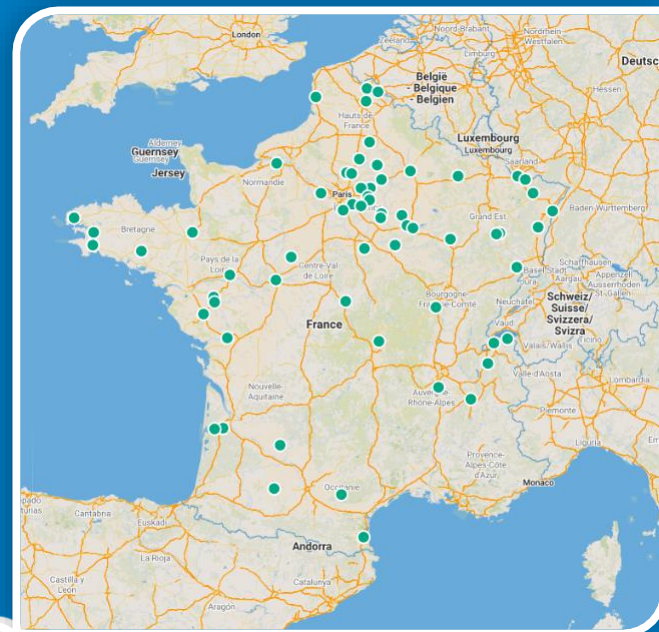




Connecter les énergies d'avenir



# Biomethane in France: business model and stakes

Dr Yves Brullé  
GRTgaz Strategy and Regulation



# Outline of the presentation

## Biomethane in France: business model and stakes

- About GRTgaz
- Biomethane and other renewable gases
  - Existing injection facilities and projects
  - Injection forecasts
- Biomethane Value chain
- Economical and Environmental stakes



# GRTgaz

+ Certified  
Independent  
Transmission  
System  
Operator  
(ITO)

+ 140  
Shipper  
customers

+ 749  
Industrial  
customers

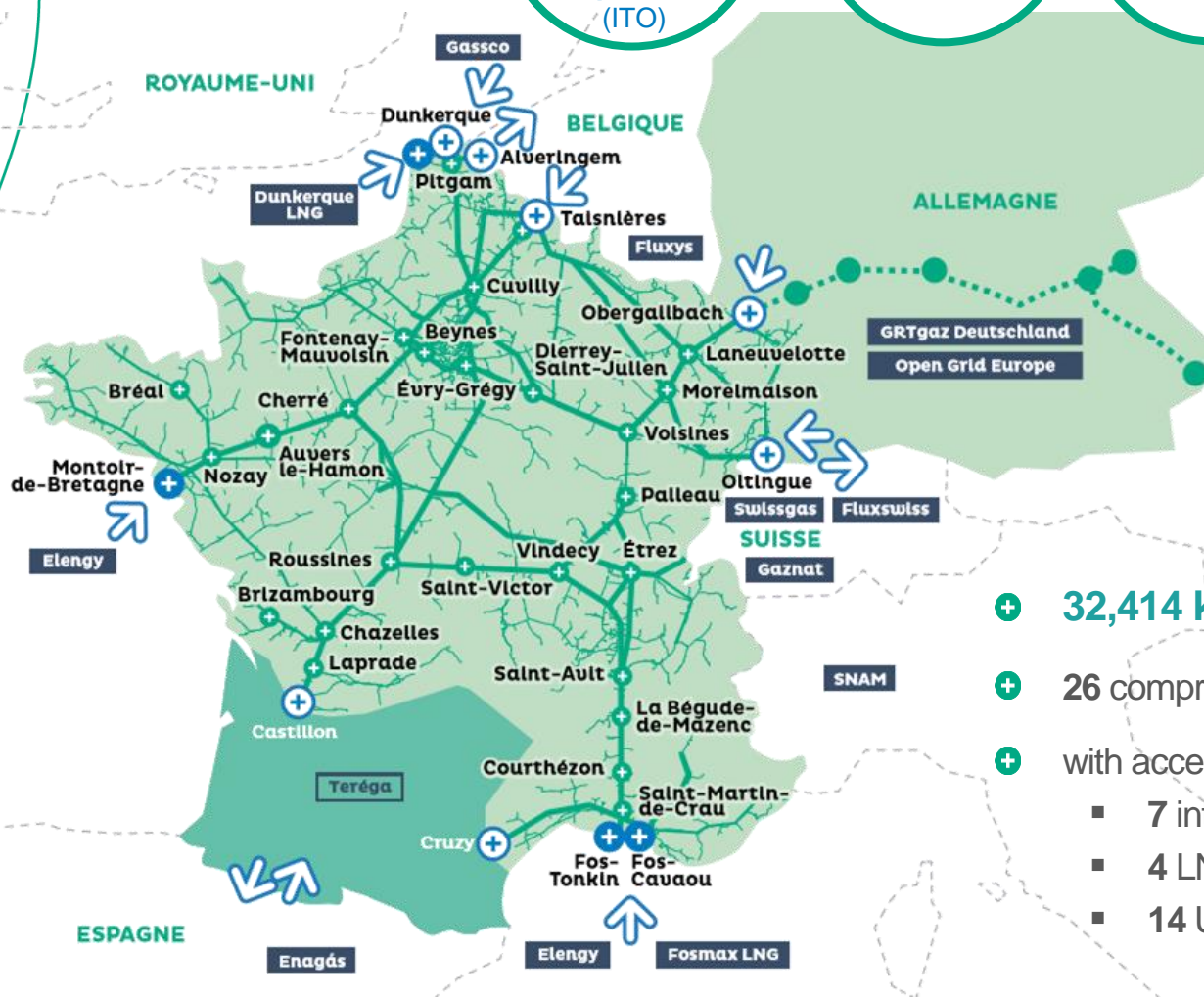
+ 19  
Distribution  
system operators

+ 465 TWh  
Consumption

627 TWh  
Quantities transported

960 TWh  
Exchanges on the  
French market

- + 32,414 km network length
- + 26 compression stations (598 MW)
- + with access to:
  - 7 interconnexions
  - 4 LNG terminals
  - 14 UGS





# Biomethane in France

## Key figures



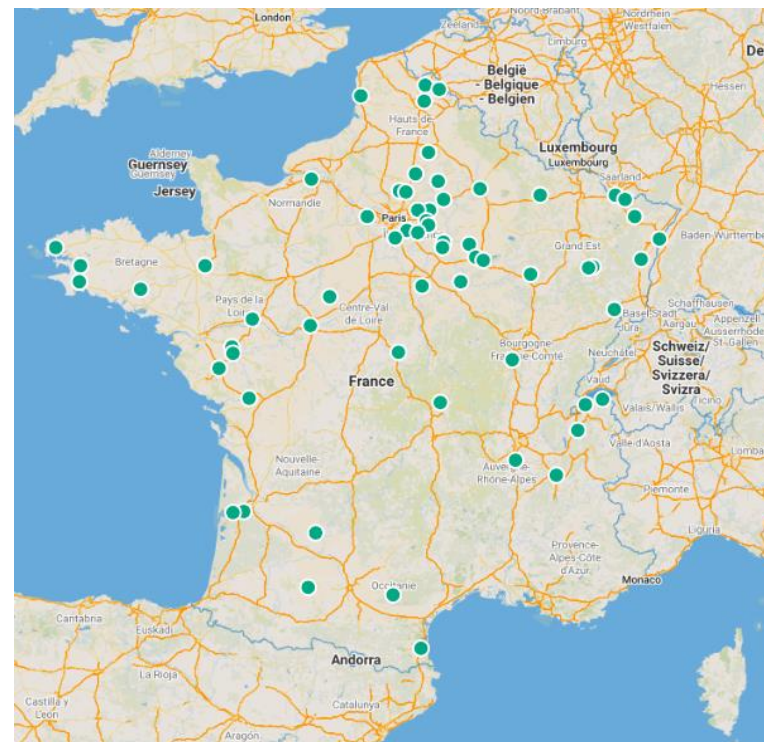
**65**

**injection facilities**  
in both TSO and DSO  
networks)



**408 GWh**

**injected in 2017**  
i.e. 34,000 houses  
or 1,800 NGV buses



**485**

**projects studied (Q1 2018)**  
i.e. some 8.8 TWh/y  
(10% on TSO)



**76,700**

**avoided CO<sub>2</sub> emissions**  
in 2017 thanks to  
biomethane injections



**+88 M€**

**additional turnover**  
yearly for the  
Agriculture sector



**x5**

**injected volumes**  
2015 vs 2017



# + Gas System Operators injection forecasts

LA TRANSITION ÉNERGÉTIQUE pour la  
CRÔISSANCE VERTE



French short term  
biomethane target

2018 1.7 TWh/y → 2023 6 to 8 TWh/y

Multiannual programming of energy (PPE)  
First orientations and actions 2016-2023  
November 2015

French long term  
renewable gas target

"In 2030, renewable  
energies represent 10%  
of gas consumption"

August 2015 Energy Transition Law (LTE)

**Ambition of the French TSO and DSO**  
**90 TWh/y renewable gas in 2030 (30%)**

GRTgaz

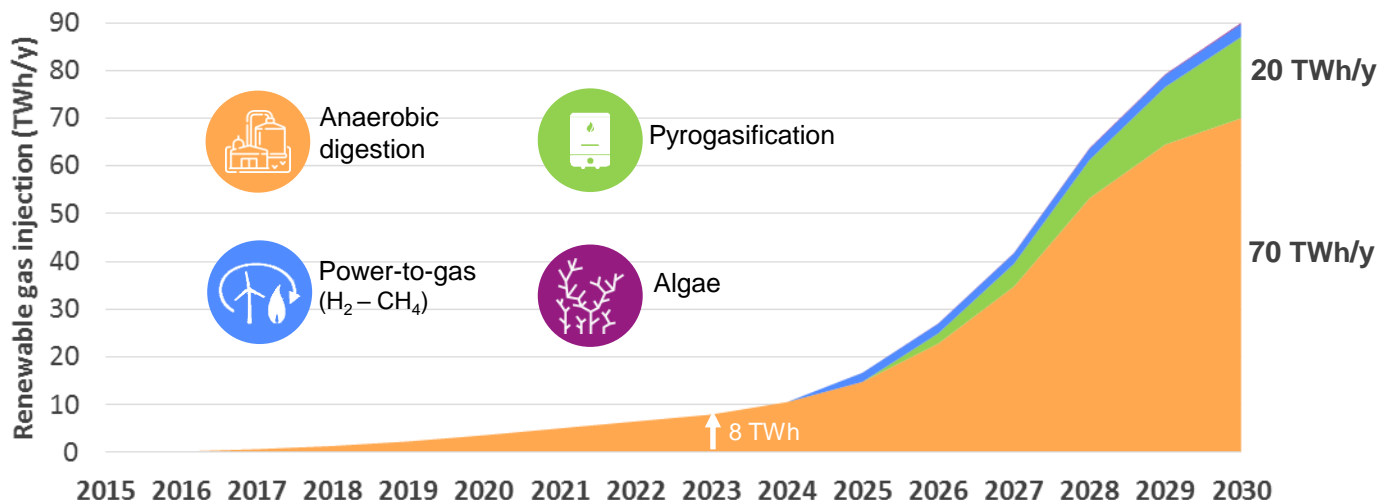
teréga

GRDF



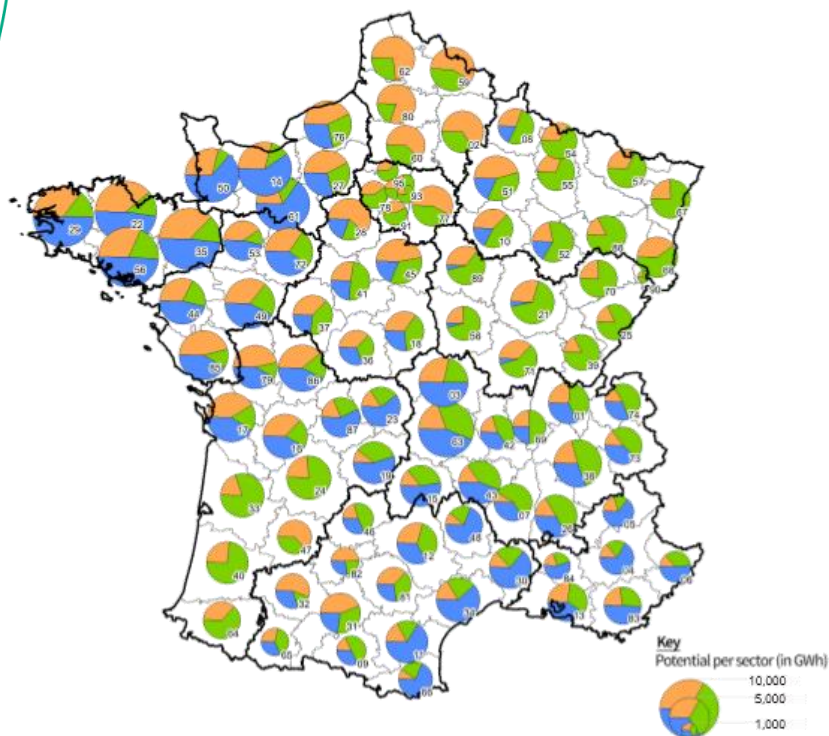
SPEGNN

Source: Bilan prévisionnel  
pluriannuel gaz 2017

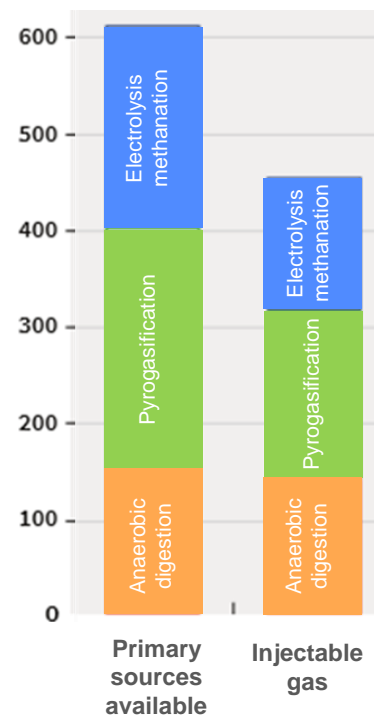


# + Renewable gases potential in 2050

Potential of injectable gas by departments in 2050



Theoretical potential of 460 TWh of renewable gases injectable in 2050



Anaerobic digestion



Pyrogasification



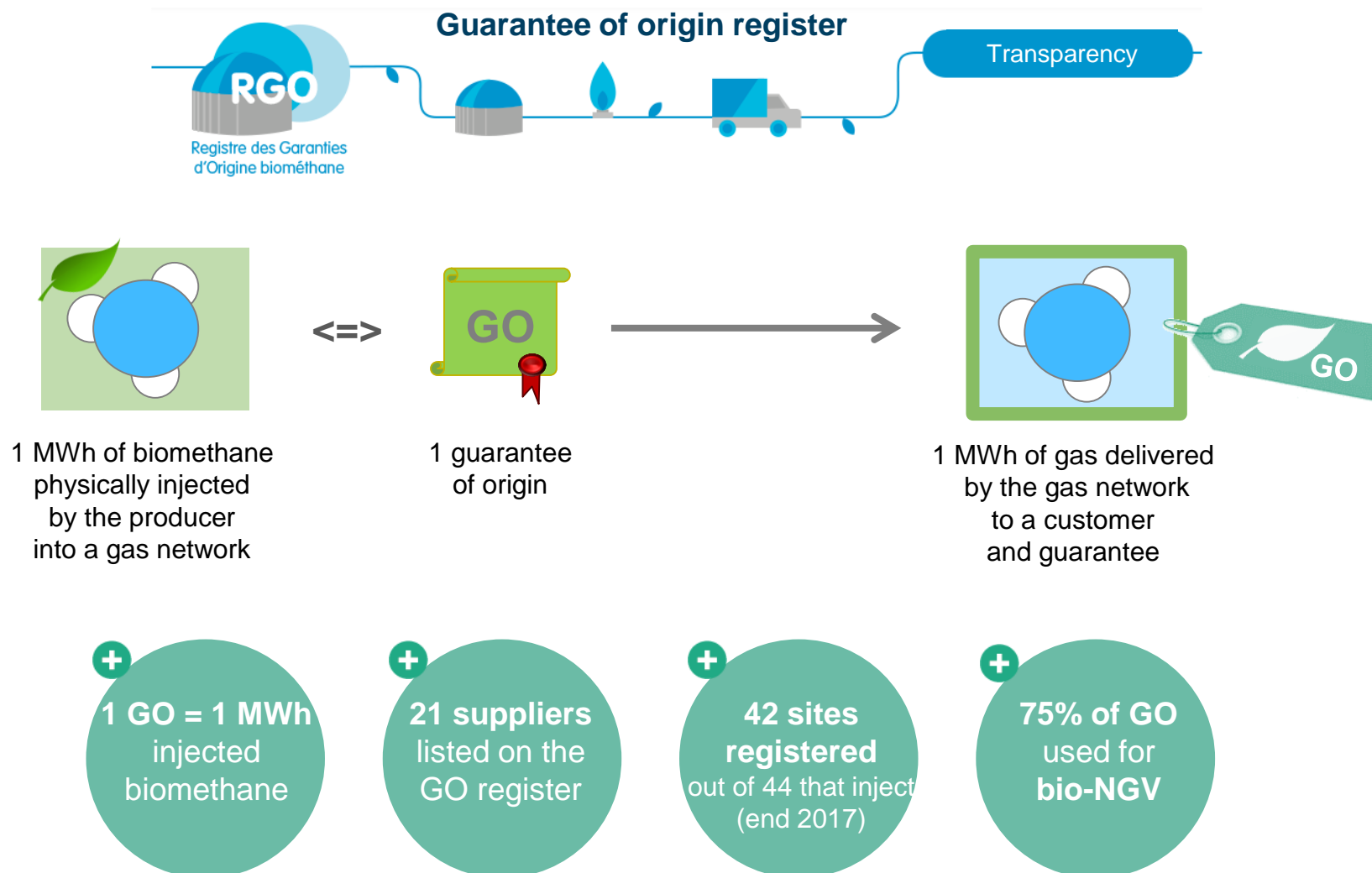
Power-to-gas  
(H<sub>2</sub> – CH<sub>4</sub>)



Algae

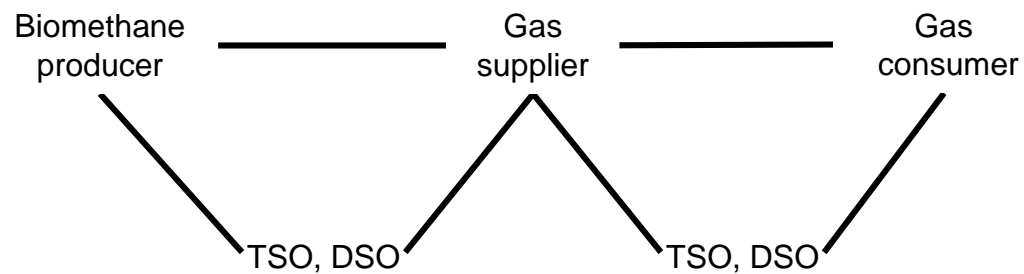


# Biomethane guarantee of origin





# Biomethane Value chain

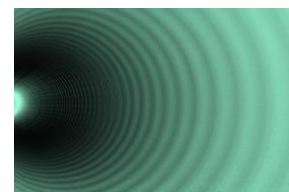


**Biomethane  
producer**

**Gas  
supplier**

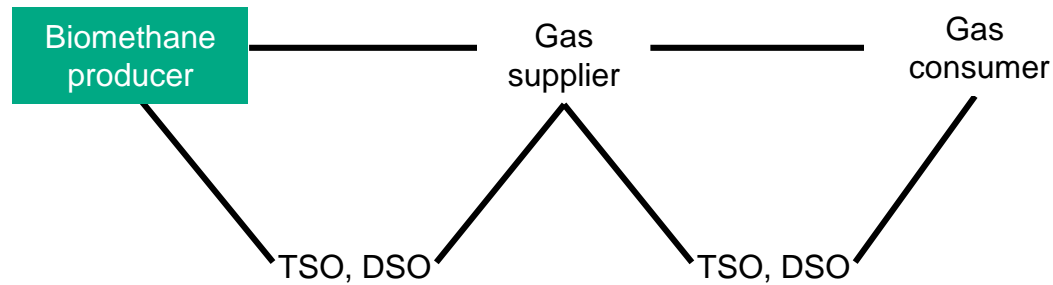
**Gas  
consumer**

**TSO, DSO**





# + Biomethane Value chain

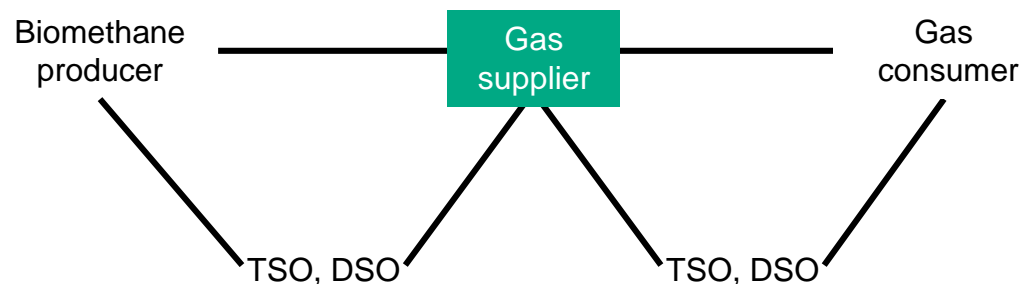


## Biomethane producer

Value = Biomethane 15 years sale agreement with a gas supplier at a minimum feed-in tariff secured by French state



# + Biomethane Value chain



## Gas supplier

- + Compensation mechanism: biomethane purchase cheap for gas suppliers.

$$\text{Biomethane purchase price} - \text{Monthly average Gas Spot Daily Average} = \text{Compensation for gas suppliers concerned}$$

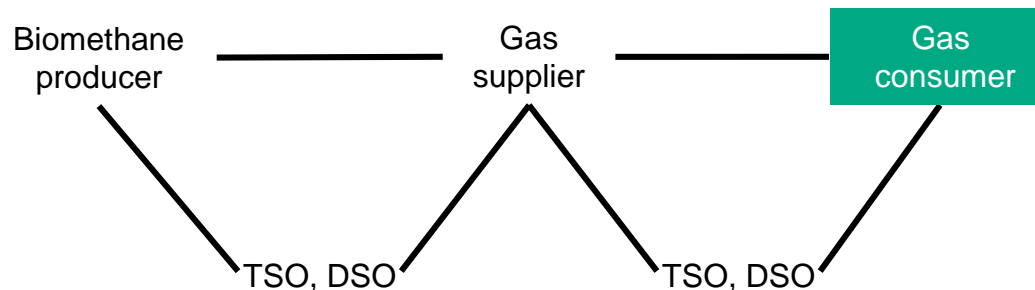
- + A gas supplier can create guarantees of origin when it buys injected biomethane to a producer.

$$\text{Value} = \text{Guarantees of origin speculation and exchanges on the register}$$

- + Variable incentive mechanism

- Mobility uses : gas supplier keeps 100% of guarantee valuation price
- Other uses : gas supplier keeps 25% of guarantee valuation price and 75% goes back to compensation mechanism via a fund manager

# + Biomethane Value chain



## Gas consumer

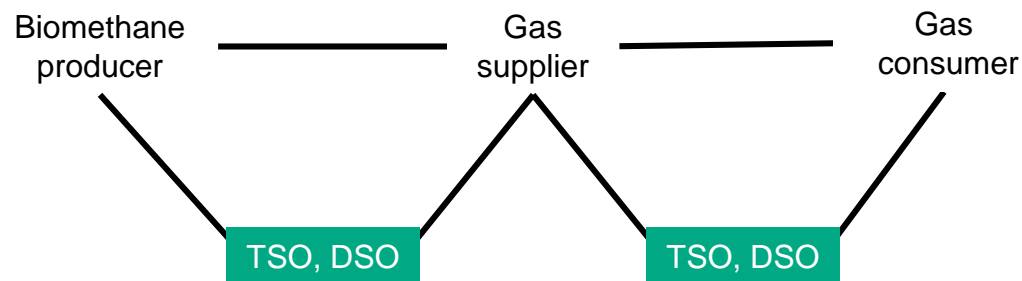
- + Because of compensation mechanism, all French natural gas consumers pay a fee to support biomethane development.
- + Biomethane development costs are socialized on French gas consumers. This contribution is now included in a tax on oil products consumption, and biomethane consumers are exempted of tax on natural gas consumption.

Value = Renewable gas sale to a consumer thanks to guarantees of origin





# Biomethane Value chain



## TSO, DSO

### + Injection tariffs on gas networks are nil.

- TSO: Tariff at PITP (Transport Production Interface Point) = 0 € / MWh/d
- DSO: Tariff doesn't exist

Value = Renewable gas shipping

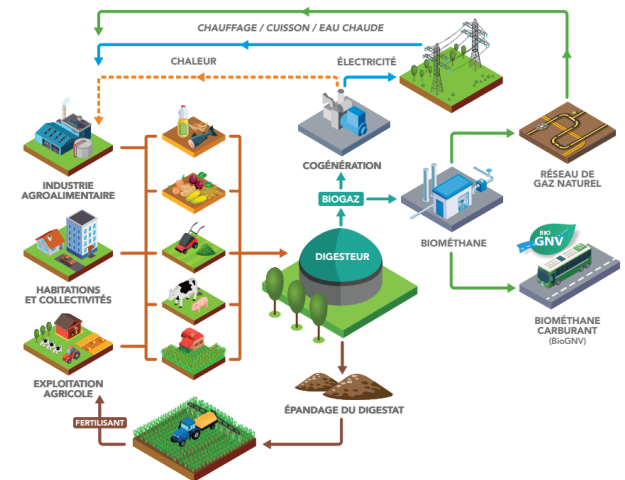
Value = Green gas offer (marketing)



# + Biomethane Economical and Environmental stakes

## + Cumulative values for the gas ecosystem:

- CO<sub>2</sub> emissions reduction
- Bet on future CO<sub>2</sub> price
- Reduced VAT for heating networks
- No need to change gas installations to access renewable energy
- Image, communication
- Marketing for green products







Connecter les énergies d'avenir

[grtgaz.com](http://grtgaz.com)