

Best-Practise-projects for bioenergy utilisation in urban environments



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Project name: Using fuel cells to process organic waste –
Maximising the energy yield from biodegradables
Location: Leonberg
Bioenergy technology concerned: Fermentation plant

Executive summary: Since organic waste can no longer be used as landfill but has to be treated instead, the biological waste in Böblingen County now ends up in a fermentation plant in the town of Leonberg.

Case description

Background:

Leading the way – Böblingen County decides in favour of new technologies.

Description:

Here it gets processed into energy-rich biogas that combined heat and power plants use to make electricity and heat. The fermentation plant processes some 30,000 tons of biological waste each year. Due to the particular process used in Leonberg and the plant's operational capacity, a high recovery of gas is possible that is expected to total some 3.7 million m³ per year.

Technical data (capacity, output, etc.):

The two central heating plants will use this to produce 8.2 million kW hours of energy annually that will augment the public supply – enough to provide 2,300 households with all the energy they need for a year. Feeding this power into the public supply also brings the county an extra 700,000 Euro of profit each year. In addition, as part of a globally unique demonstration project, some of the biogas is processed using a special type of fuel cell called a Hot Module. Up to 250 kW hours of electricity made this way can be fed into the public supply. Any leftover heat in Leonberg is then used to dry the residue of the fermentation process, which in its final form can be used as fertilizer

Financial data (investment, subsidies, etc.):

Which main problems had to be overcome?

Legal factors :

Socio-economic factors:

Economic:

Others:

Information flow (which information needed, sources, difficulties, etc.)

Lessons learned:

Contact:

Community

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Key words:

fuel cells, fermentation plant, biogas

Pictures:

