

GRDF

**“Distribution System Balancing Workshop
2016**

**Injection of renewables (e.g. biomethane)
from multiple suppliers into Gas Supply
Grids”**

Biomethane injection status (GRDF)

About twenty injection points on GRDF distribution network :

- At most points injection of gas produced from agricultural or food industry wastes
- Some gases injected produced from urban wastes
- Some gases injected produced from waste water plant

All injections on the distribution network at 4 bar, 1 at 20 bars

Biomethane injection is GRDF responsibility!

GRDF : Owner of the injection station. Ensure operation and maintenance.

- Injection service billed to the producer. Includes continuous control of the main gas quality parameters.
- Connexion to the grid and potential reinforcement of the grid (inter-connexion of different distribution grids when necessary) billed to the producer after quotation
- **Gas quality full analysis billed to the producer (control of full list of parameters done periodically)**

Fares determined by CRE (Commission de Régulation de l'Energie)

Biomethane production is not!

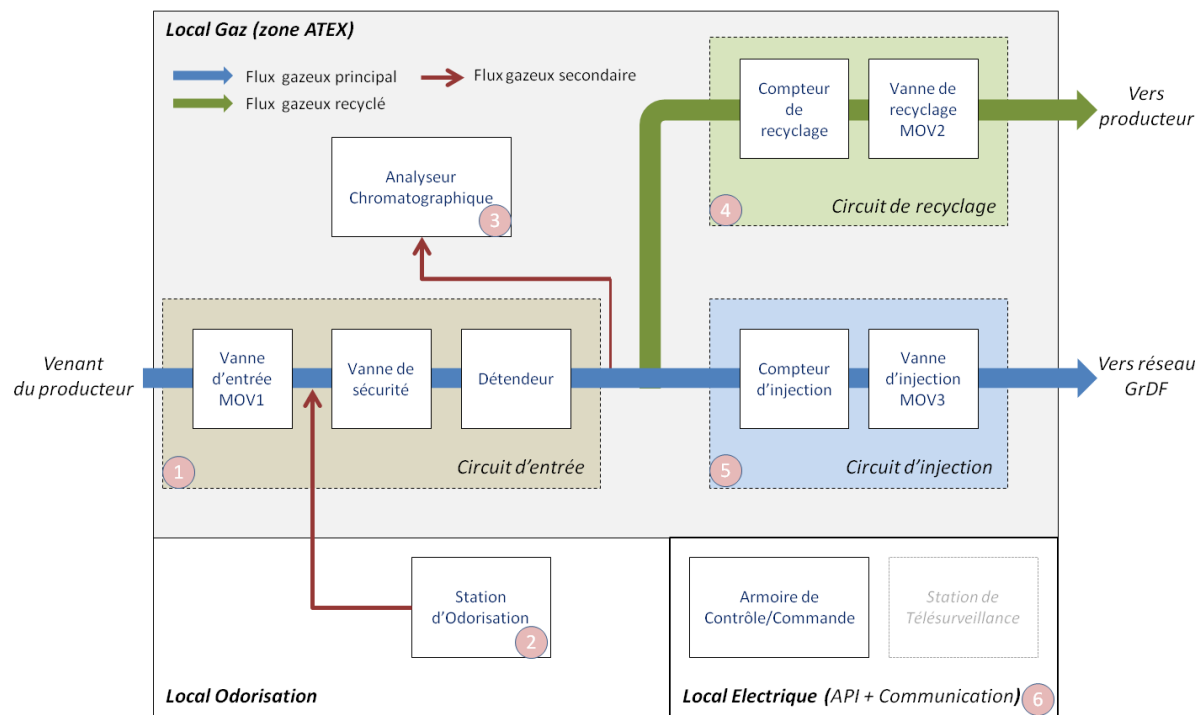
Producer is responsible of :

Installation, operation and maintenance of the digester, upgrading installations and compression.

Providing a biomethane whose quality parameters are within the limits defined by the grid operator.

Injection station functionalities

Odorisation, gas quality control, accounting, injection (pressure control)



How biomethane injection is controlled?

1 – Network gas demand is above production capacity

Injected flowrate is controlled in order to keep a constant acceptable pressure upstream of the injection station. This avoid the safety shut down of the producer installation (because of the loss of upstream pressure) and keeps a constant downstream pressure.

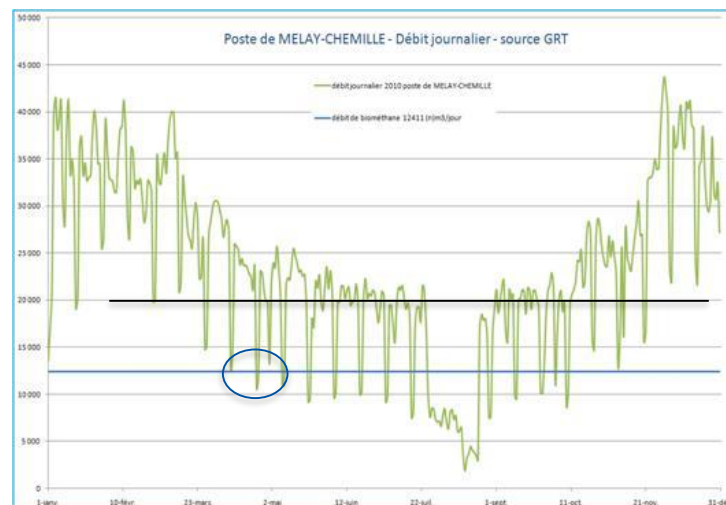
This control is achieved through a dynamic flowrate limiter that opens and closes a pneumatic valve according to upstream pressure variations

2- Network gas demand is below production capacity,

Injection flowrate will follow gas demand. Excess production is, depending on producer's choice, burned or stored to avoid upstream pressure increase.

Main difficulty: gas demand may not allow for accepting all the biomethane production

Problem appears during summertime:



Solutions under investigation:

Winter/summer setting for injection stations → some excess biomethane may be stored in the distribution station

Connexion of 2 (or more) independent grids in order to increase gas demand