

Enhancing biogas production in Finland

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Mitigation in Agriculture 1/2

- ESD target: 16 %,
- National target in sector Agriculture 13 %
- Possible measures: animal nutrition, constraining deforestation for farming, perennial crops on peatland, biogas production, ...
- Impacts of these measures are uncertain and mostly small
- Difficult to implement, need for policy coherence
- Food production shouldn't be threatened

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Mitigation in Agriculture 2/2

- Emissions from the whole agriculture are reported in 3 different sectors: Agriculture, LULUCF and Energy
- Also many Finnish farms are forest owners, i. e. they provide carbon sinks
- **There is an urgent need for more comprehensive thinking of sinks and emissions in agriculture**
- F.ex. In agriculture most cost-efficient measures to mitigate are in energy

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Case study: Biogas

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Biogas plants in operation and planned on September 2012

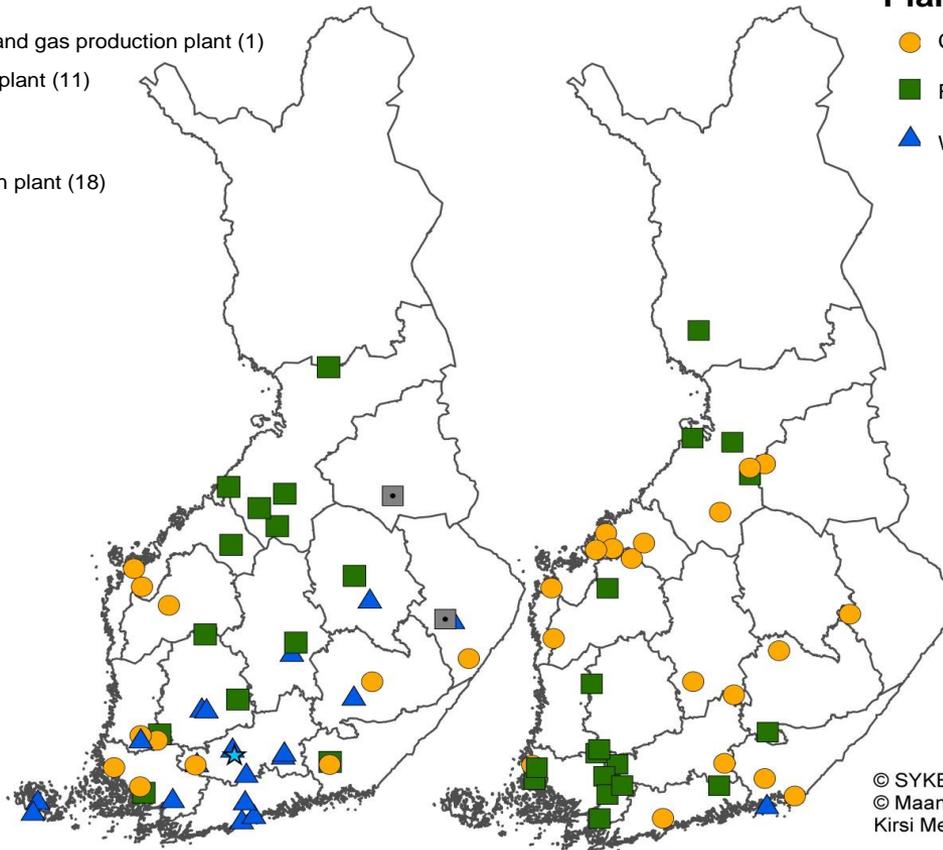
(sources: UEF Biogas plant register, VAHTI info system, Markku Alm)

In operation

- ★ Integrated bioethanol and gas production plant (1)
- Combined procession plant (11)
- Farm plant (13)
- ▲ Wastewater purification plant (18)
- Experimental plant (2)

Planned

- Combined procession plant (19)
- Farm plant (19)
- ▲ Wastewater purification plant (1)



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Biogas in Finland 1/2

- 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
- 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; new program for 2014-2020 sent to Commission)
- biomethane is exempted from excise tax

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Biogas in Finland 1/2

- 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

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National aid for bioenergy production 2008-2011

- Investment aid for biogas production: two rounds of applications in 2008 and 2010
- Focus in biogas plants bigger than a farm, using mostly material produced in farms
- 5 millions per year
- In 2008: 16 applications were accepted, 35 % of acceptable costs would have been reimbursed
- In 2010: 7 applications were accepted, 45 % of acceptable costs would have been reimbursed
- 23 applicants, only 8 plants were finished (7 million €)

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Lessons learnt from the investment aid scheme and agricultural biogas 1/3

- Reasons for failing:
 - poor know-how
 - administrative constraints (predictability, coherence with other schemes, f. ex. Agri-environmental scheme)
 - poor profitability

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Lessons learnt from the investment aid scheme and agricultural biogas 2/3

- A lot of potential, but problems with profitability
 - Must have sufficient and predictable balance from selling electricity and heat and also partly from fertilizers produced from the digestate and gate fees obtained from waste-based materials
- What is needed to increase number of agricultural biogas plants in Finland?
 - Developing energy production support system
 - Supporting research and development on digestate processing and the use of recycled fertilizers

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Agricultural biogas (3/3)

- New way of thinking: biogas plant as an integration of energy production, agriculture, waste management and nutrient recycling could enhance the development of the biogas sector in Finland

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Climate Programme in Agriculture

- Comprehensive approach to agriculture
- Gathering together all possible, cost-efficient and socially acceptable measures
- Food production and consumption included
- Ready by the end of June, 2014

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Thank you!

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