Pressinformation

BINE Informationsdienst

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Reducing household waste with less energy

Optimised exhaust air purification for mechanical-biological waste treatment

Contact
Uwe Milles
presse@bine.info

BINE information service
Kaiserstraße 185-197
53113 Bonn
www.bine.info

There are two disposal alternatives for processing residual waste from the grey refuse bins used in Germany: a waste incinerator or mechanical biological treatment (MBT). With the latter, the recyclable materials are first of all sorted and recovered for reuse. Then the remainder is treated in composting tunnels. The new BINE Projektinfo brochure entitled "Reducing energy use from waste treatment" (15/2016) presents a more efficient exhaust air treatment system for MBT. This can save almost a quarter of the energy compared with current plants.

The non-recyclable waste residue from the grey bin passes through an aerobic rotting process in the composting tunnels in the MBT system. This oxidises all organic components. After the treatment, the residue can be deposited in landfill sites without the risk of it forming methane or other climatically relevant gases. The exhaust air from the tunnels must be cleaned and treated in order to prevent harmful gas and odour emissions. For this purpose, bio-filters, scrubbers and a combustion unit are used for the carbon-containing gases. With the new system, the researchers have optimised the entire process chain. The energy savings were achieved mainly by reducing and dividing the exhaust air currents according to their carbon content and through the resulting decrease in the support gas consumption. An improved method for feeding the waste into the tunnels has also contributed to this.

In Germany there are currently 45 facilities providing mechanical biological waste treatment. The energy-saving exhaust air cleaning system underwent practical testing at the MBT facility operated by the rural district of Aurich in Großefehn. The Institute for Treatment and Recycling at RWTH Aachen carried out the project together with co-operation partners.

The BINE Projektinfo brochure, which can be obtained free of charge from the BINE Information Service at FIZ Karlsruhe, is available online at www.bine.info or by calling +49 (0)228 92379-0. The brochure cover and an additional image can also be downloaded from the press section in this web portal.

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