

Introduce biogas for heavy-duty freight vehicles

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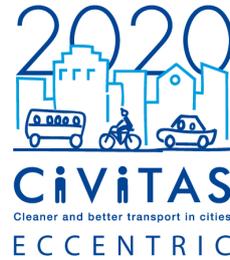
- Clean Heavy Duty Vehicle traffic
- Reducing CO₂ emissions in urban freight
- Renewable fuels

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Location: Turku, Finland

Organisations involved: [City of Turku](#)

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What is the solution?

The solution is to support the growth of the biogas ecosystem in the region of Turku by introducing Heavy Duty Vehicles (HDV) operated by liquefied biogas (LBG) to replace traditional diesel trucks. By using renewable energy instead of fossil fuels it is possible to reduce emissions from carbon dioxide (CO₂) NO_x and particulate matter (PM).

The City of Turku is cooperating with relevant stakeholders to promote the use of biogas for heavy duty freight vehicles. In terms of evaluation, key indicators will cover both indicators related to the technical realisation of the measure (vehicle kilometres travelled, investment and operational costs), environmental indicators (CO₂, NO_x, PM emissions, energy efficiency, etc.), as well as society related indicators (awareness, acceptance, satisfaction).

How does it work?

Gasum Ltd. will invest in two LBG trucks and use them in the company's own waste and organic fertilizer logistics. The City of Turku will promote biogas use by purchasing and operating two to three delivery vans, or similar, for food transport in the city area, for instance.

One LBG truck runs between the Turku Waste Water Treatment Plant and Gasum's biogas production plant transporting sludge that will be processed to biogas. The other truck delivers nutrition residue from the biogas plant to local farmers.

The trucks are refilled at the local public biogas filling station.

Expected results

- First freight companies and vehicles using LBG as an energy source.
- Higher acceptance of LBG, and as a result, first passenger cars using liquefied biogas available in the local market.
- Biogas operated vehicles are competitive with fossil fuel operated vehicles.
- If in future a production capacity of 10 Mm³ can be used for replacing the diesel in cargo trucks this will result in annual reductions of 100 tonnes of NO_x emissions, three tonnes of PM and 30,000 tonnes of CO₂ emissions.

Business model

Procurement of the two LBG trucks is funded by CIVITAS ECCENTRIC.

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