

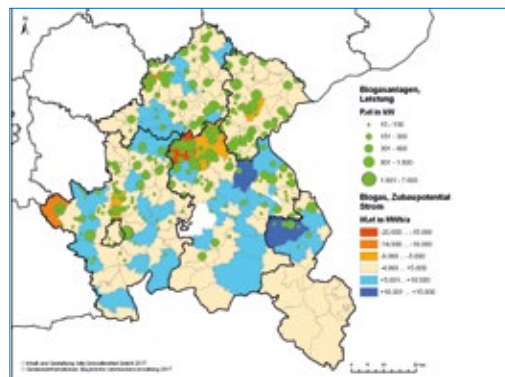
# Implementation of the turn of energy policies

## Energy future for Southeast Bavaria

On behalf of the Southeast Bavaria planning region, bifa Umweltinstitut together with other specialist consultants are determining the potential for renewable energy.

In addition to forest and waste timber, and residual materials, biogas is also being considered. Since the beginning of 2016, work has been carried out on drawing up a comprehensive cross-district energy concept in the planning region, which is being funded by the Bavarian State Ministry of Economic Affairs and Media, Energy and Technology (Bayerischen Staatsministerium für Wirtschaft und Medien, Energie und Technologie) with a grant for 75 percent of the costs. Guidelines are being created for the future energy supply. The comprehensive data acquisition for this has already been completed and the region's energy demand for heat

and electrical power is being determined. The consultants involved have analysed the potential savings and efficiency and the development potential for renewable energy. The results are the foundation for the energy strategy, which will be developed with the municipalities. A total energy production of 3.9 million MWh per year can be achieved with solid biomass materials such as waste timber, green waste, forest timber and short-rotation woody crops. bifa Umweltinstitut has located and spatially evaluated the data collected on biomass plants using the ArcGIS geoinformation software. The objective of the bifa evaluations is to identify appropriate development areas for energy production within the planning area.



The topics of hydropower, geothermal energy and direct marketing are being worked on together with bifa's partners, the Green City Project, Steinbacher Consult and Erdwerk. The results are due to be presented to the public in the first quarter of 2018.

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## „Demonstrating the Zwickauer turn of energy policies“ (ZED)

The Federal Ministries For Research (BMBF) and Economic Affairs (BMWi) approve new research project

bifa and the University of Munich (LMU) are involved in a consortium of more than ten scientific and industrial partners initiated by the Town of Zwickau. The main objective is to develop technologies and methods for the local turn of energy policies and in particular the change in heat policies and to demonstrate them in Zwickau-Marienthal as a real-life laboratory. ZED will be funded by BMBF/BMWi with around 16 million euros over the next five years. During this time, bifa



and LMU together with the partners will advance the development of concepts and implementation of combined electro-thermal composite for the rea-

lisation of zero emissions districts. This requires highly efficient storage technologies and the combination of overall electrical and thermal concepts. Zwickau is already closer to the future – whether due to its demographic structure or its know how acquired from previous projects. Both social equity and technology development focussed on its users play a particular role in the project.

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## Obituary

### Farewell to Alexander Farny

Our valued employee and colleague Alexander Farny, who was associated with bifa for the past 24 years, has parted completely unexpectedly. With him we lose a congenial, humorous and always helpful person. We send our heartfelt condolences to his wife, his children and parents and all his relatives. We will miss him very much.



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## Collection of used textiles

### City of Augsburg approves a "one-stop" concept

With the coming into force of the Recycling Management Law ("Kreislaufwirtschaftsgesetz") as of 01.06.2012, the legislator responded to the changed basic conditions for the collection of recoverables, especially in EU law. The new law led to changes to existing collection structures for various material flows – including used textiles. The reasons for those were changing market conditions and market players, but also an amended and partly more specifically defined legal framework, which has often proven to be difficult to implement in practice. The consequence of this was increased potenti-

al conflict between the players and a large number of legal disputes in court. In Augsburg, as a non-profit collector, the "Hoffnung" (hope) campaign provides the clothing collection containers. In the meantime, different market players were active within the city area regarding the collection of used textiles. Above all, the reason was that for many players the city represented an interesting business area for the collection of used textiles. Other non-profit participants announced their interest in siting clothing collection containers within the city area. Several commercial collectors >>

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### Dear Readers, Dear Partners and Customers of bifa,

Christmas and thus the end of the year are near and it is once again time to look back. The public discussion of the environment in 2017 was highly dominated by the so-called "diesel affair" and associated topics, such as nitric oxide emissions, electromobility, fine dust and climate change – at least whenever extreme weather had occurred again or most recently during the sounding-out talks for the "Jamaica coalition". The discussions frequently overlook the fact that these topics cannot all be considered in isolation, but that we must deal with a highly complex system that is decisively determined by our behaviour. There are no simple solutions! We at bifa have therefore for a long time taken a systematic, interdisciplinary and undogmatic approach, which is also

reflected in many interesting and successful projects in 2017. The end of this year was unfortunately overshadowed by the fully unexpected death of our longstanding employee Alexander Farny. We remember him in an obituary in this bifa-aktuell. Finally, I would like to thank you for the many interesting topics we were allowed to work on on your behalf. I also thank our employees, without whose committed work this would not have been possible. We look forward to continuing this in the new year and wish you a contemplative Christmas period and all the best for the New Year.

W. Rommel

Yours, Wolfgang Rommel



>> are planning to enter the market in Augsburg and one had already sued the City of Augsburg for the issue of a special use permit for clothing bank sites. The case was dismissed at the end of 2016 in the first instance, however, with the condition that a new concept be drawn up, taking into consideration current legal award issues concerning the collection of used textiles. With the help of bifa, a "one-stop" concept was worked up for the collection of used textiles on public land within the city area of Augsburg. At the same time, a special use concept is being passed by the so-called "Straßenbaulastträger" (competent road authorities for all activities relating to the construction, maintenance and operation of roads and paths). The public waste management organisations apply for the special use. The city area of Augsburg is divided into three areas, where in one area special privileges can be awarded to non-profit organisations under a service concession competition. Based on structure planning for the quantities and areas, the remaining locations can also be awarded in two lots to commercial collectors as a service concession.

The provision of uniform containers by the public waste management organisations was recommended to implement the intended objectives – clarity and transparency for citizens and thus to increase the collection quantities within the city area, combatting illegally installed clothing banks and a uniform cityscape. Application of the future guidelines of the City of Augsburg was checked for the award procedure. It was advised that certain sustainability criteria be applied as award criteria and be defined in detail when drawing up the specification. Furthermore, it was recommended that these be implemented in the specification as requirements or included in the respective contractual terms. With the implementation of the proposed concept, the City of Augsburg fulfils its pioneering role as a sustainable environmental city and implements a forward-looking concept for the collection of used textiles, in which all market players are taken into consideration. The future guidelines of the



city can be taken into consideration in the award procedure for the non-profit lot and the commercial lots, insofar as public procurement law allows this. The proposed concept can be used as a model for other municipalities, in order to anchor sustainability in the area of used textiles and at the same time to pay appropriate regard to market players, taking into consideration current public procurement aspects and the development of court decisions.

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## Updating of the waste management concept

### Adaptation in Landkreis Neu-Ulm

The municipal waste management service of Landkreis Neu-Ulm (AWB) engaged bifa Umweltinstitut to provide its support for the updating of its waste management concept.

Under the waste management law (KrWG), public waste management organisations (öRE) must draw up waste

management concepts and waste balances for the recovery, in particular the preparation for reuse and the recycling, as well as the removal of waste arising within their area and waste that has to be transferred to them. The waste management concept and waste balance requirements depend on the state law of the individual German fe-

deral states. Under the Bavarian waste management law, in a waste management concept, the entities responsible for disposal present the intended

- > measures for prevention,
- > for recovery,
- > in particular for preparation for reuse,
- > for recycling and
- > for removal

of the waste arising and to be transferred to them within their area for a period of seven years in advance.

The results of the work were presented to and discussed with the members of the working committee in a half-day workshop. Implementation of the update of the waste management concept is planned for 2018.

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## Paper use in the biobin?

### Restraint is necessary regarding the use of paper in the biobin

The "biobin" is used by households for the collection of biowaste. The waste this includes is specified nationwide by the Biowaste Regulations and is supplemented locally by the specifications of the competent waste management representative.

The Biowaste Regulations specify that only a partial fraction of waste paper collected separately in households in quantities of max. 0.5 % may be used with separately collected biowaste, "if this is useful for hygienic or practical reasons (e.g. in case of very moist biowaste)".

Use of paper packaging, high-gloss paper and waste wallpaper is explicitly not allowed. However, other paper products can also be problematic in biowaste under environmental aspects. The history of the development of paper in Europe over 800 years has led to the current production of around 3,000 paper variants in Europe. Their main constituent is almost always cellulose (pulp) made from wood fibres. However, the impressive variety of paper products is only achieved by adding all kinds of different fillers, additives and finishing agents, which often account for a two-digit percentage of the mass of paper products. The material diversity increases again when the paper products are further processed (printed, glued, coated, etc.) and are used for the respective intended application.

Here it must be noted that very few paper products contain specifically selected recipe constituents, which are verifiably completely biodegradable and are not environmentally harmful. This applies, e.g. to paper used for the production of biowaste collection bags certified according to the requirements of EN 13432 or comparable standards. However, biowaste collection bags made of paper without corresponding certificates are also offered, for which insufficient information is available on their biodegradability and their material composition.

Under environmental aspects, placing newspaper and sanitary papers in the biobin must also be assessed as being critical. Today's daily newspapers, often with colour printing, can contain diverse paper additives, mineral oils, pigments and printing agents. Therefore, in several countries health risk warnings are now issued, if newspa-

pers – as often practised – are used as food packaging. Although newspaper degrades rapidly during composting, it is unclear whether all the environmentally hazardous constituents are destroyed with sufficient speed. Many sanitary papers have special wet strength finishes, which improve their resistance when used as a hygiene product. To what extent these and other constituents are degraded biologically during biological waste treatment and/or in the soil is often unclear. Therefore, restraint is necessary when using paper in the biobin. Only paper products specifically developed for this use should be allowed to get into biowaste. Then, even with longer-term use, contamination can be safely excluded from the composts produced from this waste.

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## Ecoefficiency study of PV production

### New process for cleaning and texturing silicon surfaces

On behalf of the TU Bergakademie Freiberg, bifa is examining the environmental and cost advantages of a new process for cleaning and texturing silicon surfaces in the photovoltaic industry.

Within the scope of the BMBF funded development scheme for the "Validation of the technological and societal innovation potential of scientific research – VIP+", the "Innovative wet chemical cleaning and nanotexturing

of silicon surfaces (SiStEC)" project is being implemented under the management of the Institute of Inorganic Chemistry of the University of Resources (Technische Universität Bergbauakademie Freiberg).

The objective of the SiStEC project is to develop a new process for simultaneous wet chemical cleaning and texturing of the surfaces of wafers made of monocrystalline silicon. Unlike conventional etching baths, the plan is

for this process to be implemented at room temperature and in addition the energy demand and chemical use is to be reduced.

bifa will quantify and assess these expectations within the scope of an ecoefficiency analysis for determining both the environmental effects and the economic efficiency.

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