



CASE
STUDY

Case Study



Clean Energy

Lille, France - Buses powered by biogas of the municipal wastewater

The Urban Community of Lille (CUDL) is a public inter-municipal co-operation body that gathers 87 local authorities from the Nord-Pas-de-Calais Region. Its scope of competencies includes the provision of services and amenities to the urban community in the fields of town planning, road infrastructure, mobility and parking facilities, urban transport systems for passengers. CUDL is home to over 1 million inhabitants. The mobility policy is determined by the town planning and master plan. Priority is being given to public transport: (i) development of existing transport facilities (train, underground, tramway); and (ii) preferential urban development (ToD) in these areas serviced by such transport facilities. The Urban Mobility Plan, adopted by the Municipal Council in 1997, set the objective of promoting less polluting energy sources for private cars as well as for public transport, and for transportation of goods. By the end of 1990, the CUDL launched the innovative renewable energy project, to introduce biogas to power urban transport buses. The biogas is being produced by the Maquette sewage plant, in the suburbs of Lille. In 1990, 80% of the 15,000 m³ of biogas produced daily by the waste water treatment plan, i.e. the equivalent of 6,000 litres of petrol every day, was used internally to supply the treatment plant with heat and power, and the remaining gas was burnt. To make use of this resource, the CUDL decided to utilize the balance, some 1,200 m³ of biogas usable as fuel in public transport vehicles. The first bus operating on such biogas was introduced in March 1994. Further buses were introduced in the years thereafter, bringing the share of biogas fuelled vehicles to 50% of the entire municipal bus fleet.

Biogas powered buses



Source: http://www.energy-cities.eu/db/lille_113_en.pdf

Technical features of the Renault V.I. PR-100-2 biogas-fuelled experimental bus	
Introduction	March 1994
Type of fuel	Currently biogas fuel produced from the Marquette sewage plant
Gas quality	Good, between Gaz de France category B and category H
Tanks	6 aluminium tanks with a capacity of 127 litres each
Additional weight	1,500 kg
Range	220 km
Safety aspects	Biogas fuel is non toxic, weakly reactive, hardly inflammable and lighter than air
Consumption data	55 litres/100 km (diesel bus: 41 litres/100 km)
Performance	Improved acceleration and driveability
Pollutant emissions:	Complies with EURO II and EURO III standards. Higher results for NO _x due to a problem with engine tuning
Noise level:	Reduced by 60%

Source: http://www.energy-cities.eu/db/lille_113_en.pdf

References

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Credentials

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