

Can Biogas replace Fossil Gas Imports? Realistic Potential

Harm Grobrügge

European Biogas Association EBA

[Www.european-biogas.eu](http://www.european-biogas.eu)

grobruegge@european-biogas.eu

“Reducing Dependence on Russian Natural Gas with
Bioenergy”

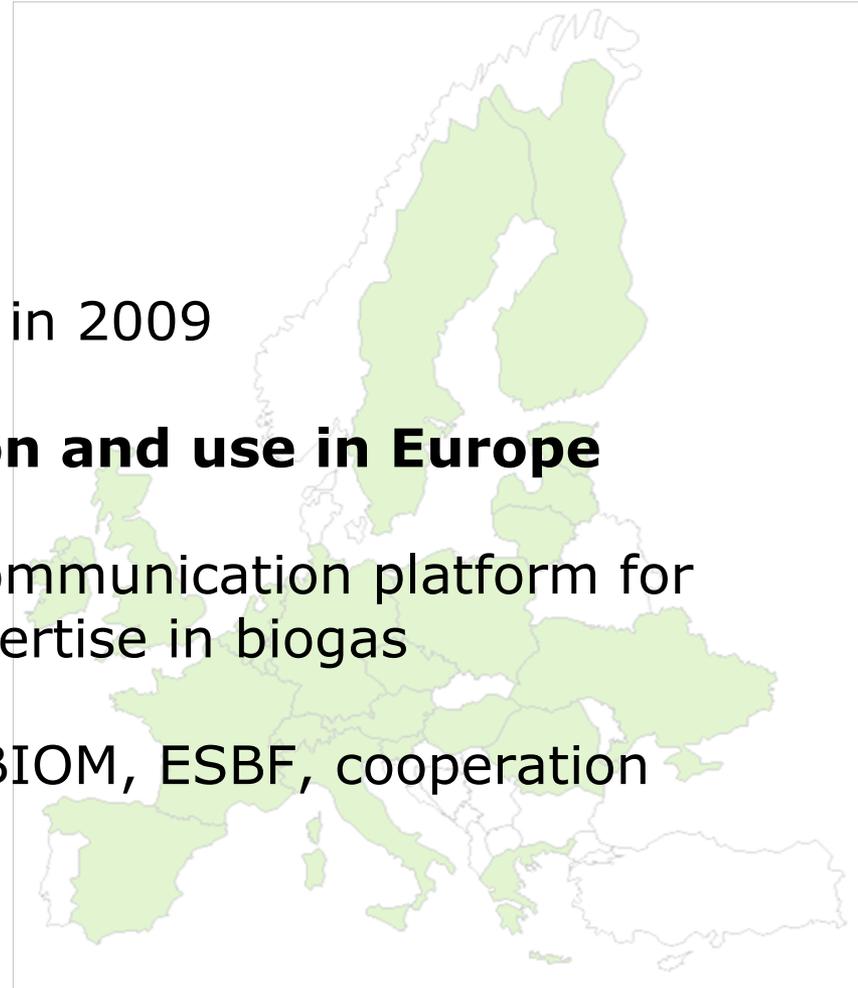
Brussels, 12th of May 2014



What is EBA?

- ✓ Non-profit organisation founded in 2009
- ✓ **Sustainable biogas production and use in Europe**
- ✓ Well-established network and communication platform for exchanging information and expertise in biogas
- ✓ Member of EREF, EUFORES, AEBIOM, ESBF, cooperation with ECN
- ✓ Strategic vision for biogas:

at least 50 billion m³ of biogas potential by 2030
= 15-30 % share of the methane market



European Biogas Association

24 countries – 32 National Organisations – 34 companies

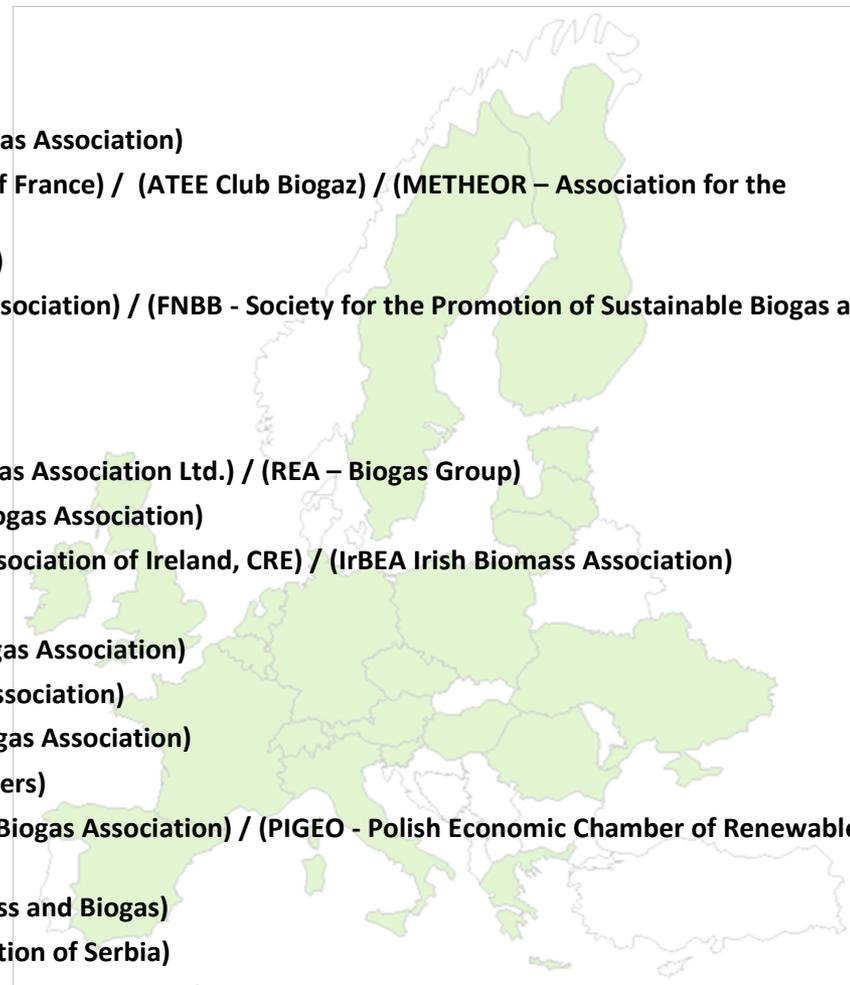


www.european-biogas.eu



Full members

<u>Austria</u>	(ARGE Kompost & Biogas)
<u>Belgium</u>	(ValBiom – Wallonian Biogas Association) / (EDORA – Federation of renewable energies) / (Biogas-E– Anaerobic digestion platform of Flanders)
<u>Czech Republic</u>	(CzBA - Czech Biogas Association)
<u>Estonia</u>	(MTÜ – Estonian Biogas Association)
<u>Finland</u>	(Suomen Biokaasuyhdistys – Finnish Biogas Association)
<u>France</u>	(AAMF – Association of Biogas Farmers of France) / (ATEE Club Biogaz) / (METHEOR – Association for the Ecological Anaerobic Digestion of Waste)
<u>Germany</u>	(Fachverband Biogas – German Biogas Association) / (FNBB - Society for the Promotion of Sustainable Biogas and Bioenergy)
<u>Greece</u>	(HEL.BI.O. - Hellenic Biogas Association)
<u>Great Britain</u>	(ADBA The Anaerobic Digestion and Biogas Association Ltd.) / (REA – Biogas Group)
<u>Hungary</u>	(Magyar Biogáz Egyesület - Hungarian Biogas Association)
<u>Ireland</u>	(Composting and Anaerobic Digestion Association of Ireland, CRE) / (IrBEA Irish Biomass Association)
<u>Italy</u>	(CIB Consorzio Italiano Biogas)
<u>Latvia</u>	(Latvijas Bigazes Asociacija – Latvian Biogas Association)
<u>Lithuania</u>	(Bioduju Asociacija - Lithuanian Biogas Association)
<u>Luxemburg</u>	(Biogasvereenegung - Luxembourger Biogas Association)
<u>Netherlands</u>	(VGGP - Association of Green Gas Producers)
<u>Poland</u>	(Polskie Stowarzyszenie Biogazu - Polish Biogas Association) / (PIGEO - Polish Economic Chamber of Renewable Energy)
<u>Romania</u>	(ARBIO - Romanian Association of Biomass and Biogas)
<u>Serbia</u>	(Udruženje Biogas Srbija - Biogas Association of Serbia)
<u>Slovakia</u>	(AVEOZ - Association of producers of renewable energies)
<u>Slovenia</u>	(Sekcija bioplinarjev pri GZS-Zbornici kmetijskih in živilskih podjetij - Biogas section of the Chamber of Commerce and Industry of Food and Agriculture)
<u>Spain</u>	(AEBIG - Spanish Biogas Association)
<u>Sweden</u>	(Energigas Sverige - Swedish Gas Association)



Associated members



HAFFMANS



Institute for Biogas
Waste Management & Energy
Prof. Dr.-Ing. Frank Scholwin



Current Studies and Analyses

- ✓ **DBFZ:** Potenziale für Biogas und Biomethan in Deutschland und Europa
- ✓ **Ludwig Bolkow Systemtechnik:** Die Zukunft der europäischen Gasversorgung 2014
- ✓ **ENERGYWATCHGROUP:** Erdgasabhängigkeit der EU von Russland kann nur mit steilem Ausbau der Erneuerbaren Energien beendet werden.
- ✓ **Fachverband Biogas:** Eine Europäische Biogasstrategie als klimaneutrale Alternative zu Erdgasimporten und Fracking

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Status and Outlook

Status

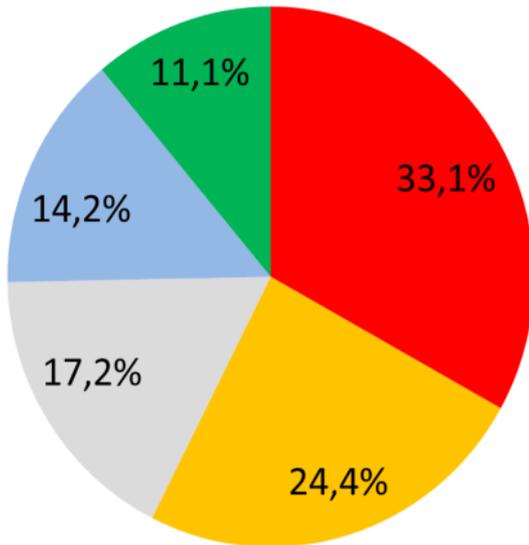
- ✓ Primary Energy Consumption
- ✓ Fossil Gas Sources
- ✓ Biogas Potential

Outlook

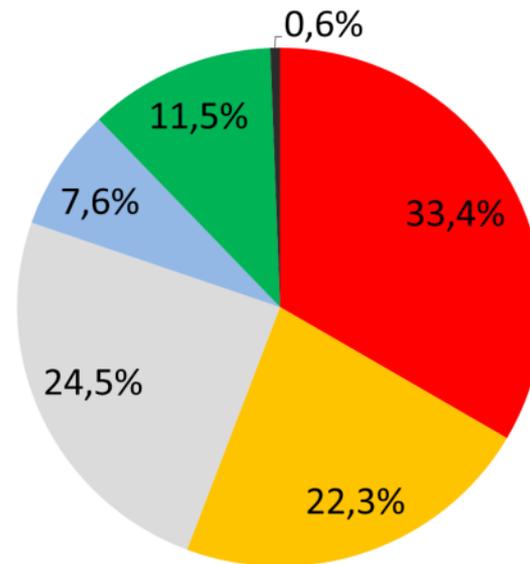
- ✓ Perspectives of Fossil Gas Sources
- ✓ Alternative Gas Sources
- ✓ What are other Alternatives?

Primary Energy Consumption

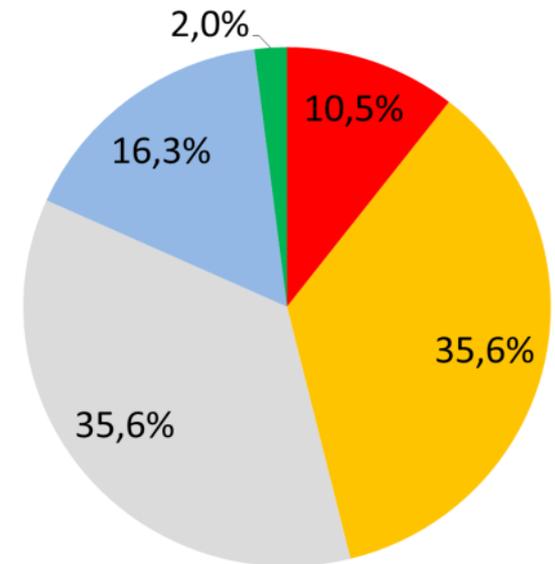
EU-28
69.459 PJ(2011)



DEUTSCHLAND
13.908 PJ(2013)



UKRAINE
5.246 PJ(2012)



- Mineralöl
- Erdgas
- Kohle
- Kernenergie
- Erneuerbare
- Sonstige

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Biogas Potential EU-28

EU-28

- a) Fossil gas consumption 2013 - 17.365 PJ IEA
- b) Imports from Russia - 5.209 PJ CIEP
- c) Biogas production 2012 - 335 PJ Observ'ER
- d) Biogas potential today - 1.711 PJ BMVBM, AEBIOM
- e) Future biogas potential - 6.836 PJ BMVBM, AEBIOM

= 125% of Russian imports could be replaced,
or 39% of total consumption

Sources: IEA, CIEP, Observ'ER, BMVBS, AEBIOM

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Potentials of Fossil Gas Sources

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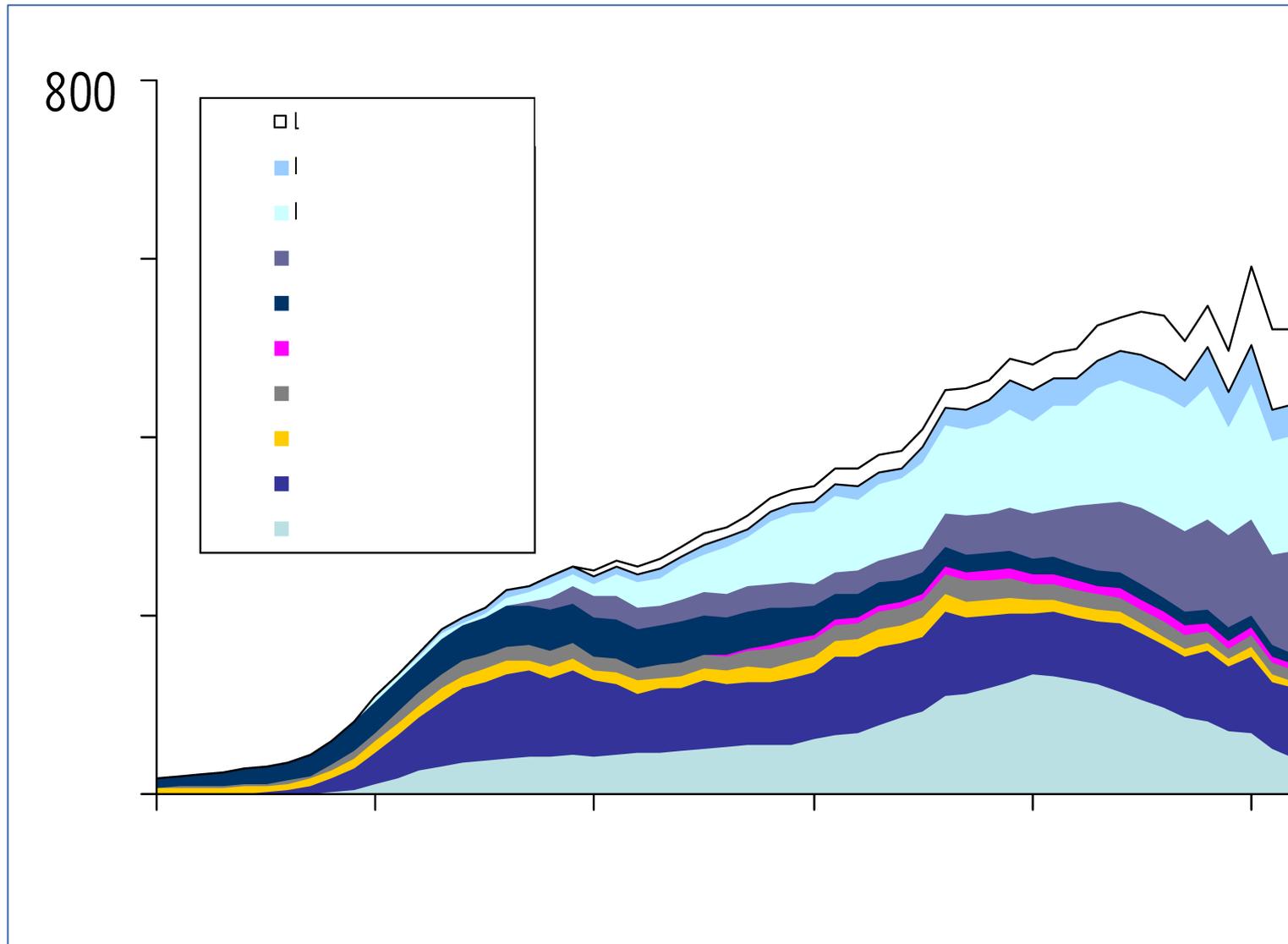
Fossil Gas Sources - EU

Mrd. m³/a

100 Mrd. m³ = 3.600 PJ = 3600.000 TJ



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Alternative Gas Sources

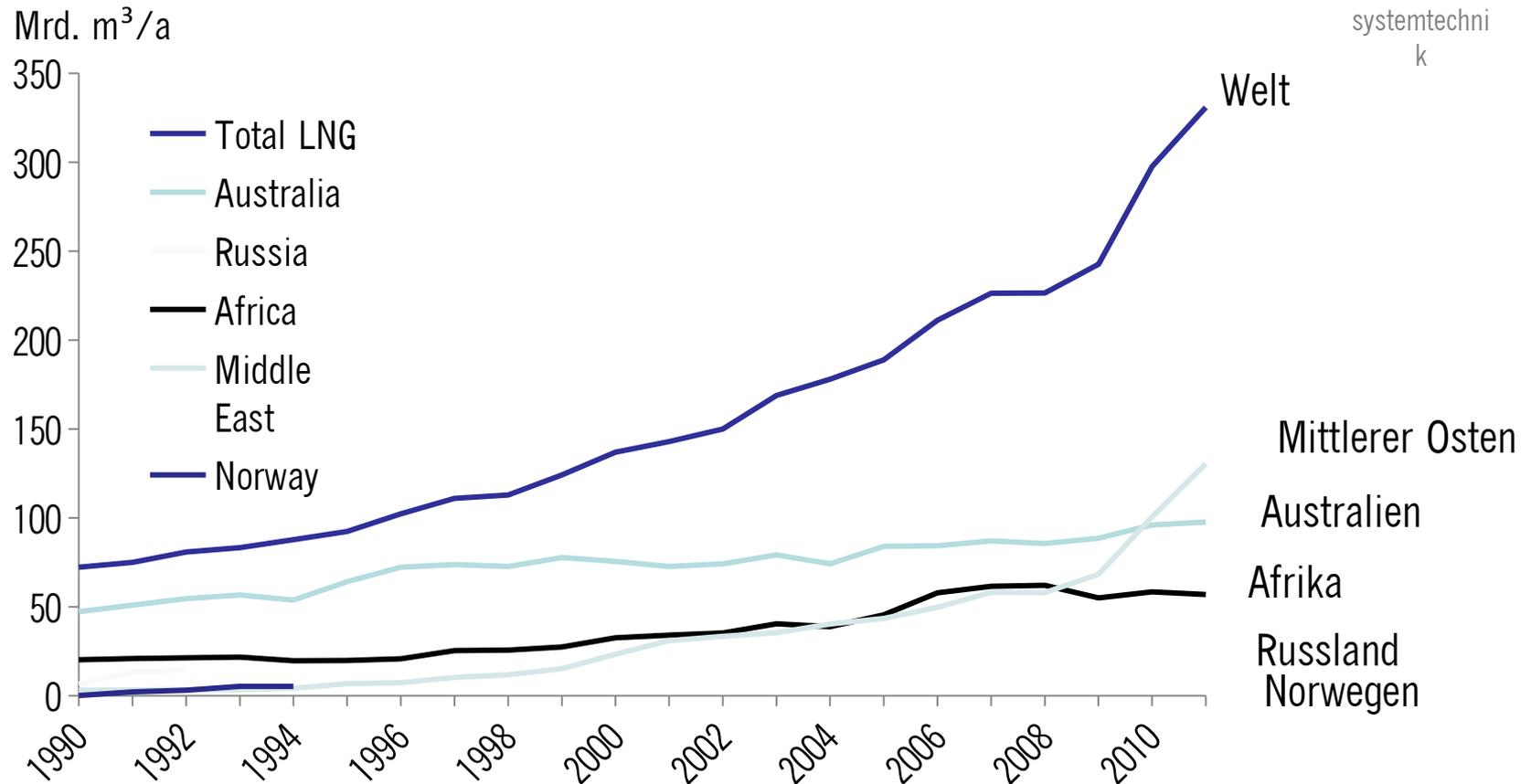
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LNG - Exports



Ludwig
Bolkow
Systemtechnik



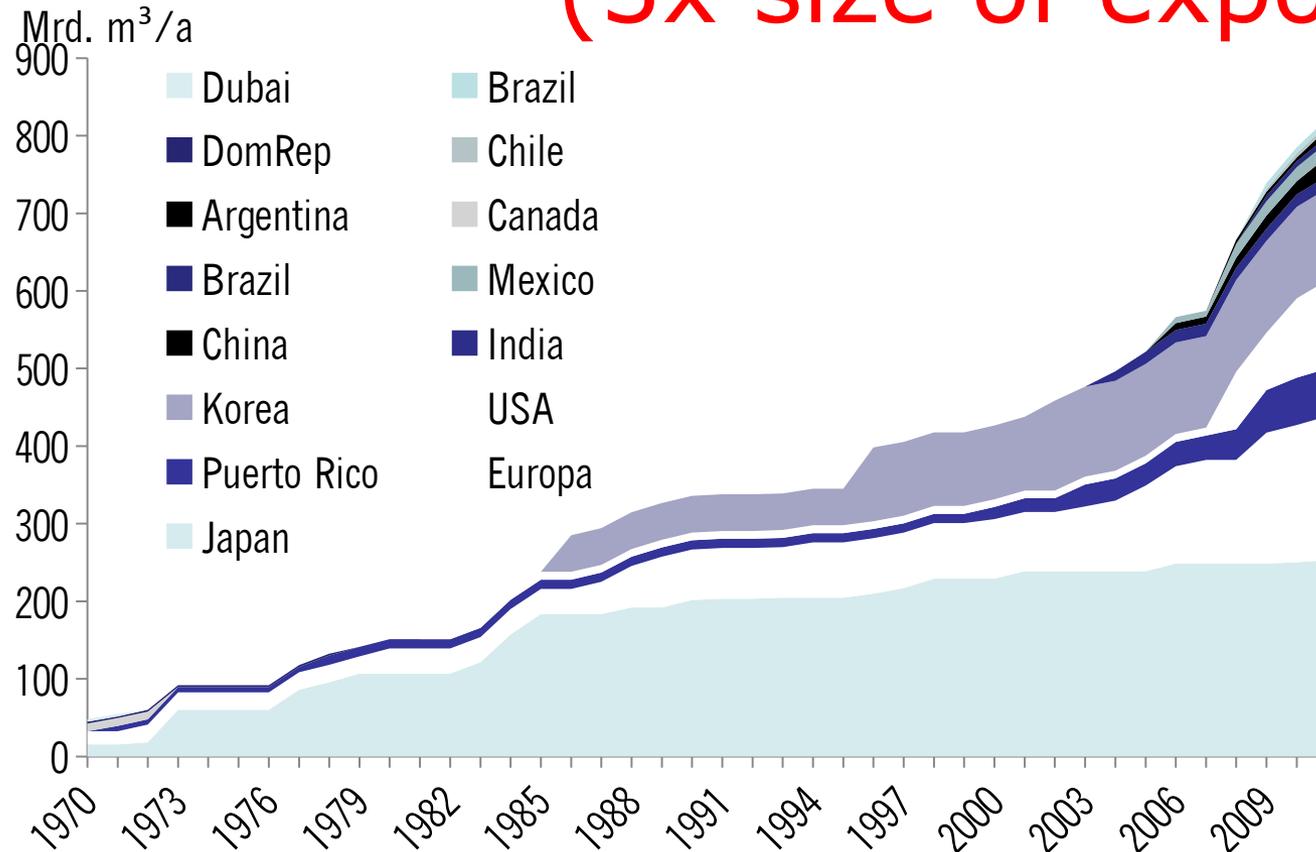
Quelle: GIIGNL 2013

LNG Regasification Capacities



Ludwig
bolkow
systemtechni
k

(3x size of exports)



Quelle: GIIGNL 2013

Shale Gas

- European shale gas not comparable to US fields much deeper, more expensive, scarcer, environmental problems?
- All shale gas fields show rapid decline
- US are still importing gas from Canada
- No LNG export terminals on US east coast, only on west coast > Asian markets

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Shale Gas



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Other Alternatives



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Perspectives?

- EU energy consumption has fallen by 10% since 2005
- EU fossil gas production has fallen by 30% since 2005
- EU fossil gas prices have doubled since 2004
- EU fossil gas imports have risen by 50% since 2000
 - (by 15% since 2005)
- **Fossil gas imports from Russia** to EU have risen by 20%
 - since 2000 (since 2005 stagnation)

- **Source: Ludwig Bolkow Systemtechnik:** Die Zukunft der europäischen Gasversorgung 2014

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Other Alternatives

- combined efforts to reduce dependency on fossil energies
- raising awareness and efforts for higher energy efficiency
- faster and coordinated efforts for more renewables, in the electricity and heating and transport sectors
- biogas constituting the necessary energy form to fill the gaps of the fluctuating energies wind and solar
- with biogas 125% of Russian imports could be replaced, or 39% of total consumption

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Biogas Production – Gasification – Biomethane

**plenary sessions - parallel sessions - poster session –
exhibition - study tours**

Co-hosts: Netherlands Enterprise Agency , Energy Valley

**Conference of European
Biogas Association**



EBA
European Biogas Association

**30 September - 2 October 2014
Alkmaar region, Netherlands**

www.BiogasConference.eu