



**RICE**   
Research & Innovation  
Center for Energy

Cristina LOPEZ

# Diversity of Technology Solutions

Overview of RICE's efforts



# RICE at a glance

GRTGAZ R&D center



140

PhD, Research Engineers, Lab technicians



3

RD&I Centers



400

Patents and inventions



4 Leading expertises for the Gas infrastructure

PROCESS & GAS CHARACTERISATION

PIPES & GRID EQUIPMENT

PERFORMANCE & INDUSTRIAL SAFETY

SYSTEM MODELISATION & TECH-ECO STUDIES

## 5 RD&I programs

**PREPARE**

Energy forecasting, Network Management and Optimization

**NEW CH4**

Prepare networks for the arrival of new gases

**OPTISE**

Optimize the functioning, operation and safety of gas systems

**H2**

Prepare networks for the arrival of H2

**IMPACT**

Reduce the environmental impact of gas activities

## 3 test sites



« Sibelius » in Villeneuve-la-Garenne



Alfortville (Parisian area)



« Jupiter 1000 » in Fos-sur-mer

# Context : Upcoming European Regulation & OGMP 2.0

- Upcoming European Regulation for fugitive emissions will impose more frequent source level campaigns.
- To reach level 5 of OGMP 2.0., it is necessary to display site level measurements.



Average emissions from a TSO site in France - Europe : < 10 kg/h

LDAR type 1 : 1 campaign/6 months

7000 ppm or 17 g/h



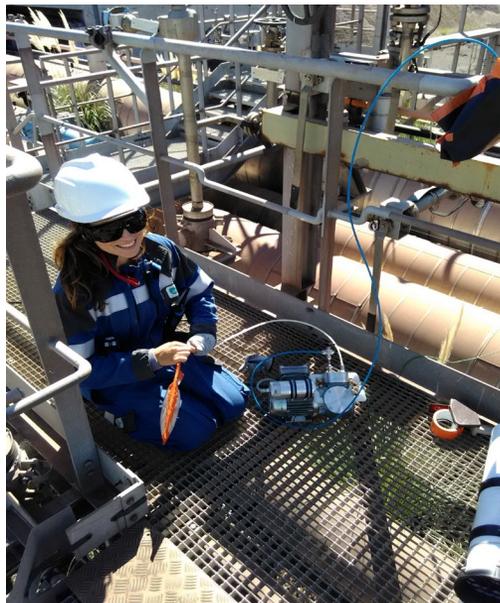
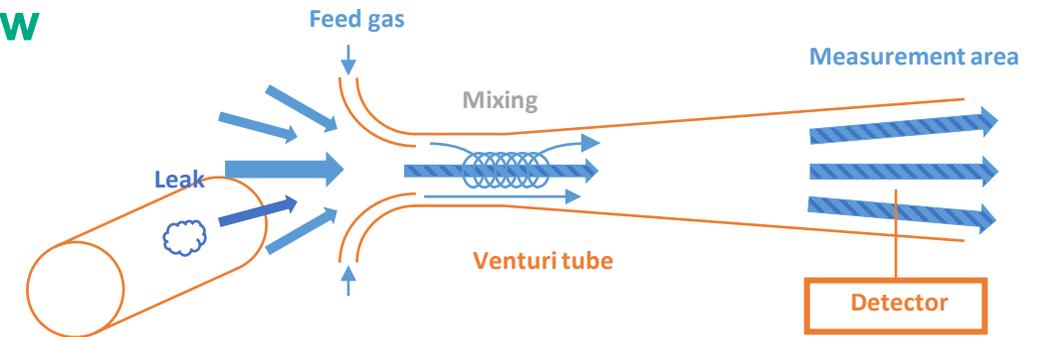
LDAR type 2 : 1 campaign/year

Aerial : 10 ppm or 0,15 g/h  
Underground : 3000 ppm or 5 g/h  
Offshore : 7000 ppm or 17 g/h

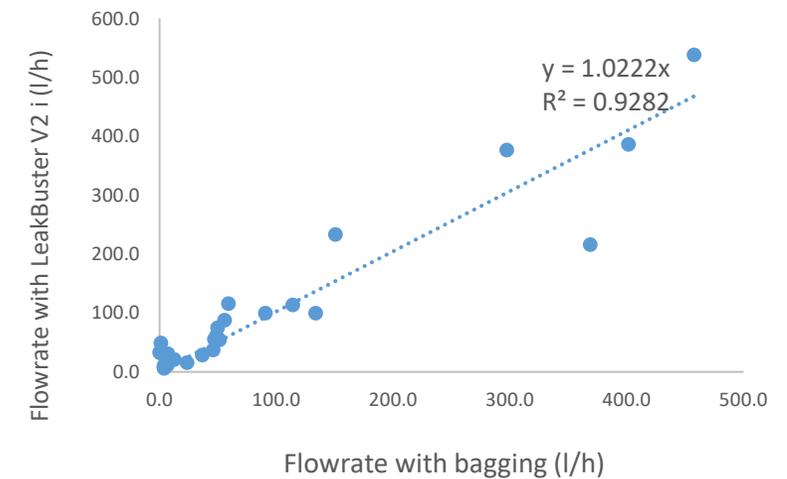


# Source Level campaigns : development of new quantification devices

- Use of handheld instruments for detection & flow measurement for quantification
- Development of RICE own « HiFlow Sampler »
  - V1 : powered with compressed air
  - V2 : powered with a battery



Correlation between flowrate measured with LeakBuster V2 and flowrate measured with bagging



# Site level campaigns & European projects



- Test of aerial top-down methodologies for pipelines
- Organization of 7 top-down field campaigns in real sites & results interpretation
- Participation in GERG project for methane emission quantification (from 2020)



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Atmospheric  
Measurement  
Techniques  
Discussions  
EGU

## Assessment of current methane emissions quantification techniques for natural gas midstream applications

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# Other activities & lab tests

## Current research

- **Benchmarks** : new detectors, mitigation technologies
- **Lab tests** : sensor accuracy
- **Lab tests** : burners for CH<sub>4</sub> conversion
- Assessment in reporting & uncertainty estimation





**Thank you !**

