Use of biomethane as fuel

Feedback of the European Metropolitan Lille (MEL)

OFATE Conference on 4 April 2019

Le biogaz dans l’économie circulaire
CNG is:

- the use of natural gas as an automotive fuel,
- the most widely used alternative fuel in the world: Highly developed in the Netherlands, Belgium, Germany and Italy, it is still emerging in France and the region.
- At MEL, we have been choosing the bus fleet for 20 years.
  - 1st biogas bus in France in the 90s
  - Leader of the European project Biogas Max in 2006 - 1st site in France to inject biomethane into public gas networks in 2011
  - Diesel/GNV bus transfer in 10 years - 100% of the fleet = 430 buses run on CNG
  - In the short term, 15% of household waste containers will be powered by CNG.
- Two technologies:
  - Compressed Natural Gas (CNG): in a gaseous state and compressed to 200 bars. Used for light vehicles, light trucks, trucks, buses...
  - Liquefied Natural Gas (LNG): in its liquid state it is maintained at -160°C. Volume / 600: interesting for long distances, available in fuel stations for more than 2 years.
Regulatory requirements have increased in recent years.

In the regulatory framework, we can mention in particular:

- **European directive AFI** (Alternative Fuels Infrastructure) which ratifies the deployment of infrastructures for alternative fuels in each Member State (electricity, hydrogen or natural gas),

- **Energy Transition Law for Green Growth 2015 (TECV)**: implementation of Restricted Circulation Zones (CNG in category 1),

- **Multi-year Energy Programming 2019 (MPE)**: by 2023 target of 3% of heavy goods vehicles running on CNG with a 20% share of bioGNV in CNG consumption,

- More recently, the Ministry of Ecological and Solidarity Transition's draft climate plan which foresees the end of the marketing of petrol and diesel vehicles by 2040,

- The revision of the Metropolitan’s **Climate-Energy-Air Plan** (*Plan Climat Air Energie, PCAET*) initiated in 2018.
A strong impact of transport on the metropolitan environmental balance sheet:
- 46% of CO₂ emissions in the carbon footprint,
- 35% of particulate emissions and 61% of nitrogen oxide (NOx) emissions

=> 60 air quality threshold exceedances in 2018

GrDF's target for 2030 is 30% biomethane in the network.

The MEL adopted a strategy for the development of biomethane on its territory in October 2016: equipment of wastewater treatment plants and Euramethanisation label to support agricultural projects

Compared to diesel (EURO VI):

Existence of a strong economic stake for the carriers of the territory (ZCR, ecological taxation).
Promote the development of CNG and CNG and CNGB
In heavy goods vehicle mobility in metropolitan France

Main lines of the October 2017 deliberation on the development of CNG

- consolidate the inventory of development potential at the MEL level with the elaboration of a mapping of possible station locations (location of transporters, presence of gas networks, availability of land, proximity of suitable transport routes),
- Sensitize and mobilize carriers with a view to a medium-term commitment to partially replace their fleets, thus creating conditions conducive to investors for the establishment of refuelling stations,
- mobilise the MEL and its member municipalities in their own operation of CNG vehicle equipment, including by their delegates.
DEVELOPMENT OF CNG MOBILITY
WHAT ARE THE CONCLUSIONS OF THE STUDY?

- **Despite obstacles** (additional cost of purchasing vehicles, network of stations to be increased, emergence of a second-hand market), there are real opportunities for transport operators (existence of a full manufacturer's offer, cheaper fuel, tax incentives, image)

- Emergence of the sector: work on captive fleets before thinking in terms of flows

- Breakeven point of a station: 30 heavy goods vehicles attached to the station,

- **Potential for the creation of 2 to 4 new stations on the territory**

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UPDATE ON PROCEDURES IN FRANCE
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300 000 €* (2016)
200 000 €* (2018)

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"Carriers bear the risk"
"The community has a role to play in bringing together stakeholders for the emergence of stations"
"Importance of ceilings for allocating aid"

*Indicative prices for 1 station or 20 trucks
- Financial support for vehicles

**Study of the influence of purchase aid**

*As a % of the overcharge*

- Positive signal.
- Reduces financial immobilization.
- Concrete impact on profitability.
- Allows to compensate for fears and changes in habits.

- Depending on conditions, can be used to recover BioGas.

- Without additional help, there is a risk of a lack of stations.
- Requires an agreement with the region
- Financial support for vehicles

Proposal of grant amounts
(As a percentage of the surcharge)

- Small companies: 40%
- Medium-sized companies: 30%
- Large companies: 20%
- BioGNV Bonus: +10%

4 stations, 25 vehicles:
100 PL per year = about **900,000€**
- 1000 tonnes of CO2/year (CNG)
- 8.5 tonnes of Nox/year

**MEL Deliberation next June to validate this strategy**
- Launch of a Call for Proposals with investors from private stations,
- Provision of the conclusions of the study and the locations,
- Support for the first 25 transfers of diesel trucks to CNG per station to launch the business model
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