming for climate neutrality through digital control and recycled energy.



Municipalities are required to include heating and cooling in energy plans, but many lack such plans, partly due to insufficient financial support. Heat pumps are expected to lower system temperatures and increase efficiency, enabling better use of renewable sources. New "5th-generation" systems, such as Malmö's Hyllie project, aim for 100% renewable and recycled energy by 2030.

People in Sweden have high implicit trust in the district heating system but low technical knowledge about how it works. Engagement in energy planning is generally low, with greater understanding among local policymakers or property managers.

Local district heating companies, often municipally owned, are strongly involved in planning by providing data, analyses, and developing technologies such as bioenergy with carbon capture and storage, thermal storage, and digital systems. Property owners and tenant associations are often involved in dialogue meetings and pilot projects on energy efficiency, especially in areas where networks are expanding. Citizens are rarely directly involved in technical planning but can participate in public consultations, while civil society organizations may influence political decisions.

Universities and research institutes develop tools and scenarios used by municipalities and energy companies. The transition to renewable heat sources reshapes roles: many citizens are becoming energy producers, expected to make sustainable choices, and increasingly demand transparent information about costs, emissions, and efficiency.

Municipalities bear more responsibility for climate action, owning buildings and networks, transitioning to renewables, and providing incentives for households. **Coordination challenges arise between municipalities, grid operators, and private actors, requiring balance between environmental goals and affordability.**

Energy companies are responsible for efficiency improvements, renewable heating technologies, and shifting toward climate-friendly business models, while educating consumers about greener choices. National government sets climate targets, standards, and incentives, ensuring fair implementation across regions. Housing sector and property owners must retrofit buildings, adopt new technologies, and inform tenants about energy changes³⁴.

4. Guide to stakeholders engagement

Effective stakeholder engagement is foundational to inclusive, transparent and robust energy planning. Engaging stakeholders early, meaningfully and across the planning-lifecycle helps build legitimacy, reduces risks of delay or opposition, and fosters shared ownership of outcomes. For a municipal or regional heating-transition initiative, the engagement of multiple actor groups ensures that the vision is co-designed, implementation is smooth and benefits are shared.

However, for stakeholder engagement to be successful, the process must be carefully planned and intentionally designed to achieve municipal objectives while addressing stakeholders' needs and capacities.

The first step in effective stakeholder engagement is to define a clear purpose for the process. Is it conducted solely to fulfill a legal requirement or another formal obligation? Is it intended to inform residents about the municipality's plans and actions, gather public opinion on an issue, involve citizens in city activities, establish a long-term dialogue platform, or highlight an important point?

Clearly defining the goal of engagement is crucial, as it shapes all subsequent steps: which stakeholders should be approached and when, the level of their involvement, the tools and methods to use, and how to allocate resources to support the process.

Real-life good practices from European municipalities provide strong evidence that such stakeholder engagement approaches work effectively when implemented in practice. For example, in Poland, the **Warm to See You** initiative and the **Heat Lessons** programme have shown how combining education, dialogue, and community-based activities can both inform and empower citizens while strengthening social cohesion. Similarly, the Finnish **Energy Expert Training** model institutionalised citizen capacity-building by equipping housing company board members to act as mediators between residents and planners. The city of Lidzbark Warmiński's **Heating Plant of the Future** consultations demonstrate how transparent and inclusive dialogue during project planning can increase trust and accelerate project approval. These examples illustrate that engagement is not merely a theoretical requirement but a practical tool for ensuring community support, smoother implementation, and more resilient energy transitions.



Identifying stakeholders

Any stakeholder engagement process must begin with a fundamental question: Who are the stakeholders? Distinguishing between different stakeholder groups helps to understand who influences the planning process and who is affected by it. Without this step, it is impossible to conduct a thoughtful and effective collaboration with stakeholders.

Experience from countries such as Germany and Finland shows that structured mapping and the creation of standing working groups can help build continuity. In Rostock, the **Project Group Heating Plan** brought together city officials, universities, housing companies, and citizen representatives to ensure all affected parties were included in the process. Similarly, in Poland, housing cooperatives have been directly involved in co-designing modernization projects, improving trust and ownership.

Who are the stakeholders?

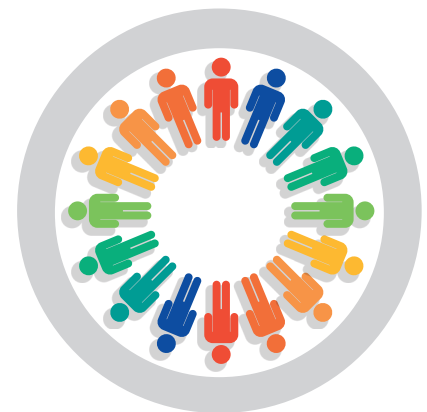
Effective stakeholder engagement in local heat planning begins with clearly identifying who the stakeholders are. A useful starting point is to distinguish between **internal** and **external stakeholders**.

Internal stakeholders are particularly important, as they directly influence the municipality's internal processes and decision-making. Without their active involvement, the planning process may be delayed, weakened, or even fail altogether. It is therefore essential to identify all relevant internal units, departments, and decision-makers whose participation is required at each stage of local heat planning – from preparation and analysis, through implementation, to the monitoring of actions and regular plan updates.

Examples of **internal stakeholders** in LHP typically include:

- municipal political leadership (e.g. mayor, city council members),
- senior municipal management and executive staff,
- energy, climate, or sustainability departments,
- urban and spatial planning departments,
- technical and infrastructure departments (e.g. utilities, public works),
- financial and budget departments,
- legal and regulatory units,
- procurement and project management units,
- data, GIS, and IT departments,
- municipal housing and property management units,
- public communication and citizen engagement teams.

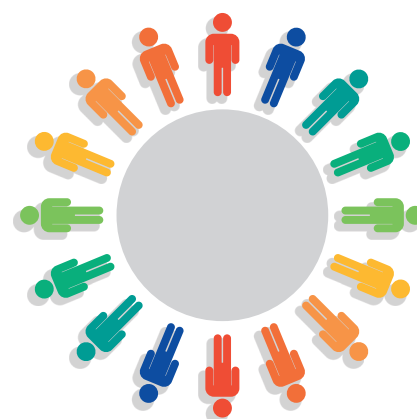
These stakeholders play different roles at various stages of the planning cycle and should be involved accordingly to ensure coherence, feasibility, and long-term ownership of the local heat plan.



While identifying and engaging internal stakeholders is essential for maintaining internal cohesion and the smooth conduct of the municipality's strategic planning, reaching out to **external stakeholders** ensures that local heat plans reflect real-world conditions, build public trust, and mobilise actors beyond the municipality's direct control.

External stakeholders include any individuals, groups, organisations or institutions that either affect or are affected by the project, initiative or its outcomes. In the case of a heating-transition vision (for a city or region) the following stakeholder groups may be relevant:

- national, regional and other local public authorities (lawmakers, authors of regional strategies, neighbouring municipalities),
- energy system operators (heat network operator, electricity grid / decentral generation),
- local industries / large heat consumers (factories, commercial centres),
- **community and resident groups** (tenants' associations, homeowners' associations, housing cooperatives, neighbourhood groups, school communities, senior citizens' groups, social housing residents),
- **NGOs, civil society organisations** (climate and environmental organisations, energy justice groups, consumer rights organisations, social inclusion NGOs, fuel poverty advocacy groups, community development organisations),
- financial institutions, investors (local banks, ESCOs),
- research institutions and technical experts,
- suppliers, contractors, installers (heat-pump installers, biomass, solar thermal companies).



Stakeholder groups **differ in their capacities, interests and constraints** and should not be treated as **a monolithic public**.

Below an example of table to identify stakeholders is presented.

Table 1 Identifying stakeholders

Internal/external stakeholder	Group of stakeholders	Name of a stakeholder	Contact details	Comments

What stakes do the stakeholders hold?

Once stakeholders are listed, it is useful to **evaluate them in terms of their interest** (how much they care / are impacted and why) and **influence / power** (how much they can affect decisions and in what ways). This assessment is important because it helps prioritize engagement efforts: high-interest, high-influence stakeholders require close collaboration, while those with lower interest or influence may need only occasional communication or information. Understanding these dynamics ensures that resources are used effectively, potential conflicts are anticipated, and the planning process remains inclusive, strategic, and more likely to succeed.

The table presented below is a template (supplementing Table 1) to identify the interests of different stakeholders.

Table 2 Identifying interests of the stakeholders

Stakeholder group / name of a stakeholder	How are they impacted by the issue (LHP)? Why?	How much do they care about the issue?	How much they can affect decisions (what decisions) and in what ways?

How are the stakeholders connected to one another?

After identifying stakeholders and assessing their interest and influence, it is also important to consider their connections and dependencies. In this context, a useful way of creating a functional stakeholders data base is a **stakeholder map**, an analytical tool that provides a visual representation of all stakeholders. It allows not only to understand who the stakeholders are but also **how they relate to the planning entity (municipality) and to one another**.

The stakeholder map can be prepared digitally (using a graphical program or app) or manually, with pen and paper. When creating the map, it is useful to place each stakeholder or stakeholder group separately, for example on individual tiles or sticky notes. To visually distinguish between different types of stakeholders – such as internal and external – different colors or shapes can be used. Relationships between

stakeholders can be indicated with arrows: one-way arrows if one entity depends on another, or two-way arrows if the relationship is more collaborative. The arrows can also include labels to specify the nature of the relationship. Mapping stakeholders helps to better understand how they are connected, who has influence over whom, and how the interests of different stakeholders may align or conflict. An example of a stakeholder map is presented below.

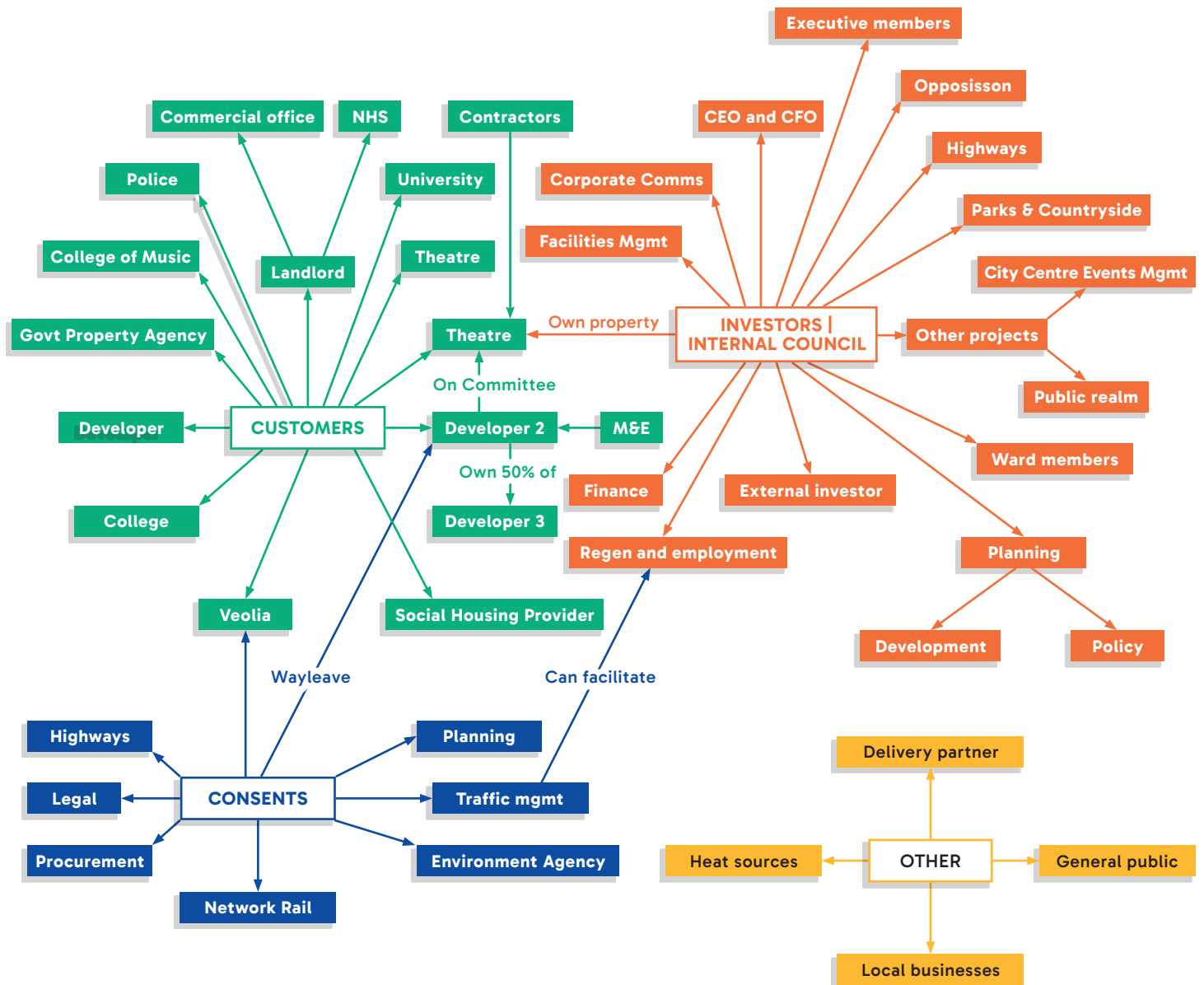


Figure 2 Example of a map of stakeholders

Based on: Carbon Trust, Department for Business, Energy & Industrial Strategy, 2018. Stakeholder Engagement in Heat Networks. A guide for project managers, accessed 17.12.2025.

Key questions to answer while identifying stakeholders

1. Who are the stakeholders?
 - a. Who are the internal stakeholders?
 - b. Who are the external stakeholders?
2. What stakes do the stakeholders hold?
 - a. How are they impacted by the issue (LHP)? Why?
 - b. How much do they care about the issue?
 - c. How much they can affect decisions (what decisions) and in what ways?
3. Are the stakeholders connected to one another? How?
 - a. How are the stakeholders connected to the planning entity (municipality)?
 - b. Is there a relation of power or partnership between stakeholders?
 - c. Do their interests align or conflict?

Levels of engagement

Cooperation with relevant stakeholders, including sectoral authorities, interest groups, NGOs or representatives from the private sector **can be set up with different levels of involvement** – from informing to consultation or participatory involvement throughout the whole process. The level of involvement can also change over the course of the adaptation process (e.g. high level when defining objectives vs. low level when working on an evaluation scheme). But when starting the process, the objectives as well as the role of stakeholders need to be clear and communicated to manage expectations.

Defining engagement levels provides a structured way to:

- identify where different stakeholder groups currently stand in relation to the project,
- determine the desired state of engagement (i.e., how far the municipality wish to bring them) and set measurable objectives,
- allocate resources and tailor engagement approaches according to level, making the process more strategic and efficient,
- clarify expectations on both sides (planners & stakeholders) to reduce conflict and build trust.

While defining engagement levels it is important to keep in mind the **main purpose of stakeholder engagement process**, defined in detail at the very beginning (see [page 27](#)).

In local heat planning, these benefits matter because heat-networks or DH initiatives often involve multiple stakeholders: homeowners, tenants, municipalities, utilities, industry, social housing organisations, and vulnerable groups. Recognising their different engagement levels

helps ensure no one is left behind and that their input contributes meaningfully to planning decisions.

One widely applied framework presents five levels of engagement³⁵:
Inform → Consult → Involve → Collaborate → Empower.

Below a summary of these levels is presented and how they apply to heat-planning contexts.

Table 3 Levels of engagement

Level	Description	Typical heat-planning application
Inform	One-way communication: stakeholders are kept informed but not asked to contribute.	Distribute brochures or websites about a new district-heating scheme without solicitation of input.
Consult	Two-way communication: stakeholders are asked for feedback and their views are considered in internal decision-making.	Hosting surveys or public meetings to gather views about heat network design options.
Involve	Stakeholders are engaged more deeply: their concerns are considered, and they may help shape alternatives.	Workshops with homeowner groups and local business owners to refine heat-network service offerings and tariff models.
Collaborate	Stakeholders partner with planners: joint decision-making on specific aspects.	A stakeholder steering group (municipality + utility + tenant association) co-designing the thermal-energy delivery model for a neighbourhood.
Empower	Stakeholders, or stakeholder groups, have decision-making authority or manage part of the implementation.	A community energy cooperative owning or operating the local heat network, making pricing/maintenance decisions.

Another useful model simplifies engagement into three strategic levels³⁶:

- information strategy: communicating the plan and its implications (similar to "Inform"),
- response strategy: gathering stakeholder feedback and shaping decisions (similar to "Consult" / "Involve");
- involvement strategy: engaging key stakeholders in partnership and shared decision-making (akin to "Collaborate" / "Empower").

This simpler three-tier classification is particularly helpful when resources are constrained or when communicating an engagement approach to non-specialists.

How deeply should different groups of stakeholders be engaged?

When applying engagement levels in LHP, it is essential to **align the depth of engagement** with both the **project stage** and the **type of decisions** being made. Early phases, such as scoping and feasibility

studies, may only require "Inform" and "Consult" approaches, whereas design, procurement, and implementation stages benefit from deeper involvement through "Involve" or "Collaborate" strategies. **Stakeholder capability and interest must also be considered:** some groups, such as marginalized households, may have limited capacity or interest, making lower engagement levels appropriate initially, while others, such as tenant associations or local business consortiums, may be ready for collaboration or even empowerment.

Choosing appropriate engagement methods is equally important: "Inform" may rely on newsletters or websites, "Consult" on surveys or public meetings, "Involve" and "Collaborate" on workshops or co-design sessions, and "Empower" through stakeholder-led governance structures. Engagement should also be dynamic, allowing stakeholders to progress from lower to higher levels over time as trust and capacity build. Importantly, the approach must be **fit-for-purpose**, considering factors such as stakeholder interest, project complexity, available resources, and community capacity, to ensure that engagement is effective, inclusive, and aligned with the overarching goals of the heat planning process.

Different levels of engagement – from informing and consulting to collaborating and empowering – allow planners to tailor approaches to the capacities and interests of different groups.

In practice, many European municipalities move across these levels dynamically. For instance, in Włocławek's **Warm to See You Citizen Café** programme, engagement began at the "Inform" level through public events and evolved into "Collaborate" as residents began co-creating workshops and solutions. In Finland, Tampere's **Energy Expert Training** illustrates "Empowerment," where trained residents influence energy efficiency decisions in their housing associations.

Methods and tools

Methods are the specific actions that can be taken to engage stakeholders (e.g., workshops, surveys, focus groups). Tools are the structured instruments, frameworks or technologies that support those methods (e.g., stakeholder-maps, dashboards, online platforms). Using appropriate methods and tools helps to:

- gather relevant and meaningful input,
- provide transparency and consistency in engaging stakeholders,
- adapt the engagement to different stakeholder groups, levels of engagement and stages of the project,
- monitor and evaluate the engagement activities and outcomes with more clarity.

"The engagement approach must be fit-for-purpose, considering factors such as stakeholder interest, project complexity, available resources, and community capacity, to ensure that engagement is effective, inclusive, and aligned with the overarching goals of the heat planning process."

As noted in the **Project Management Institute guidance**, managing stakeholder engagement relies on analytical and assessment techniques, communication strategies and interpersonal skills, **not simply "doing more" engagement**³⁷.

Selecting the right methods for engagement is crucial. The effectiveness of each tool depends on the local context, audience, and available resources. Good practices from across Europe show that a combination of digital and face-to-face tools yields the best results. The level of participation can vary throughout the process.

What methods can be used for citizen engagement?

Public meetings and **open consultations** remain key instruments to ensure transparency, especially when new investments or infrastructure changes are planned. However, these formal formats are increasingly complemented by more interactive and creative approaches. For example, **citizen cafés** and **cultural events** create a relaxed environment where people can discuss energy and comfort in everyday language. Similarly, **educational initiatives** like **Heat Lessons** and **EkoCiepło** show how schools can serve as long-term platforms for climate education and intergenerational learning.

Workshops and **participatory design sessions** are valuable during the technical planning phase, allowing stakeholders to co-develop scenarios and assess trade-offs. Digital tools, such as **online surveys**, **interactive maps**, and **webinars**, can help reach younger or remote audiences. At the same time, planners must not rely solely on digital means, as this may exclude elderly or less connected citizens.

Finally, **on-site visits**, **plant tours**, and **demonstration projects** provide tangible evidence of change and help build acceptance. Seeing successful renewable or district heating solutions in operation increases trust and reduces fear of the unknown.

Selecting the right methods and tools is critical for translating stakeholder engagement from theory into practice in LHP. Rather than applying the same approach to all stakeholders, **planners must consider the combination of engagement level, stakeholder capacity, project phase, and available resources to choose methods** that are effective, inclusive, and feasible. Informative methods and communication tools work best for raising awareness, while consultative techniques and feedback mechanisms allow for meaningful input. For deeper involvement, participatory workshops, co-design sessions, and collaborative platforms enable shared decision-making, and empowerment methods supported by governance tools to facilitate stakeholder-led management.

"Rather than applying the same approach to all stakeholders, **planners must consider the combination of engagement level, stakeholder capacity, project phase, and available resources to choose methods that are effective, inclusive, and feasible.**"

Table 4 Methods and tools for citizen engagement

Engagement Level	Method Type	Description	Heat-Planning Application	Linked Good Practice
Inform	Informative Methods	One-way communication to provide information without expecting input.	Methods & tools: → newsletters, → brochures, → websites, → public information sessions, → open-house exhibitions. Might be useful for raising awareness of a new district heat network.	→ Comprehensive Ecological Education and Waste Management Promotion → Awareness Rising and Inspiring Habit Change by Local Heat Supplier → EkoCiepto: Green Lessons for Schools → Citizen Engagement in Energy Transformation and Environmental Protection → Sharing Information and Educating Online → Geretsried Geothermal Visitor Center
Consult	Consultative Methods	Two-way communication to collect stakeholder feedback, considered in decision-making.	Methods & tools: → surveys, → questionnaires, → focus groups, → public hearings. Might be useful for gathering opinions on heat network design options or tariff models.	→ Citizen Engagement and Climate Education in the City of Lublin → Heating Plant of the Future: Public Consultations for a Renewable Heat Transition → Open Housing Cooperative: Dialogue on District Heating → Energy Consumer Education and Counseling Agreements
Involve / Collaborate	Collaborative & Participatory Methods	Interactive methods that actively engage stakeholders in shaping alternatives and decisions.	Methods & tools: → workshops, → co-design sessions, → stakeholder steering groups. Might be useful for co-developing service offerings, tariffs, or network design.	→ Warm to See You Citizen Café → Energy Expert Training → Project Group Heating Plan: Collaboration for Local Heat Planning → Together for Climate Neutrality 2030
Empower	Collaborative & Participatory Methods	Stakeholders have delegated decision-making authority or manage part of implementation.	Methods & tools: → stakeholders' boards, → hackathons, → performance labels. Might be useful for community energy cooperatives or tenant-led governance bodies managing a heat network, making pricing or operational decisions.	→ Net-Zero Hackathon: Co-Creating Waste Heat Solutions → Efficient District Heating Label → RepowerRegions: Cross-Regional Cooperation → Climate Miles: Listening to Residents for Sustainable Renovation
All Levels	Monitoring, Feedback & Evaluation Methods	Tools and activities to capture feedback, evaluate engagement, and report back.	Methods & tools: → post-event surveys, → feedback portals, → participatory evaluation sessions. Might be useful for tracking stakeholder satisfaction, reporting "you said, we did" outcomes.	

Complementing the approaches listed in the table above with monitoring and evaluation tools ensures accountability, captures lessons learned, and allows adjustments over time. Ultimately, a carefully curated mix of methods and tools ensures that stakeholder engagement is not just a procedural formality but a practical driver for better, more resilient, and widely accepted heat-planning outcomes.

Below, a table is presented to assist in identifying appropriate methods and tools for engaging different stakeholders (supplementing Table 1 and Table 2).

Table 5 Identifying appropriate methods and tools for engaging stakeholders

Stakeholder group / name of a stakeholder	Purpose of engagement	Project stage for stakeholder engagement	Level of engagement (Inform / Consult / Involve / Collaborate / Empower)	Methods of engagement

All communication-based engagement methods should be designed according to the following quality principles³⁸, ensuring that stakeholder input is meaningful and usable in decision-making:

- Equality – providing stakeholders with equal opportunities to access information and express views.
- Reason-giving – clearly explaining the rationale behind decisions and proposed options.
- Accuracy of information – ensuring that all shared data is reliable, timely, and understandable.
- Transparency – making processes, roles, and outcomes visible to stakeholders.
- Inclusiveness – adapting communication to reach diverse groups, including vulnerable or less connected audiences.

Financing approaches

Local heat projects often require substantial capital for infrastructure, including heat generation plants, distribution networks, and metering systems. Securing appropriate financing ensures that projects are technically feasible, economically viable, and socially acceptable.

A clear financing strategy can also enhance stakeholder confidence and support by demonstrating long-term sustainability and affordability. Financing decisions are a key component of planning, as they influence project design, tariff structures, risk allocation, and stakeholders engagement. Without finance to support this engagement, critical voices may remain unheard, risks unaddressed, and social license compromised.

While engagement has a cost, viewing it solely as an expense overlooks its most critical function: stakeholder engagement is a primary and effective strategy for enhancing and sustaining the financial capacity for sustainability projects.

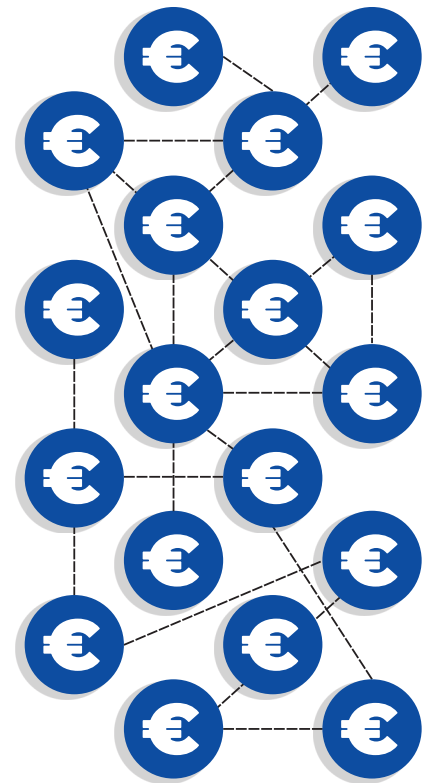
What costs are associated with stakeholder engagement?

Effective stakeholder engagement is not free; it requires dedicated resources, including staff time, budget, and capability. Too often, engagement is constrained by limited budgets, temporary grants, or a lack of specific funding. This can reduce participation to the legal minimum or lead to initiatives that fade once initial project funding ends. The resources for engagement must be strategically planned and allocated from the start of the LHP process.

To finance stakeholder engagement effectively, it is useful to break down the cost elements and link them to stages of the project. Typical cost categories include:

- stakeholder mapping and analysis (identification of actors, influence, interest),
- communication tools and materials (workshops, digital platforms, printed materials),
- facilitation and consultation events (venue, moderators, logistics, translation if needed),
- monitoring, feedback and evaluation of engagement (tracking sentiment, outcomes),
- capacity-building for stakeholders (training, workshops for harder-to-reach groups),
- risk mitigation and contingency (addressing emergent issues raised by stakeholders).

When budgeting for a local heat planning project, these costs need to be integrated early, ideally during the feasibility and business-case



phase. According to the **Financing Heat Networks in the UK Guidebook**³⁹, developers and funders should engage with internal and external funding sources from the outset and plan a timeline for when funds must be secured.

How to finance stakeholders engagement?

The financing of citizen involvement in LHP should be tailored to the scope, intensity, and duration of the planned engagement activities. Some forms of participation can be implemented using existing staff, communication channels, and events, while others require dedicated funding and additional organisational capacity.

For citizen engagement to be effective and credible, funding should be stable, predictable, and integrated into regular municipal budgets, rather than relying exclusively on temporary external resources. In practice, however, allocating sufficient long-term funding is often challenging. As a result, citizen involvement is frequently organised through time-limited, project-based initiatives, which represent a valid and practical approach for piloting methods, mobilising resources, and advancing participation. When this approach is used, continuing to nurture established communication channels and relationships beyond the project period helps sustain engagement and builds long-term trust with citizens and stakeholders.

"For citizen engagement to be effective and credible, funding should be stable, predictable, and integrated into regular municipal budgets."

Funding citizen engagement without external resources

Citizen involvement can often be supported through existing structures and budgets by:

- making use of available municipal resources, staff, communication channels, and public events to reach citizens and stakeholders,
- leveraging existing networks and partnerships, such as associations of municipalities, regional authorities, or neighbouring cities, and participating in relevant joint initiatives,
- mainstreaming citizen engagement within public financial management, with the aim of building lasting participation rather than one-off activities⁴⁰,
- exploring participatory budgeting or citizen budget approaches, where appropriate, to directly involve citizens in funding decisions related to local heat planning.

Project-based approaches and external funding sources

When additional resources are needed, project-based financing and external funding can support more extensive or innovative forms of citizen involvement. Potential sources include:

→ **European Structural and Investment Funds (read more [here](#))**

These funds support objectives such as employment, education and training, institutional capacity building, urban development, and territorial cooperation.

- European Regional Development Fund
- European Social Fund
- Cohesion Fund
- European Agricultural Fund for Rural Development
- European Maritime and Fisheries Fund
- Just Transition Fund
- Innovation Fund

→ **EU funding programmes (read more [here](#))**

- Horizon Europe
- LIFE Programme
- Interreg
- Connecting Europe Facility

→ **National funding programmes**

Finally, LHP infrastructure requires engaging specific financial stakeholders, such as local banks or private investors. This engagement is often more instrumental, with the goal of managing stakeholder relationships to achieve the project's objectives – namely, securing access to capital. By engaging these financial actors at a collaborate level, project planners can align the LHP's goals with the interests and requirements of investors, thereby unlocking the large-scale investment needed for implementation.

Additional resources

As many projects and initiatives address stakeholder engagement, it is useful to draw on existing materials from reliable sources. Some of these are listed below.

→ **Vision workshop toolbox**

- A handbook full of inspiring ideas for conducting participatory workshops, using multiple tools and tailored approaches. The toolbox was developed under the BEACON project (Bridging European and Local Climate Action), financed by the European Climate Initiative (EUKI). The toolbox is available in 6 languages (English, Bulgarian, Romanian, Polish, Greek and German), to be downloaded from [EUKI's website](#). Access English version [here](#).

→ **Renewables best practices. Solutions for nature-positive, community-led renewable energy in Europe**

- Showcasing twelve European projects, the collection explores how

renewable energy transitions can proceed responsibly, considering both environmental sustainability and community well-being. The publication was prepared by the European Environmental Bureau in May 2023. Access [here](#).

- Citizen-led renovation resource hub
 - An EU initiative aimed at enabling current and future energy communities to give citizens a leading role in energy-efficient renovation projects, [see website](#).
 - Available materials on social media communication strategies, open collaboration model, citizen engagement: [see website](#).
- CommitClimate resources
 - The CommitClimate project, co-financed by Interreg Baltic Sea Region, aims to equip municipalities with knowledge and tools enhancing their capacity to navigate energy transition, [see website](#).
 - A resource-base was developed, including materials on **Community Engagement and Behavioral Change**, together with **Best practice & resources**.
- Involve stakeholders and citizens in your local energy policy. Turn over a new LIEF!
 - A publication created under the BELIEF project, co-financed by the European Commission under the Intelligent Energy-Europe programme. The project promoted the creation of Local Intelligent Energy Forums. Access [here](#).
- Citizen participation playbook
 - A playbook on citizen participation developed as a part of + Cityx-Change project, that received funding from the European Union's Horizon 2020. Access [here](#).

Summary

The process of stakeholder engagement in LHP begins with setting a clear purpose – defining why stakeholders are being involved and what the municipality aims to achieve by engaging them. Once the goal is established, the process of identifying stakeholders can start. It is important not only to list all relevant stakeholders but also to assess their interests, potential influence, and relationships with one another and with the municipality. Based on this information, the appropriate level of involvement for each stage of the local heat plan can be determined, and suitable engagement methods can be selected. The final step, informed by all the collected data and decisions made, is financing – estimating the costs of the planned engagement and identifying potential funding sources.

Following this preparation, the engagement activities are implemented in practice. It is essential to monitor the results of stakeholder engagement throughout the process and to adjust approaches where necessary, ensuring that the engagement remains effective, responsive, and aligned with the objectives of local heat planning.

5. Conclusions and key takeaways

The experience gathered across countries in the BSR and the wider EU clearly shows that effective LHP is not only a technical exercise but a social and governance process that relies on the active involvement of many different groups. Municipalities, energy companies, housing associations, NGOs, and citizens each hold a piece of the knowledge, influence, or lived experience needed to design a heating transition that is realistic, fair, and widely supported. As demonstrated by numerous examples throughout this handbook, early and continuous engagement leads to better planning outcomes, greater public acceptance, and smoother implementation of investments.

A central conclusion emerging from the analysis is that **stakeholder engagement significantly increases the quality and legitimacy of local heat plans**. Transparent communication, educational activities, and participatory formats help break down the perceived complexity of heating systems and make the transition more understandable and relatable for residents. When citizens see clear links between heating choices, daily comfort, affordability, and climate resilience, their willingness to participate and support local energy strategies increases substantially.

At the same time, municipalities must acknowledge that **engagement requires sustained resources, skills and coordination**. Successful initiatives – such as Finnish energy advisory services, Latvian public dialogues, or Polish community-based programmes – illustrate that continuity is essential. Engagement that stops at the planning stage or relies solely on one-off consultations is unlikely to bring lasting change. Instead, building long-term structures, such as customer councils, school-based education programmes, or permanent advisory centres, helps to embed participation in everyday municipal practice.

Another key lesson is the importance of **inclusive and tailored engagement approaches**. Communities are not uniform. Younger residents may be reached through digital tools, while older or less digitally active groups require personal outreach, simple language, and trusted intermediaries such as housing cooperatives. Marginalised households may need targeted support to ensure that they are not left behind as heating systems evolve. The most effective engagement strategies are therefore those adapted to local realities, using varied tools and combining digital and face-to-face formats.

Across all countries analysed, the transition toward renewable and low-emission heating underscores the need for **strong cooperation between municipalities and heat suppliers**. Energy companies are

"A central conclusion emerging from the analysis is that **stakeholder engagement significantly increases the quality and legitimacy of local heat plans**."

"The most effective engagement strategies are those adapted to local realities."

central actors, holding data, technical expertise, and responsibility for system operation. Where cooperation is structured – through working groups, regular meetings, or co-design processes – the resulting heat plans tend to be more robust and easier to implement. Lack of coordination often leads to delays, misunderstandings, and lower public trust.

A recurring theme in the collected good practices is also the role of **education and awareness-raising**. Many residents still perceive heating as a technical matter beyond their influence. However, when equipped with accessible information – through school programmes, workshops, or practical demonstrations – they become active contributors to the transition. In several cases, educational initiatives led to behavioural change, energy savings, or greater support for network modernisation.

Finally, the analysis highlights that **weak or absent engagement carries clear risks**: delays, resistance, higher project costs, and missed opportunities for community-driven solutions. Plans that do not reflect local needs or values may face public opposition or lack political support. Ensuring meaningful participation from the outset helps build a shared vision of the heating future and strengthens the social mandate required for long-term investments.

Key takeaways

- **Stakeholder engagement is essential for successful LHP**, improving both the quality of decisions and their acceptance by the public.
- **Engagement must be continuous**; spanning planning, implementation, and follow-up phases – not limited to formal consultations.
- **Tailored approaches are crucial**: different stakeholder groups require different communication channels, formats, and levels of involvement.
- **Education and awareness-raising build capacity and understanding**, helping residents see the connection between heating choices, comfort, affordability, and climate goals.
- **Collaboration between municipalities and heat suppliers strengthens governance**, accelerates planning, and reduces conflict.
- **Inclusive engagement enhances fairness**, ensuring that vulnerable or hard-to-reach groups are not excluded from the benefits of the heating transition.
- **Stable financing for engagement activities is necessary**, as lack of resources often limits participation to minimum legal requirements.
- **Long-term, structured engagement increases resilience**, enabling communities to adapt to technological, economic, and regulatory changes in the heating sector.
- **Ignoring engagement increases risks** – from opposition and delays to inequities and reduced effectiveness of the heat transition.

"Ensuring meaningful participation from the outset helps build a shared vision of the heating future and strengthens the social mandate required for long-term investments."

6. Good practices and study cases

The good practices presented in this chapter showcase **18 examples of citizen and stakeholder engagement in local heat planning (LHP)**, implemented across Estonia, Finland, Germany, Latvia, Lithuania, Poland, and Sweden. The examples illustrate a wide spectrum of engagement approaches, ranging from information and awareness-raising activities to advanced forms of multi-organisational and collaborative cooperation.

The practices also differ in their scale and scope: some focus on small local communities, while others have been implemented at regional or national levels, demonstrating how engagement strategies can be adapted to different contexts and governance frameworks.

Each example is presented with a concise overview that highlights key details, including the country of origin, the level of implementation (national, regional, or local), and the current status of the practice (completed or ongoing). The overview also explains the motivation behind the initiative and provides general information on required resources, rated on a scale of one to three euro signs to indicate relative financial costs. Additionally, it includes information on the methods and tools applied (see [Chapter 4](#)).

To support further learning and knowledge exchange, each practice concludes with references to additional sources. These materials offer deeper insights into the presented approaches and encourage readers to explore the examples in greater detail and draw inspiration for their own local heat planning processes.



Source: PNEC

The list of good practices:

Awareness Rising and Inspiring Habit Change by Local Heat Supplier	46
Citizen Engagement and Climate Education in the City of Lublin	50
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Climate Miles: Listening to Residents for Sustainable Renovation	58
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Efficient District Heating Label	65
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Heating Plant of the Future: Public Consultations for Heat Transition	78
Geretsried Geothermal Visitor Center	80
Net-Zero Hackathon: Co-Creating Waste Heat Solutions	83
Open Housing Cooperative: Dialogue on District Heating	87
Project Group Heating Plan: Collaboration for LHP	89
RepowerRegions: Cross-Regional Cooperation	93
Sharing Information and Educating Online	96
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Warm to See You Citizen Café	104

Awareness Rising and Inspiring Habit Change by Local Heat Supplier

Country: Poland 

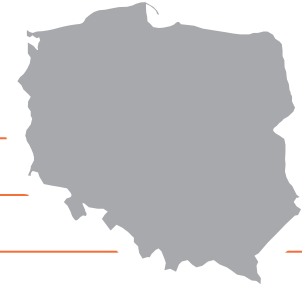
Level: Local – City of Konin

Duration: Implemented since 2021

Motivation: Own commitments

Budget: €€

Methods: Videos → mobile education center → lessons → meetings → RES tours



Introduction

MPEC Konin actively engages the local community and stakeholders in key initiatives, particularly those concerning heating and air quality improvement. The company goes beyond heat supply, focusing on educating and changing habits related to rational energy use and pro-environmental behaviors. These activities span a wide age range, from preschoolers to seniors, and are supported by internal regulations optimizing the consumption of thermal and electrical energy, water, and waste.



Source: <https://www.wfosgw.poznan.pl/aktualnosci-z-funduszu/konkursy-wielkopolskie-cieplo-przyjazne-srodowisku-rozstrzygniete/>, accessed 18.12.2025.

Stakeholders engaged

Key participants included:

- residents of Konin,
- preschoolers,
- primary and secondary school students,
- seniors,
- teachers,
- housing cooperatives, housing communities,
- property managers,
- MPEC Konin employees.

Context

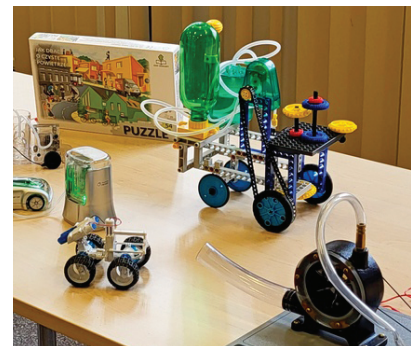
As the system heat supplier in Konin, MPEC Konin initiated its pro-environmental actions internally by introducing regulations to optimize media consumption. The idea for broad ecological education and community habit change stems from the mission to encourage residents to use system heat wisely and rationally, and to instill pro-environmental attitudes across different age groups. The company leverages funding from the Provincial Fund for Environmental Protection and Water Management in Poznań to implement numerous educational projects.

Methods and tools

- Educational films on RES, system heat, and geothermal energy.
- Modernization and opening of an ecological education room at MPEC headquarters.
- Organization of educational competitions, games, and quizzes.
- Purchase of RES models and large-format Eco-board games.
- Creation of a mobile ecological education center.
- Participation in fairs, picnics, and conducting classes in schools and kindergartens.
- Participation in the nationwide Heat Lessons project (e-learning platform, school lessons).
- Nationwide 20stopni.pl campaign promoting rational use of system heat (leaflets, billboards, posters at bus stops, local media).
- Regular meetings with administrators of multi-family buildings.
- Tours of the Geothermal Heat Plant (physical and virtual tours).
- Cooperation with the NFOŚiGW in Poznań.

Practice description

MPEC Konin carries out diverse educational and promotional activities to increase environmental awareness and change residents' habits regarding energy use.



Source: [ZAPATRZENI w Konin](#), accessed 10.02.2026.

→ **Ecological Education** – Projects co-financed by WFOŚiGW (Provincial Fund for Environmental Protection and Water Management):

- Educational Films: Since 2021, MPEC has been implementing projects that have resulted in and are still producing educational films on RES, system heat, and geothermal energy. The first project yielded 4 films with tens of thousands of views online System heat; System heat – where does it come from and who is it for?; Green sources of heat in Eastern Greater Poland; Geothermal energy – the energy of the future.
- Ecological Education Room: In 2022, an educational room at MPEC's headquarters was modernized, enabling classes on energy efficiency, air protection, and circular economy. Approximately 4 000 people participated in the project.
- Competitions, Games, and Quizzes: In 2024, competitions (artistic, literary) were organized, and didactic materials and Eco-board games were purchased, reaching over 2 000 people. Links to related articles: [LINK](#), [LINK](#).
- Mobile Ecological Education Center: In 2025 (project in progress), a mobile ecological education center is being equipped, aiming to reach 1 500 people.
- Broad Accessibility: Educational classes are conducted at MPEC headquarters, in schools and kindergartens in Konin and Greater Poland, during fairs and picnics.
- Goals: Building pro-environmental attitudes and social awareness, familiarizing participants with the benefits of modern heating systems.



Source: [WFOŚiGW Poznań](#), accessed 16.01.2026.

→ **Geothermal Heat Plant – RES Tours:**

- The Geothermal Heat Plant on Pocijewe Island, MPEC's largest investment, attracts significant interest.
- Meetings and tours are organized, providing information about the investment and technologies.
- A virtual tour of the heat plant is also available.

→ **Heat Lessons:**

- A nationwide educational and ecological project implemented since 2013, and in Konin since 2021.
- Students learn about the wise use of system heat and its role in preventing low emissions and smog.
- The program is based on the adventures of Little Red Riding Hood, available on an e-learning platform.
- In Konin, over 600 third-grade students participated, under the patronage of the Mayor of Konin.



Source: [Lekcje Ciepła](#), accessed 16.01.2026.

→ 20stopni.pl Campaign:

- A campaign by the Polish Heat Engineering Chamber, supported by MPEC Konin, aimed at educating and changing habits of heat consumers towards rational use of system heat.
- It promotes 20 simple habits, using leaflets for communities / co-operatives, billboards, posters at bus stops, and local media.

→ Meetings with Multi-family Building Administrators:

- Regular meetings between MPEC and administrators of multi-family buildings.
- Discussion topics include preparations for heating seasons, renovation and investment works, new heat tariffs, and pro-ecological solutions. They also serve to gather information about administrators' issues. Link to related article: [LINK](#).

Benefits

- Increased environmental awareness among children, youth, and residents of Konin.
- Changes in habits regarding rational use of system heat and optimization of energy, water, and waste consumption.
- Increased social engagement and acceptance for modern heating solutions and RES investments.

Challenges

- Reluctance from residents and employees to change habits.
- Reaching and educating the oldest residents of the city.
- Maintaining good habits among residents and employees.

References and additional sources

- MPEC Konin news:
 - [Archiwum aktualności MPEC Konin \(Ekoprzestrzeń gościnnie na Wielkim Dniu Pszczół\)](#)
 - [Archiwum aktualności MPEC Konin \(Pracowity tydzień Ekoprzestrzeni\)](#)
 - [Strona projektu Lekcje Ciepła](#)
 - [Aktualności MPEC Konin \(Kampania 20 stopni ruszyła\)](#)
 - [Aktualności MPEC Konin \(Z zarządcami o nowym sezonie grzewczym\)](#)
 - [Aktualności MPEC Konin \(Wirtualna wycieczka po Ciepłowni Geotermalnej\)](#)
 - [Aktualności MPEC Konin \(Z radnymi o geotermii\)](#)



Source: [20 stopni](#), accessed 16.01.2026.



Source: [ZAPATRZENI w Konin](#), accessed 16.01.2026.



Citizen Engagement and Climate Education in the City of Lublin

Country: Poland 

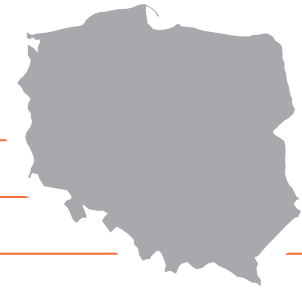
Level: Local | regional – City of Lublin

Duration: Implemented since 2014

Motivation: Own commitments & strategic policy

Budget: €€

Methods: School lessons → public campaigns 20stopni.pl → meetings → digital tools



Introduction

District Heating Operators in City of Lublin (LPEC – Lubelskie Przedsiębiorstwo Energetyki Ciepłej S.A.) is implementing a modern district heating management strategy that emphasizes customer education and active participation in climate and energy efficiency initiatives. The company aims to increase residents' awareness of rational heat use, energy saving and air quality protection, while building public acceptance for modernization investments in Lublin's heating network.



Source: [LPEC](#), accessed 9.02.2026.

Stakeholders engaged

Key participants included:

- residents of Lublin (including children and school youth),
- teachers and primary schools,

- property managers and housing communities,
 - the Lublin City Council,
 - social organizations,
 - local media,
 - LPEC S.A. employees,
- promoting energy efficiency and environmental awareness.

Context

In line with the city's sustainable energy goals and the growing importance of climate protection, LPEC launched a set of educational and participatory initiatives to support responsible energy use. These initiatives are a response to rising energy costs, environmental challenges, and the need to engage local communities in the energy transition.

Methods and tools

The approach combines education, communication and digital engagement. LPEC's strategy is based on interactive learning, public dialogue, and transparent communication about ongoing investments. Key methods include:

- educational activities in schools,
- social campaigns promoting rational heating habits,
- open consultations with residents,
- the development of digital tools to improve access to information and services.

Practice description

Heat Lessons (Lekcje Ciepła) – an educational program aimed at primary school students, implemented in cooperation with teachers. The project includes interactive classes in schools, during which children learn about the operation of the district heating network, methods of saving energy, the role of district heating in environmental protection, and good practices for daily heat use. The program is enriched with teaching materials, contests, and educational games.

20stopni.pl campaign – LPEC is an active participant in the nationwide information campaign promoting the rational setting of indoor temperatures at 20°C. The goal of the campaign is to encourage responsible heating behavior, reduce energy consumption, and promote thermal comfort and residents' health. The campaign uses a wide range of tools: posters, infographics, guides, press articles, social media, and individual consultations for residents and building managers.

Public consultations and open information meetings – every major network investment is preceded by meetings with residents and prop-



Source: [LPEC](#), accessed 9.02.2026.

erty managers, during which the project's objectives, scope of work, and environmental and economic benefits are presented. Participants have the opportunity to provide feedback and receive advice on the rational use of heat.

Digital customer service portal – enables quick contact, failure reporting, tracking of investment progress, and access to educational materials and current information on efficient energy use.

Promotion of district heating in the media – LPEC conducts an ongoing information campaign in local media, on the internet, and through its own channels (newsletter, social media), promoting energy efficiency and climate protection.

Benefits

- Increased energy awareness among residents, including children and youth – participants of the Heat Lessons and 20stopni.pl campaigns report improved knowledge about energy saving and the role of district heating.
- Behavioral change among consumers – an increasing number of residents follow temperature-setting recommendations, and building managers are more willing to implement energy-efficient solutions.
- Social acceptance for modernization projects – effective communication and public consultations foster residents' involvement in investment processes, facilitating project implementation.
- Reduced energy consumption and pollutant emissions – the promotion of responsible heating contributes to lower heating bills and improved air quality in the city.

Challenges

- Reaching all social groups, including the elderly and digitally excluded.
- Maintaining long-term motivation to change everyday energy habits.
- The need for continuous development of communication tools and individual advisory services.

References and additional sources

- [LPEC S.A. official website](#)
- [Campaign website](#)
- [Educational programme Heat Lessons – materials and resources](#)

Citizen Engagement in Energy Transition and Environmental Protection

Country: Poland 

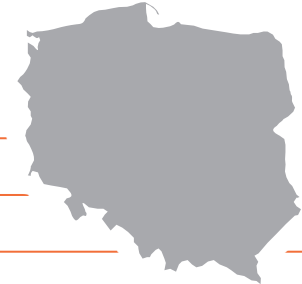
Level: Lokal – City of Konin

Duration: Implemented since 2018

Motivation: Own commitments

Budget: €€€

Methods: Mobile info points → home visits → consultations → online info → climate advisors



Introduction

The City of Konin actively engages the local community and stakeholders in key initiatives, especially those concerning heating and air quality improvement. The presented good practices focus on the city's energy transformation, promoting modern heating solutions, increasing ecological awareness, and supporting the energy efficiency of buildings and CO₂ reduction. Activities include mobile information points, proactive visits to residents' homes, providing information on the city's website, implementing EU projects supporting RES and climate neutrality, and environmental education in various forms.



Stakeholders engaged

Key participants included:

- citizens,
- citizen associations,
- community groups,
- climate protection initiatives,
- other: municipal office employees, local entrepreneurs (small and medium-sized enterprise sector), Konin City self-government.

Context

The practices were implemented by the City of Konin. The idea of good practices stems from the need for active engagement of the local community in initiatives concerning heating and air quality improvement, energy transformation, and achieving climate neutrality.

"The goal is to ensure legitimacy for proposed actions, achieve successful implementation of planned investments, improve decision-making processes, increase acceptance for RES projects, and support positive behavioral changes."

The goal is to ensure legitimacy for proposed actions, achieve successful implementation of planned investments, improve decision-making processes, increase acceptance for RES projects, and support positive behavioral changes.

Methods and tools

- Mobile information points: Organized during local events (e.g., festivals, Konin Days).
- Direct visits to residents: Proactive meetings of officials in residents' homes, especially in areas heavily affected by low emissions.
- City Hall website: A central information point with current news, guides, and educational materials on subsidy programs and initiatives supporting building energy efficiency.
- Climate Advisors: Municipal and District Climate Advisors offering support and advice in preparing projects and applications for funds for energy efficiency improvement and CO₂ reduction activities.
- Public consultations: Engaging residents and entities in the development of strategic city documents.

Practice description

Clean Air Program – the Environmental Protection Department of the Konin City Hall regularly organizes mobile information points during local events, such as festivals or Konin Days. This is an excellent opportunity for direct contact with residents and providing advice on the benefits of connecting to the municipal heating network and possibilities of obtaining financial support for replacing heat sources (e.g., the popular Clean Air Program). Such activities increase ecological awareness and promote modern heating solutions. Information on the Clean Air Program is provided at the Municipal Consultative and Information Point of the Clean Air Program located at ul. Wojska Polskiego 2. The aim of the program is to improve energy efficiency and reduce emissions of dust and other pollutants into the atmosphere from existing single-family residential buildings or to avoid air pollutant emissions from newly built single-family residential buildings. Individuals who are owners/co-owners of the property can apply for funding. Types of projects in existing buildings include: replacement of an inefficient solid fuel heat source with a new heat source (e.g., heat pump, gas boiler, heating network, condensing oil boiler); application of renewable energy sources (solar collectors, photovoltaic micro-installations); thermal modernization of single-family buildings/separated residential units. Current statistics on the implementation of the Clean Air Priority Program are: number of subsidy applications submitted: 1 133, number of completed projects – 541, total amount of subsidies paid:



Source: Konin City Council

14 809 856.44 PLN. Detailed information about the program is available on the website: <https://czystepowietrze.gov.pl/>.

Meetings with residents regarding heating sources – the initiative of the City of Konin also included proactive visits by officials from the Environmental Protection Department to residents in their homes. This concerned locations particularly burdened by low emissions (homes with old solid fuel boilers). During these meetings, proposals for replacing old stoves and boilers with modern, ecological heat sources, such as connecting them to the municipal central heating, are presented individually. Such a direct approach proved to be an effective method of convincing residents. Meetings build trust, dispel doubts, and help residents take concrete steps towards thermal modernization and using more efficient heating systems.

Information and materials on the city's website – the website of the Konin City Hall serves as a central information point. Current news, guides, and educational materials regarding subsidy programs for heat source replacement, as well as information on all initiatives supporting building energy efficiency, are regularly published there. This ensures residents have easy and constant access to comprehensive information.

Project LIFE AFTER COAL PL: Implementation of the Climate Neutrality Strategy Greater Poland East 2040 – the project is being implemented with co-financing from the EU LIFE Program and the National Fund for Environmental Protection and Water Management. Implementation period: from January 1, 2023, to December 31, 2031. The main goal of the project is the implementation of the Climate Neutrality Strategy. The main goal of the LIFE AFTER COAL PL project is to significantly shorten the time needed to achieve the assumed effects of the Strategy, by ensuring conditions for its full and rapid implementation. It is assumed that the main results of the project will be reduction of CO₂ emissions, reduction of energy demand, increase in the share of RES in the energy balance, and reduction of pollutant emissions. From July 1, 2023, the Municipal Climate Advisor and the District Climate Advisor started their work at the Konin City Hall. The LIFE AFTER COAL PL project is a response to the challenges facing Eastern Greater Poland, related to the need for a significant reduction in the use of fossil fuels in the economy while maintaining energy security and stability of the entire system. The development of energy produced from RES is intended to facilitate this. Climate Advisors will, among other things, provide advisory and support functions to residents, the small and medium-sized enterprise sector, and other entities in preparing projects and applications for funds for energy efficien-



cy improvement and CO₂ emission reduction activities. They will also conduct promotional, educational, communication, and information activities related to the process of achieving climate neutrality and adapting to climate change using nature-based solutions. The task of the Advisors will also be to develop a municipal / district integrated plan for energy, transport, and climate. Within the project, a study on the socio-economic situation of the area covered by the LIFE AFTER COAL PL project in Eastern Greater Poland in 2022 was carried out. The report from the study serves as a reference point for subsequent planned comparative studies, which will be carried out in 2028 and 2031.



Source: [Life After Coal PL](#), accessed 16.01.2026.

Installation of renewable energy source systems for Residents of the City of Konin – the project is implemented under Priority 10 "Just Transformation of Eastern Greater Poland", Measure 10.06 "Bringing Eastern Greater Poland closer to achieving climate neutrality" of the European Funds for Greater Poland 2021-2027 Program. Total value: 21 237 381.19 PLN, including: co-financing: 14 865 994.63 PLN (70%), own contribution 6 371 140.56 PLN (30%) – residents' payments. Implementation period: January 5, 2024 – June 30, 2026. The main goal of the project: support for RES development in accordance with Directive (EU) 2018/2001 regarding the development of prosumer energy in the city of Konin. This goal fully aligns with the thematic goal and specific objective of Measure FEWP.10.06, i.e., bringing Eastern Greater Poland closer to achieving climate neutrality. Project implementation involves the installation of RES micro-installations on private properties. The applicant is the City, and the final beneficiaries (end users) are the residents of the city of Konin. The project assumes the installation of individually selected RES micro-installations (photovoltaics, heat pumps, and devices supporting their operation,



Source: [ZAPATRZENI w Konin](#), accessed 16.01.2026.

i.e. energy storage) in residential buildings, with the simultaneous, mandatory dismantling of existing heat sources in the form of traditional solid fuel boilers, so-called "smokers". The following installations will be carried out: photovoltaic installations: 238 units, including: 207 roof-mounted photovoltaic installations and 31 ground-mounted photovoltaic installations; Energy storage units: 204 units; Heat pump installations: 149 units, including: 124 air-to-water heat pump installations and 25 ground-source heat pump installations.

Engaging residents and entities associated with Konin in public consultations during the development of strategic documents – the main goal of such consultations is to gather opinions, ideas, and proposals from residents, NGOs, entrepreneurs, and other key stakeholders. However, an additional aspect is active participation in the city's strategic policy, which includes, among others, heating. This allows the City Hall to create strategic documents – such as Konin. Green City of Energy. City Development Strategy Plan 2020-2030 – update.



Source: Konin City Council

Benefits

- Increased ecological awareness among residents and promotion of modern heating solutions.
- Increased trust and clarification of residents' doubts regarding thermal modernization and efficient heating systems.
- Ensuring easy and constant access to comprehensive information for residents.
- Significant shortening of the time needed to achieve climate neutrality.
- Reduction of CO₂ emissions, energy demand, pollutants, increase in the share of RES.
- Active participation in the city's strategic policy.

Challenges

- Reaching the oldest residents of the city and educating them.

References and additional sources

- Life After Coal
- Clean Air Programme
- Projects implemented – European Union – Konin. Energy flows here

Climate Miles: Listening to Residents for Sustainable Renovation

Country: Germany 

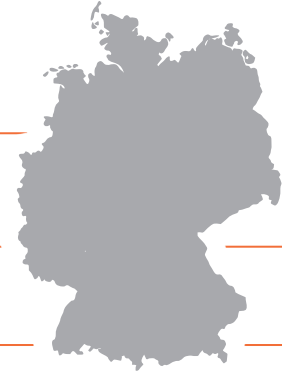
Level: Local | municipal – Municipality of Bremerhaven

Duration: Implemented since 2021

Motivation: To enable the climate neutral transformation of historically and architecturally valuable urban ensembles

Budget: €€

Methods: Meetings → street events → town hall meetings → local newspaper → official letters from municipalities



Introduction

Bremerhaven aims to integrate architecturally and historically valuable buildings and urban ensembles into the heat transformation process without compromising their cultural value. In the municipality, many climate miles consist of ensembles from the founding and Wilhelminian periods, whose facades and urban character are worth preserving. These areas face significant challenges, including dense development, poor building conditions, fragmented ownership, limited heating infrastructure, and low economic capacity.

Despite these difficulties, heat transformation is unavoidable. Therefore, neighbourhood-specific renovation concepts are being developed to balance climate goals with the preservation of ensemble character and to define feasible renovation pathways tailored to local conditions.



Stakeholders engaged

Tenants, neighborhood management, landlords, apartment owners, owner associations.

Context

The creator and initiator of the Climate Mile concept was the municipal authority with the Climate City Office, which is represented by the Department for Municipal Affairs of Climate Change in the Environmental Protection Agency of Bremerhaven. The idea arose from the fact that this type of housing was of very little interest or



Image: Wikimedia Commons

concern to energy agencies and housing associations, yet at the same time accounted for a significant proportion of the municipality's building stock.

Methods and tools

- Town hall meetings and owner assemblies.
- Articles and information series in the local newspaper.
- Focus on personal contact.
- Cooperation with a communication agency.
- Close operational cooperation between municipal authorities and neighbourhood management.
- Door to door conversations with residents.
- Street events.
- Informal neighbourhood meetings.

Practice description

From the outset, Bremerhaven pursued two principles. They arose from the assumption that, although public administration represents a significant force for change, for various reasons it does not enjoy enough public trust to act effectively as an incentive or role model for climate-neutral transformation. The other assumption arose from the observation that the approach often pursued by energy agencies of winning people over through education, incentives, and leadership was perceived by some as patronizing.

The working principles for the project were therefore that firstly, the direction of communication had to come from the neighbourhood. The residents say what they need and we make it possible – all on the condition that this enables a movement towards climate neutrality. Secondly, the municipal authorities themselves played only a minor role as drivers of this movement. Instead, this role was taken on by the neighbourhood management, which initially had little to do with the idea, but enjoyed a high reputation in the community. It was the multiplier and the face of the project. As a result, the city worked **less with social media** and **more with targeted outreach**, door-to-door conversations, mailings, street events, town hall meetings, and, in some cases, official letters from the municipal authorities, which were very effective. The agreement reached by the neighbourhood manager with the local newspaper to publish a series of articles about the project in the local newspaper proved to be particularly effective. This was made possible by commissioning a communications agency to manage the entire communications process behind the scenes according to Bremerhaven's specifications, and a planning



Source: Jens Rilke, Quartiersmeisterei Alte Bürger Bremerhaven

office to develop a redevelopment concept for the neighbourhood. Both were contractors for the municipal authorities, but cooperated much more closely with the neighbourhood management team on an operational level.

Benefits

- Trust
- Creative drive
- Participation

Challenges

- The process is costly and cannot be carried out without the use of a subsidy program (approx. €150 000-200 000).
- Language barriers can arise in such neighbourhoods.

References and additional sources

- Output: Integrated energy-efficient renovation concept for the Alte Bürger climate mile



Comprehensive Ecological Education and Waste Management Promotion

Country: Poland 

Level: Lokal – City of Konin

Duration: Implemented since 2019

Motivation: Own commitments

Budget: €€

Methods: Media campaigns → plant tours → competitions → fairs → teacher support



Introduction

MZGOK (Miejski Zakład Gospodarki Odpadami Komunalnymi – Municipal Waste Management Company) in the City of Konin has been implementing a wide range of educational activities for many years among residents of Konin and the Konin sub-region. The priority of these actions is to raise public awareness about selective waste collection and proper disposal methods, highlighting the environmental benefits of thermal energy recovery. In addition to informing the public, these initiatives aim to encourage greater community involvement, foster a sense of shared responsibility, and build acceptance and support for new investments and infrastructure projects.



Source: [MZGOK Konin](#), accessed 18.12.2025.

Stakeholders engaged

Key participants included:

- residents of Konin and the Konin sub-region (36 municipalities),
- primary, secondary, and higher education schools (students and teachers),
- local government of the City of Konin and the Konin sub-region (36 municipalities),
- local media,
- MZGOK Sp. z o.o. in Konin employees.

Context

MZGOK Konin operates on the principle that ecological education is not just about transferring knowledge, but also about shaping attitudes, developing skills, and inspiring action. The company's initiatives stem from the need to inform the public about proper waste management, its benefits (including heat recovery), and to gain social acceptance for new investments in waste processing. Most educational activities are financed by the company's own funds, supplemented by support from the Voivodeship Fund for Environmental Protection and Water Management in Poznań and the Marshal's Office of the Greater Poland Voivodeship within the WRPO program.

Methods and tools

- Publicly available films and multimedia presentations.
- Publication of educational and informational materials (such as Eko-Gmina, a magazine published monthly).
- Radio and television broadcasts.
- Articles in local press and on Facebook profiles.
- Participation in social campaigns, events, and fairs in Konin and sub-region municipalities (e.g., world cleanup day, bee day).
- Study visits to the plant, covering topics of waste disposal and heat / electricity production.
- Annual "The Clean World is More Beautiful, It's Up to You Whether It Will Be So" competition (artistic, photographic, literary, multimedia categories, with an eco-game finale).
- Creation of an educational path in 28 locations.
- Development of lesson scenarios for teachers on climate and waste management.
- Dedicated website and mobile application (for the "Clean World is More Beautiful!" project).



Source: [MZGOK Konin](#), accessed 18.12.2025.

Practice description

MZGOK Konin implements a variety of educational methods adapted to the age and needs of the audience, aiming to reach the widest possible group of people.

- **Direct Engagement and Plant Visits:** In 2024, the plant was visited by 681 people, including children, youth, adults, and seniors. During these meetings, multimedia presentations and films are shown, followed by visits to the installations to familiarize participants with the processes. Participants can actively engage by asking questions and expressing opinions.
- **Informational Publications – Eko-Gmina:** The company publishes a monthly ecological newsletter, Eko-Gmina, with a circulation of 10 000 copies, covering environmental, ecological, and technical topics. A paper version ensures reach to those not using social media or the Internet. Its main goal is to build pro-environmental attitudes and social awareness, consolidating knowledge on: circular economy (including energy production from thermal waste treatment), energy efficiency (modern recovery technologies), air, water, and soil protection (waste segregation, production reduction to lessen emissions), and human activity's impact on the environment (promoting good practices). This newsletter is directed to residents of Eastern Greater Poland.
- **Competitions and Social Campaigns:** The annual "The Clean World is More Beautiful" ("Świat czysty jest piękniejszy") competition has been organized for over a dozen years, encouraging pro-environmental actions through artistic, photographic, literary, and multimedia works. In 2024, 26 schools participated, submitting 257 works, which indicates the scale of the company's activities.
- **Under the project co-financed by the Greater Poland Regional Operational Program:** A local social campaign was conducted in the years 2019-2021. This included a film, educational spots, an environmental newsletter (800 000 copies), three publications, a dedicated website, and a mobile application.
- **Workshops and Educational Paths:** "The Clean World is More Beautiful" project also involved equipping a center at MZGOK for "See it with your own eyes" workshops, which included plant tours. Pro-ecological fairs were organized to propagate knowledge on selective waste collection and management. An educational path was created in 28 locations to spread ecological knowledge over the long term. The project has been implemented in the years 2019-2021.
- **Teacher Support:** MZGOK offers lesson scenarios for primary school teachers on topics like "Waste is a valuable resource" and "Climate is changing – let's change our habits".

"In 2024, 26 schools participated, submitting 257 works, which indicates the scale of the company's activities."

Benefits

- Increased environmental awareness among residents of Konin and municipalities of the Konin sub-region.
- Supporting social engagement and building acceptance for new investments implemented by the company.
- Building partnerships and cooperation to achieve common environmental protection goals.
- Dissemination and consolidation of knowledge on circular economy, energy efficiency, protection of air, water, and soil, and the impact of human activity on the environment.

Challenges

- The necessity to reach various age groups.
- Continuous awareness-raising about the role and benefits of thermal waste treatment and the importance of generated energy for residents' needs.
- The necessity to finance most educational activities from own funds.

References and additional sources

- [Official MZGOK Konin website](#) (for Eko-Gmina periodicals, etc.)

Efficient District Heating Label

Country: Estonia 

Level: National

Duration: Implemented since 2018

Motivation: Law & national climate goals

Budget: €€€

Methods: Media campaigns → plant tours → competitions → fairs → teacher support



Introduction

The well-being of district heating systems depends on the well-being of customers, which is why inefficient and poorly maintained district heating networks have to struggle to retain consumers, since according to the European Union Energy Efficiency Directive they have the right to use more efficient and environmentally friendly local solutions instead of inefficient district heating. The latest trends rather show that the situation of district heating in Estonia is in a condition that many larger consumers, such as companies that have previously produced heat in local boiler houses running on natural gas, are switching to district heating precisely because it is in line with their environmental trends.

The **Efficient District Heating Label** also allows district heating companies to raise consumer awareness and interest in the fuels used to produce heat. The movement towards climate neutrality is gaining momentum and, in an effort, to reach the goal set by the European Union to achieve climate neutrality by 2050.

The Efficient District Heating Label can help meet the two goals of the district heating sector: to increase the energy efficiency of district heating and to introduce more renewable energy sources into district heating, and the requirements for obtaining it can be gradually increased until we reach a fully climate-neutral and renewable energy-based district heating system.

For example, a system that uses only waste heat or renewable energy sources to produce heat can be considered fully climate neutral.



Source: Estonian Power and Heat Association

Stakeholders engaged

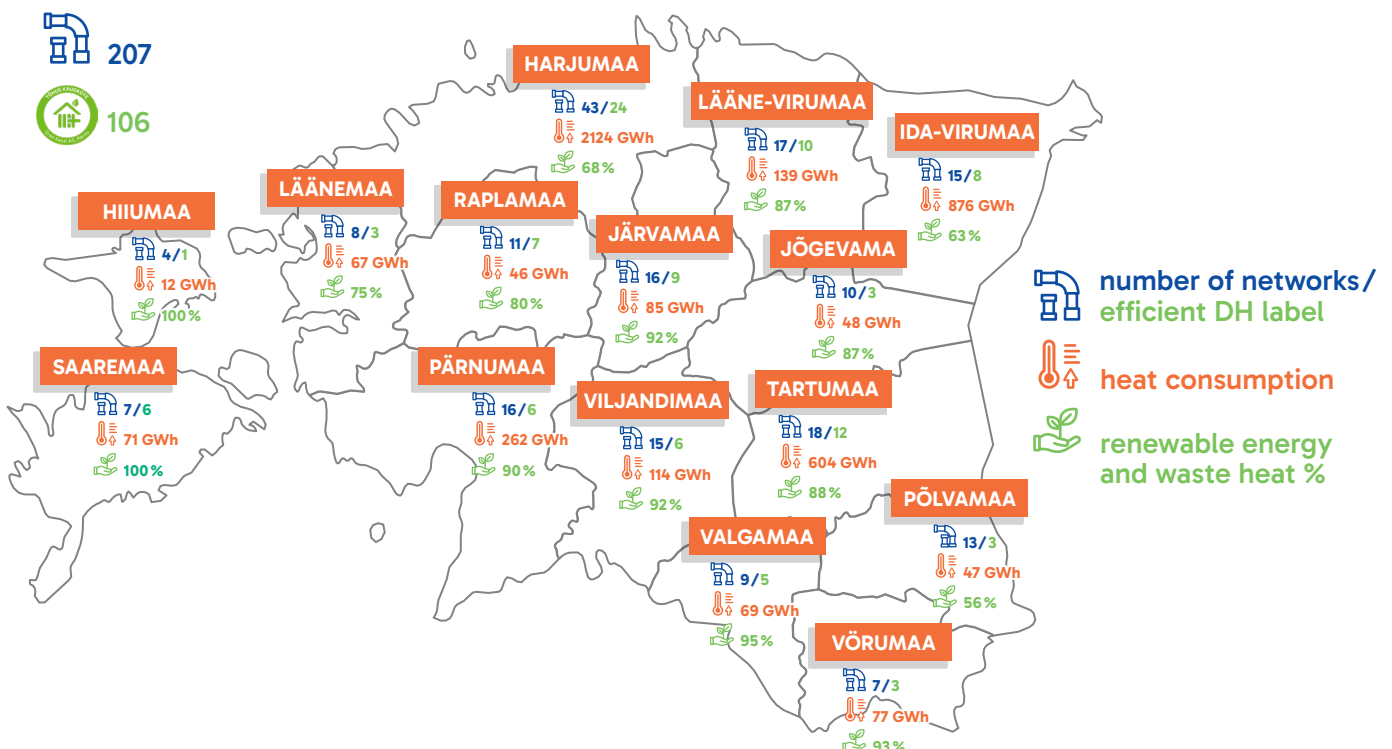
Efficient District Heating Label engages local governments, district heating network companies and heating companies.

Context

The purpose of awarding the Label is to recognise and promote the use of renewable energy sources in DH systems, efficient heat production and distribution, and highlight DH as an efficient, environmentally friendly, inexpensive, and convenient heat supply method.

The Label certifies the efficiency of the DH network and the share of renewable energy or cogeneration in the heat distributed via the network.

The development of the Label started in 2015, and the first one was issued in 2018. So far there have been issued more than 130 Efficient District Heating Labels to different Estonian municipalities and heating companies for efficient district heating networks. The Label, as a sign of quality, really motivates the companies to make an effort and the citizens can easily see whether their heating is produced in an environmentally friendly way.



Source: Tallinn University of Technology Research Group of Smart District Heating Systems and Integrated Assessment Analysis of Greenhouse Gases Emissions

Methods and tools

The main communication channels for promotion of Efficient District Heating Label were Estonian Power and Heat Association and Estonian Society of Thermal Engineers who directly communicate with district heating stakeholders and heating companies. Also, information seminars and trainings have been held for stakeholders – both heating companies and local municipalities.

The promotion of the Label was also done by national media – news articles were published in bigger Estonian newspapers and sites.

Practice description

The Efficient District Heating Label is awarded to a district heating system in which at least 50% of the heat produced is produced from renewable energy or 50% from waste heat or 75% from co-generated heat or 50% from a combination of such energy and heat. The conditions for the Efficient District Heating Label are equivalent to the definition of efficient district heating and cooling set out in the EU Energy Efficiency Directive 2012/27/EU. For better engagement, information seminars and trainings are organized by Estonian Power and Heat Association and by Estonian Society of Thermal Engineers.

Benefits

- Renewable energy integration into the heating sector.
- Motivation for local municipalities to ask and heating companies to provide renewable and efficient services.
- Raising public awareness of energy efficiency and renewable energy in the heating sector.

Challenges

- Low heating density because of very few consumers in rural areas which makes it expensive to renovate and maintain district heating network and boiler houses, therefore some district heating networks struggle to find investments for new, efficient technologies and renovations.
- Low energy efficiency of the building stock – the buildings need to be renovated before they can use modern, low-temperature heating sources, such as waste heat. Low energy efficiency of the building stock also keeps the temperatures in district heating network high, which means higher heat losses for district heating network.
- Need for more profitable business models: waste heat is often not available for heating companies, although there are industrial companies with remarkable excess heat quantities in the area but they

are not interested to make investments to sell the heat; in some cases it is more profitable to use old, non-renewable technologies rather than invest in renewable technologies, as often – heat price is the most important for customers.

References and additional sources

- Estonian Power and Heat Association webpage (original source)
- The Efficient District Heating Label status
- National newspapers (media promotion): Technika, Arileht Delfi, MAAELU
- University website (media promotion)
- Scientific publication: <https://doi.org/10.1016/j.jup.2021.101332>
- Heating company webpages (they want to show that they have done good work and they have it in many places): Adven, SW ENERGIA, UTILITAS

EkoCiepło: Green Lessons for Schools

Country: Poland 

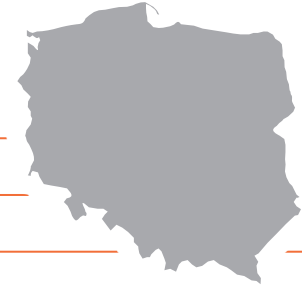
Level: Local – City of Poznań

Duration: Implementation completed before 2025

Motivation: DH operator's corporate education

Budget: €

Methods: School lessons → competitions → plant visits → workshops



Introduction

Veolia Energia Poznań, the operator of the district heating system in Poznań, has been running the educational programme EkoCiepło for several years. The initiative is aimed at primary school students and focuses on raising awareness about district heating, energy efficiency, and environmentally responsible for heat use.

Stakeholders engaged

Schools, students, teachers, representatives of the district heating company, parents, and local media. Key participants include Veolia Energia Poznań (programme organizer), educational institutions, and local communities promoting environmental education and sustainable energy use.

Methods and tools

The educational approach combines theoretical knowledge with hands-on experience and interactive learning. Key methods include:

- demonstration of lessons and competitions for children,
- study visits to the heating plant and interactive city games,
- practical workshops on energy saving at home and at school.

Practice description

During the programme, children learn about how the district heating system works, the sources of heat, ways to save energy, and the environmental impact of heating. The most engaged and high-achieving students take part in competitions with prizes and have the opportunity to present their ideas during city-wide events.



Image: Wikimedia Commons

Benefits

- Increased environmental awareness among children and their parents.
- Inspiration to adopt simple energy-saving actions at home.
- Broader dissemination of knowledge about modern, low-emission heating technologies.

Challenges

- Varying levels of prior knowledge among schools.
- The need to adapt the educational content to different age groups.

Energy Consumer Education and Counseling Agreements

Country: Lithuania



Level: National

Duration: Implemented since 2017

Motivation: Legal obligation

Budget: €€€

Methods: Seminars → consultations (phone, email, on-site) → media info → training → comparative analysis → loan of energy meters



Introduction

One of the principles for increasing energy efficiency in Lithuania set out in the National Energy Independence Strategy is the principle of active training and education of energy consumers. Since energy consumers can contribute to the goals of increasing energy efficiency by changing their behavior and habits, the training and education of energy consumers is being strengthened.

The purpose of the education and consultation agreements is to educate and consult consumers on energy-saving measures and solutions that change consumer behavior and habits by increasing energy efficiency.

Stakeholders engaged

The range of suppliers' customers is wide and varied – from domestic consumers to businesses, from a few customers to several hundred thousand. Suppliers supplied energy to the following main groups of customers – domestic and non-domestic (companies, institutions, organizations, etc.). The most widespread activities of the SCE in the heat sector were carried out for domestic consumers, in the electricity sector for private and business customers, and in the natural gas sector for both domestic consumers and business customers.

Key participants included citizens of all ages – residents of multi-apartment buildings, housing associations, service providers, sectoral associations all over Lithuania.



Source: [ManoCO2](#), accessed 16.01.2026.

Context

Publicly announced agreements on the education and consultation of energy consumers are concluded between the Ministry of Energy of the Republic of Lithuania (hereinafter referred to as the Ministry of Energy) and energy supply companies (hereinafter referred to as suppliers) on the education and consultation of end energy consumers (hereinafter referred to as consumers) on increasing energy efficiency (hereinafter referred to as agreements), in accordance with the Law on Energy Efficiency of the Republic of Lithuania No. XII-2702 and the Procedure for Concluding Agreements on the Education and Consultation of Energy Consumers, approved by Order No. 1-221 of the Minister of Energy of the Republic of Lithuania on August 25, 2017 "On the Approval of the Procedure for Concluding Energy Consumer Education and Consultation Agreements" (hereinafter referred to as the Procedure).

Methods and tools

The Lithuanian Energy Agency has prepared Energy Saving Guidelines to help residents, companies, and public sector institutions learn about the most effective short-term energy saving tips and opportunities to invest in resource-efficient solutions that will ensure energy independence in the future:

- [Energijos taupymo gaires-Namu_ukiai.pdf](#)
- [Energijos taupymo gaires-Pramone_paslaugos_viesasis_sektorius1.pdf](#)

The following methods can be applied:

- publication of information on a company website,
- publication of information in the press or in publications, or publication of information on television or radio programs,
- provision of comparative analysis of consumer groups together with energy saving advice in print or electronic (digital) form,
- consultations at the consumer's premises,
- consultations by e-mail, online or by telephone upon receipt of a consumer's request,
- publicity event covering energy efficiency improvement,
- training on the efficient operation of heating systems,
- training on the efficient operation of heat distribution points,
- loans of energy meters or other measuring equipment.

Guidelines for education and consulting were elaborated by Lithuanian Energy Agency.

The Lithuanian Energy Agency has developed a mobile application called ManoCO₂, which allows users to track their energy consump-



Source: [Alytus DH company](#), accessed 9.02.2026.

tion and greenhouse gas (GHG) emissions with minimal effort. The amount is calculated based on the user's movements in the city, longer trips, energy use at home, shopping habits, and diet. The user is provided with useful tips on efficient energy consumption and reducing GHG emissions. Users can track their GHG reduction achievements and see a graphical representation of their GHG emissions for a single day, week, or entire period, as well as the proportion of their energy consumption that comes from renewable energy sources.

The Lithuanian Energy Agency operates an Energy Saving Advice Line. Residents who wish to consult on energy saving issues can call +370 5 230 3312 or write to taupymo.linija@ena.lt.

The purpose of the Energy Saving Advice Line is to inform residents about ways to save energy that can be applied in the home by changing behavior or making minor renovations, and to help direct efforts in the right direction to save energy and reduce costs. During the conversation, the consultant will find out and, together with the caller, try to find suitable solutions for using energy more efficiently without compromising comfort at home. The agency provides consultations free of charge. The resident pays the call according to their telephone operator's plan rates, as a regular call to the Telia network.

Practice description

One of such events was a seminar arranged by the Alytus District Heating company. On October 4, 2025, UAB Alytaus šilumos tinklai invited the chairpersons of apartment building communities, administrators, and heating and hot water system maintenance specialists to a seminar on building heating and efficient system maintenance.

The event was attended by speakers from the Lithuanian Energy Institute and the world-leading technology company Danfoss, who shared their experience and insights on solutions for modernizing heat distribution points and hot water systems.

The seminar featured presentations on smart heat point controllers and remote control and monitoring technologies, as well as discussions on the selection and proper operation of hot water heat exchangers. The possibilities for modernizing heating systems were also reviewed and various technical solutions were discussed, assessing their advantages and effectiveness.

A representative of the Lithuanian Energy Institute presented data and calculations revealing changes in energy consumption in buildings before and after renovation. Projects that have already been im-



Source: PNEC

plemented were discussed, the most common mistakes were highlighted, and ways to avoid them in the future were presented.

Representatives of UAB Alytaus šilumos tinklai reminded the audience of simple, everyday energy-saving solutions that can be implemented by both residents and system operators. They also demonstrated specific examples of changes in energy consumption in buildings in the city of Alytus where remote control and monitoring systems have been installed.

The seminar also featured the most modern heating system in the city of Alytus, which was installed by UAB Alytaus šilumos tinklai in cooperation with Danfoss. Based on the size of the facility, it is the largest system of its kind in the Baltic States. It allows the temperature of each room to be regulated remotely and individually, ensuring maximum comfort and energy efficiency.

The participants actively asked questions, which the speakers answered based on both scientific research and practical experience.

The seminar was an excellent opportunity to share knowledge, discuss current issues related to heating systems, and seek new solutions to help the city of Alytus keep pace with the most advanced energy technologies.



Source: PNEC

Benefits

- Raising awareness on available installations improving energy efficiency in buildings.
- Strengthening social knowledge on actions of consumers forming their energy efficient behavior.
- Boosting citizens' confidence.

Challenges

- Only more educated and computer literate part of population are really interested in provided information.
- Citizens still have distrust in offered measures and are not eager to change their behavior.
- The citizens are still not organized and mainly negative towards implementing new solutions.
- Energy providers often make mistakes, which make education and consulting not effective enough. The list of most often mistakes was presented by Lithuanian Energy Agency below.

Most often made mistakes and suggestions on education and consulting: internet; on-line; media; consulting on site; comparative analysis; loan of energy meters; dissemination events and training.

References and additional sources

The mission of Alytaus šilumos tinklai encompasses not only the provision of high-quality heat and hot water to residents and organizations, but also the education of heat consumers on the efficient use of energy. In September 2019, the company signed an agreement with the Ministry of Energy of the Republic of Lithuania and committed to carrying out this activity in various forms and by various means.

- Education and consultation measures implemented short movies on energy efficiency on company website (in Lithuanian):
 - [Efektyvus energijos vartojimas – Alytaus šilumos tinklai](#)
 - [Laidų ciklas "Gyvenk taupiau" – 1 dalis \(general\)](#)
 - [Gyvenk taupiau: šilumos punktai \(sub-stations\)](#)
 - [Gyvenk taupiau: būstų renovacija \(renovation of buildings\)](#)
 - [Gyvenk taupiau: būstų renovacija \(2\) \(renovation of buildings 2\)](#)
 - [Gyvenk taupiau: balansiniai ventiliai \(balance valves\)](#)
 - [Gyvenk taupiau \(6 dalis\) \(heating terms\)](#)
 - [Gyvenk taupiau 2020 12 18 \(renovation in Alytus\)](#)
 - [Gyvenk taupiau 2020 12 28 \(renovation process\)](#)
- Information and program of the seminar, which took place in Alytus (in Lithuanian): [seminaras vartotojų švietimas šiluminės energijos taupymo klausimais \(2021\)](#).

Energy Expert Training

Country: Finland 

Level: Lokal – City of Tampere

Duration: Implemented since 2013

Motivation: Own commitments

Budget: €€ (The budget varies annually depending on the amount of funding allocated to energy counselling)

Methods: Formal training → advice services → OSS information model



Introduction

In Finland, some cities have an energy office that operates on the OSS principle. In Tampere, the OSS (Tampere Energy Agency) is operated by EcoFellows Ltd. (Ekokumppanit Oy), owned by the The City of Tampere, the local Municipal Waste Management Company (Pirkanmaan Jätehuolto Oy) and the local municipal district heating company Tampere Energy Ltd (Tampereen Energia Oy). The Tampere Energy Agency offers advice and expert assistance e.g. to housing companies as well as to owners of single-family houses or residents who are interested in energy matters. The Energy Agency also trains members of housing company boards to become Energy Experts.

Stakeholders engaged

The primary stakeholders involved are the Tampere Energy Agency (EcoFellows Ltd.), organizer of the training, and the members of housing company boards who participate in the training. Key partner in the training has been the local municipal district heating company, Tampere Energy Ltd (Tampereen Energia Oy), which is one of the three owners of EcoFellows Ltd. Other important stakeholders are housing companies, owners of single-family houses, and residents who are interested in energy matters.

Methods and tools

The core method is a formal training program including information e.g. heating systems, electricity and water use in buildings, air conditioning and planning future renovations. This training is facilitated by



Source: EcoFellows Ltd.



Source: [URBACT](#), accessed 18.12.2025.

the Tampere Energy Agency, which acts as an OSS, providing expert assistance and advice.

Practice description

The Tampere Energy Agency actively trains members of housing company boards. The goal of this training is to turn these members into Energy Experts who can act in their own housing companies. The Energy Expert's role is to facilitate discussions, observe, and propose potential improvements to the housing company's energy efficiency. Final decisions regarding which measures to implement are made by the housing company's general meeting and board. This specialized training complements the agency's other services, which include offering guidance and expert help to any housing companies, residents, or owners of single-family homes who are interested in energy issues.

Benefits

- The practice creates a dedicated pool of Energy Experts within housing company boards, equipping them to handle energy matters.
- It provides a mechanism to engage residents of apartment buildings, who are otherwise often not interested in energy issues.
- It counters the perception that energy planning is only for technical experts and that there is no benefit to ordinary people participating.

Challenges

- Lack of interest: Residents, especially in apartment buildings, are often not interested in energy issues, seeing it as a small cost.
- Perceived complexity: It is often believed that network design and operation require high-level expert knowledge.
- Focus elsewhere: While Finns are interested in reducing their carbon footprint, the focus is simple, easy-to-understand choices (like food or mobility), and energy issues for apartment residents do not fall into this category.



Heating Plant of the Future: Public Consultations for Heat Transition

Country: Poland 

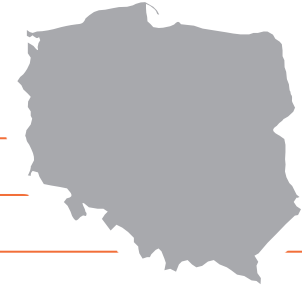
Level: Local – Municipality of Lidzbark Warmiński

Duration: 2021–2022

Motivation: Own commitments, community transparency

Budget: €€

Methods: Public meetings → online consultations → workshops → hotline



Introduction

As part of the innovative **Heating Plant of the Future** project financed by the National Centre for Research and Development (NCBR), the authorities of Municipality of Lidzbark Warmiński launched extensive public consultations and an information campaign about the planned transformation of the city's district heating system based on renewable energy sources (RES) and heat storage technologies.

Stakeholders engaged

- Residents of the city,
- representatives of the municipal authorities,
- local entrepreneurs,
- heat suppliers,
- industry experts,
- and regional media.



Source: [OZE Ciepłownia Przyszłości](#), accessed 9.02.2026.

Key participants included the Municipality of Lidzbark Warmiński (project initiator), technology experts, energy suppliers, and citizens actively involved in shaping the future heating system.

Methods and tools

The engagement strategy combines open dialogue, expert knowledge, and participatory workshops. The main tools included:

- open meetings at the town hall and online sessions;
- World Café-style workshops exploring residents' expectations of the new heating system;
- expert consultations and collection of public feedback through an online platform.

Practice description

Residents were given the opportunity to express their expectations regarding heat supply quality, energy security, and costs. The consultation results directly influenced the technological design and implementation schedule of the project. An open consultation line was established and remains active throughout the entire investment period to ensure ongoing dialogue and transparency.

Benefits

- High public acceptance of the project and increased trust in local authorities.
- Easier acquisition of permits for infrastructure redevelopment.
- Faster resolution of issues arising during project implementation.

Challenges

- Residents' concerns about the initial investment costs.
- The need for intensive communication during the construction phase.



Source: [OZE Ciepłownia Przyszłości](#), accessed 9.02.2026.

Geretsried Geothermal Visitor Center

Country: Germany 

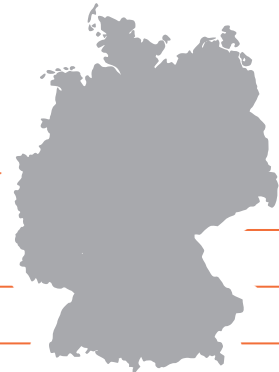
Level: Local – Town of Geretsried

Duration: Implemented since 2023

Motivation: Law & national climate goals

Budget: €€

Methods: Guided tours → on-site visitor centre with expert dialogues → interactive presentations → Q&A sessions → real site visits.



Introduction

The geothermal development in Geretsried is a flagship project introducing the innovative **Eavor-Loop™ closed-loop geothermal technology to Germany**. Instead of using natural underground reservoirs, the system relies on a sealed subsurface circuit that continuously circulates fluid to extract heat. This ensures stable, predictable, and emission-free energy production.

To support public understanding of this new technology and to maintain open communication with residents during drilling and construction, Eavor established an on-site **Visitor Center**. It serves as a space where community members can learn about the project, ask questions, and observe progress directly at the drilling location.



Source: [Eavor](#), accessed 9.02.2026.

Stakeholders engaged

- Eavor Deutschland (project operator) – manages the visitor center, provides expert communication and project updates.
- Technical experts and engineers – directly involved in explaining drilling operations, geothermal technology and safety aspects.
- Local residents and community groups – participate in guided tours, information sessions and Q&A discussions.
- Local authorities and municipal representatives – support project visibility and attend selected briefings on progress and expected local impact.

Context

Geretsried is located in Upper Bavaria, a region with growing demand for clean, local heating solutions and strong political pressure to expand renewable heat sources. Although geothermal energy is not new to Bavaria, the **Eavor-Loop™ system represents a next-generation approach**: it eliminates the typical risks associated with conventional geothermal projects (e.g., reliance on natural permeability, induced seismicity concerns).

Because of this novelty, early and transparent engagement with the public became essential for ensuring trust and acceptance.

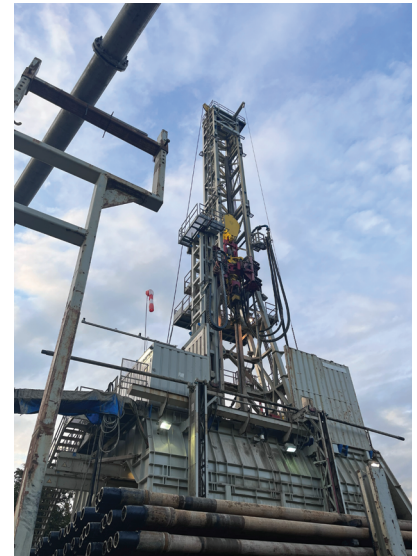
In addition, the project is part of a broader European transition effort – supported by the EU Innovation Fund – to scale up low-carbon heat technologies. This funding context creates expectations for high-quality communication, visibility and public outreach. The establishment of the Visitor Center responds to these needs by creating a structured channel for ongoing information, community contact and educational activities directly at the project site.

Methods and tools

- On-site Visitor Center – dedicated space for structured information, exhibits and explanations of the geothermal system.
- Guided site tours – small groups (max. 15 people) guided by technical staff, enabling direct observation of drilling and project infrastructure.
- Expert briefings and presentations – short technical explanations delivered by engineers and geoscientists in accessible language.
- Interactive educational displays – visual materials illustrating the closed-loop system, drilling stages, and environmental impacts.
- Q&A sessions with residents – open dialogue formats where participants can raise concerns and receive direct answers from specialists.
- Project progress updates – regular on-site communication on drilling milestones, construction phases and expected timelines.
- Safety and environmental information boards – explanations of noise levels, groundwater protection, drilling operations and monitoring.
- Registration-based open days – scheduled public visit slots ensuring organized, safe and transparent access to the site.
- Printed and digital informational materials – brochures, diagrams and simplified descriptions of the technology and project goals.

Practice description

The Geretsried Visitor Center functions as an open communication hub situated directly next to the geothermal drilling site. Its main purpose is to give residents and local stakeholders an opportunity to fol-



Source: PNEC

low the project as it unfolds and to understand how the new closed-loop geothermal system works in practice. Instead of relying solely on online communication, Eavor created a physical space where people can experience the project first-hand, observe ongoing activities and engage in dialogue with project staff.

During organized visits, participants are introduced to the technological concept, the drilling workflow and the long-term energy ambitions for the region. The explanations are delivered in accessible language and supported with visual materials that help illustrate processes occurring underground. A key element of the practice is the direct interaction between visitors and technical experts, which allows the team to address questions, explain safety measures and clarify the environmental implications of each project phase.

The Visitor Center also serves as a platform for transparent updates on construction milestones and overall project progress. As drilling continues, the space is regularly adapted with new information, ensuring that local residents can track developments over time. By combining on-site learning, dialogue and live project monitoring, the initiative strengthens trust, improves understanding of geothermal technologies and supports community acceptance of the project.

Benefits

- Higher acceptance and trust thanks to transparent, hands-on explanations.
- Better understanding of innovative geothermal technology among non-experts.
- Direct engagement between residents and project engineers reduces misinformation and uncertainty.
- Positive visibility of geothermal energy as a clean, local heat source supporting regional climate goals.

Challenges

- Limited scale of outreach due to group-size limits and need for pre-registration.
- High complexity of technology requires expert presence to translate concepts into accessible language.

References and additional sources

- Official project website: [Geretsried Visitor Center – Eavor Deutschland](https://www.geretsried-visitor-center.de/)



Source: PNEC

Net-Zero Hackathon: Co-Creating Waste Heat Solutions

Country: Latvia 

Level: Local – City of Riga

Duration: November–December 2024

Motivation: Policy alignment

Budget: €€

Methods: Hackathon (coopetition format) → workshops → site visits → mentoring → interdisciplinary teamwork → final pitching sessions



Introduction

The BASD with GEN4 to NET0 hackathon was organised in Latvia as an innovation-driven initiative aimed at supporting the transition of urban energy systems towards climate neutrality. The main focus was on identifying practical and scalable solutions for the reuse of waste heat generated at wastewater treatment plants, particularly the Daugavgrīva wastewater treatment facility in Riga.

The hackathon was designed as a "coopetition" process, combining collaboration between diverse stakeholders with competitive team-based solution development. By bringing together students, researchers, engineers and sector professionals, the initiative created a structured environment for developing technically feasible and economically realistic concepts contributing to net-zero goals.



Source: [REA](#), accessed 16.01.2026.

Stakeholders engaged

- **Rīgas ūdens** (municipal water utility) – provided the real-life challenge, operational data and access to infrastructure.
- **Riga Technical University (RTU)** – hosted the event, supported teams with academic expertise, laboratories and mentoring.
- **Rīgas Siltums** (district heating company) – contributed expertise on heat networks and integration potential.
- **Riga Energy Agency** – linked the hackathon outcomes with local energy and climate strategies.
- **Students, researchers and young professionals** – formed interdisciplinary teams developing solution concepts.
- **Industry mentors and technical experts** – guided teams on engineering, feasibility and business aspects.

Context

Latvia, and particularly the city of Riga, is actively seeking pathways to reduce greenhouse gas emissions in line with EU climate targets. Wastewater treatment plants represent an underutilised source of low-temperature waste heat, which can be recovered and integrated into district heating systems or other local energy uses.

Despite the technical potential, such solutions often face institutional, financial and planning barriers. The hackathon addressed this gap by creating a controlled innovation space where stakeholders could jointly explore options without immediate investment pressure. The initiative was also linked to broader European decarbonisation efforts, including next-generation district heating (4th generation DH) and net-zero urban energy concepts.

Methods and tools

- **Hackathon format with multiple stages** – including preparatory workshops, ideation sessions, mentoring rounds and a final pitch event.
- **Real-life case study** – focused on the Daugavgrīva wastewater treatment plant, providing realistic constraints and data.
- **On-site visits** – participants visited the facility to better understand technical conditions and operational challenges.
- **Interdisciplinary teamwork** – teams combined engineering, environmental, economic and policy perspectives.
- **Mentoring and expert consultations** – sector specialists supported teams throughout the process.
- **Final presentations and evaluation** – solutions were presented to a jury of experts and institutional representatives.



Image: Wikimedia Commons

Practice description

The BASD with GEN4 to NET0 hackathon was implemented as a multi-week innovation process rather than a single short event. Participants worked in teams to develop concepts for capturing, upgrading and utilising waste heat from wastewater treatment processes. The focus was placed on **practical applicability**, system integration and contribution to climate neutrality goals.

Throughout the hackathon, teams refined their ideas through iterative feedback from mentors and stakeholders. The solutions explored included integration with district heating networks, decentralised heat use, and innovative system configurations. The final event, held at Riga Technical University, showcased five developed project concepts, each addressing technical feasibility, environmental impact and potential scalability.

By grounding innovation in a concrete infrastructure case and fostering close cooperation between academia, utilities and city actors, the hackathon functioned as a bridge between theoretical knowledge and real-world implementation pathways

Benefits

- Strengthened cooperation between municipal utilities, academia and energy stakeholders.
- Increased awareness of waste heat recovery potential in urban infrastructure.
- Generation of implementable concepts aligned with real technical and regulatory conditions.
- Capacity building among participants in climate-neutral energy system design.
- Support for innovation-driven approaches to district heating decarbonisation.

Challenges

- Limited time frame for deep technical modelling and economic validation.
- High complexity of integrating waste heat into existing infrastructure.
- Transition from conceptual solutions to actual implementation requires further funding and institutional commitment.
- Engagement mainly attracted technically skilled participants, with limited direct citizen involvement.



Source: [REA](#), accessed 16.01.2026.

References and additional sources

- [Riga City climate and energy policy \(Riga Sustainable Energy and Climate Action Plan – SECAP\)](#)
- [Riga Energy Agency – city-level energy transition and district heating decarbonisation](#)
- [Riga Technical University \(RTU\) – official BASD with GEN4 to NET0 hackathon summary](#)
- [Riga Technical University \(RTU\) – hackathon finale event page.](#)
- [Rigas ūdens – climate neutrality and wastewater heat recovery context](#)
- [Riga Energy Agency – hackathon workshops linked to district heating and Enable DHC project](#)



Source: [SMARTeeSTORY](#), accessed 9.02.2026.

Open Housing Cooperative: Dialogue on District Heating

Country: Poland 

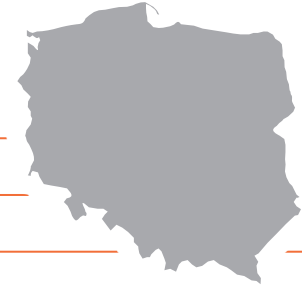
Level: Lokal – City of Warsaw

Duration: Implementation completed before 2025

Motivation: Cooperative's & residents' needs

Budget: €

Methods: Workshops → surveys → online tools → joint study visits



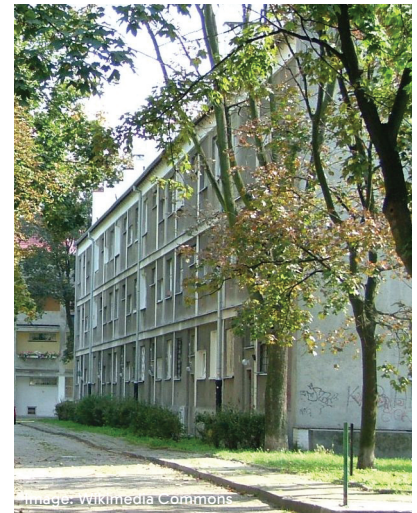
Introduction

In one of Warsaw's housing cooperatives (Open Housing Cooperative "Osiedle Młodych"), a series of open educational and consultation meetings were implemented for residents. The initiative aimed to involve them in the planning of the building heating system modernization and in consultations regarding district heat tariffs.

Stakeholders engaged

Key participants included:

- residents,
 - the cooperative management board,
 - the local district heat supplier,
 - energy efficiency experts,
 - city representatives,
 - and social organizations,
- actively participating in decision-making processes.



Methods and tools

The engagement process combines direct meetings, digital communication, and participatory decision-making mechanisms. The main tools included:

- information meetings and workshops;
- online surveys and voting on modernization technology choices and preferred billing methods;
- study visits to modernized housing estates to exchange experiences;
- continuous communication with residents via the cooperative's newsletter and mobile app.

Practice description

Residents gained real influence over the choice of thermal modernization methods and the optimization of heating system settings. They also participated in negotiations with the heat supplier, securing preferential tariff conditions through collective representation. Some meetings were streamed online, enabling participation for less mobile residents.

Benefits

- Increased acceptance of modernization projects and energy-saving solutions.
- Reduced number of complaints and disputes related to heat billing.
- Improved cooperation among residents, the cooperative's management, and the heat supplier.

Challenges

- Difficulties in engaging older residents, addressed through individual consultations.
- Language barriers among Ukrainian residents, mitigated with translator support.

Project Group Heating Plan: Collaboration for LHP

Country: Germany 

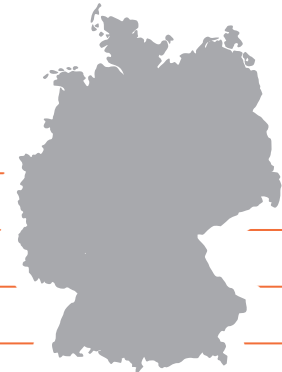
Level: Local – City of Rostock

Duration: 2020-2022

Motivation: Legal obligation

Budget: €€

Methods: Advisory board → public forums → questionnaires → expert panels



Introduction

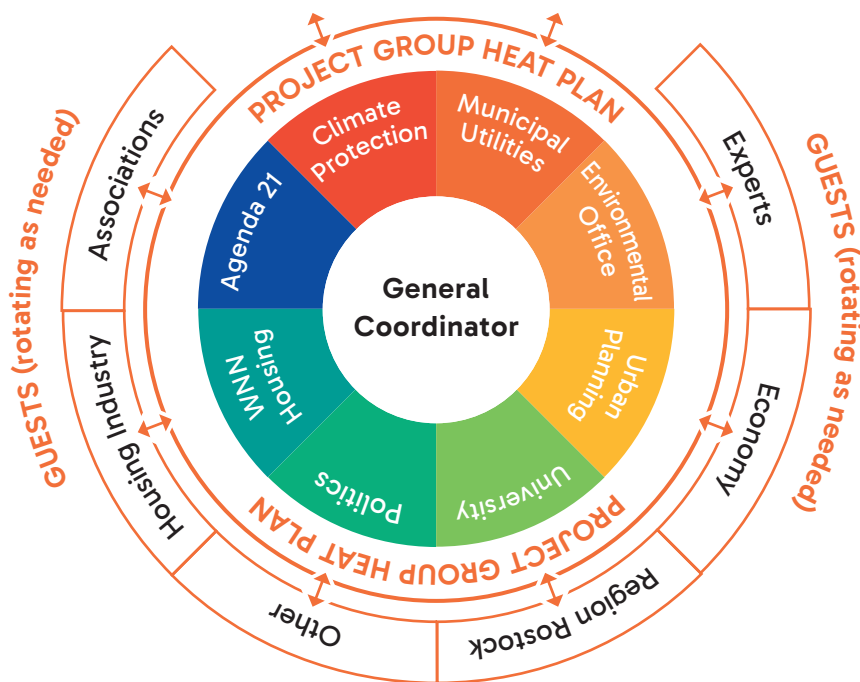
The overarching process of developing the heating plan was accompanied by the advisory board **Project Group Heating Plan**. The members of the Project Group Heating Plan represented the key stakeholder groups and interest representatives in the heating sector. This central and overarching body supported and guided the heating plan process through critically constructive discussions, inquiries, and suggestions from an interdisciplinary, holistic perspective.

The city of Rostock's approach to their LHP (incl. stakeholder involvement and participation) has been part of the blueprint for the suggestions / guidelines now provided by the national Competence Center for Municipal Heat Transition (KWW) (self-disclosure by Rostock's local government).



Source: [City of Rostock](#), accessed 9.02.2026.

Project Group Heating Plan. Work structure



Based on: DUH + AEE–Online-Seminar "Kommunale Wärmeplanung–Recht und Praxis" Wärmeplan Rostock 2035, accessed 15.01.2025.

Stakeholders engaged

The Project Group Heating Plan included representatives from Rostock's municipal utilities, the climate protection control center, local politics, the University of Rostock, the housing industry, the Agenda21 Council and city administration offices:

- ➔ Rostocker Bürgerschaft – Ausschuss für Stadt- und Regionalentwicklung, Umwelt und Ordnung (Rostock City Council – Committee for Urban and Regional Development, Environment, and Public Order);
- ➔ Agenda21-Rat für nachhaltige Stadtentwicklung – AK Energiewende (Agenda21 Council for Sustainable Urban Development – Working Group on Energy Transition);
- ➔ VNW – Verband norddeutscher Wohnungsunternehmen (Association of North German Housing Companies);
- ➔ Energielenker projects GmbH;
- ➔ Universität Rostock – Lehrstuhl für Technische Thermodynamik (University of Rostock – Chair of Technical Thermodynamics);
- ➔ Stadtwerke Rostock AG (Rostock Municipal Utilities);
- ➔ Amt für Stadtentwicklung, Stadtplanung und Wirtschaft (Office for Urban Development, Urban Planning, and Economic Affairs);

- Amt für Umwelt- und Klimaschutz, Immissions- und Klimaschutz / Umweltplanung (Office for Environmental and Climate Protection, Emissions and Climate Protection / Environmental Planning);
- Amt für Umwelt- und Klimaschutz, Klimaschutzleitstelle (Office for Environmental and Climate Protection, Climate Protection Coordination Unit).

Context

City of Rostock (Klimaschutzleitstelle – Climate protection control center) – aim to include the public in local heat planning as early on as possible to ensure a high level of acceptance for the project from the beginning and achieve the highest possible consensus among all stakeholders.

Involvement and cooperation of stakeholders to recognize potential together, formulate solutions together, clarify responsibilities and create commitment.

Rostock set itself ambitious goals for the LHP process: a high level of public participation, comprehensive information, transparency, early recognition of obstacles and consensus building. These factors should increase the population's willingness to implement the plan.

Methods and tools

- Monthly meetings of the Project Group Heating Plan (core group + additional 'guests' from different groups, organizations etc. depending on the topics discussed).
- Development of a questionnaire for citizens at the beginning of the project → 'information questionnaire' with information on key aspects of the heating transition in Rostock and to obtain citizens' opinions, suggestions, comments.
- Four public forums to regularly inform citizens about the objectives, work status and (interim) results of the heat plan (50-100 participants per meeting):
 - kick-off forum with the constitution of the Heat Plan project group,
 - two interim report forums,
 - a final forum with subsequent discussions in small groups.
- In total, over 100 meetings were held with technical working groups, expert advisory boards, and the Project Group Heating Plan.
- In addition, around 50 internal consultations took place between the Climate Protection Coordination Unit and the General Coordinator.
- Finally, in addition to the citizen forums, several presentations were given to municipal committees and bodies of the City Council.



Image: Wikimedia Commons

The methods and tools used (e.g. seminars, presentations) roughly comply with the legal requirements for stakeholder participation and engagement. The practices used in the city of Rostock have influenced the existing legal requirements and the suggestions / guidelines provided by the national Competence Center for Municipal Heat Transition (KWW).

Benefits

- Project group was able to resolve conflict issues quietly and without public controversy.
- Misunderstandings about the heat planning can be addressed early on.
- A transformation plan has been developed by the city and will serve as a blueprint for the energy company (75% city-owned).

Challenges

- Due to a shift in political majorities, former opponents of the heat planning – who were previously in opposition – are now in power. They do not welcome the re-establishment of the advisory board, especially with the proposed inclusion of civil society representatives.

References and additional sources

- [Local Heat Plan of the City of Rostock](#)
- Press release – [New Project Group Heating Plan Rostock 2050 supports energy transition to renewable heat sources](#)
- AEE + DUH online seminar "Municipal heat planning – law and practice" – ["Heat Plan Rostock 2035"](#) – Rostock Senate Department for Infrastructure, Environment and Construction
- Municipal heat planning webinar from the Competence Center for the Municipal Heat Transition: [A practical look at Rostock](#)

Additional Sources:

- German Environment Agency: [Social support for a successful heating transition: Handbook on social participation in the municipal heating transition](#)
- KWW Guideline: [Stakeholder participation in municipal heat planning](#)
- German Environment Agency: [Overview paper on possible formats, to communicate and activate the 2030 Agenda \(SDGs\) in municipalities](#)

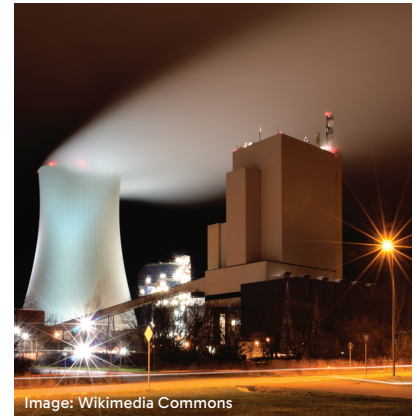


Image: Wikimedia Commons

RepowerRegions: Cross-Regional Cooperation

Country: Multi-country | European Union 

Level: International & regional cooperation

Duration: 2024-2027

Motivation: European climate goals & skills gap

Budget: €€€

Methods: Regional analysis → curricula development → online training and alliances

Introduction

The Repower Regions project is an Erasmus+ Alliance for Innovation initiative addressing a key barrier in Europe's energy transition: the **lack of skilled professionals in sustainable heating, ventilation, air conditioning (HVAC) and construction sectors** needed to deliver decarbonized energy solutions. It brings together education providers, researchers, industry partners and public organizations from across Europe **to improve training, close skills gaps, and build a workforce equipped for the clean energy future.**

This project focuses on delivering modernised education and practical training related to low-emission heating and cooling systems, digital tools, and green competencies – directly linking REPowerEU goals with regional and local implementation.



Stakeholders engaged

- Project partners: higher education institutions, research centers, training organizations and industry partners from multiple EU countries.
- Educators and trainers: universities, vocational schools and continuous training providers updating and delivering new materials.
- HVAC and construction professionals: mid-career workers upskilling via online courses and microcredentials.
- Regional authorities & municipalities: supporting local skills alliances and connecting education with regional labour needs.
- Industry & finance stakeholders: contributing to training design and helping align skills with market demand.



Source: PNEC

Context

Heating and cooling account for a substantial share of energy use and greenhouse gas emissions in Europe. However, many professionals in the HVAC and construction sectors lack **up-to-date knowledge and digital skills** needed to design, install, and maintain **efficient, low-carbon systems**.

In response, RepowerRegions was launched in March 2025 with a consortium of partners from multiple EU countries and regions. Its aim is to build capacity in **higher education (HE), vocational education (VET) and continuous vocational training (C-VET)** by developing new learning materials, curricula, courses and regional cooperation structures. This effort aligns with the EU's broader strategy to decarbonise buildings under the REPowerEU Plan, helping to reduce dependence on fossil fuels while boosting local skills and employment opportunities.

Methods and tools

- Regional Landscape Analysis Report – identifies skills gaps, labour market trends and policy drivers in sustainable heating and cooling.
- Curricula & Educator Guides – tailored educational frameworks for HE, VET and C-VET sectors.
- Online diploma-style course – flexible upskilling course for HVAC and construction professionals.
- Open Educational Resources (OERs) – digital teaching materials, videos, templates and practical resources.
- Microcredential framework – pathways for recognizing short skills-focused learning.
- Toolkit for Regional Skills Alliances – practical guidance on setting up intersectoral collaborations.
- Stakeholder engagement events – workshops and alliance meetings linking educators, industry and local authorities.

Practice description

The Repower Regions project addresses the critical shortage of skilled professionals in sustainable heating, ventilation, air conditioning (HVAC), and low-carbon building technologies across Europe. It brings together universities, vocational training institutions, research centers, industry partners and regional authorities to develop coordinated education and upskilling programs. The practice focuses on creating **modern curricula, online courses, open educational resources, and microcredentials** tailored to the needs of professionals who are implementing energy-efficient and decarbonized building solutions.



Source: [RepowerRegions](https://www.repowerregions.eu), accessed 9.02.2026.

Through workshops, stakeholder meetings and regional alliances, the project ensures that the learning materials reflect real-world industry requirements while also supporting the strategic goals of the REPowerEU plan. Professionals can access training flexibly, acquire practical skills, and apply them directly in their workplaces, while educators and trainers receive guidance on teaching modern low-carbon technologies effectively. By combining curriculum development, training delivery, and regional cooperation, Repower Regions strengthens workforce capacity, reduces skills gaps, and fosters collaboration between education, industry, and public authorities across multiple European regions.

Benefits

- Bridging skills gaps in sustainable HVAC and construction training across Europe.
- Supporting educators with modern curricula and teaching methods tailored to clean energy technologies.
- Upskilling workforce via accessible online training and microcredentials.
- Regional cooperation between education, public and private sectors strengthens local capacity and investment.
- Alignment with EU goals such as REPowerEU and the European Green Deal by enabling faster deployment of low-carbon heating and cooling solutions.

Challenges

- Coordinating across regions with different education systems and labour markets.
- Ensuring uptake of new training by professionals busy with existing work commitments.
- Keeping content relevant as technologies and regulations evolve rapidly.

References and additional sources

- Official Repower Regions project website: <https://repowerregions.eu/>
- Repower Regions Resources & Publications: <https://repowerregions.eu/resources/>
- REHVA project overview page: <https://www.rehva.eu/eu-projects/project/repower-regions>
- PNEC – Association of Municipalities Polish Network "Energie Cités", project page: <https://www.pnec.org.pl/index.php/pl/repower-regions>



Source: PNEC

Sharing Information and Educating Online

Country: Lithuania



Level: National

Duration: Implemented since the early 2000s

Motivation: Legal obligation

Budget: €

Methods: Websites → Q&A portals → lectures → media → online education



Introduction

The use of Renewable energy sources (RES) and energy efficiency (EE) in consumption, as well as environmental and sustainability issues are of key importance in Lithuania due to independence and the safety of energy supply. Thus, educating society and disseminating information on these issues as well as related EU and national political decisions are of key importance.

Nearly all District Heating (DH) companies in Lithuania have their websites and a lot of information inside is dedicated to their consumers – citizens, housing associations and services maintaining heating installations inside buildings. Some of those companies also have Questions & Answers (Q & A) sections, where stakeholders can send their questions and receive qualified responses.

On planning issues, there is information on the websites of respective municipalities. Besides, there are a lot of websites for elderly citizens, children and other groups of population on energy issues as well.



Source: [Kaunastau](#), accessed 16.01.2026.

Stakeholders engaged

Citizens of all ages including elders, children, residents of multi-apartment buildings, housing associations, service providers and the wide public are engaged.

Besides, a big volume of information on heating issues for stakeholders is provided by one of the key stakeholders – Lithuanian District Heating Association. This is one of the most interested stakeholders, that takes active role in defining the main keystones and formation of district heating policy in Lithuania.

Context

Heat Law of the Republic of Lithuania in Article 22 on Information of consumers states the requirement to inform consumers on a number of issues, such as:

- the services provided, the conditions for the provision of the services, the prices of the services, the prices and conditions for connection to the systems, and the envisaged changes to the terms and conditions of the contracts;
- the established base level of heat production and/or supply income, the fixed part of the base level of heat production and/or supply income, and the variable part of the base level of heat production and/or supply income, as well as the hot water price components;
- inform consumers, municipal authorities, and the Council about the calculated heat and hot water prices by the 25th of the current month;
- annual financial and operational indicators, operating costs, system operation, modernization, development, investments of heat and/or hot water suppliers and independent heat producers shall be public, the base level of heat income, the fixed part of the level of heat income and the variable part of the level of heat income, the structure of prices and tariffs, the conditions of provision of services shall be public;
- the information of the building heating and hot water system maintainer / operator on its revenues, costs, system operation, prices and tariffs, their structure, conditions of service provision, as well as the quarterly and annual financial-balance-sheet indicators, investment amounts, data on investors, number of employees of the building heating and hot water system maintainer / operator shall be made public;
- the information on the energy efficiency of the heat supply system and the percentage of renewable energy in the heat supply systems shall be made publicly available once a year (for the previous calendar year) by 1 May on the website of the heat suppliers, and, if the heat consumers wish, additionally indicated in bills / payment notices provided to consumers.

This makes DH companies, municipalities, energy producers and suppliers provide a lot of information as well as answer questions arising to their consumers and other interested parties.

Besides, a lot of national institutions, such as Ministry of Energy, Lithuanian Energy Agency, Lithuanian District Heating Association, large energy producers and suppliers see their role in educating society in terms of efficient and sustainable consumption, which is one of the goals of the National Energy Strategy.



Source: [Ignitis Renewables](#), accessed 9.02.2026.

Methods and tools

Every DH company has pages on their websites, dedicated to citizens, mainly consumers as well as businesses related to all interesting topics, such as heat supply, hot water supply, small-scale renovation, heat consumption in buildings, assessment of heat substations, renovation of substations, heat and hot water prices, hydraulic tests, heat distribution methods, Q&A section. This is also financial situation for possible investors and other information for businesses.

Besides, information for citizens is also provided at the websites and lectures for various groups of citizens, like The Third Age University, Faculty of Technologies, websites for seniors, Eco websites, and a big number of others.

The largest energy producer, Ignitis has initiated an educational program for children and teachers to include energy efficiency issues into schools' curricula.

There is also a lot of related information available on the websites of the Ministry of Energy, National Energy Agency, National District Heating Association, etc.

Practice description

The topics of information are selected according to their importance during the season, ongoing support schemes, and actual possibilities for citizens. For users of district heating this may be information on the possibilities and support for renovation of buildings, heat substations, compensations due to growth of prices for low-income resi-

dents, etc. There is information on improvement of energy efficiency and possibilities to reduce consumption.

Besides, there is a rather big amount of information on the use of RES and EE in consumption, as well as environmental and sustainability issues.

Information is also available on the changes in legislation related to consumers (e.g. recent increase of VAT for district heating from 9 to 21%).

The Third Age University had lectures on the topic of energy saving and sustainability. Education on responsible energy consumption was initiated for Teachers together with methodological information on specific education. Educating children is important as this has also an impact on their parents and even grandparents and their energy behavior and understanding.



Source: [Ignitis Group](#), accessed 16.01.2026.

Benefits

- Raising awareness and knowledge about energy sector development, prices, energy consumption and efficiency.
- Strengthening social resilience during changes in energy sector and crises.
- Boosting citizens' confidence.

Challenges

- Only more educated and computer literate part of population make use of provided information.
- The citizens are still not organized and mainly negative towards implementing new solutions.
- Citizens still more rely on individual and not community solutions.

References and additional sources

The best practice examples (all information is in Lithuanian):

- DH companies:
 - [District Heating Shrouded in Myths – what is worth knowing](#);
 - [Efficient Use of Heat](#);
 - [Most frequent Q & A](#);
 - [Questions and answers](#);
 - [Frequently asked questions](#);
 - [Energy efficiency issues](#).
- Lithuanian DH association:
 - [Information for citizens is also provided at the websites and lectures for various groups of citizens, like The Third Age University, Faculty of Technologies](#).

- Other websites for seniors:
 - [How to save heat at home;](#)
 - [Heat saving solutions for seniors.](#)
- Information for children by the largest Energy company Ignitis:
 - [Education on responsible energy consumption.](#) The book for the smallest consumers can be [downloaded;](#)
 - [Courses for teachers to start Energy Efficiency education program;](#)
 - [Example of the program for 5-graders.](#)
- Information for wider group of consumers:
 - [Eco voice, and a big number of others;](#)
 - [Energy service companies – Heat saving tips – YouTube.](#)
- Lithuanian Energy Agency:
 - [The block information for promotion and dissemination or in English: Public Institution Lithuanian Energy Agency – Lithuanian Energy Agency.](#)
- Lithuanian DH Association info for population and stakeholders:
 - [Changes in legislation: Changed due to RED; changes due to EED; Requirement for more energy from RES; New solutions for cleaner energy sector;](#)
 - [New lightboard on environment pollution situation.](#)

Together for Climate Neutrality 2030

Country: Sweden 

Level: Local – Municipality of Helsingborg & other municipalities

Duration: Implemented since 2021

Motivation: National & municipal climate goals

Budget: €€€

Methods: Climate dialogues → company agreements → grants → youth campaigns



Introduction

The local administration of Helsingborg – a municipality in southern Sweden is actively driving a campaign to reach the goal of climate neutrality by 2030 – that is, to reach a level where the city's emissions are minimal while the quality of life is high. To achieve this, joint, coordinated efforts are required from residents, companies, associations, and the city as actors in a broad transition. The campaign consists of a few initiatives.



Source: The municipality of Helsingborg.

"The Helsingborg Declaration is an initiative that means that the city, together with actors from the entire logistics chain, aims to make the Helsingborg region Europe's most fast-moving and sustainable logistics hub."

Stakeholders engaged

- City of Helsingborg: The municipality's central role is to drive and enable the climate transition through the exercise of authority, planning, purchasing, communication and service delivery.
- Business and companies: The municipality actively cooperates with companies via the Climate Agreement in Helsingborg, where over 100 companies and associations have signed and committed to reducing their emissions.
- Climate Agreement in Helsingborg–Through the Helsingborg Declaration, actors from the entire logistics system–politics, academia and business–come together to make the Helsingborg region Europe's most fast-moving and sustainable logistics hub.
- Entrepreneurs Helsingborg Associations and civil society–Associations are covered by the climate work via the Climate Agreement and participate in dialogues and networks.
- Residents–Through extensive climate dialogues in 2024, the municipality has engaged residents in open conversations and in-depth workshops on how they can contribute in various everyday areas (travel, consumption, urban planning, etc.).
- Viable Cities Academy and research actors–Universities and research institutions participate in collaborations and networks, as evidenced by, among other things, the climate and energy plan and the collaboration on Climate Agreements and innovation programs.
- Authorities and public programs–Helsingborg is part of the national innovation program Viable Cities, which also includes the Swedish Transport Administration, the Swedish Energy Agency, Vinnova, the Swedish Agency for Economic and Regional Growth and Economic Development and Formas.
- The city has signed the Climate Agreement 2030 together with 23 other Swedish municipalities and six authorities as part of Viable Cities.
- Public operations and energy management–Municipally owned companies such as Öresundskraft (energy company) and NSR (waste management) contribute with practical solutions: biochar plants, CCS plans, climate investments, etc.
- The Port of Helsingborg is also part of the transition through electrification and logistics improvements.
- Youth and schools–Through the pilot project "Powerful climate communication", young people in upper secondary schools are involved in communicating the city's climate goals and acting as climate ambassadors.



Image: Wikimedia Commons

Practice description

Climate dialogues in 2024: 24 dialogue sessions were held with residents to gather ideas and understand what is needed for everyone to be able to contribute to the climate transition, e.g. questions about travel habits, consumption, urban planning, obstacles and opportunities were in focus.

Climate agreement for companies and associations: Since its launch in 2021, the number of signatories has grown from 25 to over 100 in 2024. Signing up for the Climate Agreement is free of charge and means that businesses commit to quickly reducing their emissions, while the city offers networks and resources for transition.

Green Community Building: Support through the Climate Fund, where private individuals and non-profit associations can apply for up to SEK 100 000 for climate projects in Helsingborg. The scope is broad – from carpooling campaigns, sustainability strategies for associations, climate-inspired events to projects that strengthen civil society engagement.

Benefits

- Local cooperation and networking Initiatives such as the Climate Agreement, the Climate Fund and the Helsingborg Innovation District encourage companies, residents and associations to jointly contribute to the transition. The many sub-campaigns offer a wide number and type of stakeholders.
- The strategies and roadmaps are clear and understandable for individuals. The municipal Climate and Energy Plan (2025-2030) provides a structured way forward with prioritized areas of action and continuous follow-up.
- Practical climate action in the urban environment is visible in the streets. Examples such as electric machines in the harbor, tree planting, and CCS technology (fossil-free DH) show that the transition is concrete and already underway.

Challenges

- The campaign has limited influence over consumption-based and global emissions. The city mainly affects emissions within the municipality, but a large part of the climate impact occurs through international consumption and travel. These are not included in the climate goals, which makes the whole difficult to manage.

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Warm to See You

Country: Poland 

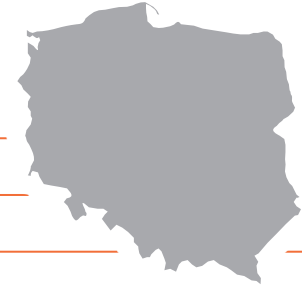
Level: Lokal – City of Włocławek

Duration: 2022

Motivation: Municipality's & community's needs

Budget: €

Methods: Citizen café → workshops → cultural events → expert consultations



Introduction

A citizen café created by the Municipality of Włocławek in 2022 contributed to building community and spreading knowledge about energy efficiency, renewables and energy management. The café has become a venue for educational events, workshops and meetings – combining community building with the realization of the city's energy goals.



Source: [City of Włocławek](#), accessed 9.02.2026.

Stakeholders engaged

Citizens, local non-governmental organisations, and local authorities. Key participants included the City of Włocławek, the Ładowarka Foundation – operator of the citizen café, experts (such as lawyers, psychologists, and energy advisors), local residents, NGOs and community leaders from the area.

Context

In 2022, in the face of soaring energy prices caused by the outbreak of war in Ukraine and rising inflation, the **Warm to See You** programme (Ciepło Cię Widzieć) was initiated to educate citizens on energy saving and efficient heat management, provide psychological and legal support, and foster community integration through cultural events and workshops.

Methods and tools

The strategy for engaging citizens and local organisations combined free and inclusive cultural events with educational workshops on urban energy issues. It also included an energy advice desk for residents and targeted training sessions to address current community needs. Launched in 2022 during the energy crisis, the Warm to See You project benefited from its attractive venue and diverse programme, successfully engaging a broad audience – from children to seniors, as well as representatives of nearby local governments and NGOs.

Practice description

Warm to See You was a social initiative launched in Włocławek in response to the 2022 energy crisis and the resulting sharp rise in heating costs. The project was aimed at supporting residents, local organisations, and officials through educational, social, and cultural activities focused on improving energy efficiency and strengthening community resilience. Around 50 events were held as part of the project, including:

- educational workshops on energy efficiency and renewable energy,
- expert sessions on energy-efficient appliances, sustainable practices and funding conditions for changing heat-sources in homes,
- consultations with specialists,
- sewing, cooking, and children's workshops,
- psychological and legal support sessions.

The events and activities took place at **Śródmieście Cafe**, which served as a warm island – a place where residents could stay warm, drink hot tea, and receive help.



WŁOCŁAWEK

Miasto dobrego klimatu



The Warm to See You programme kicked off with a workshop for mayors and other local authorities' representatives from Włocławek and the surrounding area, strengthening their competences in terms of cost optimization, energy transition and proper communication.

Benefits

- Strengthening social resilience during energy crises.
- Raising awareness and knowledge about energy efficiency.
- Fostering community engagement and cooperation.

Challenges

- Limited or unstable funding for social-energy initiatives.
- Insufficient integration of energy policy with social policy at the local level.
- Low awareness or engagement in less-organised communities.

References and additional sources

- [Recommendations for cities and municipalities: Warm to See You \(publication in Polish\)](#)
- [Municipal environmental campaigns as a key to activating local communities – example of the city of Włocławek – Sebastian Górka \(Plenipotentiary of the Mayor of Włocławek for Energy and Climate Issues\) \(presentation in Polish\)](#)



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