



# Gas System Control Centre



# A key control centre for the Gas System

As the Technical Manager of the Spanish Gas System, Enagás is responsible for ensuring the continuity and safety of the natural gas supply in Spain. From our **Main Control Centre (MCC), or Dispatching**, we manage the operation and supervision of Spanish Gas System transmission facilities, in real time, 24 hours a day, 365 days a year.

The MCC is also the centre from which Gas System incidents and emergencies are managed. To strengthen security, Enagás also has a **Reserve Control Centre (RCC)** and a **Last Resort Control Centre (LRCC)**, both of which are equipped with equivalent technical resources as the Main Control Centre.



## Enagás as GTS and leader in energy infrastructures

In Spain, Enagás is the Technical Manager of the Gas System (GTS) and the main natural gas transmission company. Since 2000, Enagás as the GTS has been responsible by law for the operation and management of the natural gas transmission networks in Spain and of maintaining optimum conditions for the normal operation of the Gas System.

With 50 years of experience, Enagás is an international standard bearer in its sector and has been certified by the European Union as an independent TSO (Transmission System Operator) which guarantees the independence of the Spanish gas transmission network with respect to gas producers and supply companies.

Enagás is also present in key gas infrastructures in Latin American and European countries. The company has been listed on the Ibex 35 since 2002 and has a free float level of 95%.

# The Spanish Gas System: a world-class benchmark



- 6 regasification plants
  - 6 international connections
  - 4 underground storage facilities
  - 19 compressor stations
  - 13,000 km of transmission pipelines
  - 75,000 km of distribution networks
  - 2 gas fields
  - Pending
- INP: Input capacity (GWh/day)  
EXP: Export capacity (GWh/day)  
STO: Storage capacity (in thousands m<sup>3</sup>)

## Input capacity (GWh/day)

LNG plants	1,986
International connections	1,039
Underground storage facilities	215*
National production	6
<b>Total</b>	<b>3,246</b>

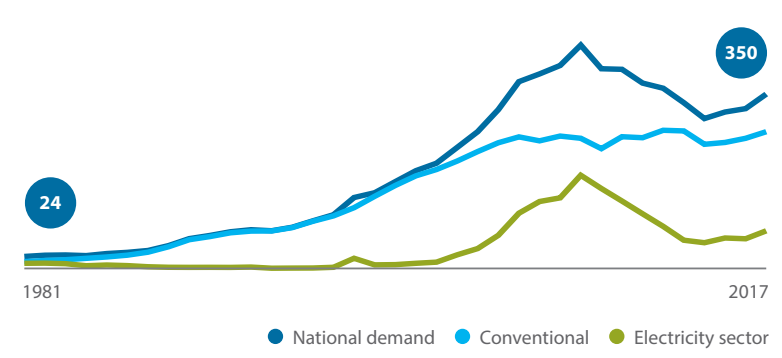
\*Maximum technical capacity conditional upon filling volume

## 50 years of experience

- 1969** The Barcelona Plant –one of the first in Europe– begins operating
- 1979** The first section of the Barcelona-Bilbao-Valencia gas pipeline comes on stream
- 1993** First international connection: Larrau
- 1996** Maghreb-Europe gas pipeline
- 2000** Royal Decree-Law 6/2000 of 23 June: Enagás is designated as GTS
- 2002** Market entry of combined cycle power plants (CCPPs)
- 2008** End of regulated market
- 2009** Adoption of Regulation (EC) No 715/2009: development of European Network Codes
- 2015** Organised Gas Market (MIBGAS) in Spain
- 2017** Regulation (EU) 2017/1938: definition of Risk Groups

As well as guaranteeing the security of supply, Spanish gas infrastructures play an important role in the energy transition towards decarbonisation. This is one of our key principles in Dispatching, given that we are responsible for operating the System. Our gas network is ready for the transmission and storage of gas produced from renewable sources.

## Evolution of demand (GWh. Data in thousands)



## The GTS, responsible for safe and efficient operation

The Technical Manager of the System carries out its duties in coordination with other agents that operate or use the Gas System. Its key duties include:

- **Guaranteeing the natural gas supply** at all times
- Predicting the **use of the System's facilities** and the **natural gas reserves** in accordance with **demand forecasts**
- Providing the necessary instructions and orders to ensure that the System and transmission network is functioning correctly
- Submitting the **development of the basic natural gas network and emergency plans** that are deemed necessary to the Ministry
- Carrying out **delivery programs**, managing the entry and exit of natural gas into/out of the System
- Calculating and applying the **daily balance** that the gas network uses and the network's strategic and operating reserves
- Coordinating **maintenance plans**

These duties are governed by criteria of **reliability, safety, transparency, objectivity and independence.**

### A strong relationship with all agents involved in the System

The Technical Manager of the System coordinates and cooperates smoothly with the various parties that make up the system (shippers, distributors, transmission companies, etc.), international operators, other European TSOs and European gas management groups, as well as with State bodies and security forces, and emergency coordination centres.



+100 shippers  
10 transmission companies  
5 distributors  
4 international connection operators

## Dispatching and the control room

From the central hub of Dispatching, guidelines are issued for the safe and efficient operation of the system, international connections are managed with operators outside Spain, plans are proposed to guarantee the security of supply and, if necessary, facility maintenance calendars are coordinated and adapted to ensure their proper operation and availability.

### Up to 30,000 signals in real time

Thanks to the signals that are received in real time we can obtain data on the control variables of the facilities as well as on the composition of the natural gas, and the flow, pressure and temperature at which it is transmitted through the gas pipeline.

### Key operation factors

#### Programming

The forecasting of facility usage by users, better known as programming, allows the supply and use of the System's facilities to be identified to guarantee a full satisfaction of demand. More specifically, thanks to programming it is possible to forecast the evolution of natural gas reserves stored in the tanks of regasification plants, the underground storage facilities and transmission pipelines.

#### Forecasting demand

This is a key tool for determining if the user programming is compatible with the predicted demand and to identify potential imbalances.

In order to maintain reserve levels in the gas pipeline within the normal operating levels, the Technical

Manager of the System can use market tools, known as balancing actions, to balance the transmission System.

#### Customer service

Complete availability (24 hours a day/365 days a year) is crucial for resolving incidents in real time. The GTS provides users of the System with different information channels through which they can make queries, send messages or suggestions, and request information.

#### Maintenance Plan

The plan is drawn up based on improvement and maintenance plans that each facility owner submits to the GTS so that Dispatching can assess whether these interventions are compatible and viable with the operation of the system. It is an annual plan that is updated on a regular basis with the latest available information, taking into account all parties and variables.

### Operation, supervision and service

The Control Centre's main mission is the operation of the pipeline transmission System, the supervision of the main control variables and service for operators and users in critical business processes.

### A highly qualified team

The Dispatching workforce is made up of highly qualified professionals who apply the highest levels of quality and management transparency, implementing Enagás best practices and values.

## At the forefront of technology for effective management

The Control Centre has the very latest facilities, communication networks and IT systems which allow it to manage complex information in real time. It is equipped with all the necessary latest technology to effectively control, manage and operate the Spanish Gas System.

#### SCADA

*(Supervisory control and data acquisition)*

A communication system through which the physical control variables of the complete Spanish transmission pipeline network –including compressor stations, control valves, etc.– are obtained in real time and displayed in diagrams and on screens.

The control room staff analyse and interpret these variables for the operational management of the system and carry out all necessary remote actions on transmission elements.

#### Hydraulic simulators

A programme that carries out static and dynamic simulations to decide on the best operation options for the System, in accordance with the circumstances.

#### Orión

Information manager through which the management and monitoring of operating activities are carried out.

#### SL-ATR

*(Third-party Access Logistics System)*

A flexible and reliable real-time communication tool between the various agents involved in the gas system, which helps to manage the entire commercial natural gas cycle.

#### Forecasting

A gas demand forecasting system developed by the Technical System Manager, based on mathematical algorithms. The information is updated hourly and new forecasts are produced in accordance with the latest data.



These systems are permanently kept up to date and are connected with each other and with other technologies to ensure the proper functioning of the Gas System



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