


Wet digestion of organic waste and production of biomethane in practice



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Structure of presentation

- ✓ Input material
- ✓ Industrial examples of wet digestion plants
- ✓ Biogas plant Kielen, Luxemburg with biomethane production
- ✓ Summary

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Input material for wet digestion systems



- ✓ Biowaste
- ✓ Organic fraction from household waste
- ✓ Energy crops e.g. corn and grass silage
- ✓ Dung
- ✓ Sewage sludge
- ✓ Manure
- ✓ Food waste from restaurants, canteens
- ✓ Industrial organic waste e.g.
 - ▶ Residues from food and beverage processing industry
 - ▶ Slaughterhouse waste
 - ▶ Packaged food
 - ▶ Fats

This biomass has often high humidity.

Wet digestion is a flexible process treating biomass independent from humidity!


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Wet anaerobic digestion Some European case studies

 Västerås, S 23.000 t/y	 Saaremaa, Estonia 40.000 t/y	 Vienna, A 17.000 t/y	 Barcelona, E 90.000 t/y
 Kielen, L 48.000 t/y	 Avila, E 36.000 t/y	 Voghera, I 27.000 t/y	 Palma de Mallorca, E 32.000 t/y

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European biogas plants of Ros Roca



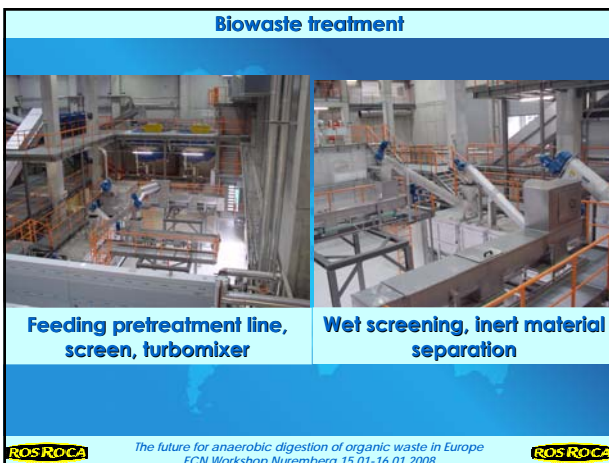
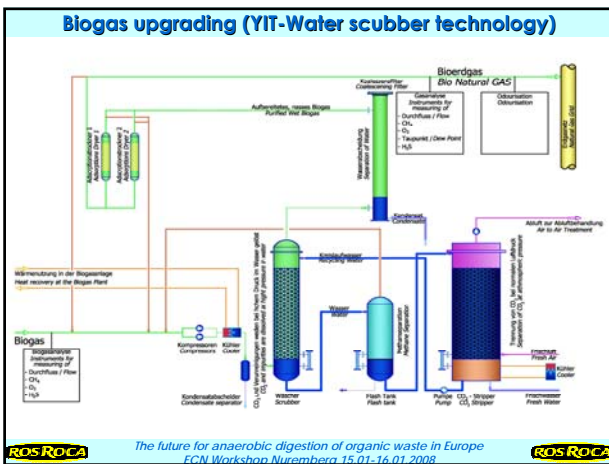
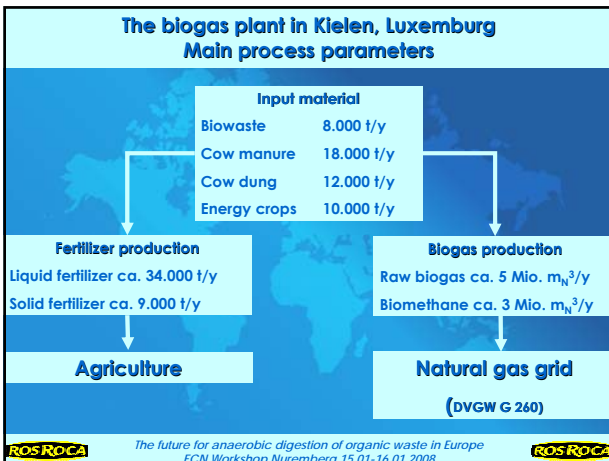
- 1 Gran Canaria
- 2 Lanzarote
- 3 Jelin
- 4 Avila
- 5 Alicante
- 6 Tudela
- 7 Barcelona
- 8 Palma de Mallorca
- 9 Lommiel
- 10 Kielen
- 11 Goscher
- 12 Voghera
- 13 Delllingen
- 14 Volkenschwand
- 15 Wien
- 16 Västerås
- 17 Krosno
- 18 Saaremaa
- 19 Savelletras
- 20 São Martinho de Porto

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Biogas plants with biomethane production

 Kielen, L 48.000 t/y 550 – 600 Nm ³ /h Injection in natural gas grid	 Västerås, S 23.000 t/y 300 – 450 Nm ³ /h Vehicle fuel production
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Biogas production

4.000 m³ 4.800 m³ 2.600 m³

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Biogas upgrading

Building installation **Container installation**

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Summary

- ✓ Wet digestion is the most common used anaerobic technology with several thousand industrial applications all over the world
- ✓ Biomass can be treated independent from humidity
- ✓ High flexibility for input material if conditions general conditions change
- ✓ Efficient separation of impurities and sanitation (ABPR 1774/2002) in front of digestion process
- ✓ Flexible utilization of high quality sanitized digestate
- ✓ Efficient off-site energy conversion using water scrubber technology for biomethane production
- ✓ Combined utilization of biowaste with agricultural waste and energy crops has several advantages

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Thank you very much for your attention !

Further informations :
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