



Public procurement of buses with 100% renewables target

Kalmar, Sweden

IN A NUTSHELL

As part of the objective of becoming 100% fossil fuel free by 2030, Kalmar County has set up a public procurement for the purchase of biogas fuelled buses. Authorities from the county and the city of Kalmar chose to reuse biomethane produced from cattle manure to run the buses, both addressing the issue of over-fertilisation and fostering the shift towards a carbon neutral transport system.

A favourable context for biomethane production

Kalmar's surrounding area consists of wide farm lands with numerous livestock. While the municipality of Kalmar and the island of Öland are very popular holiday resorts, the Baltic Sea suffers from over-fertilisation due to cattle concentration. For example, on Öland, facing the city of Kalmar, there are 2.5 cows per inhabitant. The situation is such that farmers wishing to buy more animals must buy extra land. Kalmar County represents 2.4% of all the inhabitants in Sweden but boasts 25% of chicken production and 12% of milk production in the country. Politicians have recognised that biogas can be one of the solutions because it not only reduces methane emissions from cattle but also delivers a renewable fuel to vehicles.

A strong political ambition

Kalmar County has a target to become a fossil fuel free county in 2030 with no net greenhouse gas emissions. This target was set by the Climate Commission consisting of the County Administrative Board, the Regional Council of Kalmar County as well as different private and public organisations. Kalmar, the county's main city, aims to reduce its CO₂ emissions by 50% by 2020 compared to 2008 levels. To reach this ambitious target, several sub targets have been set. One of them is that all transport paid by public means in the County shall be fossil fuel free by 2020, reducing emissions by approximately 6,000 tonnes /year. Since there are very good conditions to produce biogas especially from manure and many farmers are interested in producing biogas, the Regional Council of Kalmar County set a 65% biomethane target in the procurement. Launched in 2014, it consisted of approximately 400 vehicles and it was worth about €500 million.



A biogas bus in front of Kalmar's cathedral

KALMAR



Population:
36,392

Area:
19.50 km²

Signatory
to the Covenant
of Mayors since:
2011

CO₂ emission
reduction target:
-50% by 2020
compared to 2008

Setting up and implementing the procurement

Members of the regional biomethane network, Biogas Sydost, led by the Energy Agency for Southeast Sweden, carried out feasibility studies and mapped the potential and locations for biomethane production. On that basis, the County Council set the requirements that the procurement should result in 100% renewable public transport and a reduction of greenhouse gas emissions by 50% compared to fossil fuels. It was agreed that on the main routes and in the city, there shall be only one fuel option (biomethane), whereas for the rest of the traffic there would be five alternative fuels (biomethane, sustainable synthetic diesel, green electricity, rapeseed methyl esters and ethanol).

The Regional Transport Administration oversaw the implementation. Like all the other municipalities that wanted to have BioCNG buses, the city of Kalmar had to make sure there would be a bus depot in the municipality at the time when the buses enter the traffic. The County Council signed contracts with the eighteen companies that won the procurement and bought the BioCNG buses. Also, to give smaller companies the opportunity to make an offer, the procurement was divided into 60 parcels of different sizes, ranging from one vehicle to thirty-five vehicles.

When it comes to the delivery of biomethane, contracts were made between the producers (mainly farmers) and distributors, in general energy companies.

Outcomes of the procurement

Thirty companies entered the bid. Negotiations took place in February 2016 and the choice of winning companies was made in April 2016. Contracts were signed in June 2016 and the new busses entered the traffic on 21 August 2017. Kalmar was one of the five cities that made this project possible by installing bus depots. A new biomethane plant, 'More Biogas Småland AB', was built to produce biomethane for BioCNG busses and started production in spring 2014.

The results obtained are encouraging. The greenhouse gas emissions from buses are set to decrease by 75% and the reduction of costs is about 2%. The initial forecasts were that the costs would increase by 3 to 4% but the costs decreased for municipalities like Kalmar, thanks to coordination with school buses.

An important point is that BioCNG buses are profitable only if the contracts are made long-term and the busses run many miles. Otherwise they will end up more expensive due to higher capital and service costs.



400 vehicles

€500 million procurement

2% reduction of costs

75% decrease in CO₂ emissions

6,000 tonnes/year: emissions reduction induced by clean public transport by 2020



FINANCING THE PROJECT

- + **Financing source(s):**
41 to 43% are financed by the sale of bus tickets. The rest is tax-financed.
- + **Total amount:**
€500 million for the ten years the contracts are signed.
- + **Payback period:**
10 years

USEFUL LINKS

- ▶ Covenant of Mayors profile of Kalmar: <http://bit.ly/2BAHXZI>
- ▶ Moving to biogas saves Kalmar money: <http://bitly/2aq2x7m>



CONTACT

For more information on the project, please contact:
Hannele Johansson, Biogas and sustainable transport
Hannele.johansson@energikontorsydost.se