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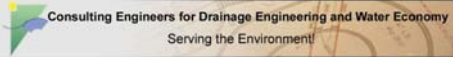
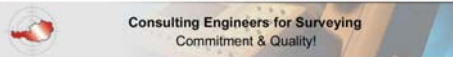
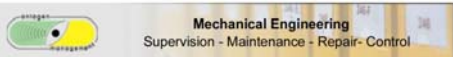
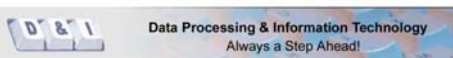
The Company

- Private engineering and consulting company
- Leading in the Austrian environmental, energy and infrastructure sector
- Independent of industry and trade
- Integrated in national and international networks
- Independent advice in all areas of business activities
- From project development to financing, planning and construction supervision up to commissioning
- Quality assurance



TÜV CERT
EN ISO 9001:2000
Zertifikat Nr. 20 100 10140

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Subsidiaries



Project management within the autonomous business segments

- Environmental engineering and water management
- Waste water management and water supply facilities
- Surveying
- IT Services
- Facility management
- Consulting
- **Renewable Energy**

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RENEWABLE ENERGY

Use of biomass

- **Biogas**
- Bioethanol
- Biodiesel







- **Combination of different technologies**
- Other sources of renewable energy



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BIOGAS

Heat-, Electrical Power and Fuel Production

Biomass from

- Agriculture
- Food industry
- Animal feed industry
- Communal waste (biowaste)
- Gastronomy

Production of

- Electrical power
- Heat
- Fuel
- Fertilizer



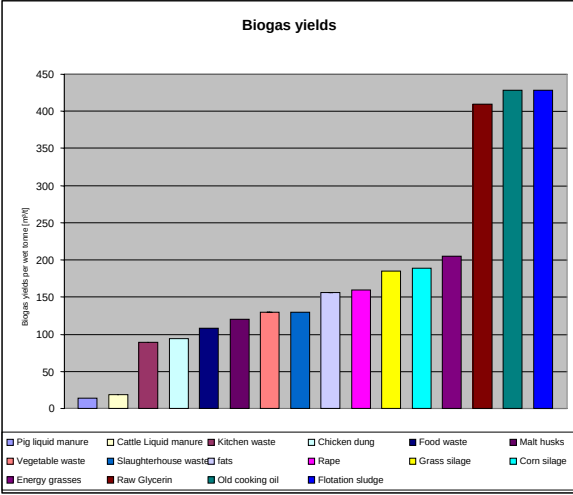
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Input material used

Input material

Corn silage, grass silage, liquid manure pig, liquid manure cattle, chicken dung, energy grasses, vegetable waste, pomace, malt husks, food waste, kitchen waste, biowaste, old cooking oil, chip fat, flotation sludge, glycerin, slaughterhouse waste,

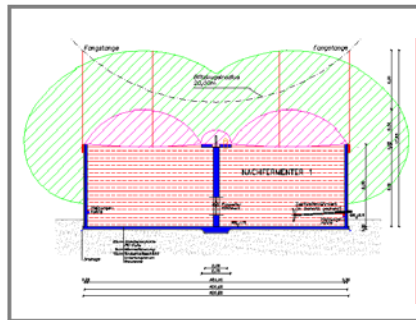
Biogas yields



Input Material	Biogas Yield (m³ per wet ton)
Pig liquid manure	~10
Cattle Liquid manure	~20
Kitchen waste	~90
Chicken dung	~100
Food waste	~110
Malt husks	~120
Vegetable waste	~130
Slaughterhouse waste	~130
fats	~140
Rape	~160
Grass silage	~180
Energy grasses	~190
Raw Glycerin	~210
Old cooking oil	~410
Flotation sludge	~430
Corn silage	~440

Biogas Process

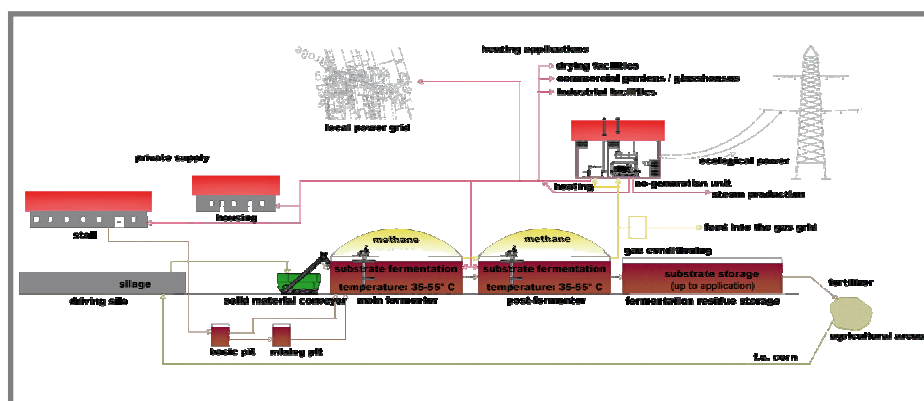
- Multi-step fermentation process
- Breakdown of organic substances with high molecular weight into substances of lower molecular weight until it reaches methane
- Damp anaerobe environment



Stages of fermentation

1. Hydrolysis
2. Formation of acid
3. Formation of acetic acid
4. Formation of methane

Process flow of a biogas plant



Agricultural Biogas Plant (500 kW)

Biogas Plant Margarethen / Moos (Austria)

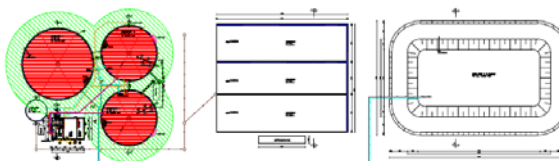
Substrate Used (9.980 t/a):
Corn silage, Sudan grass, liquid manure

Output:

electrical: 500 kW_{el}
thermal: 535 kW_{therm}

Energy yield per year:

Electricity: 3,9 Mil. kWh/year
Heat: 4,2 Mil. kWh/year
Biogas: 1,4 Mil. Nm³/year



Agricultural Biogas Plant 500 kW

Biogas Plant Margarethen / Moos



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Agricultural Biogas Plant 500 kW

Biogas Plant Margarethen / Moos



The first photograph on the left shows the interior of the biogas plant, featuring a complex network of yellow and grey pipes and machinery. The top right photograph shows a large, dark, rectangular biogas digester covered in black plastic mulch, situated in a rural landscape. The bottom right photograph shows a blue tractor working in a field, with a person standing nearby, and a small yellow building in the background.

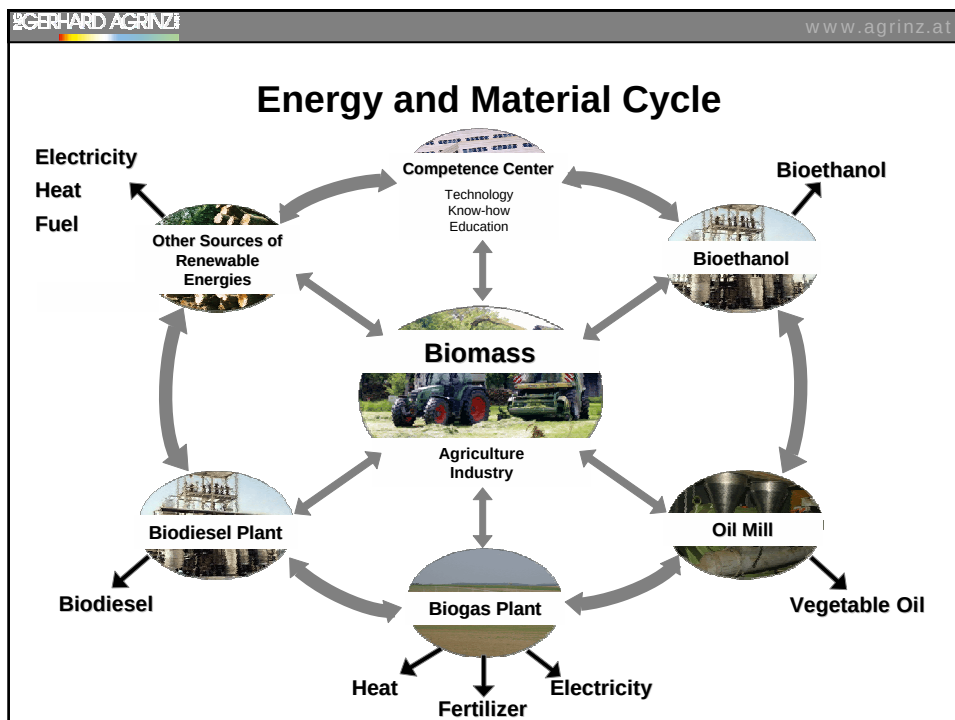
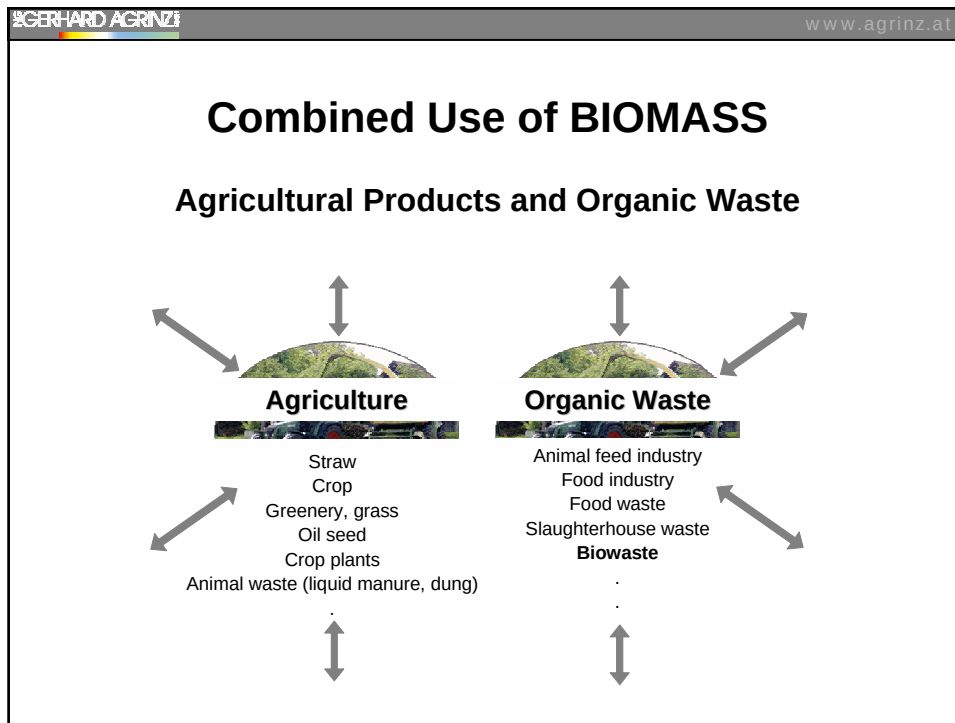
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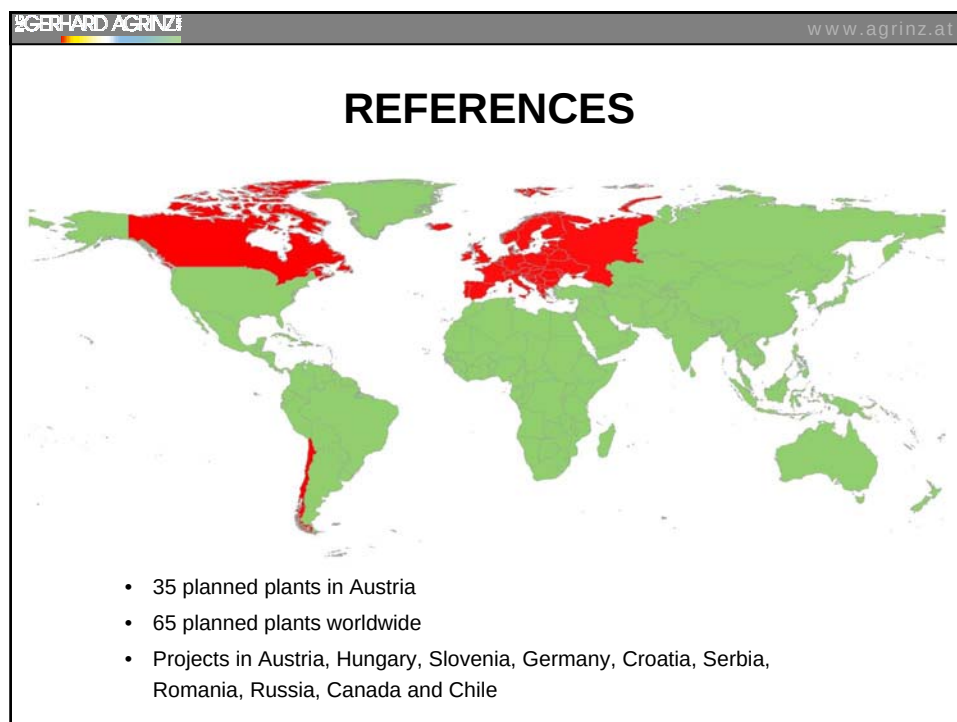
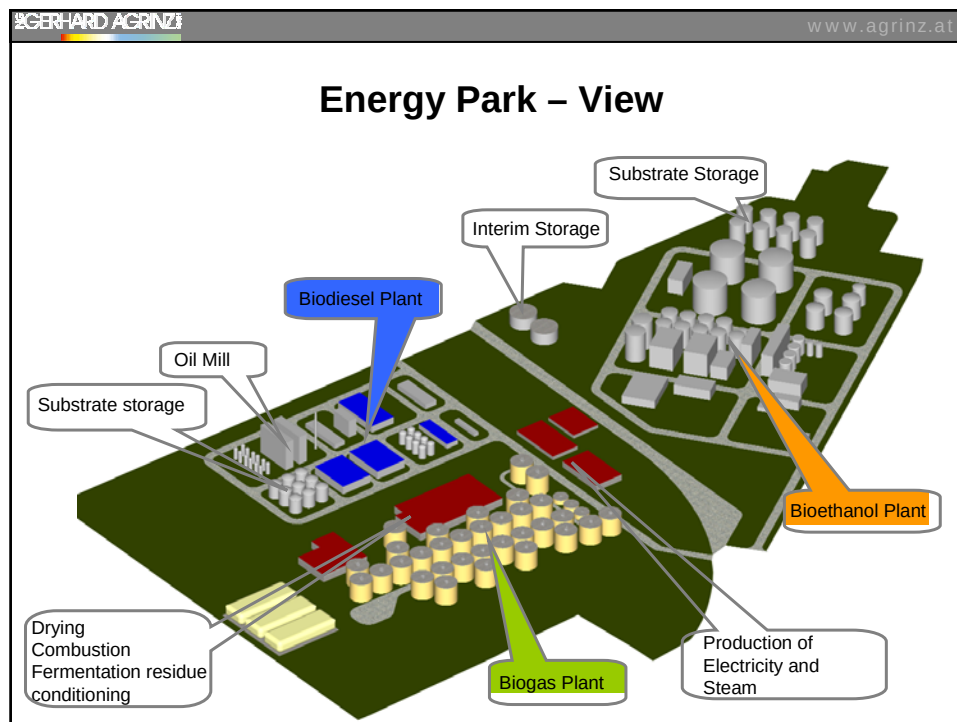
Agricultural Biogas Plant 500 kW

Biogas Plant Margarethen / Moos



The photograph shows the exterior of the biogas plant, featuring three large, cylindrical digesters with green conical roofs. A small yellow building with a red roof is positioned in front of the digesters. The plant is situated in a rural area with a green field in the foreground and a clear sky in the background.









Consulting & Information

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