Swiss Country Report
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Biogas Plant Inventory

Number of plants

Number of plants (end of 2012)

Agriculture: 89 plants
Biowaste: 26 plants
Industrial waste water: 22 plants
Waste water treatment plants: ~ 463 plants (282 with CHP)

Detailed statistic data:
http://www.bfe.admin.ch/themen/00526/00541/00543/?dossier_id=00772&lang=de
Biogas Plant Inventory

Gross gas production

- Agriculture
- Industrial waste water
- Biowaste
Biogas Plant Inventory

WWTP – gross gas production

GWh/a

Biogas Plant Inventory

Upgrading plants

GWh/year

New biogas plants (2013)

Agriculture
- **Bure**  Feb 2013, CHP 360 kW
- **Gutenswil**  Mai 2013, CHP 75 kW
- **Einsiedeln**  June 2013, CHP
- **Seigneux**  Aug 2013, CHP 150 kW
- **Densbüren**  Aug 2013, CHP 120 kW
- **Seedorf**  Sept 2013, CHP

Biowaste
- **Zürich**  Aug 2013, Upgrading
Biogas plants under construction

Agricultural installations
Cournillens (CHP)

Biowaste
Vétroz (Kompogas, upgrading)
Winterthur (Kompogas, upgrading)
Financial support systems

Feed-in tariff for electricity from biogas

<table>
<thead>
<tr>
<th>Power class</th>
<th>≤ 50 kW</th>
<th>≤ 100 kW</th>
<th>≤ 500 kW</th>
<th>≤ 5 MW</th>
<th>&gt; 5 MW</th>
</tr>
</thead>
<tbody>
<tr>
<td>Basic tariff [CHF/kWh]</td>
<td>0.28</td>
<td>0.25</td>
<td>0.22</td>
<td>0.185</td>
<td>0.175</td>
</tr>
<tr>
<td>Agricultural bonus [CHF/kWh]</td>
<td>0.18</td>
<td>0.16</td>
<td>0.13</td>
<td>0.045</td>
<td>0</td>
</tr>
<tr>
<td>Heat bonus [CHF/kWh]</td>
<td>0.025</td>
<td>0.025</td>
<td>0.025</td>
<td>0.025</td>
<td>0.025</td>
</tr>
<tr>
<td><strong>Maximum [CHF/kWh]</strong></td>
<td><strong>0.485</strong></td>
<td><strong>0.435</strong></td>
<td><strong>0.375</strong></td>
<td><strong>0.255</strong></td>
<td><strong>0.20</strong></td>
</tr>
</tbody>
</table>

Fund for biomethane injection
- Voluntary support program by the Swiss Gas Association
- Objective: injection of 300 GWh biomethane within 6 years

Certificates for emission compensation
Projects reducing GHG emissions can get financial support

www.erdgas.ch/biogas/foerderung-der-biogas-einspeisung/

News and developments

Blue BONSAI: in pilot stage

- Project: small scale biogas upgrading plant
- Capacities: 1 and 15 Nm$^3$/h of upgraded gas
- Technology: membrane separation
- Markets: decentralized biogas filling station or injection into the gas grid
- Goals: pilot plants shall demonstrate the economic feasibility and reliability of plants smaller than 50 Nm$^3$/h of upgraded gas

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News and developments

Biomethane import – administrative and tax barriers
An important step towards eased import of biomethane through the natural gas grid has been made. National Council has voted in favour of a tax relief.
Current studies and research projects

**Determination of methane production in laboratory**
Comparision of laboratory BMP test results and real methane producion in full-scale plants (2012 – 2014)
C. Holliger, EPFL ([http://lbe.epfl.ch/page-83701.html](http://lbe.epfl.ch/page-83701.html))

**ORION – Organic waste management by automated small-scale AD**
Development of an on-site organic waste treatment for SME ([www.project-orion.eu](http://www.project-orion.eu)). 7th framework programme

**Mini-Biogas**
Identification and evaluation of technologies for small-scale digestion (2012 – 2013). Y. Membrez / EREP
Current studies and research projects

Agricultural dry batch digestion
Pilot plant of a dry batch digester, fed with dry manure (2012 – 2014). C. Morrier

Hygiene of digestate
Tracking of pathogens in substrates from digester feeding until digestate spreading on agricultural fields (2012 – 2014). J. Fuchs / FIBL

Membrane separation

Post-treatment of digestate
Studies and research projects

Published reports 2013

- Measurement of odour emissions and development of a odour-emission-model for biogas plants. Holger F. et al. / Ernst Basel & Partner

- Digestion of manure and Co-Substrates in a Membrane Bioreactor. Meier U. et al. / Meritec

Link to publications: