# food&water europe

# SPAIN

#### **KEY FACTS:**

- Between 2010 and 2017, gas demand fell by 12%
- Spain has the best diversified gas sources in the EU and even re-exports gas.
- Its LNG capacity makes up for 1/3 of the EU's total capacity.
- Many unnecessary new gas projects (with PCI status) planned, despite an already well-diversified gas infrastructure

## 1. GAS DEMAND

According to EU data:1

- Gas represented 19% of Spain's energy mix in 2016.
- Spain consumed around 30.5bcm of gas in 2016.
- Gas demand dropped by 12% between 2010 and 2017, since the peak in 2008 by over 21%<sup>2</sup>

Due to falling gas demand (since 2014 demand is slightly on the rise again), revenues from gas infrastructure such as LNG plants, storage, and pipelines declined, leading to a tariff deficit (already standing at €400 million in 2013) in the gas system.<sup>3</sup>



#### Figure 1: Spain 2016 Energy Mix



# 2. GAS SUPPLY

With around 0.3bcm of gas produced in 2016, Spain's domestic production (once significantly higher)

very marginally contributes to annual gas demand of the country (0.1% of the 30.5bcm consumed in 2016).<sup>4</sup> Spain therefore almost entirely relies on gas imports. In 2016, it received 36.4bcm of gas from 8 different countries. **The main exporting country for the last 11 years has been Algeria** (56.8% of total imports compared to only 42% in 2012). Nigeria (14.48%), Norway (10,54%), **Qatar** (7.9%), **Trinidad and Tobago** (5.7%) and France (4%) are a few of the other countries – see graph.<sup>5</sup> Also in 2017, the origin of most of the imported gas was Algeria with 48%, followed by Nigeria with 12.7% and LNG from Peru (10%).<sup>6</sup>



<sup>&</sup>lt;sup>1</sup> E3G compilation of data extracted from Eurostat

<sup>&</sup>lt;sup>2</sup> http://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=nrg\_cb\_gas&lang=en

<sup>&</sup>lt;sup>3</sup> <u>http://www.iea.org/publications/freepublications/publication/IDR Spain2015.pdf</u>

<sup>&</sup>lt;sup>4</sup> <u>http://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=nrg\_cb\_gas&lang=en</u>
<sup>5</sup> <u>http://www.cores.es/sites/default/files/archivos/icores/i-cores-imp-export-gn-febrero-2015\_eng.pdf</u>

<sup>&</sup>lt;sup>6</sup> https://ec.europa.eu/eurostat/cache/infographs/energy/bloc-2c.html

57% of Spain's 2016 imports came through pipelines (up from 39.8% in 2012),<sup>7</sup> liquefied natural gas (LNG) accounted for the rest of gas imports - see graph.<sup>8</sup> The share of LNG in total imports fell in the recent years due to sharp decrease in demand, high prices and a second pipeline importing Algerian gas.<sup>9</sup>



**Spain is the most diversified importer in Europe**, and also started to re-export gas; however, after a peak in re-exports (mainly to Asia) in 2014, volumes dropped steeply until 2016 and stagnate since then (status 2018) .<sup>10</sup> (see graph)<sup>11</sup> *Figure 3.5: Re-exports by Market, 2005-2018* 

**Diversification is a legal obligation in Spain**. Royal Decree 1766/2007 orders consumers and direct suppliers that hold supplies accounting for over 7% of national annual consumption to limit their supply from a country to less than 50% of the total, if this country exceeds 50% of the total imports.<sup>12</sup>

### **3. GAS INFRASTRUCTURE**

Being the most diversified gas importer in Europe necessarily means that Spain benefits from a very dense and partially highly underused gas infrastructure.

**Connected with Algeria, Morocco, Portugal and France**, Spain imports Algerian gas through Morocco (via the 12bcm/y Maghreb pipeline) and, since 2010, directly from Algeria (through the 8bcm/y Medgaz pipeline). Both pipelines have several bcm annual spare capacity.



Note: Re-exports figures exclude volumes that were reloaded and discharged within the same market. Sources: IHS Markit

Spain's gas interconnections with France (Larrau and Biriatou, 5.4bcm/y) and Portugal (Badajoz and Tuy, 5.2bcm/y) are bi-directional.<sup>13</sup>

To import its gas from overseas, Spain has **six operating LNG regasification plants** with a combined regasification capacity of **68.9bcm per year**<sup>14</sup>, which is more than twice as high as Spain's **natural gas demand of 29.75bcm in 2015**.

Since 2008, all LNG terminals (except for Mugardos) have been expanded and the total regasification capacity has increased by 8%, despite a decline in gas demand. And this, even though the utilisation rate of Spain's LNG regasification capacity was at only ~23% on average between January 2012 and March 2019, same as the low EU average during the same time period!<sup>15</sup> The need to have so much LNG

<sup>9</sup> <u>http://www.iea.org/publications/freepublications/publication/IDR\_Spain2015.pdf</u>

14 http://www.gie.eu/index.php/maps-data/lng-map

<sup>&</sup>lt;sup>7</sup> https://www.iea.org/media/freepublications/security/EnergySupplySecurity2014\_Spain.pdf

<sup>&</sup>lt;sup>8</sup> https://www.cores.es/sites/default/files/archivos/icores/i-cores-imp-export-gn-enero-2016\_eng.pdf

<sup>&</sup>lt;sup>10</sup> https://www.cores.es/sites/default/files/archivos/icores/i-cores-imp-export-gn-enero-2016\_eng.pdf
<sup>11</sup> https://www.igu.org/sites/default/files/node-news\_item-field\_file/IGU%20Annual%20Report%202019\_23%20loresfinal.pdf

<sup>&</sup>lt;sup>12</sup> http://www.iea.org/publications/freepublications/publication/IDR Spain2015.pdf

<sup>&</sup>lt;sup>13</sup> http://www.iea.org/publications/freepublications/publication/IDR Spain2015.pdf (p.82)

<sup>15</sup> https://alsi.gie.eu/#/

regasification capacity is guestionable and best illustrated with the Gijón (Musel) LNG terminal (7bcm/y and a 300,000m<sup>3</sup> storage capacity) which was completed in 2012 and then directly put into "hibernation", *"until demand picks up"*.<sup>16</sup> The terminal has not been used since then.

Despite large underutilization, Spain was the 5<sup>th</sup> biggest LNG importer with the 5<sup>th</sup> biggest liquefaction capacities worldwide in 2018, and for both cases number 1 in Europe (followed by France).<sup>17</sup> Since at least 2016, Spain repeatedly imported cargoes of fracked US gas through its LNG terminals.<sup>18</sup>

Finally, Spain has 4 operating underground gas storage (UGS) sites with a combined capacity working aas of 4.1bcm/y in depleted gas fields (three: Gaviota, Serrablo and Marismas) and a saline aquifer (one: Yela), managed by Enagás GTS. Plans to further increase storage capacity at Gaviota were abandoned because of declining gas demand.

Despite its declining demand and overcapacity of infrastructure to import and export gas, Spain plans to further develop its transmission system through a number of projects, a number of which received a PCI status:

While Spain has around one third of the EUs total



regasification capacity and the largest LNG regasification capacity in the EU, 2 (non-PCI) LNG terminals are planned on the Canary Islands: Granadilla on Tenerife and Arinaga on Gran Canaria are under construction, and were supposed to start up in 2017 and 2018 but are seriously delayed now<sup>19</sup> and scheduled start up in 2021 and 2022<sup>20</sup>.

A third interconnection point between Portugal and Spain (PCI project). It consists of phase I, a connecting pipeline between the two countries<sup>21</sup> and phase II, a second 625km pipeline solely on Spanish territory which connects to phase I of the interconnection project.22 Phase I of the €1 billion bidirectional pipeline (4.3bcm/y in both directions) will link Celorico da Beira (PT) and Zamora (ES). However, Spain can already send 5.2bcm/y of gas to Portugal and receives 2.85bcm/y of gas via the two existing interconnections. What would the added value of almost doubling its export capacities to a country which only consumes around 4.8bcm/y be? How would it contribute to diversifying gas supply for Portugal and reaching new markets for Spain particularly since both countries have large unused LNG import capacities? Another good illustration of an unnecessary gas project. Phase I of the project already received some CEF funding. This project is partially linked to the MidCat pipeline.



https://ec.europa.eu/energy/sites/ener/files/eu-us Ing trade folder.pdf

20 http://europa.eu/rapid/press-release\_IP-19-1531\_en.pdf

<sup>&</sup>lt;sup>16</sup> http://www.naturalgaseurope.com/musel-Ing-to-be-shelved-6067

https://www.igu.org/sites/default/files/node-news\_item-field\_file/IGU%20Annual%20Report%202019\_23%20loresfinal.pdf 17 18

<sup>&</sup>lt;sup>19</sup> http://www.abc.es/espana/canarias/abci-gasificadoras-canarias-unicas-retraso-201607091834 noticia.html

<sup>&</sup>lt;sup>21</sup> http://ec.europa.eu/energy/maps/pci fiches/pci 5 4 1 en 2017.pdf 22 http://ec.europa.eu/energy/maps/pci fiches/pci 5 4 2 en 2017.pdf

- A very big and contested project is a pipeline forming a third interconnection between Spain and France called *MIDCAT pipeline* (PCI project).<sup>23</sup> While this €2 billion project, with an export capacity of 8bcm/y SP→FR and 3bcm/y FR→SP, could be a solution for Spain to share its important excess of LNG imports, the project would clearly not answer to the "diversification" objective, one of the three preconditions for PCIs. So far, over €7 million have been awarded to this project via the CEF. It is highly possible the the Midcat (=the actual interconnection pipeline) won't be accepted on the 4<sup>th</sup> PCI list anymore.
- There is a lack of clarity concerning the terminology of the project, while originally only the actual pipeline crossing the border between Spain and France was called MidCat, this smaller part is now called **STEP** (South Transit East Pyrenees, also a PCI)<sup>24</sup>. What is now often called MidCat is an array of pipelines dependent on the third interconnector, such as the 3<sup>rd</sup> interconnector between Spain and Portugal, pipelines in Spain and in France, e.g. Midi, Arc Lyonnais, Perche and Eridan pipelines. The entire web of pipelines linked to the MidCat project would amount to about 1.250km and cost a staggering €3 billion.

Pipelines/interconnectors already exist between Spain and France (5.4bcm/y via two interconnectors). In 2016, French regulator, CRE, stated that a new gas pipeline between France and Spain would not boost the security of French or European gas supply and could raise gas prices for consumers.<sup>25</sup> Spain would

increase its access to a Western European market already oversupplied with gas. The project was marked by continuous mobilization by communities and organizations<sup>26</sup>. Strong civil opposition to the MIDCAT pipeline has been backed up by a leaked study ordered by the European Commission, clearly underlining the poor economic prospects of the project.27 Finally, early 2019, both the French and the Spanish gas regulators published a statement to reject the STEP (former MidCat) interconnector given a lack of market need and "maturity" of the project.28

Spain has many opportunities to share its excesses through existing LNG reloading systems, which should be more efficiently used, especially at a time when new investment in fossil fuel infrastructure should be banned for climate reasons. The MIDCAT and interconnection projects would "just" allow Spain to reduce the costs for exports, but the added value in terms of diversification is extremely questionable.





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- <sup>25</sup> http://www.lesechos.fr/15/06/2016/lesechos.fr/0211028300361\_energie---l-afflux-de-projets-d-interconnexion-inquiete-le-regulateur.htm
- http://www.cre.fr/documents/publications/rapports-thematiques/les-interconnexions-electriques-et-gazieres-en-france A group of NGOs and civil society organizations gathered a number of arguments against the costly megapipeline MidCat, see
- https://www.foeeurope.org/sites/default/files/extractive\_industries/2018/mythcat\_report\_english.pdf 27 https://www.reuters.com/article/us-france-spain-gas-exclusive/exclusive-viability-of-french-spain-gas-pipeline-guestioned-report-idUSKBN1HO34R <sup>28</sup> https://www.reuters.com/article/france-spain-gas/update-1-regulators-reject-france-spain-gas-interconnection-project-idUSL8N1ZM5DQ

<sup>&</sup>lt;sup>23</sup> <u>http://ec.europa.eu/energy/maps/pci\_fiches/pci\_5\_5\_1\_en\_2017.pdf</u><sup>24</sup> <u>http://ec.europa.eu/energy/maps/pci\_fiches/pci\_5\_5\_2\_en\_2017.pdf</u>