



Connecter les énergies d'avenir







First HyENet meeting

June 26th 2019

Thierry Trouvé CEO

GRTgaz key figures (2018)

Shareholders

- 74,8% 
- 24,9%  & 
- 0,3% 

Certification ITO

150 shippers
742 active industrial customers
19 distribution network operators connected

Transport France
32 548 km of network
442 TWh consumed
3389 public distribution posts
991 industrial customers posts
3104 employees

Contract Public Service
(signed in nov. 2015)

Consolidated turnover (2017) : 1 972 M€

RICE GRTgaz
Research & Innovation Center for Energy

CSR Commitment chart

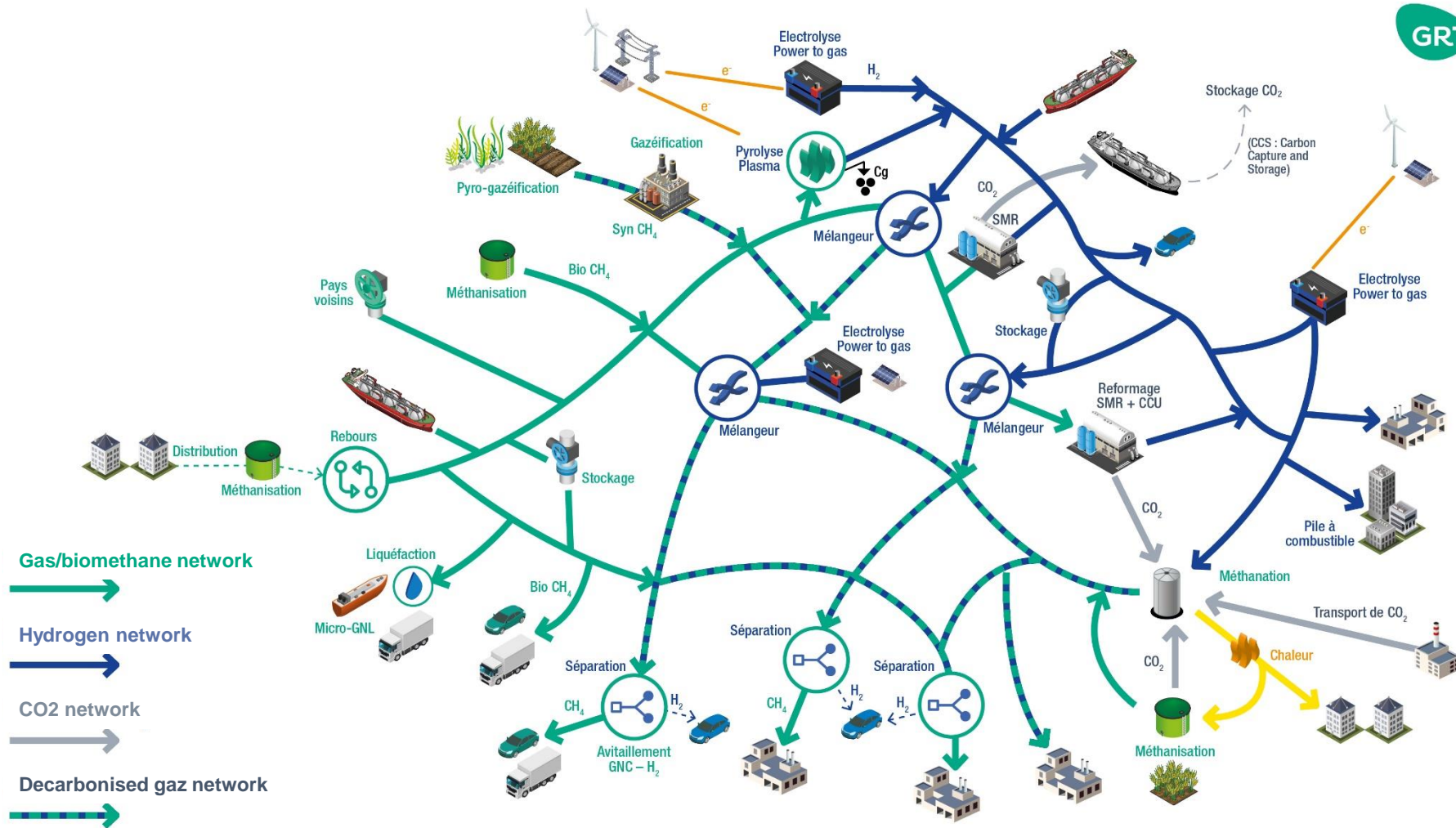
elengy
100% acquisition in 2017

GRTgaz Deutschland

« GRTgaz aims to contribute to the creation of a sustainable energy landscape for current and future generations. »



The convergence of Energy networks 2050 : « Le réseau des possibles »



Jupiter 1000 : a pilot project for Power to Gas

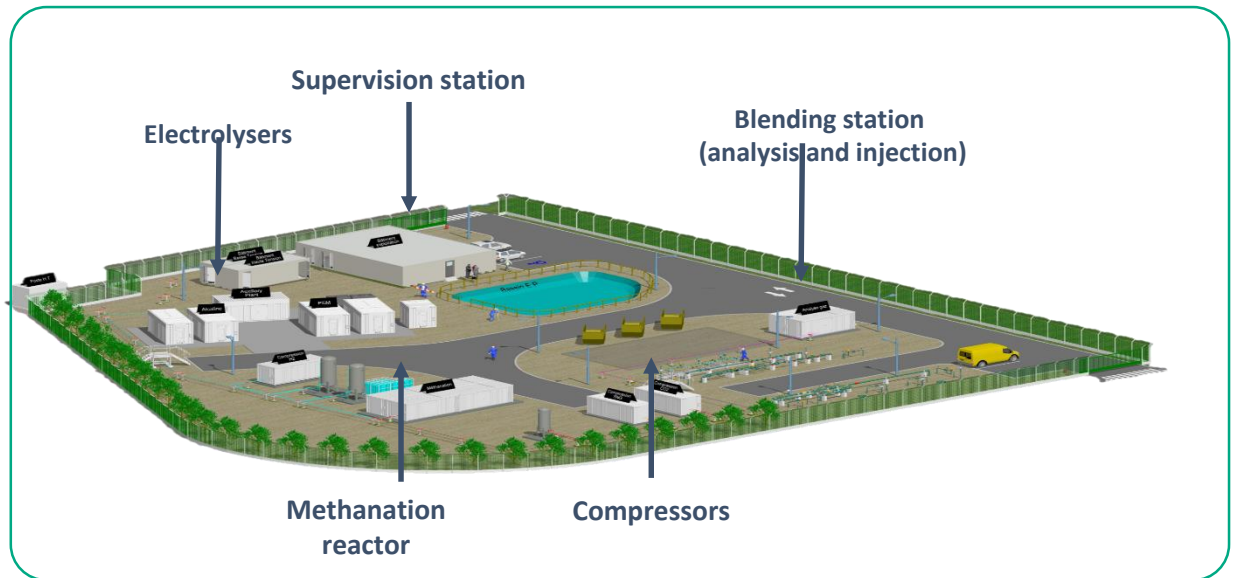
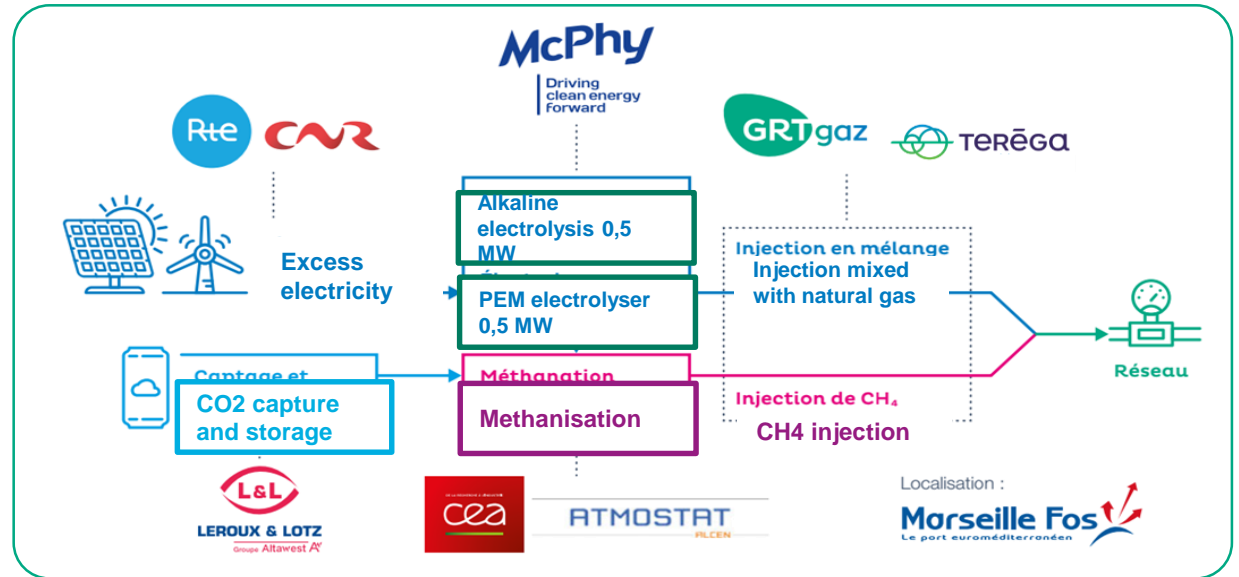


Une installation de

1 MW

Jusqu'à
200 m³/h
d'injection d'hydrogène

Jusqu'à
25 m³/h
de production de méthane



FenHYx, a European Innovative Platform for HYdrogen and mix



Objectives

- Accelerate network upscaling and adaptation for transmission of new low-carbon gases and increase use of low-carbon gases
- Test/develop new transmission equipment/innovation design for H2, synCH4
- Contribute to the standardization of equipment at different concentrations of hydrogen and methane



Project identity

- Project initiator**
- Partners and project funders:** Multiple European organisations/Gas grid operators
- Localisation:** Modular with different testing facilities



Equipment

- Testing facilities reproducing gas transmission operating conditions:
- ✓ Gas quality, metering in dynamic conditions (NEW), network equipment e.g. valves, ...
 - ✓ Network integrity
 - ✓ New process : gas mixing and separation technologies



Tested parameters

- Static and dynamic conditions
- Different blends of natural gas and hydrogen, up to 100% hydrogen
- Different pressure levels



Making the Gas Infrastructure Hydrogen Ready

Plan de déploiement de l'hydrogène pour la transition énergétique



1

Decarbonise gas end uses

Economic optimization of renewable hydrogen generating sites:

- Maximizing the utilization rate
- Decrease in local storage cost

2

Maximise RES integration

- Avoid curtailments
- Make acceptable a peak production that exceeds grid limits

3

Optimise the seasonal supply-demand balance

- Massive storage of hydrogen in the underground storages
- Gas grid transport capabilities compatible with high energy flows

- French operators are currently assessing the capabilities of the existing infrastructures related to hydrogen injection
- Qualitative evolutions to remove potential hurdles will be proposed to the French government in june 2019
- Preliminary results show that up to a certain level of hydrogen in the energy mix (10-20% vol = 3-6% energy), the existing infrastructures can accommodate a H2/CH4 admixture with limited investments
- Beyond this level, a systemic view is necessary to find the lower cost solution ie infrastructure upgrades or replacement, and 100% H2 cluster conversion.



How do we unleash Hydrogen's full potential?

- A “colour-blind” approach is needed and all technologies (electrolysis, SMR combined with CCS, etc..) should be considered for their benefits.
- R&D efforts should continue to be pursued with a view to developing the next generation commercial scale hydrogen technologies.
- The criteria for eligibility for Projects of Common Interest status should be adapted to make the contribution to decarbonisation a decisive criterion
- No need for a fully-fledged market design but rather some basic features
 - Clear definitions of renewable and low carbon gases and EU wide system for guarantees of origins,
 - A harmonised framework for the injection of hydrogen into the existing gas infrastructure in a transparent and non-discriminatory way.
 - A framework for power-to-gas smart and flexible enough to ensure that industrial size P2G projects will come on stream when and where needed.
 - “regulatory sandboxes” that will foster technologies with challenging business case to reach commercial scale, and allowing the TSOs to engage in those activities.



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