

Change of management at bifa Umweltinstitut GmbH

Professor Dr Nadine Warkotsch and Thomas Weber succeed
Professor Dr Wolfgang Rommel



From left: Thomas Weber, Prof Dr Nadine Warkotsch and Prof Dr Wolfgang Rommel

Prof. Dr Wolfgang Rommel has steered the fortunes of bifa Umweltinstitut GmbH as Managing Director since 2004 and is retiring on 31 December 2024. Thereafter, the environmental institute will be managed by a dual leadership team.

Managing Director and Scientific Director of the Institute Professor Dr Nadine Warkotsch

From 1 January 2025, Prof. Dr Nadine Warkotsch will be working for the bifa Umweltinstitut. She completed

her doctorate at LMU (Ludwig-Maximilians-Universität München) in 2004 and then worked in the industry for a long time, the longest period of which was at Henkel AG & Co. KGaA in Düsseldorf. In 2013, she founded her own company, which advises companies on applications for technical and environmental research funding projects.

Prof Dr Warkotsch was a lecturer at Munich University of Applied Sciences for many years and was >>

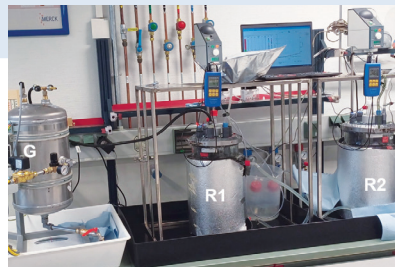
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safety concept for the collection
of lithium batteries

Background and objectives



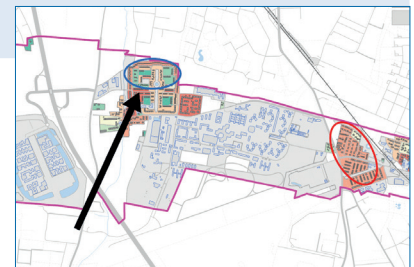
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the in-situ biomethanisation

Eco-efficient process-integrated
sewage sludge utilisation



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for the heating sector

Neubiberg on the way to a green-
house gas-neutral supply





>> appointed Professor of General Chemistry, Environmental Chemistry and Construction Chemistry at Augsburg University of Applied Sciences in 2019.

Prof Dr Warkotsch, what do you wish for your future at bifa Umweltinstitut?

For many years, the bifa Umweltinstitut has reliably made important contributions to tackling what I consider to be the extreme challenges we face in the environment and therefore also the economy and society in a good and sustainable way. This will continue under my scientific leadership. I would like to work with everyone

at bifa to further develop solutions and even find and implement completely new, interdisciplinary solutions together with our partners.

Managing Director Thomas Weber

Mr Thomas Weber has been Managing Director at bifa Umweltinstitut since 1 November 2024. After studying business administration, he gained many years of management experience in international SMEs and in management consulting. He specialises in the areas of financing, controlling, human resources, IT and purchasing/sales. He also has extensive knowledge of business planning and strategy development.

Mr Weber, how do you see your future tasks at bifa Umweltinstitut?

I am convinced that sustainable success is achieved through empathy, reliability, and credible behaviour. You can't achieve anything on your own, only together as a team can you make the necessary adjustments to constantly changing conditions. We want to continue to promote the unique selling point of 'bifa' in the future and strengthen our market position and practical research. In this way, we are making a valuable contribution to the climate and environmental issues of our time.

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Study to evaluate the safety concept for the collection of lithium batteries

Background and objectives of the study

The study carried out by bifa Umweltinstitut GmbH on behalf of Gemeinsame Rücknahmesystem Servicegesellschaft mbH (GRS) on the 'Future-proof collection, transport and disposal of portable batteries and industrial batteries similar to portable batteries' examines the safety-relevant aspects of handling used batteries, in particular lithium batteries (LiB), which are increasingly being used in electrical appliances, electromobility and renewable energies.

Currently, the proportion of portable batteries placed on the market in Germany is around 30%, with a significant increase expected in the coming years. In addition to the strong growth in the area of waste portable and industrial batteries, there is also very strong growth for electrical appliances powered by rechargeable batteries, e.g. power tools, garden and household appliances, e-bikes, consumer electronics, communication devices, hearing aids and the like.

The study was conducted due to multiple incidents of fires in sorting facilities for packaging and household waste, in which incorrectly disposed or improperly col-



lected portable batteries, in particular LiB, but also small and micro battery-operated electrical appliances such as e-cigarettes, were identified as the causes of fire. The increasing quantities of LiB in the waste stream therefore require a review of safety concepts in order to reduce fire risks.



>> Recommendations for action along the entire battery collection process chain

In the study, the effectiveness of existing safety concepts was reviewed and further developed, particularly with regard to the risk of fire incidents caused by improperly disposed of or treated batteries. As a result, the existing safety concept for collecting and disposing of used batteries was subjected to a comprehensive reassessment. This included analysing fire incidents in relevant facilities

and carrying out fire tests under laboratory conditions. bifa Umweltinstitut GmbH has completed the final report on the review and evaluation of applied safety concepts for the collection of LiB in the context of battery collection and take-back of battery-operated waste electrical and electronic equipment. A summary of the results will be published shortly.

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Laboratory reactors for the in-situ biomethanisation of synthesis gas and hydrogen

Eco-efficient process-integrated sewage sludge utilisation

As part of the BMWK-funded joint project Eco-PIK 'Eco-efficient process-integrated sewage sludge utilisation', bifa is investigating the biomethanisation of synthesis gas and hydrogen.

To simulate the digestion towers of municipal sewage treatment plants, laboratory bioreactors are operated under practical conditions with raw sludge as a substrate. The synthesis gas produced during the thermochemical conversion of sewage sludge pellets (sub-project of the Blue Energy Group) is used as a co-substrate. Hydrogen is also dosed for extensive biomethanisation of the carbon oxides (CO, CO₂) of the synthesis gas and the carbon dioxide of the digester gas. This produces a product gas whose methane content is of natural gas quality. The yield of bio-methane is increased by a factor of around 4 compared to conventional sludge digestion.

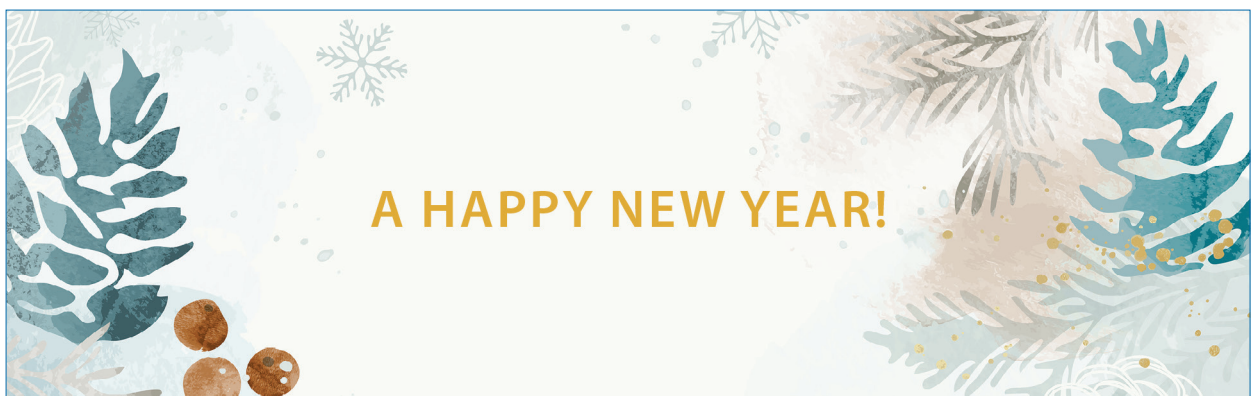
In addition to energy recovery from the product gas (e.g. in an optimised micro gas turbine; sub-project of Augsburg University of Applied Sciences), it would also be possible to feed it into the natural gas grid and/or use it as a biogenic raw material. Since the in-situ biomethanisation of synthesis gas and hydrogen has been realised on a laboratory scale, the influence of the gaseous

co-substrates on the microflora of the methane-forming bacteria is currently being analysed using molecular biological methods.



The laboratory biogas plant consists of a gas dosing device (G), a reactor that is supplied with hydrogen and synthesis gas (R1) and the reference reactor (R2) without gas addition.

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Decarbonisation plan for the heating sector

Neubiberg on the way to a greenhouse gas-neutral supply

Summarised results of the partial energy use plan drawn up by bifa Umweltinstitut in September 2024.

The municipality of Neubiberg has committed to achieving climate-neutral administration by 2030 and is aiming for overall climate neutrality by 2040 at the latest. Heat supply is a key area of action in this regard. The bifa environmental institute prepared a study for the municipality as a basis for targeted decisions.

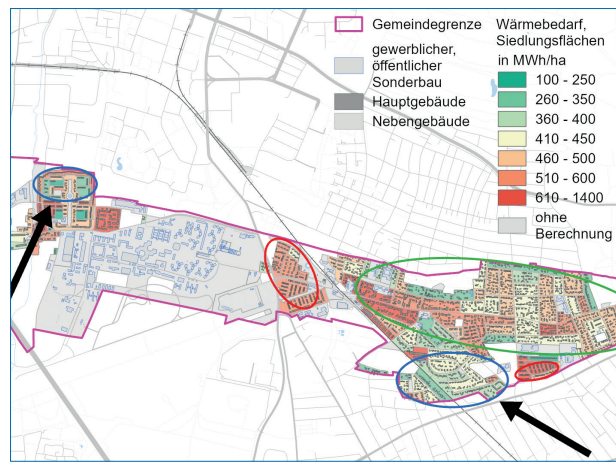
bifa recorded the situation of the heat supply and heating infrastructure in detail

A community-wide heat register was calculated from building-specific heat demand classifications. Energy and CO₂ balances were drawn up. With natural gas and heating oil accounting for 84% of heating requirements, private households are responsible for more than half of all heat-related greenhouse gas emissions.

Saving energy is a key lever for reducing greenhouse gases

It is recommended to proceed ambitiously in each individual case wherever possible. Nevertheless, even with intensive refurbishment, there will still be a need for heating and hot water, which must then be covered by renewable energy sources.

The regenerative heat potentials have been determined. The local conditions offer hydrogeological potential in particular: a temperature of around 110 °C can be expected for deep water from the Upper Jurassic Malm at a depth of 2,800 metres.



A climate protection scenario was developed as a target image for development. Measures were formulated in the areas of heating networks (see illustration), refurbishment and climate-neutral municipal administration. The bifa results were presented to the environmental committee and the municipal council and discussed in detail. The municipality implemented the first measures within the project period.

The study was funded by the Bavarian State Ministry of Economic Affairs, Regional Development and Energy as part of the funding programme for energy concepts and municipal energy use plans via Bayern Innovativ GmbH, Project Management Agency Bavaria.

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EVENT

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- Market development of PV technology production in Europe
- Social acceptance of PV
- Potential of repair, reuse and recycling of PV



We look forward to hearing your opinion at: <https://s2survey.net/quasar/>
(The survey is in English)

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