## Biogas Plant Inventory
An aerobic digestion plants (2011)

<table>
<thead>
<tr>
<th>Anaerobic digestion plants</th>
<th>Number</th>
<th>Production (GWh/year)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sewage sludge</td>
<td>135</td>
<td>638</td>
</tr>
<tr>
<td>Municipal (biowaste)</td>
<td>19</td>
<td>416</td>
</tr>
<tr>
<td>Agriculture</td>
<td>19</td>
<td>20</td>
</tr>
<tr>
<td>Industrial</td>
<td>5</td>
<td>129</td>
</tr>
<tr>
<td>Landfills</td>
<td>55</td>
<td>270</td>
</tr>
<tr>
<td><strong>Sum</strong></td>
<td><strong>233</strong></td>
<td><strong>1,473</strong></td>
</tr>
</tbody>
</table>
Biogas Plant Inventory
Upgrading plants (2012)

Number of biogas upgrading plants: 57
Expected development of biogas production in Sweden including gasification

Biogas Plant Inventory Trends

Number of upgrading plants

Källa: Energigas Sverige
Biogas Plant Inventory
Utilisation of the annual production of 1.5 TWh

- Electricity: 38%
- Heat: 50%
- Upgraded: 8%
- Flaring: 1%
- Missing data: 3%
Biogas as a vehicle fuel

- 44,000 gas vehicles
  (1,800 buses, 600 heavy duty vehicles)
- 60% biomethane in the biogas
- 138 public and 57 non-public filling stations
- A few filling stations for LBG also exist
Financial support systems

The support system in Sweden is mainly focused on increasing the usage of biomethane as vehicle fuel. The exiting support systems are:

- No carbon dioxide or energy tax on biogas. Today this correspond to a value of 68 € / MWh compared to petrol and 52 € / MWh compared to diesel of which 26 € / MWh is from the carbon dioxide relief and the remaining part is from the energy tax relief.
- 40% reduction of income tax for use of company NGVs until 2017
- Investment grants for marketing of new technologies and new solutions for biogas during 2013-2016. Maximum 45% or 25 MSEK (~3 M€) of investment cost
- A joint electricity certificate marked between Norway and Sweden. The producer get one certificate for every MWh electricity produced from renewable resources and electricity consumers must buy certificates in relation to their total use. Average price 2012 around 17-22€/MWh
Some new plants
Brålanda – biogas hub

- Total capacity: 1.7 million Nm³
- Substrate: manure and slaughter house waste
- Investment: 80 million SEK (€ 9,5 million)
  - Farm based biogas plant: 6-10 million SEK (€ 0,7-1,2 million)
  - Upgrading plant: 10 – 15 million SEK (€ 1,2-1,8 million)
  - Filling station for cars 3 – 4 million SEK (€ 0,4-0,5 million)
  - Filling station for tanks 5 – 8 million SEK (€ 0,6-1,0 million)
Dry digestion plant in Mörrum for food waste

Capacity: 20 000 ton/Y
(15 000 ton food waste / 5000 ton green waste)
Thermophil digestion 55C
Retention time: 27 days
Gas production: 1.7 million Nm3/y

Upgrading with water scrubber

Total investment: 54 MSEK
(-19 MSEK as Investment grants for marketing of new technologies)