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Municipal Heat Planning – Shaping the Local Heat Future

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The Municipal Heat Plan as a Strategic Steering Instrument

Rising energy prices, geopolitical uncertainties, and the obligation to achieve climate-neutral energy supply are increasingly placing municipalities under strategic pressure. At the same time, the urgency to secure long-term heat supply and make the building stock climate-resilient is growing. A key instrument in this context is *municipal heat planning*. It provides a methodological foundation to systematically assess energy demand, existing infrastructure, and the potential of renewable heat sources, and to derive a strategic development pathway for the local heat supply.

Within the flagship project *"Fossil Phase Out – Strategic and Holistic Planning of District Heating Networks,"* AEE INTEC has developed a practice-oriented guideline to support municipalities and regions in implementation. The approach combines legal and spatial planning foundations with concrete methodological steps, demonstrating how heat planning can be established as an integral component of spatial energy planning.

The central message is clear: heat planning is not a one-off report, but a continuous process for the systematic transformation of the local heat sector – delivering immediate benefits in terms of security of supply, cost stability, and regional value creation.

Why Heat Planning Is Indispensable

With the new Energy Efficiency Directive (EED III, 2023/1791), heat planning is increasingly becoming a mandatory municipal responsibility. Cities with more than 45,000 inhabitants will be required to prepare heating and cooling plans (Art. 25), and district heating operators must decarbonise their networks by 2050 (Art. 26). In addition, the Renewable Energy Directive (RED III, 2023/2413) and the Energy Performance of Buildings Directive (EPBD, 2024/1275) establish binding targets for renewable energy expansion and building renovation.

This creates a clear mandate for action: cities and municipalities must transition their heat infrastructure toward renewable sources, renovate buildings, and develop long-term decarbonisation pathways. Municipal heat planning provides the methodological and organisational foundation for achieving these objectives.

A municipal heat plan illustrates the level of local energy demand, the existing infrastructure, and the renewable potentials that can be harnessed. The added value is multifaceted:

- **Climate Protection:** A systematic transition to renewable heat sources and energy efficiency measures sustainably reduces greenhouse gas emissions.

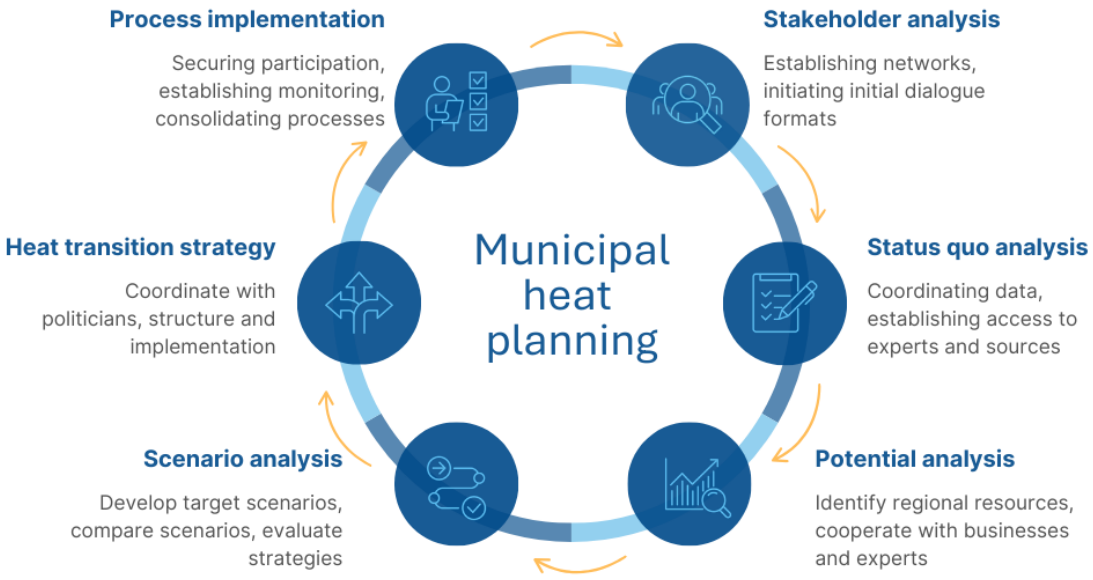
- **Security of Supply:** The utilisation of local resources – from biomass and ambient heat to waste heat and solar thermal energy – reduces dependence on imports.
- **Planning Reliability:** Municipalities and energy suppliers gain a sound decision-making basis for long-term investments.
- **Cost Efficiency:** Coordinated planning processes avoid duplication and associated additional costs.
- **Regional Value Creation:** Local crafts, utilities, and businesses benefit from increasing demand for the planning, construction, and operation of renewable heat systems.

Heat planning thus becomes a central component of modern municipal infrastructure development, comparable to spatial or transport planning.

The Path Toward a Municipal Heat Plan

Municipal heat planning follows a clearly structured, multi-stage process integrating technical analyses, spatial assessments, and political decision-making. The guideline describes six sequential steps (see figure).

Its modular structure allows for gradual implementation, even for smaller municipalities with limited resources. Already the preparation of a baseline and potential analysis enhances transparency and opens up concrete fields of action.



Municipal heat planning follows a structured, multi-stage methodology. Source: AEE INTEC / Canva

1. **Stakeholder analysis:** Identify and involve relevant actors – political representatives, technical departments, energy suppliers, businesses, and citizens.
2. **Status quo analysis:** Record buildings, energy infrastructure, and consumption data; identify key focus areas and savings potentials.
3. **Potential analysis:** Identify and systematically assess available renewable sources (biomass, solar thermal energy, waste heat, ambient heat).
4. **Scenario analysis and target visions:** Develop realistic development pathways and future scenarios, taking into account technical, economic, and social aspects.
5. **Heat transition strategy:** Define measures, responsibilities, financing structures, and monitoring mechanisms.
6. **Process implementation:** Embed the process institutionally and integrate it into existing administrative and planning structures.

Practical Example: Gleisdorf

The municipality of Gleisdorf demonstrates how such a process can be implemented in practice. Building on several initiatives – including the sectoral energy concept as part of the local development plan, the district heating expansion strategy of the municipal utility, the research project GEL S/E/P[1], and the Climate Action Plan[2] – a comprehensive spatial dataset on buildings, energy consumption, and local heat potentials was established.

Based on this foundation, scenarios and target visions for phasing out fossil fuels and expanding renewable district heating networks by 2030 and 2040 were developed. The next step involves systematically consolidating and refining these results into a municipal heat plan in accordance with the guideline developed within the *Fossil Phase Out* project.

Key elements include:

- **Political Anchoring:** The municipal council adopted binding climate targets and systematically assesses decisions for their climate relevance.
- **Data-Driven Planning:** GIS data and the regional heat atlas1 enabled precise spatial analyses as a basis for strategic decisions.
- **Integrated Governance:** Close cooperation between administration, municipal utilities, and research institutions ensures consistency between climate strategy, spatial energy planning, and district heating expansion.
- **Monitoring:** A designated climate officer oversees implementation; regular evaluations in interdisciplinary committees safeguard progress and quality.

Gleisdorf illustrates that municipal heat planning is not limited to large cities. Medium-sized municipalities can also develop ambitious yet realistic heat transition strategies through systematic procedures and regional cooperation. Particularly relevant is the close alignment between municipal heat planning and the district heating transformation planning of the municipal utility. Both processes interact and jointly form the foundation of a future-proof heat supply system.

Success Factors and Outlook

Experience from research and practice highlights key success factors for effective heat planning:

- **Early Stakeholder Engagement:** Transparency and participation enhance acceptance and quality.
- **Interdisciplinary Cooperation:** Energy planning, spatial planning, construction, and administration must act in coordination.
- **Political Commitment:** A formal municipal council resolution creates binding commitment.
- **Use of Data Infrastructure:** Spatial tools and registers such as energy atlases and digital mapping platforms provide valuable foundations and reduce effort.
- **Implementation of Quick Wins:** Visible early successes strengthen trust and motivation.
- **Institutionalisation of Processes:** Heat planning is a continuous learning and governance process.

With increasing legal obligations, heat planning is rapidly gaining importance in Austria. Municipalities that begin early can efficiently utilise funding instruments, build expertise, and strengthen their position within the regional energy system.

Conclusion: The Local Heat Transition Begins at the Municipal Level

Municipal heat planning is a key instrument of the energy transition at the local level. It combines technical analysis with strategic governance and enables municipalities to actively shape their energy future. Those who act today lay the foundation for a secure, renewable, and economically viable heat supply for tomorrow.

The guideline developed by AEE INTEC provides clear recommendations and practical guidance – for cities and municipalities as well as for climate and energy model region managers, planners, and energy suppliers. It is available online free of charge.

[1] Kerebel C., Geier S., Sakulin S., Schardinger I., Standl C., Mauthner F., Der digitale ENERGIEAtlas für die Räumliche Energieplanung, „nachhaltige technologien“ issue 02/2024, p. 27–29, publisher AEE INTEC, Gleisdorf 2024

[2] Mauthner F., Höfler R., Fink C., Ein Plan für den Klimaschutz: Die Stadtgemeinde Gleisdorf legt Ziele und Maßnahmen fest, „nachhaltige technologien“ issue 02/2023, p. 9–12, publisher AEE INTEC, Gleisdorf 2023

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Further information and links in the e-paper

Article: https://www.aee-intec.at/zeitung/nachhaltige_technologien-4-2025/17/

Project link (AEE INTEC): https://www.aee-intec.at/project/fossil-phase-out-strategische-und-ganzheitliche-planung-von-waermenetzen/

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Sources and further information

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