FRANCE

KEY FACTS:

- Gas demand has reduced by 10% between 2010 & 2017
- 99% of gas is imported from a wide range of suppliers
- France has been an important industry target for the "renewable gas and biogas" push.

1. GAS DEMAND

According to EU data:[1]

- Gas represented 15% of France's energy mix in 2016.
- France consumed 45.6bcm of gas in 2016
- Gas demand dropped by 10% between 2010 and 2017.[2]

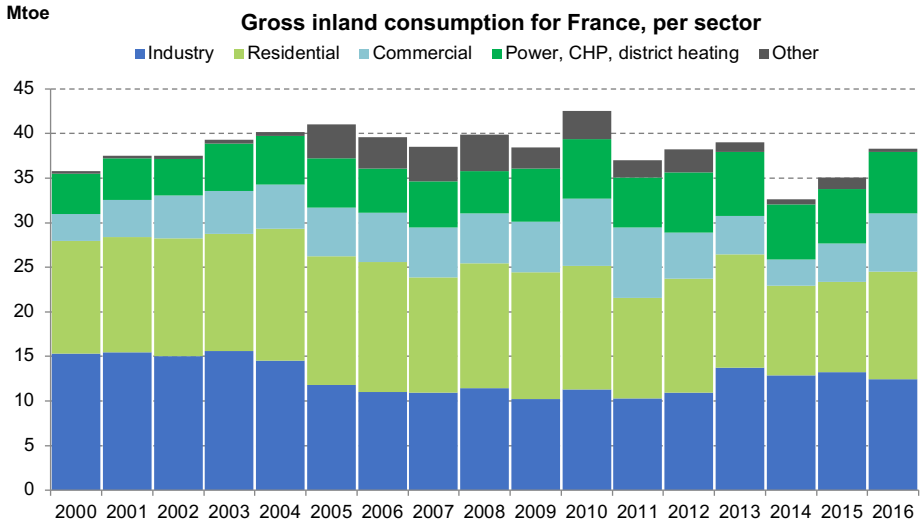
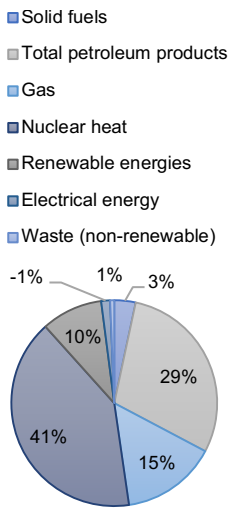


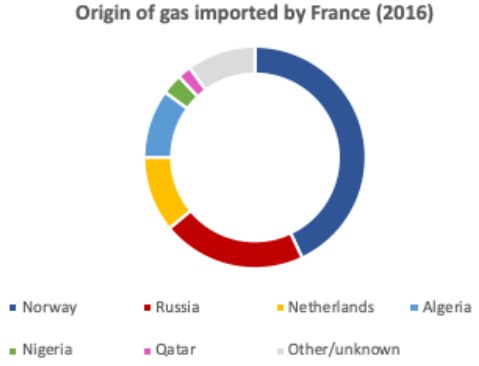
Figure 1: France 2016 Energy Mix



2. GAS SUPPLY

France has a very marginal domestic production of gas (0.02bcm per year) which accounted in 2015 for only 0.04% of the national consumption of gas[3] but indigenous production rose between 2016 and 2017.[4] The French regulator CRE specified that 98% of the country's gas was imported.[5]

While the gas industry believes France owns important resources of shale gas, this potential remains very uncertain and, most of all, unproven. Even more importantly, the decade of shale gas production in the US has resulted in a catastrophic environmental record.[6] This knowledge was at the origin of an important mobilization in France which pushed the country to **ban shale gas exploration and exploitation in 2011**, citing environmental concerns.[7]



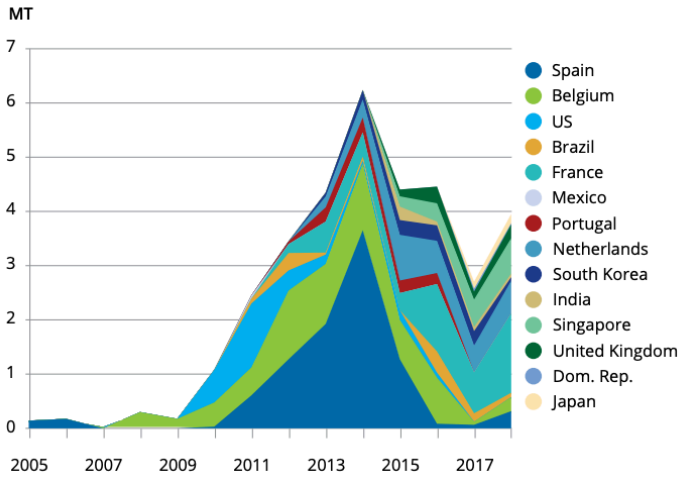
Up to now, almost the entirety of France's gas demand has been imported. These gas **imports are relatively well diversified with a striking rise in the amount of Gas imported from Russia.** In 2016, gas was mostly provided by **Norway (43% of the total imports), Russia (21%), the Netherlands (11%), and Algeria (10%)** – see graph.[8] In 2017, the numbers stayed

[1] E3G compilation of data extracted from Eurostat
[2] http://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=nrg_cb_gas&lang=en
[3] https://ec.europa.eu/energy/sites/ener/files/documents/gas_infrastructure_2050_report_tasks_3_and_4_v2.pdf
[4] https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Natural_gas_supply_statistics#Supply_structure
[5] https://www.cre.fr/en/Natural-gas/Natural-gas-networks/Natural-gas-networks
[6] http://concernedhealthny.org/compendium/
[7] http://interfaxenergy.com/gasdaily/article/20286/french-us-shale-ban-would-clash-with-trade-law
[8] http://www.connaissancedesenergies.org/le-gaz-consomme-en-france-vient-principalement-de-russie-120222

roughly the same.[9] This distribution could change in the future, notably after two French companies, Electricité de France (EDF) and gas utility Engie signed contracts with Chenière[10] to buy fracked gas from the US, via LNG. This contradiction to France's domestic ban on fracking was controversial, especially given that the French state has a large interest in both companies, including a 75% ownership stake in EDF. That's why in May 2016, the French energy minister Ségolène Royal said France is investigating options to ban shale gas imports from the United States. Since this promise, however, no concrete steps have been taken. Quite on the contrary, between 2018 and 2019, after a joint statement between former EU Commission President Juncker and US president Trump on energy cooperation, import of fracked US LNG to France rose considerably.[11]

With its high amount of LNG capacity, France also started to re-export gas, particularly after 2015 and in 2017 and 2018 was the biggest re-exporting country worldwide - see graph.[12]

Figure 3.5: Re-exports by Market, 2005-2018



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

3. GAS INFRASTRUCTURE

Gas infrastructures in France are considered well developed as they ensure security and diversity of supplies. According to French authorities, the **French gas network meets the N-1 standard** of the European regulation (Regulation 994/2010) at a level of 130%. This means that it has **resilience** to satisfy total gas demand even in the event of an outage of the single largest gas infrastructure, during a day of exceptionally high gas demand.[13]

The maximum gas **supply capacity of France's gas infrastructure** (pipeline imports, LNG regasification and peak storage output) is 528mcm/d, while peak daily gas demand was some 340mcm/d. This leaves over 180mcm/d (or 35%) "spare" capacity in the gas network.[14] Since the end of 2018, the former two French gas market zones have been united to form a single price zone. This is likely to have an impact on the use of French gas infrastructure, too.[15]

France has a 193,700km gas distribution network that is owned by local communities and managed by 26 operators. In 2014, it already had numerous cross-border gas pipelines, with a total import capacity of 68.5bcm/y and has a gas **storage** capacity of approximately 13bcm (12bcm in aquifers, 1bcm in salt caverns and 0.1bcm in a depleted reservoir).[16] The low-calorific (L-gas) network in the north of the country is operated by GRTgaz, a subsidiary of ENGIE, while the high calorific H-gas network in the south-west of France is operated by TIGF, a consortium including among others the Italian transmission system operator SNAM.[17]

There are **four LNG port terminals** in France: Fos Cavaou and Fos Tonkin near Marseilles, Montoir-de-Bretagne on the Atlantic coast, and a 4th operating terminal since the end of 2016 near Dunkirk at the North Sea shore. Their combined regasification capacity in 2019 was 34.7bcm/y, which represents around 58% of the annual fossil gas consumption of France, Belgium and Luxembourg combined.[18] The new Dunkirk Terminal has a regasification capacity of 13bcm/y of gas alone, representing around 30% of France's annual fossil gas consumption.[19] This makes it the second **largest terminal in continental Europe.**[20] There are also plans to expand the capacity of the existing terminals at Fos Tonkin (1.5bcm/y)

[9] https://ec.europa.eu/eurostat/cache/infographs/energy/bloc-2c.html
[10] https://www.bloomberg.com/news/articles/2015-10-28/cheniere-to-sell-lng-to-engie-as-more-u-s-fuel-to-reach-france & http://www.reuters.com/article/cheniere-edf-lng-idUSL5N11R3B920150921
[11] https://ec.europa.eu/energy/sites/ener/files/eu-us_lng_trade_folder.pdf
[12] https://www.igu.org/sites/default/files/node-news_item-field_file/IGU%20Annual%20Report%202019_23%20loresfinal.pdf
[13] https://www.iea.org/media/freepublications/security/EnergySupplySecurity2014_France.pdf
[14] https://www.iea.org/media/freepublications/security/EnergySupplySecurity2014_France.pdf
[15] https://www.edf.fr/collectivites/le-mag/le-mag-collectivites/decryptage-du-marche-de-l-energie/unification-du-marche-francais-pour-du-gaz-a-prix-unique
[16] https://www.iea.org/media/freepublications/security/EnergySupplySecurity2014_France.pdf
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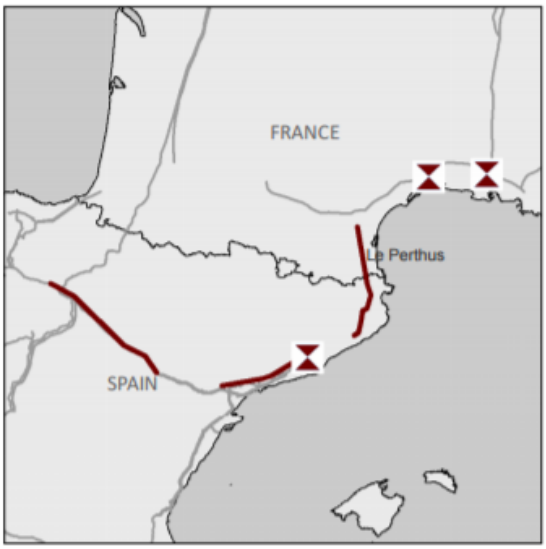
[18] http://www.gie.eu/index.php/maps-data/lng-map
[19] http://www.lngworldnews.com/operational-and-performance-tests-progress-at-dunkirk-lng-terminal/?utm_source=emark&utm_medium=email&utm_campaign=daily-update-lng-world-news-2016-11-22&uid=52896
[20] http://www.dunkerquelng.com/1/presentation#capacites-techniques

and Montoir (2.5-6.5bcm/y).[21] The construction of this new terminal however looks seriously questionable. Between January 2012 and March 2019 (and for Dunkerque since it started operating in January 2017), the four existing LNG terminals were **only used at an average of about 30% of their capacity.**[22] At the end of 2016 while the Dunkirk terminal was just about to be commissioned, Engie, its main operator, announced it would **cut 1,150 jobs in the French LNG sector**.[23]

Despite these more than sufficient infrastructures, especially in a context of important gas demand reduction, France receives significant support (notably via the List of Projects of Common Interest) to further develop its gas network and transmission capacity.

In May 2016, France and Belgium launched a €1.2 billion **bidirectional gas transmission pipeline, connecting the Dunkirk and the Zeebrugge LNG terminals**, and allowing the LNG Dunkirk terminal to access the German, Dutch and UK gas market. The pipeline has an 8bcm/y transport capacity.[24]



France is the partner of a bidirectional pipeline project which used to be heavily requested by Spain, which would connect the Iberian Peninsula to France and which received, under the name of **MIDCAT pipeline**, PCI status. The Midcat project is a big cluster project and includes a set of pipelines both in Spain and France. Originally only the (comparably short) central pipeline section directly connecting Spain and France was called Midcat, but this term now refers to a project cluster including 577km of pipelines.[25] The project promoter now calls the central piece STEP (South Transit Eastern Pyrenees). While the €3+ billion project, that includes the **STEP project**, also listed in the 3rd PCI list, with a total 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 the "diversification" objective as pipelines and interconnectors already exist between Spain and France (5.4bcm/y via two interconnectors).[26] That's one of the reasons which recently pushed the French regulator CRE to state 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.[27] Moreover, Spain has already many opportunities to share the excess through existing LNG reloading systems. The MIDCAT project would "just" allow Spain to reduce the costs for exports, but the added value in terms of diversification is extremely dubious.

In April 2018 a leaked study commissioned by the European Commission showed that the Midcat project and its €3billion of investment would not be economically viable in almost any case.[28] The project, which has already received over 7.3million euros of Public Money from the European Commission, is now clearly being presented as a future stranded infrastructure.[29] In a joint statement by both the Spanish and the French energy regulator it was noted that the project "fails to comply with market needs and lacks sufficient maturity to be considered" and fails to prove that its benefits exceed its cost.[30]

CONTRIBUTING AUTHORS (2019)
Antoine Simon, *Friends of the Earth Europe*
Frida Kieninger, *Food & Water Europe*, fkieninger@fweurope.org
Andy Gheorghiu, *Food & Water Europe*, agheorghiu@fweurope.org
Noëlie Audi-Dor, *Gastivists*
Nessim Achouche, *Food & Water Europe*
Eilidh Robb, *Food & Water Europe*

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[21] http://www.gie.eu/index.php/maps-data/lng-map
[22] https://alsi.gie.eu
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