



## Massive increase of EU LNG imports: enablers, benefits and trends

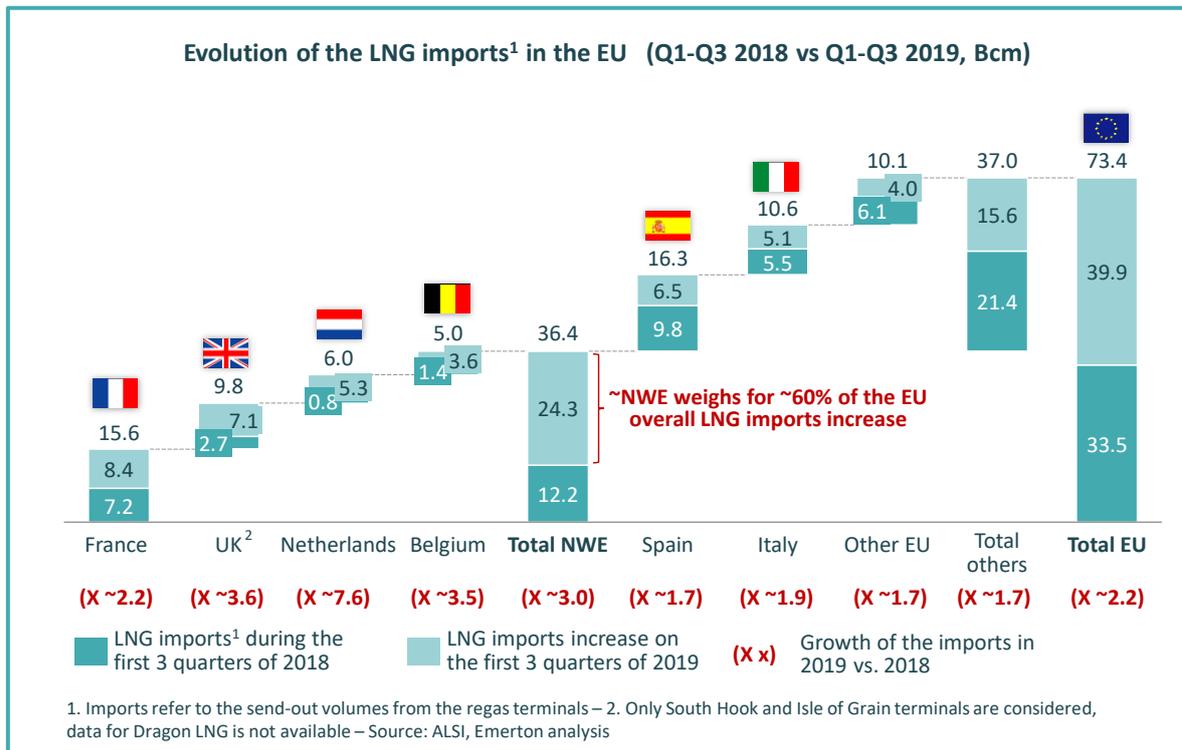
European LNG imports have more than doubled during the first three quarters of 2019 when compared to 2018. Europe started playing the role of a balancing market absorbing the excess LNG volumes. Beyond regasification terminals, gas infrastructure and notably storage facilities play a key role in enabling such a flexible and adaptative supply mix. In the longer run, LNG imports in Europe are expected to become increasingly needed rather than being an option.

**By Sébastien Zimmer and Haithem Choukatli**

## 1. In an oversupplied global LNG market, Europe has massively increased its LNG imports compared to 2018

Since the end of 2018, the global LNG market entered an oversupply phase leading to a collapse of the spot prices both in the Asian and European markets. Indeed, the main continental European price marker, TTF, and the Asian LNG spot price marker, JKM, fell from ~\$9/MMBtu and ~\$10.5/MMBtu, respectively, in September 2018 to ~\$3.5/MMBtu and ~\$4/MMBtu, respectively, one year later in September 2019.

**In this context, Europe started playing the role of a balancing market absorbing the excess LNG volumes.** Overall EU LNG imports<sup>1</sup> have more than doubled jumping from ~34 Bcm during the first 3 quarters of 2018 to ~73 Bcm during the same period in 2019 (see *Exhibit 1* below).



*Exhibit 1: Increase of the LNG imports in the EU in 2019*

All the main EU gas markets benefitted from this momentum, albeit in various proportions. France registered the highest increase in LNG imports (+~8 Bcm compared to the first 3 quarters of 2018), establishing itself as the second biggest LNG importing country in Europe. In contrast, the rise in Spain (+~6 Bcm) was relatively moderate in comparison, though it remains the biggest European country in LNG imports, with a total of ~16 Bcm of imported LNG on Q1-Q3 2019.

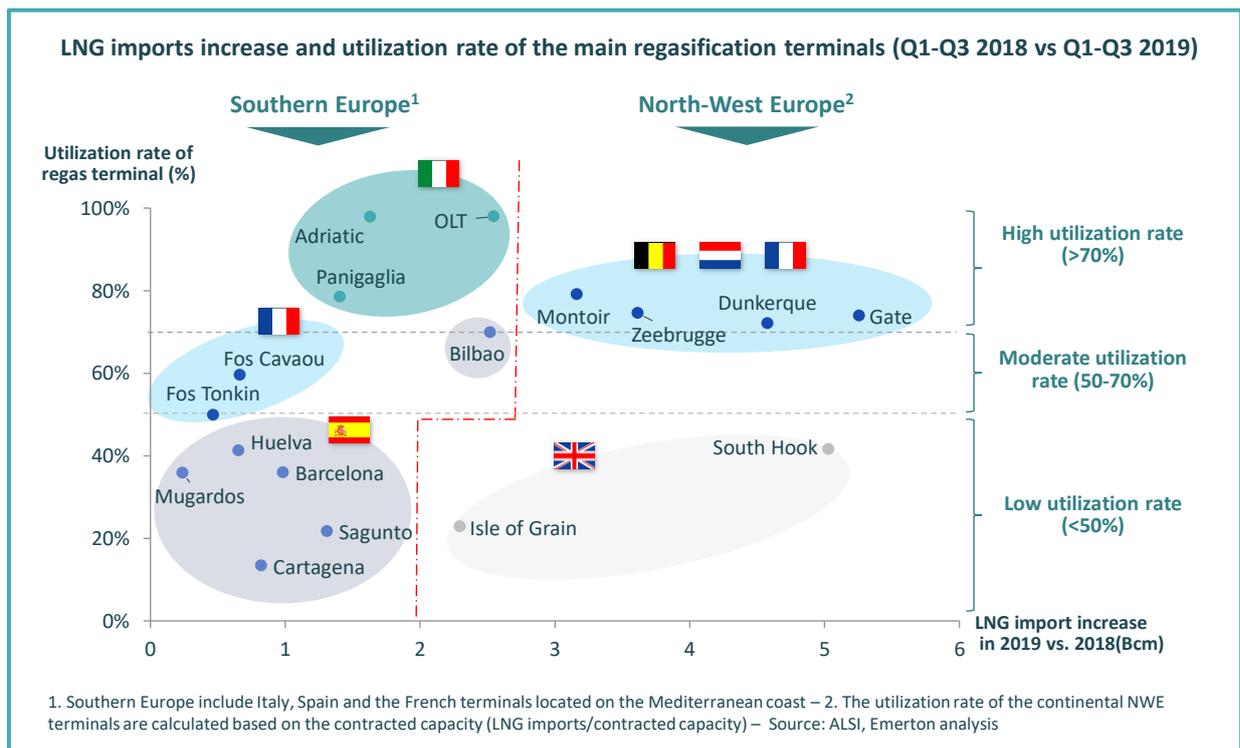
## 2. Beyond the liquidity of wholesale markets, transshipment services and innovative value-based capacity allocation mechanisms are key differentiation factors

A detailed analysis of LNG import increases by regasification terminal reveals that Northern European terminals have been the most effective in absorbing additional LNG volumes (see

<sup>1</sup> LNG imports refer to the send-out volumes from the regasification terminals

Exhibit 2). Indeed, the Northern wholesale gas markets, being more liquid, offer more reliable and easily accessible trading opportunities for capturing the value of additional LNG cargoes.

Beyond market liquidity, the long-term transshipment agreements concluded between Yamal's off-takers and the Zeebrugge and Montoir regasification terminals substantially favored the unloading of additional LNG cargoes. The LNG volumes initially intended to be transhipped to Asia, have largely been "trapped" and regasified in Europe; the market conditions being in favor of deliveries in Europe rather than in Asia, as the JKM-TTF price spread was lower than the additional logistics costs required to ship LNG to Asia.



**Exhibit 2: LNG imports increase and utilization rate of EU regasification terminals**

Moreover, the further development of new Arctic LNG project based on seasonal transshipment services of ice-breaker LNG carriers may prove an opportunity for Northwest European regas terminal operators. However, this potential opportunity needs to be assessed carefully as Russian authorities are supporting the development of ad hoc transshipment terminals in Russia.

The Southern LNG regasification terminals, mostly located on the Mediterranean coast, have attracted less LNG volume. Indeed, the LNG glut is concentrated on the Atlantic Basin as it mainly results from the ramp-up of the US LNG projects and the Russian LNG volumes taking the "winter route"<sup>2</sup> based on planned transshipments in Northern European terminals. However, clear distinctions have to be made between the various regas terminals in Southern Europe: while most of the Spanish regasification terminals did not attract significant additional LNG volumes beyond the structurally contracted imports<sup>3</sup>, the two Italian regasification terminals OLT<sup>4</sup> and

<sup>2</sup> The "winter route" is the conventional route through the Mediterranean Sea and the Suez Canal which is used to ship LNG from the Yamal peninsula to the Asian market during winter (as opposed to the "summer route" which is a more direct route from Yamal to Asia through the Arctic sea, used during summer with the support of nuclear ice-breakers).

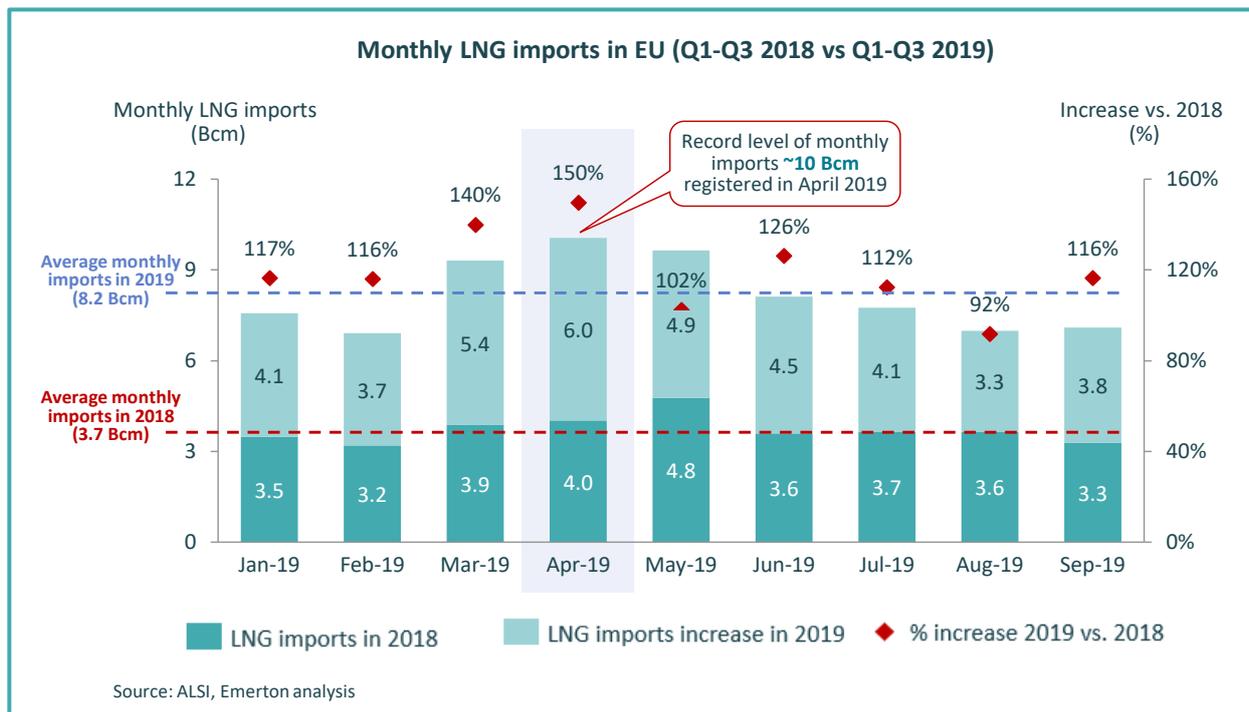
<sup>3</sup> The utilization rate of the Fos Tonkin terminal remained low as well notably because of its inability to accommodate conventional size LNG carriers (the access to Fos Tonkin is operationally limited to Medmax LNG carriers).

<sup>4</sup> Offshore LNG Toscana.

Adriatic LNG, have been running near full capacity (~98%) during the first 3 quarters of 2019. This contrast is explained by the poor liquidity of the Iberian gas hub, and the innovative auction-based capacity allocation mechanisms in those two Italian terminals.

### 3. EU LNG imports have been more seasonal in 2019 notably depending on the price spread between Asian and European markets

The EU LNG imports used to be quite stable during 2018 oscillating around 3.7 Bcm/month. However, the import profile has been more seasonal in 2019 as illustrated in *Exhibit 3* below. Indeed, the increase of the LNG imports has not been evenly spread over the period; the monthly additional LNG volumes imported in the EU in 2019 vs 2018 ranged between a maximum of ~6 Bcm (in April) and a minimum of ~3.3 Bcm (in August).



*Exhibit 3: Evolution of the monthly LNG imports in the EU*

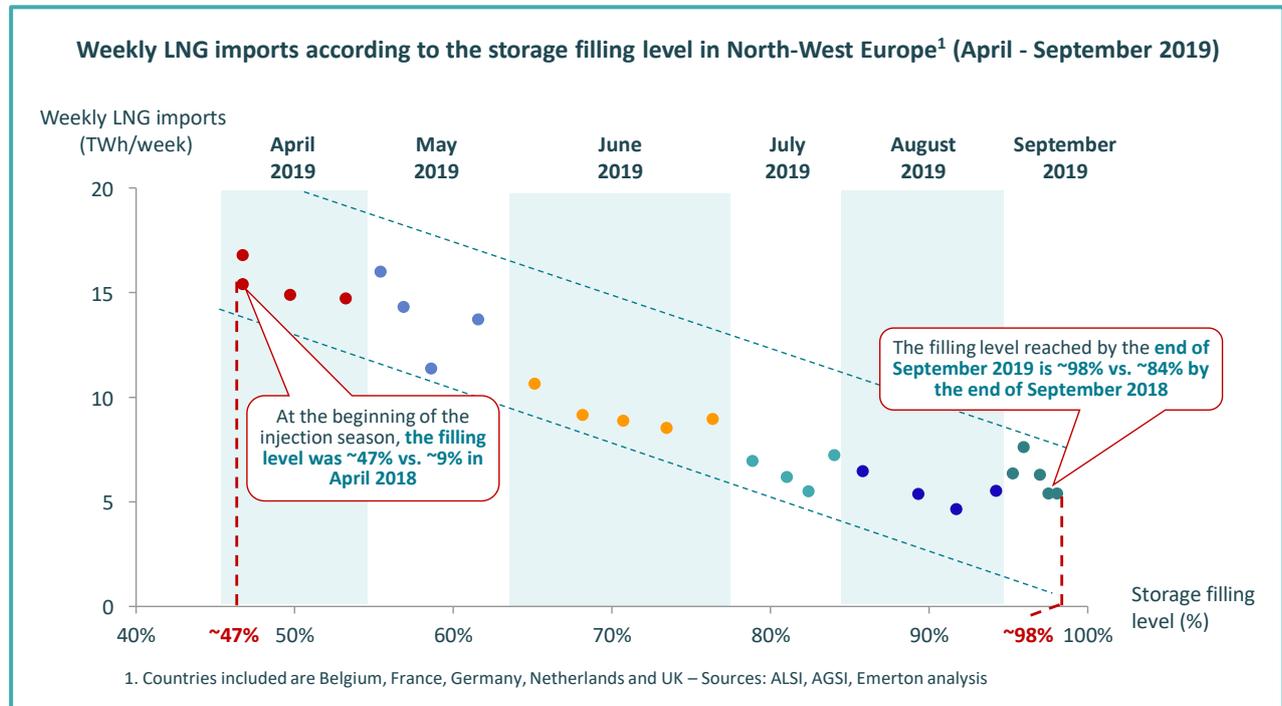
The magnitude of the increase mainly depends on the price spread between the Asian and the European spot markets. As a matter of fact, the record level of monthly LNG imports (~10 Bcm) was registered in April 2019 when the monthly JKM-TTF spread reached a \$0.3/MMBtu low point. In a consistent way, the increase of the EU LNG imports was relatively more limited in August 2019 (+3.3 Bcm vs. 2018) when the JKM-TTF spread increased up to ~\$1.6/MMBtu.

### 4. Gas storage facilities played a key role in enabling the NWE market to absorb LNG during the injection season

During the winter period, NWE markets withdrew less than usual gas volumes from their storage facilities as they relied more on LNG imports to fulfill their needs. Therefore, the average filling level of the storage sites at the beginning of the injection period remained relatively high at ~47%, while it fell to ~9% in the same period of 2018.

Starting from a higher level, the storage facilities were filled very quickly. Indeed, they were already almost full at ~98% by the end of September 2019 well ahead of the coming heating season (vs. a filling level of ~84% at the same period one year later).

The high storage level limited the ability of NWE markets to absorb more LNG volumes during the end of the injection season. *Exhibit 4* below shows that the weekly LNG imports absorbed by NWE are strongly correlated to the filling rate of the storage facilities in NWE.



*Exhibit 4: Evolution of the LNG imports according to the storage filling level in NWE*

This correlation underlines the key role played by NWE storage infrastructures as an enabler to import large LNG volumes and the flexibility offered by such facilities in maximizing import volumes while minimizing the import costs of the various LNG and gas supply sources.

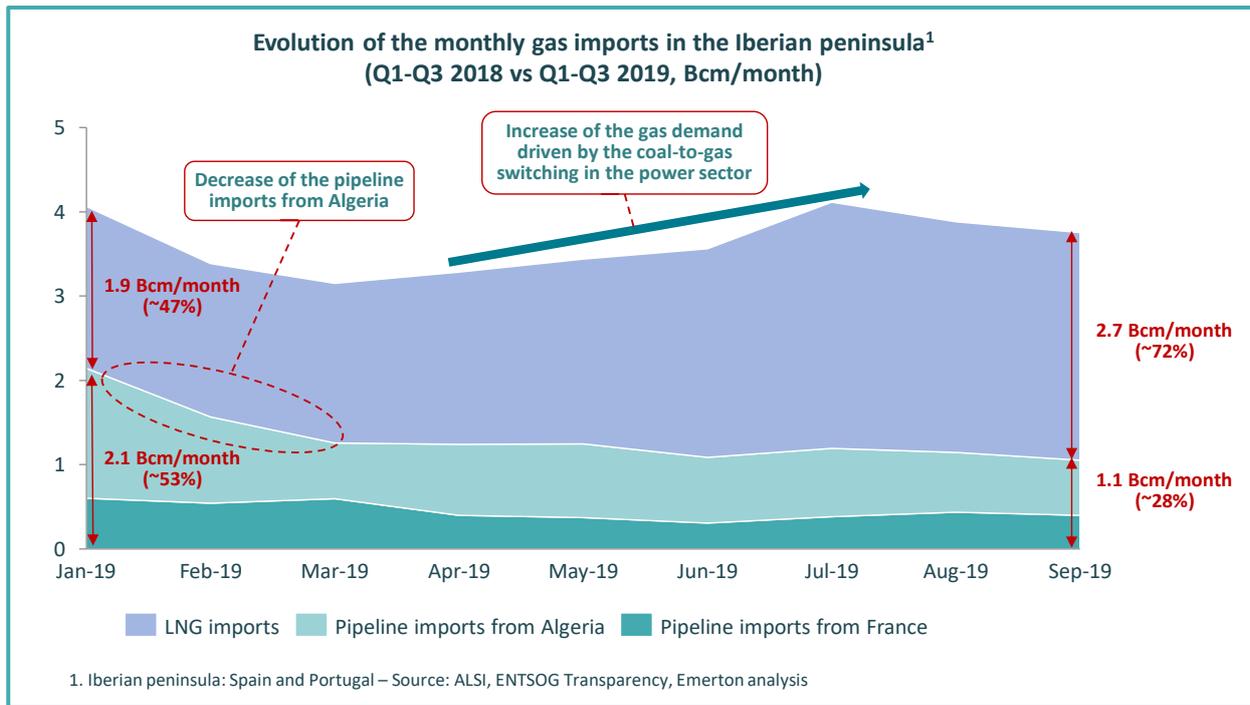
## 5. The saturation of the NWE gas market and storage facilities opened an opportunity for Southern Europe, enabling Spain to import higher LNG volumes during the summer

The saturation of the NWE gas market and the resulting collapse of its gas price<sup>5</sup> pushed the LNG to the Southern markets which usually show a price premium compared to the Northern markets.

The Italian gas market being unable to absorb further LNG volumes<sup>6</sup>, the LNG headed for Spain where regasification capacities are underused. The Iberian LNG imports increased significantly from ~1.9 Bcm/month in the beginning of the year to above 2.7 Bcm/month between July and September as illustrated in the *Exhibit 5* hereafter.

<sup>5</sup> In early July 2019, TTF price fell to \$3.2/MMBtu hitting a record low level since TTF began trading on the Dutch market in 2010.

<sup>6</sup> All the regasification terminals in Italy were running at almost full capacity.



*Exhibit 5: Evolution of the gas import mix in the Iberian Peninsula*

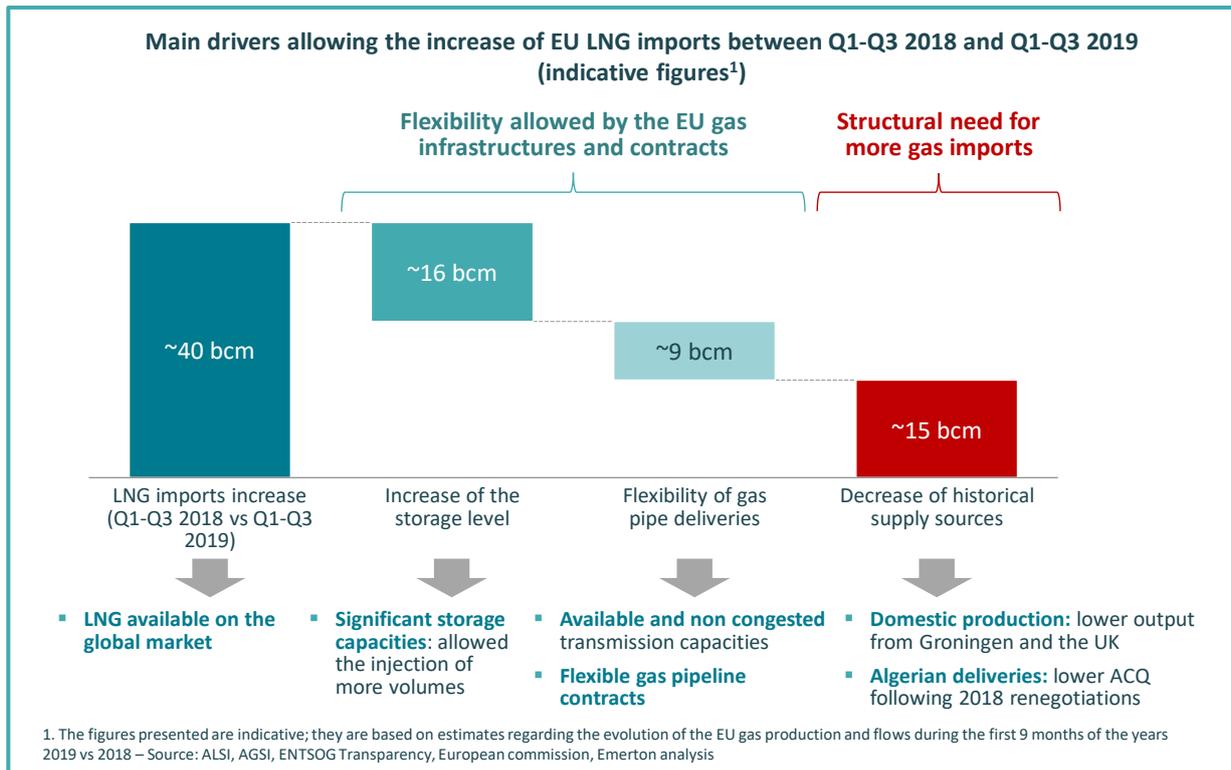
This was made possible thanks to two main drivers. On one hand, the Spanish pipeline imports deliveries decreased significantly from the beginning of the year leaving more room for LNG imports. Indeed, the Algerian gas pipe long-term contract seems to offer a certain level of flexibility. On the other hand, Spanish gas demand witnessed a significant increase during recent months<sup>7</sup>, driven by the power sector and the coal-to-gas switch driven by competitive LNG prices.

## 6. The flexibility offered by the European gas infrastructure has been the key driver enabling the increase of EU LNG imports

**The European gas market leans on a robust and well-developed gas infrastructure which played a key role in enabling the EU to benefit from the global LNG glut.** European gas infrastructure allowed the adjustment of the gas supply mix driving down the level of gas prices for the benefit of the European end-users and energy-intensive industrial sites.

Indeed, the large underground gas storage facilities (~100 Bcm of working volume in the EU) allowed maintaining the LNG imports at a high level during the period of lower demand by storing the gas for the coming heating period. As a matter of fact, the EU storage facilities contained ~16 Bcm more gas volumes by the end of September 2019 compared to the same date in 2018. Storage has been the leading driver absorbing the major part of the LNG imports increase as illustrated in the *Exhibit 6* below.

<sup>7</sup> The operator of the Spanish transmission system Enagas reported that the Spanish gas demand grew by 45% in July 2019 compared to 2018.



*Exhibit 6: Main drivers of LNG imports increase in EU*

The LNG imports increase has also been made possible thanks to the non-congested transmission system which enabled the smooth switch in gas and LNG flows without altering the physical balance of the gas system.

In addition, the pipeline gas contracts are evolving toward a higher level of flexibility. The main European gas importers stressed the need for higher flexibility during their most recent long-term gas pipe contract renegotiations. **This additional contractual flexibility concretely opened the opportunity to increase LNG imports at the expense of gas pipe imports.**

On top of the flexibility enabled by gas infrastructure, a part of the rise in LNG imports results from the shrinking supply of some traditional European gas supply sources as the domestic production of the main European gas producers (the Netherlands and UK) is ramping down. Furthermore, some contracted volumes related to the long-term gas deals between Algeria and the Southern European markets were lowered as a result of recent negotiations.

**These structural drivers of the increase in LNG imports are expected to play a growing role in the coming future.** For instance, the closure of Groningen field by mid-2022 will exacerbate the need for additional gas imports in Europe. Moreover, the expected further decrease of the Norwegian production beyond 2025 is likely to open a larger gap for imports.

**LNG imports in Europe are expected to become increasingly needed rather than being driven by optimizations. This further increase in imports will have to happen whatever the balance of the global LNG market. In such a context, gas infrastructure will play an increasing role in facilitating the management of these structural evolutions and lowering their potential impacts on European gas prices.**

## ABOUT EMERTON:

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## CONTACT:

**Sébastien ZIMMER**, Partner

Sébastien leverages a 20-year experience in the energy sector. He built a distinctive expertise in regulated activities, gas and LNG infrastructure, wholesale and retail markets. Sébastien led numerous strategic projects in the gas and power sectors for leading energy players and infrastructure operators. Thanks to his distinctive and direct experience of the gas and LNG value chain, he regularly intervenes as an expert in high-stake litigation and REMIT-related cases.

✉ [sebastien.zimmer@emerton.fr](mailto:sebastien.zimmer@emerton.fr)

**Haithem CHOUKATLI**, Consultant

Haithem is Consultant at the Paris office, he has an in-depth expertise in the LNG global market. Prior to joining Emerton, Haithem worked for 5 years as an analyst in economic valuation of LNG supply contracts for a leading Oil & Gas company.

✉ [haithem.choukatli@emerton.fr](mailto:haithem.choukatli@emerton.fr)



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