



Ten-Year Development Plan Teréga's Transport Network

2024/2033

Teréga SAS Board of Directors

Teréga's Network



- RÉSEAU EXISTANT
- DÉCOUPAGE DES TERRITOIRES TERÉGA
- SIÈGE SOCIAL
- TERRITOIRES
- COORDINATIONS OPÉRATIONNELLES
- OPÉRATIONS SPÉCIALISÉES
- ENTRÉES/SORTIES PRINCIPALES
- SITES DE STOCKAGE
- ⊞ STATIONS DE COMPRESSION
- POSTES D'INJECTION BIOMÉTHANE
- STATION GNV PRIVÉE
- STATION GNV PUBLIQUE

—
La carte du réseau
Teréga
—

Our Business Model

RESSOURCES

Financières

- Actionnariat :
- SNAM (40,5%)
 - Raffles Infra Holdings Limited (GIC) (31,5%)
 - Ouestgaz (18%)
 - Predica (9%)
 - Crédit Agricole Assurances Retraite (1%)
- Investissements : 174 M€

Industrielles

- 5 094 km de canalisations de transport
- 6,6 Gm³ de capacité totale de stockage de gaz

Humaines

- 646 collaborateurs

Clients

- 74 expéditeurs Transport
- 28 expéditeurs Stockage
- 116 clients industriels
- 153 distributions publiques
- 10 postes d'injection de biométhane

Intellectuelles

- 60 collaborateurs environ intégrés au réseau R&I
- Budget moyen annuel consacré à la R&I : 5 M€

Environnementales

- Certifications ISO 14001 : 2015 (management environnemental), ISO 50001 : 2018 (management de l'énergie)

Un secteur régulé

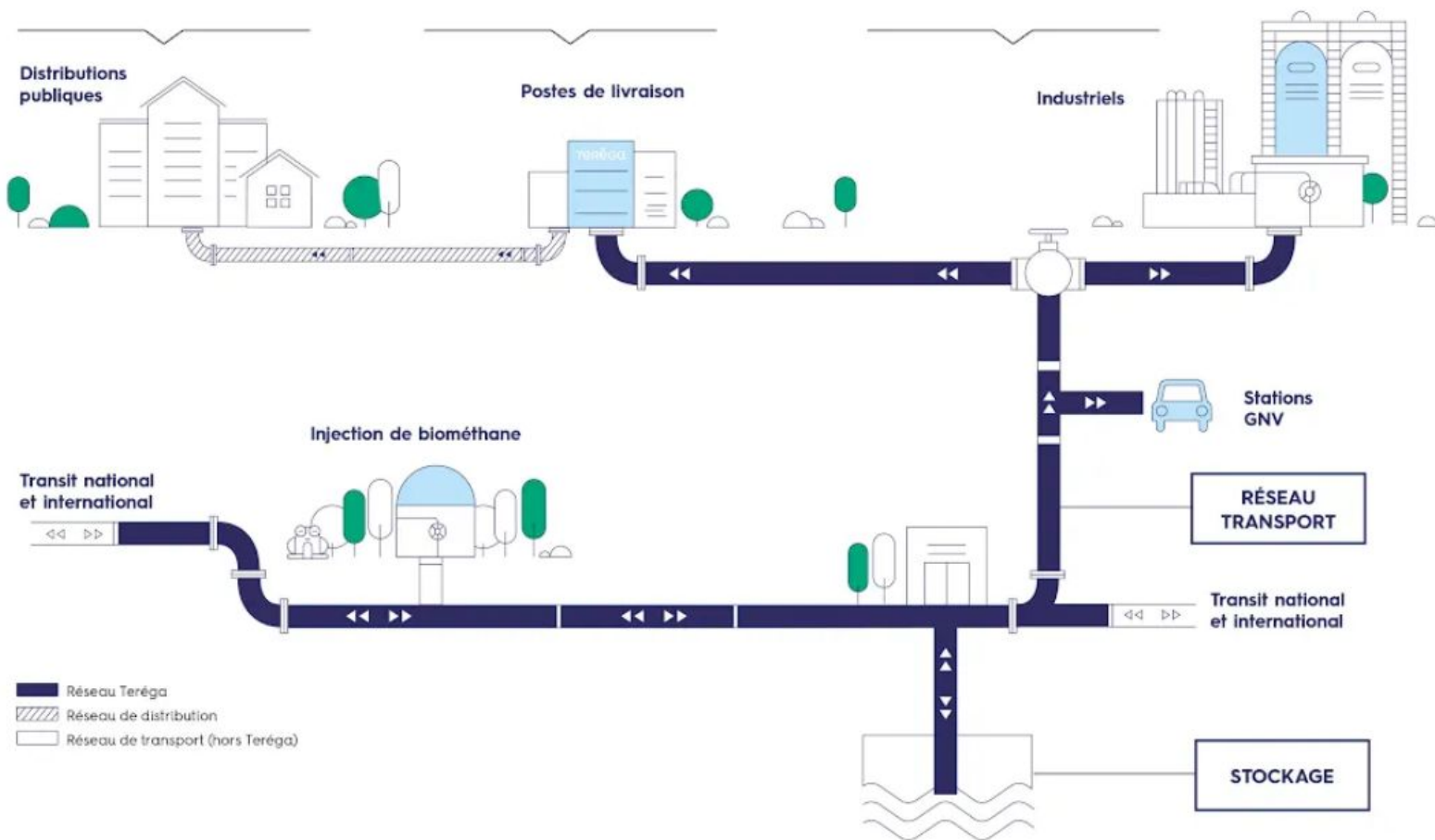
La Commission de Régulation de l'Énergie (CRE) veille au bon fonctionnement du marché du gaz en France

Transition énergétique

Nouveaux usages du gaz, nouveaux modes de production, nouveaux réseaux, etc.

Obligations de service public

Conformément aux dispositions des articles L. 431-3 du Code de l'énergie pour le transport et L. 421-3 du Code de l'énergie pour le stockage



RÉSULTATS

Financiers

- 692 M€ de CA

Industriels

- 143,4 TWh de gaz transporté
- 22,6 TWh consommés sur la zone Teréga (industriels + distributions publiques)
- 33 100 GWh de capacité de stockage souscrite, soit 100% de la capacité disponible

Humains

- 53 embauches (CDI+CDD)
- 96,6% de collaborateurs formés
- TFAD (taux de fréquence des accidents déclarés) de Teréga SA : 3,6

Intellectuels

- Environ 60 projets de R&I en cours

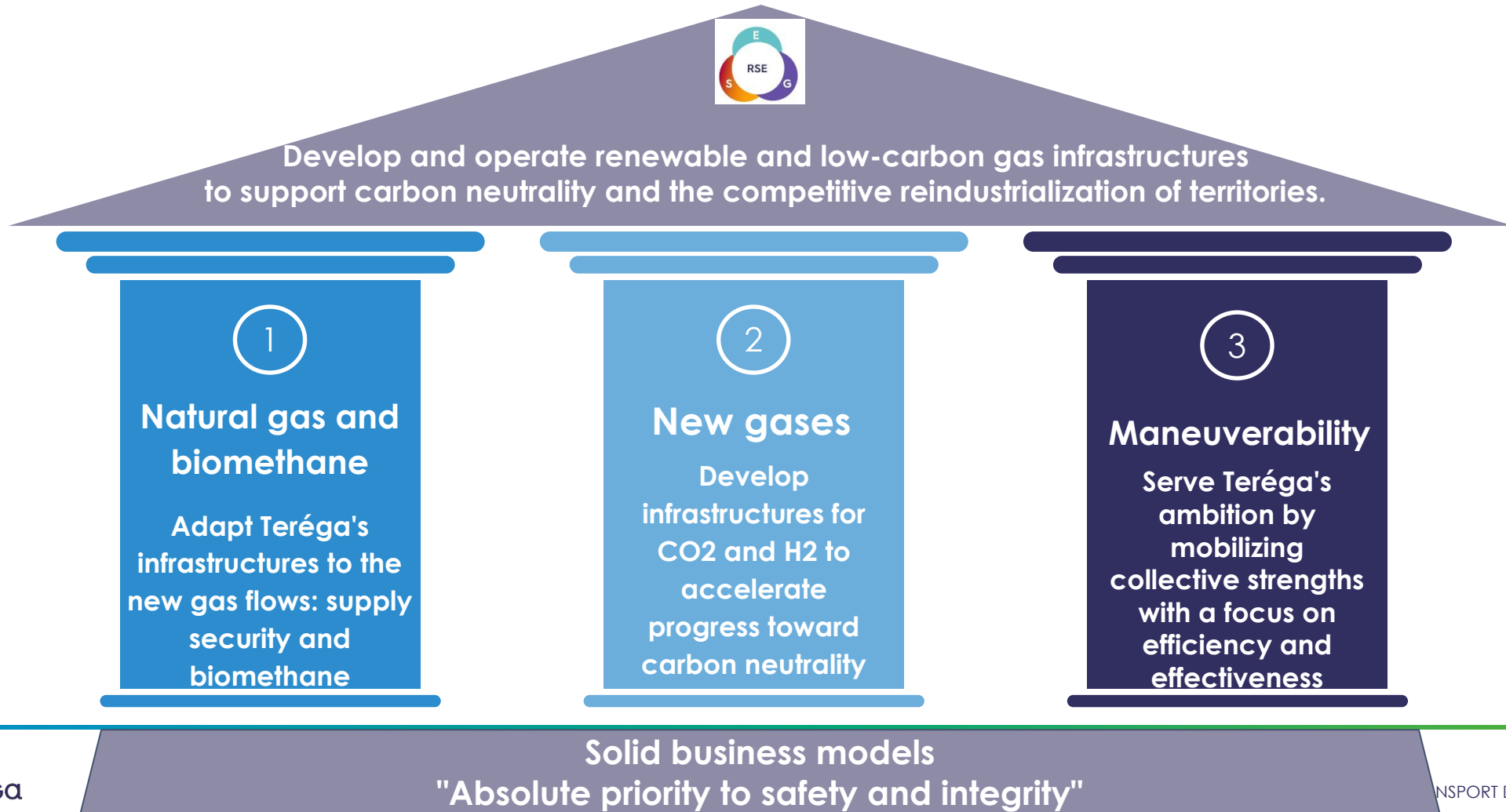
Environnementaux

- 0,63 teqCO₂/GWh transporté*

* Calculé avec PRG (pouvoir de réchauffement global) pour le méthane = 34.

GAIA 2035: An Ambition for 2035

"The Southwest: Platform and Reservoir for the Energies of the Future"
implemented into a mission and three strategic pillars



AMBITION and COMMITMENTS towards CARBON NEUTRALITY

Be a company recognized
for ESG practices
and a leader in the energy sector,
supporting
the energy transition
towards carbon neutrality.

Our ESG Commitments

2030

Scopes 1,2 & 3 :

-34% compared to 2021

2050

Carbon
neutrality

Respect of the commitments
of the 2015 Paris Agreement
and the Energy-Climate Law.

Teréga's corporate social responsibility: An ESG foundation structured around key programs and initiatives.

Teréga Energy Accelerator

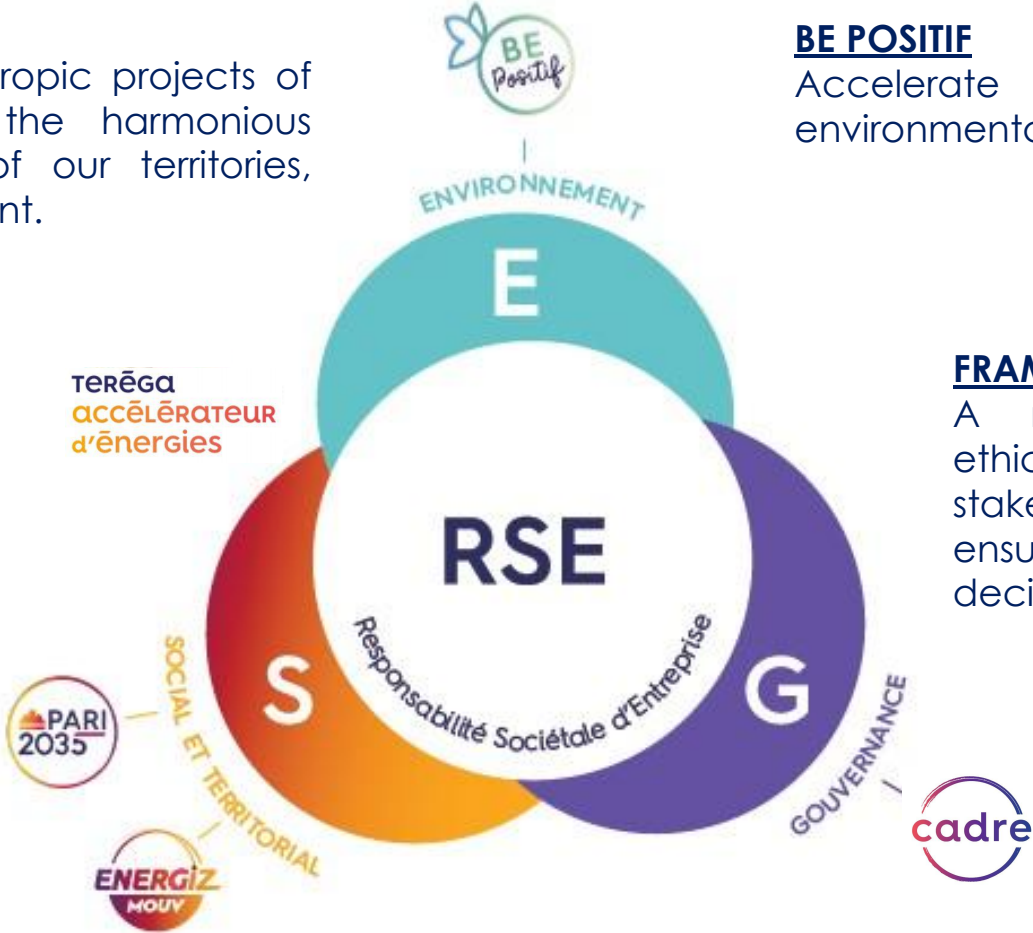
The endowment fund supports philanthropic projects of general interest that contribute to the harmonious economic and social development of our territories, respectful of people and their environment.

PARI 2035

Operate the infrastructures safely and develop a shared culture of major risks with our employees and stakeholders.

ENERGIZMOUV

Engaged employees and a positive territorial impact.



BE POSITIF

Accelerate the reduction of the environmental impact of our activities.

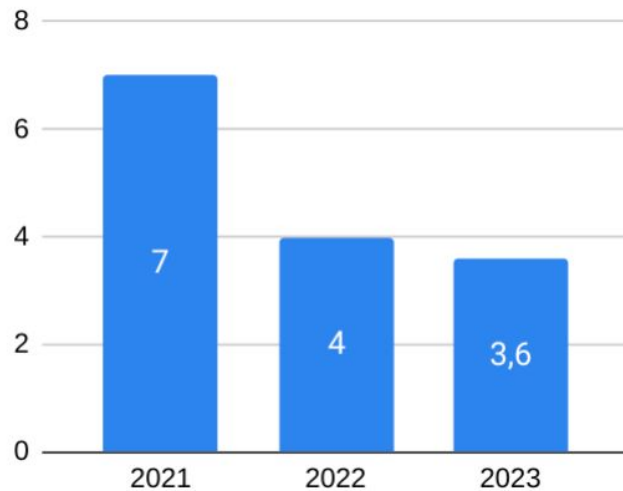
FRAMEWORK

A robust governance and ethical conduct integrating stakeholder expectations to ensure responsible decision-making.

Significant achievements in the main CSR priorities

Safety Indicator - TFAD

The downward trend in workplace accidents reflects Teréga's daily commitment to adhering to safety rules and promoting a zero-accident culture.

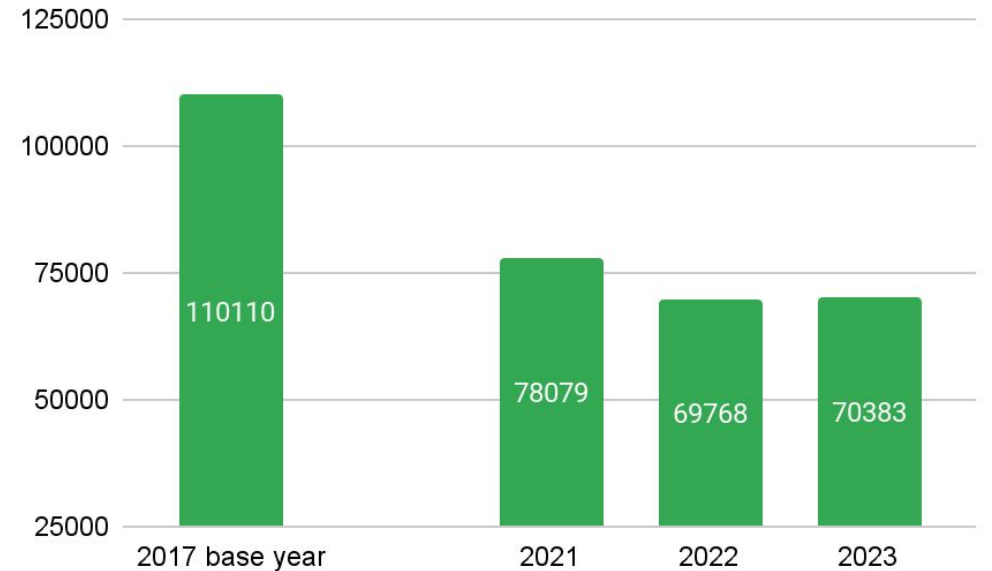


TFAD: Total number of incidents recorded, expressed as (number of accidents / number of hours worked) x 1,000,000

TFAD Teréga SA + temporary workers + contractors

GHG emissions Scope 1 & 2

A reduction of -36% in direct GHG emissions (Scope 1) and indirect emissions related to energy (Scope 2) since 2017.



Scope 1 and 2 expressed in tCO2e. The GHG calculation method incorporates more measures since the end of 2023 as Teréga refines the reliability of data related to methane emissions, with some emission sources now being directly measured (comparable figures).

Contents

01

Context 2023 - 2024

11

02

Gas demand and supply - Balance and outlook

16

- Demand, supply, and production in 2023 - 2024
- Outlooks

03

Investing to secure and adapt the network

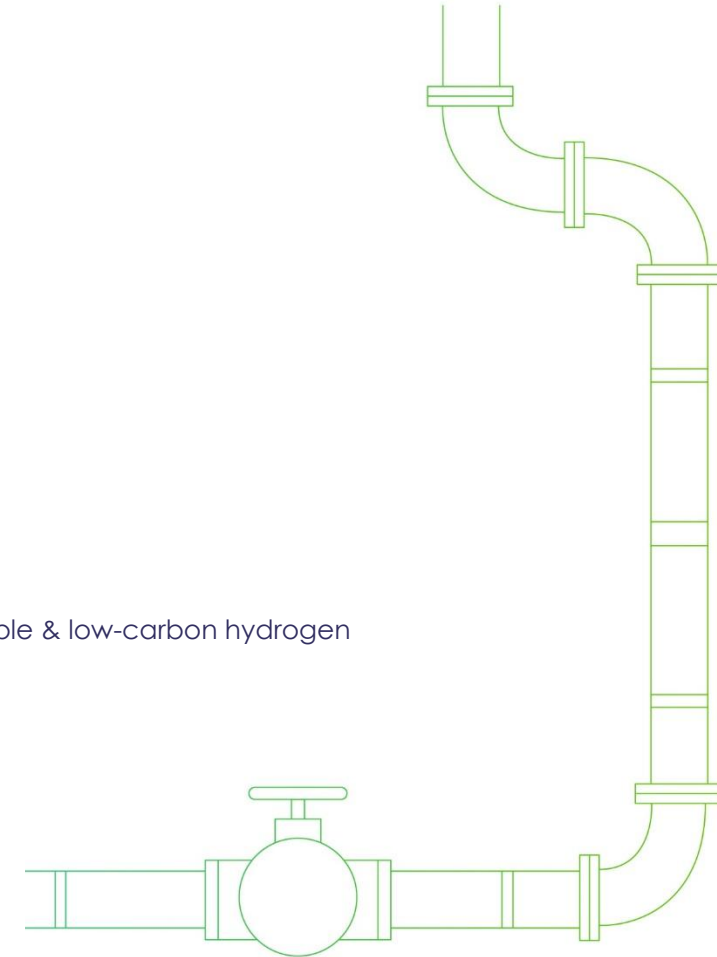
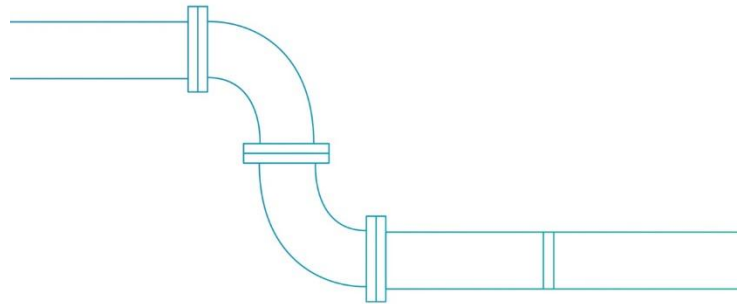
35

- Secure the infrastructures
- Adapt the network and support the development of green gases and renewable & low-carbon hydrogen
- Reduce CO2 emissions
- Ten-year investment envelope

04

Major hydrogen (H2) and CO2 infrastructure projects

52



The framework of the Ten-Year Development Plan (PDD)



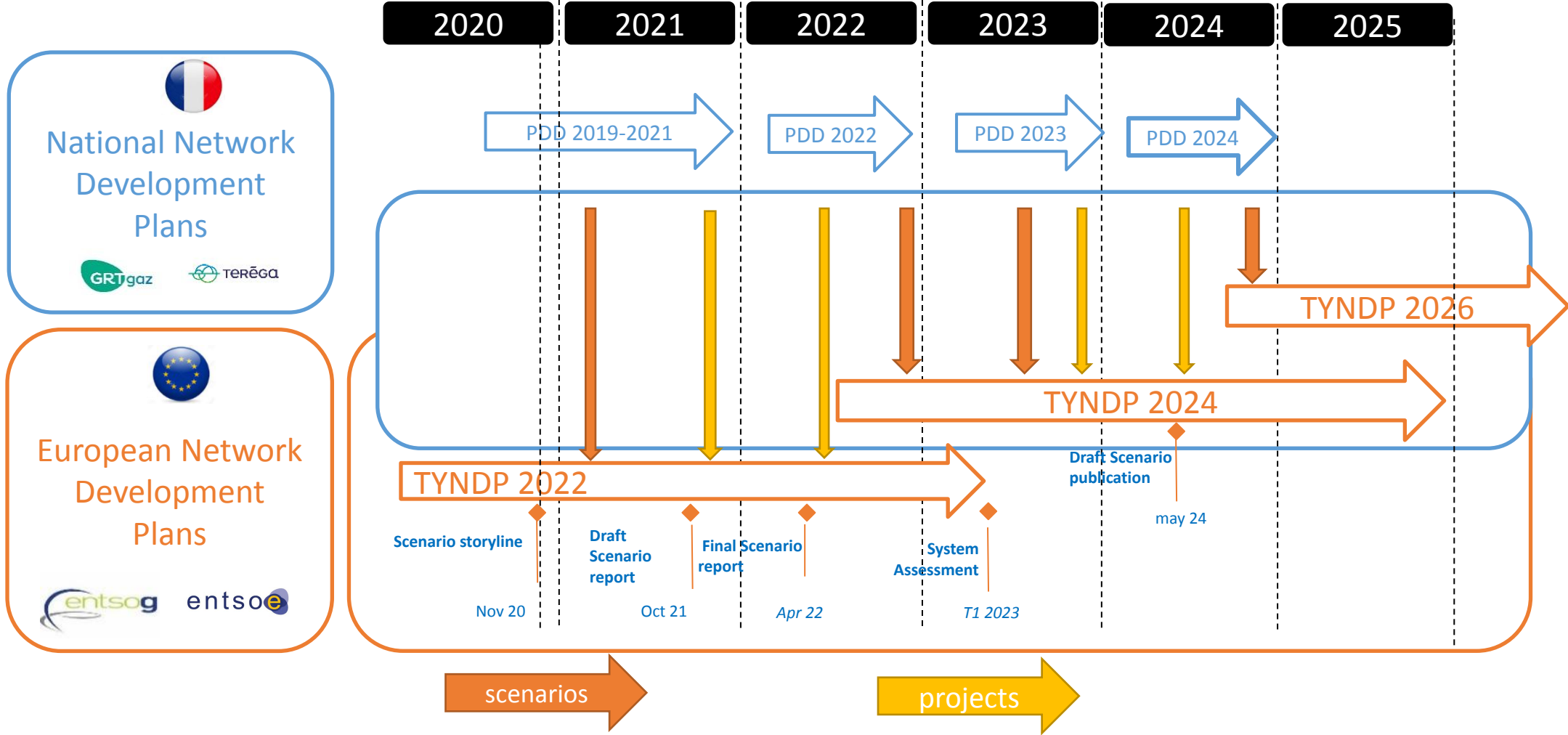
This document is part of the framework of Article L. 431-6 of the Energy Code, which stipulates that Transmission System Operators (TSOs) must, after consulting the interested stakeholders, develop a ten-year development plan for their network. This plan should be based on the supply and demand of gas, forecasts for the injection of renewable gases in the territory, as well as reasonable medium-term forecasts for the development of gas infrastructure, gas consumption, and international exchanges.

The ten-year plan outlines the main transport infrastructures that need to be built or significantly modified within ten years, lists already-decided investments, as well as new investments that need to be made within the next three years, providing a provisional timeline for the completion of all investment projects. This plan is reviewed by the French Energy Regulatory Commission (CRE), who consults, according to procedures determined with network users and publishes a synthesis of this consultation. CRE verifies whether the ten-year plan addresses all investment needs and whether it is in with the non-binding European plan developed by the European Network of Transmission System Operators (ENTSO-G) established by Regulation (EC) No. 715/2009 of July 13, 2009.

The ten-year plan must also take into account the assumptions and needs identified in the report on investment planning in the gas sector prepared by the minister responsible for energy.

The Teréga Ten-Year Development Plan 2024-2033 was presented to market participants during the Gas Consultation on 28/11/2024 in the presence of the CRE.

Connection between European and National Plans





01

The context 2023-2024

Energy policy framework at the European, national, and regional levels.

The current challenges

SFEC / SNBC 3 / PPE (2024-2033)

Dissolution of the National Assembly (09/06/24) with the formation of a new Barnier government since the end of September, itself replaced by another Bayrou government in December, leading to delays in the schedule:

- PNIEC published in July 2024;
- **PPE and SNBC: public consultation from 4/11 to 16/12/2024.**

Dynamism of the biomethane sector

- Recent publication of a decree and order regulating the system related to the obligation to return **biogas production certificates (CPB)** until 2028
- **PPE 3 ambition of 44 TWh injected by 2030.**

CO2 Strategy

France is adopting an ambitious strategy for CCUS with:

- A deployment trajectory for CCUS
- A support scheme through Contracts for Difference
- A framework for CO2 transport infrastructures
- A diversification of CO2 storage options
- The possibility of CO2 utilization

Energy sovereignty

- End of the Ukrainian route - January 2025;
- Ban on the transshipment of Russian LNG by the EU - March 2025.

Inflation and sobriety

A French consumption in 2023 below the 400 TWh threshold.

- A decrease driven by the industrial and R&T sectors due to energy prices and efforts in energy sobriety.
- Inflation: return to normal (~40€/MWh)

European context

- **June 2024: Publication of the Gas and Hydrogen Decarbonisation Package in the EU official journal** aiming to reform the existing EU regulatory framework to support the deployment of renewable and low-carbon gases, including hydrogen.
- Hydrogen Ten-Year Development Plan (PDD) with scenarios and multi-energy consultations.
- Tariff of 0€/MWh at interconnections for biomethane.
- June 2024: adoption of the European regulation on methane emissions reduction

H₂ Strategy

France, a pioneering hydrogen nation

- The PPE (Energy Programming Plan) under consultation confirms the goal of 6.5 GW of electrolyzers by 2030
- Still waiting for the publication of the revised Hydrogen Strategy

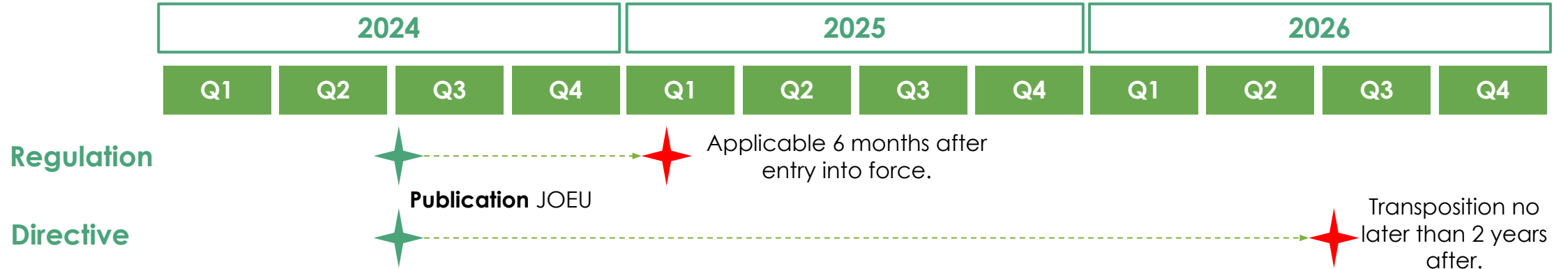


European energy policy - focus on the 4th Directive

Key topics of interest for Teréga



Indicative timeline



National energy policy: the development of renewable and low-carbon gases



PPE 3 / SNBC 3:

- Target of 50 TWh of biogas production, with 44 TWh injected by 2030
- Hydrogen: 6.5 GW of installed electrolyzer capacity by 2030 and development of transport infrastructure within industrial hubs
- Study the establishment of a network and regulatory framework for the transport of hydrogen (H₂) and CO₂
- CO₂: Use of carbon capture, storage, and utilization in line with the national CO₂ strategy (with a target of capturing around 7 Mt in industry by 2030)

Biogas Production Certificates (CPB)

- Recent publication of a decree* and an order regulating this system until 2028.
- An obligation is imposed on gas suppliers to return certificates to the State corresponding to biogas production without public support.
- Suppliers can fulfill this obligation either by directly producing biogas injected into the network or by acquiring certificates from biogas producers.
- Biogas producers independently market the biogas molecule and the CPBs (Biogas Production Certificates).

Level of the obligation:
0.0041 per MWh PCS in 2026
0.0182 per MWh PCS in 2027
0.0415 per MWh PCS in 2028

*<https://www.legifrance.gouv.fr/orf/id/JORFTEXT000049891497>

The regional context in “Nouvelle Aquitaine” and “Occitanie”



- Establishment of Regional Energy Committees (CRE) as part of the Renewable Energy Production Acceleration Law, Teréga is a member of the CREs in the Nouvelle Aquitaine and Occitanie regions.
- The number of Biomethane Renewable Energy Zones (ZAEnr) will be analyzed according to the objectives of the SRADDET 2030, with the obtained ZAEnr being compared by sector to the objectives of the future PPE 3 for 2030/2035.



Confirmation of the SRADDET 2030 target for methanization at 6 TWh.
Several actions are being pursued for the deployment of H2 (heavy mobility, e-fuel projects, port development, etc.).



Confirmation of the SRADDET 2030 target for methanization at 2.9 TWh.
Occitanie continues its ambitious strategy to support the deployment of hydrogen (local production, mobility, port development, e-fuel projects, etc.).



02

Gas Supply and Demand - Balance and Outlook

Gas demand, supply, and production in 2023-2024

Outlook

02

Gas Supply and Demand - Assessment and Outlook

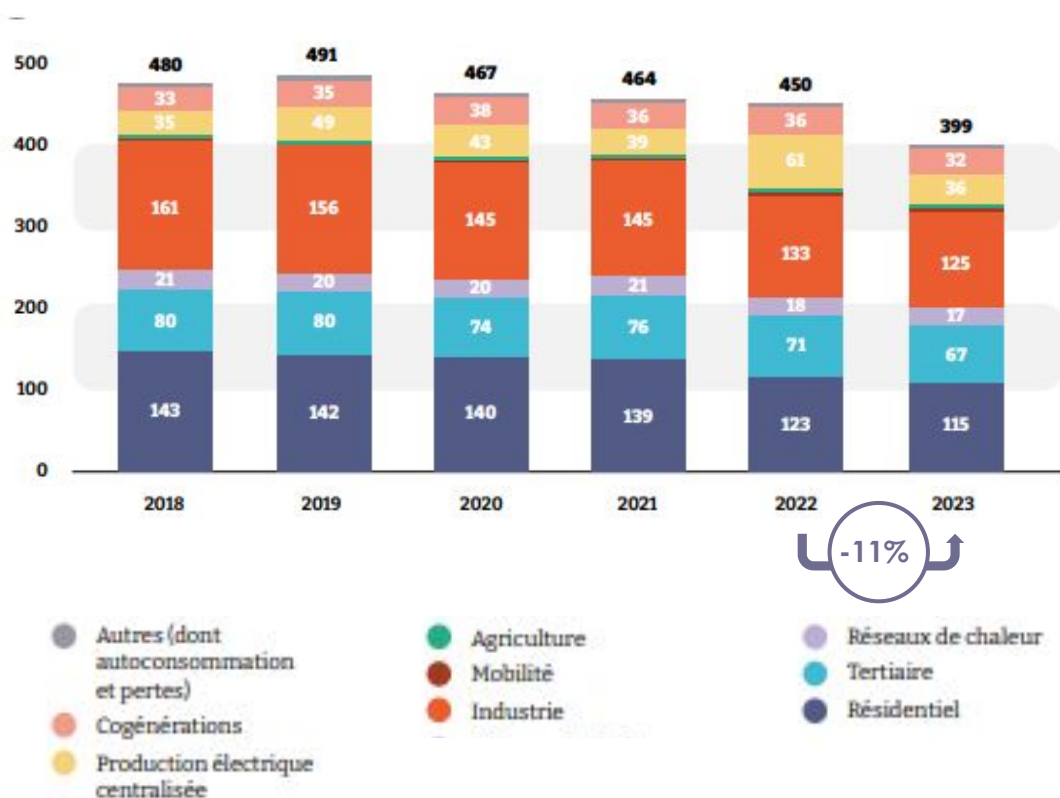
Gas demand, supply, and production in 2023-2024

Outlook

Gas demand in France: 2023 Overview - 2024 Trends

GAS CONSUMPTION IN FRANCE

Adjusted for weather variations; Volumes consumed on the network, TWh PCS



In 2023, gas consumption in France reached:

399 TWh (climate-adjusted data) representing approximately -11% compared to 2022.

This decline is driven by:

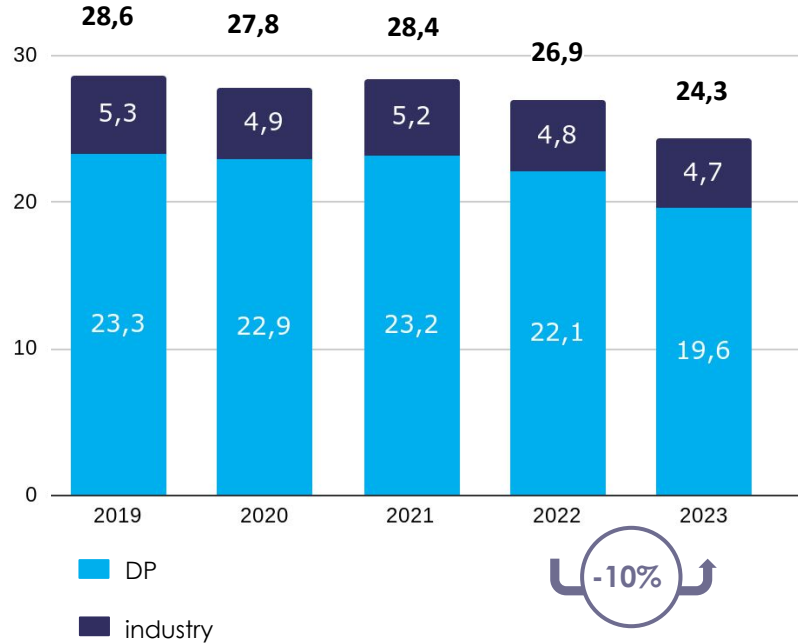
- **The building and industrial sectors, due to the increase in energy prices since 2022:** a decrease of approximately -6% between 2022 and 2023 in these two sectors;
- **A reduced reliance on gas-fired electricity generation** due to better availability of the nuclear fleet: -41% between 2022 and 2023 (with an average availability rate of 63% in 2023 compared to 54% in 2022), as well as the hydropower fleet.

In 2024, the projected consumption would be around 370 TWh*, in climate-adjusted consumption. The decline is driven by the electricity generation sector (approximately -60%).

* Estimation because only raw datas in 2024 are known and are around 360 TWh

Gas demand in Teréga's area: 2023 balance and 2024 trends

Evolution of Teréga's consumption / climate-adjusted (TWh)

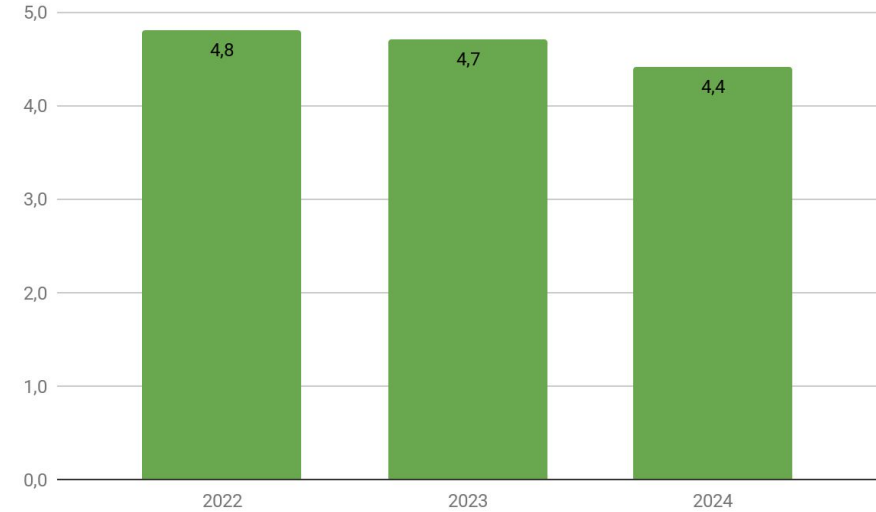


In 2023, gas consumption in the Teréga area was:

24,3 TWh (climate-adjusted data), -10% compared to 2022

⇒ A similar trend to the one observed at national level

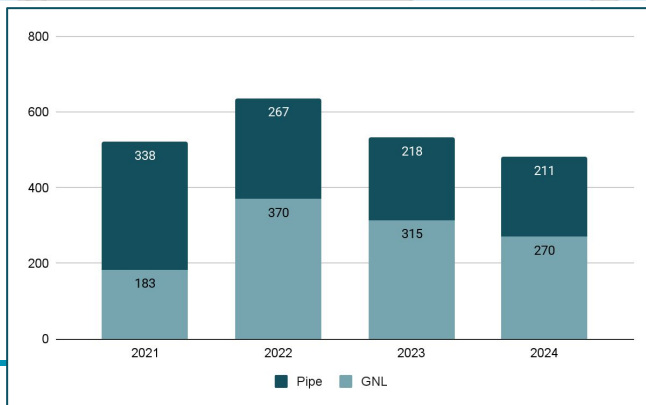
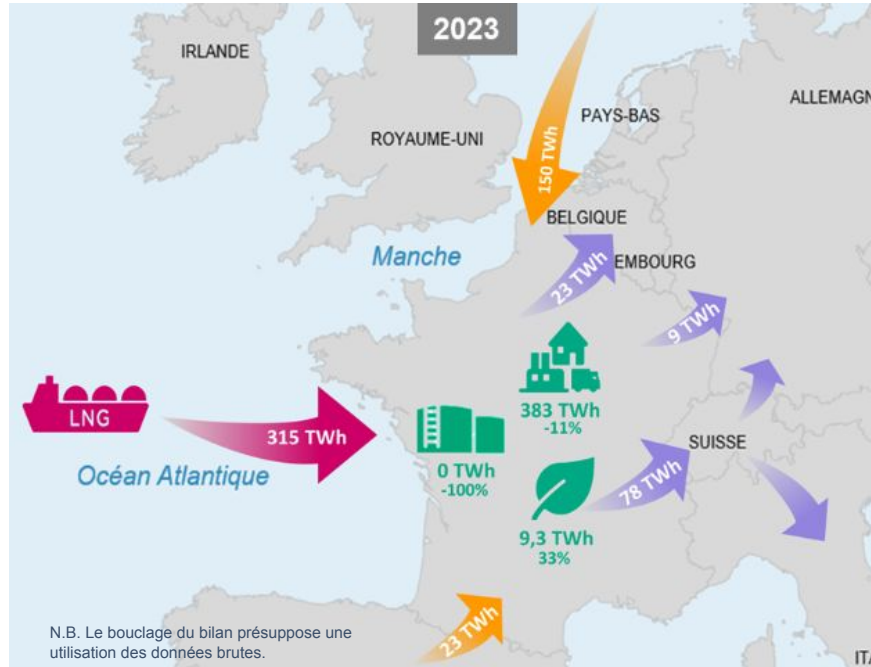
Industrial sector consumption Teréga's area in TWh



In 2024, the decline at the industrial level is confirmed due to certain sectors that have started decarbonizing their processes or reduced their production (such as the glass and construction materials sectors).

Source: Internal data from Teréga.

Gas supply in France in 2023 and trends for 2024



→ Evolution of gas imports via pipelines and LNG terminals in France (including DK LNG exports).

Source : Transparency Platform

- In 2023, South >> North flow trends:

- With the following supply pattern: 59% LNG and 41% via pipelines;
- A decrease in LNG imports (-15% compared to 2022) and pipeline imports (-18% compared to 2022) due to reduced consumption and demand at the interconnection points, along with the end of supplies from the East.

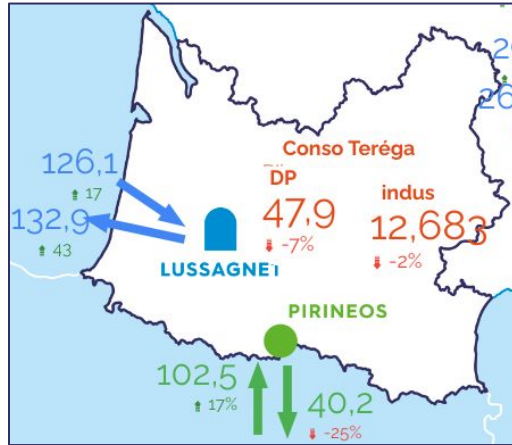
In 2024, the infrastructure continues to operate under a South >> North and West >> East pattern, with LNG arrivals declining compared to 2023 (270 TWh in 2024: -15% vs. 2023)

- Storage facilities contribute to balancing the gas system and ensuring supply security.

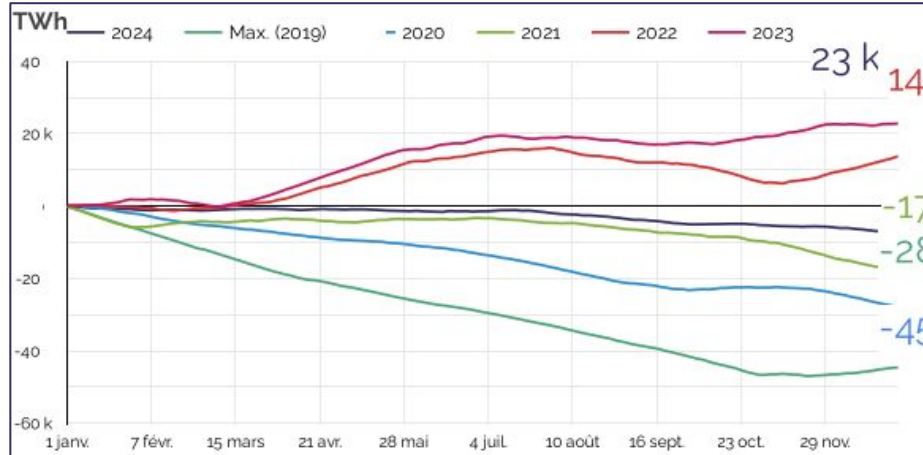
- During the winter of 23/24, 84 TWh of gas were withdrawn from storage, out of a total consumption of 233 TWh for the winter*.

*Brute sans correction bioCH4

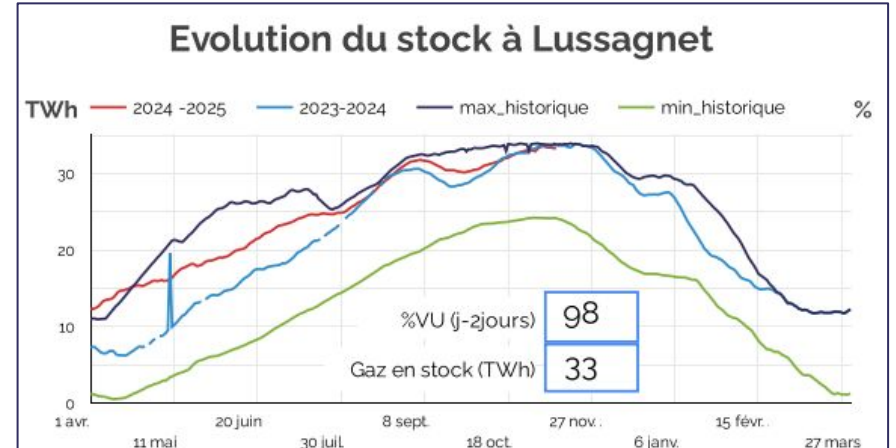
Focus on the Teréga's area



Average allocations for entry and exit in 2023 in GWh/day and the difference compared to the average of the previous period.



Flows at Pirineos in TWh (S52 - 2024).

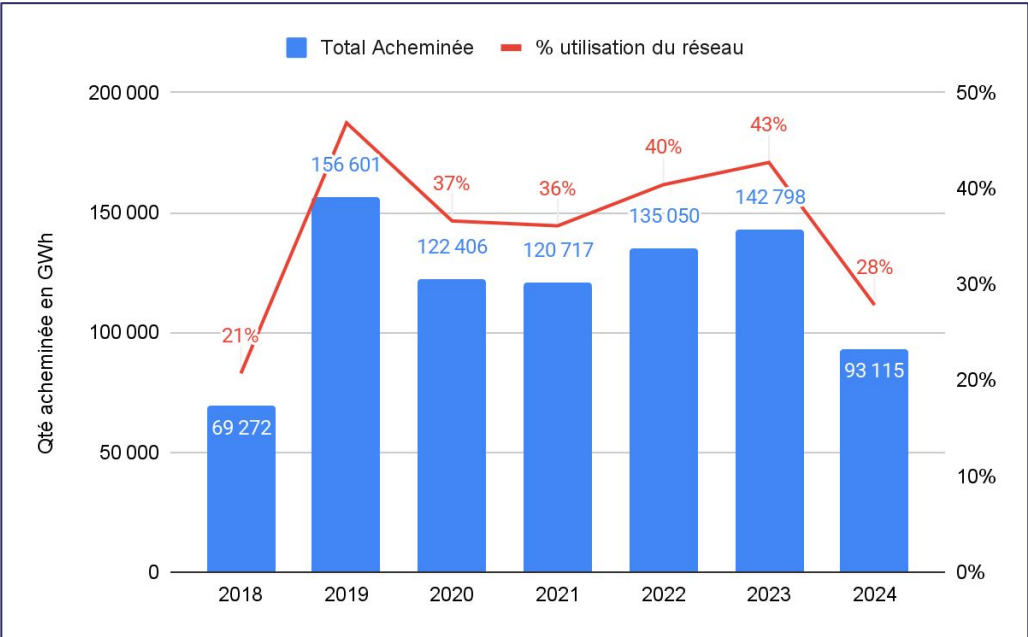


Evolution of the stock at Lussagnet, in %VU (S45 - 2024).

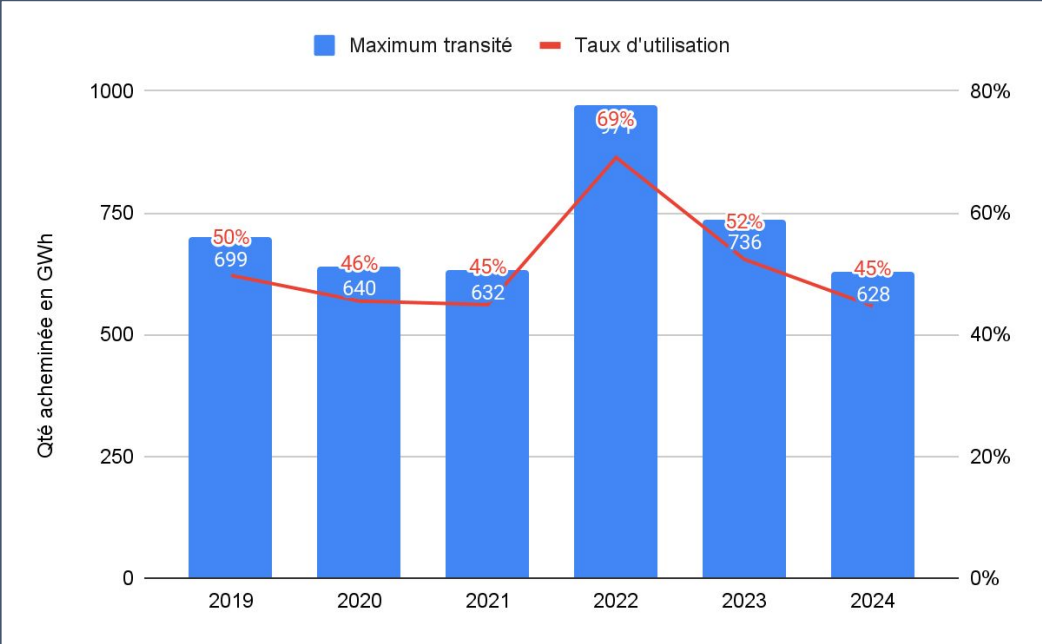
- 2023 :
 - Pirineos is primarily used in the direction from Spain to France
- 2024 :
 - A new capacity of 20 GWh/day will be available from July 2024, from Spain to France (firm in summer and interruptible in winter)
 - Nearly zero net flows.
 - The Lussagnet site is 98% full as of November 1, 2024, with an additional 1 TWh of usable volume available.

* capacités additionnelles mises sur le marché grâce à la performance du stockage Source: Internal data from Teréga.

Focus on the Teréga's area



Annual quantities transported on Teréga network (2019 to 2024) and utilization rate compared to maximum capacities



Maximum daily quantities transported on the Teréga network (2019 to 2024) and utilization rate compared to daily maximum capacities

The network utilization rate averaged at 28% in 2024 vs 43% in 2023, with less flows coming into Teréga's grid.

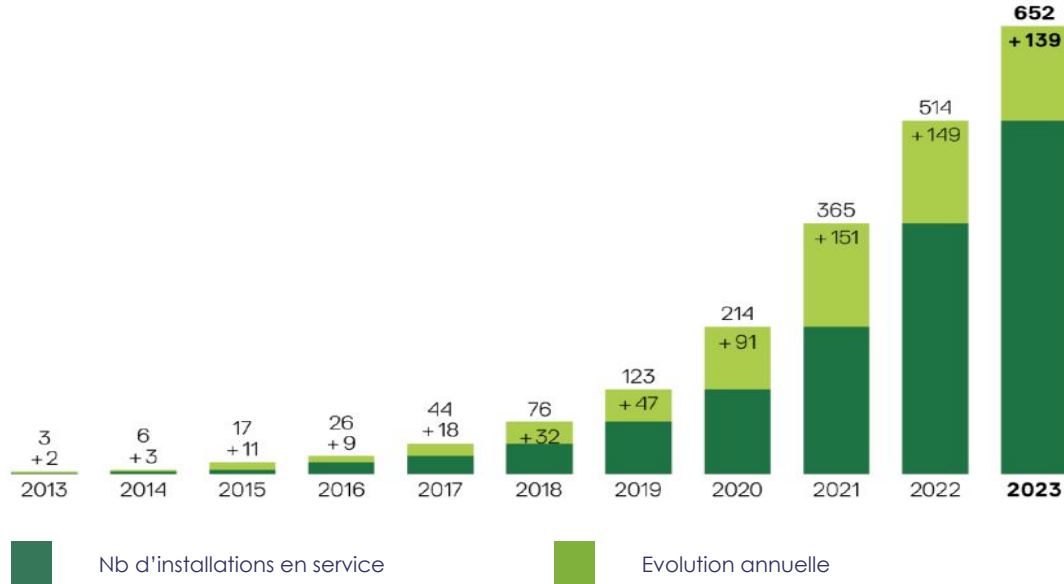
Note: The quantities transported refer to the physical entries from Pirineos via Larrau & Biriadou, physical entries from GRTgaz via Cruzy & Castillon, and physical entries at the PITS (all pipelines)

Source: Internal data from Teréga

The dynamism of the biomethane sector

NOMBRE TOTAL D'INSTALLATIONS EN SERVICE ET ÉVOLUTION ANNUELLE

Source : ODRe¹⁰

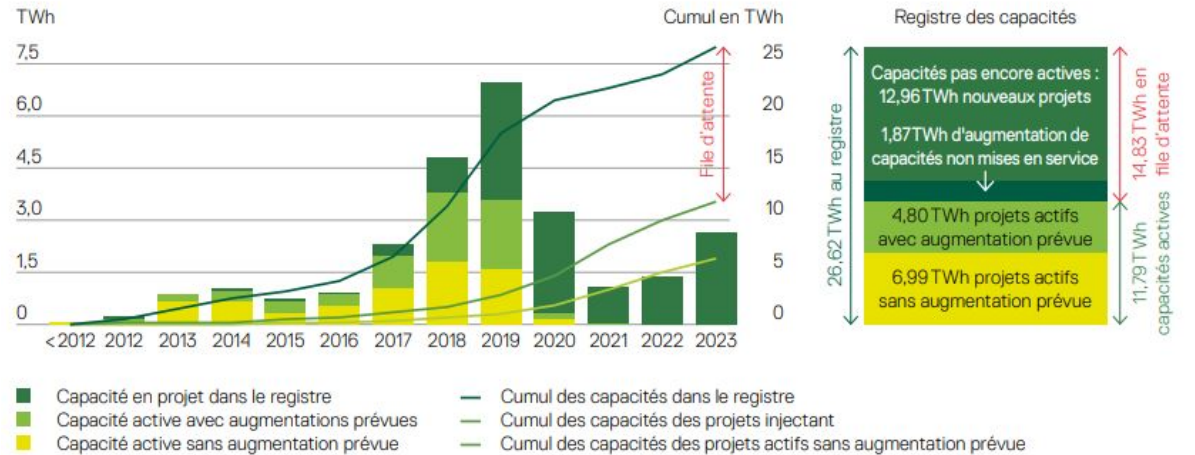


CAPACITÉS DANS LA LISTE D'ATTENTE DU TABLEAU DE BORD DU MINISTÈRE DE LA TRANSITION ÉNERGÉTIQUE PAR DATE D'ENTRÉE DANS LE REGISTRE

France entière – hors projets en attente, sortis, abandonnés.

Incluant les demandes d'augmentation de capacité

Source : registre des capacités au 31/12/2023



- In 2023, biomethane injections into the French gas network represented approximately **9 TWh** (+31% compared to 2022), or **2.4% of national consumption** (national IGR).
- There were **731** biomethane injection sites by the end of **2024** in France, with a capacity of 13,8 TWh/year.
- It is noteworthy that **methanization is the only sector to have exceeded the 2023 PPE target (6 TWh)**, demonstrating its ability to mobilize its potential and rapidly and sustainably achieve the objectives for energy transition and greenhouse gas emissions reduction.

Source : Panorama Gaz Renouvelables 2023

Teréga, an actor in the biomethane sector



★ Injection site

As of the end of October 2024, Teréga's network hosts **10 biomethane production units with an injection capacity of approximately 590 GWh/year.**

9 other producers have made contractual commitments and will eventually ensure an additional injection of **220 GWh/year.**

The positive momentum is also reflected in around **ten additional projects**, currently at the feasibility study stage for connection.

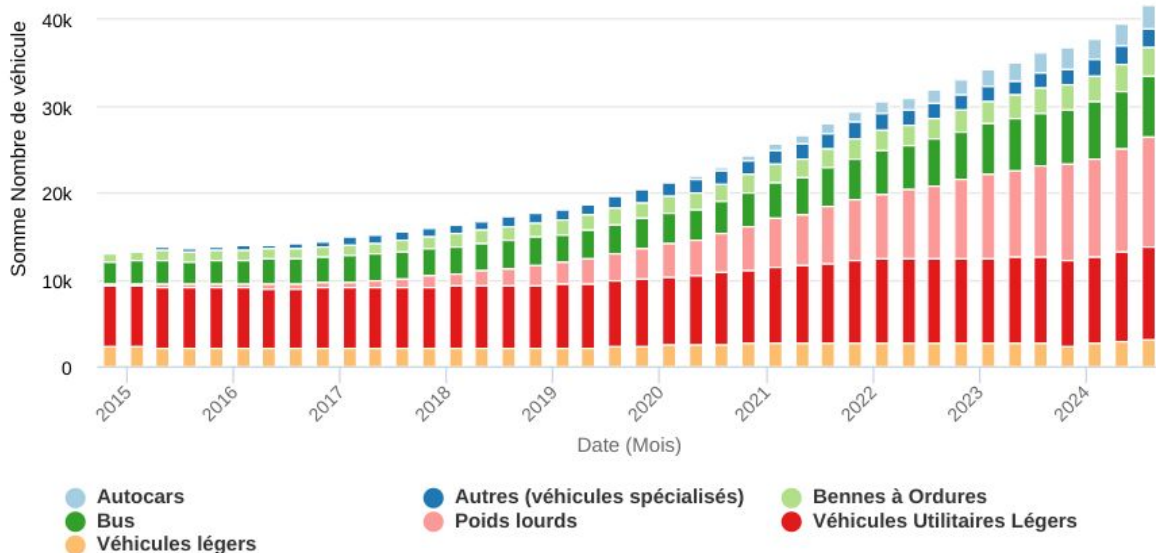
10
injection sites
590 GWh/year

9
contracts
175 GWh/year

▶ **Average IGR** in 2024: **4.1%** biomethane in the Teréga zone

▶ **Max IGR** in august 2024 : **14,6 %** biomethane in the Teréga zone

The Development of Natural Gas for Vehicles in France: Current Situation



As of December 2023, GNV/BioGNV represents in France:

- **A 16% increase in consumption in 2023** (quantities transported through the gas network), representing **3.5 TWh***;
- 331 fueling points;
- 37,800 vehicles running on BioCNG/CNG, including 25,200 heavy-duty vehicles;
- Market share in 2023 increased: +20% of heavy-duty BioCNG/CNG vehicles in circulation between 2022 and 2023.

Source : https://odre.opendatasoft.com/explore/dataset/points-d-avitaillement-gnv-publiques-en-france/table/?disjunctive.exploitant&disjunctive.ville&disjunctive.departement&disjunctive.paiement&disjunctive.nom_region&sort=annee_ouverture; AFGNV, * hors GNL

Teréga, a key player in the NGV sector



2 public stations in service

20 GWh/year

1 BIOGNV OF THE CONFLUENT
Damazan (47)

2 SEVEN OCCITANIE
St Sulpice la Pointe (81)

4 private stations Terega

2 GWh/year

1 Pau (64)

2 Lussagnet (40)

3 Cugnaux (31)

4 Barbaira (11)

TRANSPORTER

Teréga offers a dedicated service for CNG stations, built on the basis of a standard connection and a delivery station known as "at the gas flow," allowing the exploitation of the transport network's operating pressure.

By the end of October 2023, two public CNG stations are connected to the Teréga transport network, at Damazan (47) and Saint-Sulpice-la-Pointe (81).

CLIENT USER

Teréga has opted for a 100% CNG fleet as part of its eco-responsible BE+ program and has invested in four private refueling stations at its sites in Pau (64), Lussagnet (40), Cugnaux (31), and Barbaira (11).

02

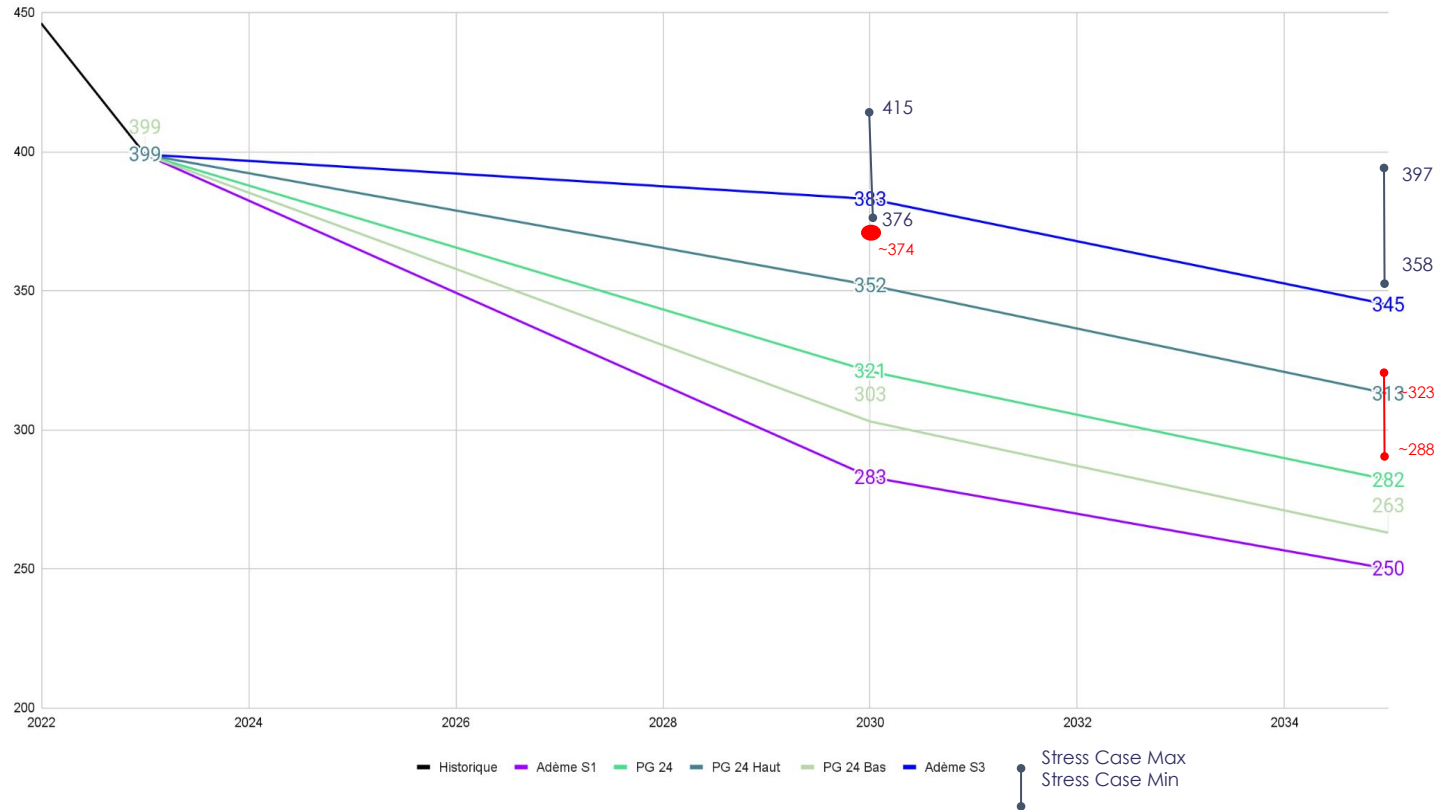
Gas Demand and Supply - Balance and Outlook

Gas Demand, Supply, and Production in 2023-2024

Outlook

Gas Demand Trajectories in France - Volume

Consumption Trends by 2035 - France (TWh)



A set of scenarios considered that reflects the uncertainties affecting the energy sector:

- the **S1 scenario from ADEME** ;
- the **Perspectives Gas (PG) 24 scenario and its variants**;
- the **S3 scenario from ADEME**

Note: ADEME's scenarios are derived from the [Transitions 2050](#) report

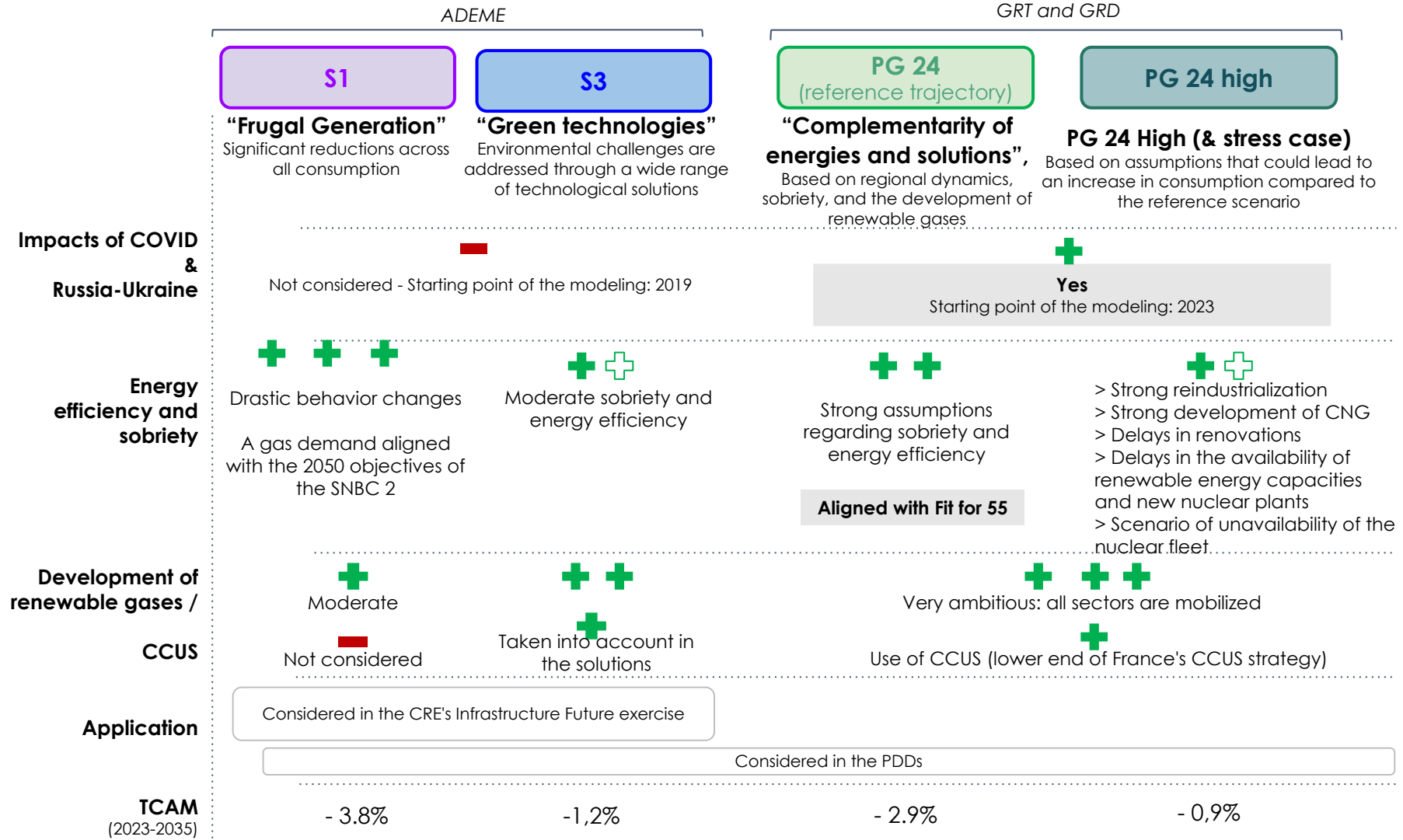
Note that the PPE3, currently under consultation, fully aligns with the range of scenarios considered in this PDD.

Gas Demand Trajectories in France - Volume

Update Perspectives Gaz 2024

The PG exercise was updated in 2024 to account for the new starting point of 2023, as well as recent developments in the regulatory context.

A reference scenario is proposed, compatible with the Fit for 55 objectives for 2030, built on the complementarity of energies, with a particular emphasis on the use of renewable and low-carbon gases, as well as significant activation of levers for sobriety and energy efficiency.



Gas Demand Trajectories in France - P2 peak

At the France level, the P2 peak (winter consumption peak at a 2% risk) is estimated at 3828 GWh/day in 2024.

The recent revisions take into account:

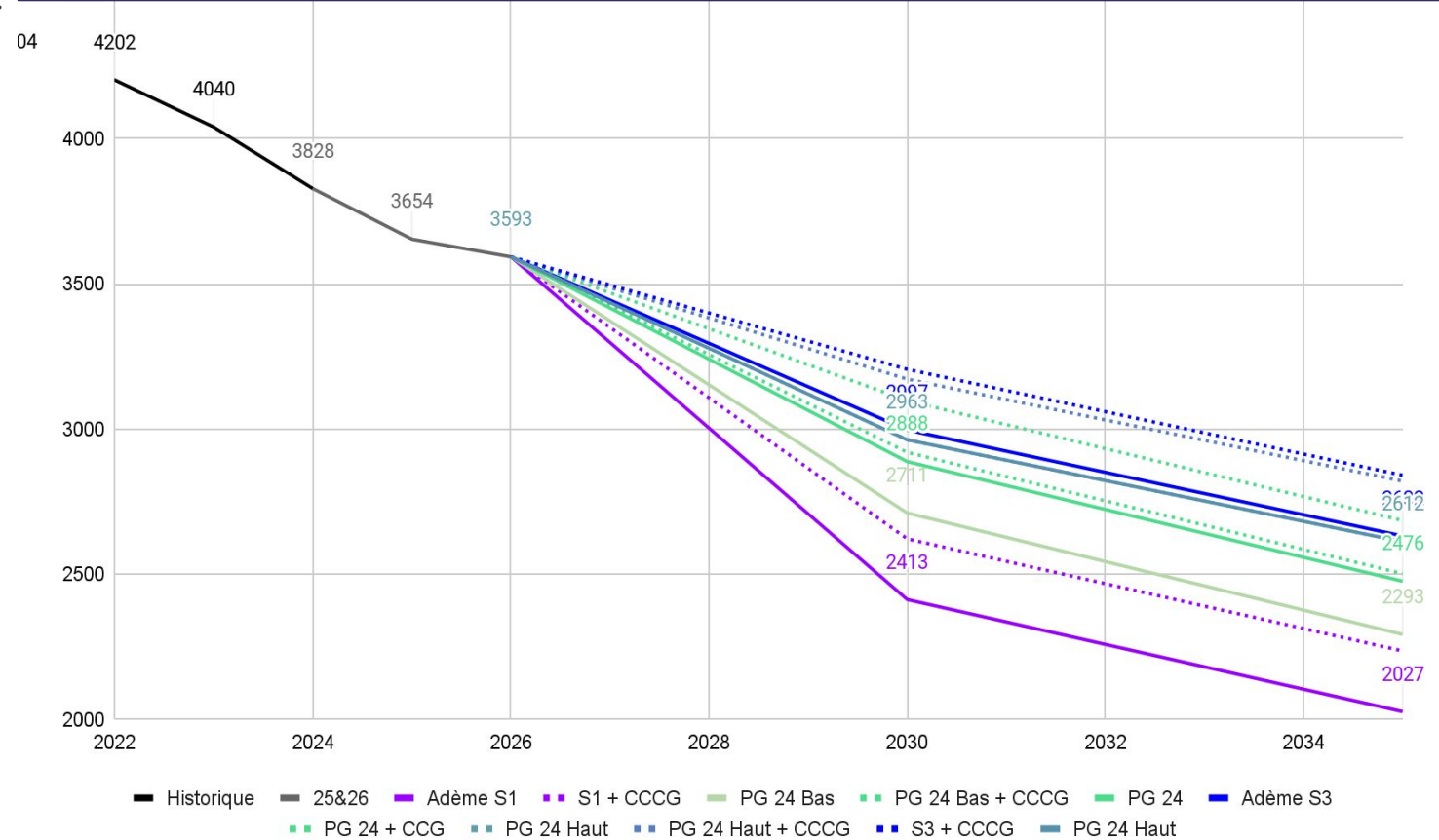
- The decrease in consumption observed since the start of the Russia-Ukraine conflict;
- The update of the climate reference framework.

This trajectory is therefore built from the new starting point of 2024, with a refined estimate for 2025 and 2026, followed by the application of the CAGR beyond that.

→ **Several assumptions for hybrid heat pumps beyond 2026:**

- **A high trajectory in the PG 24 Low scenario** with 9% hybrid heat pumps in 2030 and 19% in 2035;
- **A median trajectory - PG 24/PG 24 High & S3** with 7% hybrid heat pumps in 2030 and 14% in 2035;
- **ADEME S1** represents the lower bound, as it is a scenario without hybrid heat pumps.

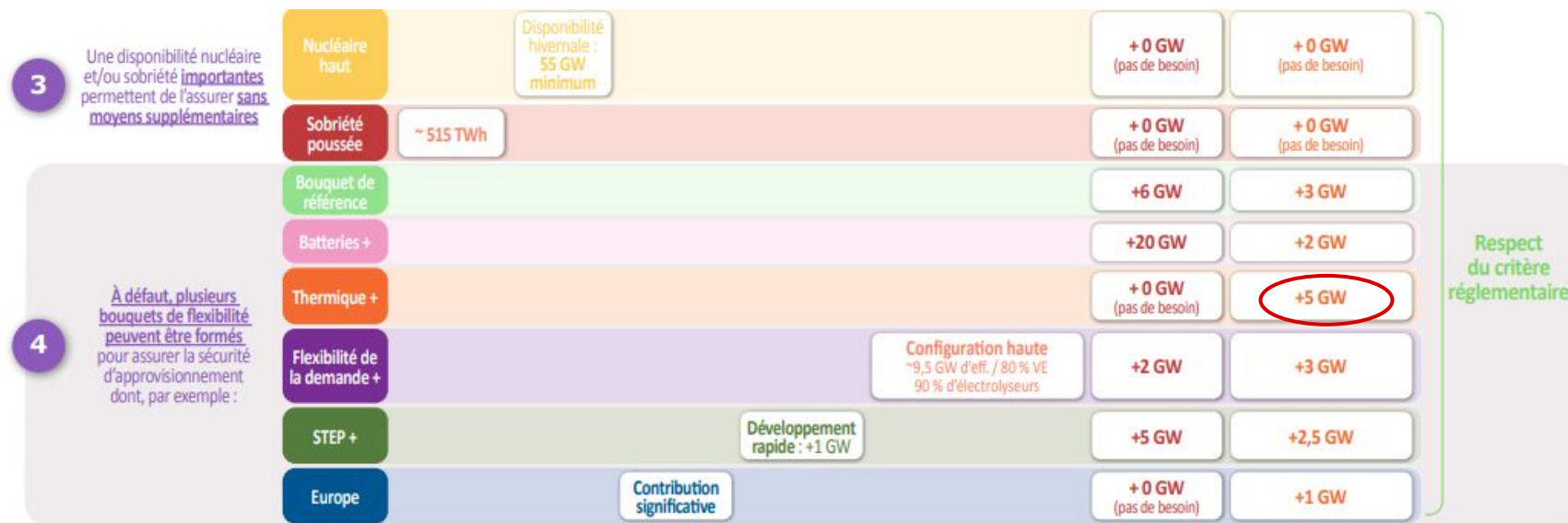
Evolution of the consumption peak by 2035 - France (GWh/day)



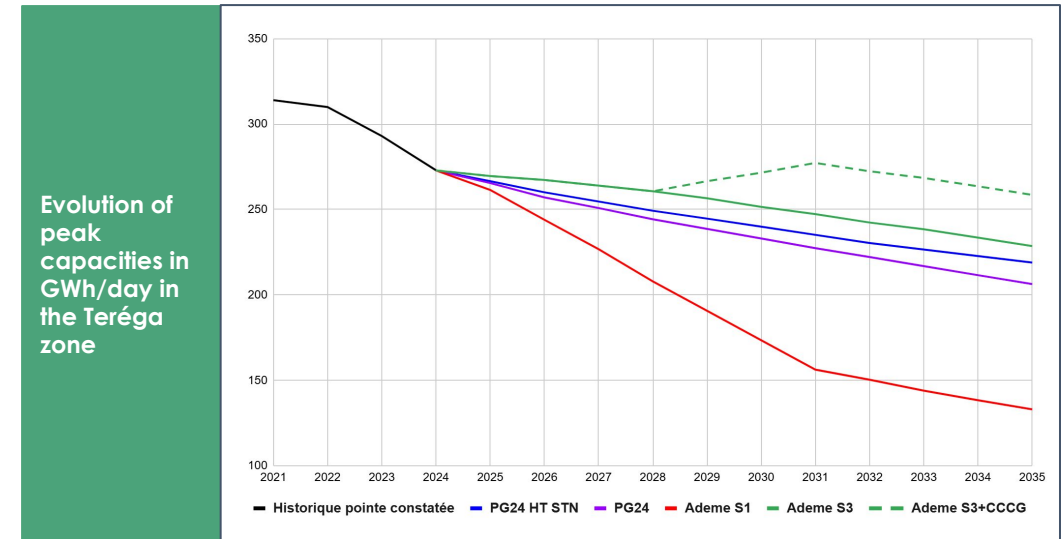
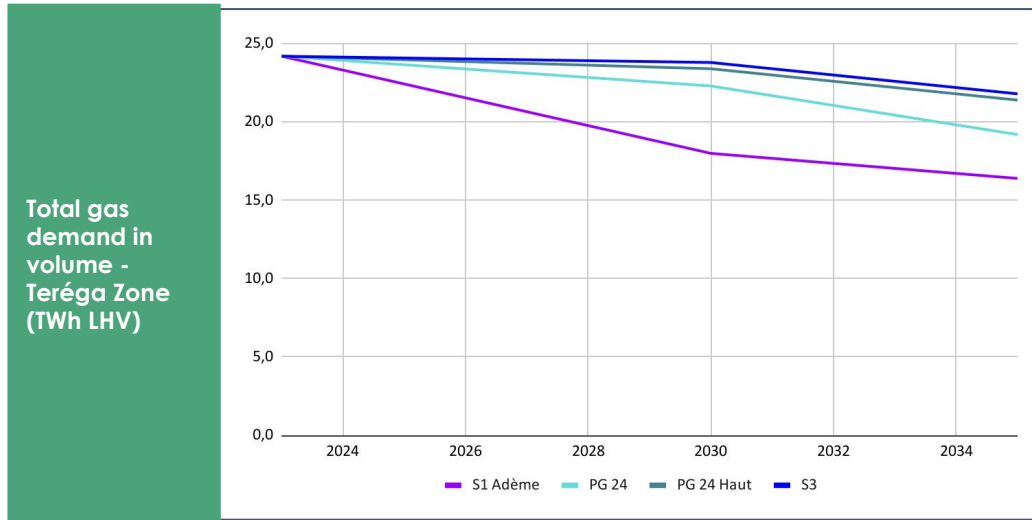
Gas Demand Trajectories in France - P2 peak

→ Variants with additional CCGT units :

- The previous scenarios are supplemented by a **variant that includes additional gas-fired power plants amounting to 5 GW**, in line with the results of the RTE BP for 2035. This scenario anticipates the use of CCGT plants to ensure power balancing in accordance with regulatory criteria by 2030



Breakdown of trajectories in volume and at the peak in Teréga's area



The volume evolution in the Teréga zone follows the assumptions of the previously described scenarios, with a horizon set to the PDD 2032.

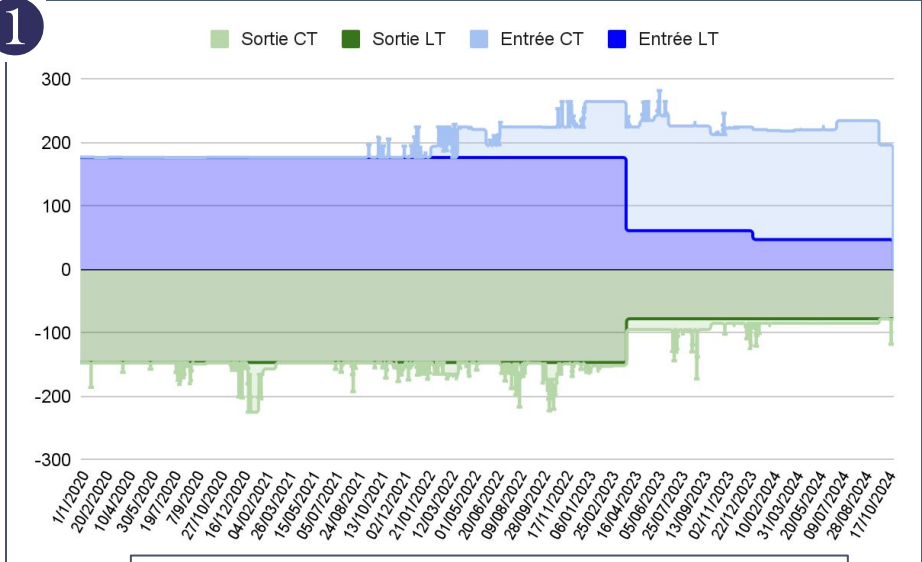
266 GWh/day the peak consumption in the Teréga zone is estimated for 2024 following the latest winter analysis, with the following distribution:

- **90%** for **Public Distributions**
- **10%** for **industries** connected to the transmission network

This estimate constitutes the first point of the long-term peak projection, based on the assumptions explained in the previous slides for the different scenarios, using a Teréga peak projection model.

Subscriptions - Pirineos

1

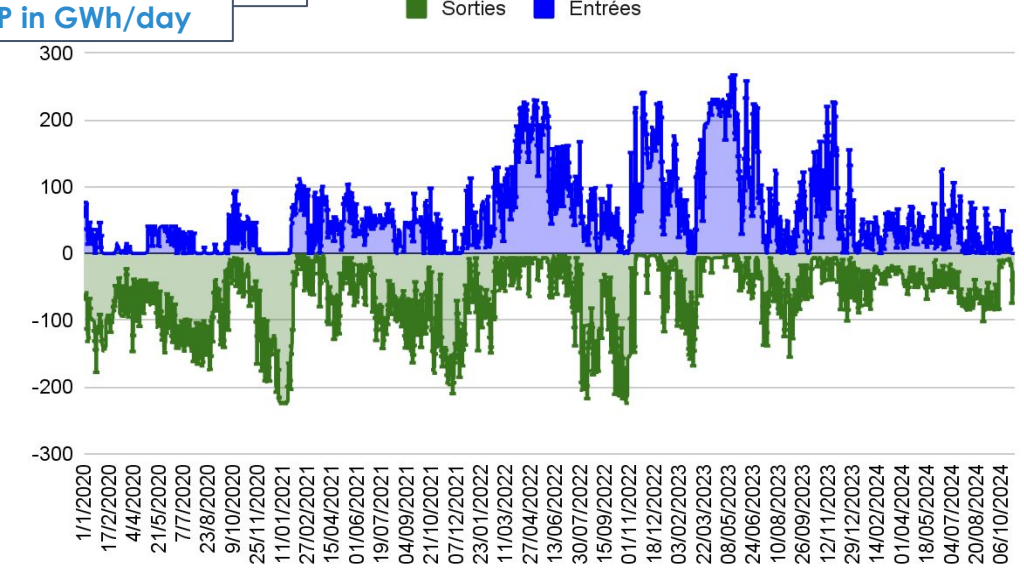


Subscriptions* to the Pirineos VIP in GWh/day

* LT = multi-year
CT = annual, quarterly, monthly, or daily

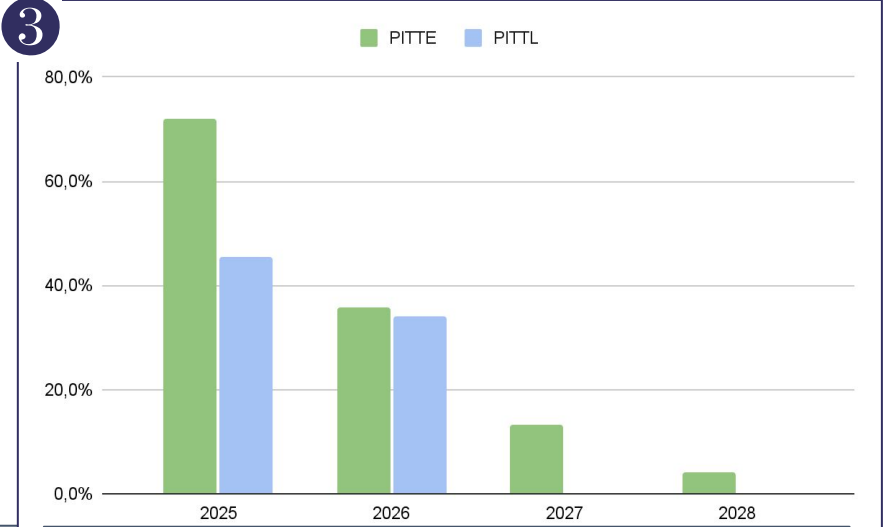
1. Subscriptions to Pirineos are increasingly focused on the Short Term
2. Random flows, both in direction (North > South or South > North) and in amplitude

2



Allocations to the Pirineos VIP

3

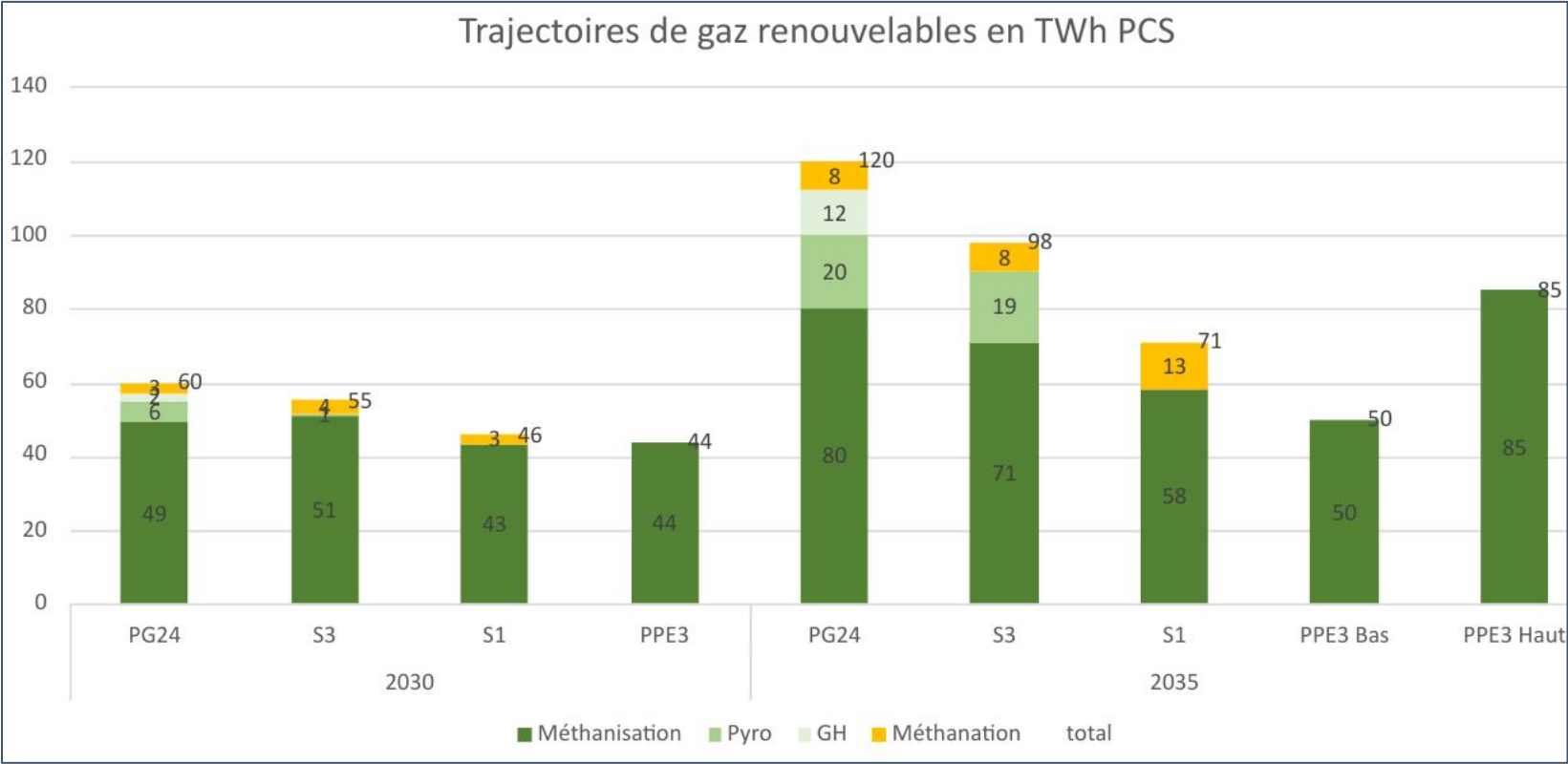


Subscription rate of firm capacities at Pirineos (Inflow/Outflow)

3. The long-term contracts at Pirineos will end in 2026 for the direction FRA >> ESP, and in 2028 for the direction ESP >> FRA

In the coming years, subscriptions will be primarily driven by short-term opportunities

Renewable and low-carbon gas production trajectories



- The PG 24 trajectory is based on its potential, around 150 TWh for the methanization sector and 320 TWh in total;
- The production level of the scenario is compatible with the European target of 20% green gas by 2030 set by the Repower EU plan;
- A trajectory that intensifies after 2030 and relies on innovative green gas production volumes, unlike the trajectory of the ADEME S1 scenario primarily driven by methanization, as well as the PPE3 currently under consultation.

Source : Perspectives Gaz, édition 2024



03

Investing to secure the network and adapt it to the injection of renewable gases

Security/maintenance projects for infrastructure

Adapting the network and supporting the development of green gases and renewable and low carbon hydrogen

Reducing CO2 emissions

Ten-Year Investment envelopes

03

Investing to secure the network and adapt it to the injection of renewable gases

Security/maintenance infrastructure projects

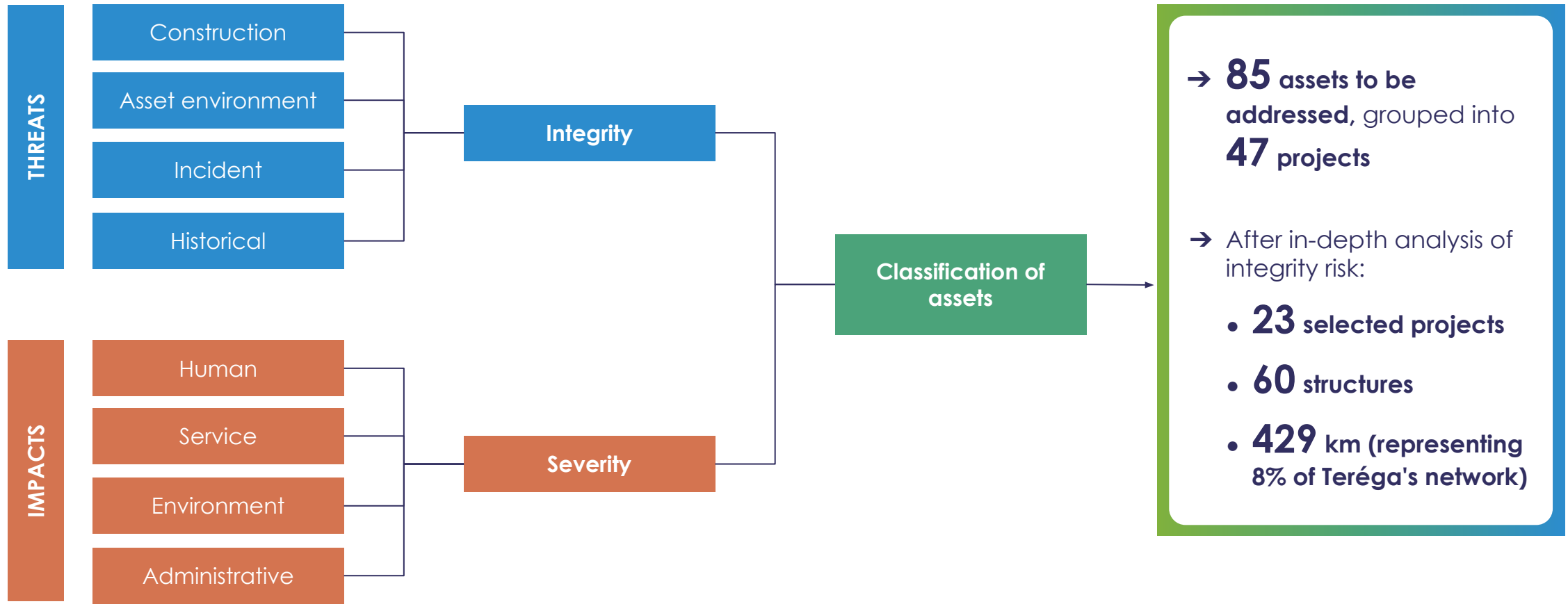
Adapting the network and supporting the development of green gases and renewable and low-carbon hydrogen

Reducing CO2 emissions

Investment envelopes over ten years

Methodology for identifying security/maintenance projects

As part of its **Asset Management** approach, Teréga has identified, through a **multi-criteria analysis**, **85 'at-risk' assets** that could impact internal stakeholders.



Mapping of security/maintenance projects

The **security** and **maintenance** of Teréga's transportation infrastructure rely on a **multi-criteria analysis** that cross-references the **probability** and **severity of identified risks** for each asset, allowing for the **prioritization of interventions**. For each prioritized project, Teréga examines the **technically optimal security solution**, including a **potential conversion to hydrogen** when the local potential justifies it.

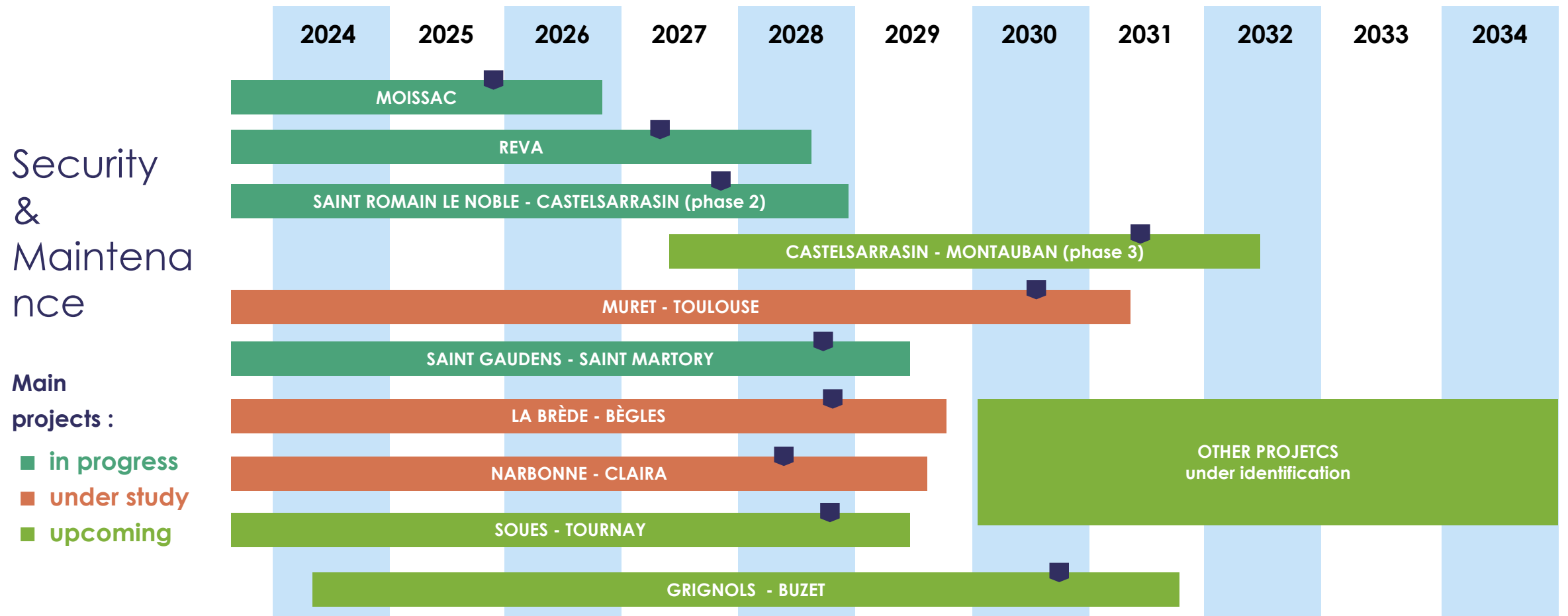
Key security/maintenance projects:

- 1 **Moissac** ⇒ Commissioning in 2025
- 2 **REVA** ⇒ 2027
- 3 **Saint-Romain-le-Noble - Castelsarrasin** ⇒ 2027
- 4 **Castelsarrasin - Montauban** ⇒ 2031
- 5 **Muret - Toulouse** ⇒ 2030
- 6 **Saint Gaudens - Saint Martory** ⇒ 2028
- 7 **La Brède - Bègles** ⇒ 2028
- 8 **Narbonne - Clairac** ⇒ 2028
- 9 **Soues - Tournay** ⇒ 2028
- 10 **Grignols - Buzet** ⇒ 2030



A network of **5 115 km** half of which is over 50 years old.

Projected timeline of major Security/Maintenance investments



Security/Maintenance Investments: Focus on NARBONNE-CLAIRA



NARBONNE-CLAIRA, A local project for the modernization of our network

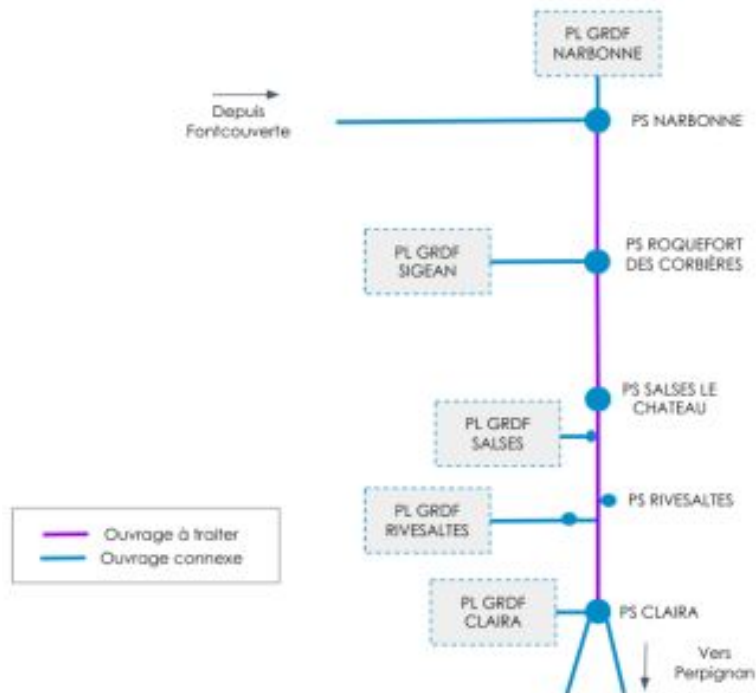
With nearly **53 km of pipelines to be renewed**, the project for renewing the natural gas transportation infrastructure between the municipalities of Narbonne (11) and Clairà (66) addresses the challenge of **modernizing and securing our infrastructures**, while anticipating future needs related to the **energy transition of the Occitanie region**.

The pipeline connecting the two municipalities currently supplies **11 Public Distributions and 1 industrial client**.

It must be replaced in order to meet **regulatory and technical requirements**. This is an **old pipeline** (nearly 50 years old), **non-pistonable**, and presents:

- numerous **defects** due to rocky backfill,
- many areas of **corrosion** due to soil typology,
- several instances of insufficient **depth**.

As with all of our infrastructure renewal projects, Teréga is committed to contributing to the **development of local areas**. For the NARBONNE-CLAIRA project, this involves studying the **compatibility of the future pipeline with hydrogen**, in order to account for the region's strong potential.



03

Investing to secure the network and adapt it for the injection of renewable gases

Security/Maintenance Projects

Adapting the network and supporting the development of green gases and renewable, low-carbon hydrogen

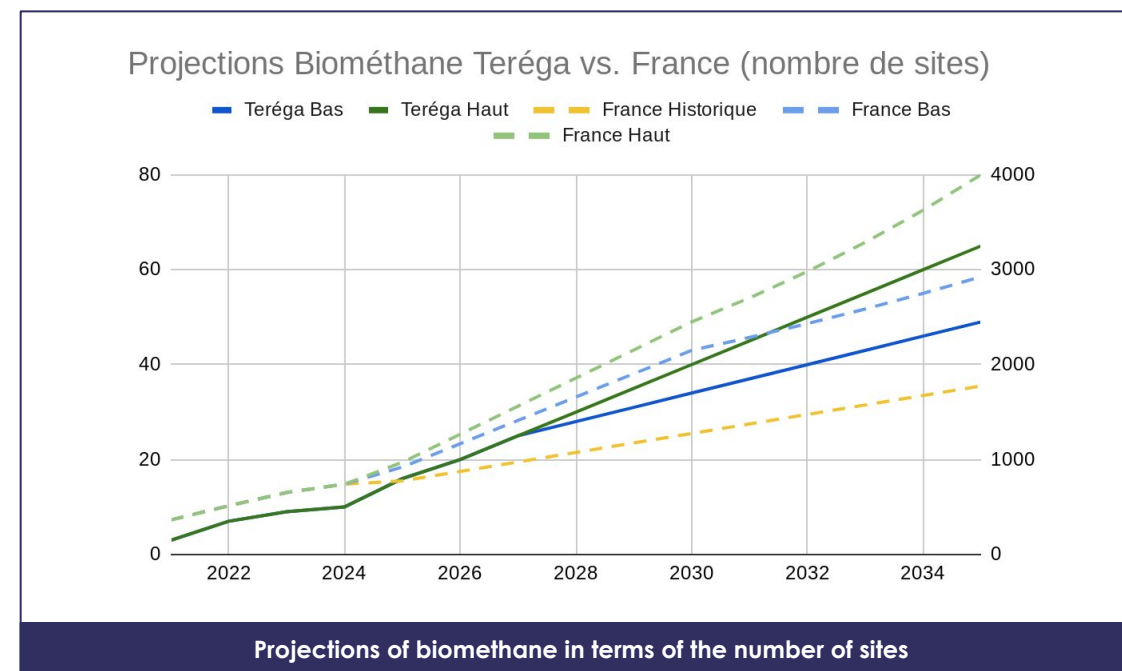
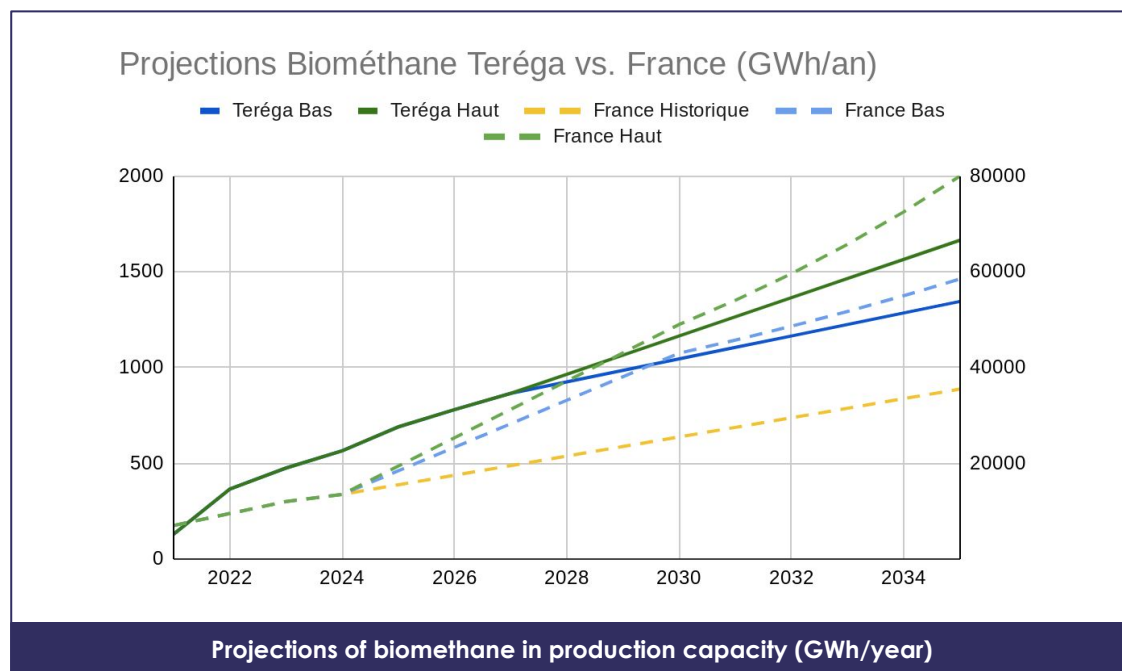
Reducing CO2 emissions

Investment budgets over the next ten years

Methanization installations connection trajectories

Two connection trajectories for biomethane on the Teréga network: a lower bound built on a low production scenario (ADEME S1) and a high trajectory corresponding to the renewable gas production level of the adjusted Territories scenarios.

Teréga plans **3 to 5 connections per year until 2033**, which would bring **the number of units connected to its network between 43 and 55** by that time, with a **cumulative injection capacity between 1.2 and 1.6 TWh/year** and a **total investment estimated between 32 and 44M€**.

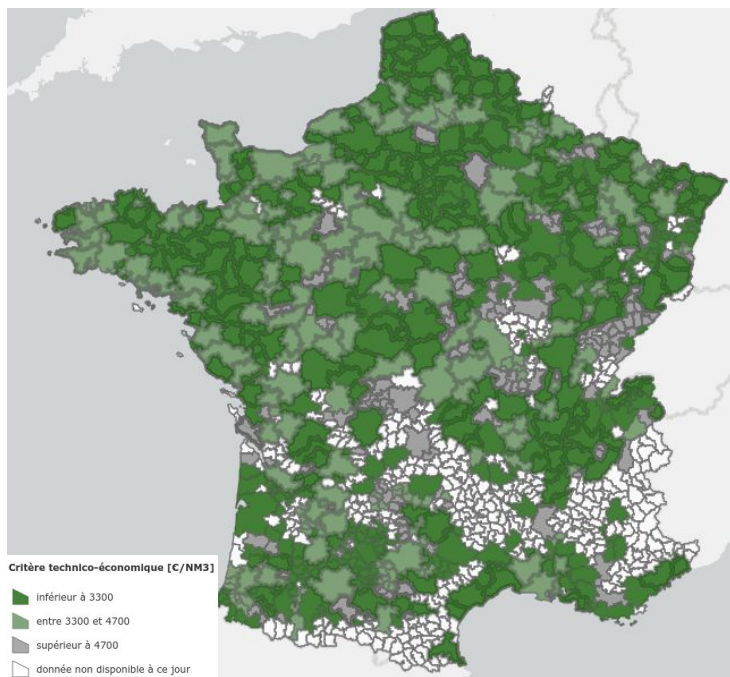


N.B. The high trajectory is based on PG24 / S3, and the low trajectory is based on ADEME S1

Zoning, a tool to prepare the adaptation of networks for the arrival of green gases

Teréga is fully involved in the development of **biomethane connection zoning** in collaboration with other infrastructure managers in its territory. By the end of October 2024, more than 40 zones have been completed, representing approximately **75% of the total zones to be addressed**.

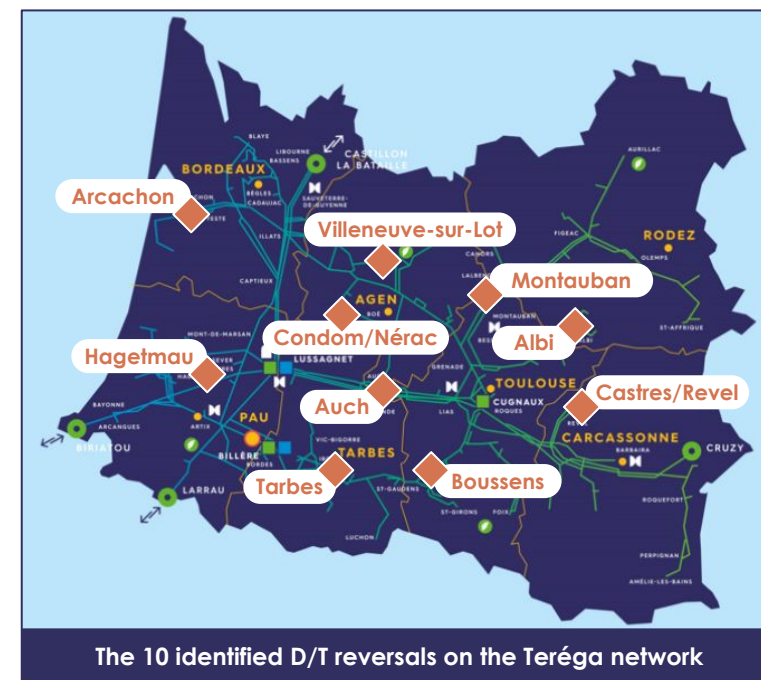
The **mapping of access to gas networks**, allowing producers to identify the most favorable zones for biomethane injection, is updated annually and is available on [Teréga's website](#).



The zoning proposed by Teréga and approved by the CRE highlights the need to install **10 reverse flow**.

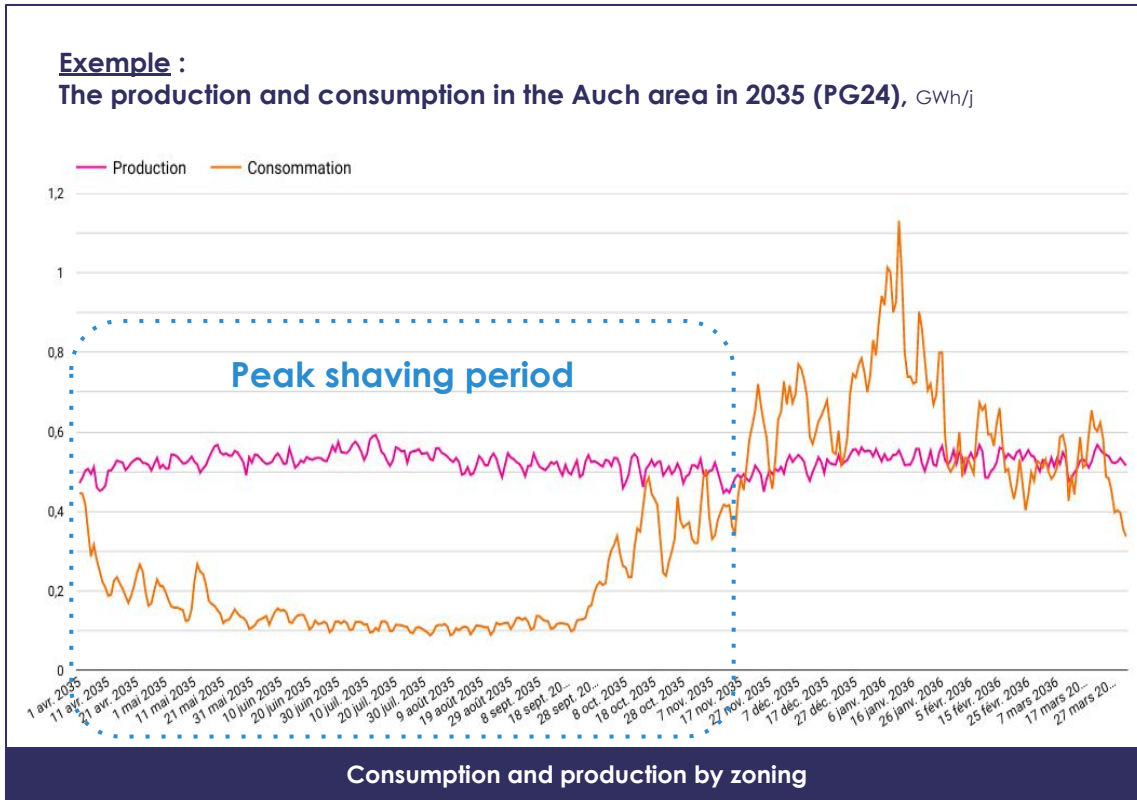
Distribution/Transport stations in the coming years (if the identified methanization projects in these zones materialize by then).

- These reverse flow stations would be located around **Auch, BousSENS, Condom/Nérac, Hagetmau, Tarbes, Villeneuve-sur-Lot, Albi, Arcachon, Castres/Revel et Montauban**,
- for an investment of approximately **30 M€**.

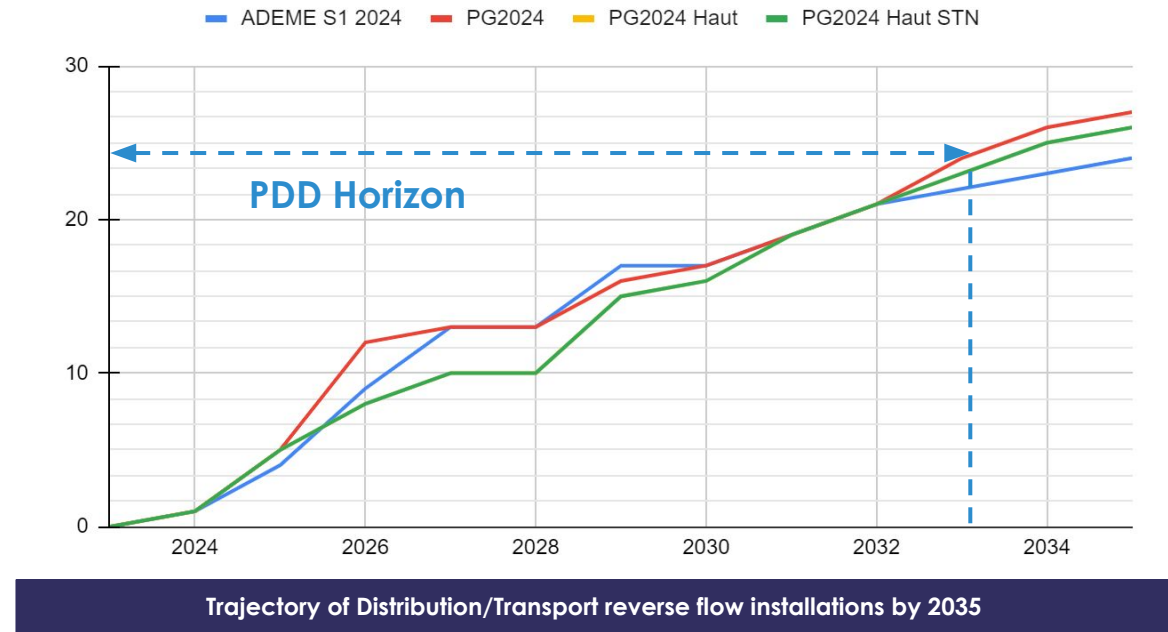


Distribution/Transport reverse flow stations trajectories

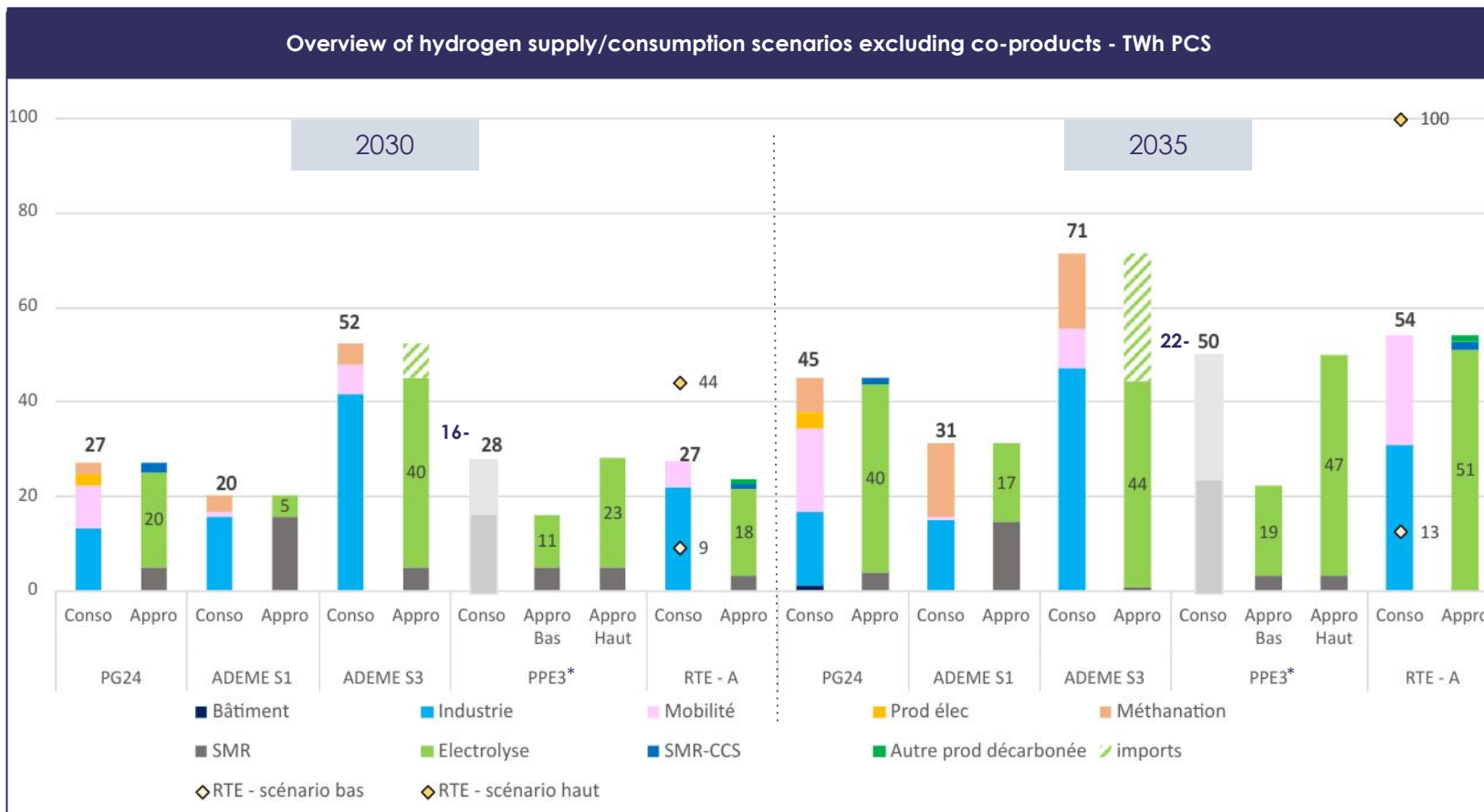
The need for **Distribution/Transport reverse flow** stations is identified by comparing the evolution of **gas production and consumption in each zone** according to the previously described prospective scenarios.



The prospective scenarios lead to a total of **22 to 25 reversal stations by 2033**, with a cumulative investment between 63 and 72 M€.



H2 to accelerate the decarbonization of industry and transport



*with estimated SMR production from the SGPE

The development of the hydrogen vector will:

- Support the decarbonization of industry and heavy mobility.
- Represent a major asset for the flexibility of the electrical system.

Several scenarios assess hydrogen consumption in France (excluding co-products from industry) to reach between 20 and 50 TWh in 2030 and between 30 and 70 TWh in 2035.

The hydrogen level in the PG 24 scenario builds upon the previous exercise (PG 22) and proposes a hydrogen demand of 27 TWh in 2030 and 45 TWh in 2035.

These levels are consistent with those proposed in the ongoing consultation for PPE 3 (6.5 GW of electrolyzers in 2030).

Teréga supports the development of hydrogen

In order to meet the national and European hydrogen sector development goals, Teréga has implemented a program based on:

• Research and Innovation (R&I) work and demonstrators

- R&D work on the impact of hydrogen in underground storage (e.g., RINGS).
- Work and tests on the impact of hydrogen on the transport network.
- Test bench, development, and training to anticipate skill development.
- Power-to-Gas demonstrator with hydrogen injection into the network (Jupiter1000 with GRTgaz).

→ Studies to anticipate the modification of installations

- Design of a mixing and injection station.
- Connection of an injection station.
- Design of an H2 sectioning station.
- Gas quality management in the network.

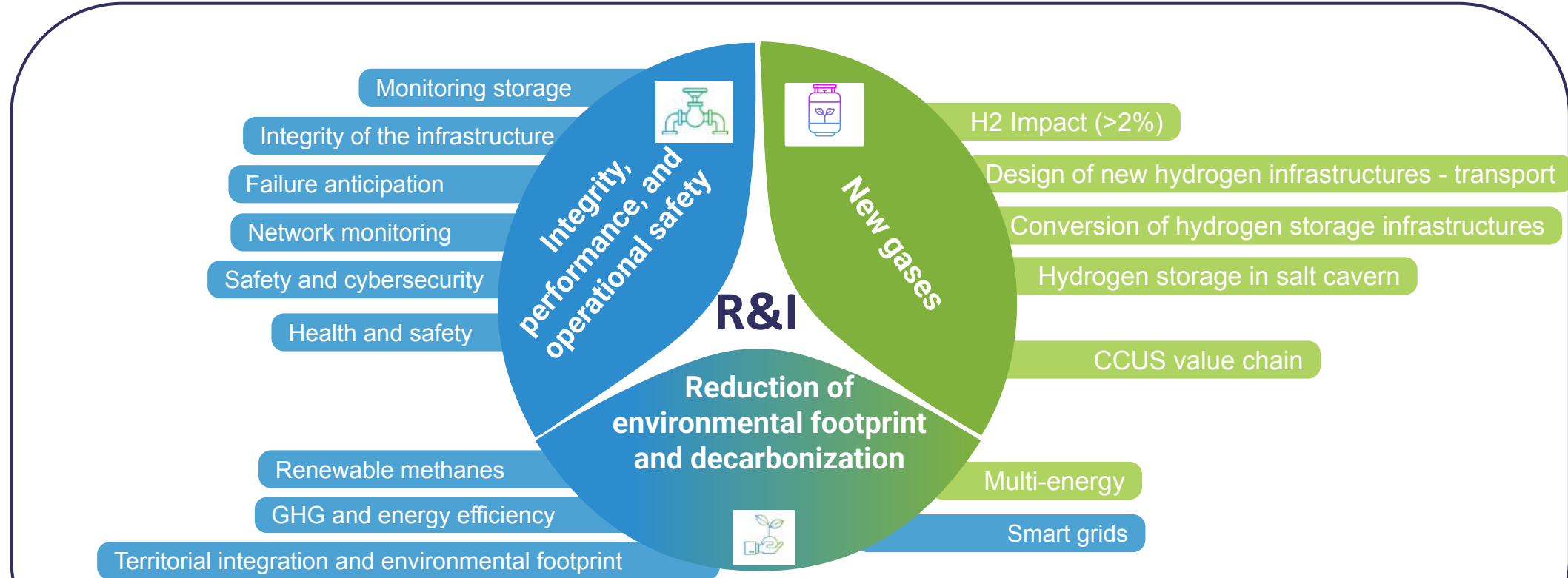
→ The first industrialization projects

- Studies related to a project for the conversion of existing infrastructure for hydrogen transport and storage (Ambès pipeline conversion project).
- Hydrogen storage project in salt caverns (project with the Salins group near Dax).
- Participation in the development of dedicated ecosystems or decarbonization initiatives - Lacq, PLN.

→ Development of large transport infrastructures

- Development of the HySoW and H2Med/BarMar projects.
- Cooperation with other European TSOs within the framework of the "European Hydrogen Backbone" initiative.
- Teréga participates in the creation of ENNOH (European Hydrogen TSOs Association) in line with the Decarbonization Package.
- Teréga is a member of the European Alliance for Hydrogen Storage, H2eart for Europe.

Investment in Research & Innovation to evolve the energy system through priority ambitions, themes, divided into 3 axes



In the current global context of decarbonization, energy sector players must rely on innovation to evolve their businesses, ensure their sustainability, and build a new energy system that addresses both economic and environmental challenges.



03

Investing to secure and adapt the network

Infrastructure security/maintenance projects
Adapt the network and support the development of green gases
and renewable and low-carbon hydrogen

Reduce CO2 emissions

Ten-year investment envelopes

Reduce CO2 emissions

The Global Methane Pledge (GMP), launched by the EU in partnership with the United States, aims to reduce methane emissions by 30% by 2030 compared to 2020 levels for over 100 countries.



This goal is outlined through the methane emissions regulation in the energy sector, published in mid-2024, which consists of the following components:

- Component 1: Ensure reliable methane emissions reporting
- Component 2: Detection and repair of leaks
- Component 3: Ban on venting (except in emergency situations)
- Component 4: Design and performance control

Teréga takes into account the evolution of this regulation in its investment envelope.

03

Investing to secure and adapt the network

Projects for the security/maintenance of infrastructure

Adapting the network and supporting the development of green gases
and renewable and low-carbon hydrogen

Reducing CO2 emissions

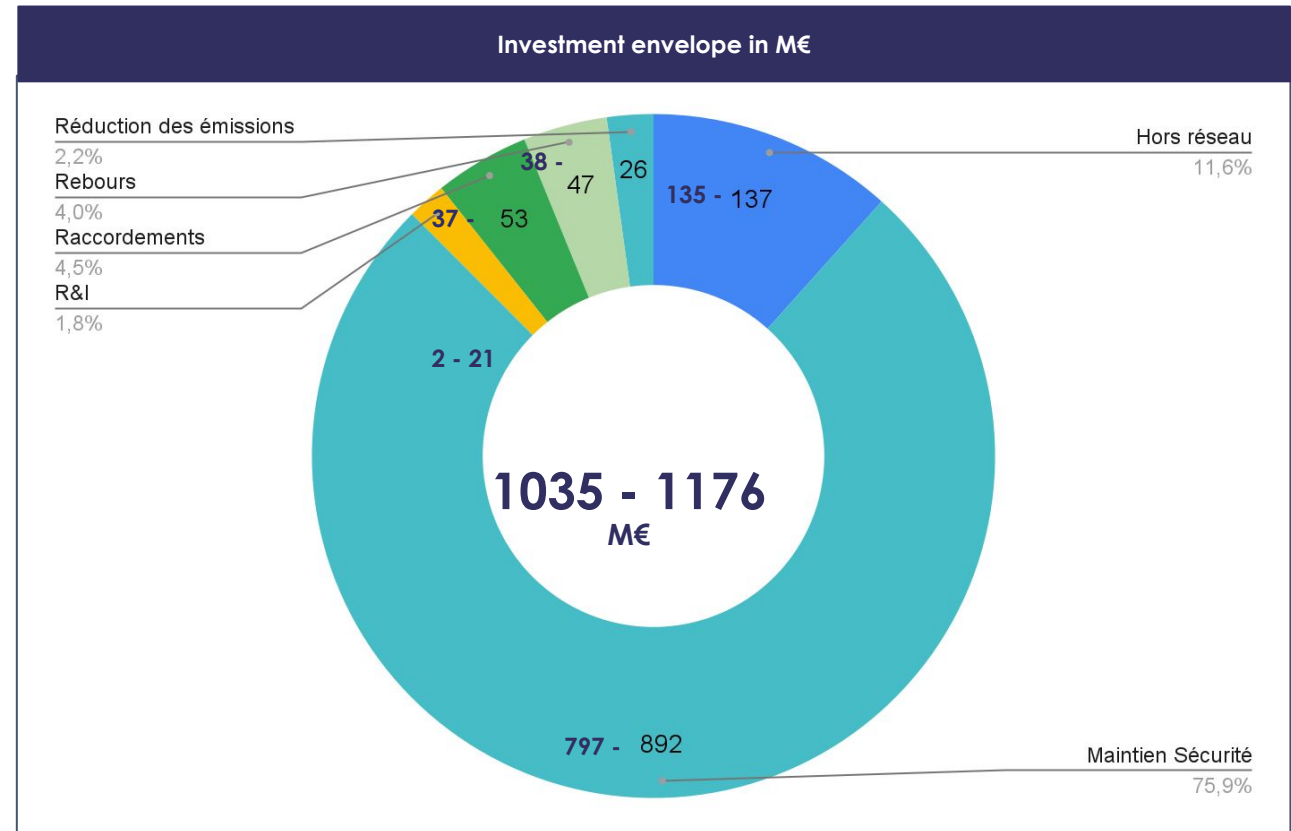
Investment budgets for the next ten years.

Ten-year investment expenditure envelopes

In line with the different prospective scenarios presented earlier, Teréga has built an investment program that includes:

- A trajectory for connecting methanation units;
- A trajectory for the installation of reverse flow stations;
- Projects for the maintenance/security of transportation installations;
- Projects for “methane emissions reduction”;
- Research and innovation;
- “Off-network” which includes expenses related to IT and real estate.

The 10-year envelope shown here (in constant M€) remains indicative. The proposed range aims to reflect the scope of the demand scenarios presented earlier.



Note: Distribution in % provided for the reference range.

04

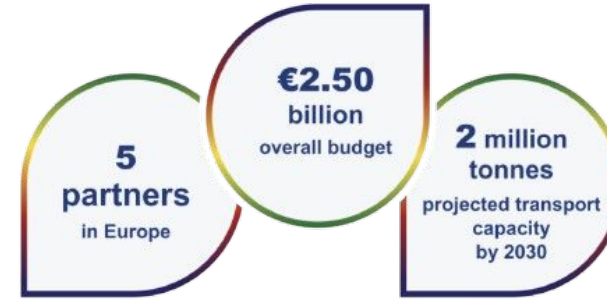
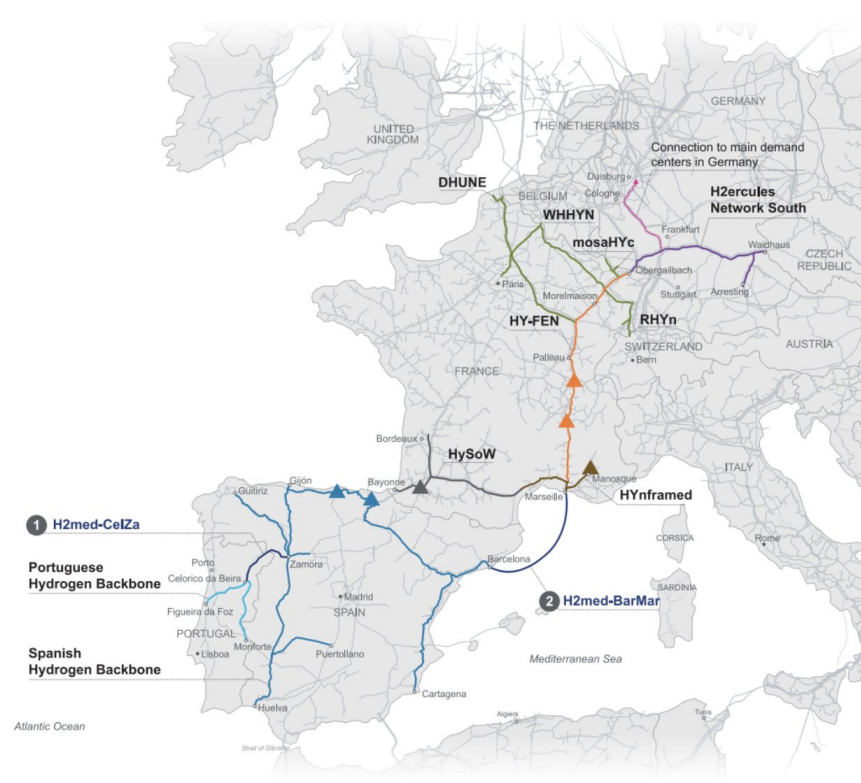
Major hydrogen and CO2 infrastructure projects

H2Med - BarMar

Hysow

Pycasso

Hydrogène - H2med



- Connect the Iberian hydrogen networks to those of Northern Europe and create a "green energy corridor"
- **European Project of Common Interest (PCI)** since 08/04/2024. Candidate project for the Connecting Europe Facility Fund
- **2 segments:** between Portugal and Spain (**CelZa**), and between Barcelona and Marseille (**BarMar**)
- **Transport 2 million tons of H2 per year**, representing 10%* of the European consumption target for 2030.
- Preliminary studies and societal and environmental impact assessments launched

2022-2027

Studies

2027-2029

Implementation

2030

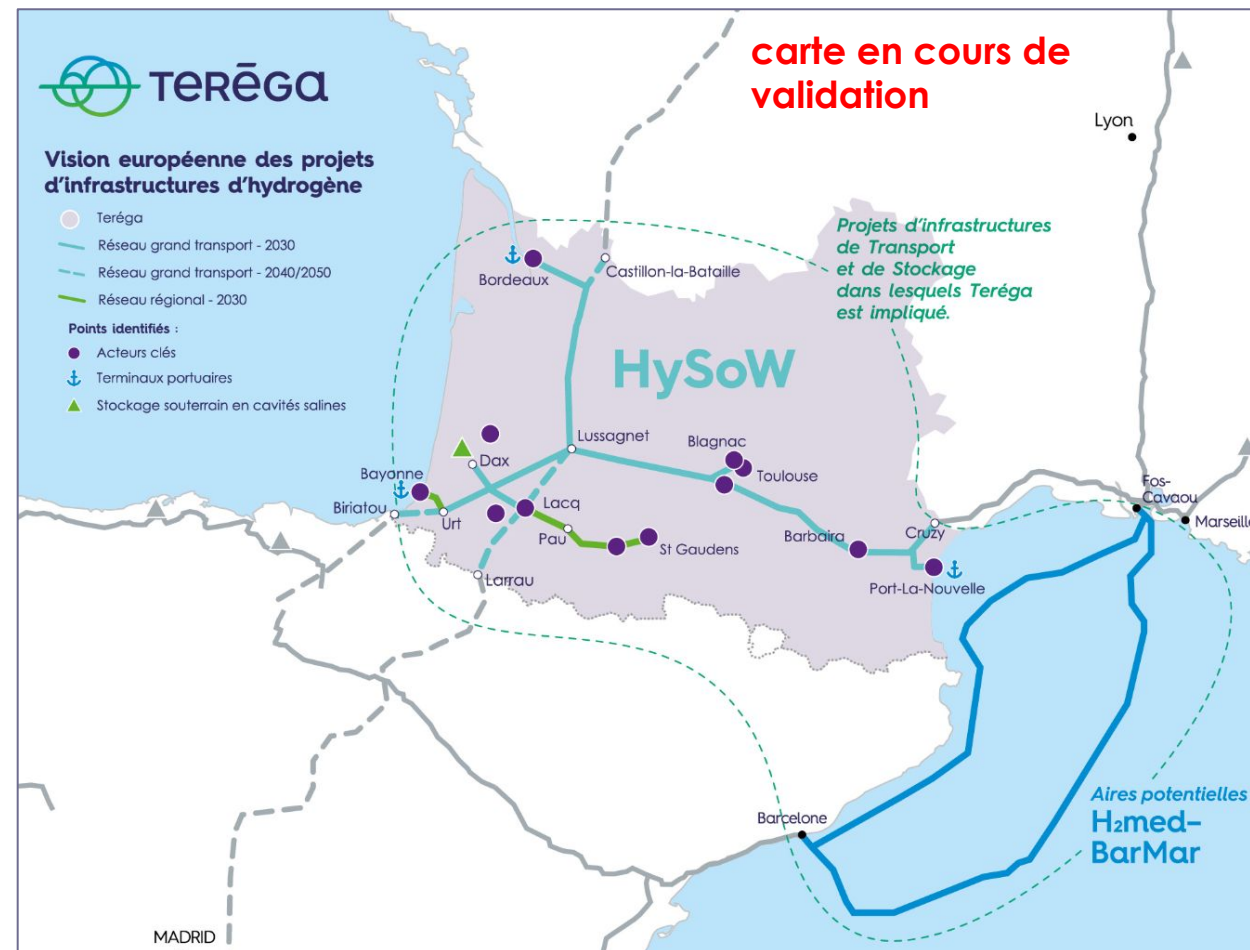
Commercial operation date



HySoW Project: Our Hydrogen Vision for 2030

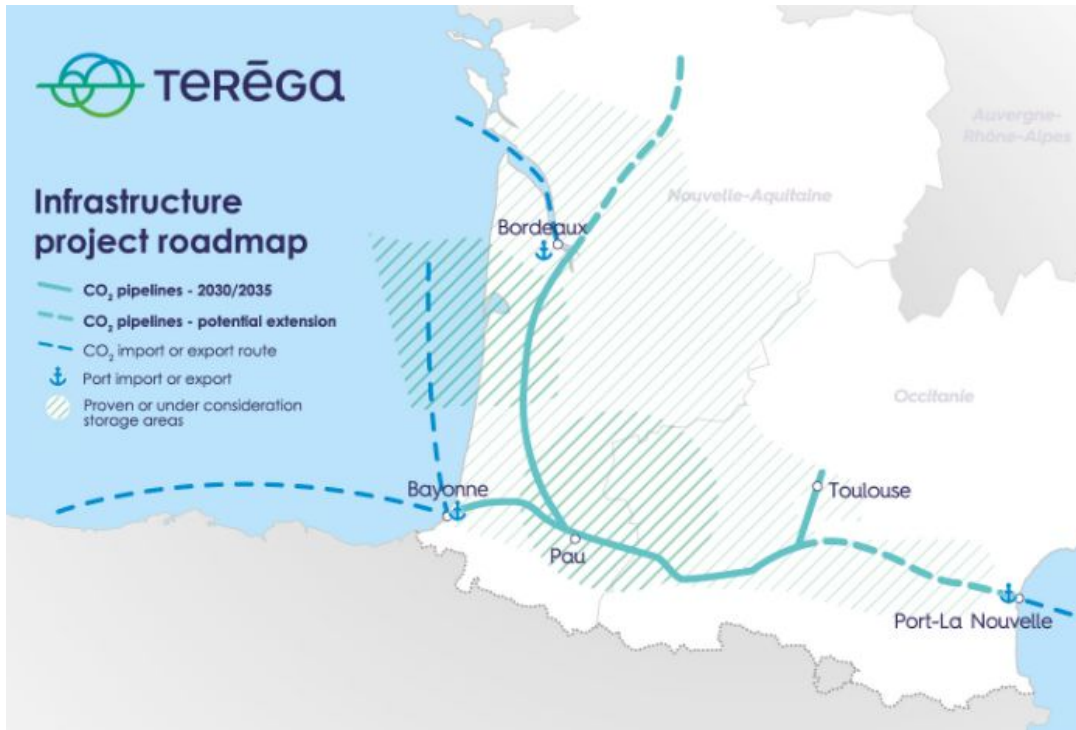
A key flexibility lever for the future European hydrogen network

- A hydrogen network consisting of approximately **650 km of pipelines**, with **30% of the pipelines converted** and **70% being new**.
- A hydrogen storage facility near Dax with **an initial development capacity of around 500 GWh**, but with a **total estimated potential of over 1000 GWh**.
- Additional interconnection possibilities with Spain (Larrau, Bariatou) by 2040.
- Call for expressions of interest: more than 120 responses.
 - ◆ Teréga zone = hydrogen exporter (0.3 Mt/year of excess production in 2030).
- Candidate for the 7th PCI list - with MidHY (GRTgaz) connection to HyFEN-BarMar. With two terminal projects (Port La Nouvelle and Bordeaux) and two electrolyzers (HyLacq and Bordeaux).



CO2 - Pycasso project

A project of public interest for the decarbonization and reindustrialization of territories



- Perspective of sovereign storage sites of 500+ Mtons
- 20+ priority industrial clients in the South-West targeted
- Up to 6 Mt/ per year of residual CO₂ captured
- Unique biogenic CO₂ reservoir (notably from paper mills)
- Opportunity for reindustrialization through CO₂ valorization
- European Commission's Project of Common Interest (PCI)
- CEF-E (Connecting Europe Facility for Energy) funding application



Annexe PDD 2024_trajectoires_scenario

[Annexe trajectoires scénario 2024](#)