Very high carbon conversion
> 85 à 99 %

Production of a gas rich in methane and hydrogen

Steep reduction of final waste

Quick conversion time (1 to 10 min)

No atmospheric pollutant (NO_x, CO, fine particles)

Recovery and preservation of water, minerals and nitrogen (=> fertiliser)

Many assets

Hydrothermal gasification completes the portfolio of innovative technologies producing renewable and low-carbon gas.
It contributes to the success of the energy transition and recovers waste in a circular economy approach.
Its positive externalities sustainably support local employment and regional energy production.

Conversion of fossil organic waste (plastics, chemical wastes)

Compact and modular installation

Multiple economic interests (gas...)

High energy efficiency: from 75 to 85%

Elimination of bacteria, viruses and pathogens

Elimination of PFAS

Metals and heavy metals recovery

RED III carbon footprint compliance (decarbonization)

The main technology developers in Europe

SUEZ
- Prototype: 5 kg/h
- Pilot: 150 kg/h (in development)
- Industrial demonstrator (planned)

Leroux et Lotz Technologies
- Prototype: 10 kg/h (in development)
- Industrial demonstrator (planned)

CEA
- Prototype: 10 kg/h

CADE
- Pilot: 100 kg/h
- Industrial demonstrator (planned)

SCW Systems
- Industrial project ALKMAAR 1: 16 t/h
- Industrial project ALKMAAR 2: 40 t/h (in progress)

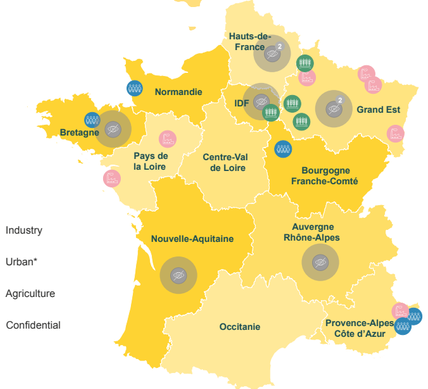
Karlsruhe Institute of Technology
- Pilot: 100 kg/h

Paul Scherrer Institut (PSI)
- Prototype: 1 kg/h
- Pilot: 100 kg/h (with TreaTech)

TreaTech
- Prototype: 1 kg/h
- Pilot: 200 kg/h
- Industrial demonstrator (planned)

High-temperature process
T: 550 to 700°C
P: 260 to 350 bar

Catalytic process
T: 360 to 400°C
P: 210 to 280 bar



Call for Expressions of Interest in Hydrothermal Gasification (AMI GH) conducted in 2024 highlights:
- 24 projects identified including 12, 8, and 4 projects from the industrial, urban and agricultural sectors
- Annual raw waste production: 1.25 million tons
- Potential for injectable gas production: 2 TWh HHV/year

* Local authorities, waste and wastewater treatment authorities, private waste management companies, etc.

GAZÉIFICATION HYDROTHERMALE
VALORISER LES DÉCHETS ORGANIQUES

natran

Conception: purple PP - 2025

Hydrothermal Gasification

GAZÉIFICATION HYDROTHERMALE
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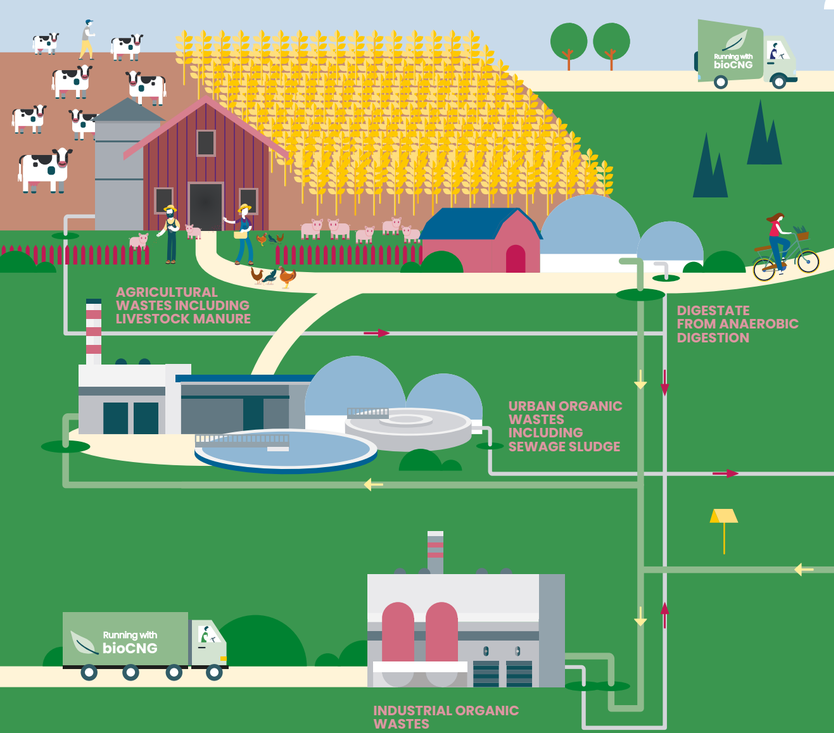
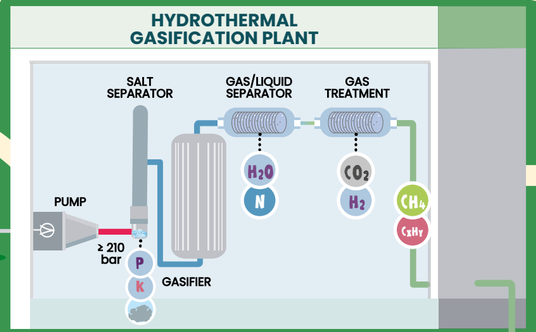
A value chain supporting regional development

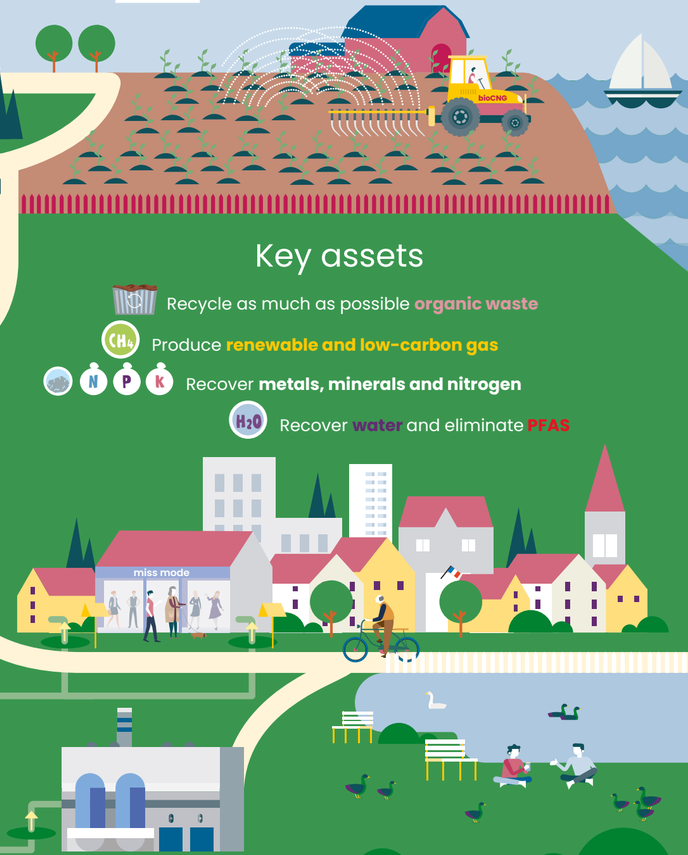
1 Feedstock

2 Conversion technology

3 Recycling and recovery







Each year in France, at least **400 million tons** of organic waste are produced. Among which, at least **150 million tons/year** could be mobilized and transformed into renewable or low-carbon gas by hydrothermal gasification.

How it works?

Hydrothermal gasification converts the organic wastes, pure or mixed, into a renewable or low-carbon gas at a pressure between 210 and 350 bar and a temperature between 360 and 700°C, which is injectable into the gas network after the gas treatment. With water necessarily present inside the process, the technology converts the carbon contained in waste into a gas, rich in methane and hydrogen. Moreover, it allows the separation and recovery of metals, mineral salts (phosphorus, potassium, etc.), nitrogen and water.

- **From 2025** — First pilot and demonstration plants
- **From 2028** — First industrial projects
- **2030** — Production potential of injectable gas: ≥ 2 TWh/year
- **2050** — Production potential of injectable gas: ≥ 50 TWh/year