



# Gas and power market analysis

July 2019



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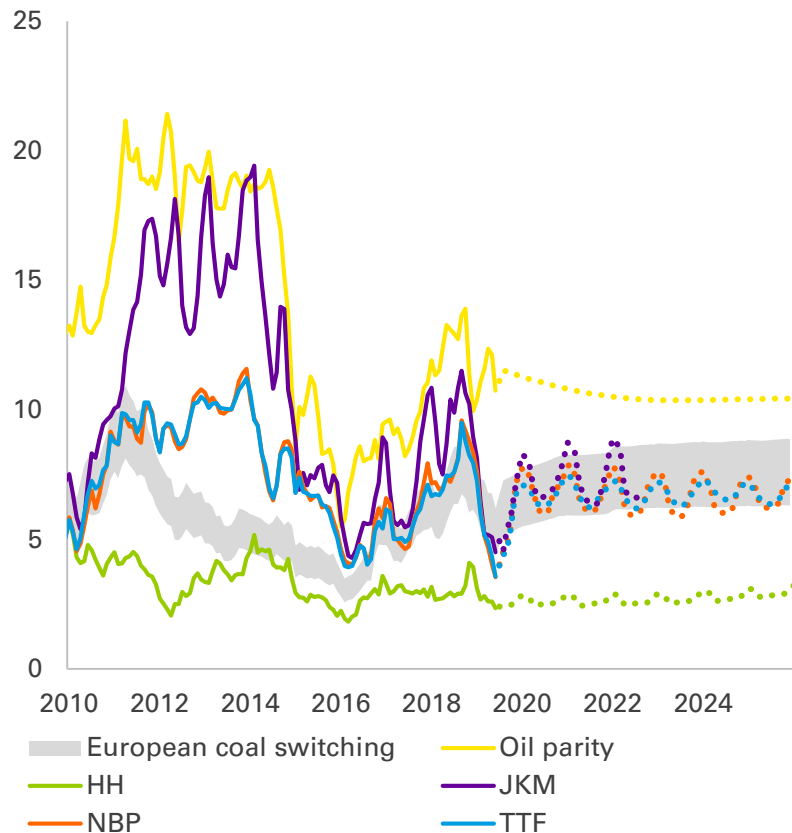


# Gas prices have fallen sharply over the past three quarters

A mild winter and strong supply saw NBP, TTF and JKM all fall by over 60% from September 2018 to July 2019. JKM traded close to flat, if not negative, versus European gas across some of this period, with a global oversupply of LNG and slower demand growth in Asia pushing LNG cargoes into Europe.

## Global gas benchmarks

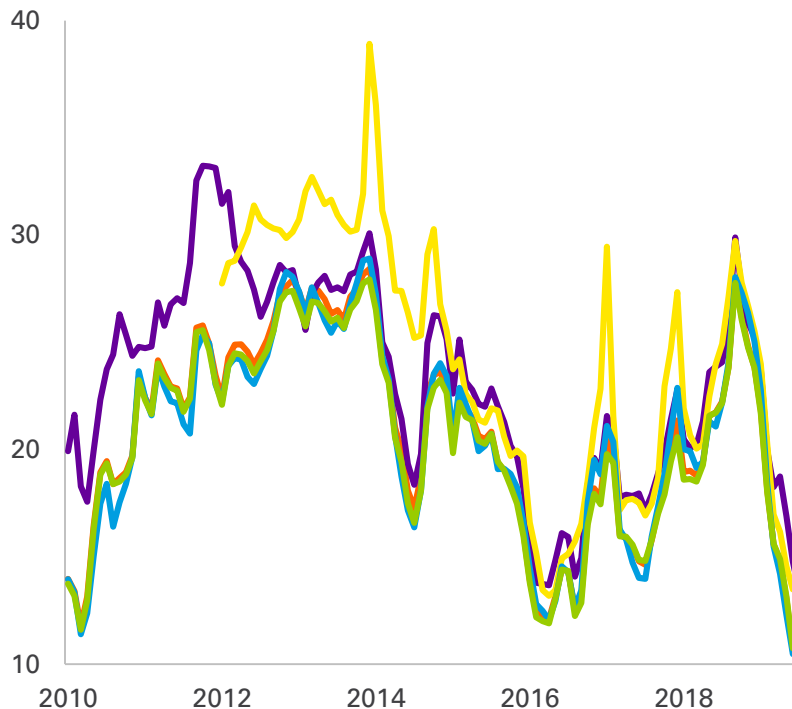
\$/mmbtu



Futures as of 15/07/19

## European gas benchmarks

€/MWh



PEG = French gas  
PSV = Italian gas  
PVB = Spanish gas  
NBP = British gas  
TTF = Dutch gas

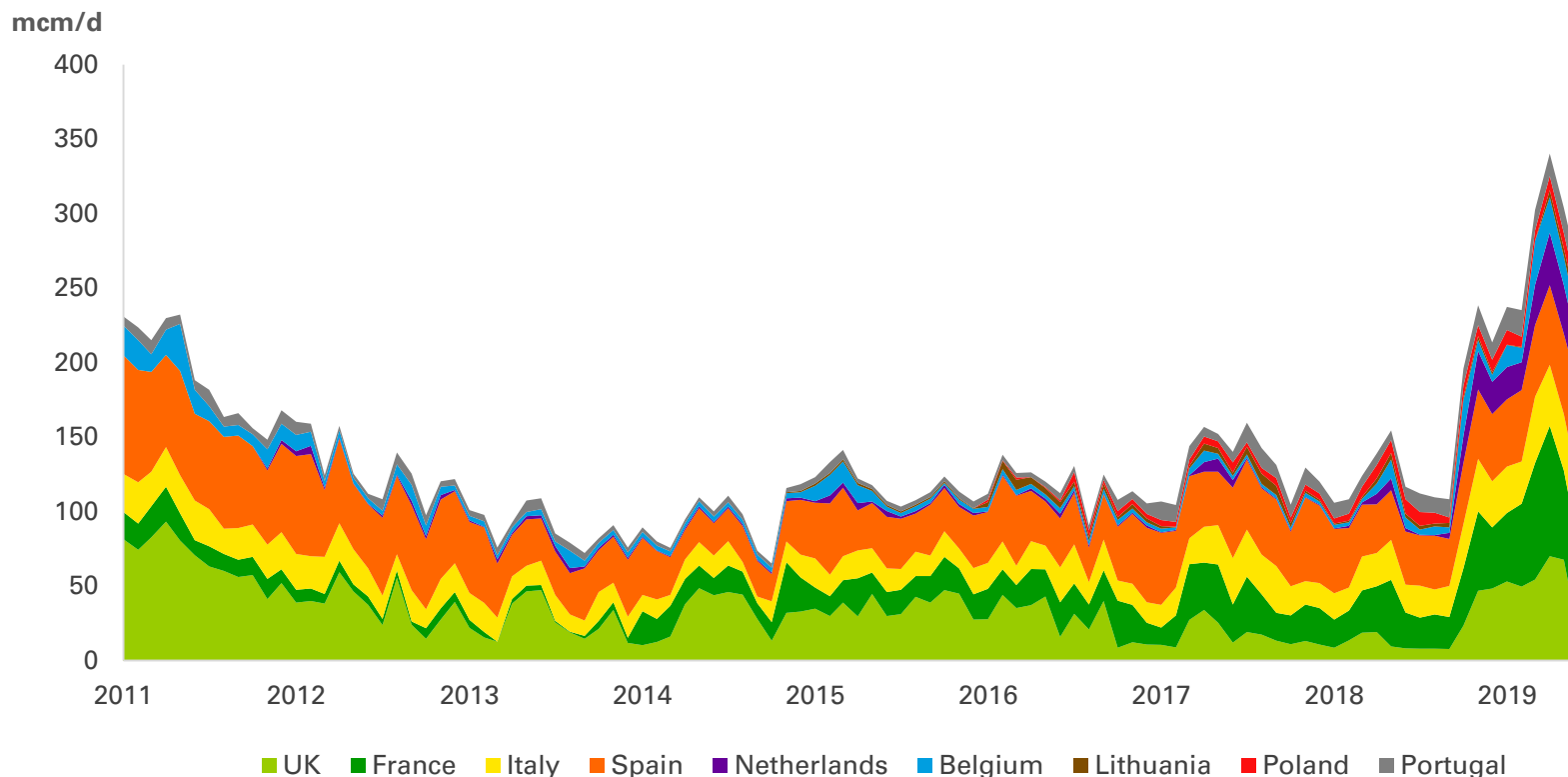
Source: NYMEX, ICE, Heren, S&P Global Platts®



# LNG send-outs reached record highs in April 2019 and remain strong

Over the last nine months, European send-outs have more than doubled year-on-year, as strong global LNG supply and slower LNG demand growth in Asia resulted in a wave of LNG cargoes heading into Europe. After reaching a record ~340 mcm/d in April 2019, send-outs have retracted although still remain historically high.

## Monthly LNG send-outs in Europe



*N.B. data does not incorporate all regasification facilities in Europe, but rather can be used as a proxy for LNG send-outs*  
Source: Official TSO Statistics

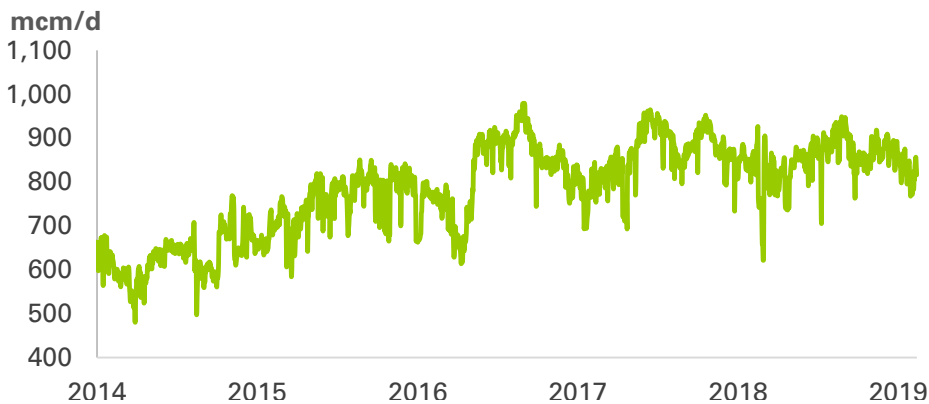


# European gas markets have also been well supplied by pipeline imports

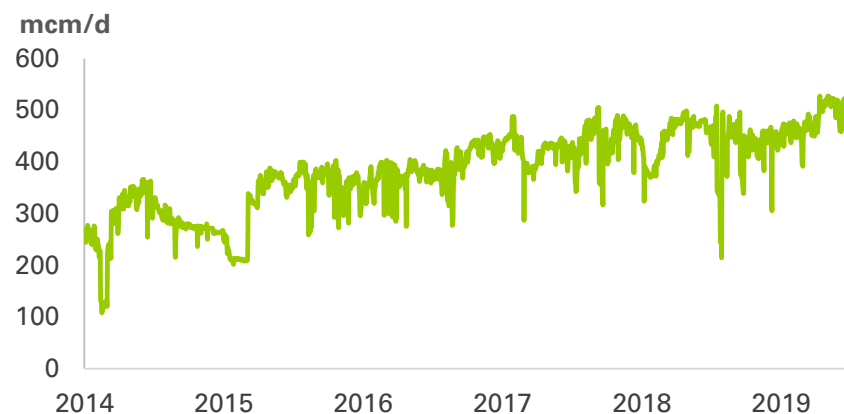
Pipeline flows into Europe held strong through early 2019 despite high LNG supply, compounding weak prices. Algerian imports were the first to show signs of flexibility, falling from over 100 mcm/d in January 2019 to 40 mcm/d in March 2019, where they have since remained relatively steady. Russian and Norwegian imports remained high throughout January to May 2019 however more recently have also eased down.

## Europe pipeline imports

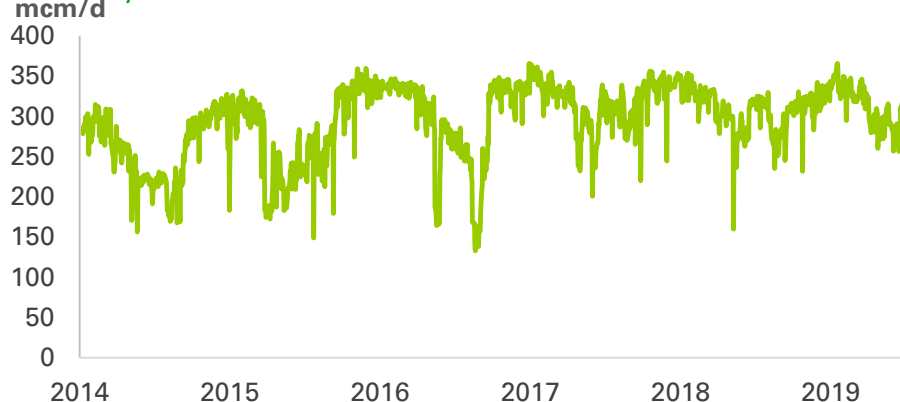
### Total



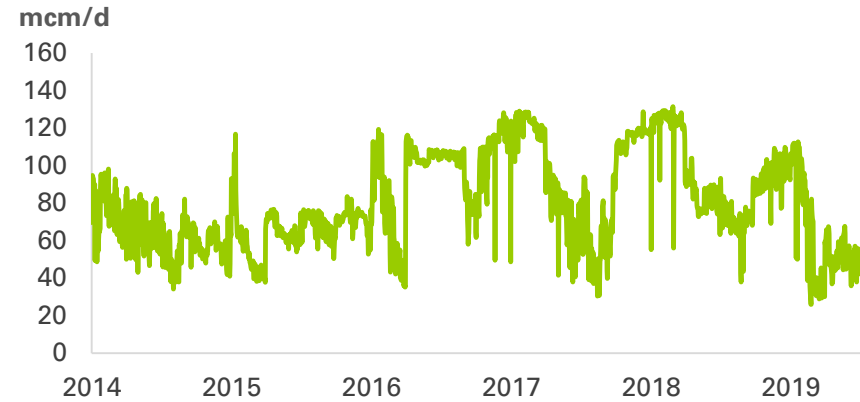
### Russia



### Norway



### Algeria

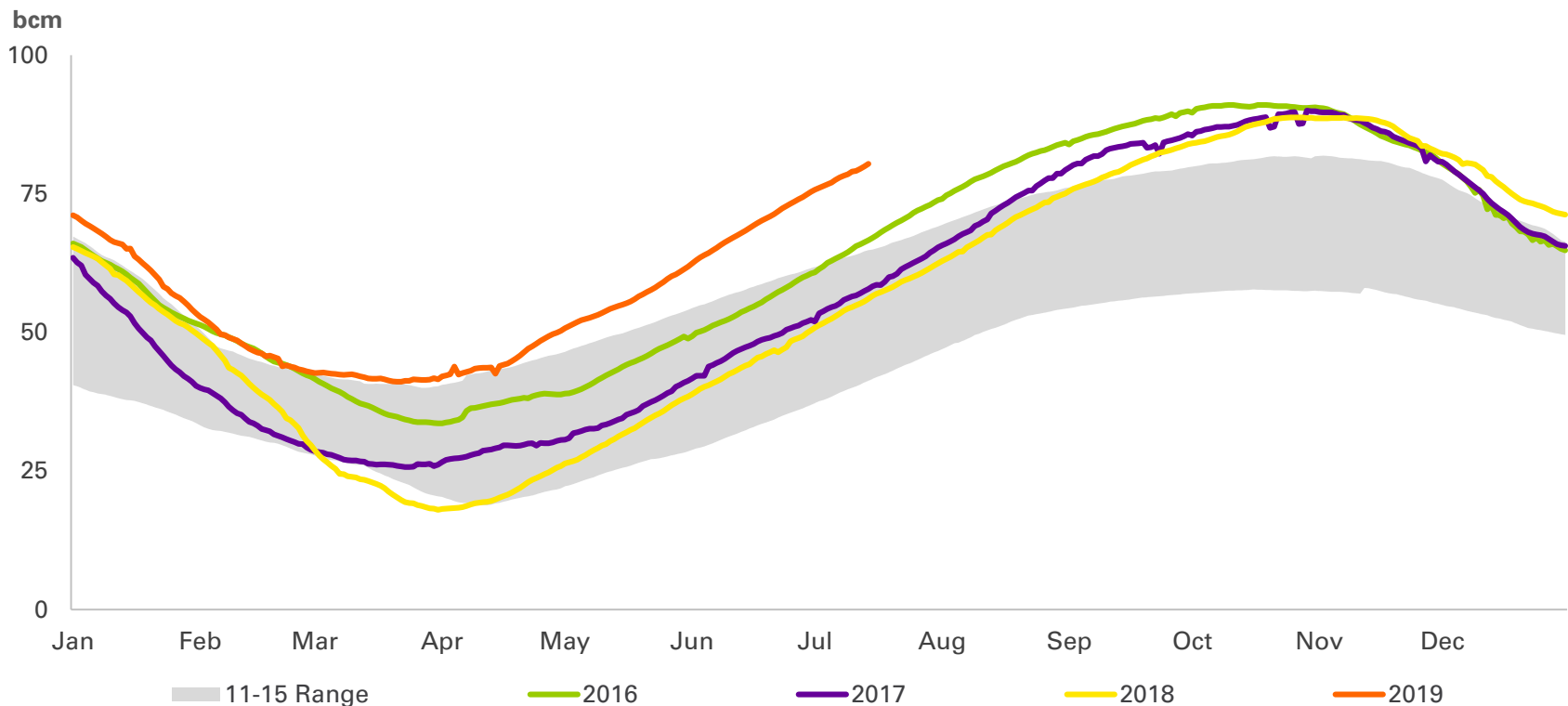




# European gas inventories have built significantly above historic average levels

A mild winter resulted in limited need for storage withdrawals, in contrast to 2018 where extreme weather caused storage levels to fall to their lowest in recent years. European gas inventories were on average 24 bcm higher year-on-year across Q2 2019 with injections supported by strong LNG and pipeline supply in Europe. Consequently, storage levels are at a higher level than usual for this time of year, having already reached the level they were at in September last year.

## European GIE storage



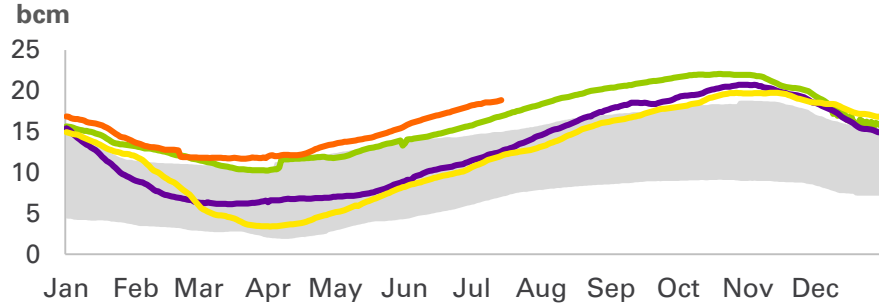
*N.B. data from GIE does not incorporate all storage facilities in each country, but rather can be used as a proxy for total storage*  
Source: Gas Infrastructure Europe

# Germany, France and Netherlands see the highest year-on-year inventory builds

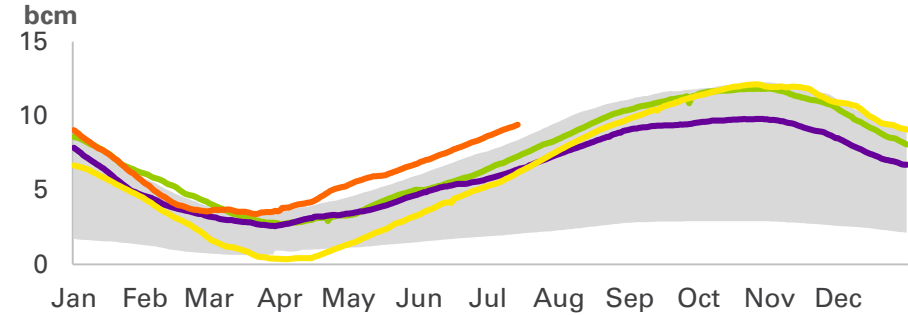


Storage injections have been strong across Europe. Germany, France and the Netherlands, in particular, have sustained high inventories whilst Italy, UK and Spain tracked close to average levels.

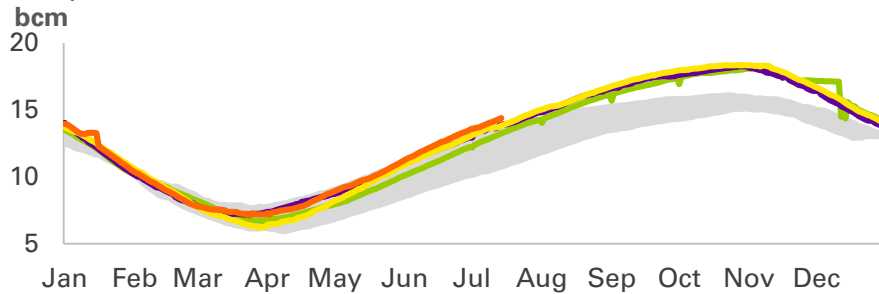
## Germany



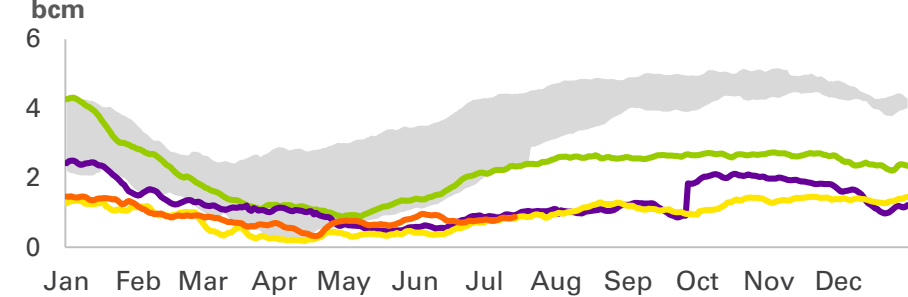
## France



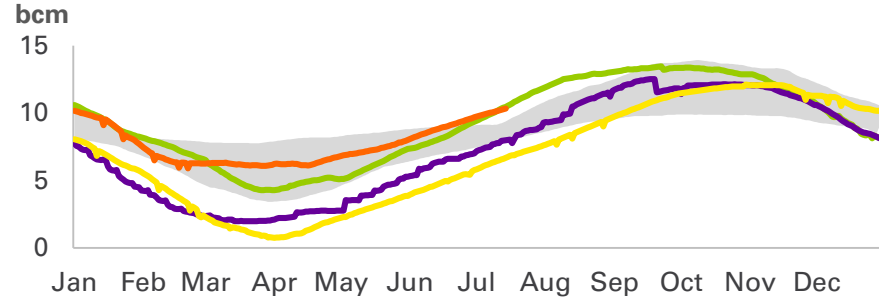
## Italy



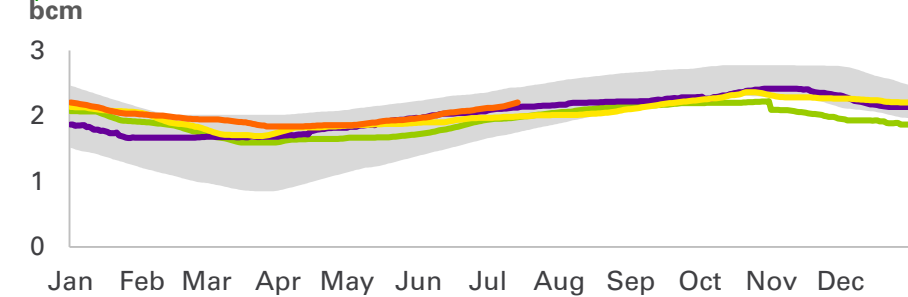
## UK



## Netherlands



## Spain



11-15 Range

2016

2017

2018

2019

*N.B. data from GIE does not incorporate all storage facilities in each country, but rather can be used as a proxy for total storage*

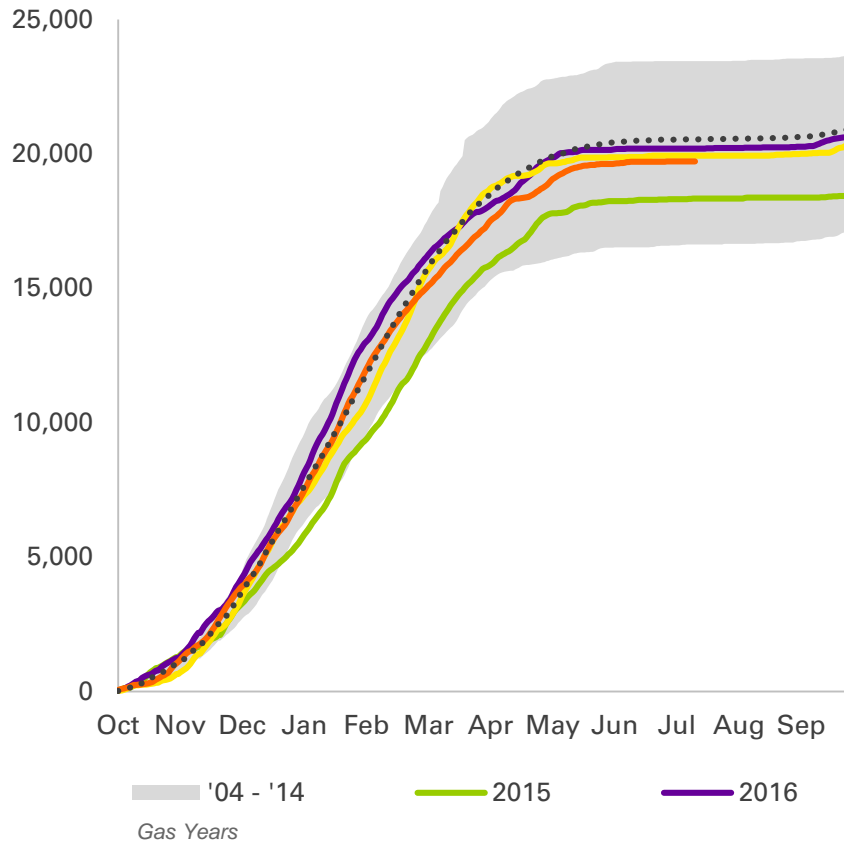
Source: Gas Infrastructure Europe



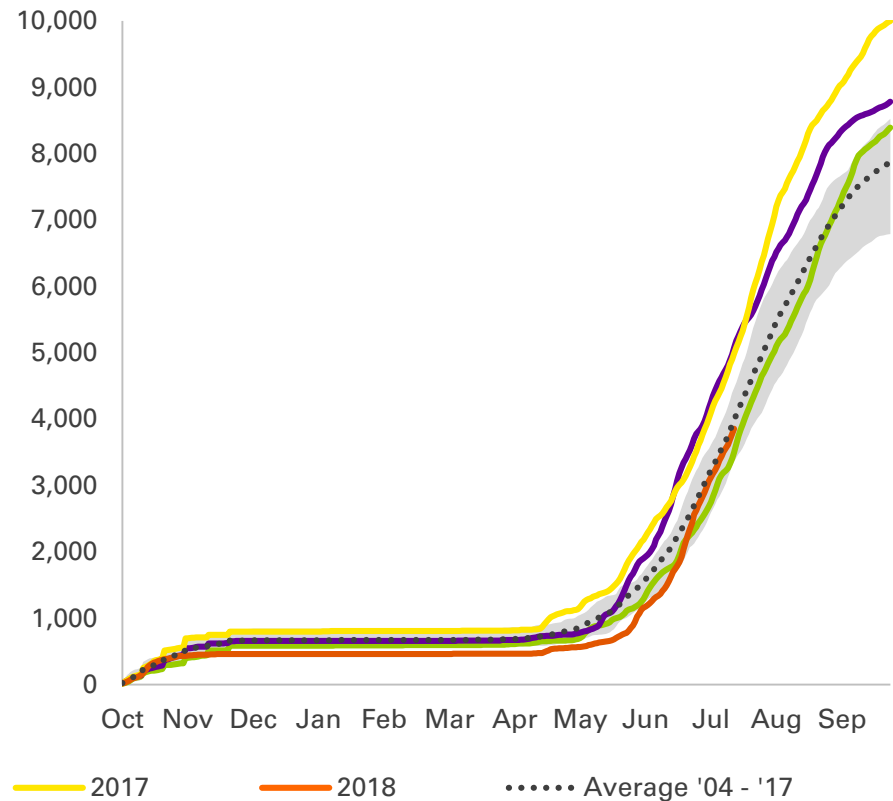
# European heatwave in June followed a mild winter

A mild winter across Europe resulted in below average HDDs contributing to a reduced need for storage withdrawals. In late June 2019 much of Europe experienced a heatwave during which France hit a record temperature of 45.9°C, resulting in a spike in CDDs across many European countries.

## Europe Cumulative HDDs



## Europe Cumulative CDDs



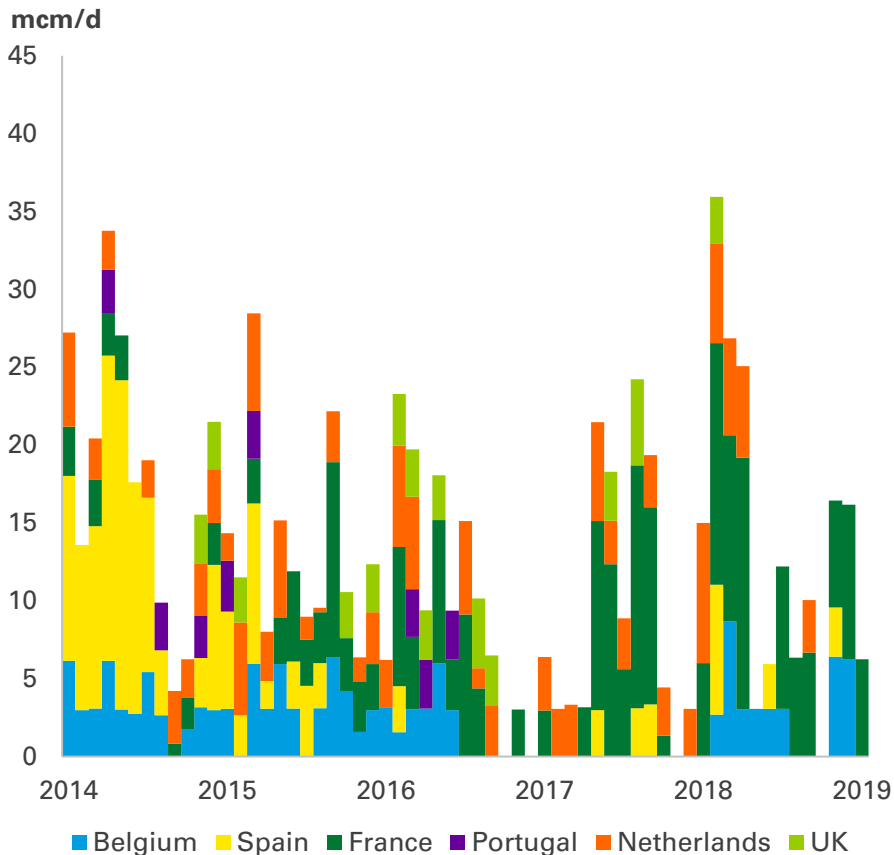




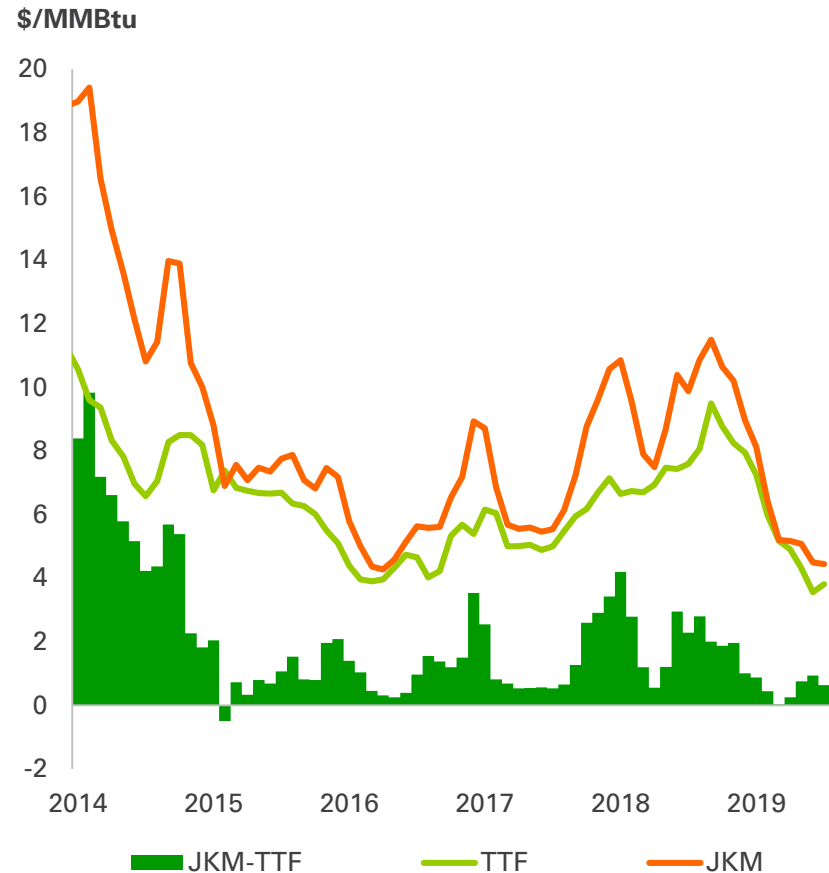
# JKM-TTF spread widened slightly in Q2 2019 but remains historically narrow

JKM traded close to flat, if not negative, versus TTF throughout Q1 2019, resulting in relatively low European reloads given the limited incentive to move Atlantic LNG cargoes east. The spread widened slightly in Q2 2019, creating some arbitrage opportunities, albeit demand in Asia remained lacklustre hence reloads were subdued.

## European LNG reloads



## JKM-TTF spread





# Carbon prices recently rallied to 11-year highs

EUAs have continued their upward trend this year, rising over 20% from January to July 2019 in a series of rallies. In July 2019, EUAs touched over €29/mt for the first time since 2008 as carbon pricing policies increasingly gained support. This has given some support to European gas prices in the first half of July.

## EUA carbon futures

