Promoting Biogas in Eastern and Southern Europe

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Biogas could be an answer to...

- Global economic crisis
- Global climate change
- Local energy security
- Sustainable agriculture

→ Actions and investments in biogas technology are needed!
Biogas Technology is already proved!

- In Germany, Denmark and Austria app. 4300 biogas plants are in operation
- Technical solutions are mature and available
- Only few plants exist in Eastern Europe

Primary Energy Production of Biogas in Europe 2007
Biogas plants in the BiG-East countries
(installed and planned; agricultural, landfill, sewage sludge plants)

Bulgaria
Greece
Croatia
Latvia
Romania
Slovenia

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Biogas in Southern and Eastern Europe

<table>
<thead>
<tr>
<th>Country</th>
<th>Installed plants (all)</th>
<th>planned</th>
<th>Feedstock</th>
<th>Political framework</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bulgaria</td>
<td>0</td>
<td>~7</td>
<td>Waste, sewage sludge</td>
<td>No legislation</td>
</tr>
<tr>
<td>Greece</td>
<td>~15</td>
<td>~3</td>
<td>sewage sludge, waste, landfill</td>
<td>Feed in tariff 0.073 €/kWh; depends on technology</td>
</tr>
<tr>
<td>Croatia</td>
<td>~2</td>
<td>~7</td>
<td>Manure, sewage sludge</td>
<td>Feed in tariff 0.1044 €/kWh (~1MW)</td>
</tr>
<tr>
<td>Latvia</td>
<td>~3</td>
<td>~9</td>
<td>sewage sludge, landfill</td>
<td>National biogas programme 2006</td>
</tr>
<tr>
<td>Romania</td>
<td>~2</td>
<td>0</td>
<td>waste, sewage sludge</td>
<td>No legislation</td>
</tr>
<tr>
<td>Slovenia</td>
<td>~13</td>
<td>~11</td>
<td>manure, energy crops, sewage sludge, landfill</td>
<td>Feed in tariff 0.12 €/kWh for 10 years; 5% Reduction after 5 years</td>
</tr>
<tr>
<td>Poland</td>
<td>~19</td>
<td>~22</td>
<td>waste, sewage sludge</td>
<td>Licence needed; Average electricity price 0.038 €/kWh</td>
</tr>
<tr>
<td>Czech R.</td>
<td>~15 twill (~100 sewage, 10 agrifuel)</td>
<td>~100</td>
<td>waste, sewage sludge</td>
<td>fixed feed-in tariffs or “Green Bonus”</td>
</tr>
<tr>
<td>Hungary</td>
<td>~14-24</td>
<td>9</td>
<td>waste, sewage sludge</td>
<td>Feed in tariff 0.094 €/kWh (until 2007)</td>
</tr>
</tbody>
</table>

Source: BiG-East (BG, GR, HR, LT, RO, SL); REDUBAR (PL, CZ, HU)  No data found for Estonia, Lithuania, Slovakia  all data: subject to correction
Waste creates Biogas!

- The biogas potential in Southern and Eastern Europe is estimated very high – especially in the waste sector
- Waste is a serious problem in many countries


Projected generation of MW and GHG emissions in the EU-27

Biogas production could be an opportunity to recover the energy content of the organic fraction of MW.
Non-technical Barriers

- High administrative burdens
- Lack of financial incentives
- Lack of (successful) pilot plants
- Lack of local biogas experts
- Lack of information
- Limited local availability of biogas technologies
- Weak waste treatment infrastructures

BiG-East Objective

Promote biogas production and utilization in Eastern Europe by knowledge transfer from...

...Austria, Denmark, Germany to Latvia, Bulgaria, Croatia, Greece, Romania, Slovenia

Project Duration: Sept. 2007 to Feb. 2010
BiG-East Activities

- **Studies** on biogas potential, barriers and policies
- **Biogas handbooks** in 7 languages
- **18 biogas training courses** for farmers
- **Development of biogas show cases**
- **12 mobilization campaigns** for decision makers
- **Study tours** to existing biogas plants

www.big-east.eu

Project Partners

- WIP Renewable Energies, Germany
- Energy Restructuring Agency, Slovenia
- Ing. Gerhard Agrinz, Austria
- Center for Renewable Energy Sources, Greece
- Ekodoma, Latvia
- Energoproekt, Bulgaria
- Energy Institute Hrvoje Pozar, Croatia
- Finsterwalder Umwelttechnik, Germany
- German Society for Sustainable Biogas and Bioenergy Utilisation
- N. Poushkarov Institute of Soil, Bulgaria
- SC Mangus Sol, Romania
- University of Southern Denmark
BiG-East Experiences

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