

Agriculture Update Finland

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Finland



Agriculture

- biogas has been produced in Finland in agricultural plants since 1979: first biogas was used for heating and later also in CHP and traffic fuel
- in 2011 10 farm-scale biogas plants were operating
- agricultural waste was also used in eight co-digestion plants

Agriculture

- in 2011 production of thermal, electrical and mechanical energy was 203 GWh by the reactor installations and 315 GWh by landfill recovery plants; agricultures share is only 4 %
- this 518 GWh is about 0,5 % of the total amount of renewable energy consumed in Finland (108 TWh) (total energy consumption 386 TWh)
- there is large potential to increase biogas production in Finland (potential estimates vary from 6,7 TWh to 17,6 TWh)

Methane Reduction, Recovery, and Use Initiatives

- the state of Finland provides subsidies for biogas investments and research projects
- Ministry of Employment and the Economy provides subsidies to bigger biogas plants: feed- in tariff or energy aid for investments

Methane Reduction, Recovery, and Use Initiatives

- The feed-in-tariff system for electricity produced from biogas has been in force since March, 2011
- Guaranteed price 83.5 €/MWh + 50 €/MWh heat bonus
 - Generator power \geq 100 kVA (~85 kWe)
 - Only new plants
 - Landfill gas and municipal plants excluded
 - Plants can be included in the feed-in-tariff scheme for 12 years
 - Biogas plants can be accepted to the feed-in-tariff scheme until their total efficiency reaches 19 MW (only 10 x 2 MW plants)
- Investment support of 15-40% available for construction of biogas plants as an alternative to joining the feed-in-tariff system

Methane Reduction, Recovery, and Use Initiatives

- Ministry of Agriculture and Forestry provides subsidies to smaller biogas plants: investment aid (rural development programme for Mainland Finland 2007-2013 and the national investment aid)
- biomethane is exempted from excise tax

Methane Reduction, Recovery, and Use Initiatives

- Research activities:
 - Processing digestate to value added products
 - Developing sustainable crop cultivation for biogas production
 - Developing use of biogas as vehicle fuel

Barriers/Challenges to Methane Reduction, Recovery, and Use

- biogas has many advantages:
 - reduction of greenhouse gas emissions
 - better manure management
 - production of organic fertilizers and soil conditioners
 - increase self-sufficiency in energy
 - possibility to produce energy for selling
 - reduce the smell of manure
 - nutrient recycling
 - etc.

Barriers/Challenges to Methane Reduction, Recovery, and Use

- but also many challenges exist:
 - suitable technology for small scale production
 - profitability
 - permit processes
 - farmers know-how
 - support policy (no feed-in tariff for small scale producers)
 - scattered farm structure
 - cold winter conditions
 - utilisation of digestate (contaminants etc.)

Barriers/Challenges to Methane Reduction, Recovery, and Use

- Government goal: 1 TWh more biogas production in 2005-2020
 - “*The use of biogas in vehicles will be promoted*” (Government Programme 22.6.2011) The Finnish Government is committed to promote the use of biogas.
- the aim of National Climate and Energy Strategy is to decrease energy consumption and increase production of renewable energy - promotion of biogas is included to the strategy

Thank you!

