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Gas and LNG
Regional Overview Europe

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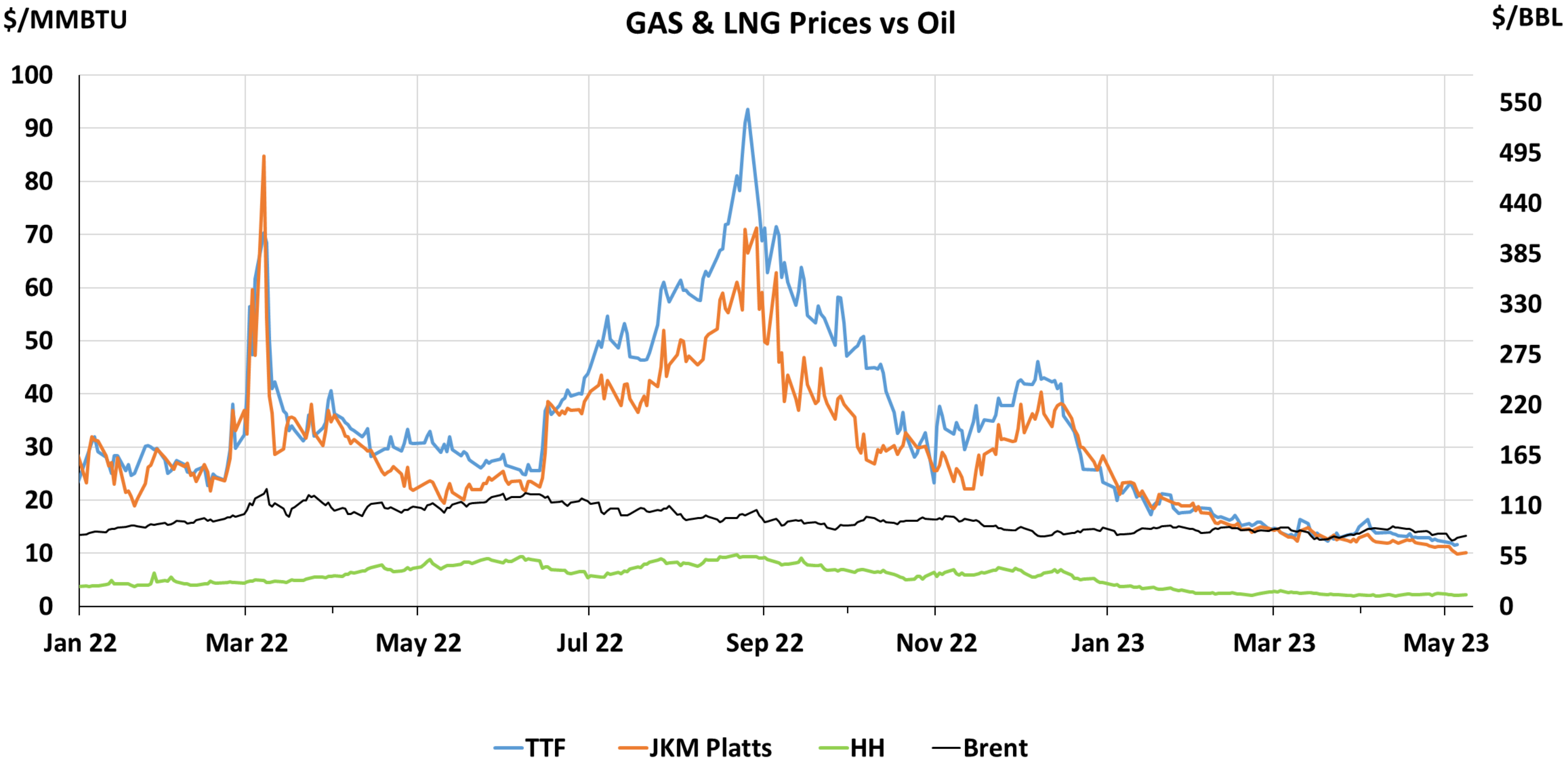
GIIGNL Executive Committee 2023

European and Asian prices spiked with the loss of NS1 gas flows

Strong correction movement from the beginning of Winter 2022. Mild winter accelerates the move from Dec.



NOTE: Month-ahead prices
Source: Platts Assessments, Heren, ICE, CME

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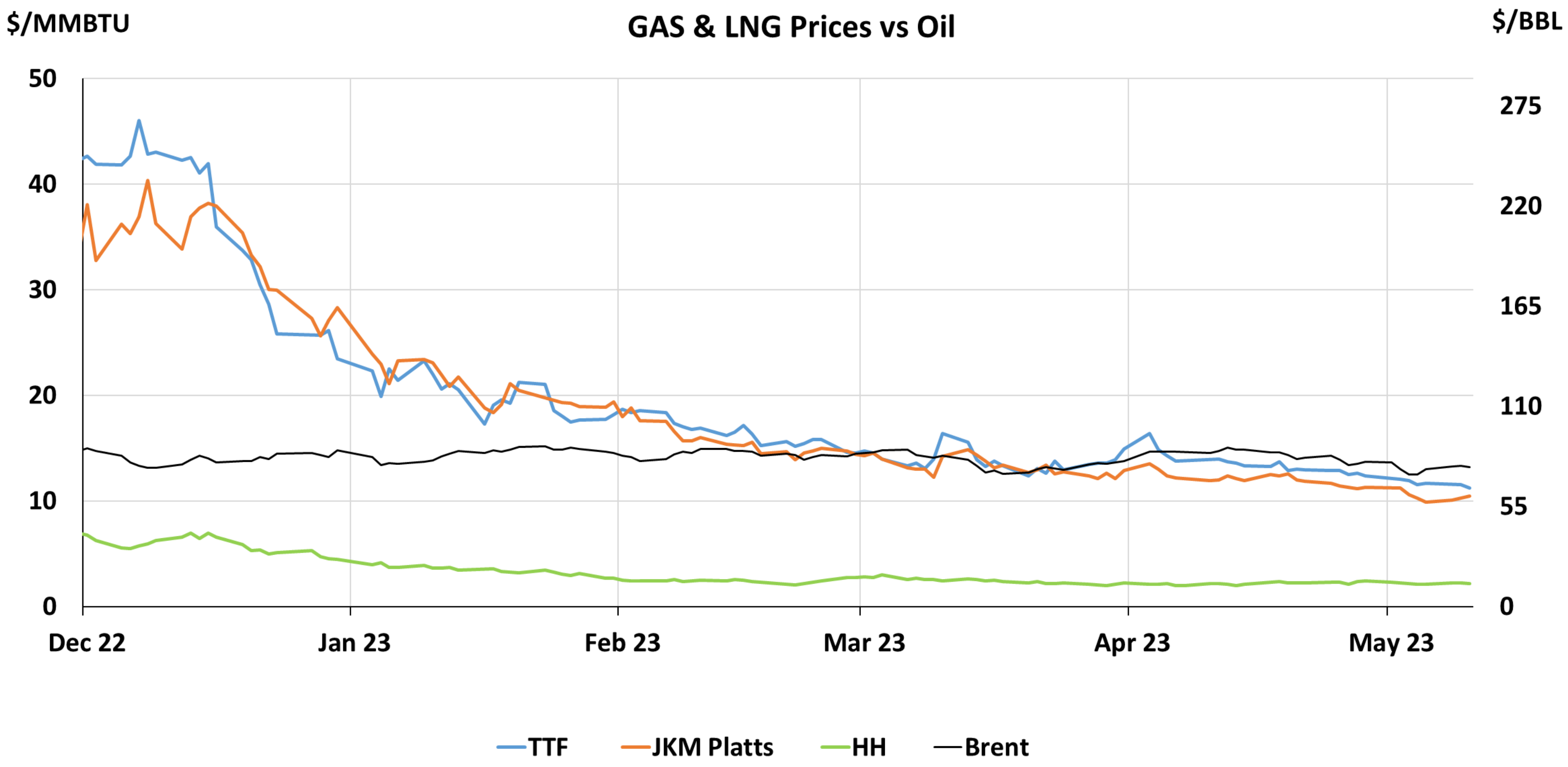
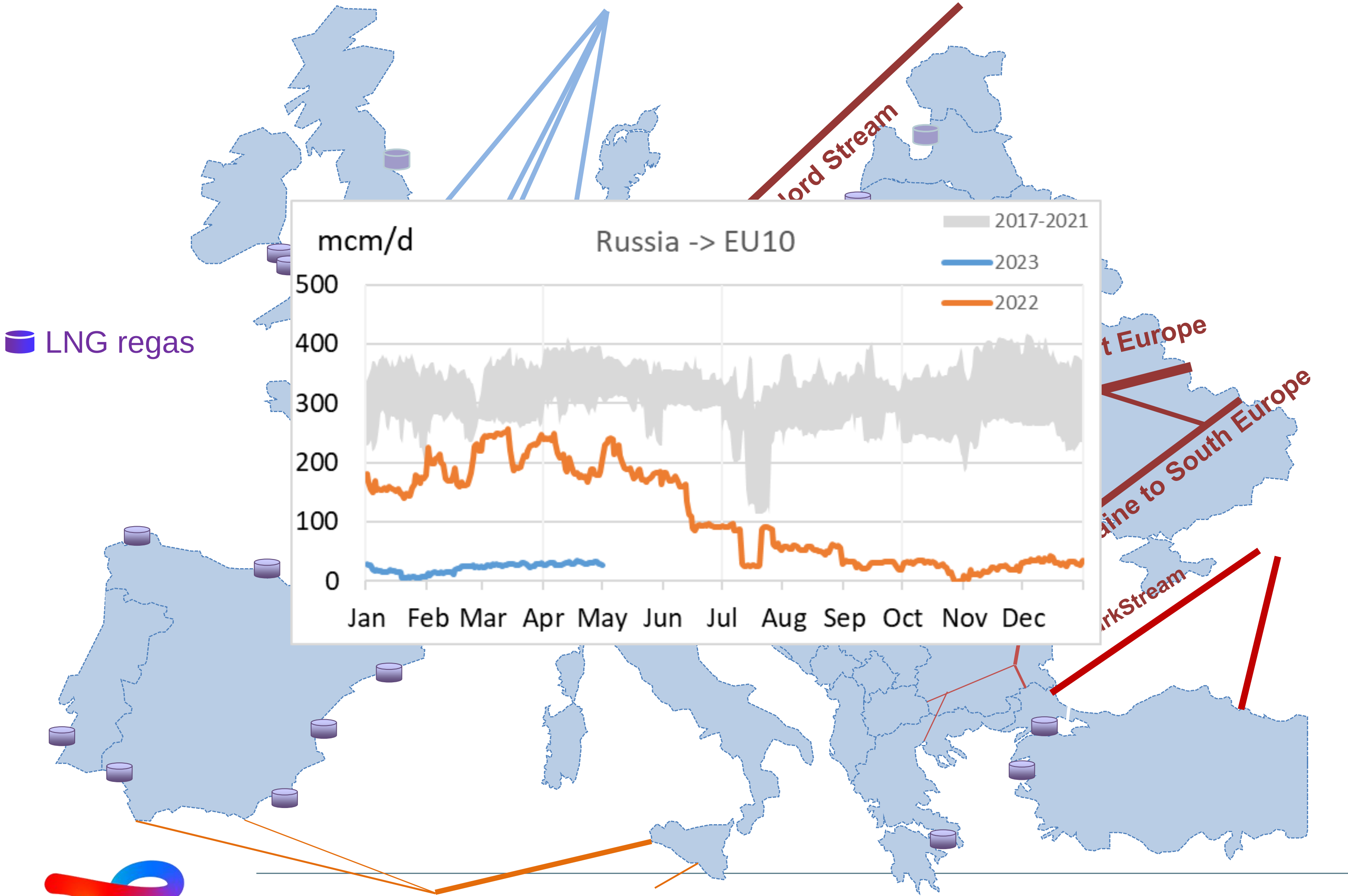
TTF and JKM back below oil parity since April

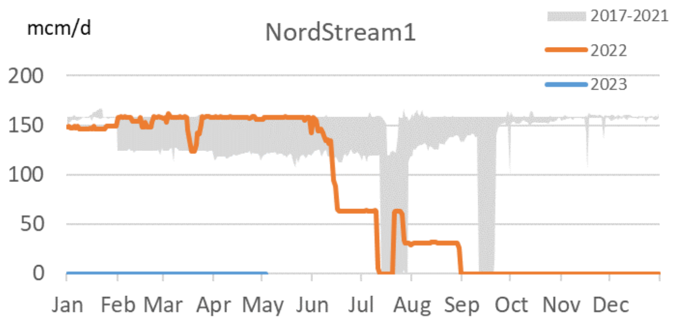


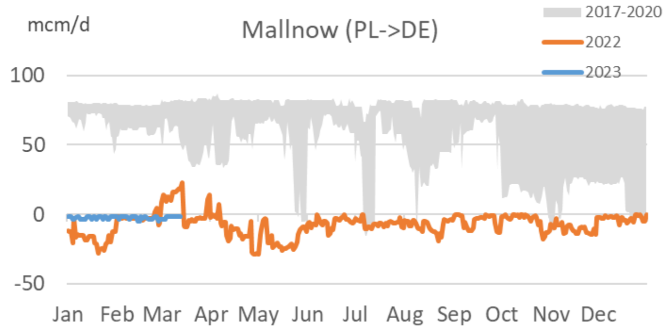
NOTE: Month-ahead prices
Source: Platts Assessments, Heren, ICE, CME

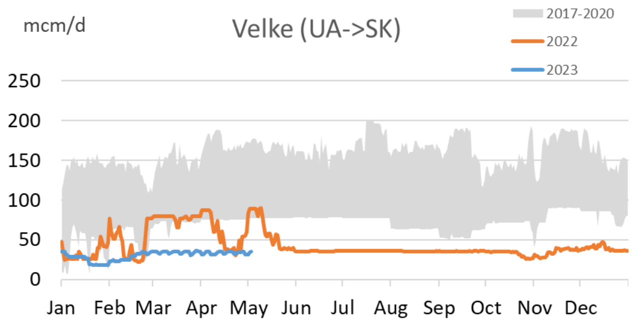
Russian pipe flows to Western Europe close to zero for the whole winter

Volumes dropped from 102 Bcm in 2021* to 4 Bcm YTD, Ukrainian pipes are the only ones still flowing









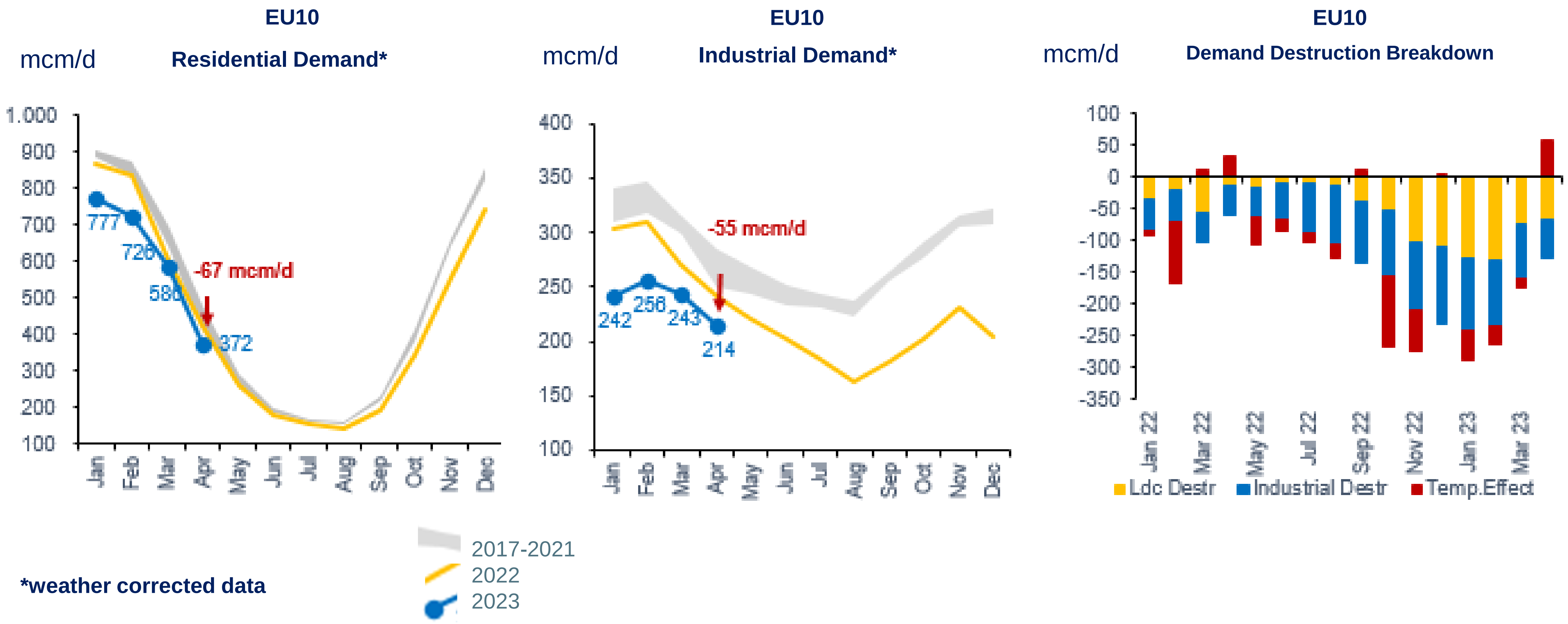
Source: European Transport System Operators (TSOs)

** Russian volumes to Western Europe through Nordstream1, Yamal pipeline, Ukraine to Western Europe*

*Note: **EU10* = Western Europe** includes UK, Germany, France, Italy, Netherlands, Belgium, Spain, Austria, Czech Republic, Slovakia*

Gas demand destruction has been an important balancing item in winter

Destruction is continuing, despite lower gas prices, both in the residential and industrial sector



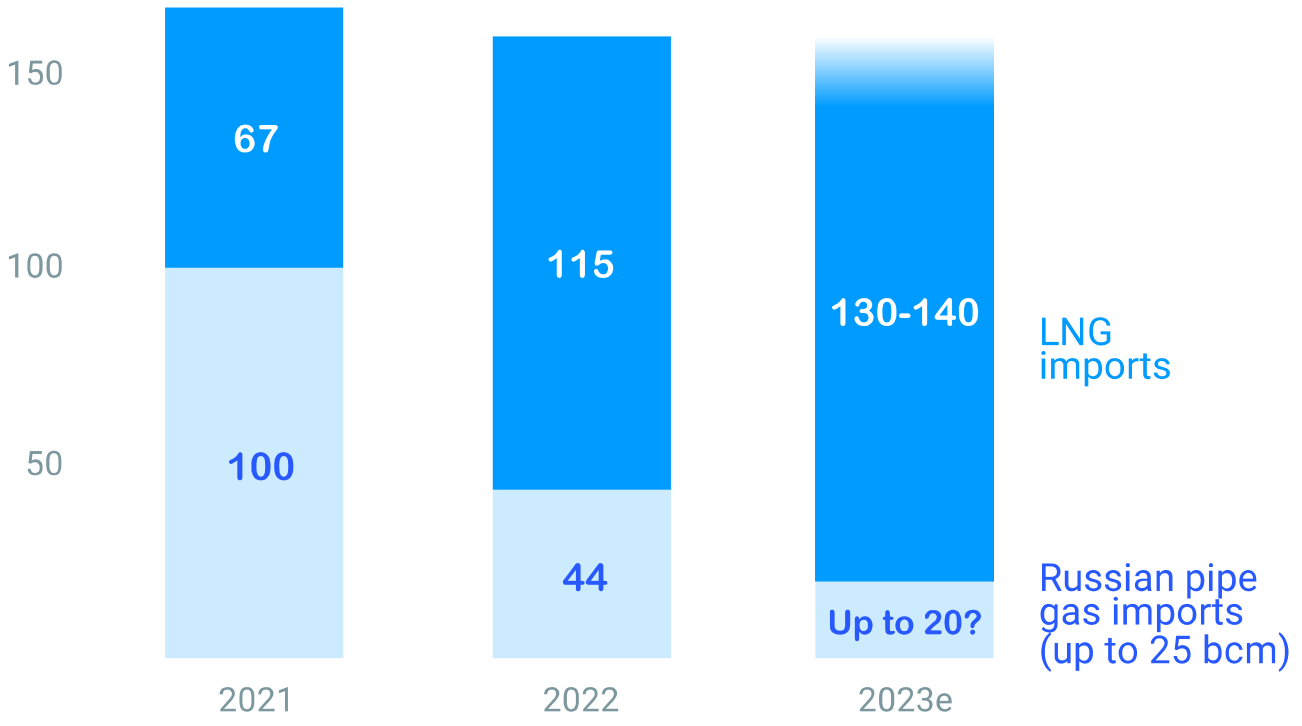
*weather corrected data

Source: European Transport System Operators (TSOs)

Note: **EU10* = Western Europe** includes UK, Germany, France, Italy, Netherlands, Belgium, Spain, Austria, Czech Republic, Slovakia

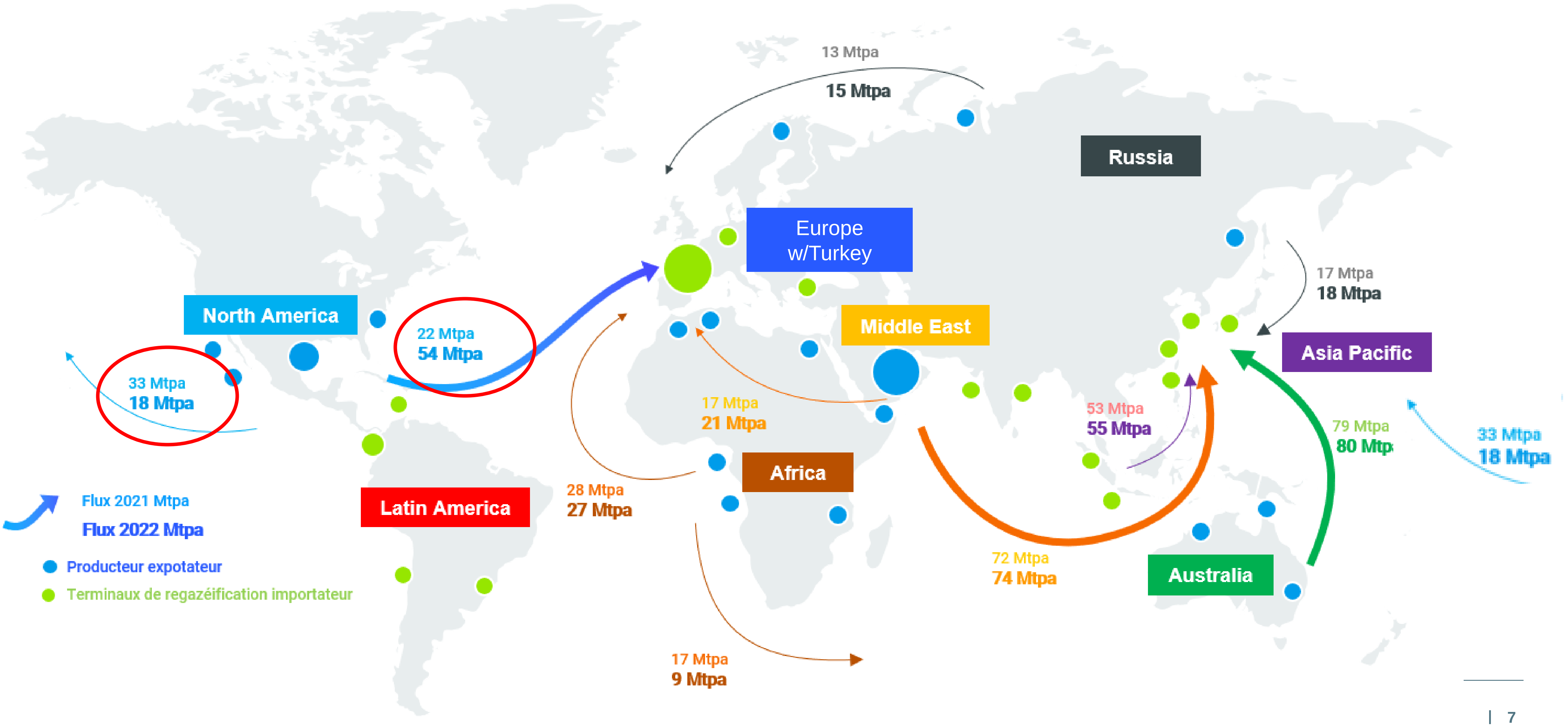
European LNG and Russian pipe gas imports

Mt LNG equivalent



Storage level	54%	85%

Main LNG flows 2021 and 2022



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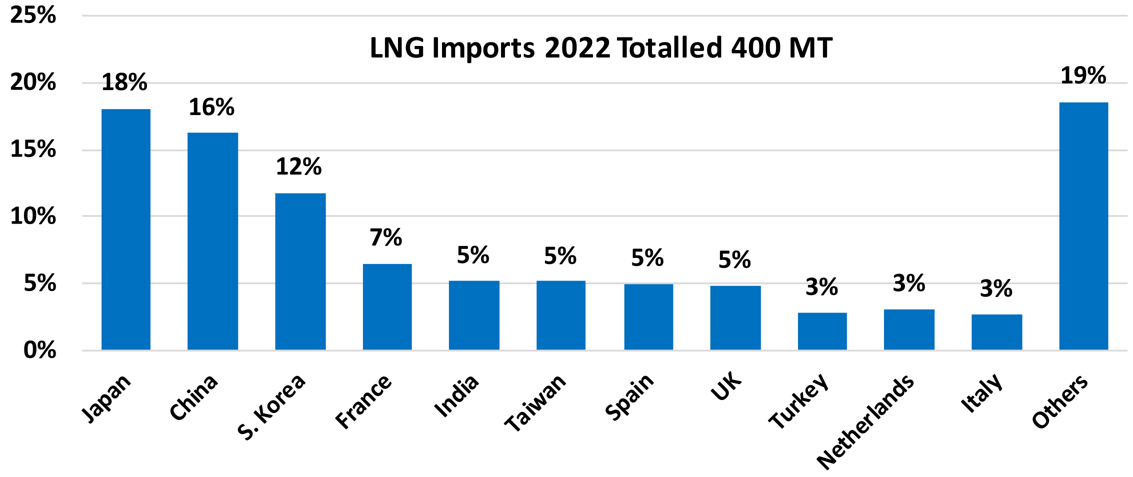
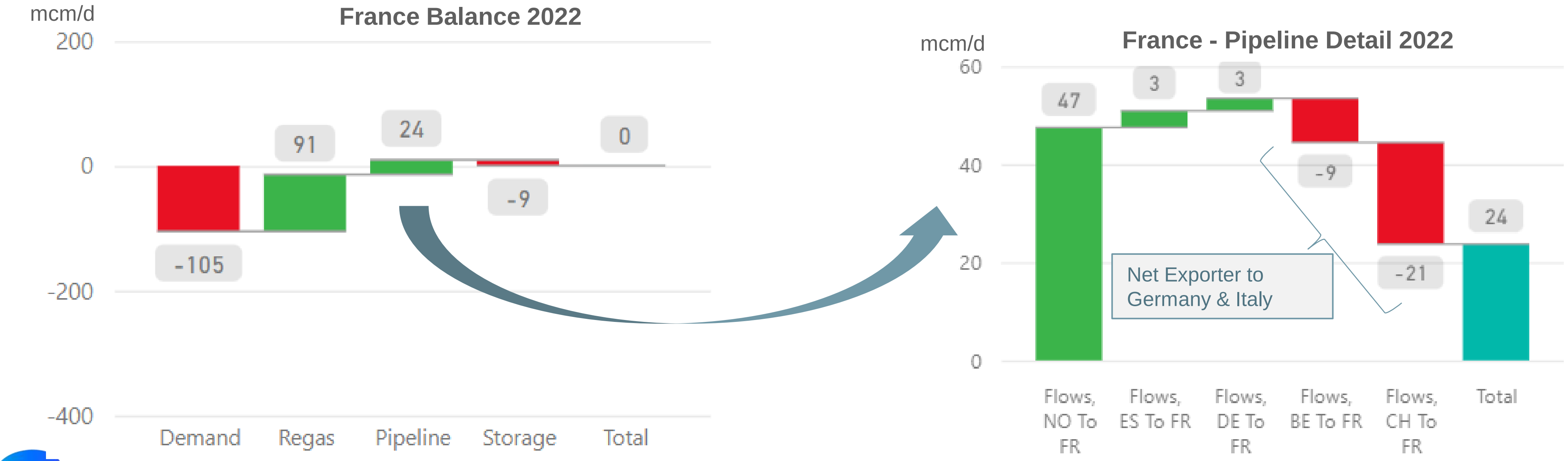
France became the 4th LNG importer in 2022

as it was also the entry point for LNG to be dispatched to the rest of the Continent





Source: IHS, European Transport System Operators (TSOs) through Commodity Essentials

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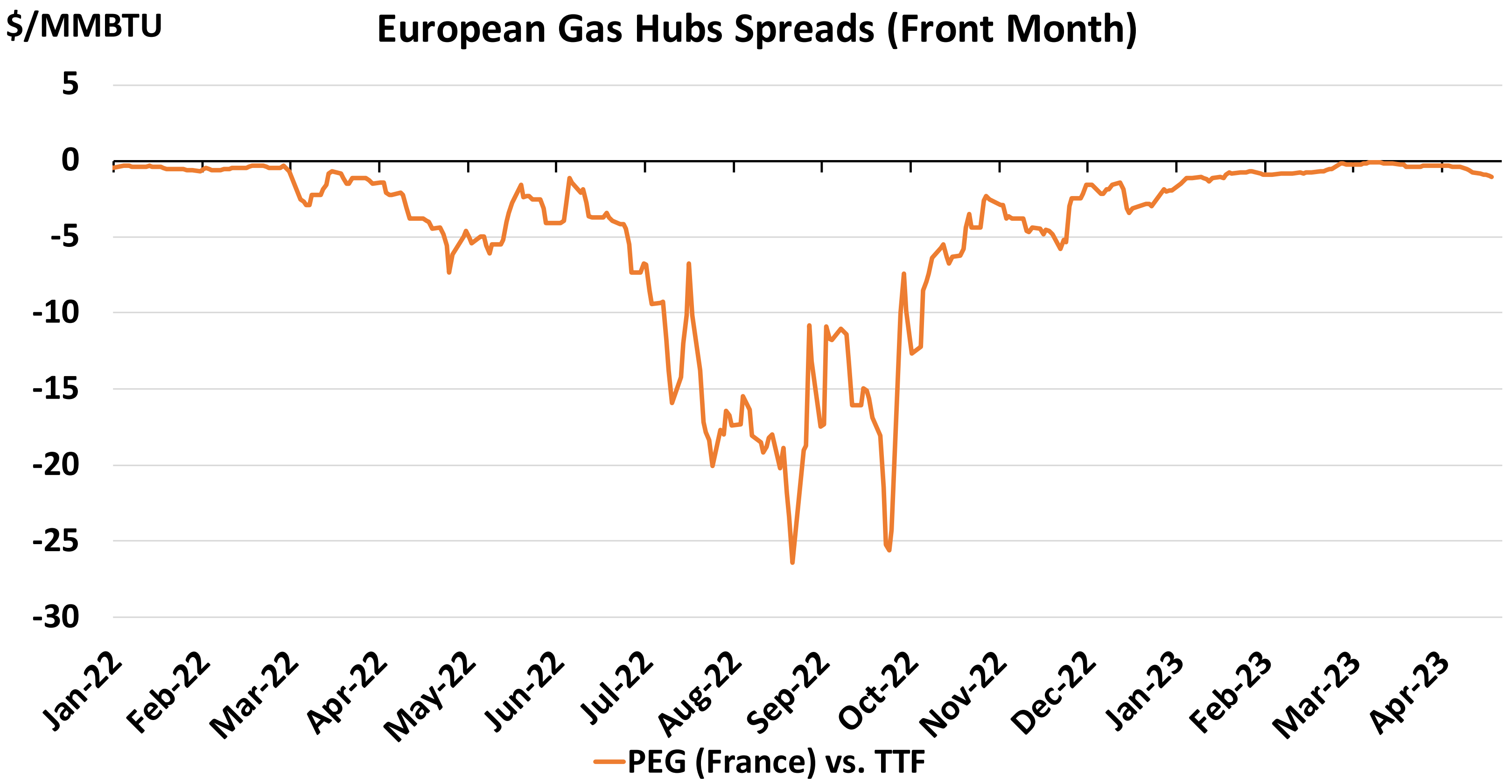
French gas prices decreased well below TTF as pipe bottlenecks appeared

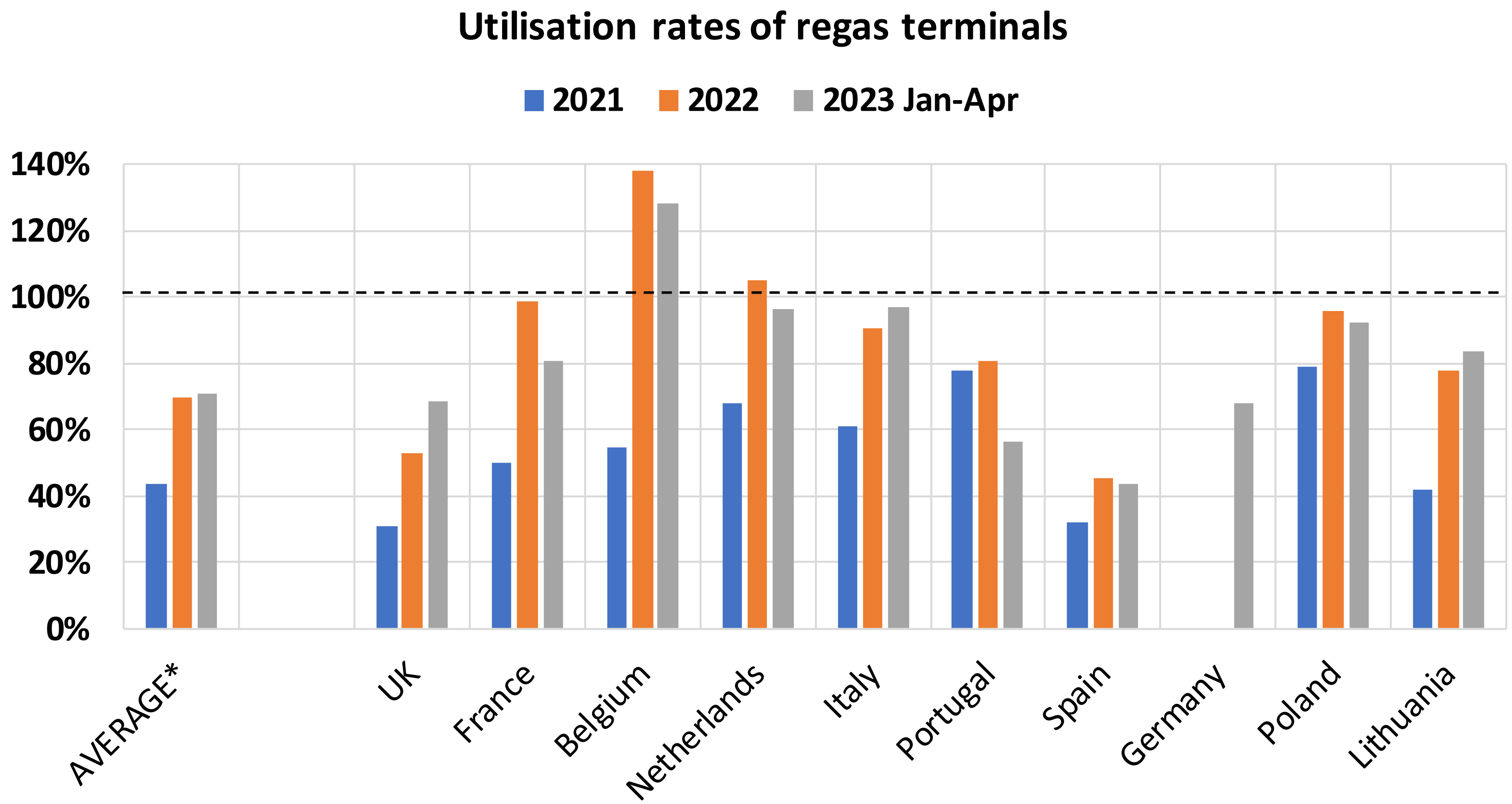
giving the market the signal for investment in new LNG regas where it was most needed



Source: Heren

Average* utilisation rates of regas from 45% in 2021 to ~ 70% today

Big differences remain across countries as bottlenecks on pipes infrastructure limit LNG import potential
Several terminal operators added temporary and interruptible capacity in 2022
Expansions and new regas are coming mostly in NWEurope



** Average of the listed countries only*
NOTE: Utilisation rates calculated on nominal firm capacity and delivered LNG imports only (excl. reloads and transhipments)

Source: GIIGNL, IHS, Terminals operators

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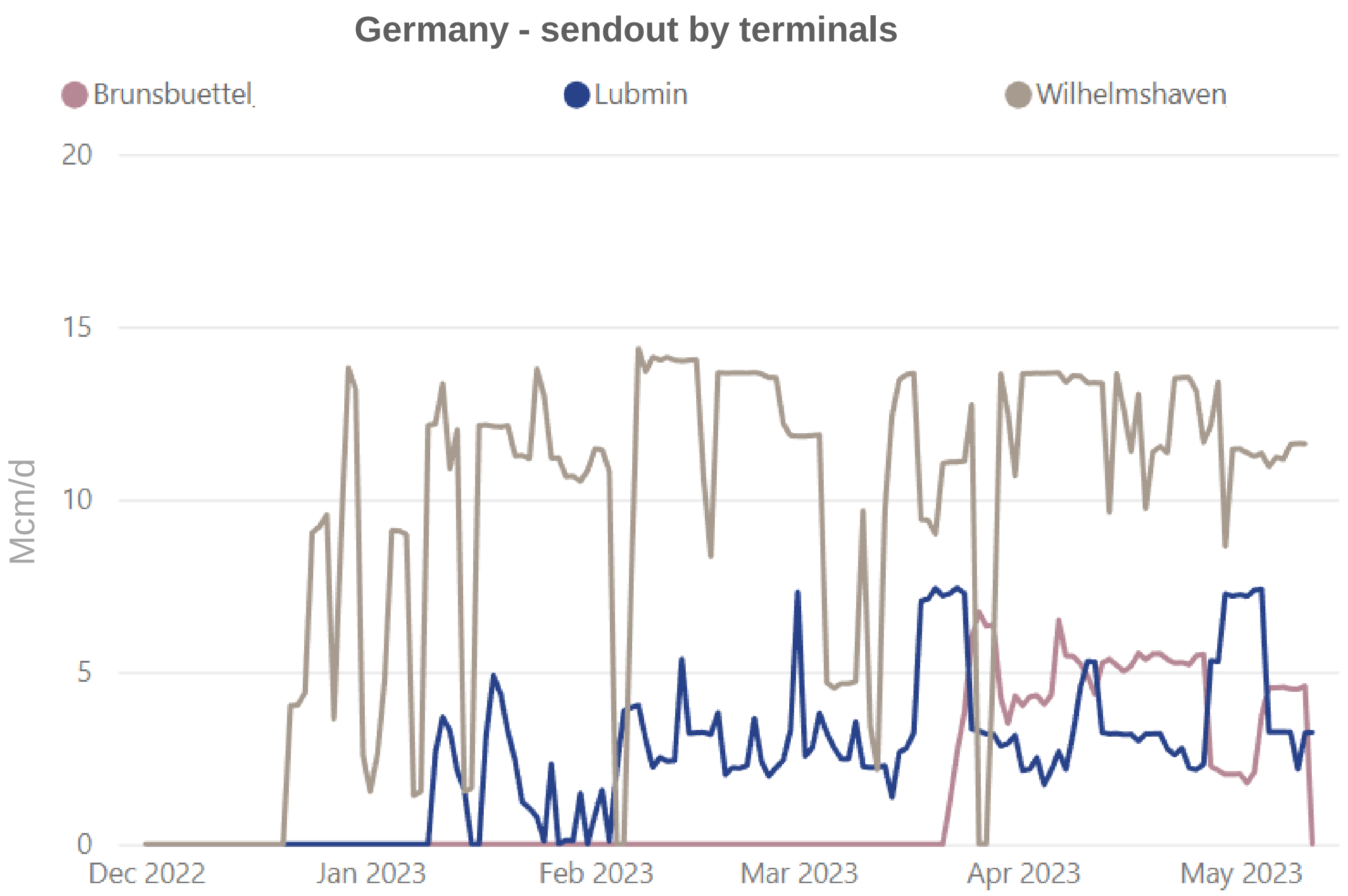
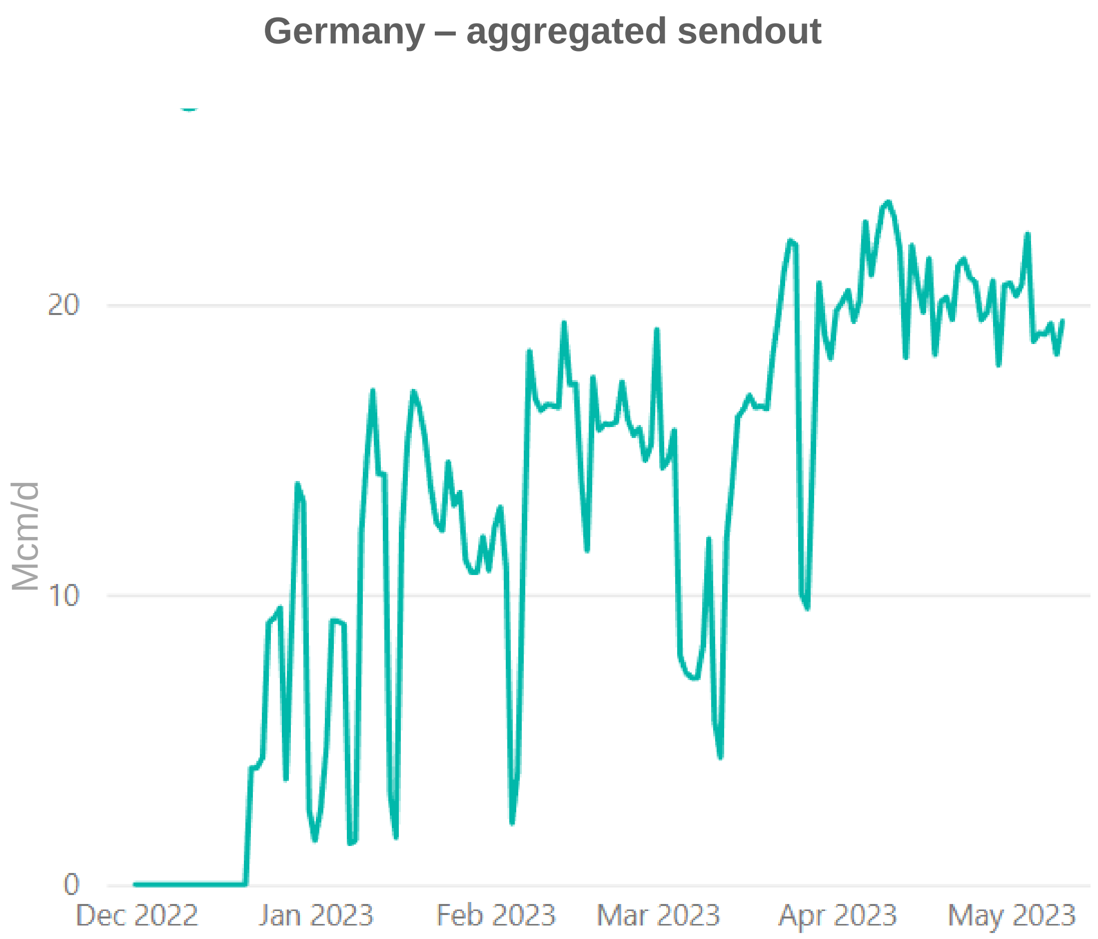
Three terminals have already started operations in Germany with more to come until end 2023

LNG volumes will be more evenly spread, reducing stress on the west-east gas flow direction





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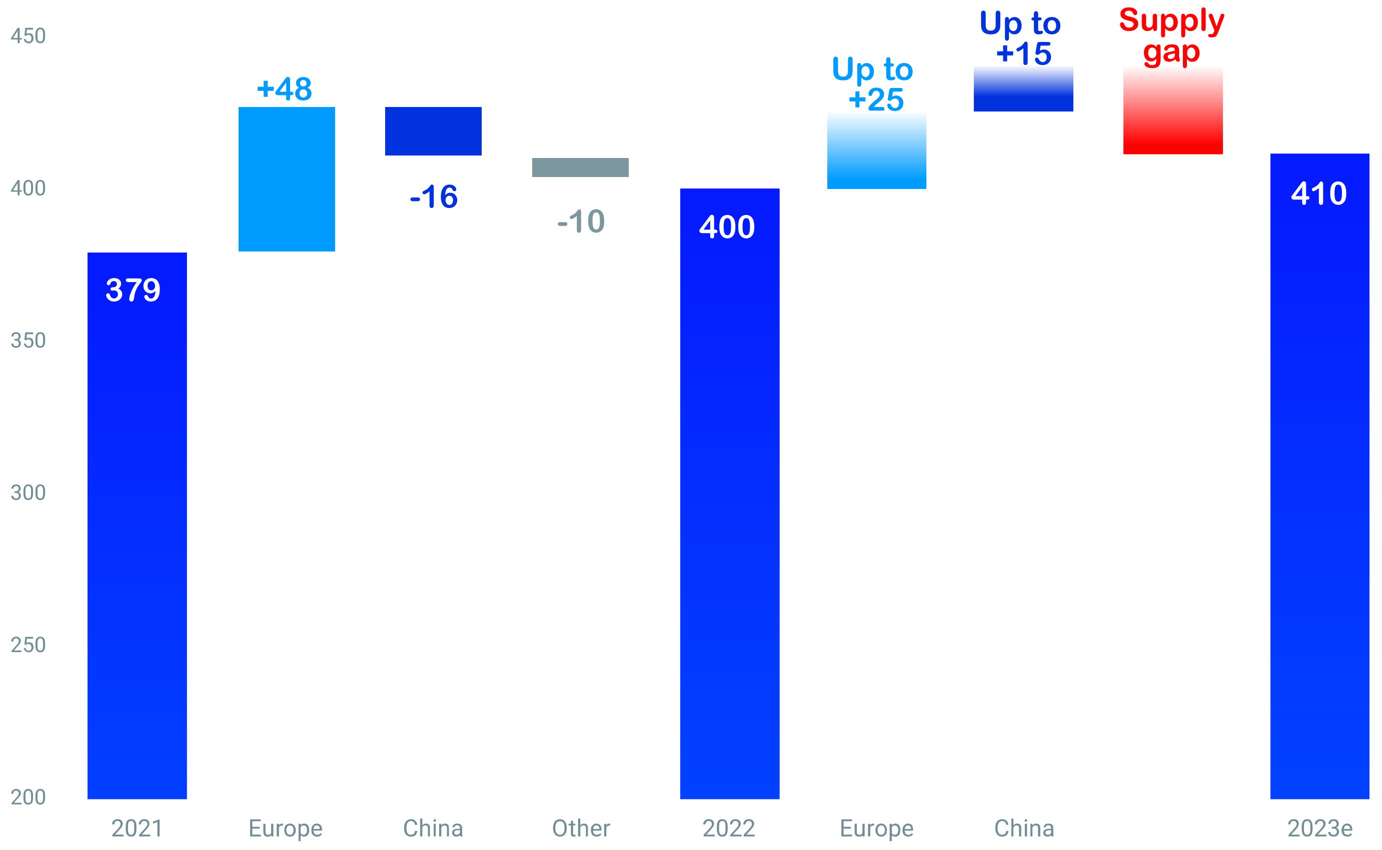
Source: IHS, European Transport System Operators (TSOs) through Commodity Essentials

European gas driving LNG

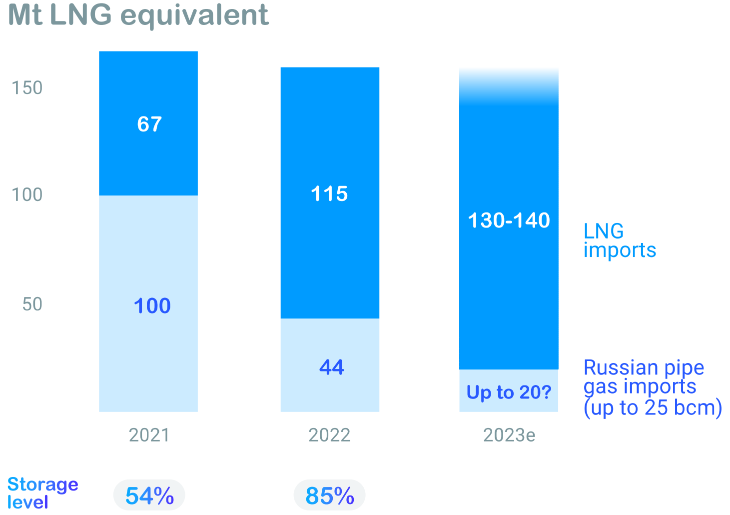
Global LNG supply/demand 2022-23



→ 2023 demand capped by limited supply growth

→ 2022 price tensions expected to remain in 2023

European LNG and Russian pipe gas imports



Europe includes European Union + UK + Norway
Sources: IHS, internal estimates

8 long-term SPAs with Europe as assumed main destination were signed in 2022, for a total quantity of 9.5 MTPA

Seller	Buyer	Supplying Project	ACQ (MTPA)	Incoterm	Destination	Start Year	Duration (years)
Woodside	Uniper	Portfolio	0.8	DES	Northwest Europe	2023	17
Sempra	Ineos	Port Arthur LNG	1.4	FOB	Europe	2027	20
Sempra	RWE	Port Arthur LNG	2.3	FOB	Germany	2027	15
Venture Global	EnBW	Calcasieu Pass 2 LNG	1.0	FOB	Germany	2026	15
Venture Global	EnBW	Plaquemines LNG	1.0	FOB	Germany	2026	15
QatarEnergy	Conoco Philips	NFE	1.0	DES	Germany	2026	15
QatarEnergy	Conoco Philips	NFS	1.0	DES	Germany	2027	15
Next Decade	Galp	Rio Grande LNG	1.0	FOB	Portugal	2028	20

Energy security, a top priority for Europe. More to be done

- Europe managed to overcome the Russian crisis through a combination of factors:
  - High LNG imports thanks to increased US availability and lower competition from Asia
  - Lower gas demand: in reaction to high prices and saving efforts
  - Exceptionally mild weather
- However longer-term solutions are necessary. The market gave signals on the priorities, but critical issues remain:
  - Temporary regas capacity was added where possible in 2022. New regas terminals are coming online where mostly needed
  - The pipe infrastructure is still a bottleneck to the optimization of LNG flows dispatch across countries
- Europe needs to keep high LNG imports in the medium term
- Additional LNG volumes contracted on a long-term basis remain quite limited when comparing to the missing firm Russian gas volumes