

Municipal heat planning for the town of Erbach (Donau)

bifa develops strategy and measures for greenhouse gas neutrality in the heating sector



Heat register – heat demand of buildings in the town centre of Erbach

Heat supply accounts for more than 50 % of total final energy consumption in Germany and is responsible for a large proportion of CO₂ emissions. Around 80 % of heating requirements are still covered by fossil fuels such as gas and oil. The heat supply must essentially be considered on a local basis – which is why municipalities play an important role as local decision-makers.

Municipal heat planning is a planning instrument for the development of a renewable heat supply and is intended to support cities and municipalities. It is used to develop a locally appropriate approach to ultimately achieve a

greenhouse gas-neutral heat supply under economic conditions. On the one hand, heat planning is a strategic process based on a transformation pathway; on the other, it derives specific, practical implementation measures.

Long before the German government's recent decisions on mandatory heat planning (Federal Heat Planning Act), the town of Erbach (Donau) put voluntary municipal heat planning on its agenda in 2022. bifa was commissioned to draw up the plan.

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>> Erbach has a good starting position

Several existing heating networks and heating network plans in the town centre and surrounding districts are helping to promote a sustainable heat supply. However, the options for action in neighbourhoods and districts not yet covered also had to be considered.

In an intensive participation process, the initial situation and options for action were clarified, a strategic approach developed and detailed measures worked out. It comprised interviews and five workshops with representatives of the local council, the municipal administration, energy suppliers, the regional energy agency, the district administration and Erbach companies. In the workshops, bifa provided support by preparing content and using targeted moderation methods.

bifa used geoinformation systems for the inventory and potential analyses. A multi-criteria analysis was also carried out to categorise settlement areas according to the feasibility of heat networks.

The central result of the study is a transformation pathway. In order to achieve the targeted reduction in greenhouse gas emissions by 60 % in 2030 (compared to 2021) and a climate-neutral heating sector in 2040, the use of oil and gas heating systems must be urgently reduced. Heating networks can generally utilise renewable energy sources more efficiently than individual house heating systems, but are not suitable for all settlements. Possibilities for a regenerative supply for all buildings in the urban area were identified. Measures for realisation were developed that can be implemented by the city administration and other stakeholders.

The project was funded by the Baden-Württemberg Ministry of the Environment, Climate Protection and the Energy Sector. The results were presented and discussed with Erbach's citizens at the end of November 2023. The bifa study is published on the website of the town of Erbach (Donau).

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Transformation to a circular economy at Augsburg University Hospital

Circular economy: A key to achieving sustainability goals

The transformation to a circular economy plays a key role in the development of national sustainability strategies. Healthcare facilities can make an important contribution to a successful transformation.

One challenge for hospitals is complex waste management, which is confronted with a large variety and quantity of waste and must enable waste collection to function in

a confined space. The top priority at all times is patient safety. The work processes involved in the fulfilment of medical tasks must not be disrupted by waste management. Changes in waste management must therefore always be orientated towards the requirements of medical staff and not vice versa.

bifa supports Augsburg University Hospital in the further development of waste management

Around 2,700 tonnes of waste were generated at Augsburg University Hospital (UKA) in 2022, of which around 60 % had to be thermally recycled. Previous studies have shown that the volume of waste has increased by around 14 % since 2014, which is partly due to the expansion of services at the UKA and the growing number of patients, although the volume of waste has also been heavily influenced by the effects of the pandemic in recent years. It was also shown that a separate collection rate of over 98 % was achieved for commercial waste.

One of bifa's recommendations is to focus more on waste avoidance measures. It should be examined whether internal processes can be designed in such a way that hospital waste can be avoided at the point of waste generation or collected separately for recycling. Possibilities can also be



investigated for substituting disposable medical products with suitable reusable products. One difficulty here is that the environmental impact of medical products is generally not known and therefore the hospital landscape lacks the decision-making basis for sustainable procurement. In order to remedy this situation, the ecological footprint of individual product flows should therefore be determined.

In addition, parts of environmental communication were analysed so that "sustainability" can be transformed from a buzzword into a lived reality in everyday clinical practice.

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Equipped for the summer of 2024

Increasing periods of heat pose new challenges for society

As climate change continues, heatwaves and periods of extreme heat are increasing and their impact on people, the environment and the economy is significant. Heat poses a considerable risk to the health of the urban population, with older people and young children being particularly affected.

Heat action plan for the city of Bergisch Gladbach

From March to October 2023, bifa developed a heat action plan for the city of Bergisch Gladbach in collaboration with Lohmeyer GmbH. It is the result of an in-depth analysis of what heat means for the city and its citizens today and in the future. The finished document contains a description of the development process as well as a package of measures tailored to the city, which is intended to sensitise the various stakeholder groups to the consequences of heat caused by climate change and show them how they can take action themselves.

The first step in the heat action plan was to identify thermally stressed residential areas with a high proportion of heatsensitive population were identified for the heat action plan. Within several participation formats such as expert interviews, citizen surveys and workshops, profiles of measures were then developed. Finally, individual



measures were analysed and evaluated in terms of their climate impact using microclimatic simulations.

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MERRY CHRISTMAS
AND A HAPPY NEW YEAR!

Study on CO₂ capture at thermal waste treatment plants in Bavaria

bifa evaluates CO₂ capture technologies and reduction paths

The Free State of Bavaria has set itself the goal of being climate-neutral by 2040. Whether and – if so – how the 15 Bavarian plants for thermal waste treatment can contribute to this is to be investigated in a study by bifa.

One possible solution is to capture the CO₂ in the waste gases from the waste incineration plants and either store it permanently (CCS) or utilise it in other processes (CCU). Depending on the composition of the waste, this not only avoids fossil CO₂ emissions, but also removes biogenic CO₂ from the biosphere. This would make negative CO₂ emissions possible, which experts believe could be necessary in the future to achieve net greenhouse gas neutrality in addition to the urgent emission reduction measures.

bifa was commissioned by the Bavarian State Ministry for the Environment and Consumer Protection to analyse options for the targeted implementation of these measures. The study will analyse different capture processes and options for CO₂ storage or CO₂ utilisation. Suitable plants will be analysed as examples. The study will result in differentiated recommendations for action for both plant operators and the public sector with regard to the targeted realisation of CO₂ capture at Bavarian thermal waste treatment plants.

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Dear readers,

My name is Markus Schönheits. I have been supporting the bifa team as a project manager for materials and processes since November 2023. I am looking forward to working more intensively on technical topics again and hope to be able to contribute my experience from industry in a constructive way.

Born in Augsburg, I studied chemical engineering in Isny, specialising in food chemistry and environmental analysis.

After a short stint at the Environmental Technology Start-up Centre Augsburg (UTG), I joined OSRAM GmbH in 2001, where I held various positions in quality assurance, production and lamp development. As production manager at the Schwabmünchen plant, I was responsible for chemical production at the site.

From 2022, I was able to help set up a new production facility for tubular PV modules at Tubesolar AG. In my free time, I enjoy hiking and cooking, appreciate music and love the British Isles.



I am looking forward to a good cooperation and to get to know you personally!

Yours, Markus Schönheits

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