

# GREECE

## KEY FACTS:

- Greece produces a very small amount of indigenous gas and has therefore been increasing its imports from Russia.
- The effects of the political choice to favour gas in Greece is already impacting the energy sector.
- Between 2010 and 2017, gas demand in Greece rose by ~30% (more than in any other EU country)
- Greece gas import capacity is about 3 times higher than actual gas demand.
- Greece is involved in several major and often controversial PCI gas projects, many are unnecessary and all contribute to locking Greece into a new fossil fuel dependence.

## 1. GAS DEMAND

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

- Gas represented 15% of Greece's energy mix in 2016 (see graph).<sup>2</sup>
- Greece consumed around 4.15bcm of gas in 2016.

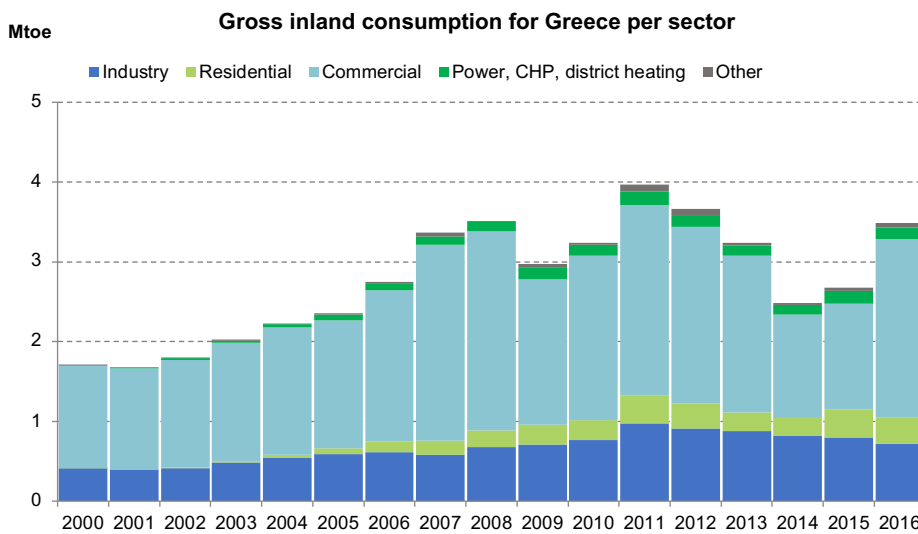
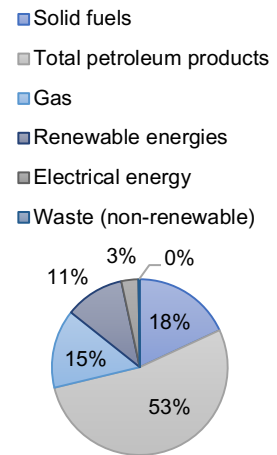
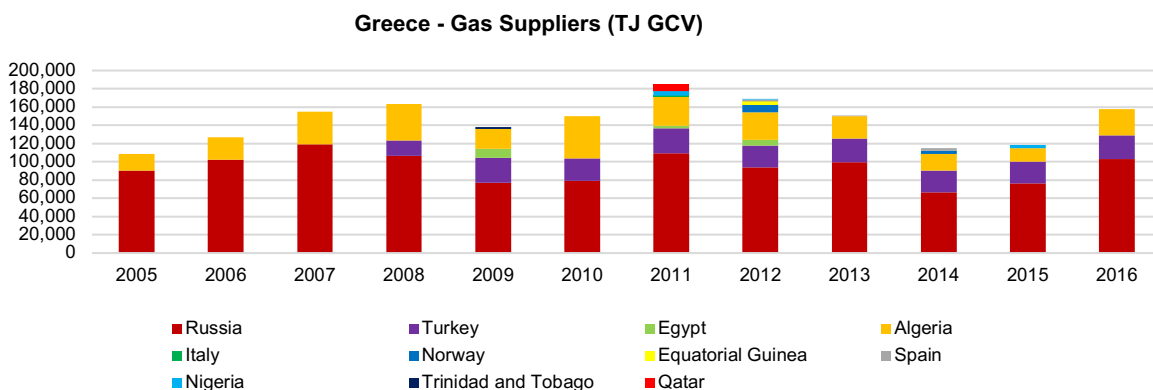


Figure 1: Greece 2016 Energy Mix



## 2. GAS SUPPLY

Greece produces a very small amount of gas domestically. The country therefore almost entirely relies on imports to supply its domestic demand. In 2016, almost the entire gas supply to Greece came from Russia (64%), Algeria (18%) and Turkey (16%) by pipeline and LNG from Algeria. **In 2017, Greece received ~58% of the gas it imported from Russia, 25% from Algeria and ~12% from Turkey.**<sup>3</sup>



<sup>1</sup> E3G compilation of data extracted from Eurostat  
<sup>2</sup> Eurostat: [http://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=nrg\\_110a&lang=en](http://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=nrg_110a&lang=en)  
<sup>3</sup> <https://ec.europa.eu/eurostat/cache/infographs/energy/bloc-2c.html>

### 3. GAS INFRASTRUCTURE

There are **three entry points to the gas transmission** system in Greece:

- The Greece-Bulgaria interconnector (with a maximum import capacity of ~4bcm/y BG→GR) which brings gas from Russia through Ukraine, Moldova, Romania and Bulgaria.
- The Greece-Turkey interconnector (with a maximum import capacity of ~2bcm/y) enabling gas imports from Turkey.<sup>4</sup>
- The third entry point is the **LNG terminal located on the island of Revithoussa** (with a maximum import capacity of 5bcm/y). An expansion of the terminal is currently occurring and will give the terminal import capacity of 7bcm/y.<sup>5</sup>

Altogether, Greece has gas import capacity about 3 times higher than it consumes. In particular, its LNG terminal was used between January 2012 and March 2019 at only about 14% of its capacity<sup>6</sup>. Even in 2011, when gas demand peaked in Greece, the terminal was used at less than 25% of its capacity.<sup>7</sup> While the expansion of the terminal (a third tank was added in 2018)<sup>8</sup> might further improve energy security a further planned LNG terminal in the North of Greece generates doubts about its commercial viability and will most likely worsen the utilization rate of the existing terminal.

Greece is an active promoter of several other gas projects in the region which could be built on its territory and which have received PCI status. Greece is indeed at the crossroads of a series of gigantic interconnected projects which could benefit several countries in the South Eastern region of Europe but significantly contribute towards locking the region into a new major gas lock-in deeply incompatible with the EU climate objectives for 2030 and 2050 and with the Paris Agreement.

#### A new LNG terminal in Alexandroupolis<sup>9</sup>

Despite the current expansion and very limited utilization rates of Revithoussa LNG terminal (only 14% during the last 7 years)<sup>10</sup>, Greece received PCI status for its plan to build an LNG terminal in the North Eastern port of Alexandroupolis with import capacity of about 5.5bcm/y.<sup>11</sup> The project would come with a system of subsea and onshore pipelines at a length of 28km (4km onshore and 24km offshore, see figure 2).<sup>12</sup> It would also be accompanied by the Alexandroupolis Independent Natural Gas System - Pipeline Section. By 2018, companies had already submitted interest to reserve capacities equaling over twice the planned regasification volumes planned for the terminal.<sup>13</sup>

Map 4.11.2 Gas infrastructure of Greece



<sup>4</sup> [https://www.iea.org/media/freepublications/security/EnergySupplySecurity2014\\_Greece.pdf](https://www.iea.org/media/freepublications/security/EnergySupplySecurity2014_Greece.pdf)

<sup>5</sup> <http://www.gie.eu/index.php/maps-data/lng-map>

<sup>6</sup> <https://alsi.gie.eu>

<sup>7</sup> GIIIGNL, GIE, Poten & Partners & own calculations based on GSIE data: <https://alsi.gie.eu/#/>

<sup>8</sup> <https://www.lngworldnews.com/greece-opens-expanded-revithoussa-lng-terminal/>

<sup>9</sup> <https://circabc.europa.eu/ui/group/3ba59f7e-2e01-46d0-9683-a72b39b6decf/library/e1fd3867-2971-463e-aec5-2b3c603a0c4f/details>

<sup>10</sup> <https://alsi.gie.eu>

<sup>11</sup> <https://circabc.europa.eu/ui/group/3ba59f7e-2e01-46d0-9683-a72b39b6decf/library/e1fd3867-2971-463e-aec5-2b3c603a0c4f/details>

<sup>12</sup> <https://circabc.europa.eu/ui/group/3ba59f7e-2e01-46d0-9683-a72b39b6decf/library/e1fd3867-2971-463e-aec5-2b3c603a0c4f/details>

<sup>13</sup> <https://www.lngworldnews.com/gastrade-closes-alexandroupolis-fsr-market-test/>

Considering urgent need to phase out demand for gas, as well as the high potential to decrease gas demand in the building sector both in Greece and in neighboring countries,<sup>14</sup> the necessity of this project looks extremely questionable and the risk is high that, if constructed, the terminal would soon become stranded. Moreover, with US-based Cheniere Energy interested in joining the project,<sup>15</sup> it seems like the LNG terminal would primarily serve the purpose of bringing fracked fossil fuels from the US port of Sabine Pass to Europe via Greece.<sup>16</sup>

### The Southern Gas Corridor<sup>17</sup>

Portrayed as being crucial for the EU's energy security, this megapipeline project connecting Azerbaijan to Italy (see figure 3) is often presented as Europe's energy flagship project. This project is meant to contribute to solving Europe's dependence on Russian gas, but with a 10bcm/y capacity, its impact on overall EU gas demand (491bcm in 2017)<sup>18</sup> will only be marginal. The balance between the cost of the project (around \$45bn,<sup>19</sup> with important financial support coming from EU funds and EU public banks) and its import capacity (equal to ~2.5% of European gas consumption) looks indeed extremely dubious. Entering Greece at the border with Turkey and crossing the entire country from East to West, the construction of 550km<sup>20</sup> of the pipeline would also significantly impact vast amounts of Greek land.



Figure 2: Proposed Alexandroupolis LNG Terminal

Ongoing discussions however, mention a capacity increase of 80 to 100bcm/y. One-fourth (or even more if, in the meantime, gas demand continues to decline) of the entire EU gas imports could be coming from Azerbaijan which is not far from the heavily criticized current share of Russia on the European gas market. The Azeri autocratic regime does not provide more political security than the authoritarian one in Russia. Built with important corruption cases,<sup>21</sup> primarily benefiting private actors at the detriment of local populations in every country crossed by the project (Turkey, Greece, Albania and Italy),<sup>22</sup> threatened by the likely risk of quickly becoming a stranded asset and of contributing to a new fossil fuel lock-in, and coming with a worrying contribution to climate change, this project covers every possible argument that would oppose it being built. Finally, with Gazprom now eyeing this pipeline project to bring even more Russian gas to Europe,<sup>23</sup> the diversification argument would be acutely weakened.

While this represents an opportunity for Greece to be a key political player as the European entry point for this major project and while the country could use it for its own business (the Alexandroupolis LNG terminal is located very close to the pipeline), this project does not contribute to EU objectives and values, especially in terms of human rights and the fight against climate change.

<sup>14</sup> <http://bpie.eu/publication/safeguarding-energy-security-in-south-east-europe-with-investment-in-demand-side-infrastructure/>

<sup>15</sup> <http://www.gastrade.gr/en/the-company/press/gastrade,-beh-to-work-together-on-alexandroupolis-lng-project.aspx>

<sup>16</sup> <http://www.reuters.com/article/greece-lng-bulgaria-idUSL5N1CB4BP>

<sup>17</sup> [http://www.sourcewatch.org/index.php/Sabine\\_Pass\\_LNG](http://www.sourcewatch.org/index.php/Sabine_Pass_LNG)

<sup>18</sup> <https://circabc.europa.eu/ui/group/3ba59f7e-2e01-46d0-9683-a72b39b6decf/library/9fd8175a-e8e0-4b15-a297-89929115a415/details>

<sup>19</sup> [https://ec.europa.eu/energy/sites/ener/files/documents/quarterly\\_report\\_on\\_european\\_gas\\_markets\\_q4\\_2017\\_final\\_20180323.pdf](https://ec.europa.eu/energy/sites/ener/files/documents/quarterly_report_on_european_gas_markets_q4_2017_final_20180323.pdf)

<sup>20</sup> <https://www.tap-ag.com/the-pipeline/the-big-picture/southern-gas-corridor>

<sup>21</sup> <https://www.tap-ag.com/pipeline-construction/building-the-pipeline/in-greece>

<sup>22</sup> [https://www.banktrack.org/blog/the\\_azerbaijani\\_laundromat\\_scandal\\_and\\_the\\_trans\\_adriatic\\_pipeline\\_bank\\_financing\\_for\\_fossil\\_fuels\\_is\\_dirty\\_but\\_how\\_dirty](https://www.banktrack.org/blog/the_azerbaijani_laundromat_scandal_and_the_trans_adriatic_pipeline_bank_financing_for_fossil_fuels_is_dirty_but_how_dirty)

<sup>23</sup> <http://bankwatch.org/our-work/projects/southern-gas-corridor-euro-caspian-mega-pipeline> & <http://globalmotion.pageflow.io/walkingtheline>

<sup>24</sup> <http://www.naturalgasworld.com/gazprom-eyes-tap-for-russian-gas-35548>



Figure 3: Proposed Southern Gas Corridor Project <https://bankwatch.org/project/southern-gas-corridor-euro-caspian-mega-pipeline>

### EastMed “controversial reserves”

The 3<sup>rd</sup> PCI list included a new set of planned infrastructures that are part of the “Southern Gas Corridor” but specifically target the newly discovered “Eastern Mediterranean gas reserves”. Since their discovery, the reserves (estimated to represent up to 1700bcm in Aphrodite, Leviathan, Aphrodite and Zhor gas fields in Cypriot, Israeli and Egyptian waters alone) have sparked great interest and created many geopolitical tensions.<sup>24</sup> The project promoter does not indicate where exactly the gas for this pipeline should be coming from, but many of the gas fields are in disputed/high tension areas. Disputes between Cyprus and Turkey, Israel and Palestine, Cyprus and Israel as well as Israel and Lebanon could be fueled by this pipeline.

This new cluster is referred to as the East-Med Pipeline and is approximately 1900km of offshore and onshore pipeline with a planned capacity of 10billion cubic meters per year that will directly connect the East Mediterranean gas resources to the European gas system. It includes an offshore connection between Greece and Crete as well as the Poseidon Pipeline linking Greece to Italy.<sup>25</sup> With costs of at least 6billion € but probably considerably more<sup>26</sup> and parts of the pipeline going deeper than no pipeline of this kind before, this project is extremely expensive and full of technical uncertainties (particularly since the planned route crosses areas partially up to 3000m deep and areas with seismic and volcanic activities<sup>27</sup>). The Eastern Mediterranean gas reserves are in the middle of several political disputes, including tensions between Turkey and Israel concerning ownership of the gas.<sup>28</sup> Turkey for example does not recognize the Republic of Cyprus and thus claims parts of the zones in which Cyprus could extract gas. Several smaller and bigger incidents linked to gas exploration show how politically heated the topic is.<sup>29</sup> These challenges raise serious questions about the feasibility of such a project, on top of legitimate doubts about the diversification of supply and energy security that could be brought, utilizing infrastructure from such animated geopolitical regions and regimes with low democratic guarantees, looks to be problematic.

Nevertheless, the project has already received €2 million<sup>30</sup> of EU public subsidies for preliminary studies in 2015 as well as €34.5 million in 2017.<sup>31</sup> It also applied for the 4<sup>th</sup> PCI list.

<sup>24</sup> <https://www.oxfordenergy.org/wpcms/wp-content/uploads/2012/12/NG-71.pdf>

<sup>25</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>26</sup> <https://cyprus-mail.com/2018/12/02/eastmed-gas-pipeline-increasingly-doubtful/>

<sup>27</sup> <https://cyprus-mail.com/2018/12/02/eastmed-gas-pipeline-increasingly-doubtful/>

<sup>28</sup> <https://uk.reuters.com/article/uk-israel-cyprus-aphrodite/cyprus-israel-seek-gas-sharing-formula-to-unlock-east-mediterranean-energy-hub-idUKKBN1180UY>

<sup>29</sup> <https://uk.reuters.com/article/uk-cyprus-natgas-turkey/erdogan-tells-cyprus-not-to-test-turkey-over-gas-standoff-idUKKBN1FX0X9> or <https://www.somo.nl/wp-content/uploads/2017/05/Beneath-troubled-waters.pdf> and <https://en.globes.co.il/en/article-on-the-high-seas-with-tamars-defenders-1000932479>

<sup>30</sup> <https://ec.europa.eu/inea/en/connecting-europe-facility/cef-energy/7.3.1-0025-elcy-s-m-15>

<sup>31</sup> <https://ec.europa.eu/inea/en/connecting-europe-facility/cef-energy/7.3.1-0023-cyel-s-m-17>

### Interconnection Greece – Bulgaria (IGB)<sup>32</sup>

The two previous projects also contribute to providing gas to neighboring countries, which is why Greece is an important promoter of a 182km onshore pipeline (5.5bcm/y) connecting to Bulgaria – see figure 4.

The project would open the doors to the Central and Eastern European gas market, utilizing gas coming from the Alexandroupolis LNG terminal and from the Southern Gas Corridor. However, the problem remains that it is doubtful whether this €220<sup>33</sup> - €240<sup>34</sup> million project contributes to energy security and diversification (especially if Gazprom uses the Southern Gas Corridor to bring more gas from Russia) and jeopardizes efforts to fight climate change (even more so if the Alexandroupolis LNG terminal is primarily meant to import fracked gas from the US).<sup>35</sup>



Figure 4: Proposed Interconnection between Greece & Bulgaria



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<sup>32</sup> <https://circabc.europa.eu/ui/group/3ba59f7e-2e01-46d0-9683-a72b39b6decff/library/e1fd3867-2971-463e-aec5-2b3c603a0c4f/details>

<sup>33</sup> <http://www.euractiv.com/section/energy/news/five-offers-made-for-use-of-greece-bulgaria-gas-interconnector/>

<sup>34</sup> [https://www.entsog.eu/sites/default/files/2019-04/TYNDP%202018%20Project-Specific%20CBA%20Results.pdf?utm\\_medium=email&utm\\_campaign=ENTSOG%20publishes%20draft%20TYNDP%202018%20Project-Specific%20CBA%20PS-CBA%20fiches&utm\\_content=ENTSOG%20publishes%20draft%20TYNDP%202018%20Project-Specific%20CBA%20PS-CBA%20fiches+CID\\_f85f3bedd47787f08707d7f430489dcb&utm\\_source=CampaignMonitor&utm\\_term=here](https://www.entsog.eu/sites/default/files/2019-04/TYNDP%202018%20Project-Specific%20CBA%20Results.pdf?utm_medium=email&utm_campaign=ENTSOG%20publishes%20draft%20TYNDP%202018%20Project-Specific%20CBA%20PS-CBA%20fiches&utm_content=ENTSOG%20publishes%20draft%20TYNDP%202018%20Project-Specific%20CBA%20PS-CBA%20fiches+CID_f85f3bedd47787f08707d7f430489dcb&utm_source=CampaignMonitor&utm_term=here)

<sup>35</sup> <http://energypress.eu/technical-study-for-alexandroupoli-lng-unit-by-this-summer/>