

# PORTUGAL

## KEY FACTS:

- Gas demand in Portugal stood at 5.1bcm in 2016 and declined by 4% between 2010 and 2016. Since 2014, gas demand rose steeply.
- Gas demand was non-existent in Portugal before 1998.
- Portugal has no domestic production and relies on LNG import (55% in 2017) and pipeline imports via Spain.
- Potential gas project (PCI) adding a 3<sup>rd</sup> interconnection with Spain – its need is questionable.

## 1. GAS DEMAND

According to EU data:<sup>1</sup>

- Gas represented 18% of Portugal's energy mix in 2016.
- Portugal consumed around 5.1bcm of gas in 2016.
- Gas demand dropped until 2014 but rose steeply since then (status 2017) making Portugal one of only 4 EU countries with a rise in gas demand compared to the 2010 EU gas demand peak – see graph.<sup>2</sup>

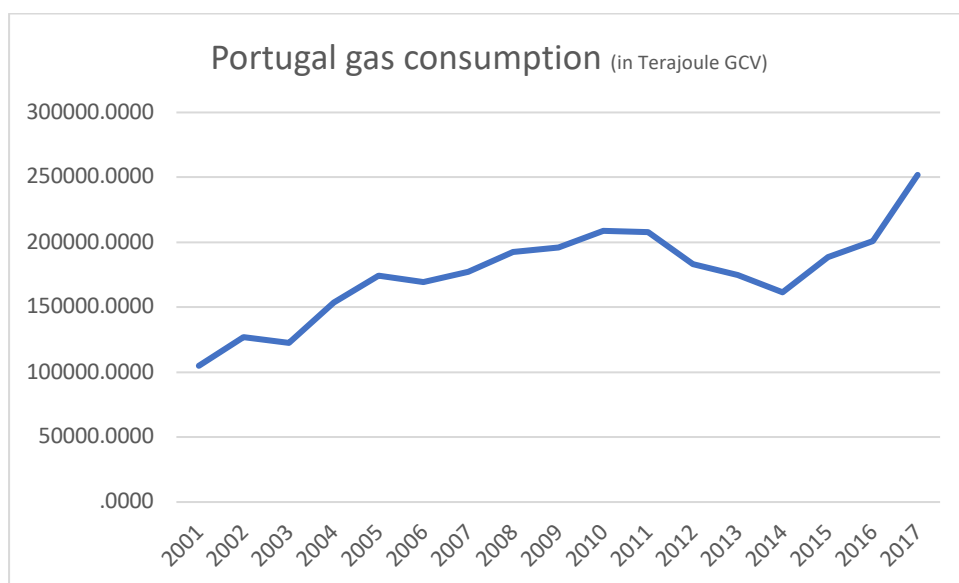
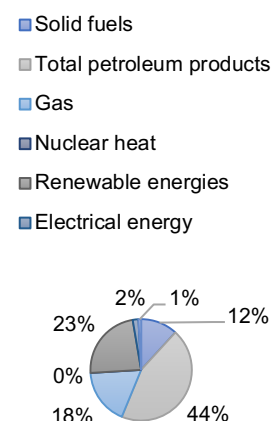


Figure 1: Portugal 2016 Energy Mix



## 2. GAS SUPPLY

Portugal has **no significant proven reserves of fossil gas**. While offshore prospecting has started off the Algarve coast in 2016,<sup>3</sup> there is currently no indigenous gas production. Citizens mobilized against oil and gas extraction in Portugal and in 2016 and 2017 several on- and offshore licenses were cancelled with only two active licenses left.<sup>4</sup>

The country entirely relies on imports to meet all its domestic gas requirements. For a long time, the country had two main gas suppliers: **Algeria and Nigeria**. However, the share of Nigerian gas has decreased recently, replaced by a larger variety of suppliers (Qatar, Norway, Trinidad and Tobago, Egypt, etc) – see chart.<sup>5</sup> In 2017, the three biggest supply countries for Portugal were Nigeria and Algeria with ~34% respectively, as well as Qatar with ~9%.<sup>6</sup> In 2017, 55% of the gas that entered Portugal came through the Sines LNG terminal, forecasts see even bigger shares of LNG in the country in the future.<sup>7</sup>

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

<sup>2</sup> [http://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=nrg\\_cb\\_gas&lang=en](http://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=nrg_cb_gas&lang=en)

<sup>3</sup> <http://www.theportugalnews.com/news/algarve-coast-gas-exploration-to-start-in-october/38001>

<sup>4</sup> <https://www.dn.pt/portugal/interior/governo-trava-exploracao-de-petroleo-no-algarve-5551064.html> and <https://www.dn.pt/portugal/interior/governo-trava-exploracao-de-petroleo-no-algarve-5551064.html>

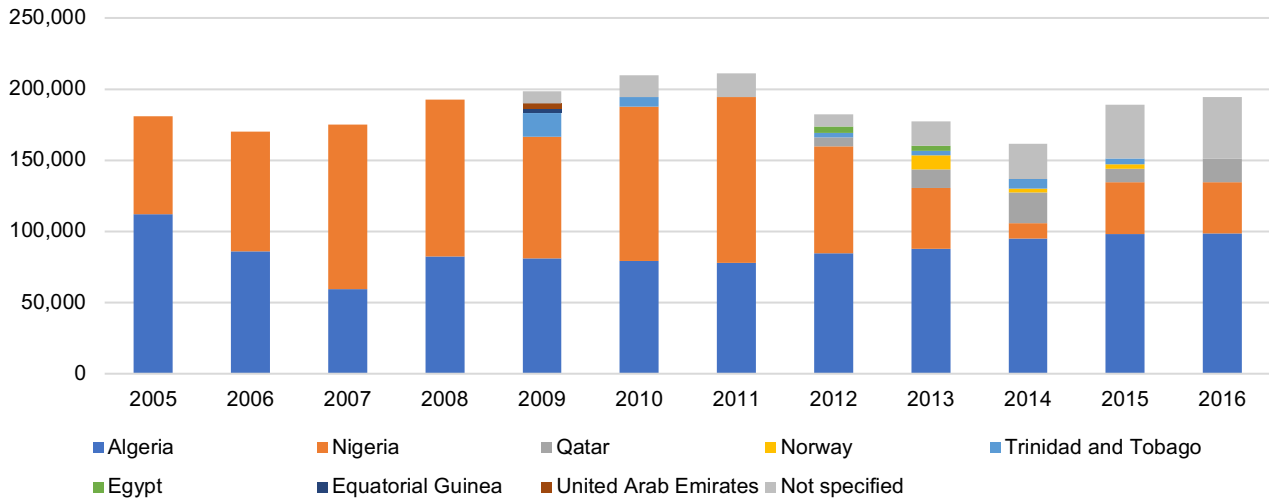
<sup>5</sup> [http://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=nrg\\_124a&lang=en](http://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=nrg_124a&lang=en)

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

<sup>7</sup> <https://www.lngworldnews.com/portugals-sines-lng-terminal-receives-500th-cargo/>

It should be noted that in April 2016, Portugal's Sines LNG terminal – normally receiving cargoes from Nigeria, Algeria and Qatar on a regular basis – was the first European facility to receive fracked US LNG in April 2016<sup>8</sup> and has since then received regular cargoes delivering US gas.<sup>9</sup>

**Portugal - Gas Suppliers (in TJ GCV)**



### 3. GAS INFRASTRUCTURE

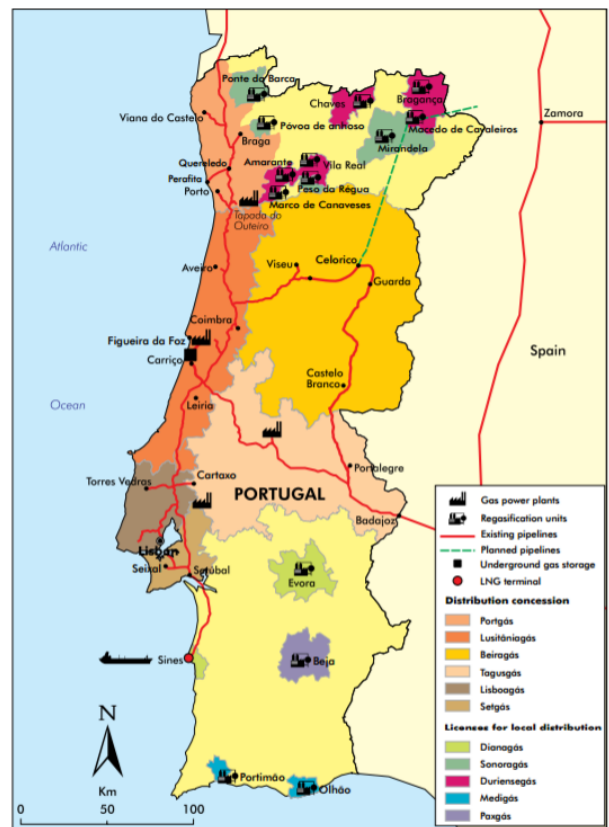
Natural gas is imported through two main entry points:<sup>10</sup>

- Campo Maior, arrival for Portugal of the Euro Maghreb Pipeline system, located on the eastern border with Spain. It has a yearly import capacity of 3.5bcm per year. Most of the gas is originally from Algeria
- The Sines LNG Terminal, with an annual import capacity of 5.3bcm.
- There is also a 2nd very small pipeline connection (providing entry and exit capacity) in Valença do Minho in the North of the country<sup>11</sup>

The existing long-term supply contracts with take-or-pay clauses represented roughly 88% of all imports (46% from Sonatrach, an Algerian state-owned company, and 42% from Nigeria LNG Ltd).

Algeria's electricity is almost entirely generated with gas, which could compromise flows of Algerian gas to Europe in case of higher domestic demand in Algeria. Gas exporter Nigeria has to struggle with terrorist threats, delivery delays, repression and environmental impacts of fossil gas extraction.

One of the projects included in the PCI list is located in Portugal:

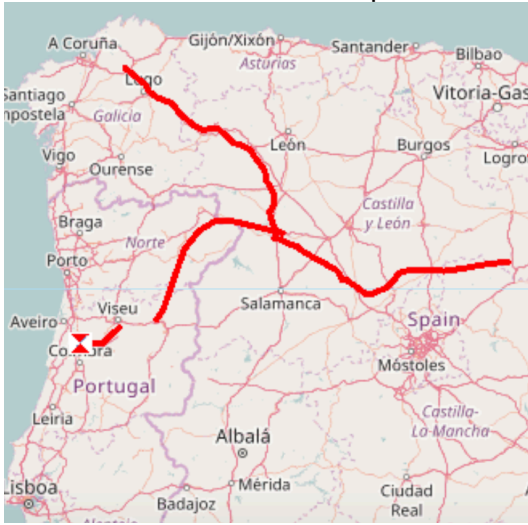


**Third interconnection point between Portugal and Spain** consists of two parts, a ~160km pipeline connecting Spain and Portugal, and a compressor station and a second 625km pipeline running from

<sup>8</sup> <http://www.lngworldnews.com/sabine-pass-lng-cargo-heading-for-portugal/>  
<sup>9</sup> <https://ec.europa.eu/eurostat/cache/infographs/energy/bloc-2c.html>  
<sup>10</sup> [https://www.iea.org/media/freepublications/security/EnergySupplySecurity2014\\_Portugal.pdf](https://www.iea.org/media/freepublications/security/EnergySupplySecurity2014_Portugal.pdf)  
<sup>11</sup> <https://www.ign.ren.pt/en/rede-nacional-transporte-de-gn3>

Northwest to East on Spanish territory and connecting to the first one<sup>12</sup> (see map, source [www.ec.europa.eu](http://www.ec.europa.eu) ).

The €1 billion bidirectional pipeline will link Celorico da Beira (PT) and Zamora (ES) and received already some CEF funding<sup>13</sup>. If the project is built, the import capacity of the country will increase by over 4.3bcm/y. The 3<sup>rd</sup> PCI list included both phase 1 and 2 of the project, making them highest national priority.<sup>14</sup>



This project is dependent on a gas project planned to connect Spain and France: STEP/Midcat. However, it is quite likely that this big project will not be built (and is seen with criticism by both the Spanish and the French regulator<sup>15</sup>) which will make the 3<sup>rd</sup> interconnector project largely irrelevant.

While Portugal succeeded in 2016 to run solely on renewable electricity for a few days,<sup>16</sup> one should wonder whether constructing new gas infrastructure and further increasing Portugal's reliance on a fossil fuel is a timely thing to do while EU countries are supposed to decarbonize their economy by 80-95% by 2050<sup>17</sup> and should organize an even faster energy transition to meet the Paris Agreement objectives to stay "well below 2 °C" of global warming and to "pursue efforts to limit the temperature increase to 1.5 °C".<sup>18</sup> Portugal, with its LNG Terminal is already very well-diversified and as import

capacities two times higher than what it consumes. **New gas infrastructure should therefore definitely not be a priority for the country.**



**CONTRIBUTING AUTHORS (2019)**

Antoine Simon, *Friends of the Earth Europe*  
 Frida Kieninger, *Food & Water Europe*, [fkieninger@fweurope.org](mailto:fkieninger@fweurope.org)  
 Andy Gheorghiu, *Food & Water Europe*, [agheorghiu@fweurope.org](mailto:agheorghiu@fweurope.org)  
 Noëlie Audi-Dor, *Gastivists*  
 Nessim Achouche, *Food & Water Europe*  
 Eilidh Robb, *Food & Water Europe*



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<sup>12</sup> [http://ec.europa.eu/energy/maps/pci\\_fiches/pci\\_5\\_4\\_2\\_en\\_2017.pdf](http://ec.europa.eu/energy/maps/pci_fiches/pci_5_4_2_en_2017.pdf)

<sup>13</sup> [http://ec.europa.eu/energy/maps/pci\\_fiches/pci\\_5\\_4\\_1\\_en\\_2017.pdf](http://ec.europa.eu/energy/maps/pci_fiches/pci_5_4_1_en_2017.pdf)

<sup>14</sup> [https://ec.europa.eu/energy/sites/ener/files/documents/memberstatespci\\_list\\_2017.pdf](https://ec.europa.eu/energy/sites/ener/files/documents/memberstatespci_list_2017.pdf)

<sup>15</sup> <https://www.cre.fr/Actualites/La-CRE-et-la-CNMC-rejettent-le-projet-d-interconnexion-gaziere-STEP> and <https://www.cre.fr/content/download/20284/258733>

<sup>16</sup> <https://www.theguardian.com/news/2016/dec/26/this-is-possible-we-did-it-the-week-portugal-ran-on-renewables>

<sup>17</sup> [https://ec.europa.eu/energy/sites/ener/files/documents/2012\\_energy\\_roadmap\\_2050\\_en\\_0.pdf](https://ec.europa.eu/energy/sites/ener/files/documents/2012_energy_roadmap_2050_en_0.pdf)

<sup>18</sup> <https://unfccc.int/resource/docs/2015/cop21/eng/l09.pdf>