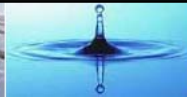


WIP



Promoting Biogas in Eastern and Southern Europe



Dominik Rutz


WIP – Renewable Energies, Munich, Germany

12 February 2009
Brussels, Belgium

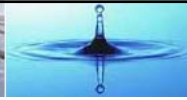


www.wip-munich.de

European Sustainable Energy Week 2009

Intelligent Energy  Europe

WIP



Biogas could be an answer to...



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

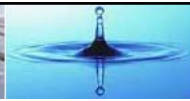
→ **Actions and investments in
biogas technology are needed!**



www.wip-munich.de

European Sustainable Energy Week 2009

2



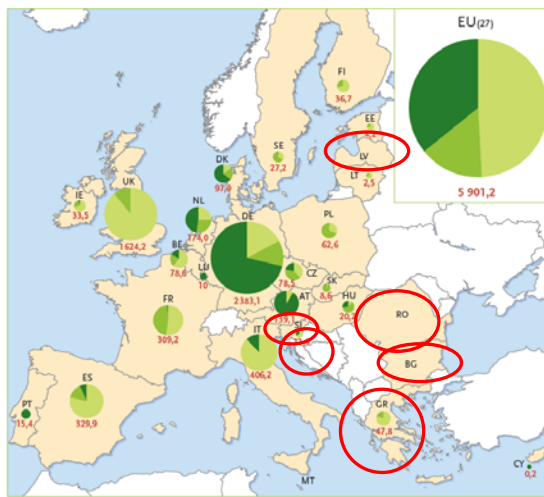
Biogas Technology is already proved!

- 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**



PRODUCTION D'ÉNERGIE PRIMAIRE DE BIOGAZ EN EUROPE EN 2007* PRIMARY ENERGY PRODUCTION OF BIOGAZ IN EUROPE IN 2007*

Primary Energy Production of Biogas in Europe 2007



LÉGENDE/KEY

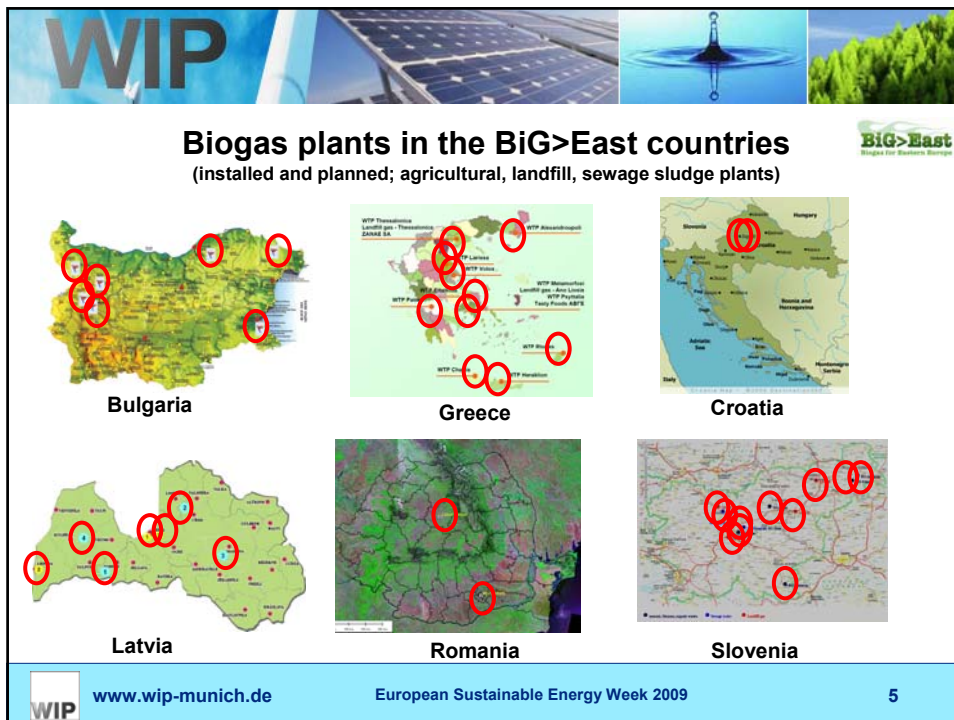
Production d'énergie primaire de biogaz de l'Union européenne en 2007 (en ktep)
Primary energy production of biogas of the European Union in 2007 (in ktep)

- Biogaz de décharges/Landfill gas
- Biogaz de stations d'épuration/Sewage sludge gas
- Autres biogaz (unités décentralisées de biogaz agricole, etc.)/Other biogases (decentralized agricultural plant, etc.)

5 901,2 Les chiffres en rouge indiquent la production totale en ktep/Red figures show total production in ktep

* Estimation/Estimate.

○ = BiG>East target country

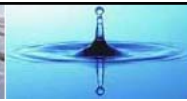


Biogas in Southern and Eastern Europe

	Installed plants (all)	planned	Feedstock	Political framework
Bulgaria	0	~ 7	Waste, sewage sludge	No legislation
Greece	~ 15	~ 3	sewage sludge, waste, landfill	Feed in tariff 0,073 €/kWh; depends on technology
Croatia	~ 2	~ 7	Manure, sewage sludge	Feed in tariff 0,1644 €/kWh (<1MW) 0,1425 €/kWh (>1MW)
Latvia	~ 3	~ 9	sewage sludge, landfill	National biogas programme 2006
Romania	~ 2	0	waste, sewage sludge	No legislation
Slovenia	~ 13	~ 11	manure, energy crops, sewage sludge, landfill	Feed in tariff 0,12 €/kWh for 10 years; 5% Reduction after 5 years
Poland	~ 19	~ 22	waste, sewage sludge	Licence needed. Average electricity price 0,038 €/kWh
Czech R.	~ 13 landfill 100 sewage 30 agriculture	~ 100	waste, sewage sludge	fixed feed- in tariffs or "Green Bonus"
Hungary	~ 14-24	?	waste, sewage sludge	Feed in tariff 0,094 €/kWh (until 2007)

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

www.wip-munich.de
European Sustainable Energy Week 2009
6



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



food waste (expired, catering, etc.)



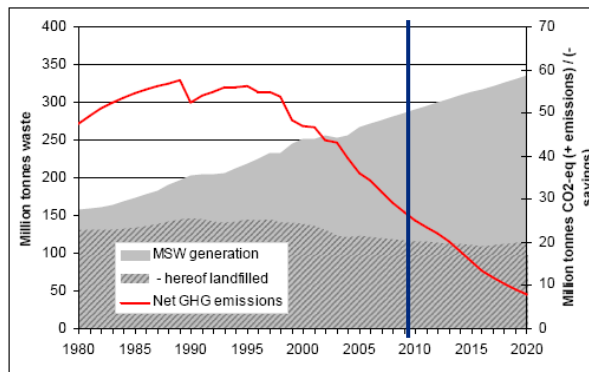
food waste delivery



Municipal Solid Waste (MSW)



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



Source: http://scp.eionet.europa.eu/publications/wp2008_1/wpl/wpl1_2008

Landfill of municipal waste in the EU 1995-2005

Source: http://scp.eionet.europa.eu/publications/wp2008_1/wp1/wp1_2008

○ = BiG>East target country

→ Biogas production could be an opportunity to recover the energy content of the organic fraction of MW

www.wip-munich.de
European Sustainable Energy Week 2009
9

PRODUCTION D'ÉNERGIE ISSUE DES DÉCHETS MUNICIPAUX SOLIDES RENOUVELABLES EN 2007*

ENERGY PRODUCTION FROM RENEWABLE MUNICIPAL SOLID WASTE IN 2007*

Energy Production from Municipal Solid Waste 2007

* Estimation/Estimate. Source: Eurostat 2008


LÉGENDE/KEY

■ Production d'énergie primaire à partir de déchets municipaux solides dans l'Union européenne en 2007* (en ktpe)
Primary energy production from renewable municipal solid waste in the European Union in 2007* (in ktpe)

■ Production brute d'électricité à partir de déchets municipaux solides dans l'Union européenne en 2007* (en GWh)
Gross electricity production from renewable municipal solid waste in the European Union in 2007* (in GWh)

○ = BiG>East target country

www.wip-munich.de
10




Non-technical Barriers

BiG>East
Biogas for Eastern Europe

- 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**

WIP www.wip-munich.de European Sustainable Energy Week 2009 11




BiG>East Objective

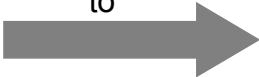
BiG>East
Biogas for Eastern Europe

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**

WIP www.wip-munich.de European Sustainable Energy Week 2009 12



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


 www.wip-munich.de
European Sustainable Energy Week 2009
13



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



 www.wip-munich.de
European Sustainable Energy Week 2009
14






BiG>East Experiences



BiG>East
Bridges for Eastern Europe

WIP www.wip-munich.de European Sustainable Energy Week 2009 15






Intelligent Energy Europe

Contact

BiG>East
Bridges for Eastern Europe



Dipl.-Ing. Dominik Rutz M.Sc.





WIP Renewable Energies
Sylvensteinstr. 2
81369 Munich
Germany
www.wip-munich.de





www.big-east.eu















WIP www.wip-munich.de European Sustainable Energy Week 2009 16