

# TRF & PEG news

AUTUMN ISSUE: SUMMER REVIEW AND PROSPECTS FOR THE WINTER



This summer was marked by record flows of LNG, generating a very low PEG price and releasing tensions from the North to the South of France. It was thus possible to fill the storages in a very fluid manner.

Despite the influx of LNG, the limits of the network were reached frequently; they were managed effectively thanks to the locational spread.

## Prices and liquidity

0.03  
€/MWh

**average end-of-day spread** between the PEG and the Dutch TTF market (from November 2018 to October 2019). This spread is still very low, to the benefit of all French consumers. The price of the PEG fell below €8/MWh in September 2019.

PEGN-TTF:  
€0.02/MWh\*  
TRS-TTF:  
€1.78/MWh\*

\*: November 2016 to October 2018

2,543  
GWh

**traded on the PEG every day**, comparable to the volumes previously traded on the PEG North and the TRS combined.

PEGN:  
2,102 GWh\*  
TRS:  
550 GWh\*

\*: November 2016 to October 2018

129

**active actors at the PEG in October 2019**, a constant increase.

105\*

\*: average number of active actors in 2017 and 2018 before the merger



Price and liquidity focus p.2-3

## Network flows and limits

### Summer review

France was at the crossroads of Europe this summer, with record flows of LNG and transit to Spain and Italy. Furthermore, the limits have been frequently reached due to punctual very high levels of injection into the most flexible storages. The locational spread was effective in managing these congestions.

59

**days in red alert\***, i.e. 16% of the time over the year and 28% during summer

44

**locational spreads\*\***

€7.21

**Million as the total cost of locational spreads**

2

**mutualised restrictions\*\*\***



Flows and summer limits focus p3-4-5

Data from 1<sup>st</sup> nov18 to 31oct19  
Source:

Smart GRTgaz INFO VIGILANCE

\*: the number of days where at least one limit has been reached. \*\*: main mechanism to manage the limits, via a call to market. \*\*\*: last resort mechanism

### Winter prospects

As storages are full both in France and in Europe, no security of supply risk is identified at this stage.



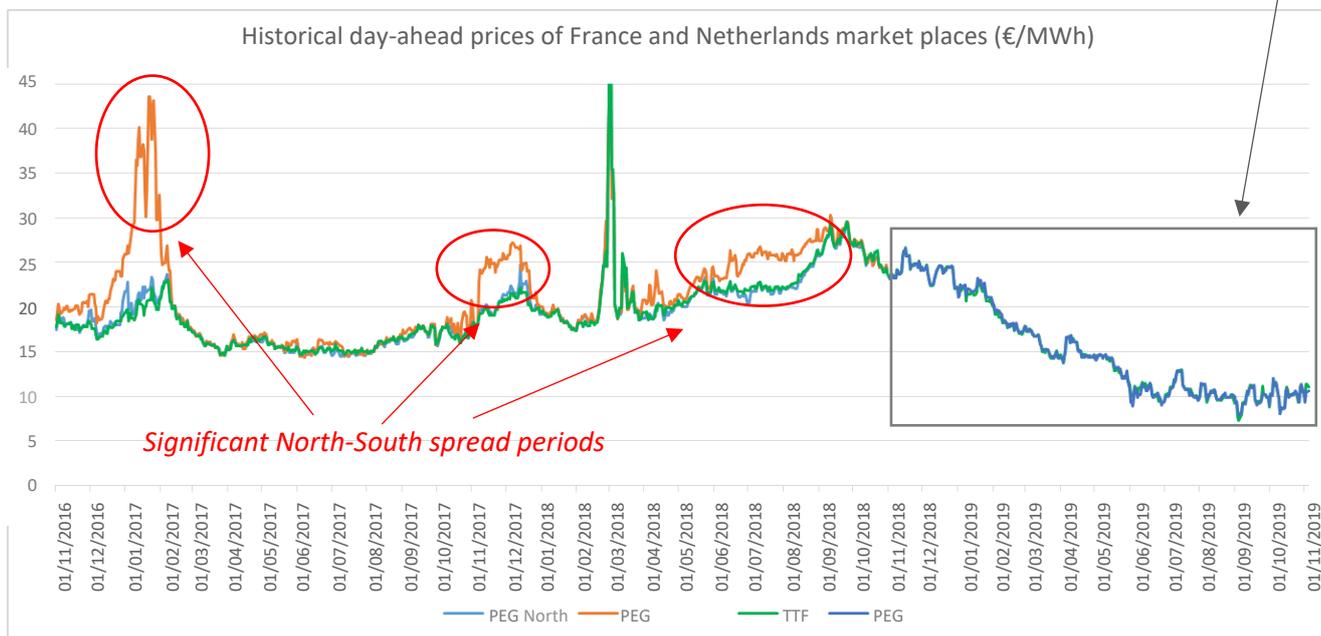
Winter prospects focus p.6-7

## PEG PRICE AND LIQUIDITY FOCUS

### The price of the PEG is still close to TTF, at its lowest level since 2009

The price of the PEG is still very close to that of the TTF, with the average spread being €0.03/MWh on average for the first year of the TRF.

Thus, the price differences between the North and the South of France have disappeared in favour of a price close to that of the ex-PEG North and the North of Europe market places.



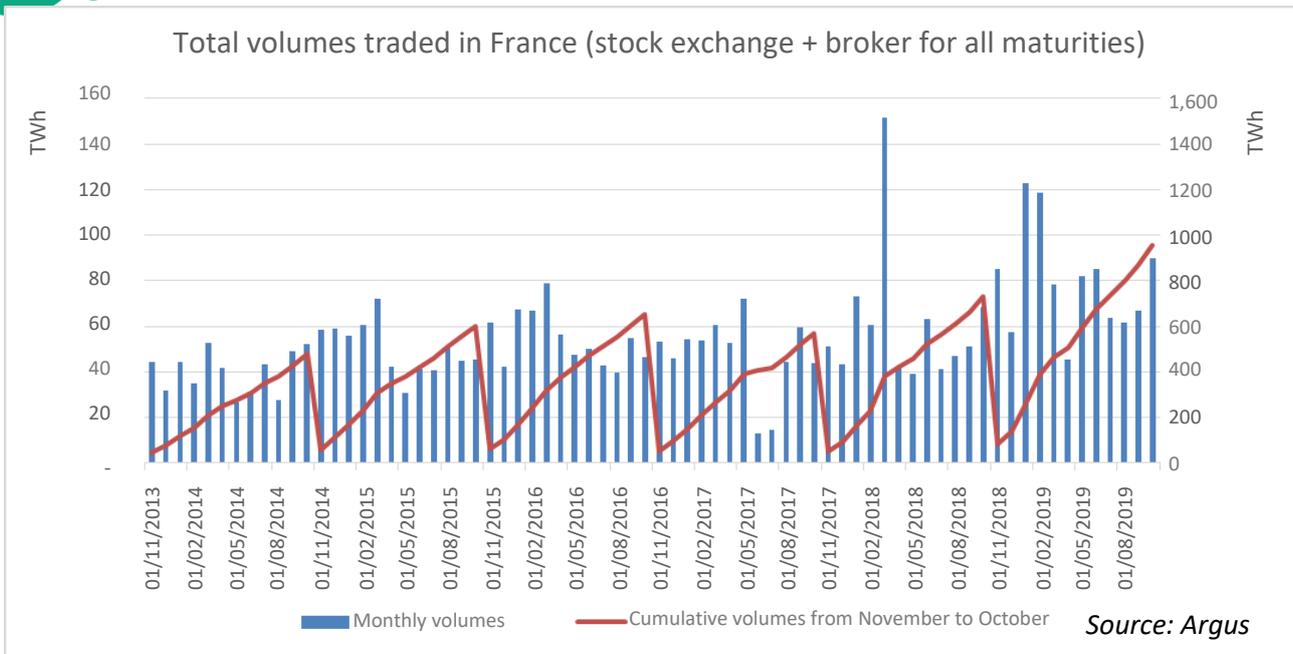
Furthermore, the price of the PEG fell sharply during the year, from an average of **€24.5/MWh** in November 2018 to **€10.1/MWh** in October 2019, falling below €8/MWh in September 2019. This is due to a combination of factors, including the mildness of last winter (which led to a high level of gas in stock at the beginning of the summer) and the mass arrival of LNG since March. The storages were then filled in August, leading to a high gas supply compared with demand in September. The futures prices of 18 November 2019 indicate a PEG price of €15.1/MWh for December and €15.7/MWh for the following 6 months.

### Rising liquidity in the spot and futures markets

First of all, the number of actors on the PEG is growing: 20 new transmission contracts have been signed with GRTgaz since the creation of the TRF, bringing the total number of shippers to 159.

The liquidity of the PEG in total volumes traded per day for 1 year is far greater than the volumes traded on PEG North (+21%), and slightly less than the total volumes traded on PEG North and TRS (-4%) in the previous 2 years. This is explained by the fact that part of the previous trading was due to the North-South link.

In addition, volumes traded on the stock exchange and among brokers increased significantly in 2019 compared with previous years. According to Argus data, these volumes should reach close to 960 TWh at the end of 2019, compared with 732 TWh in 2018, pointing to an acceleration in the increase in liquidity.



The latest CRE figures on wholesale market monitoring confirm these positive results, highlighting an increase in volumes traded on the PEG for the 2<sup>nd</sup> quarter of 2019 compared to the 2<sup>nd</sup> quarter of 2018: +3% for spot products and +40% for futures. Furthermore, our partner Powernext (manager of the Pegas platform) observed a marked improvement in liquidity through the bid-ask spread<sup>1</sup> on spot products, increasing from **€0.13/MWh** in winter 2017-2018 to **€0.08/MWh** in winter 2018-2019. This trend seems to be confirmed for summer 2020.

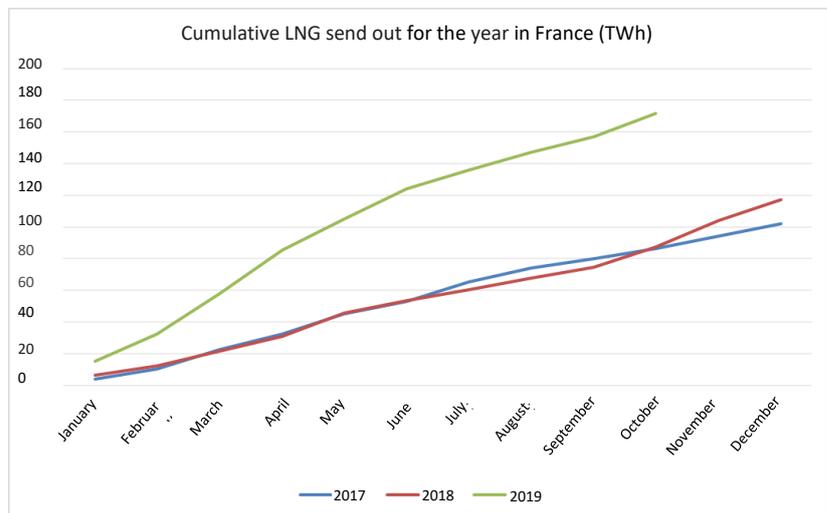
### FLOWS AND SUMMER LIMITS FOCUS

#### France at the crossroads of Europe thanks to the influx of LNG and record transits

The return of LNG last winter was confirmed this summer. March and April saw particularly high flows, on average 872 GWh/day, with some days at more than 1 TWh.

The flows then decreased slightly while remaining steady, at 530 GWh/d on average. This corresponds to a significant rate of use of terminals of around 50%.

More than 172 TWh have thus been sent out since early 2019 in France. This is an all-time record, bringing the share of LNG in France's supply to 33%, compared with 28% in 2011 (the previous best).



**Did you know?** On 4 November 2019, flows of French LNG terminals reached a historic record of 1.2 TWh, which was higher than terrestrial supplies (i.e., the equivalent of the energy produced by 50 nuclear plants!).

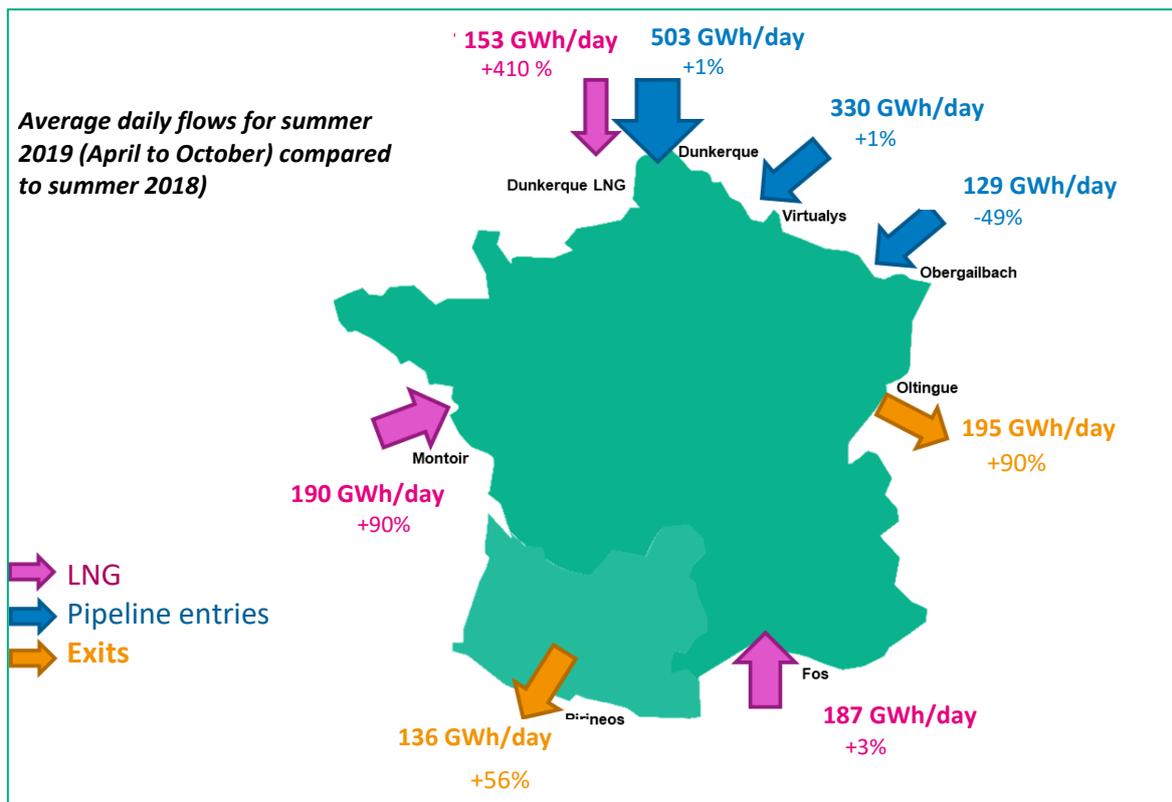
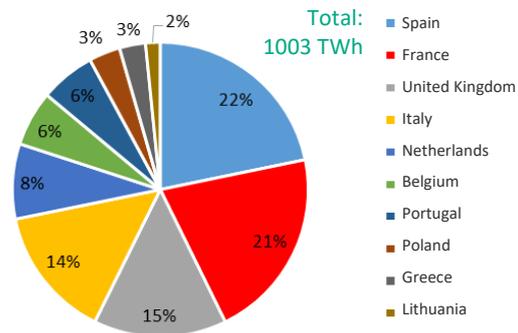
<sup>1</sup> Estimate made on the basis of the bid-ask spreads observed during the settlement window

LNG emissions have also increased in other European countries. They have doubled in one year, in Europe like in France.

France and Spain are the main destinations for LNG arriving in Europe, with more than 20% of flows sent out in each of these countries.

French LNG mainly comes from Russia (28%), followed by Nigeria and Algeria (18% for each).

Distribution of LNG send out in Europe (November 2018 to October 2019)



These high LNG flows were in part offset by very low flows at Obergailbach, down nearly 50% compared to last summer. The supply via Virtualys remained stable but at a fairly low level (50% of the firm technical capacity of the point). The Dunkirk point (import of Norwegian gas) remains stable, at a high level of use.

This large supply of LNG, generating significant spreads with Italy and Spain, allowed us to supply network exits in a remarkable way. First of all, the exit to Italy increased, in keeping with winter. This was still due to the reduced transmission on the Tenp pipeline in Germany. To meet the demands of the market, GRTgaz increased the Oltingue exit firm capacity to 253 GWh/day from 1 December 2018 (compared to 223 GWh/day previously). Seven additional GWh of firm energy have also been supplied to the market since 1 October 2019. In total, 2.8 TWh of additional firm capacity was purchased during the summer thanks to this new supply. Flows to Spain are also up more than 50% compared to last summer, even though they have fallen compared to the record average levels of last winter (187 GWh/day).

All in all, more than 110 TWh have been sent to Italy and Spain since early 2019, already exceeding the previous record in 2014 (81 TWh).

### Limits reached very frequently that have been managed effectively

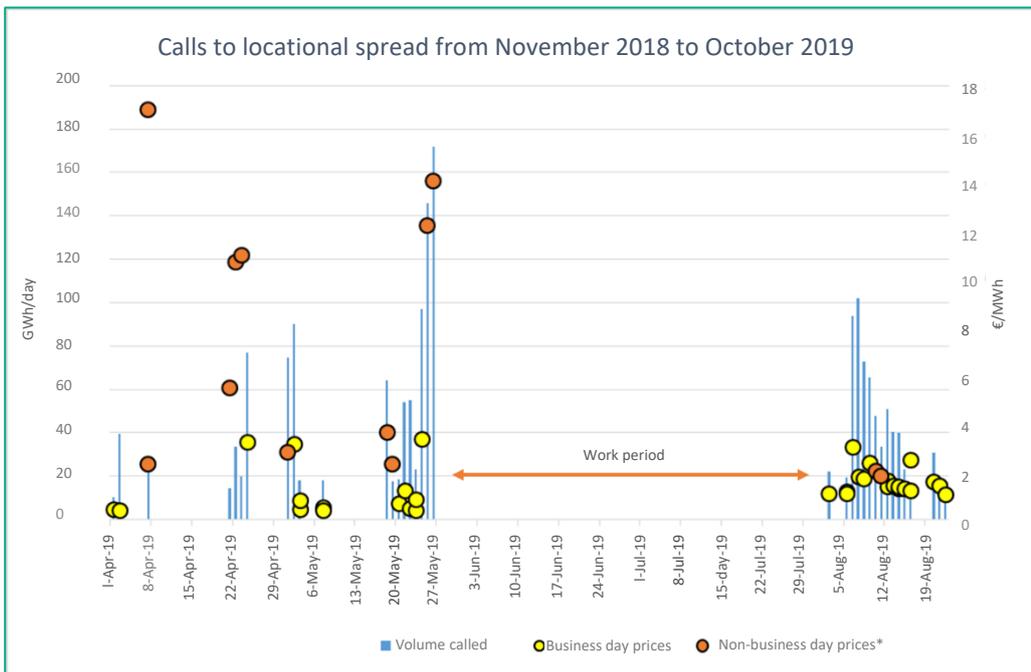
The limits have been reached with a high frequency: 16% over the year, mainly in summer. This can be explained by particularly high flows downstream of the limits, in particular by injection into the Lussagnet and Atlantique storages. While the emergence of limits in summer rather than winter is not a surprise, the level of occurrence reached (28% in summer), despite a high level of LNG flows, is more surprising. This is explained by:

- the high level of subscribed capacity in Lussagnet storage, downstream of all limits.
- the very high modulation of the quantities injected into this storage. Storages are now arbitrated by the market at the France scale. The entire daily variation in French consumption is thus currently modulated on the most flexible storages, such as Lussagnet. This could not previously take place in the TRS zone as the variations in consumption were less significant, and the TRS offered less liquidity and less forward visibility.



Map of limits reached this year

The mechanisms for managing limits worked well. In particular, the locational spread was mostly successful (42 times out of 44) and enabled the limits to be physically resolved. It has attracted many players: 37 signed the contract, 21 of which are active players.



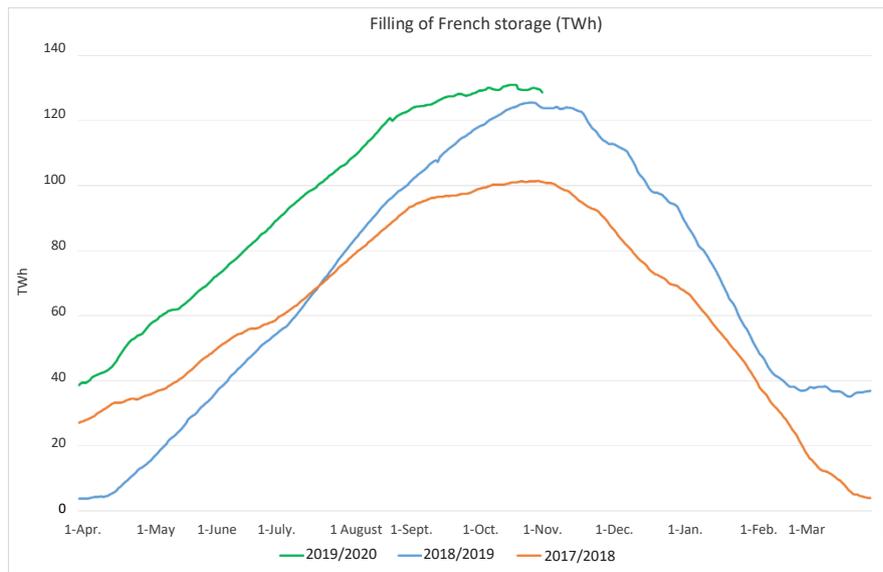
*The locational spread was only triggered during the summer: first in April-May; in June and July, the work restrictions prevented the limits from being reached; then with a very high frequency in August (16 days out of 21). Finally, since 22 August, with storages full, the limits have no longer been reached.*

The total cost of the locational spread for the past year was €7.2 million. Certainly, its price was high at the beginning of the period in specific situations (high volumes, weekends and public holidays). However, it returned to more reasonable levels in August. Solutions are still being studied with both the CRE and the market to reduce total costs. The main areas being studied are the decrease in injection capacities downstream of the limits (subject discussed in the CRE consultation of 24 October 2019) and the increase in competition and the number of players to respond to the locational spread.

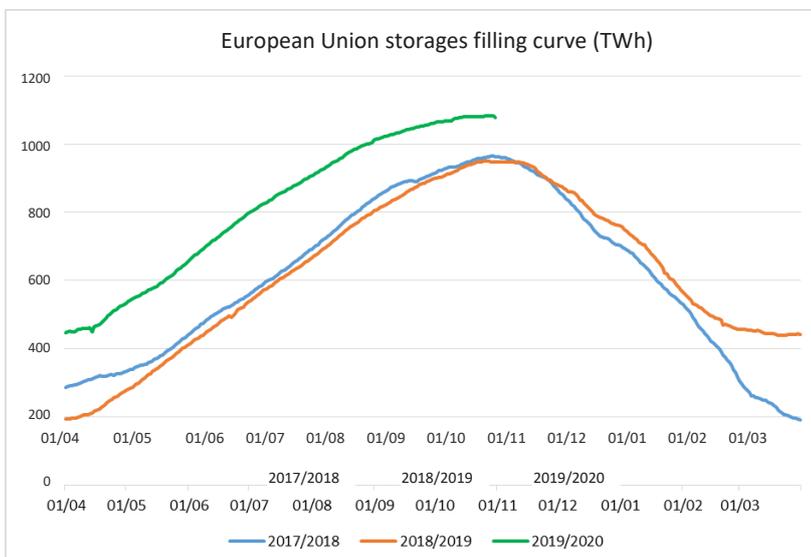
### Storages filled very early, from August

This early filling is due to several factors:

- storages were already 30% full on 1 April 2019;
- price signals were favourable: the time spread always encouraged injection the next day rather than during the rest of the summer (see graph below). Indeed, even though LNG flows were ultimately high and somewhat regular from April to October, there were some uncertainties during the summer regarding the volumes to be sent out by the end of the summer;
- the works programme was streamlined and optimised;
- the influx of LNG made it possible to relieve constraints on storage injection downstream of the limits (Atlantic and Lussagnet), thanks to superpoints.



### WINTER PROSPECTS FOCUS



#### The reserves are there!

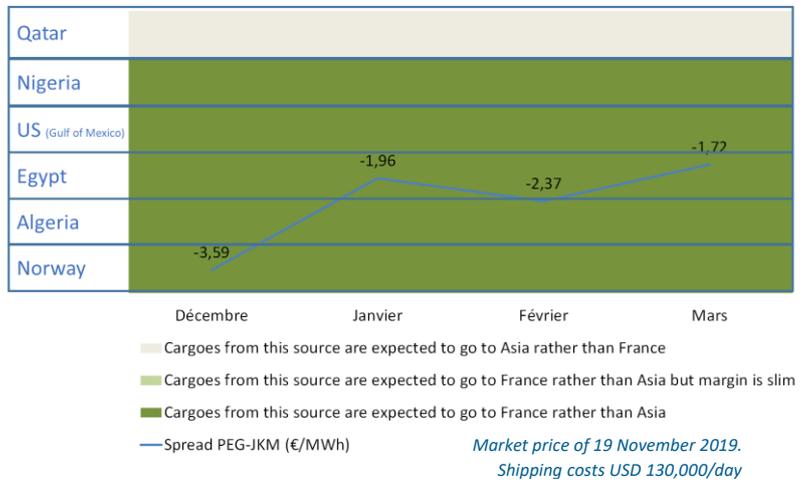
Prospects for the security of supply are reassuring: French storage is well filled (129 TWh at 31 October 2019, i.e. nearly 5 TWh more than in 2018).

Elsewhere in Europe the filling level is also much higher than in previous years: 1078 TWh, up 131 TWh compared to last year (i.e. +14%).

### What is the LNG outlook for this winter?

Currently, the futures spreads between PEG and JKM (Asia) are quite high, at around €2-4/MWh. However, the current very high shipping costs mean that LNG from rather distant sources (such as the US or Nigeria) is more competitive in France than in Asia. Economic conditions are currently favourable to arrivals of LNG in France over the next few months. Caution is needed, however, as this situation may reverse.

Analysis of the competitiveness of various LNG sources according to the PEG-JKM spreads on the futures market



To have a reliable vision one month before the arrivals of LNG, it is advisable to view the schedules for the arrival of LNG tankers, which is updated on 25<sup>th</sup> of each month:

Montoir and Fos Tonkin:

<https://www.elengy.com/fr/contrats-operations/gestion-operationnelle/donnees-d-utilisation/>

Fos Cavaou: <https://www.fosmax-lng.com/fr/nos-services/donnees-operationnelles/donnees-d-utilisation/>

### Prospects for electricity and transmission

Futures price data indicate a rise in gas prices in Europe in the coming months, with these remaining well below those of last winter.

€/MWh	Spot price 1->18 nov19	Dec. 2019	Next 6 months
TTF	13,7	15,2	15,8
PEG (France)	13,4	15,1	15,7
PSV (Italy)	15,6	17,1	18,1
Mibgaz (Spain)	12,4	15,1	16,3
Clean Spark Spread * France	11	9,4	8,6
Clean Spark Spread Italy	8,6	9,3	9,6
Clean Spark Spread Spain	10,1	10,2	8,7

The Clean Spark Spread is largely positive in November and for the next 6 months in France, Spain and Italy. This gives a favourable price signal for the operation of gas-fired power plants and for exits to Spain and Italy during the upcoming winter.

Clean Spark Spread = electricity price – gas price / gas plant yield – CO2 price \* emissions factor). CO2 price = approx. €25/t.

The PSV-PEG futures spread remains at high levels (€2-3/MWh) in the coming months, which is a positive sign for exits to Italy. On the other hand, the spread between France and Spain reversed in early November, generating a physical gas flow from Spain to France. This could be due to the surge in Spanish wind power generation, which triggered a sharp fall in gas-fired electricity production in Spain. The futures spread is currently low and not favourable to high transit towards Spain; it remains to be seen whether this trend is confirmed in the following weeks.

#### Did you know?

For the first time, gas was more cost-effective than oil and coal throughout the summer! With gas prices at the lowest and CO2 at €25/tonne, the Clean Spark Spread was mostly positive this summer (€4/MWh on average). The profitability of gas-fired power plants was thus on average €6,4/MWh higher than that of coal-fired power plants. (clean spark spread – clean dark spread on average from April to October 2019)

€6,4