Country report Finland

November 2007
Proposed policy for biogas feed-in tariff in 2008 (<20 MW plants)

New renewable energy policy for traffic fuels: Petrol and diesel in public filling stations should contain minimum of 2 % renewable fuel starting at 2008, 4 % 2009 and 5.75 % 2010

New CO₂ emission based passenger vehicle purchase tax for new cars in 2008.

CO₂ emission based yearly passenger vehicle tax proposed (2010)

Standard for biogas as vehicle fuel in preparation

Ministry of Agriculture has proposed that cultivation area of reed canary grass (used mainly for combustion) would be 100 000 ha by year 2015

In 2006 energy crops area 17 065 ha in which reed canary grass 15 763 ha

Increased interest in planning and building new biogas plants 2006 and 2007 as energy prices increase: ca 10 centralised plants are under planning, altogether 20-30 MW

Critical public discussion on vehicle biofuels and availability of biomass for paper industry
Biogas plants in Finland

Total 58 biogas plants 2006
Landfills are currently the largest biogas producer in Finland
At least two new co-digestion plants are coming online in 2007

Biogas plants in Finland 2006

- Landfill; 33
- Sewage domestic; 14
- Sewage industrial; 2
- Co-digestion; 3
- Farm; 6

Biokaasulaitosrekisteri X
Biogas production in Finland

Total biogas production 130.4 million m³ (577 GWh) in 2006
Co-digestion plants increased their biogas production 46 %, landfills dropped 16 % from previous year (2005)

Biogas production by source 2006
(millions of m³)

- Sewage industrial; 1.0
- Sewage domestic; 23.5
- Co-digestion; 3.6
- Farm; 0.3
- Landfill; 102.1
Biogas utilization in Finland

Biogas utilization was 62 % of total production in 2006
Electricity generation increased 15 % from previous year (2005)
202 GWh of energy was wasted due to torching of biogas
Traffic biogas utilization

- About 10 biogas vehicles (one taxi) by 2007 outside the natural gas grid. About 100 gas vehicles total.

Currently 6 public natural gas fuelling stations in southern Finland (2007), more opening in near future

One farm-scale biogas fuelling station in Laukaa near Jyväskylä, another planned in Salo
Natural gas grid in southern Finland

National gas grid operator (Gasum Oy) plans to build 30 public natural gas fuelling stations by 2010, some could be build outside the gas grid using liquefied natural gas transported by tanker trucks. Biomethane injection to the grid possible.
Ongoing R&D

- Development and demonstration of landfill gas upgrading to traffic biofuel (biomethane)
- Farm scale traffic biomethane production from cow manure, organic industrial waste and energy crops.
- Energy crops research for biogas production; Reed canary grass, perennial herbaceous grasses and maize in near future
- Proposed that 500 000 ha arable land could be dedicated to energy crop production, which is 25 % of all arable land in Finland (including fallow and set aside)
- And also 50 % of the regrowth yield of grasslands (600 000 ha) could be utilized to biogas production