Rep. Gary Tauchen

Bonduel, WI

Manure Handling in Germany and what we might learn

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EU Energy Mandate 20/20/20

EU policy binding targets for 2020:
- 20% less energy consumption
- 20% reduction of GHG emissions (compared to 1990)
- 20% energy from renewable resources (non nuclear)
  - min. 10% RES in mobility (biofuels or other)
Farm - Wilhelm

- 3 part-time farmers became fulltime farmers
  - operate – 250 Kwh digester

- Ration – 30% manure – beef, dairy, poultry
  - corn silage, rye-silage, grass silage, we even saw potato sorted from food grade “waste”

- Compensation: KwH & HEAT - exchanger
Aerial view – Wilhelm Operation near Vaihingen/Enz
TMR – Mixer – combine ingredients – optimum methane production

Bio-gas storage is in building behind - under protection of roof
400 living units – apartments - heated
At the entrance of the heated water
2,700 feet from the engine that generated it
Farm Gailenkirchen - Ownership

- 51% Farmer
- 25% City of Schwäbisch Hall – community
- 24% Builder - Company

- Total cost 3.5 Million € - 2 years old
Manure Handling – bio-gas
Farm – Gailenkirchen -Schwäbisch Hall

- 470 Kwh - One Generator at farm – gas pipeline to second generator 5.6 Miles in city for electricity and heat
- Hog manure, poultry litter, horse manure
- Corn silage – 400 acres now going to 800
- Electricity and heat
Gailenkirchen – Schwäbisch Hall

5.6 miles the gas is piped for the second – larger engine to produce electricity for 2,500 homes and heat for 1,200 homes
This facility will double capacity and utilize cornsilage from 850 acres

Horse, poultry, dairy and pork manure is being blended into the “ration” along with all kinds of waste, and grain
Farm – Haus Düsse

- Development and training institution: [www.duesse.de](http://www.duesse.de)  Hans-Bernd Hartmann – research in feed stock evaluation and management - Farm Organization and Extension cooperating
- Teaching dairy farm – 80 cows – robot and herringbone – “Hillary” – BEST cow!!!!!!
- Swine breeding and finishing - teaching
Farm – Haus Düsse

- Local manure max 30 %
- Grain – forage – silages or all kinds
- Feed stock evaluation – microbial activity
- Methane yield – evaluation – handling

Heat utilization: local dorms – nearby retirement home and school
Electrical power and heat from Agriculture - actual vs. demonstration installation
<table>
<thead>
<tr>
<th>Inputmaterialien</th>
<th>Güße und nachwachsende Rohstoffe</th>
</tr>
</thead>
<tbody>
<tr>
<td>Güße</td>
<td>2.900 t</td>
</tr>
<tr>
<td>Geflügelkot</td>
<td>300 t</td>
</tr>
<tr>
<td>Festmist</td>
<td>1.500 t</td>
</tr>
<tr>
<td>Silomais</td>
<td>2.300 t</td>
</tr>
<tr>
<td>sonstige nachwachsende Rohstoffe (z.B. Grünrogen, Sonnenblumen etc.)</td>
<td>600 t</td>
</tr>
</tbody>
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**Biogasproduktion insgesamt:**

- BHKW - Zündstrahldiesel
  - ca. 1.400.000 kWh
  - entspricht dem Stromverbrauch von 400

**Stromproduktion insgesamt:**

- entspricht dem Stromverbrauch von 400

**Wärmeproduktion:**

- ca. 1.400.000 kWh / 40% Fermenter / 60%
  - entspricht einer Einsparung von ca. 84%
The optimum ration for the week......
We are at Haus Düsse – TMR mixer and delivered manure for “ration” blending
Farm - Pahmeyer

- Hartmut & Dagmar Pahmeyer Family
- Has a “home-made” design and look
- Built with used parts – own design after previous owner of equipment – went out
- 2,000 hogs finishing annual manure
- 550 acres total farming
- Ration: High moisture cob-corn and many others – sugar beats – over quota production
Pahmeyer Farms – Grain silo next to digester
This tank is being used for TMR mixing and filled with front end loader – not fancy – low cost

This system uses only pumps - everything is outside for easy service – farmer designed - simple
This is the bottom of the digester and pumps are outside the system – used tank in use – insulation added at the site
New rules – retainer walls – loading tank – pre-heating
Turbine motor – more efficient, energy wise – slightly higher price – less service required

No additional fossil fuel or diesel is needed – no oil changes – made in the USA
Winter Canola – June 11
Spring Canola – O’Brien
Brooklyn, WI – July 13