Best Practice #5: Handbook to prepare Energy Use Plan

Name:	Handbook to prepare Energy Use Plan
Geography:	Germany, Bavaria, Berchtesgadener Land District
Organization interviewed:	German NSG group / Guidehouse / DENA
Organization interviewing:	Trinomics
Website:	Energienutzungsplan | Energie-Atlas Bayern
Category:	Planning / governance
Description:	The Free State of Bavaria has initiated the Energy Utilization Plan (ENP) to drive forward the energy transition. The ENP is based on the guidelines for energy use plans published by the Technical University of Munich in 2011, as an informal planning instrument for municipalities. This instrument serves as a municipal planning tool and is drawn up with the aim of installing an intelligent electricity and heat supply in the area under review that is as low-consumption as possible and based on renewable energies. This involves creating holistic energy concepts that make the local authority (city, municipality or district) independent of fossil fuel imports and ensure an independent supply of renewable energy and heat. The resulting investments, revenues and business tax income mean that the implementation of the measures provides a considerable boost to regional value creation, which is an economic advantage for financially weak municipalities in rural areas in particular. It is used by the municipality for the long-term design of heat supply. As a planning instrument, it records the current status and potential at the municipal level and provides prospective measures for the long-term design and development of heat supply in the municipality. The technical, structural-infrastructural, social, legal and other aspects that can be encountered locally must be considered. Municipal heat planning should always describe the realistic transformation path and be based on local conditions. This must be decided by the municipal committees. The aim is to meet the requirements for achieving climate neutrality anchored in the Climate Protection Act (KSG). Federal and state legislation on municipal heat planning regulates further details. Despite the detailed description of the procedure for creating an ENP in the Energy Use Plan Guidelines, questions remain unanswered when it comes to the actual creation of the plan and different approaches can be chosen for its creation. This is why a specific handbook was developed to provide further processing instructions in addition to the guidelines ensuring a standardized approach by different creators. The aim of the handbook is to provide technical support to the municipalities responsible for heat planning during the development process of an ENP. This guide provides municipalities with guidance on the organizational, methodological approach, the necessary work steps and the structured creation of a municipal heat plan.

	The handbook was produced by a working group of the Bavarian Association of Municipalities on "Energy Use Plans" (consisting of universities, energy agencies and planning offices). The handbook is the result of various workshops conducted by the working group. The ARGE's main concern is to increase the practical benefits of energy use plans for local decision-makers (based on page 5 handbuch.pdf (bayern.de)).

Questions:

1. What are the steps of the ENP? And how does the handbook support them?

The energy utilization plan gives guidelines to carry out six successive phases:

1. *The basis of the planning is the recording of the **initial energy situation** in the municipality. In addition to the existing energy infrastructure, the current final energy balance, the primary energy balance and the CO_2 balance are mapped. The creation of a detailed heat register is the central component of the energy use plan.*
2. *The **potential for saving** energy and increasing energy efficiency is determined. For example, quantified building refurbishment potentials are calculated, differentiated according to the age structure and typology of the buildings. This allows areas to be identified in which energy-efficient refurbishment should be stepped up.*
3. *The **potential for the expansion of renewable energies** is examined in close cooperation with the local stakeholders concerned (e.g. forestry office, etc.).*
4. ***Initial projects in a catalog** of measures are to be examined in detail as part of the energy use plan. Priorities are set in consultation with the municipality. As part of the action plan, 5-10 specific measures are proposed, which are also to be evaluated economically. Typical examples are heating networks, energy refurbishments, supplying individual properties with CHP and modernizing street lighting.*
5. *On the basis of the results obtained to date, the key issues for the implementation of the energy use plan are to be discussed with the **relevant local stakeholders** and solutions identified for any problems that arise.*
6. *The **future energy strategy** is developed. The reduction potential through increasing energy efficiency and expanding renewable energies in the individual consumer groups is worked out and quantitative implementation targets are agreed with the municipality."* [taken from their Brochure: Flyer.pdf (bayern.de)]

2. Decarbonisation is about **renewable energy sources** and **energy efficiency**. Would you say the approach is well balanced between the 2 dimensions?

The steps 2 and 3 of the above approach tackles savings first and then renewable supply, therefore complying with the Energy Efficiency First principle.

3. What are the major **progresses** made so far in the heat plan implementation, and lessons learnt?

As a result of the innovative planning processes, the energy utilization plan was used as a model for the whole of Bavaria and in parts of other federal states:
News from May 2019:
"Berchtesgadener Land energy utilization plan sets Bavaria-wide standards in municipal energy planning. The Bavarian Minister of Economic Affairs and Energy, Hubert Aiwanger, together with District Administrator Georg Grabner, has given the go-ahead for the new generation of energy use plans in Bavaria at the Bavarian Ministry of Economic Affairs.

The Berchtesgadener Land energy utilization plan serves as a prime example of digital and innovative municipal energy planning in Bavaria."

This comprehensive approach was unique and innovative in Germany as an orientation and information service for local authorities. A workshop held in summer 2023 also showed that interest among municipal stakeholders remains high and that they would also like to see such a service.

Above all, the procedure of the energy utilization plan is very similar to the procedure of the now mandatory municipal heat planning (KWP) according to the Heat Planning Act (WPG). This is due to the fact that various guidelines on the KWP process have been published to provide guidance for local authorities, which use the ENP publications as well as other sources.

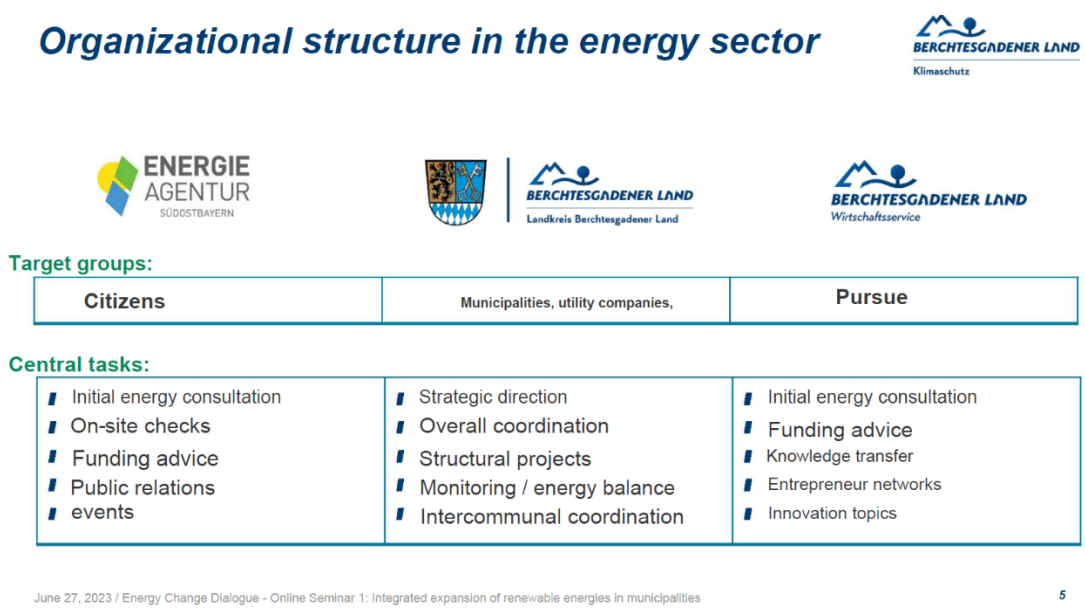
An official government guide to the KWP process is currently being drawn up and is also based on these already established guides and process advisories. The example is therefore certainly suitable Best Practice for implementing the step-by-step planning of the integrated heat transition and a good example for other EU countries.

4. What key actors should be involved in developing an ENP? What kind of stakeholders were engaged, and how?

The plan bridges the gap in the discussion as to whether municipal heat planning should be seen as a top-down or bottom-up approach. This point often causes problems and resentment, as local authorities often want orientation and clear guidelines, as the development and data collection of the process is time-consuming and cost intensive. In contrast, the energy and heat planning envisioned by the federal government must be flexible and open in order to offer local authorities and municipalities options and degrees of freedom. For this reason, the Berchtesgadener Land government saw a need to tighten up this process and took over the planning coordination in order to develop corresponding guidelines. Therefore, the plan serves as a guideline for all 15 municipalities, their political and energy/heat management stakeholders and thus subsequently for their industry and citizens. As depicted by the below figure, the offer is implemented by three organizational players:

- The **Energy Agency Southeast Bavaria** as a contact point for citizens
- **Berchtesgadener Land District/Landratsamt** for municipalities and energy supply companies
- **Berchtesgadener Land Business Service** for industrial companies

Figure 3 Organizational structure in the energy sector



The process was closely interlinked with energy consultation in order to keep citizens informed and active.

- Free initial energy consultation for citizens in the district by the Energy Agency of South-East Bavaria (approx. 350 consultations in the district per year).
- Regular consultation days in town halls throughout the district.
- Use of energy profiles in energy consulting for over 30,000 buildings.

Energy utilization plans receive funding of 70 percent through the BayINVENT program of the Bavarian Ministry of Economic Affairs, funding focus on energy saving concepts and energy utilization plans, application office: Bayern Innovativ, ITZB department.

An ENP can be carried out across municipalities as intermunicipal cooperation. This is particularly recommended for rural communities. The district can act as a coordinating initiator and organizer. This allows financial and human resources to be pooled. The district energy agencies can coordinate here Take over functions between the communities.
Data are at different levels (e.g. renewable potential is recorded at district level).

5. **Heat data** (building, and industry) seem to be at the core of your plan but will in many cases be inexistent. How would you recommend adapting your approach to develop a kind of heat strategy, without heat data?

In principle, real data that is already available in the community (i.e. Data from energy suppliers, heating network operators, Chimney sweep logbook data) is best suited for a kWP. However, if these are incomplete or not available at all, heat registers provide good assistance.

Some federal states already provide spatially resolved data on heat requirements and heat densities collected at state level. The data is mostly online and therefore relatively easy to access. Based on heat registers or heat atlases, the first important statements can usually be made with regard to area-related energy demand density. This makes heat registers an important component and data basis for the inventory and potential analysis required in a heat plan and its plausibility check

6. Can you list at least 3 key success factors that have made this project successful?

1. **Stakeholders and governance**

Intensive coordination of the necessary transformation processes between key actors is absolutely necessary in order to be able to implement heat planning as a sustainable way for a climate-neutral heat supply while conserving capacity and resources.
The assignment of potential stakeholders at the municipal level according to potential for emission savings in the area of energy and heat supply could look like this:

- Utilities/municipal utilities/network operators, housing industry/cooperative, city planning office, district chimney sweep, if applicable industry/GHD
- Other heat suppliers/waste heat from industry, commerce, trade, services (e.g. data centers), energy agencies, planners
- Economic development, public-private partnerships, associations, clubs and initiatives
- A steering group should be appointed by the local council/city to be responsible for the process of developing the ENP. The steering group should be composed of municipal and business decisionmakers in order to be able to make important decisions and take on steering tasks.

It is advisable to install a central municipal “caretaker” (e.g. “climate manager”) as a central contact point, if it does not already exist.

2. **Act – obligation to develop ENP**

ENP supports transparently Section 13 of the Climate Protection Act as well as the requirements from the decision of the Federal Constitutional Court of March 24, 2021 (ref.: 1 BvR 2656/18 et al.) and the subsequent amendment to the Federal Climate Protection Act (KSG)
Some state’s laws already oblige communities with a certain number of inhabitants to implement binding heat planning (e.g. Baden-Württemberg Climate Protection Act, Schleswig-Holstein Energy Transition and Climate Protection Act). At the federal level and in other federal states, a legal regulation did enter into force recently on January 1st, 2024 (Wärmeplanungsgesetz, WPG), providing for mandatory municipal heat planning for communities with more than 10, inhabitants (<2024).
The creation of an ENP as well as the transformation or implementation of measures in the area of heat supply can therefore be viewed as a prerequisite for public services. Heat planning is therefore a central task for the municipality, some of which will be required by law.

3. **Cross municipality coordination – to leverage expertise, share data and resources**

An ENP can be carried out across municipalities as intermunicipal cooperation. This is particularly recommended for rural communities. The district can act as a coordinating initiator and organizer.

This allows financial and human resources to be pooled, and data to be collected at municipal, district, regional and state levels. Coordination at municipal level is also needed, to synchronise various planning to avoid overlaps and ensure synergetic approaches. The district energy agencies can coordinate here.

4. **Integrated city and municipal development concepts**

A holistic approach is taken to implement planning and create synergies between different levels of implication (sectors, actors (utilities, entrepreneurs, citizens...), etc.), in within the municipality's direct sphere of influence.

5. **Heat supply standards (HSS) via urban development contracts**

In municipal areas, specifications for heat supply or structural energy standards for buildings can be made on the basis of urban development contracts in accordance with Section 11 Paragraph 1 No. 4 and 5 BauGB. The ENP as an informal planning instrument can certainly be the basis for urban development contracts and their formal specifications.
These HSS can be a success factor to accelerate broader RES deployment in heat.

6. **Public acceptance**

For the implementation of the ENP, early and comprehensive information and appropriate participation of citizens in advance are crucial. The municipalities should therefore accompany a ENP with a suitable communication strategy right from the start. Only if broad acceptance is ensured can it be assumed that citizens will take the community's objectives into account when making supply decisions.
Strong public acceptance is a key underlying condition for the heat transformation.

7. **Public funding to develop the ENP** from the District or Länder.