

TRF & PEG News

SPRING ISSUE: WINTER REVIEW AND SUMMER OUTLOOK



The past winter stood out for its historically low gas prices, the result of mild weather combined with abundant LNG. The COVID-19 crisis at the end of the winter in Asia contributed to the massive influx of LNG in Europe and accentuated the decline in prices.

Consequently, withdrawal pace in France and Europe was very moderate, resulting in high storage filling levels for the beginning of the gas summer period.

Price and liquidity

€-0.11 /MWh

Average end-of-day spread between the PEG and the Dutch TTF market. This spread was negative 75% of the days this winter, often making the PEG the cheapest market in Europe. In addition, the PEG price fell to €7/MWh at the end of the winter.

€0.11/MWh* *: from November 2018 to March 2019

2,914 GWh

exchanged on the PEG each day, up by 8% compared to the previous winter.

2,697 GWh* *: from November 2018 to March 2019

128

active players on the PEG in March 2020.

122* *: in March 2019



Focus on price and liquidity p.2-3

Network flows and limits

Winter Review

North to South transits were moderate, due to storage in withdrawal conditions, while flows to Spain were small or even reversed. Thus, there were no instances of the network's limit being reached.



A closer look at winter flows and limits p3-4-5

- 0 day on red alert*
- 0 locational spread**
- €0 total cost of localised spreads
- 0 mutualised restriction***

Outlook for the Summer

Little tension is expected this summer when it comes to filling storage, due to the combined effect of the high level of stock at the beginning of the summer and likely LNG arrivals. It should be noted that some works have had to be postponed due to COVID-19, with no significant impact on the injection programme.



Focus on summer outlook p.5-6

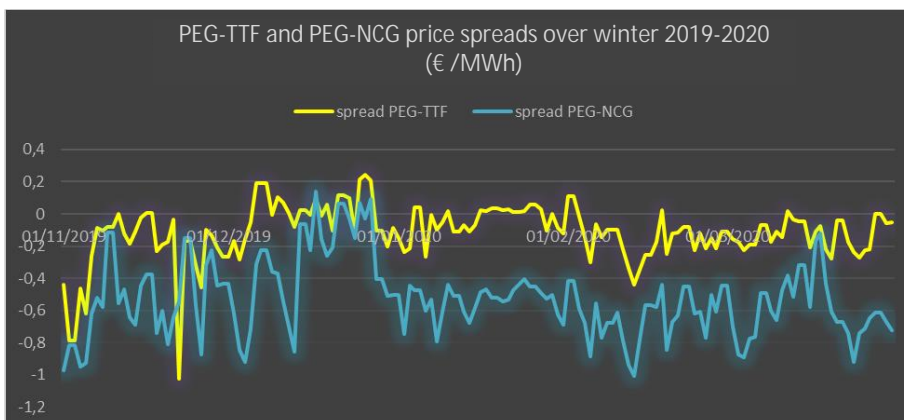
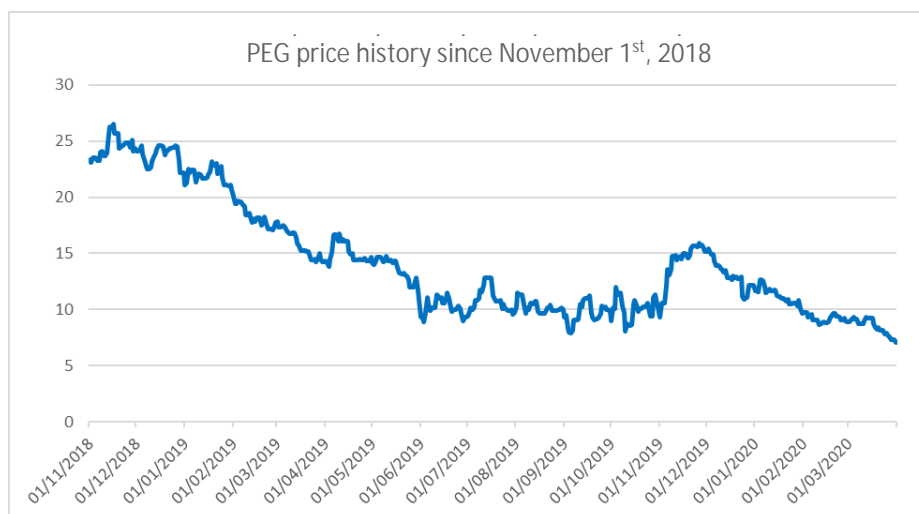
Sources: Smart GRTgaz INFO VIGILANCE

*: number of days on which at least one limit was reached. **: main mechanism for managing limits, via a call to the market. ***: mechanism of last resort

FOCUS ON PEG PRICES AND LIQUIDITY

PEG price at its lowest this past winter

After an increase of €5/MWh in November 2019, due to the increase in gas consumption, the PEG price gradually reached the historically low prices of this summer. This is probably due to the abundance of LNG, reinforced from January on by the COVID-19 crisis, and the mild winter. Consumption was down by 4% compared to the previous winter for an average temperature increase of 0,5°C.



In addition, the PEG-TTF spread reversed compared to last winter (from €0.11 to - €0.11/MWh), and the PEG price was lower than that of the Dutch marketplace TTF on 75% of the days. Moreover, the PEG price continues to be lower than that of the German NCG market (an average of €0.5/MWh over the period).

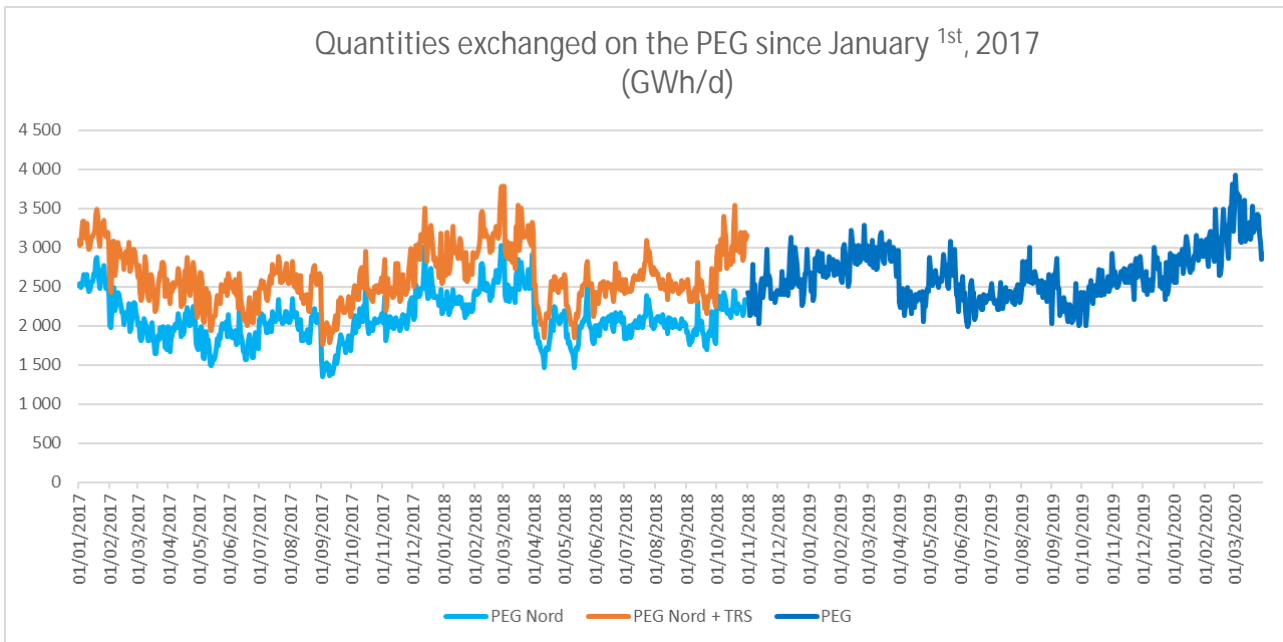
Like last winter, the combined gas cycle power plants performed well this winter (they consumed 23TWh, which represents 12% of the French gas consumption), and posted higher average profitability than coal power plants: the average Clean Spark Spread between October 2019 and March 2020 was €3.42/MWh (positive more than 2 days out of 3), as compared to -0.01 on average for the Clean Dark Spread (positive only one out of every 2 days). However, their profitability fell at the end of March, due to the COVID-19 crisis resulting in a fall in electricity and CO2 prices.

COVID-19: our analysis

The COVID 19 epidemic is having a significant impact on the French economy and energy consumption. GRTgaz has observed a significant fall in gas consumption (adjusted for the temperature effect) on its grid since March 12th. This decrease was gradual from March 12th to 22nd/23rd, before reaching a low threshold around -25%, broken down as follows:

- -15/-20% on public distribution
- -80/-90% for power plants (gas turbines and CCGT)
- -20/-25% for manufacturers connected to the GRTgaz network (the sectors most affected are automotive, metallurgy and non-metallic materials for which consumption has fallen by more than 50%).

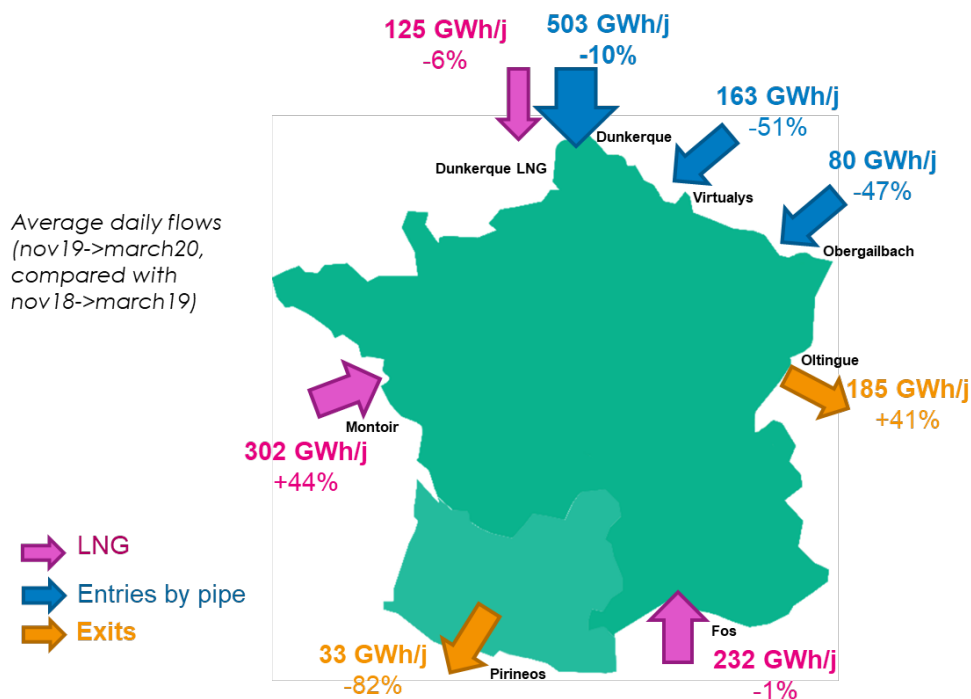
Constantly growing liquidity



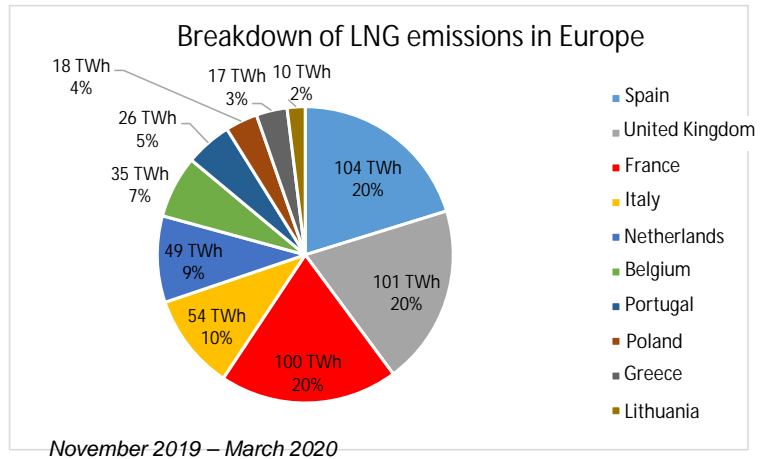
The PEG liquidity in total volumes exchanged per day increased substantially over the past year: it is 8% higher than that of last winter, and is now equivalent to that of PEG Nord + TRS (2,914 GWh/d exchanged this winter, compared with 2,933 GWh/d exchanged in winter 2017-2018). The number of players on the PEG has increased from 122 to 128 in 1 year and has been stable since this winter, after a sharp increase in the first year of the TRF. The total number of shippers amount to 156, the same as one year ago.

A CLOSER LOOK AT WINTER FLOWS AND LIMITS

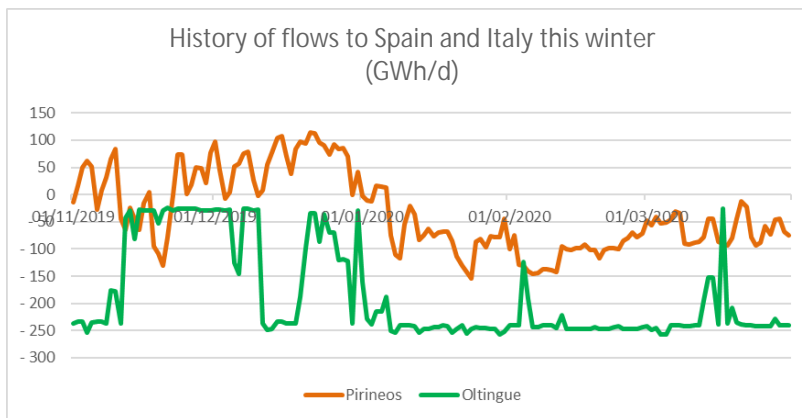
An abundance of LNG and significant transits to Italy



LNG flows continue to be very high, averaging 659 GWh/d, up by 14% compared to the previous winter. This implies a significant terminal usage rate of nearly 60%. LNG send-out in France amounted to 100 TWh, placing the country in the Top 3 in Europe, just behind Spain and the United Kingdom. This LNG comes mainly from Nigeria, Russia and the United States.



These high LNG flows were offset by lower flows compared to last year at the northern entries by pipeline. These flows were halved for Virtualys and Obergailbach compared to last winter, amounting respectively to only 25% and 13% of the points' technical capacity. The Dunkirk point (Norwegian gas import) remains at a high level but was down by 10% compared to last winter. Annual subscriptions have decreased, leaving room for new subscriptions on this widely used point.



Regarding transit: outflows at Oltingue and Pirineos were reduced at the beginning of winter, and physical flows from Spain to France were even observed 46 days in November and December (i.e. 30% of the days over the winter). Since January, flows to Spain have been moderate. In total over the winter, flows averaged only 33 GWh/d, down by 82% compared with last winter, when the same flows reached record levels. This is probably due to the increase in LNG

inflows in Spain and the increase in Spanish hydro and wind generation, reducing electricity generation from gas.

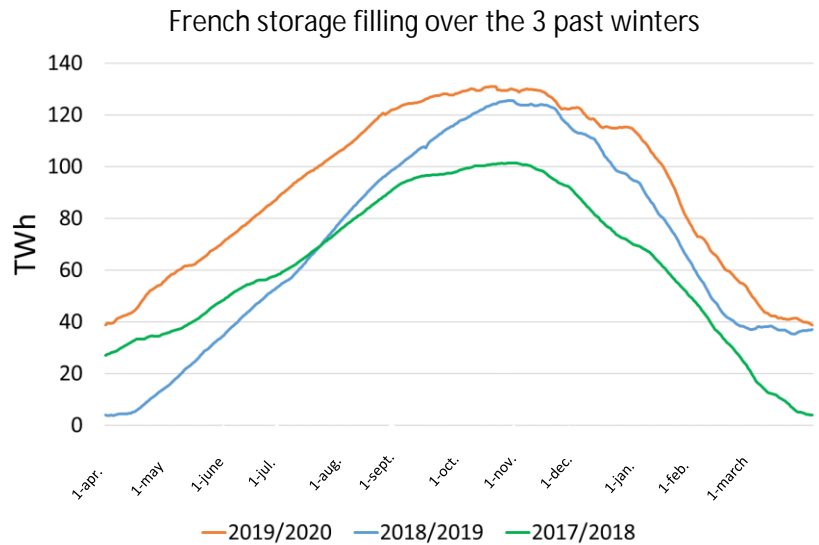
In contrast, flows to Italy have again been very high since January, averaging 234 GWh/d between January 1st and March 31st, representing 93% of the point's firm technical capacity.

No limit reached this winter

The winter withdrawal status, together with reduced flows to Spain, combined with high entries at Fos and Montoir and low flows at the northern entry points, have eased the North-to-South transits in France. As a result, the North to South and East to West limits were not approached this winter. The network has sometimes even found itself in "South to North" configurations, but never reaching the related limits.

Storage 30% full on the 1st of April

The abundance of LNG, the mild winter and therefore low prices did not encourage withdrawals from storage: day-ahead prices were often lower than “futures” prices for the summer, which encouraged buying on the PEG and keeping the gas in stock, rather than draws on storage. As a result, the filling level of French storage on April 1st was relatively high: 39 TWh, close to last year’s level (37 TWh). However, their filling rate (30%) is lower than the historically high European average, at 54% (601 TWh on April 1st,2020). It should be noted that German storage facilities are particularly full (at 71%, i.e. 162 TWh).



A CLOSER LOOK AT SUMMER OUTLOOK

Improvements in place to reduce locational spread costs

At the beginning of the summer, price signals on the gas market seem to support a significant injection into storage: on April 1st 2020, the April versus Q3 2020 time spread is - €0.5/MWh. However, as it was observed last summer, strong injections into storage facilities push the network to its limits, and thus foster the use of the locational spread, the main mechanism for congestion management.

Substantial improvements have been made to the offer following last year's experience, with the aim of reducing the cost of calling on the locational spread:

- A decrease by 100 GWh/d in the firm injection offer at downstream storage facilities. This is expected to enable a decrease in the frequency and volumes ahead in locational spreads;
- Several improvements have been made in the locational spread offering, allowing for increased competition. In particular, shippers can now receive locational spread alerts directly on their smartphone via Twitter.

The limits have been approached without being reached since the 1st of April 2020

On the 10th of April 2020, no locational spread has been launched yet. Indeed, on the first days some storages were still withdrawing gas because of cold temperatures; then they switched to injection. Due to the warm weather, some strong punctual injection were observed in Lussagnet storage; some limits were approached but not reached because the flows towards Spain were moderate.

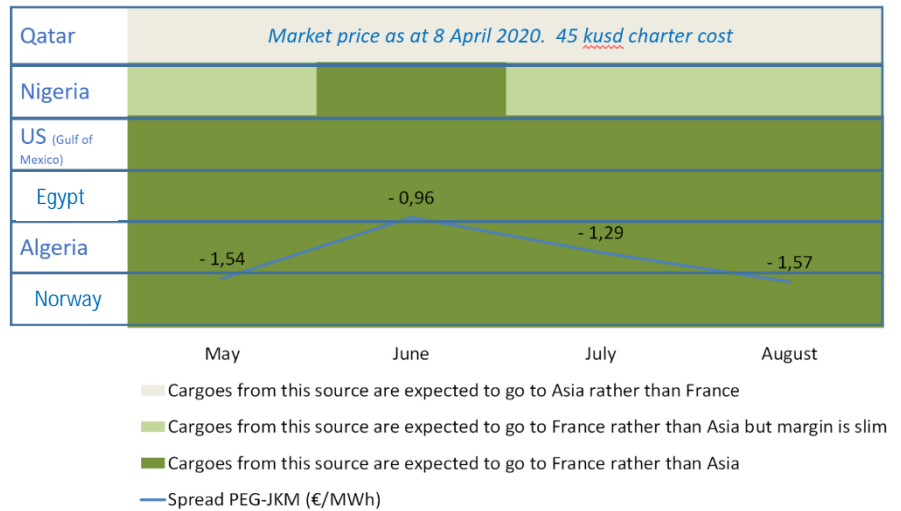


Map of North->South and East->West limits

LNG: the outlook continues to be favourable

Global LNG supply is currently abundant, all the more so in the midst of the COVID-19 crisis, which caused a drop in gas demand in Asia, then also in Europe. The Asian price (JKM) has therefore fallen, and the futures spread between the PEG and the JKM is currently low, such that LNG from nearby sources is more competitive in France than in Asia. Economic conditions are therefore currently favourable to LNG arrivals in France in the coming months. Caution is advised however, given the volatility in the global LNG market. For a reliable outlook one month before LNG arrivals, it is recommended to consult the LNG arrival programmes, updated on the 25th of each month

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



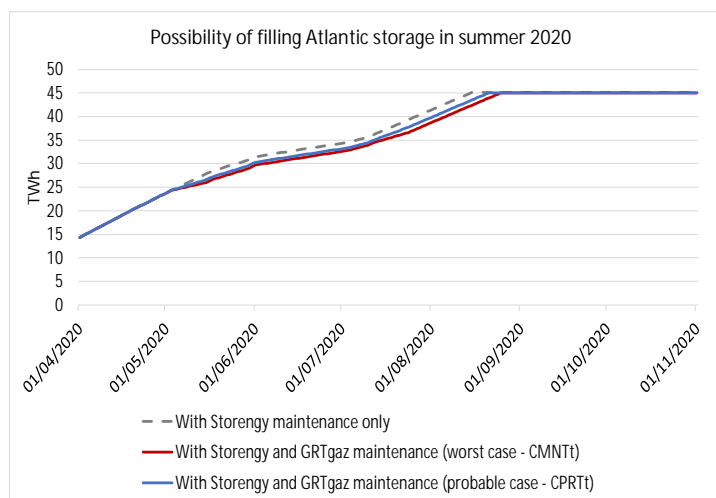
Furthermore, the spreads between the French, Italian and Spanish “futures” prices indicate that outflows should be continuous this winter, high to Italy and moderate to Spain:

Forward price as of 31/03/2020 (€/MWh)	TTF	PEG	PSV	Mibgas
April 2020	6.85	6.83	8.95	6.65
Average next 6 months	7.32	7.20	9.13	7.55

No tensions identified to fill the storage tanks

The confinement measures have caused certain works to be postponed (on the L zone in March), whereas those already initiated took place as planned; thus, the Voisines station was put into complete availability as soon as the 30th of March. Furthermore, two weeks of works initially planned in May (impacting EO2D and S1D superpoints as well as Fos terminal) had to be postponed to next year. GRTgaz will keep its customers informed as soon as possible about the works that are postponed.

Based on our initial analyses, the injection programme will remain feasible even if works are postponed this summer. The level of storage filling is high and the outlook for LNG is positive, alleviating tensions from North to South in France. Atlantic storage, which is the most restricted by the works, can thus be filled from August 22nd (70 days of flexibility) as shown by the curve opposite.



Customer info: this year, for works impacting the downstream EO2 superpoint, the quantities of LNG arriving at Fos and Montoir are directly included in your firm capacity available for the next day, offering you increased visibility compared to last year. We also encourage you to use our “transfer” service to enjoy maximum flexibility between GRTgaz and Teréga.