

AN

enagas

1 Contraction of Contract

1

LNG **terminals** 

### Enagás, world leader in LNG terminals

With eight regasification plants, Enagás is one of the companies with the most LNG terminals in the world. We pioneer the development, maintenance and operation of these facilities and lead the way internationally thanks to our experience and know-how.



Enagás, a midstream company with almost 50 years of experience and certified as an independent European TSO (Transmission System Operator), is present in eight countries. It takes part in gas infrastructures in Mexico, Chile, Peru, and

Sweden and is also involved in the TAP project, a key pipeline in Europe that will link Greece, Albania and Italy. In Spain it is the leading gas transmission, regasification and storage company and Technical Manager of Spain's Gas System.

## A key player in the natural gas chain



Spain has a larger number of LNG terminals than any other European country and as a result its natural gas supply system is one of the most secure and diversified in the world. The company's regasification plants are one of the main gateways to the Spanish Gas System and a platform in the global LNG market.



Our regasification plants were originally designed to receive, store and regasify LNG before injecting it into the gas pipeline network. All our plants in Spain are currently equipped to provide logistics services (small scale and big scale) that add value to the natural gas chain, such as tanker and truck loading. This has enabled us to diversify into **multimodal terminals**.

## How an LNG terminal works

Experience gained in the operation and maintenance of LNG terminals in various demand scenarios has enabled us to optimise operational availability and management



Full containment

#### ิก Unloading / loading

The LNG is transferred from the methane tanker to the plant and vice-versa in the loading process. Most of our terminals can handle the world's largest tankers (up to 266,000 m<sup>3</sup> of LNG).

Storage LNG is stored in total containment tanks designed for cryogenic conditions, at -160 °C and slightly above atmospheric pressure.

#### 6

Regasification LNG is regasified in evaporators in a physical process using seawater so that it reaches a temperature above 0 °C and returns to its gaseous state.

#### 4 Metering and odorisation

Natural gas is metered and odorised so that it can be detected in the event of leaks. It is then injected into the gas pipeline network or loaded onto tankers in the form of LNG.

# Pushing for...

# the highest **safety** standards

- Development of end-to-end work permit management tools.

## respect for the **environment**

- (WTW) and therefore its competitiveness as energy and the most sustainable fossil fuel:
  - Zero emissions under zero sendout conditions.
- Environmental Management "best in class":
  - **ISO 14001** certified by the accreditation agency AENOR.
  - Scheme and EMAS certification

# and know-how

- 75% of it is self-generated).
- main equipment.
- Quality Management "best in class" ▶ UNE-EN ISO 9001 asset management certification:
- process metering.
- O&M since 2014.









• Improvement of the occupational health and safety procedures over and above legal requirements ▶ Our plants in Spain have been OHSAS 18001 certified for occupational risk prevention since 2008.

• Commitment to tackle climate change and efficient use of energy improving natural gas/LNG "well to wheel"

• A 40% reduction in the energy intensity and in the carbon footprint of our business activity since 2012.

• Since 2010, all our plants in Spain have operated an environmental management system that is **UNE-EN** 

• Voluntary external inspection of our terminals in Spain under the European Eco-Management and Audit

• A reference in Europe in relation to types of technology and installed power in power generation by using residual energy in our process ▶ 40% of the energy used in our LNG terminals in Spain is renewable (and

• Leader in cryogenic equipment maintenance ▶ 100% increase in hours between maintenance jobs for the

• Metering process since 2006. Development of laboratory services and tools to reduce uncertainty in LNG









ROBECOSAN



### **Our LNG terminals:** an international benchmark

# Barcelona

Storage
Regasification
Docks 1
LNG truck loading
LNG methane tanker loading

760,000 m<sup>3</sup> LNG 1,950,000 m<sup>3</sup> (n)/h 1 LS 1 SS: 2,000 / 266,000 m<sup>3</sup> LNG 3 bays, 50 trucks/day Max. 4,200 m<sup>3</sup>/h

6 tanks

5 tanks

2 tanks

300,000 m<sup>3</sup> LNG



$\vdash$	lue	va
Stora	ge	

Storage	619,500 m <sup>3</sup> LNG
Regasification	1,350,000 m³ (n)/h
Docks	1 LS: 7,500 / 180,000 m <sup>3</sup> LNG
LNG truck loading	3 bays, 50 trucks/day
LNG methane tanker loading	Max. 3,700 m <sup>3</sup> /h



#### Cartagena 5 tanks

Storage	587,000 m <sup>3</sup> LNG
Regasification	1,350,000 m³ (n)/h
Docks	1 LS 1 SS: 4,000 / 266,000 m <sup>3</sup> LNG
LNG truck loading	3 bays, 50 trucks/day
LNG methane tanker loadin	g Max. 7,222 m <sup>3</sup> /h



El	Musel	
Storage		

÷	
Regasification	800,000 m³ (n)/h
Docks	1 LS: 65,000 / 266,000 m <sup>3</sup> LNG
LNG truck loading	2 bays, 30 trucks/day
LNG methane tanker loading	Max. 6,000 m <sup>3</sup> /h



#### Bilbao(50%)

Storage	450,000 m <sup>3</sup> LNG
Regasification	800,000 m³ (n)/h
Docks	1 LS: 7,500 / 270,000 m <sup>3</sup> LNG
LNG truck loading	1 bay, 15 trucks/day
LNG methane tanker loading	Max. 3,000 m <sup>3</sup> /h

#### Sagunto(72.5%) 4 tanks

Storage	600,000 m <sup>3</sup> LNG
Regasification	1,000,000 m³ (n)/h
Docks	1 LS: 30,000 / 266,000 m <sup>3</sup> LNG
LNG truck loading	2 bays, 40 trucks/day
LNG methane tanker loading	Max. 3,000 m <sup>3</sup> /h

#### **TLA Altamira** (Mexico) (40%) Storage Regasification 1 LS: 70,000 / 217,000 m<sup>3</sup> LNG Docks

2 tanks 300,000 m<sup>3</sup> LNG 800,000 m<sup>3</sup> (n)/h

3 tanks

**GNL** Quintero (Chile) (majority shareholder) 3 tanks 334,000 m<sup>3</sup> LNG Storage Regasification 625,000 m<sup>3</sup> (n)/h Docks

LNG truck loading

1 LS: 120,000 / 265,000 m<sup>3</sup> LNG 4 bays, 50 trucks/day

Enagás is working on the development of a regasification plant on the Canary Islands (Spain). In addition, Swedegas, the TSO for Sweden in which Enagás holds a stake, plans to develop a bunkering and small scale LNG terminal in Gothenburg (40% Swedegas), categorised as a Project of Common Interest (PCI) by the European Union.











LNG **terminals** 



Enagás, S.A. Paseo de los Olmos, 19 28005 Madrid (+34) 91 709 92 00

www.enagas.es



