

HUNGARY

KEY FACTS:

- Gas demand dropped by 13% between 2010 and 2017.
- Hungary's building sector is highly (50%+) dependent on gas.
- Hungary has some domestic production but it is in sharp decline.
- Largely dependent on Russian gas but many new infrastructures in reaction to 2006 gas crisis.
- Many new PCI gas projects planned in the country leading to severe risk of new fossil fuel lock-in.

1. GAS DEMAND

According to EU data:¹

- Gas represented 38.7% of Hungary's energy mix in 2015.²
- Hungary consumed around 9.56bcm of gas in 2016 and about 10bcm in 2017³
- Gas demand dropped by 13% between 2010 and 2017 by 29% between 2005 and 2017.

Hungary's **buildings are highly dependent on gas for their energy requirements (it represents around half of their energy needs)**, making them severely **vulnerable** to supply disruptions. The importance for gas to the residential sector shows that securing gas is particularly important for Hungary during cold winter months, but also that **energy efficiency measures could improve** the situation significantly.⁴

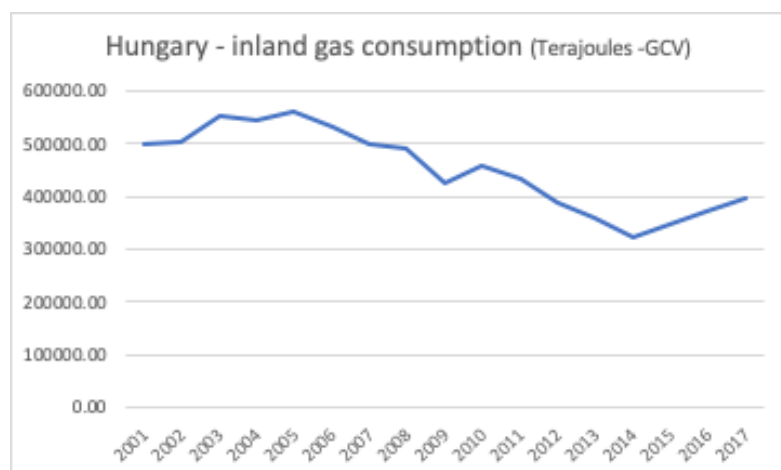
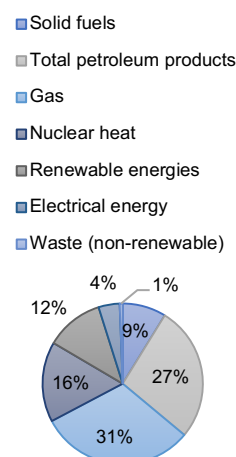


Figure 1: Hungary 2016 Energy Mix



2. GAS SUPPLY

Hungary has some **domestic gas production which has been in steady decline** since 1990 (see graph).⁵ It was estimated that Hungary might have some unconventional gas resources but after investing millions of dollars and drilling only four exploration wells, ExxonMobil decided to leave Hungary because of the insignificant economical outcome of these projects.⁶

The remaining share of gas in Hungary is **imported**. During the last few years, **almost the entirety of this gas came from Russia**, but Hungary showed that it could also import gas from Austria.⁷

¹ E3G compilation of data extracted from Eurostat

² <https://www.iea.org/publications/freepublications/publication/EnergyPoliciesofEACountriesHungary2017Review.pdf>

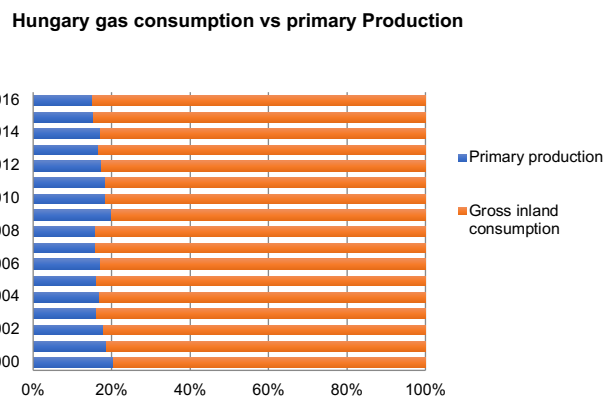
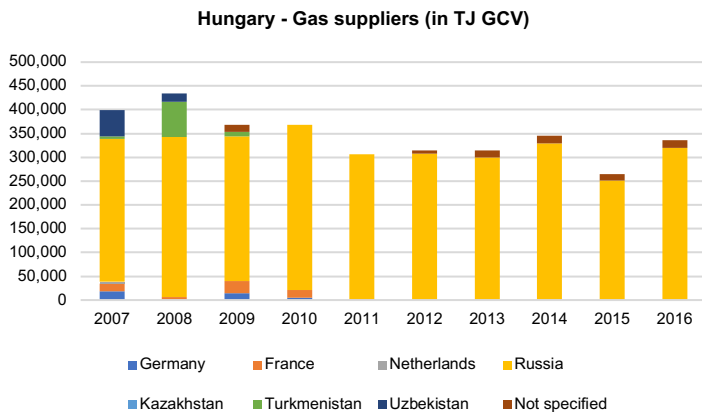
³ <https://www.oxfordenergy.org/wpcms/wp-content/uploads/2018/04/Natural-gas-demand-in-Europe-in-2017-and-short-term-expectations-Insight-35.pdf>

⁴ <http://bpie.eu/wp-content/uploads/2016/09/Safeguarding-energy-security-in-South-East-Europe-with-investment-in-demand-side-infrastructure.pdf>

⁵ <https://dailynewshungary.com/hungarys-gas-supplies-secured-for-next-year/>

⁶ <http://www.naturalgasworld.com/falcon-oil-hungary-unconventional-gas-exxon-poland>

⁷ <https://dailynewshungary.com/hungarys-gas-supplies-secured-for-next-year/>



3. GAS INFRASTRUCTURE

With a 5,873km long gas transmission network, Hungary is an important **transit country for Russian gas** to south-eastern Europe. In 2020, Hungary's gas supply agreement with Russia will run out and it remains to be seen which accord the two countries will reach.⁸ Hungary does not seem to want to stop collaboration with Russia; the Hungarian government is, in fact, working with Gazprom to further increase exchanges with Russia via the construction of Turkstream, a new 15bcm Russian pipeline reaching Europe via the Black Sea.⁹ The US however, made clear that they would rather Hungary to import (US) LNG through the planned Krk LNG terminal in Croatia than support Turkstream which they criticize.¹⁰

The country imports most of its gas from Russia via Ukraine at Beregdaróc (20.5bcm/y), and via Austria at Mosonmagyaróvár (4.4bcm/y). However, in reaction to the 2006 Ukraine gas interruption, Hungary has recently heavily developed its gas transmission network:

- June 2011: construction of a 6.9bcm/year capacity pipeline between Hungary and Croatia
- April 2013: Hungary completed the reverse flow portion of a pipeline to the Ukraine (with a capacity of 6.1bcm/year)
- February 2014: marked the first stage of a bi-directional pipeline between Hungary & Romania (0.1bcm/y)
- July 2015: new bidirectional pipeline connecting Slovakia and Hungary (4.5bcm/y SK→HU and 1.8bcm/y HU → SK).¹¹

Moreover, the high and inflexible residential sector gas demand makes gas storage important for Hungary. The country has **5 storage facilities with a capacity of 6.3bcm** (and a 79.6mcm/day of withdrawal capacity).¹² After the 2006 Ukraine gas interruption, the Hungarian government passed a Safety Stockpiling of Natural Gas Act leading to the construction of a strategic underground gas storage facility of 1.2bcm.¹³

However, despite these important recent investments allowing Hungary to diversify its gas supplies, to improve its energy security and to become an important gas hub (and a significant gas supplier to Ukraine), Hungary is still likely to receive further support to build even more gas infrastructure (with PCI status), creating a real risk of a new carbon lock-in at a time when efforts and limited financial capacity should be going to renewable energies and energy efficiency:

⁸ https://bbj.hu/business/gas-imports-a-matter-of-choices-or-not_166606

⁹ <https://www.reuters.com/article/us-russia-hungary-gas-idUSKBN19Q1YE>; Caspian News, Russia May Expand TurkStream Gas Pipeline To Hungary, 22/09/18, <https://caspiannews.com/news-detail/russia-may-expand-turkstream-gas-pipeline-to-hungary-2018-9-20-50/>; Kommersant, Gazprom made pipe selection, 22/11/2018, <https://www.kommersant.ru/doc/3806415>

¹⁰ https://bbj.hu/business/gas-imports-a-matter-of-choices-or-not_166606

¹¹ <http://energypost.eu/quiet-revolution-central-eastern-european-gas-market/> & <http://www.entsog.eu/maps/transmission-capacity-map/2016>

¹² <https://fqsz.hu/en-gb/Documents/41/A%20magyar%20f%C3%B6ldg%C3%A1zrendszer%202015.%20C3%A9vi%20adatai.pdf>

¹³ https://www.iea.org/media/freepublications/security/EnergySupplySecurity2014_Hungary.pdf



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

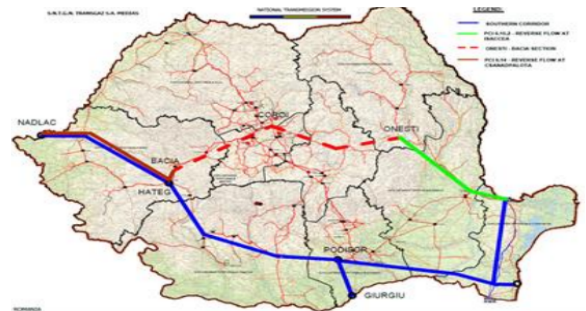
The arrival of new sources of gas in the region from the East side (via new discoveries in the Black Sea and via the Southern Gas Corridor) is attracting a lot of interest and many Eastern European countries are therefore trying to find every possible way to benefit from these sources. However, it is unclear how much (non-Russian) gas will finally flow through the Southern Gas Corridor, and also uncertainties about gas from the Black Sea rise due to new Romanian energy regulations.¹⁴

Hungary finds itself involved in a series of regionally conflicting mega-projects:

The **'RO-HU-AT/BRUA'** bidirectional transmission corridor is meant to enable an indicative capacity of 1.75bcm/y during the 1st phase and 4.4bcm/y for the 2nd phase at the Hungarian-Romanian interconnection point – see map 1.¹⁵

The 3rd phase has already been planned and integrates among other elements:¹⁶

- The construction of a second pipeline between Onesti and Isaccea with a reverse flow facility at the Isaccea station (red line on the graph below)
- Enhancement of the Romanian transmission system between Onesti – Naccia, including a new pipeline between and two compressors (red dotted line)¹⁷



The project has already faced a lot of difficulties. In 2017, Hungary's grid operator announced that the pipeline was not feasible.¹⁸ With new rules for offshore extraction and Romania's gas grid operator Transgaz shareholders rejecting the investment program which includes money for the BRUA pipeline; uncertainties around the project rise.¹⁹ It seems like first constructions of the pipeline on Romanian soil started in 2019,²⁰ but Transgaz stated that there weren't enough bidders for the project's second phase to start its construction yet.²¹

The **Cluster Interconnection between Greece, Bulgaria, Romania and Hungary, and necessary reinforcements in Bulgaria**: the cluster would involve a new pipeline between Greece and Bulgaria (3.3 to 5.5bcm/y),²² the bidirectional Horia pipeline between Romania and Hungary (8 bcm/y)²³ and important interconnections between Bulgaria and Romania.²⁴ The project would mostly aim at connecting Central and South Eastern countries to the Southern Gas Corridor and to a not-yet-built **PCI LNG terminal in Greece**²⁵ through the **PCI Gas Interconnector Greece-Bulgaria (IGB Pipeline)**.²⁶

¹⁴ <https://www.reuters.com/article/us-romania-energy-offshore-analysis/romanias-black-sea-gas-projects-hanging-by-a-thread-idUSKCN1RD2HS>

¹⁵ <https://circabc.europa.eu/webdav/CircaBC/Energy/13%20Regional%20Meetings/Library/2019%20May%207-8%20RGs%20meetings%20gas/ NSI%20East.pdf>

¹⁶ <https://circabc.europa.eu/webdav/CircaBC/Energy/13%20Regional%20Meetings/Library/2019%20May%207-8%20RGs%20meetings%20gas/ NSI%20East.pdf>

¹⁷ https://www.transgaz.ro/sites/default/files/Downloads/2016.0629 - brua_stage_3_presentation - lb.en.pdf

¹⁸ <https://www.romania-insider.com/acer-brua-hungary-feasible>

¹⁹ <https://circabc.europa.eu/webdav/CircaBC/Energy/13%20Regional%20Meetings/Library/2019%20May%207-8%20RGs%20meetings%20gas/ NSI%20East.pdf>

²⁰ <https://balkan.eu.com/romania-construction-of-the-brua-pipeline-to-finally-begin/>

²¹ <https://www.romania-insider.com/transgaz-brua-project-abandon>

²² <https://circabc.europa.eu/webdav/CircaBC/Energy/13%20Regional%20Meetings/Library/2019%20May%207-8%20RGs%20meetings%20gas/ NSI%20East.pdf>

²³ <http://www.romania-insider.com/romanias-transgaz-to-build-pipeline-hungary/>

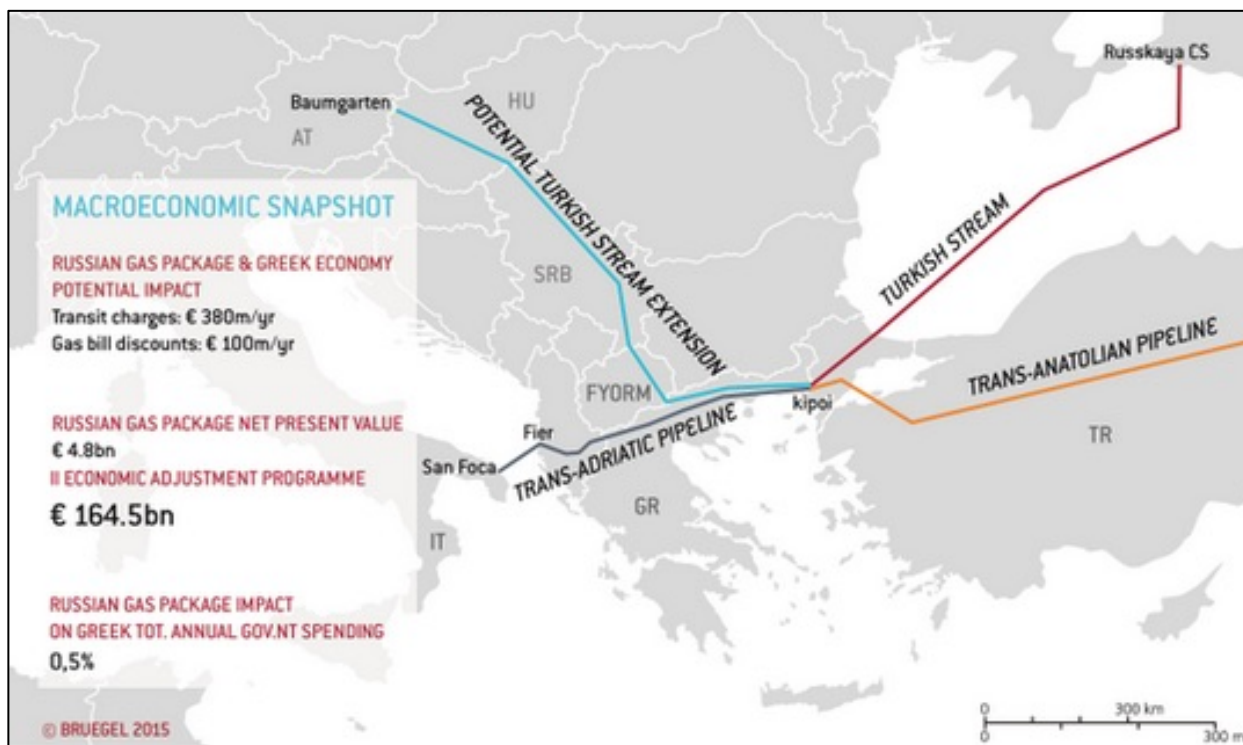
²⁴ <https://circabc.europa.eu/webdav/CircaBC/Energy/13%20Regional%20Meetings/Library/2019%20May%207-8%20RGs%20meetings%20gas/ NSI%20East.pdf>

²⁵ <https://circabc.europa.eu/webdav/CircaBC/Energy/13%20Regional%20Meetings/Library/2019%20May%207-8%20RGs%20meetings%20gas/ NSI%20East.pdf>

²⁶ https://ec.europa.eu/energy/sites/ener/files/technical_docu.pdf &

<https://circabc.europa.eu/webdav/CircaBC/Energy/13%20Regional%20Meetings/Library/2019%20May%207-8%20RGs%20meetings%20gas/ NSI%20East.pdf> &

<http://www.icgb.eu/home/>



The ‘**Eastring**’ pipeline is an interconnector project, connecting existing interconnection point Velké Kapušany on Slovakian-Ukrainian border, with Ukrainian/Hungarian-Romanian-Bulgarian transit pipeline. It is designed to transport gas in both directions, with a **planned capacity of 40bcm/y at its final stage**.²⁷ It could potentially bring gas from Western Europe on one side, and from Russia, SGC, Caspian, Iran, Iraq, Egypt and Israel on the other one, but it seems like the project promoter has little clarity about where these big volumes of gas should be coming from and claims that once the pipeline is built it will be decided who supplies it.

All these giant projects present some serious issues which should exclude them from being considered as ‘Projects of common interest’, especially for Hungary:

- First because **many of them compete with each other** by going through almost the same list of countries (they all cross Hungary).
- Secondly, 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** (Turk Stream, Eastring, Southern Gas Corridor).²⁸
- Thirdly, these projects legitimise other ones which should also not receive any support for various reasons: they would **provide justification for the Southern Gas Corridor** (with all the corruption, human right issues, environmental impacts, dangerous climate implications and poor economic sense linked to it) **and to the new LNG project in Greece** (while the one that Greece already has was used at only 14% of its capacity between January 2012 and March 2019).²⁹
- Fourthly, while these projects are advertised as bringing gas from new supply sources, strengthening security of supply³⁰, the need for Hungary to be associated to these projects seems extremely doubtful. With its recent investments, **Hungary is already well connected to neighboring countries which provides a more than sufficient level of security of gas supply**. And so are the countries to whom this gas could be transmitted to before (Slovakia and Czech Republic) and after Hungary (Austria and Western Europe).
- Finally, it should be added that combined gas demand in the four concerned countries (SK, BG, RO and HU) fell slightly between 2010 and 2017. In Slovakia, Hungary and Romania, particularly

²⁷ <https://www.eastring.eu/page.php?page=about> & <https://circabc.europa.eu/webdav/CircaBC/Energy/13%20Regional%20Meetings/Library/2019%20May%207-8%20RGs%20meetings%20gas/ NSI%20East.pdf>

²⁸ <http://www.naturalgasworld.com/gazprom-eyes-tap-for-russian-gas-35548>

²⁹ <https://alsi.gie.eu>

³⁰ <https://www.eastring.eu/page.php?page=about> & <https://circabc.europa.eu/webdav/CircaBC/Energy/13%20Regional%20Meetings/Library/2019%20May%207-8%20RGs%20meetings%20gas/ NSI%20East.pdf>

concerned by this specific project, gas demand has been almost continuously declining since the beginning of the 2000's. Between 2010 and 2017 it dropped by 17% in Slovakia, by 13% in Hungary and by 11% in Romania.³¹

With current energy objectives, the demand in gas is expected to continue its decline.³² New gas infrastructures therefore not only **contradict EU climate objectives** (gas is a fossil fuel emitting important volumes of methane) but also present a serious risk for future **stranded assets and infrastructure**.

The Krk LNG terminal cluster

Hungary is the direct benefiter of another PCI project in Croatia: The **liquefied gas import terminal on the island of Krk**. The project has been highly politicised and strongly prioritised by the Croatian government, despite the very serious economic, environmental and climate questions cast over it.³³

The project is directly and indirectly linked to a set of LNG evacuation pipelines and transport infrastructure on Croatian territory and beyond. (E.g. the interconnection pipeline to Bosnia and Herzegovina, the LNG evacuation pipelines Omišalj - Zlobin and Kozarac-Slobodnica, Compressor stations 2 and 3 at the Croatian gas transmission system, projects at the Cluster Croatia - Slovenia – Austria etc.). This leads to the situation that for the 4th PCI list, a total of 9 candidate projects were proposed for the country.



As a first step, a floating Storage and Regasification unit (FSRU) is planned, with a capacity of 2.6 bcm/y, as a second stage an onshore terminal with capacities to import up to 7 bcm/y which would represent about three times the yearly gas consumption of the entire country. There has been an extensive to and fro concerning the size and form of this terminal and due to a lack of market interest during two extended bidding rounds it was decided to build a “smaller terminal” in a first phase.³⁴

In its Phase 1 floating terminal stage, the project is now strongly opposed by all local municipalities from Krk Island, the Primorje-Gorski Kotar County and by local environmental NGOs.

Krk LNG terminal would likely bring fracked gas from the US³⁵ with all the environmental and climate implications it entails. A collection of debunked myths around the promises of Krk LNG terminal can be found in the briefing “**Pipe Dream – Debunking the Myths of Croatia’s Krk Gas Terminal**”.³⁶

Despite the interest by several countries for this terminal, the project faced serious problems to secure bids requiring a repeated prolongation of the bidding round. Even though the Croatian government approved €234million financing for the projects first stage, there were not enough binding offers to make investment in the LNG terminal’s construction profitable at that time.³⁷ However, the project still lives³⁸ and even received more than €100 million in financial support from the EU CEF programme in February 2017 (since then the project changed considerably!).³⁹ The EIB even announced in 2016 that it was ready to provide a €339m loan for the project.⁴⁰

³¹ <http://appsso.eurostat.ec.europa.eu/nui/submitViewTableAction.do>

³² 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)

³³ (https://s3-eu-west-1.amazonaws.com/zelena-akcija.production/zelena_akcija/document_translations/1167/doc_files/original/LNG_krk_report_board.pdf?1544608742).

³⁴ <https://www.total-croatia-news.com/business/33172-lng-terminal-on-krk>

³⁵ <http://www.total-croatia-news.com/business/15341-construction-of-croatia-s-lng-terminal-to-start-in-2017> & <http://www.total-croatia-news.com/business/347-us-company-cheniere-energy-interested-in-lng-terminal-in-croatia>

³⁶ http://www.foeeurope.org/sites/default/files/extractive_industries/2018/pipedream-debunking-myths-croatias-krk-gas-terminal.pdf

³⁷ <https://www.lngworldnews.com/croatia-sets-funds-aside-for-krk-lng-terminal/>

³⁸ <http://www.total-croatia-news.com/business/15341-construction-of-croatia-s-lng-terminal-to-start-in-2017>

³⁹ http://europa.eu/rapid/press-release_IP-17-280_en.htm

⁴⁰ <http://www.eib.org/projects/pipelines/pipeline/20140627>

Yet, it finds little justification: it only attracts limited enthusiasm from governments in the region (starting with Croatia); no one seems to be willing to financially contribute (expectations are that the EU would finance more than half of the project...)⁴¹; and several stakeholders doubt the commercial viability of the project. Moreover, Hungary seems already able to diversify its gas imports with current infrastructures. More capacity would only push the country to further rely on fossil fuels whose demand significantly decreased recently and which will have to be phased out to reach EU 2030 and 2050 climate objectives.



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⁴¹ <http://www.total-croatia-news.com/item/14243-when-will-lng-terminal-project-in-croatia-finally-be-launched>