



Biogas plant in Germany using sugar beet as the only substrate. The heat is utilized by an adjoining industrial estate.

## Energy from sugar beet – efficient, fast and safe.

**Sugar beet is an ideal energy source, as a co-substrate as well as in mono-fermentation.**

LIPP offers a system that provides everything from crushing via ensilage and storage to fermentation – a system with a lot of advantages:

- . high biogas yield per hectare of cultivated area
- . very high degree of substrate digestion and excellent efficiency
- . short period of residence in the fermenter
- . also in combination with slurry ('slurry bonus' at a slurry fraction of 30%)
- . optimization of crop rotation (away from maize monoculture)
- . improvement of the C/N ratio
- . stabilization in case of process fluctuations
- . high 'regeneration capacity' after dry periods



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**LIPP GmbH**  
Industriestraße  
73497 Tannhausen  
Germany  
Fon +49 7964 | 90 03-0  
Fax +49 7964 | 90 03-27  
info@lipp-system.de  
www.lipp-system.de



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# Behälter und Systemlösungen Tanks and System Solutions



Biogas plant in Germany with a LIPP-BETAVATOR.



## Benefit from all the advantages of LIPP components

In the two-stage fermentation process with upstream hydrolysis and biomass refeeding/retention:

- . in mono-fermentation or as a co-substrate
- . crushing and mashing
- . sand removal from the hydrolysis stage and the fermenter is possible
- . special stirring systems for rapidly degradable substrates
- . refeeding/retention of biomass
- . fully automatable – all year round
- . optimal storage with very high level of substrate digestion by ensilage using the LIPP-BETAVATOR
- . very high level of substrate digestion and process stabilization due to upstream hydrolysis stage

## Especially for root crop storage: LIPP-BETAVATOR

*System for crushing/mashing and storage/ensilage of sugar beet*

Root crops rich in dry matter, such as sugar beet, are crushed (mashed) and pumped directly into the gas-tight tower silo, in which the low-loss conversion into silage of high storage stability (pH value 3–4) takes place. ‘At the touch of a button’, the high-quality sugar beet silage is available all the year round for subsequent fermentation and energy generation.

- . decades of experience in feeding technology
- . stable conservation and excellent efficiency through ensilage in the LIPP-BETAVATOR
- . constant fodder quality throughout the year
- . no silo covering necessary, no daily transport work
- . no ensilage losses (gas-tight roof)
- . repeated filling in the course of the year is possible

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