

# Status of biogas in Central Finland

7.2.2019

Outi Pakarinen  
Regional Council of Central Finland

[outi.pakarinen@keskisuomi.fi](mailto:outi.pakarinen@keskisuomi.fi)  
 [@Outi\\_Pakarinen](https://twitter.com/Outi_Pakarinen)

# Central Finland

276 031 inhabitants (2017)

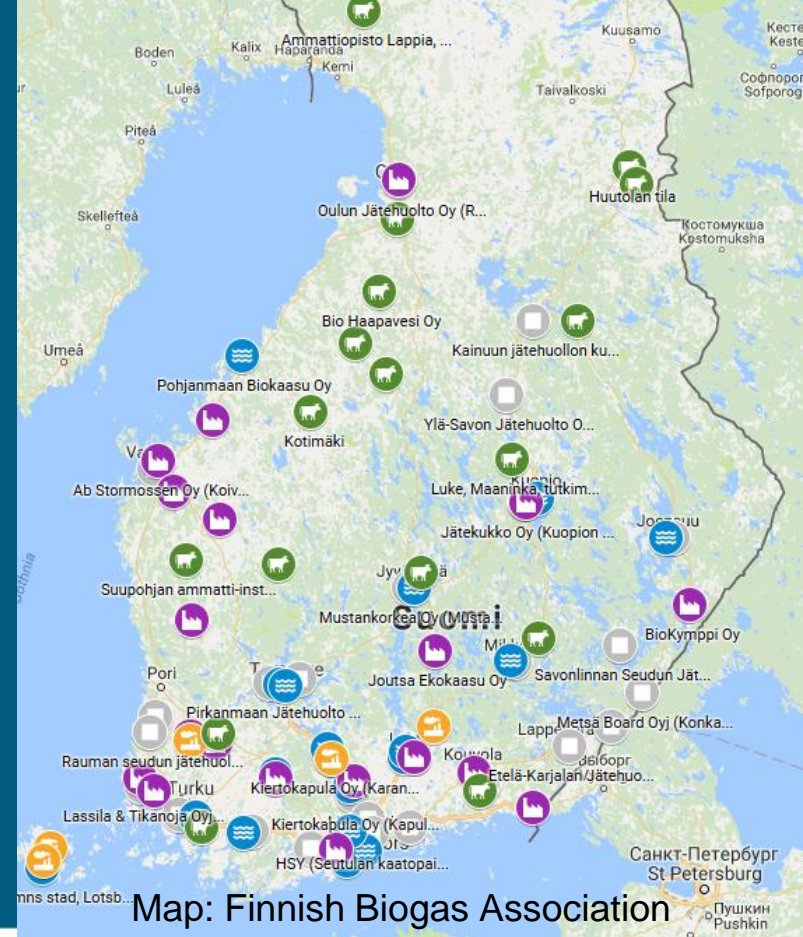


# Biogas production in Finland

**Total production: 920-1140 GWh**

- **heat 400-480 GWh**
- **electricity 170 GWh**
- **traffic (2017) 27 GWh (estimation)**

## Biogas potential 9-16 TWh



# Gas grid and fuelling stations

Biogas upgrading to biomethane: 16  
Injection into the gas grid: 5

CNG/CBG stations  
Gasum: 27  
Other operator: 15

LNG stations: 4

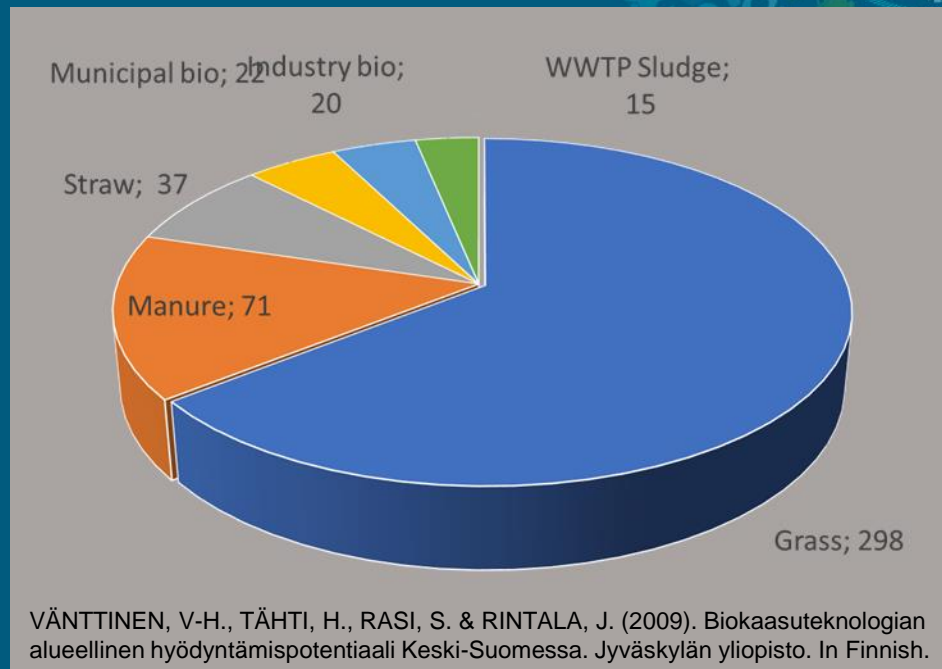
6300 gas vehicles

Maps: Gasum



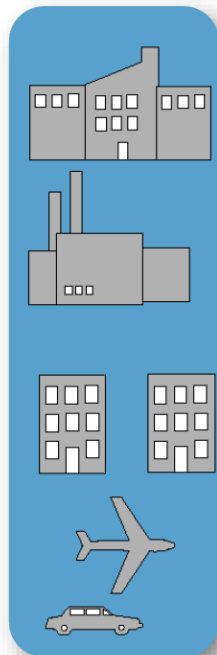
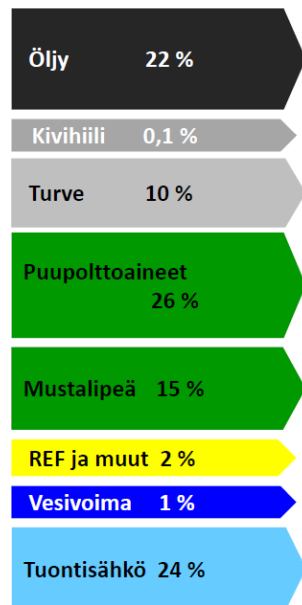
# Biogas production potential in Central Finland

Biogas potential (average) 460 GWh  
(Vänttinen et al. 2009)





# Energy balance of Central Finland 2016



**Teollisuus 48 %**  
• Sähkö 46 %  
• Prosessilämpö 54 %

**Rakennusten lämmitys 28 %**  
• Kaukolämpö 49 %  
• Puu 14 %  
• Öljy 18 %  
• Sähkö 17 %  
• Lämpöpumput 2 %

**Muu sähkönkulutus 8 %**  
• Asuminen ja maatalous 59 %  
• Palvelut ja rakentaminen 41 %

**Tieliikenne 17 %**  
• Bensiini 37 %  
• Diesel 55 %  
• Biopolttoaineet 8 %

**Yhteensä 17,3 TWh**

\* Alueen energiantuotannon häviöt (yht. 2,4 TWh) on jaettu  
kulutuskohteille niiden kulutusten mukaisissa suhteissa

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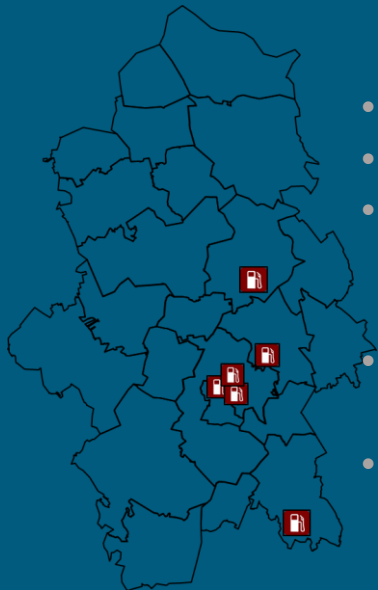
**Biogas potential covers  
approximately 16 % of the  
energy used in transport  
sector**

# Biogas production in Central Finland

- Mustankorkea, Jyväskylä: landfill gas ~ 18 GWh
- Nenäinniemi, Jyväskylä (wwtp) ~ 13 GWh
- Kalmari farm, Laukaa
- Joutsa
- Mustankorkea biogas plant, Jyväskylä ~ 15 GWh
- Ecoenergy SF, Äänekoski ~ 24 GWh



# Biogas fuelling network in Central Finland



- Kalmari farm, Laukaa
- Joutsan Ekokaasu
- Mustankorkea biogas plant, Jyväskylä
  - Another station is going to be open soon, Jyväskylä
- Gasum LNG/CNG/CBG station, Jyväskylä
- Äänekoski? (coming)





# Circwaste –project promotes the development of the biogas ecosystem in Central Finland



Biogas ecosystem covers waste management, energy production and nutrient recycling

Communication and cooperation with stakeholders



Strong commitment of the public sector  
Active biogas companies in the region  
R&D projects (e.g. CO<sub>2</sub> utilization by VTT)  
Investments in biogas production, filling network and gas vehicles



Photo: Sihvri

