

# BULGARIA

## KEY FACTS:

- Gas demand peaked for Bulgaria in 2007, and since then has decreased by 8% to 2017.
- All their imported gas comes from Russia
- There are many gas PCI projects planned to reduce dependency on Gazprom. But this comes with a high risk of creating a new fossil fuel lock-in
- Very high energy efficiency potential

## 1. GAS DEMAND

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

- Gas represented 14% of Bulgaria's energy mix in 2016.
- Bulgaria consumed 3.2bcm of gas in 2016: Gas demand dropped by 8% since 2007 compared to 2017.<sup>2</sup>

Mtoe Gross Inland Consumption for Bulgaria, per sector

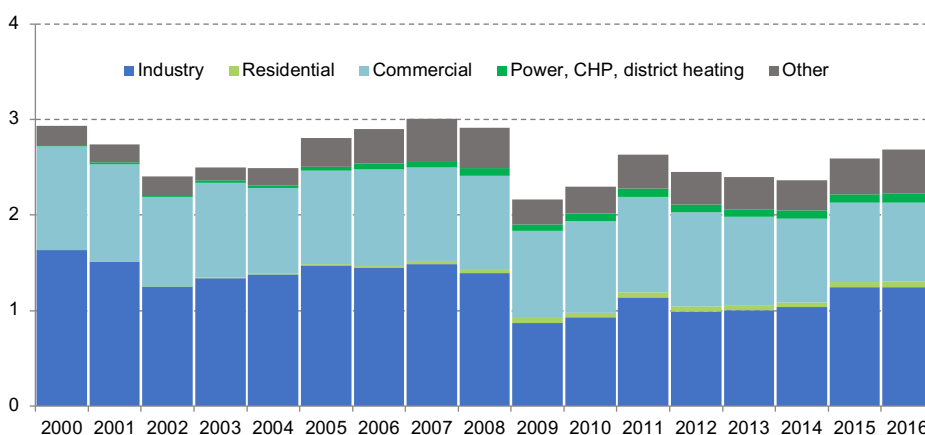
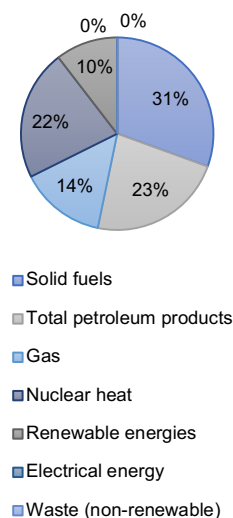


Figure 1: Bulgaria 2016 Energy Mix



## 2. GAS SUPPLY

Bulgaria produces some gas domestically but this production only represents a very marginal part of the country's annual demand (3% in 2016).<sup>3</sup> All the rest comes from Russia: **Gazprom is indeed the sole exporter of gas to Bulgaria.**<sup>4</sup>

This heavy reliance on Russian gas is however not an exception in the energy sector: overall, Bulgaria depends on Russian imports for three-quarters of its primary energy resources — coal, gas, nuclear fuel and oil.<sup>5</sup>

It should be noted that in 2014, a European Commission report cautioned that Bulgaria was fully dependent on a single source of gas supplied via a single route by a single supplier and that it had only limited domestic underground storage capacities to help in balancing disruptions and poor interconnections to neighboring countries.<sup>6</sup>

## 3. GAS INFRASTRUCTURE

According to the Bulgarian transmission system operator (TSO) Bulgartransgaz, the national gas network has a length of 1,835km and is comprised of 3 compressor stations (Kardam, Valchi DI and Polski Senovets). The transit gas transmission system is 930km with 6 compressor stations (Provadia, Lozenets, Strandja, Ihtiman and Petrich). While the technical transport capacity of the **national gas network**

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

<sup>2</sup> Eurostat data February 2019 [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> Eurostat ([http://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=nrg\\_103m&lang=en](http://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=nrg_103m&lang=en))

<sup>4</sup> <https://www.dw.com/en/bulgaria-tries-to-loosen-russian-grip-with-new-gas-pipeline-deals/a-42695513>

<sup>5</sup> <https://www.ft.com/content/4a413060-9a07-11e6-8f9b-70e3cabccfae>

<sup>6</sup> <http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A52014DC0654>

amounts to 7.4bcm/y, the transit network has capacities for 18.7bcm/y.<sup>7</sup> Chiren underground gas storage (UGS) with a capacity of 550bcm (capacity expansion planned to double working gas volume; this project is on the 3<sup>rd</sup> PCI list) plays the **main role of securing fossil gas** in case of shortage/disruption, compensating for seasonal swings in consumption.<sup>8</sup>

With 194km of new pipelines built in 2013, the country owns ample infrastructure to be able to meet domestic demand and therefore does not have any **physical congestion in its system**.<sup>9</sup> Bulgaria is also among the countries who have the highest number of proposed gas projects for the 4<sup>th</sup> PCI list.

However, after the 2009 gas crisis between Russia and Ukraine, Russian gas provision was abruptly cut off, rushing Bulgaria, and its neighboring countries, into exploring solutions to improve their energy security and reduce their dependence on gas imported from Russia through Ukraine. The **bidirectional Bulgaria-Romania interconnector (1.5bcm/y)**, finalised in 2016 is meant to reduce this Russian gas dependence for the two countries.<sup>10</sup>

However, this crisis could have been a fantastic wake-up call to launch a really ambitious energy transition policy in a country where many reports have shown that energy efficiency has a huge potential to improve energy security and to reduce energy needs.<sup>11</sup> Yet, the **majority of current investment and ambition is being given to the gas sector and still in 2019 has major priority**. Some major projects, with a PCI status, aim at significantly developing the Bulgarian gas market and interconnections, creating a serious carbon lock-in risk and missed opportunity to help the country to phase out its fossil fuel reliance:

### Interconnector Greece – Bulgaria (IGB)<sup>12</sup> & Greek LNG terminal + Southern Gas Corridor

This 182km onshore pipeline with a forward capacity up to 5bcm/y<sup>13</sup> – see map – would be part of a bigger cluster project connecting Bulgaria to Greece, Romania, Serbia and Turkey. This Interconnector would thus allow Bulgaria to connect its gas market to Greece and at the same time to access to two big import infrastructure projects: The offshore LNG terminal (FSRU) in the northern Greek port of Alexandroupolis (up to ~8.3bcm/y)<sup>14</sup> and the mega-pipeline Southern Gas Corridor project to import at least 10bcm/y of gas from Azerbaijan.<sup>15</sup> This latter project faced several delays and is now planned to start operating only in 2025. Serious delays also affected the planned Bulgaria-Serbia Interconnector.



While the IGB has not yet been built, Bulgaria has already signed a contract with Azerbaijan for the annual delivery of 1bcm/y gas from the Caspian Shah Deniz 2 gas field with a planned starting date of 2022.<sup>16</sup> While this would certainly help Bulgaria diversify its gas supplies, it remains to be seen whether an authoritarian regime such as the one currently leading Azerbaijan provides more political reliability and security than the one in place in Russia.

Regarding the gas which could come via the Greek floating LNG Terminal, the economic competitiveness of LNG (let alone the often even higher climate impacts of liquefied gas) compared to pipeline gas seems questionable, and the risk for this project to become quickly stranded seems high.

### A new web of gas transmission pipelines connected to the SGC and Black Sea

The arrival of new sources of gas in the region from the East side (via new discoveries in the Black Sea and via the Southern Gas Corridor) is attracting a lot of interest and many NSI East countries are therefore trying to find every possible way to benefit from these sources, involving a series of partially conflicting mega-projects:

<sup>7</sup> <http://www.bulgartransgaz.bg/en/pages/gaz-infra-54.html>

<sup>8</sup> [http://www.bulgartransgaz.bg/files/useruploads/files/amd/TYNDP\\_31.03.2016-en.pdf](http://www.bulgartransgaz.bg/files/useruploads/files/amd/TYNDP_31.03.2016-en.pdf)

<sup>9</sup> [https://ec.europa.eu/energy/sites/ener/files/documents/2014\\_countryreports\\_bulgaria.pdf](https://ec.europa.eu/energy/sites/ener/files/documents/2014_countryreports_bulgaria.pdf)

<sup>10</sup> <https://balkaneeu.com/bulgaria-romania-gas-interconnector-pipeline-finished/>

<sup>11</sup> [http://bpie.eu/wp-content/uploads/2016/05/Accelerating-the-renovation-of-the-Bulgarian-building-stock\\_EN.pdf](http://bpie.eu/wp-content/uploads/2016/05/Accelerating-the-renovation-of-the-Bulgarian-building-stock_EN.pdf) & <http://bpie.eu/wp-content/uploads/2016/09/Safeguarding-energy-security-in-South-East-Europe-with-investment-in-demand-side-infrastructure.pdf>

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

<sup>14</sup> [https://ec.europa.eu/info/sites/info/files/pci\\_gas\\_candidates\\_description.zip](https://ec.europa.eu/info/sites/info/files/pci_gas_candidates_description.zip)

<sup>15</sup> <https://www.euractiv.com/section/azerbaijan/news/commission-eager-to-see-the-capacity-of-southern-gas-corridor-doubled/>

<sup>16</sup> <http://caspianbarrel.org/en/2019/06/when-will-serbia-get-chance-to-access-azerbaijani-gas/>

The Cluster **Interconnection between Greece, Bulgaria and Romania, and necessary reinforcements in Bulgaria: the cluster** would involve a new pipeline between Greece and Bulgaria (up to 5bcm/y),<sup>17</sup> the bidirectional Horia pipeline between Romania and Hungary (8bcm/y)<sup>18</sup> and important interconnections between Bulgaria and Romania.



The **giant BRUA (BG–RO-HU-AT Corridor) project** is a pipeline aiming at carrying gas from Bulgaria via Romania and Hungary to Austria’s Baumgarten Hub. It consists of 3 project phases and forms part of the 3<sup>rd</sup> PCI list. This pipeline is linked to a set of projects aiming at a modernisation of gas infrastructures and transmissions networks to allow Bulgaria to become a gas hub in the region. The size of this enlargement coupled with the BRUA projects where large volumes of gas will be transported from Azerbaijan, Romania or the Black Sea raises serious doubts about the necessity of such a large-scale project, especially when taking into account the level of existing gas infrastructure in the region. The sudden withdrawal of Hungary from the initial BRUA project<sup>19</sup> as well as Romania’s threat to abandon phase II of the pipeline<sup>20</sup> hints at an imbalance of views regarding e.g. the economic viability and overall benefits of this colossal project and further contributes to uncertainty concerning the pipeline. Particularly phases 2 or 3 of the BRUA are highly dependent on availability of Black Sea gas, at a time that the EU should do everything but support new sources of gas.



The project would mostly aim at connecting Central and South Eastern countries, such as Bulgaria, to the Southern Gas Corridor and to a not-yet-built **PCI LNG terminal in Greece**<sup>21</sup> and through the **PCI Gas Interconnector Greece-Bulgaria (IGB Pipeline)**.<sup>22</sup>

The **‘Eastring’ pipeline** is an expensive (around €2 billion<sup>23</sup>) bidirectional interconnector project, connecting existing interconnection point Veľké Kapušany on Slovakian-Ukrainian border, with Ukrainian/Hungarian-Romanian-Bulgarian transit pipeline – see map. It is designed to transport gas in both directions, with a **planned capacity of 40bcm/y at its final stage with a planned commissioning date (of Phase II) as late as in 2030**<sup>24</sup> Potential gas sources for forward flows are Azerbaijan, Turkmenistan, Iraq, Cyprus and Russia, while for the reverse flow, gas is predicted to come from Western European hubs,<sup>25</sup> but following statements by the project promoter, even despite the huge size of the project, there are no clear plans or even agreements with possible supply countries.

Both of these two oversized projects, BRUA and Eastring, present some serious issues and should be excluded from being considered as ‘Projects of Common Interest’:

- First because **they compete with each other** to a certain extent, but also compete with other projects in the region.<sup>26</sup>
- Second, assuming that one of them would still be needed, it should at the very least ensure that it would bring more diversity in terms of gas suppliers (which is one of the main objectives of the PCI list), however **many of these projects are meant to bring significant volumes of gas from Russia** (Eastring, Southern Gas Corridor).
- Third, these projects legitimate others which would normally not receive any support for various reasons: they would particularly **give some justifications to the Southern Gas Corridor** (with all the corruption, human right issues, environmental impacts, dangerous climate implications and poor economic sense which are involved) **and to the new LNG project in Greece** (which is unnecessary given that Greece’s current LNG facility was only used at less than 15% of its capacity for the 2011 and 2018 period).<sup>27</sup>

<sup>17</sup> <https://circabc.europa.eu/ui/group/3ba59f7e-2e01-46d0-9683-a72b39b6deccf/library/e1fd3867-2971-463e-aec5-2b3c603a0c4f/details>

<sup>18</sup> <http://www.romania-insider.com/romanas-transgaz-to-build-pipeline-hungary/>

<sup>19</sup> <https://www.romania-insider.com/acer-brua-hungary-feasible>

<sup>20</sup> <https://www.romania-insider.com/transgaz-brua-project-abandon>

<sup>21</sup> <https://circabc.europa.eu/ui/group/3ba59f7e-2e01-46d0-9683-a72b39b6deccf/library/e1fd3867-2971-463e-aec5-2b3c603a0c4f/details>

<sup>22</sup> [https://ec.europa.eu/energy/sites/ener/files/technical\\_docu.pdf](https://ec.europa.eu/energy/sites/ener/files/technical_docu.pdf) & <http://www.icgb.eu/home/>

<sup>23</sup> <http://www.eastring.eu/page.php?page=financial-sources>

<sup>24</sup> <https://www.eastring.eu/page.php?page=timeline>

<sup>25</sup> <http://www.euractiv.com/section/central-europe/news/former-czech-pm-promotes-eastring-gas-pipeline/>

<sup>26</sup> <http://www.euractiv.com/section/central-europe/news/former-czech-pm-promotes-eastring-gas-pipeline/>

<sup>27</sup> <https://alsi.gie.eu/-/>

- This long-term non-viability is confirmed by the fact that since 2010, gas demand has seriously dropped in these concerned countries (by nearly 18% on average) and that, with current energy objectives, the demand is expected to continue to decline.<sup>28</sup>
- New gas infrastructures therefore not only contradict EU climate objectives (gas is a fossil fuel emitting important volumes of methane) but also involve high risk of future stranded assets and infrastructure.



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<sup>28</sup> Energy Efficiency Communication [COM(2014)520]: "every additional 1% in energy savings cuts gas imports by 2.6%" ([https://ec.europa.eu/energy/sites/ener/files/documents/2014\\_eec\\_communication\\_adopted\\_0.pdf](https://ec.europa.eu/energy/sites/ener/files/documents/2014_eec_communication_adopted_0.pdf))