
national
gas
energy
forum

Welcome

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Jake Tudge

Corporate Affairs Director
National Gas

Today's agenda

Part I – Industry leader updates *0930 – 1030*
Glenn Bryn-Jacobsen, National Gas
Mike Fulwood, Oxford Institute for Energy Studies
Natasha Fielding, Argus Media
Carlo Procaccini, North Sea Transition Authority
Break *(1030 – 1100)*

Part II – National Gas and guest speaker *1100 – 1200*
Glenn Bryn-Jacobsen, National Gas
Edward Mellish, NESO
Max Chapman, National Gas
Lunch (1200 – 1300)

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Part 1

Industry leader updates

Today's speakers for our Part I session

Glenn Bryn-Jacobsen
Director of Energy Systems & Resilience

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Mike Fulwood
Senior Research Fellow

THE OXFORD INSTITUTE FOR ENERGY STUDIES
A RECOGNIZED INDEPENDENT CENTRE OF THE UNIVERSITY OF OXFORD
UNIVERSITY OF OXFORD

Natasha Fielding
Editorial Manager

argus

Carlo Procaccini
Chief Technical Officer

North Sea Transition Authority

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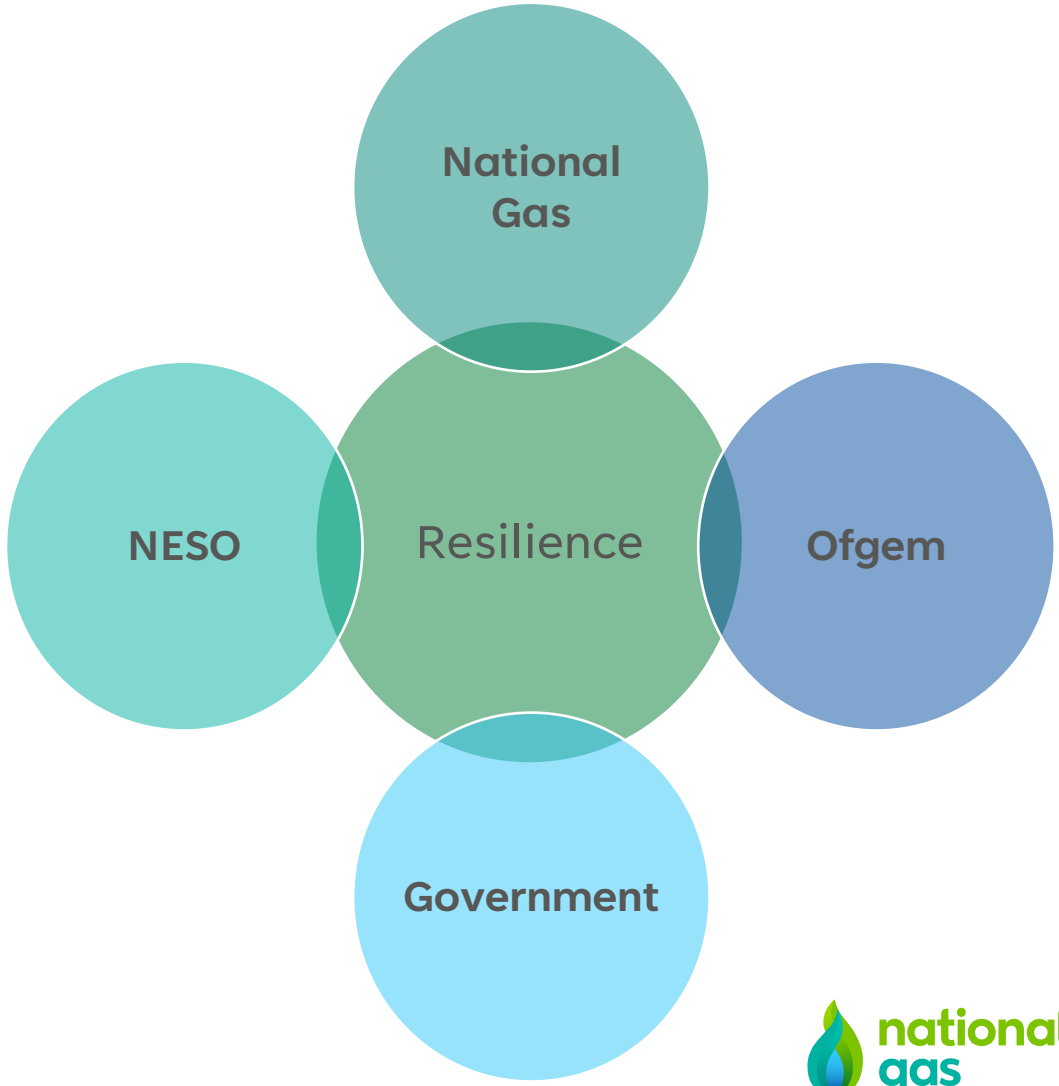
Glenn Bryn-Jacobsen

Director of Energy Systems & Resilience
National Gas

Security of Supply

Resilience is an aspect of the security of supply objective; responsibility shared between National Gas, Government, Ofgem & NESO.

Gas Act 1986 sets out the principal objective of the Secretary of State and Ofgem: "*to protect the interests of existing and future consumers in relation to gas conveyed through pipes. Those interests of existing and future consumers are their interests taken as a whole, including... their interests in the security of the supply of gas to them...*"



Security of Supply – Primary standards

1 in 20

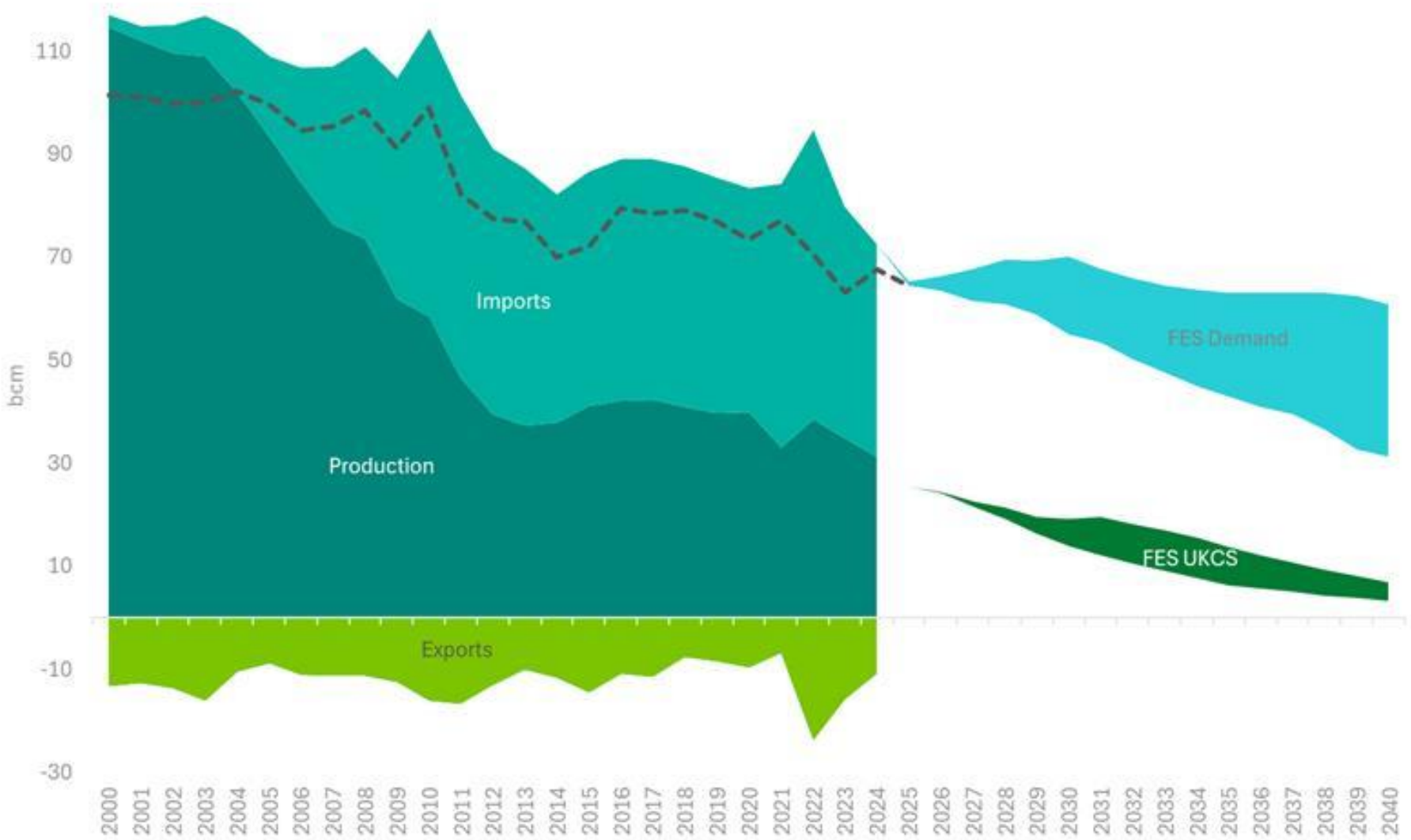
National Gas Transmission's licence (SC 16) places on it an obligation that it ***"shall … plan and develop its pipe-line system to meet expected demand, and, taking account of operational measures, meets peak aggregate daily demand for the 1-in-20 year peak demand scenario".***

N-1

The Gas (Security of Supply and Network Codes) (Amendment) (EU Exit) Regulations 2019 transposes Regulation 2017/1938 into GB law and specifies that ***"the infrastructure standard should oblige Member States to maintain a minimum level of infrastructure such as to ensure a degree of redundancy in the system in the event of a disruption of the single largest gas infrastructure,"*** usually referred to as the 'N–1 formula'.

- National Gas in its role as real-time system operator of the network also has accountabilities around safe, economic and efficient market operation.
- We act as the real-time 'residual balancer' of the network, secure operational stress events and have responsibilities around emergency arrangements

Evolution of GB Gas Supplies vs Demand



- Declining UKCS & Increased Import dependence
- Lower expected annual demand but peak requirements (Including power) remains into the 2030s
- Change in use of the system impacts resilience, reliability and capacity.

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Evolving supply side changes have dramatically changed gas flows in the network

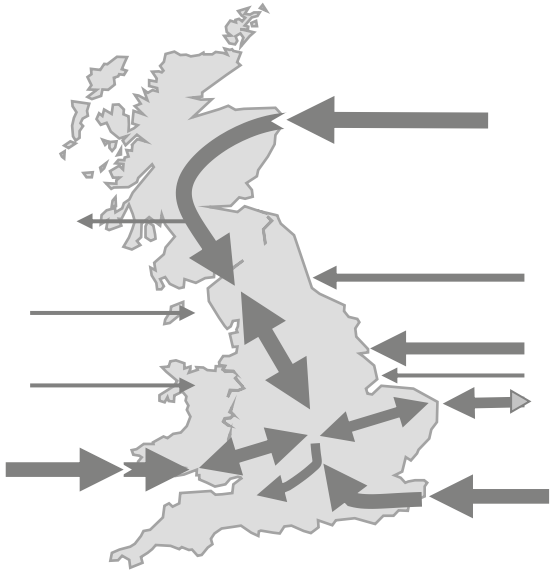
Gas flow 2000

Predominant North to South

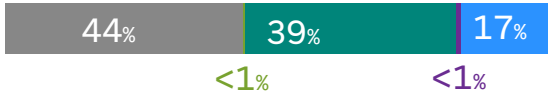
Gas source: 2000

Gas flow 2024

Diversity of supply



Gas source: 2024



KEY

UKCS | Green Gas | Norway | Interconnectors | LNG

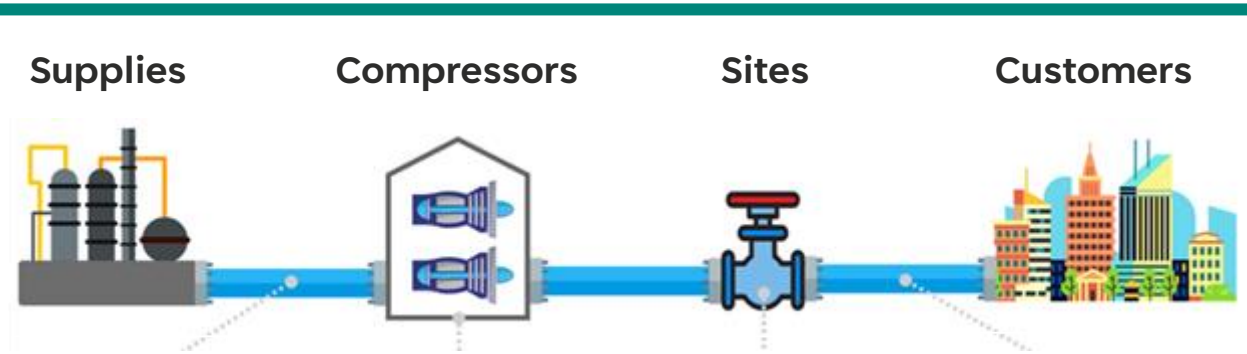
Resilience is underpinned by **commodity** and **infrastructure**

Government definition of energy security includes the availability of fuel, affordability, environmental and geopolitical acceptability and accessibility of energy.

Commodity Security : 'Availability'

Assessment, Market Design & Resilience

Infrastructure Security : 'Accessibility'



Interactions between Electricity & Gas

Accessibility: Gas Infrastructure Resilience

- GB has optionality in terms of gas supplies and strong commercial incentives on shippers to balance the system.
- Ensuring that optionality is effective and those incentives can be acted on depends on appropriate market arrangements and the network being resilient and available, particularly at times of peak system stress.

Resilience: The ability of a network to respond to, and recover from high impact, low probability events

Reliability: Age and condition-based replacement from traditional wear-and-tear and non-extreme weather and other events

Capacity: New assets or upgrading existing infrastructure to address incremental capacity needs and to meet changing patterns of demand and supply

UNDERPINNED BY EFFECTIVE EMERGENCY RESPONSE AND RESTORATION ARRANGEMENTS

£ 23/24 Prices

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Mike Fulwood

Senior Research Fellow
Oxford Institute for Energy Studies

THE OXFORD INSTITUTE FOR ENERGY STUDIES

Unless otherwise stated sources are:
IEA, NexantECA World Gas Model, OIES Estimates, Argus Media

Global Gas Market: Medium-Term Outlook to 2035

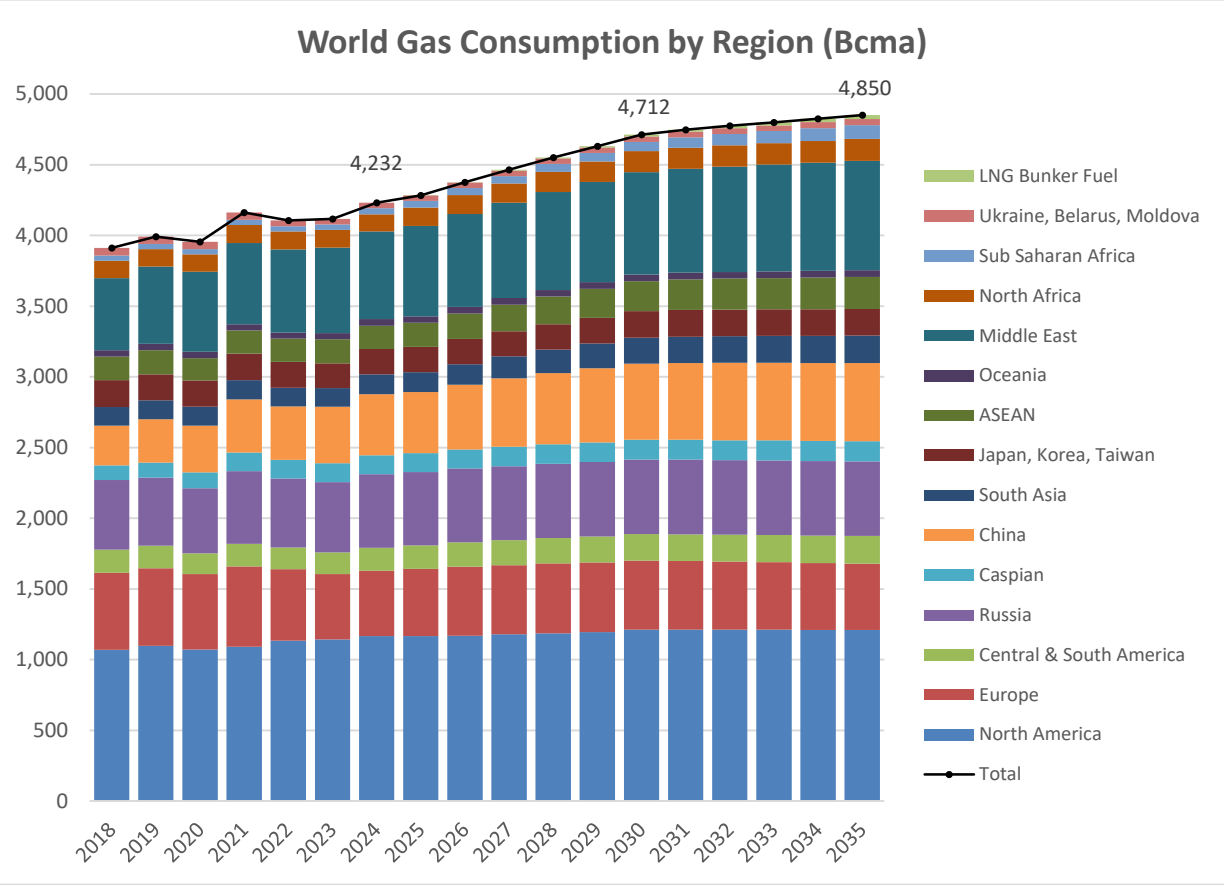
Mike Fulwood, Senior Research Fellow

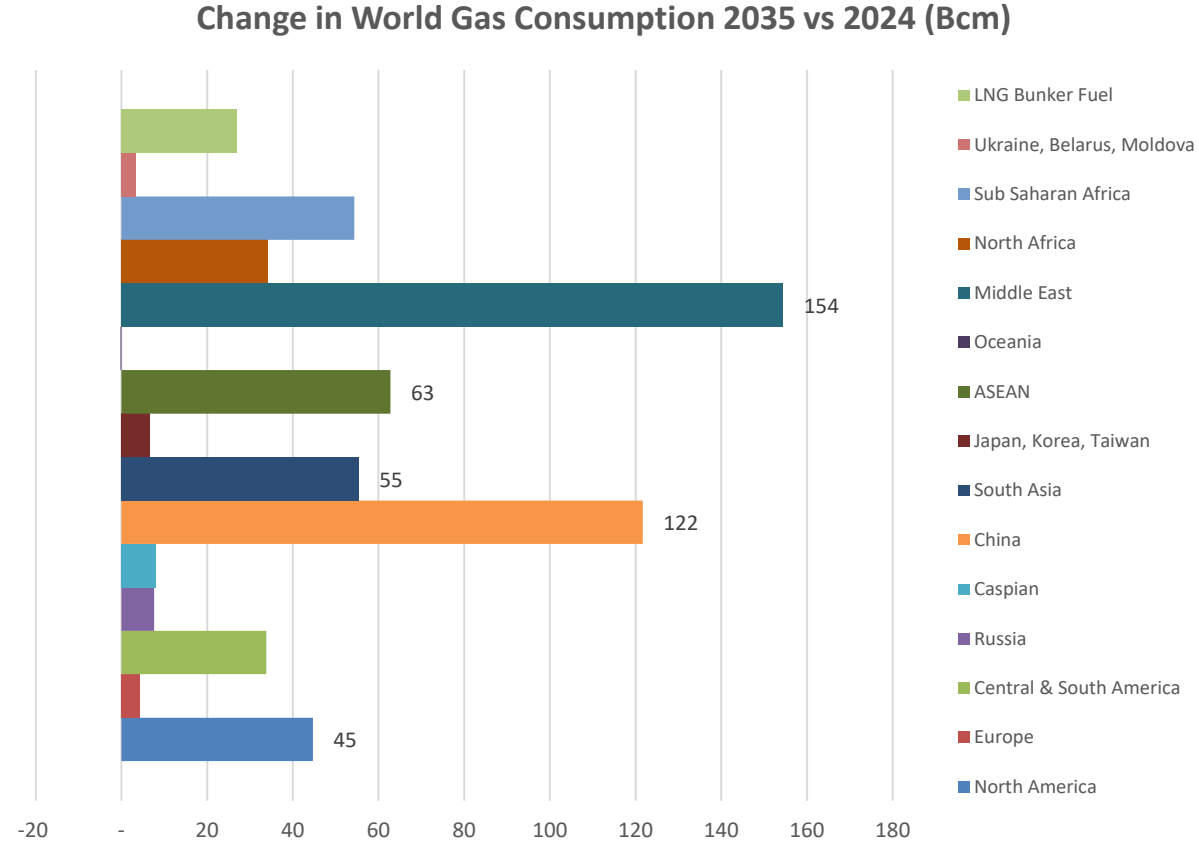
Gas Research Programme, OIES

National Gas Transmission Energy Day
October 23rd October 2025

Demand

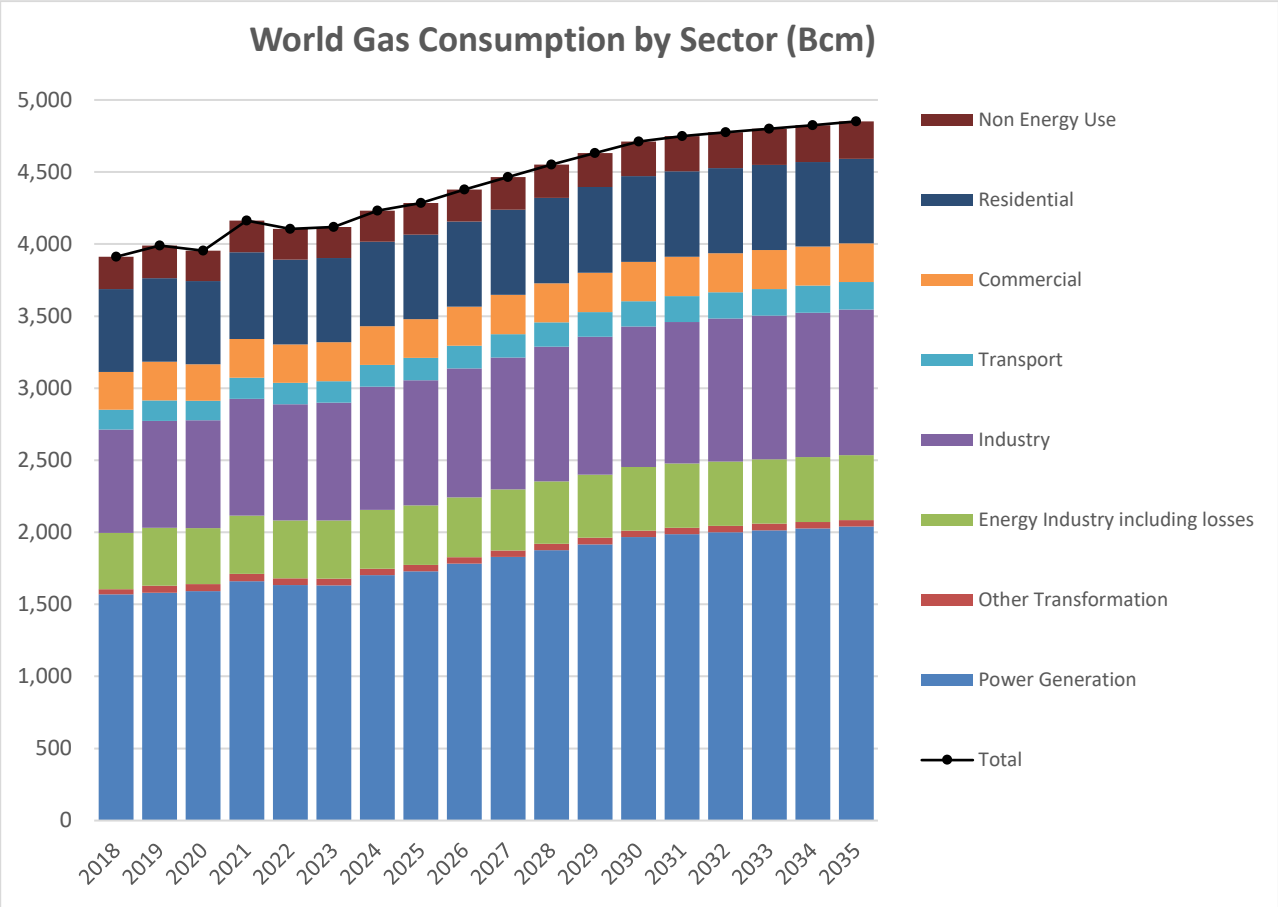
World Demand to 2035 by Region

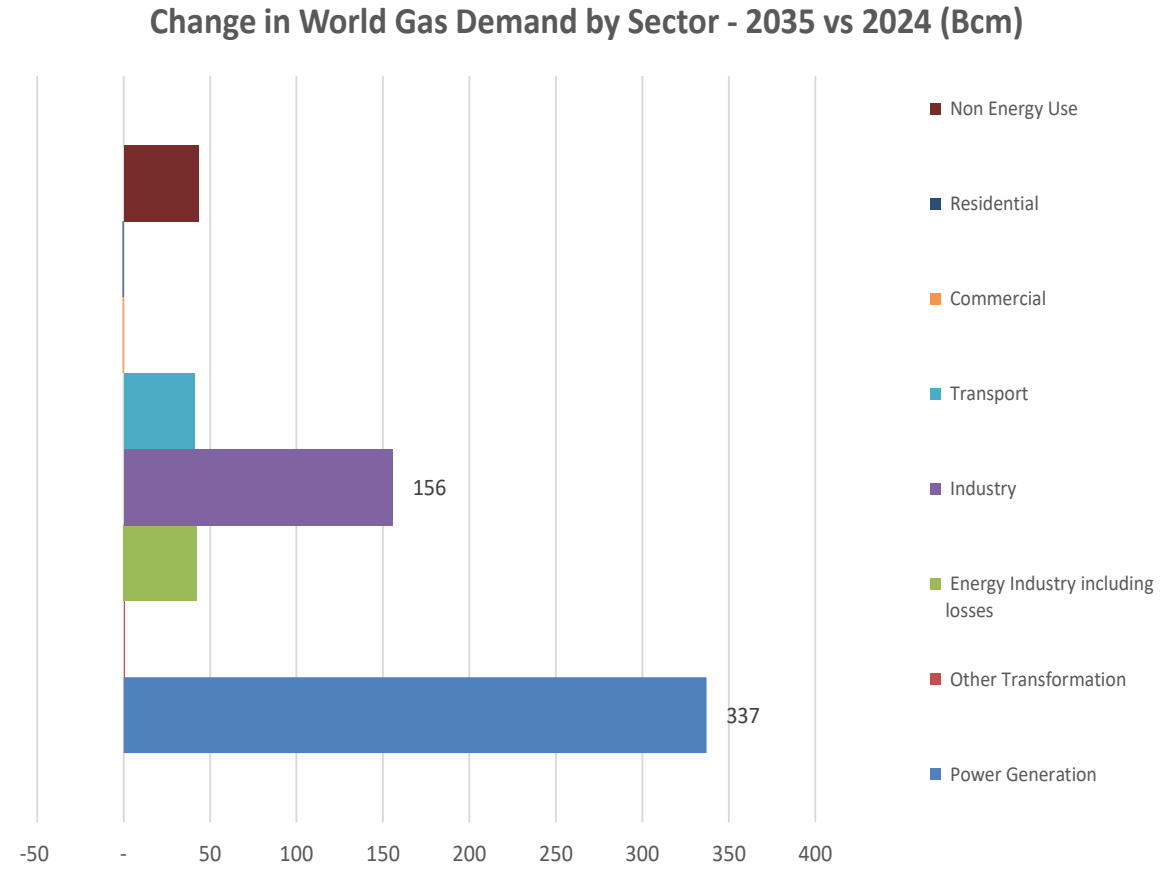




- Growth of 618 bcm (+15%) between 2024 and 2035, of which 45% is in Middle East (+154 bcm) & China (+122 bcm). Strong growth in ASEAN and South Asia, while Sub-Saharan Africa could see growth in domestic supply in parallel with development of LNG export projects
- European demand is virtually unchanged between 2024-35, following a decline of 108 bcm since 2021. Partial recovery in 2027-2029 (peaking around 490 Bcm), driven by growing LNG supply, is not sufficient to rebound to 2022 level (504 Bcm), let alone pre-crisis 2021 level of 569 Bcm

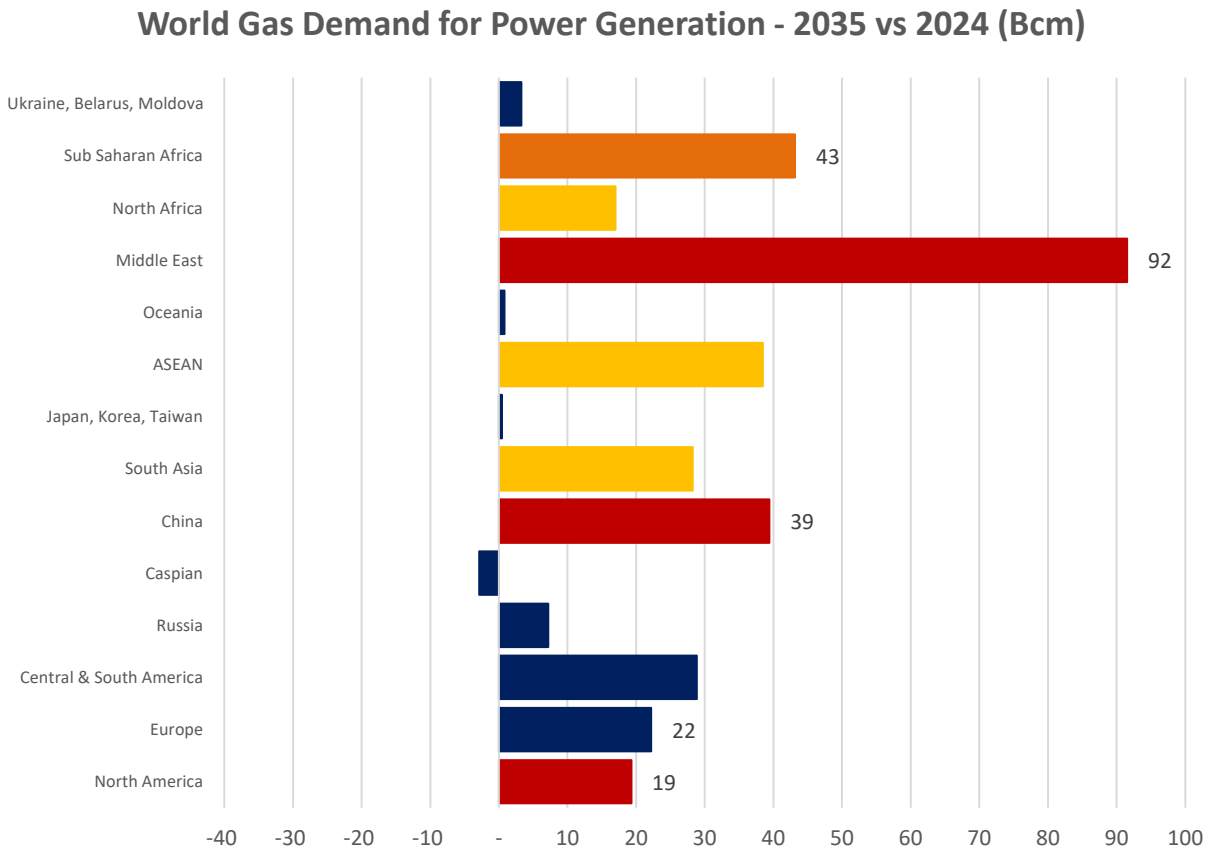
World Demand to 2035 by Sector

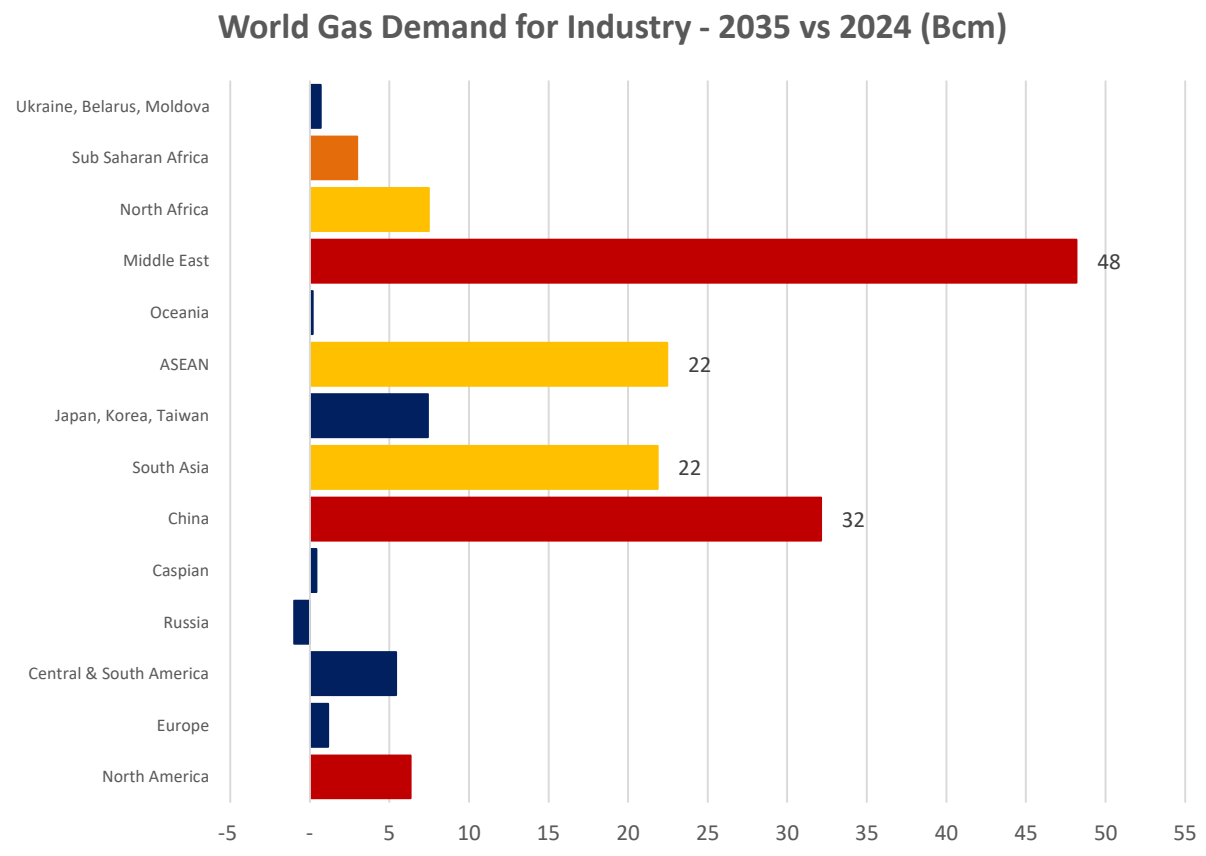




- Growth in demand in 2024 -2025 is concentrated in the power generation (+337 Bcm) and industrial (+156 Bcm) sectors, accounting for 80% of growth in 2024-35
- By contrast, virtually no growth in gas demand for residential & commercial (i.e., space heating) at a global level. Growth in Res-Comm demand in China is offset by decline in Res-Comm demand in Europe & North America in the same period.

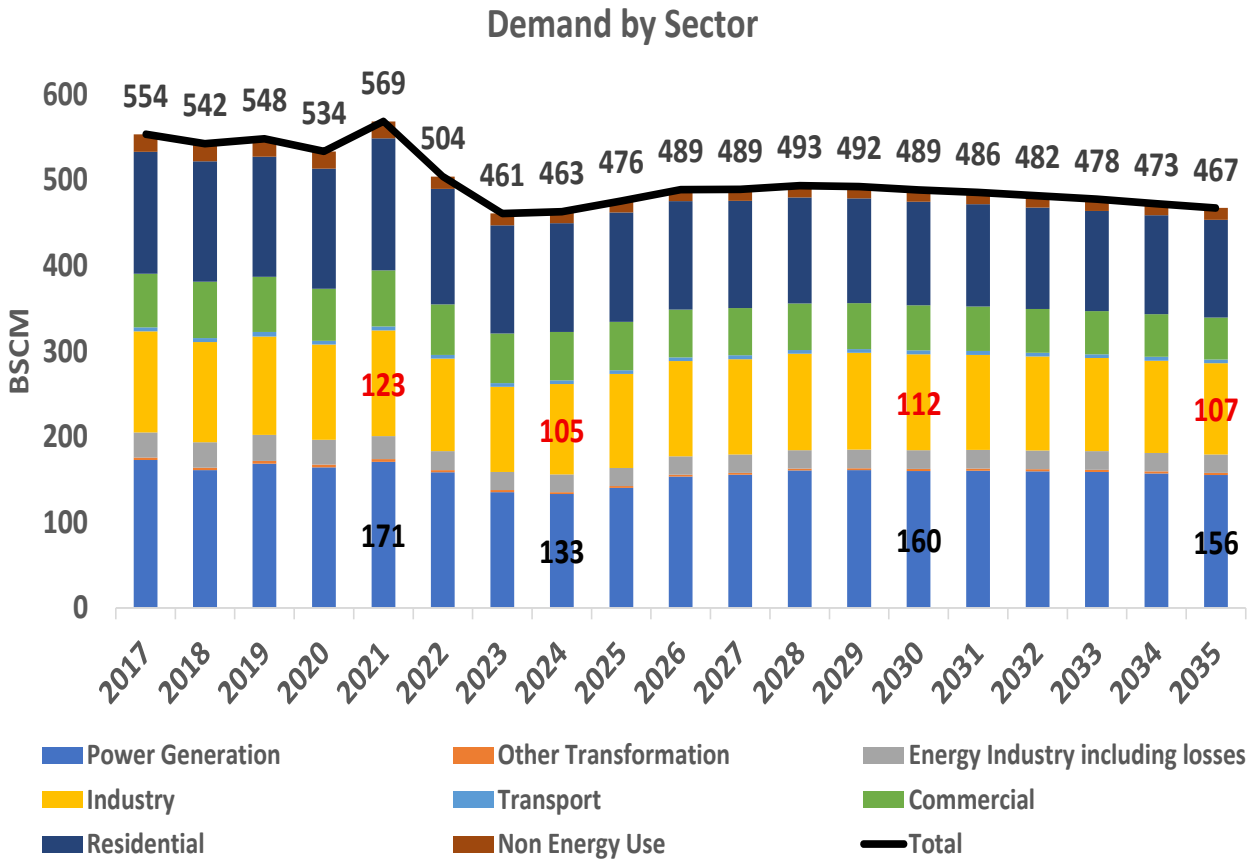
World Demand to 2035 by Sector

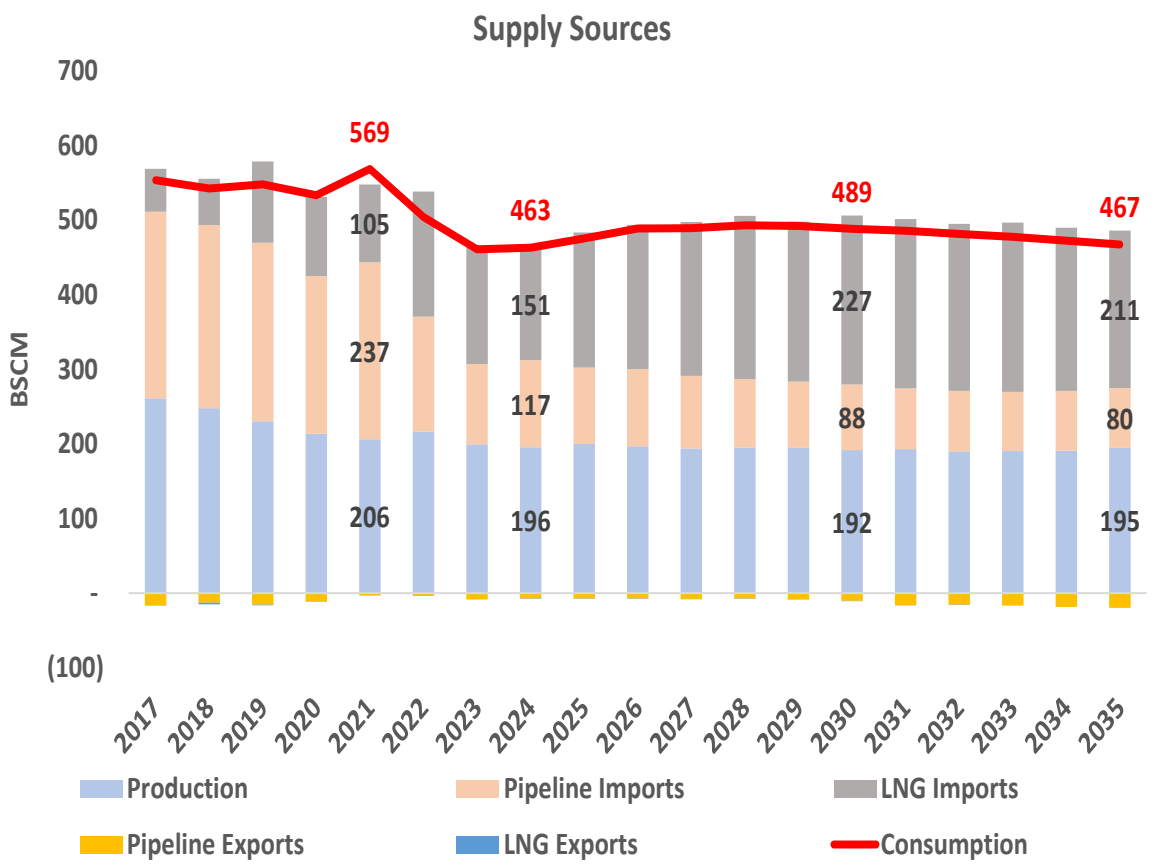




- Growth in gas demand for power generation is strongest in Sub-Saharan Africa, Middle East, and Asia. In Europe, the growth is concentrated in Cyprus, Germany, Italy, Netherlands, Poland, and Turkey. Replacement of fuel oil (Cyprus) and coal, and nuclear phase-out are key factors
- Industrial gas demand grows strongly in North America, Middle East, and Asia, but is lacking in Sub-Saharan Africa. In Europe, Turkey provides most of the growth.

Europe Balance



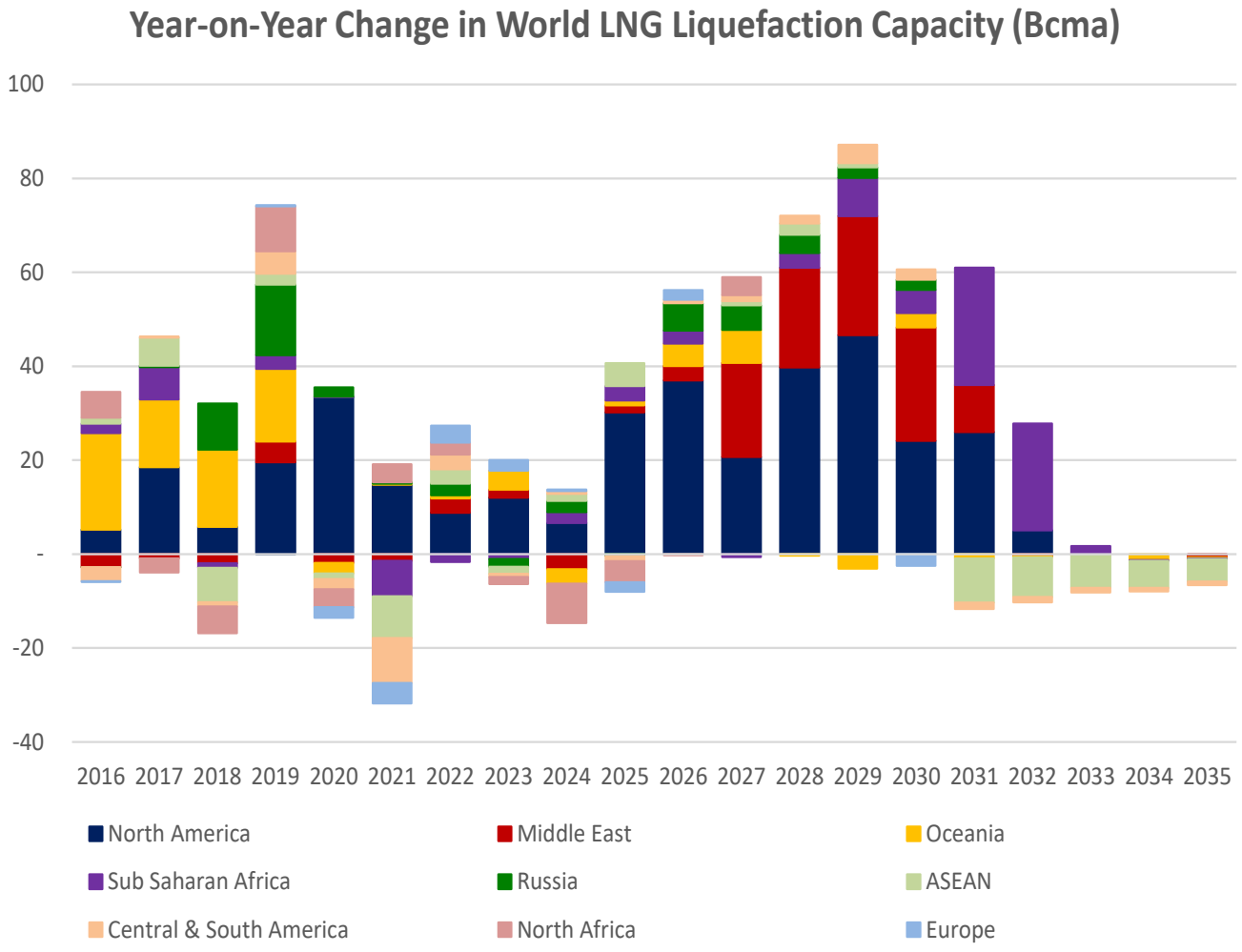


- Europe demand has plateaued and set to rise marginally over rest of this decade as power generation demand increases as coal declines
- Declining production, partly offset by new Romania and Turkey production, with falling pipeline imports, leads to rising LNG imports

LNG and Prices

LNG Export Capacity growth to 2035

Figures in brackets are MTPA
Red means yet to take FID



2025 – Corpus Christi P3T1-4 (6), Plaquemines T1 (13), Tortue (2.5), LNG Canada (14)

2026 – Golden Pass T1-2 (12), Corpus Christi P3 T5-7 (4.5), Plaquemines T2 (6.5), Energia Costa Azul (3), Qatar NFE T1-2 (16), Pluto 2 (5), FLNG Congo Brazzaville (2.5), Cap Lopez Gabon (0.7), Arctic T1-2 (13)

2027 – Qatar NFE T3-4 (16), Golden Pass T3 (6), Altamira FLNG 2 Mexico (1.4), Sabah ZLNG (2), Kasuri FLNG Indonesia (1.2)

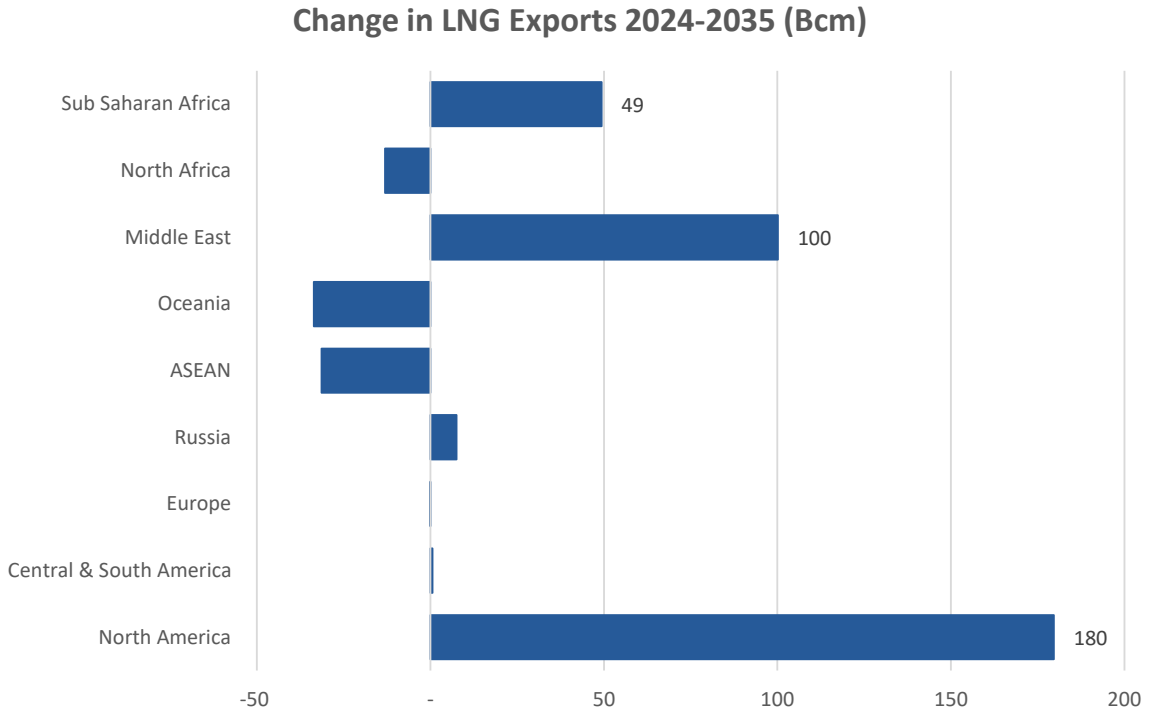
2028 – NLNG T7 (7.5), Corpus Christi P3 T8-9 (5), Woodfibre (2), Port Arthur P1 (13), Qatar NFS T5-6 (16), Cedar FLNG (3.3), FLNG Hilli Argentina (3)

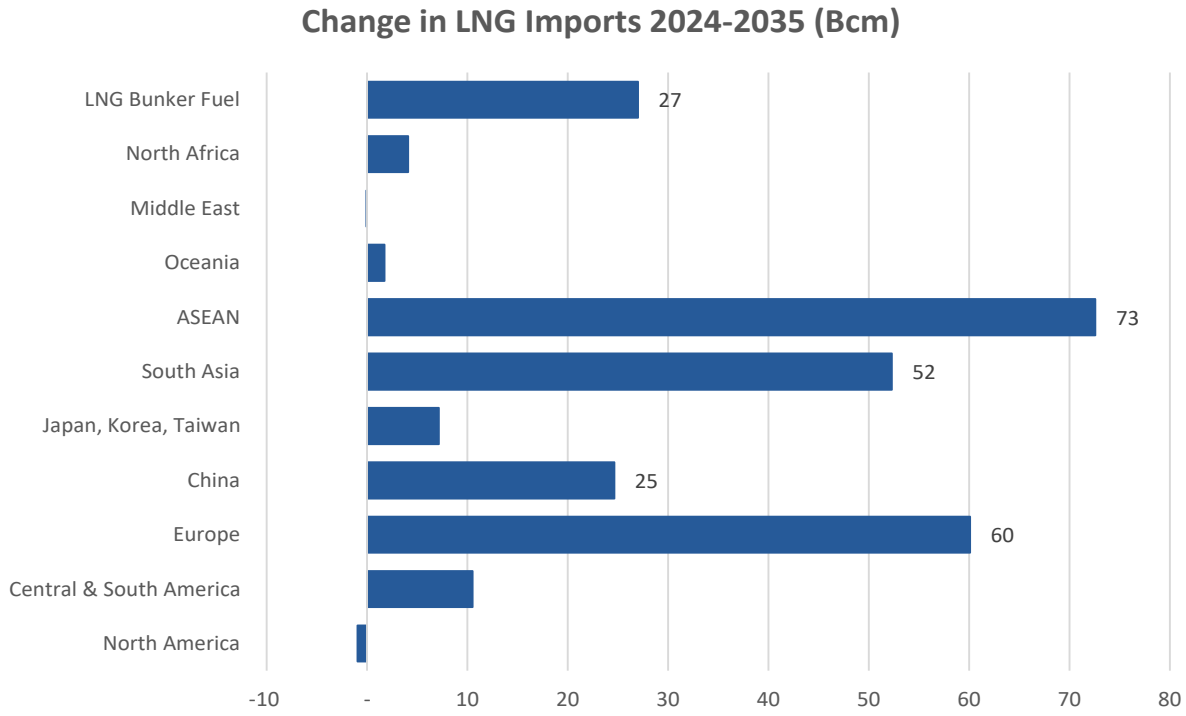
2029 – Rio Grande T1-3 (17.5), Louisiana T1-2 (11), Calcasieu Pass P2 (10), Ruwais UAE (9.5), Marsa Oman (1), Oman Sur (4)

2030 – Rio Grande T4-5 (11), *Mozambique T1-2 (13) ?*, Papua LNG (4), Qatar NFW T7-8 (16), Delfin FLNG (3), Louisiana T3 (5.5), Port Arthur P2 (13),

2031 –Rovuma T1-2 (18)

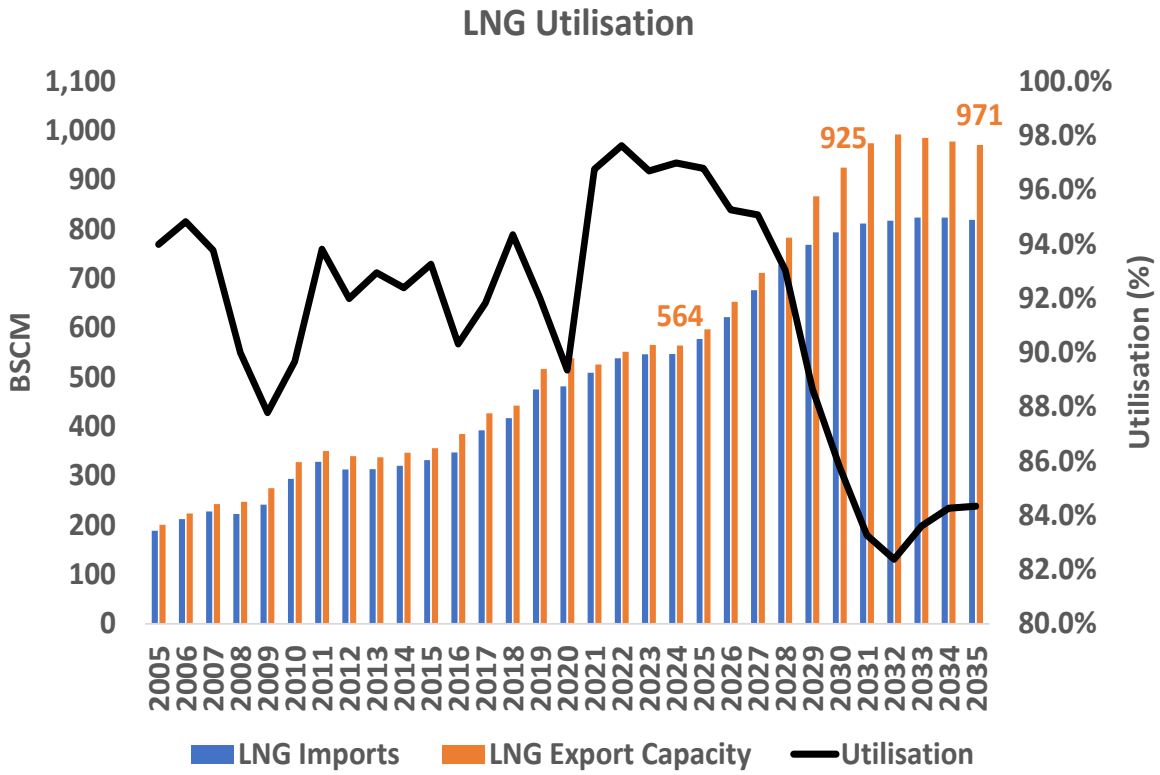
LNG Imports and Exports

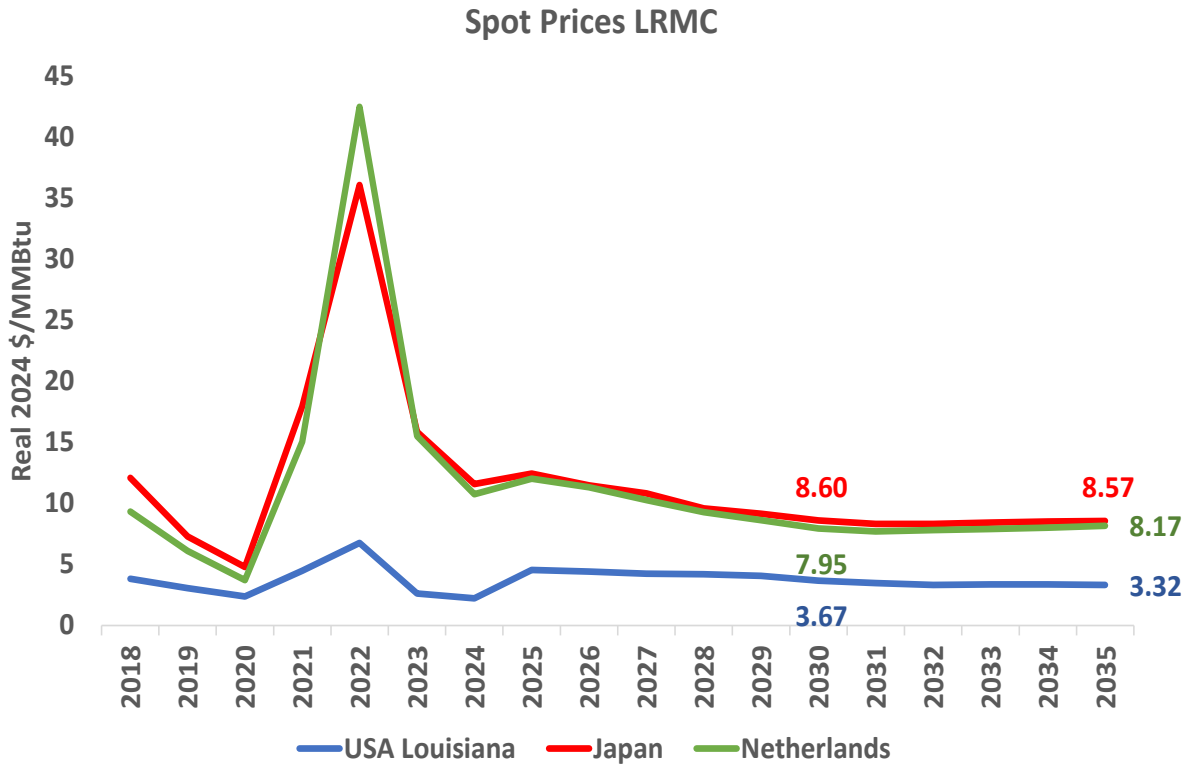




- Total LNG import growth between 2024 and 2035 is some 260 bcm, of which 27 Bcm is growth in LNG as bunker fuel.
- LNG export growth follows the rise in export capacity, so North America tops the list, accounting for over half the rise in LNG exports, followed by the Middle East – Qatari expansions – and Sub-Saharan Africa – largely Mozambique, Nigeria, and Tanzania.
- Regarding imports, ASEAN has the most significant increase (73 bcm) as production declines and demand grows. China's growth peaks around 2030 at 137 bcm, declining to 127 bcm by 2035 (25 bcm growth in 2024-35), partly recovering from the 20 bcm decline in 2022 following the weak economic activity and lockdowns.
- Europe sees a growth of 60 bcm as production and pipe imports decline. South Asia shows strong growth as prices stimulate demand

LNG Utilisation and Spot Prices

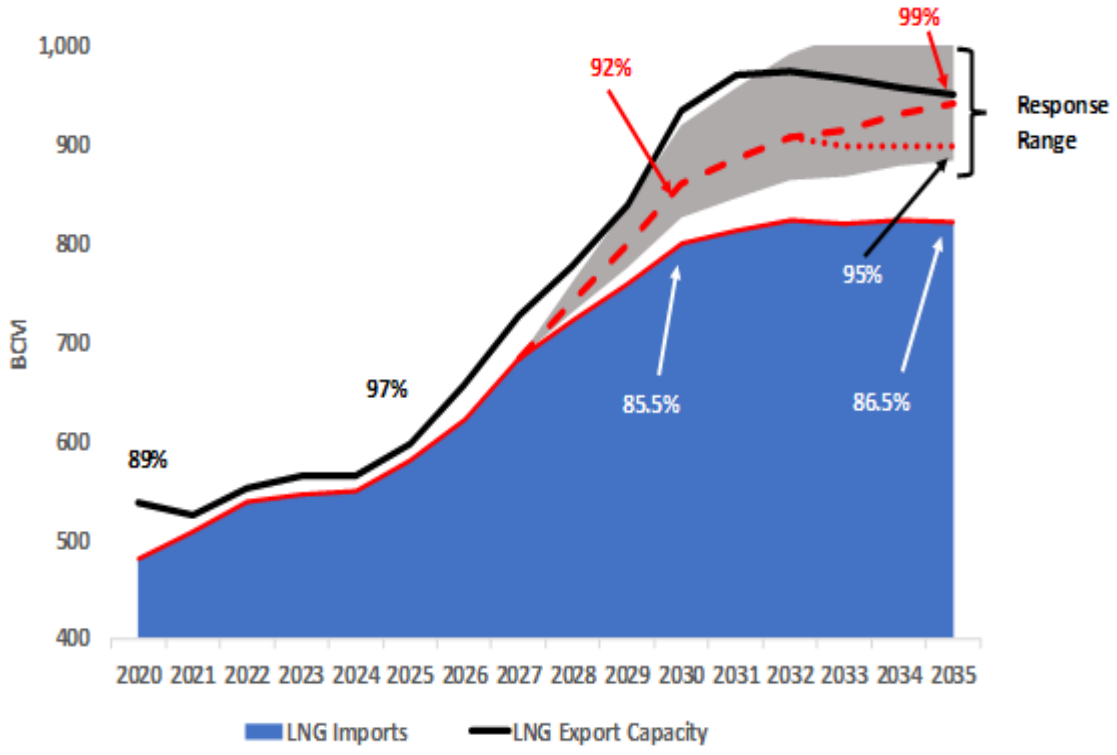


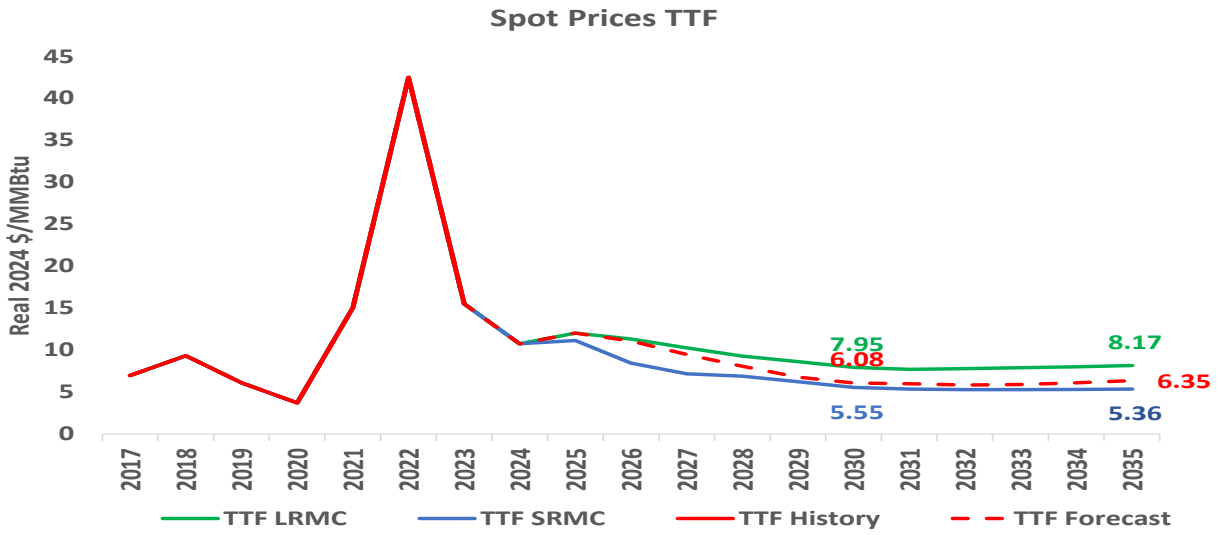


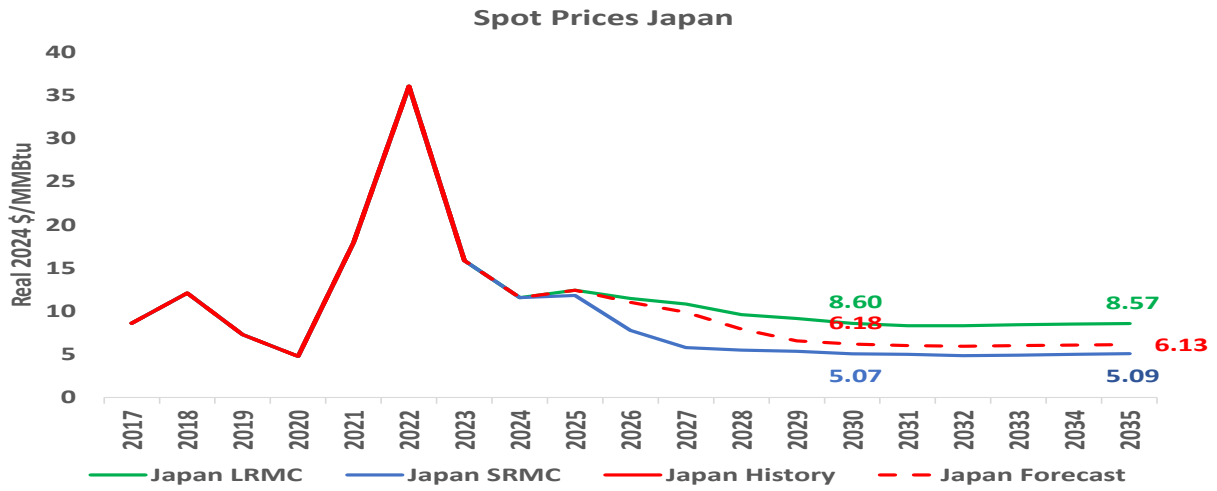
- LNG utilisation – imports divided by available LNG export capacity – is at very high levels (98%) post-Russian invasion of Ukraine – effectively at full capacity
- Utilisation is not expected to begin declining until 2026 as the anticipated surge in LNG supply materialises. The growth in available supply then outstrips the growth in demand for LNG imports, and utilisation – based on the projected demand and available supply – falls to 87 per cent by 2030 and rises marginally to 89 per cent by 2035.
- Note that in 2009 (after the 2008 financial crisis) and in 2020 (COVID), utilisation was 89 per cent. European and Asian spot prices decline from the very high 2022 levels, easing to $8 or so by 2030 on the back of the LNG oversupply. Henry Hub stabilises in the $3 to $3.5 per MMbtu range.

Demand Response and Spot Prices

Response Range to $6 Gas



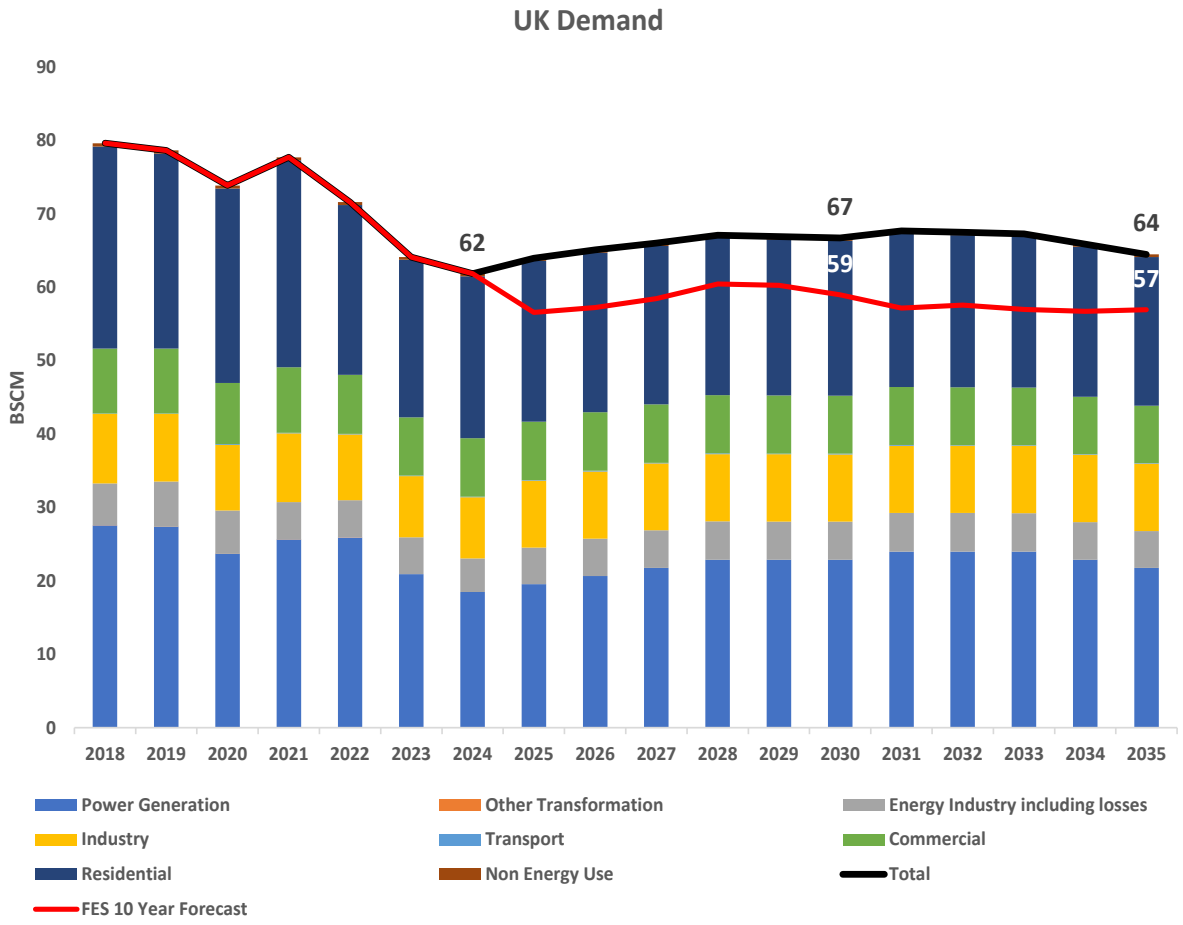


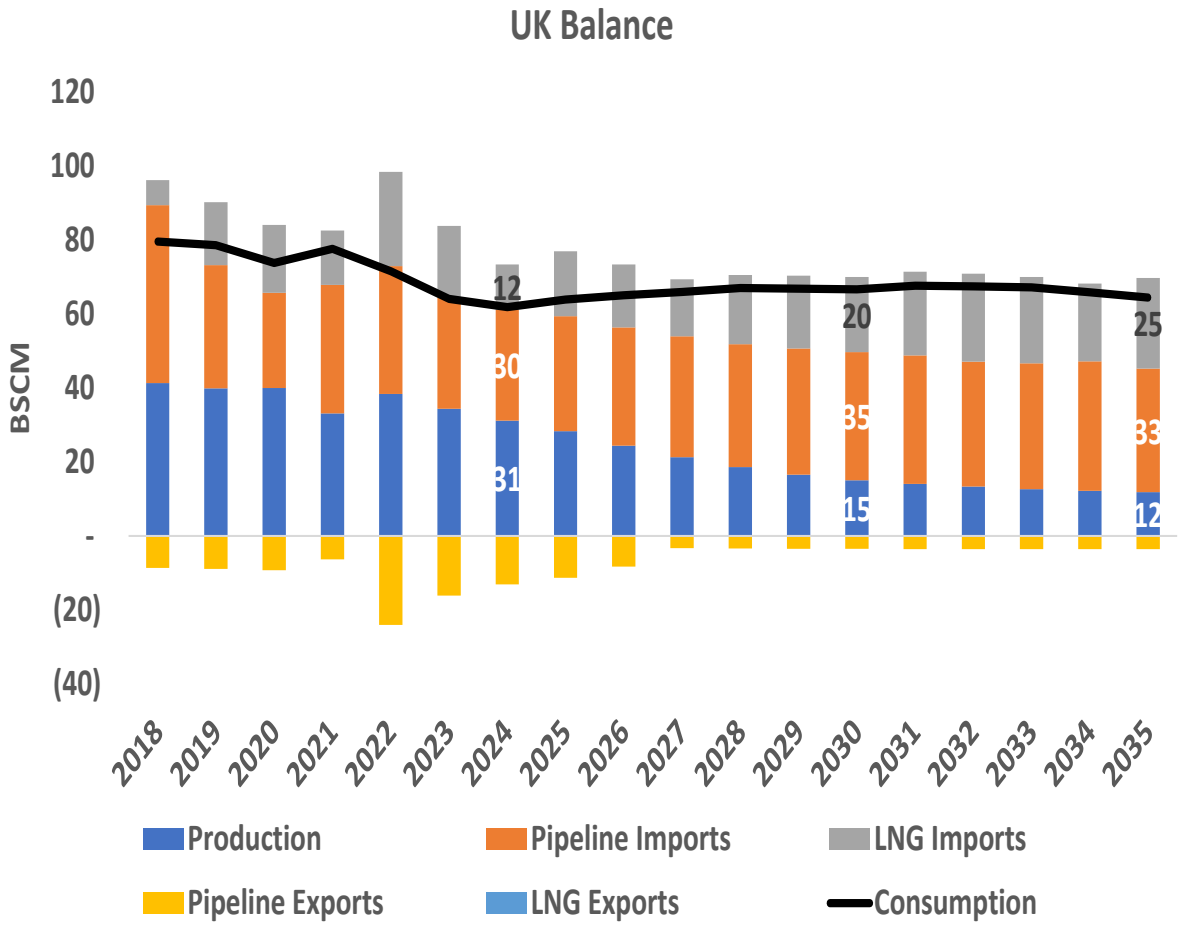


- Declining utilisation as the market loosens points toward more short-run pricing rather than long-run.
- Lower prices increases demand for LNG, especially in Asia – range of response to a $6 gas world

UK

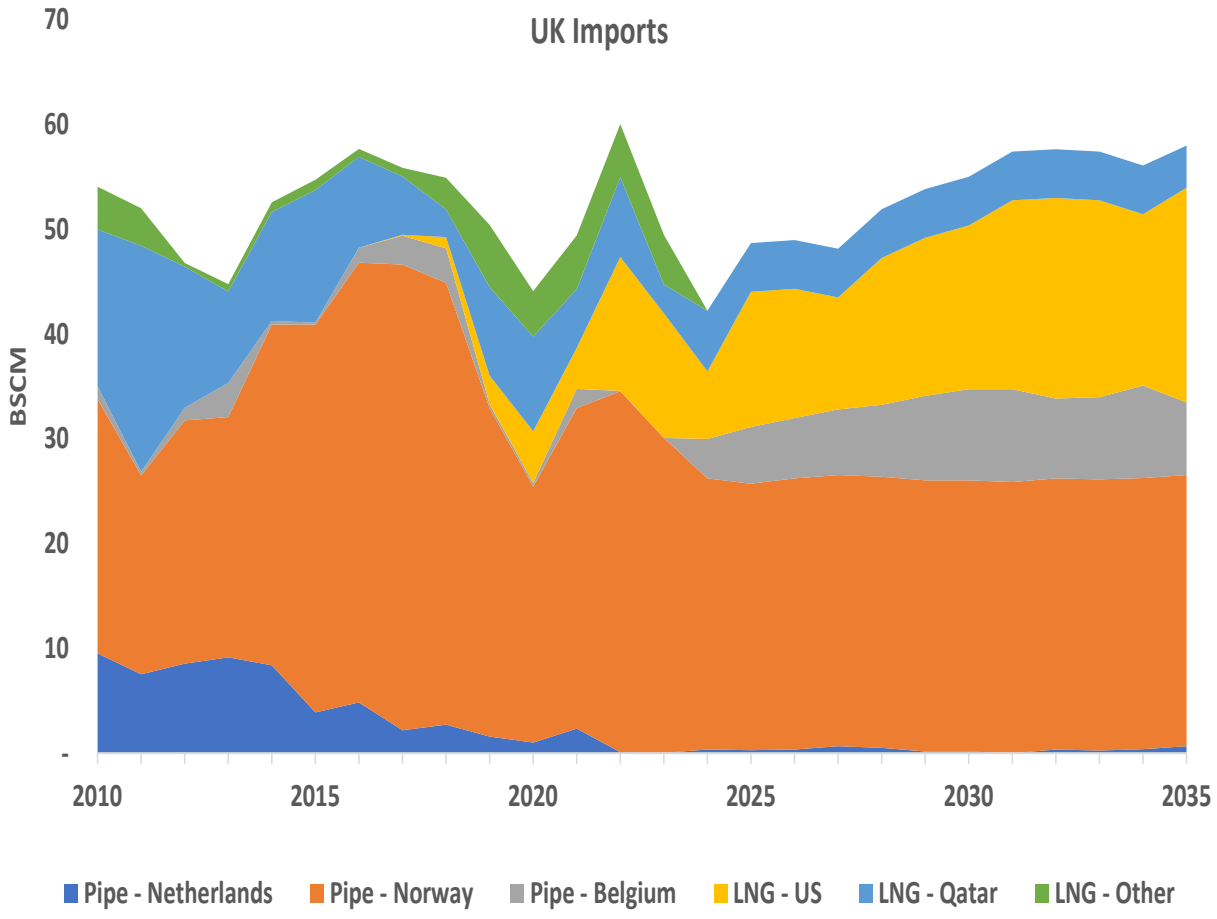
UK Demand and Supply

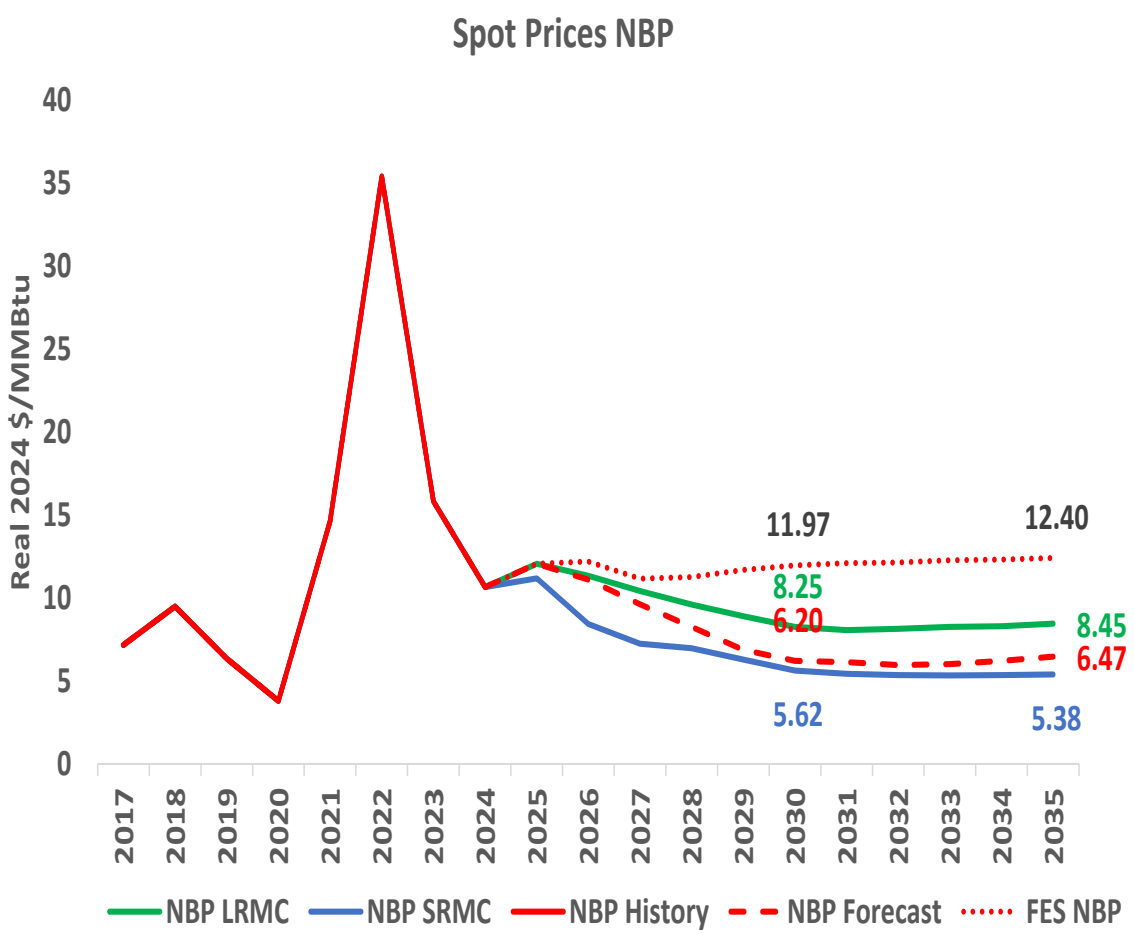




- Demand plateaus – slightly above latest FES 10 year forecast
- Production falls faster than demand – LNG imports fill the gap

UK Imports and Prices





- US LNG dominates UK LNG imports – Qatar falls back
- Projected prices at some $6 per MMBTU around half the FES assumption

Thank you!

Mike Fulwood
mike.fulwood@oxfordenergy.org

https://www.oxfordenergy.org/wpcms/wp-content/uploads/2025/10/NG202-The-Global-Outlook-for-Gas-Demand-in-a-6-World.pdf

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Natasha Fielding

Editorial Manager
Argus Media

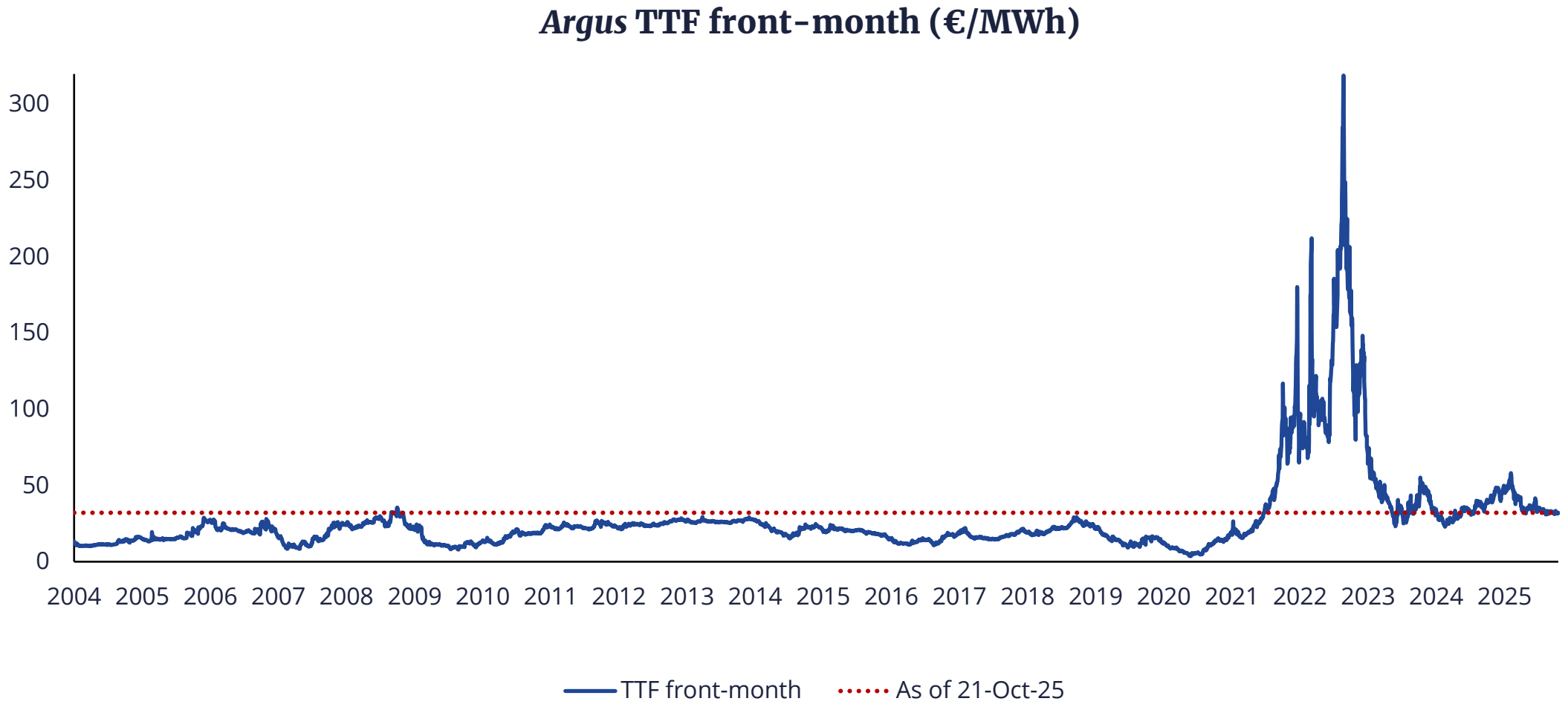
European gas market update

Recent calm: a turning point?

Natasha Fielding, Argus Media
National Gas Energy Forum, 23 October 2025

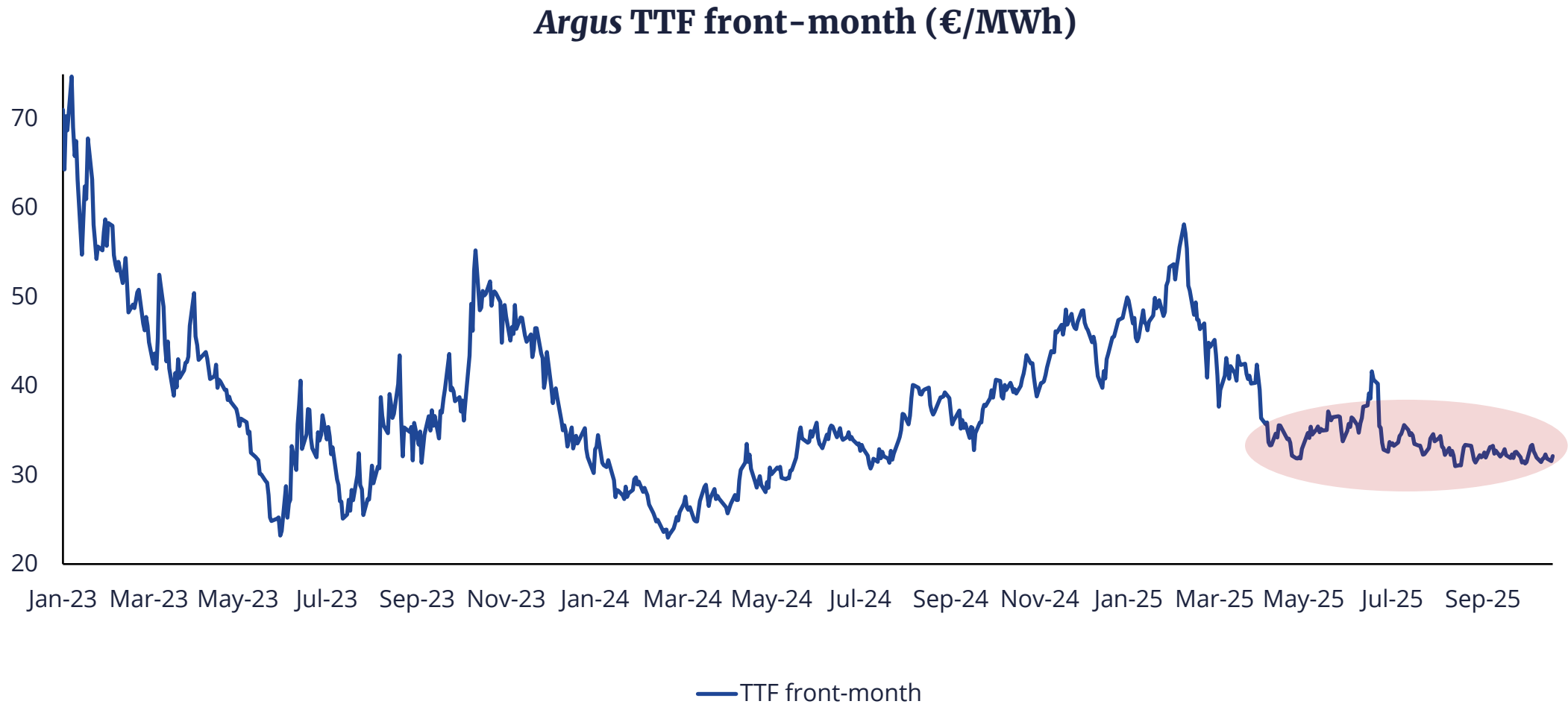
I. Recent prices

The TTF remains higher than in the pre-2022 era



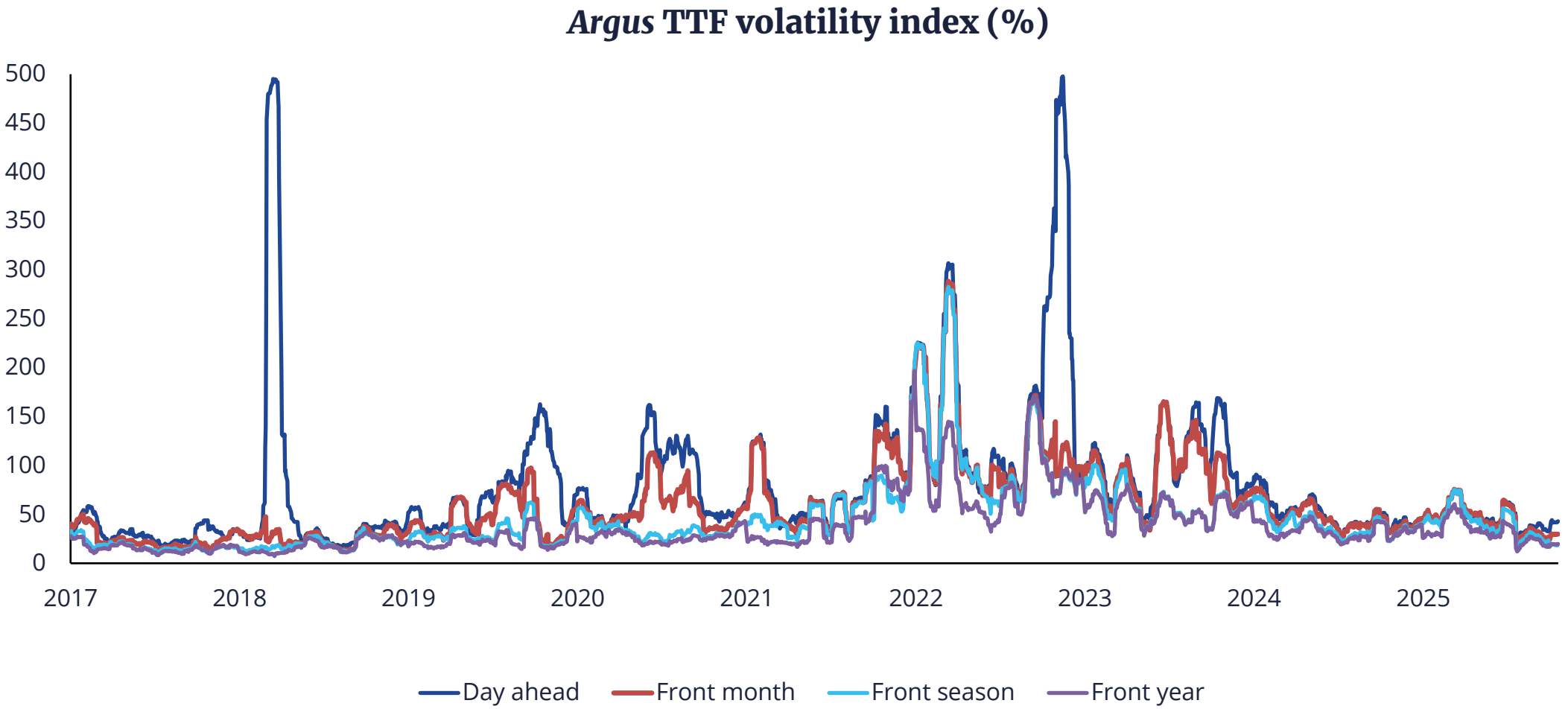
Source: Argus

But prices have been stable for months



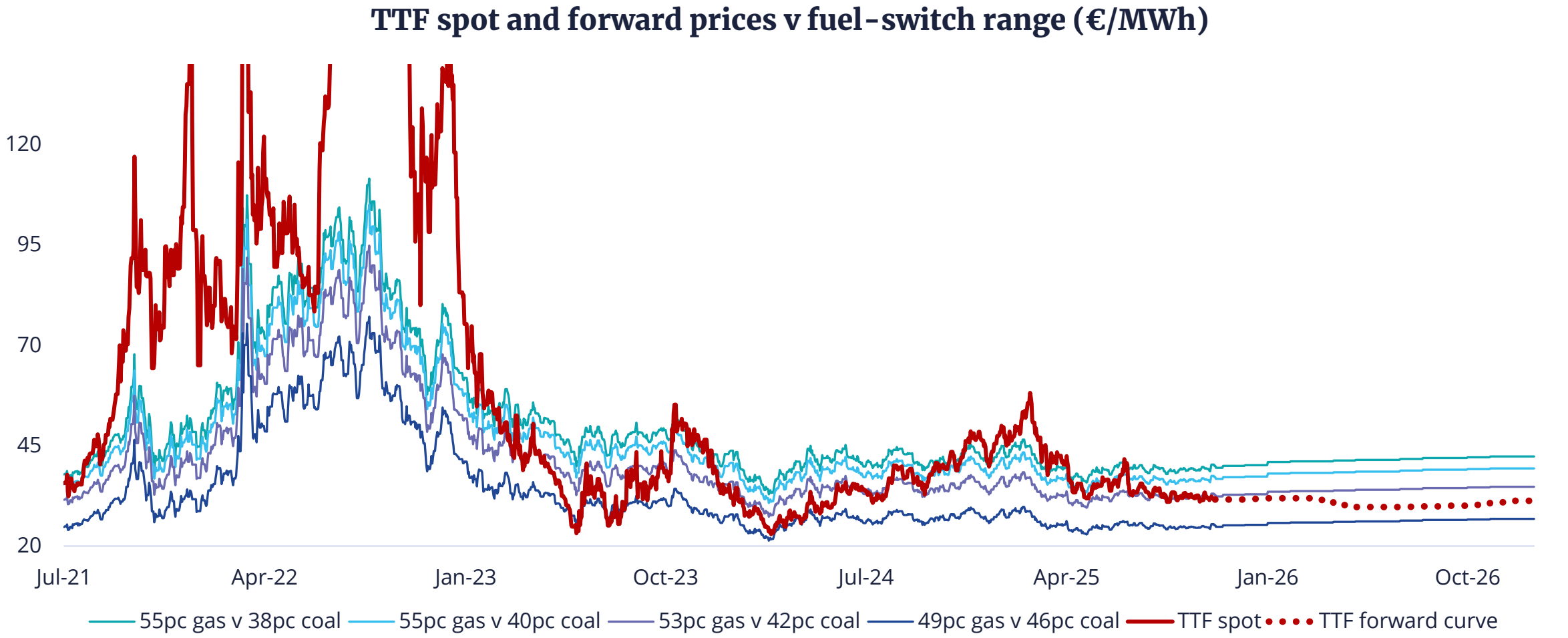
Source: Argus

Volatility is at its lowest in years



Source: Argus

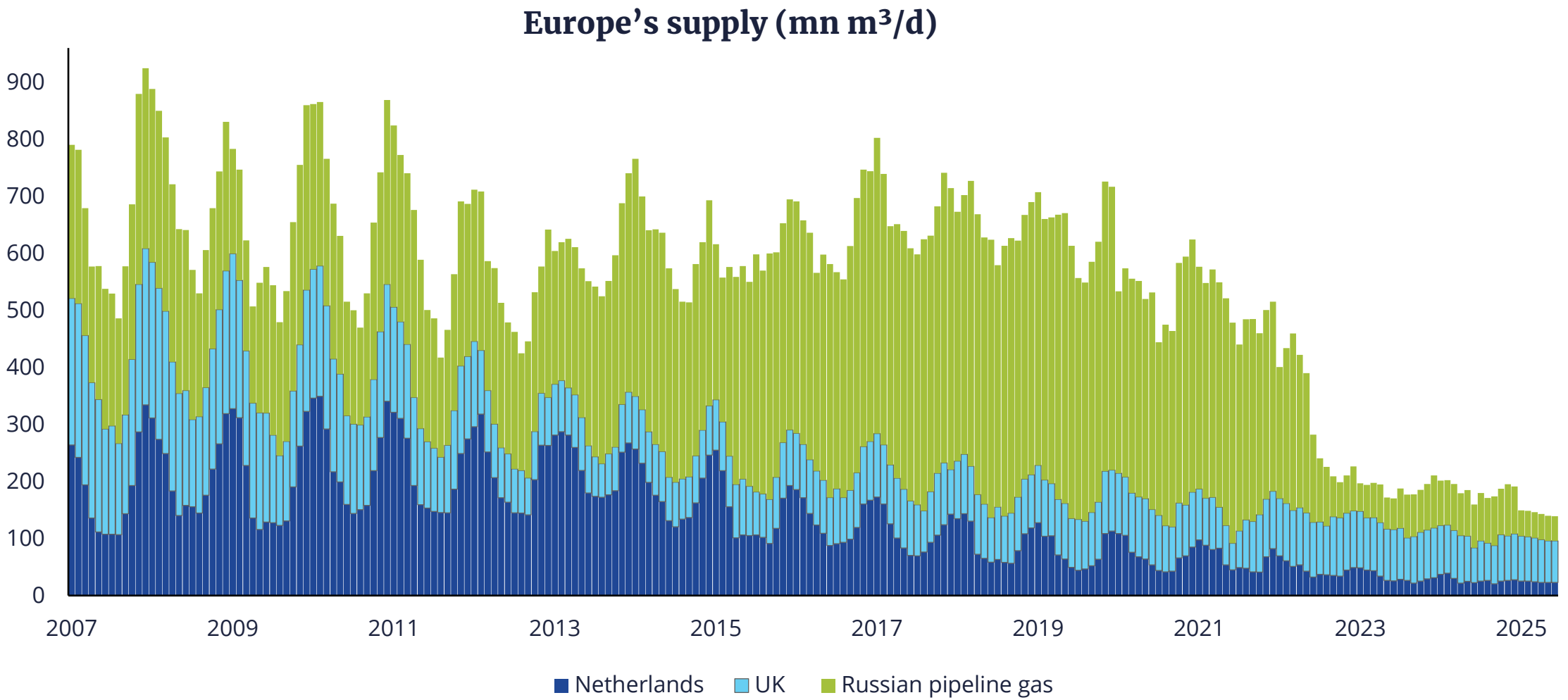
And the TTF is inside coal-to-gas switching territory



Source: Argus

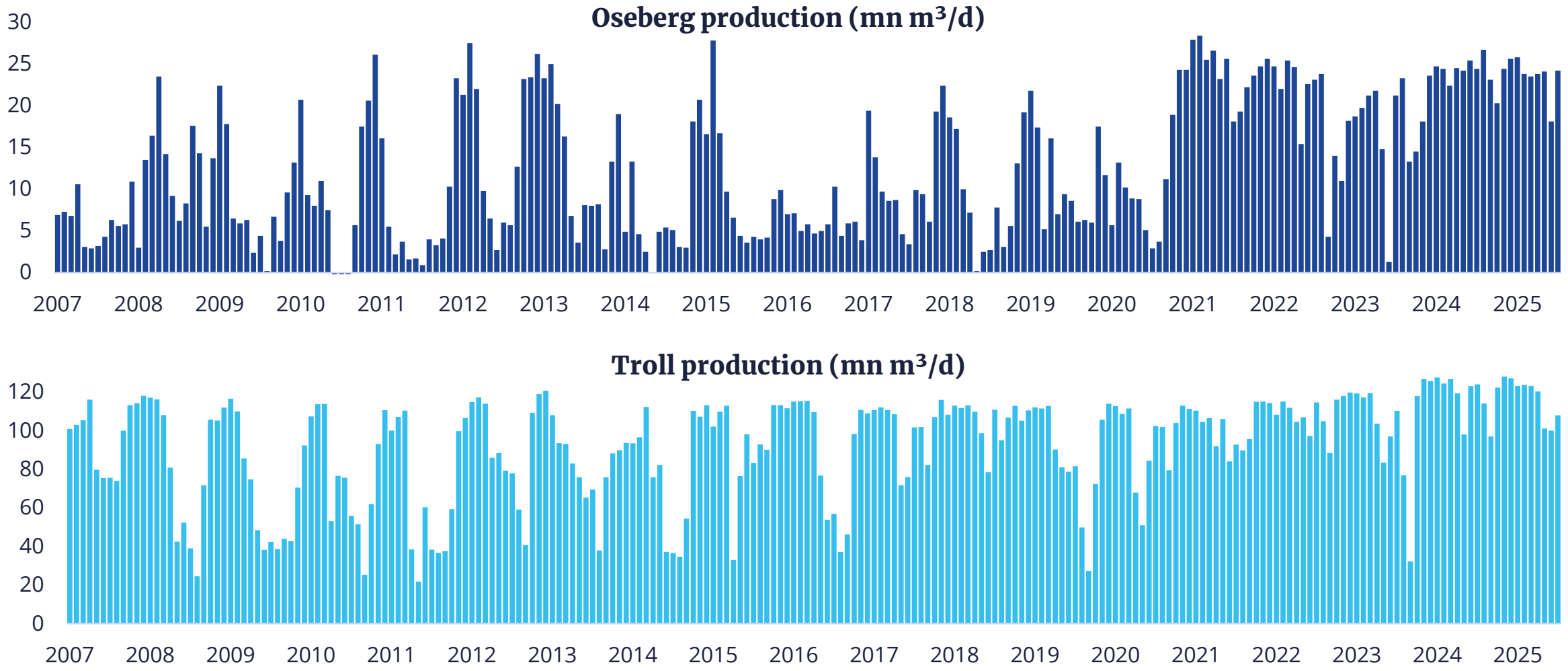
II. Winter 2025-26: a turning point?

Europe has already lost most Russian pipeline gas



Source: Argus, TSOs

Norway's production to hold strong

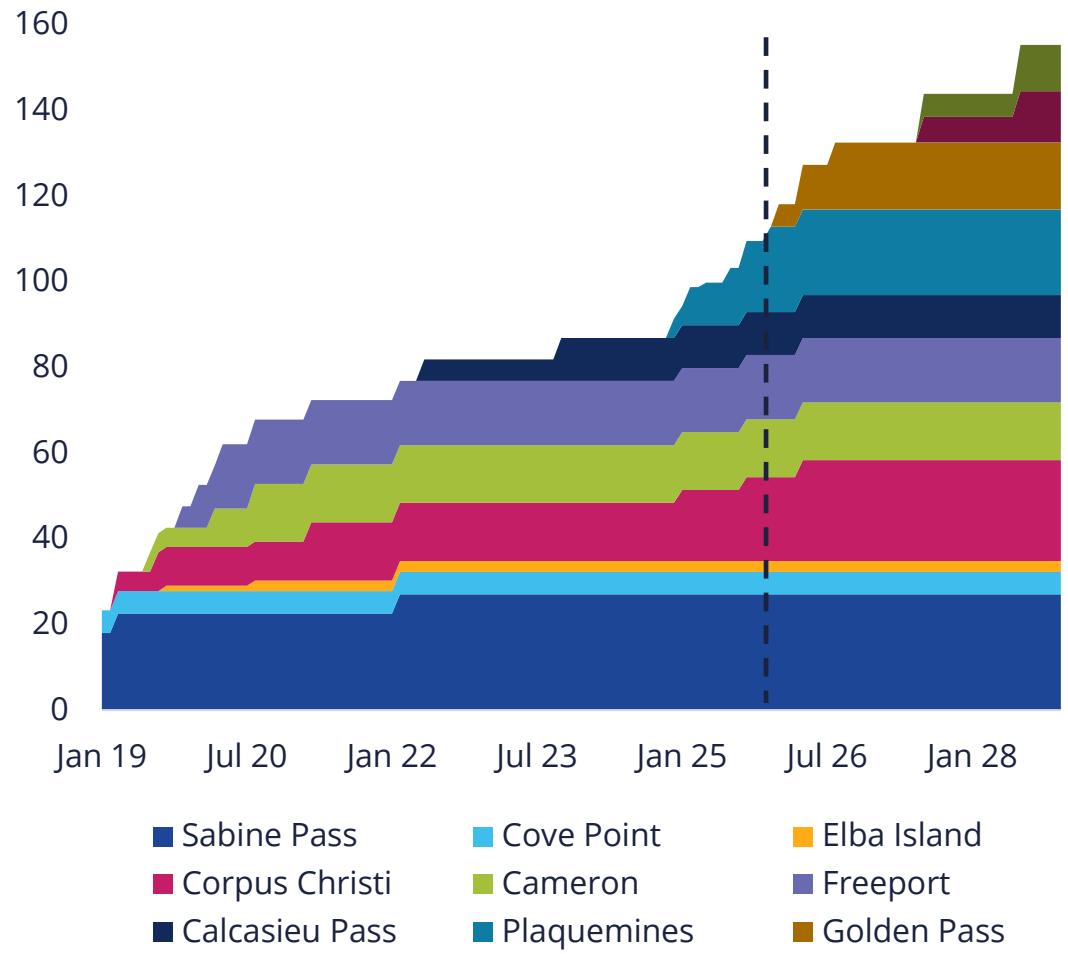


Source: NOD

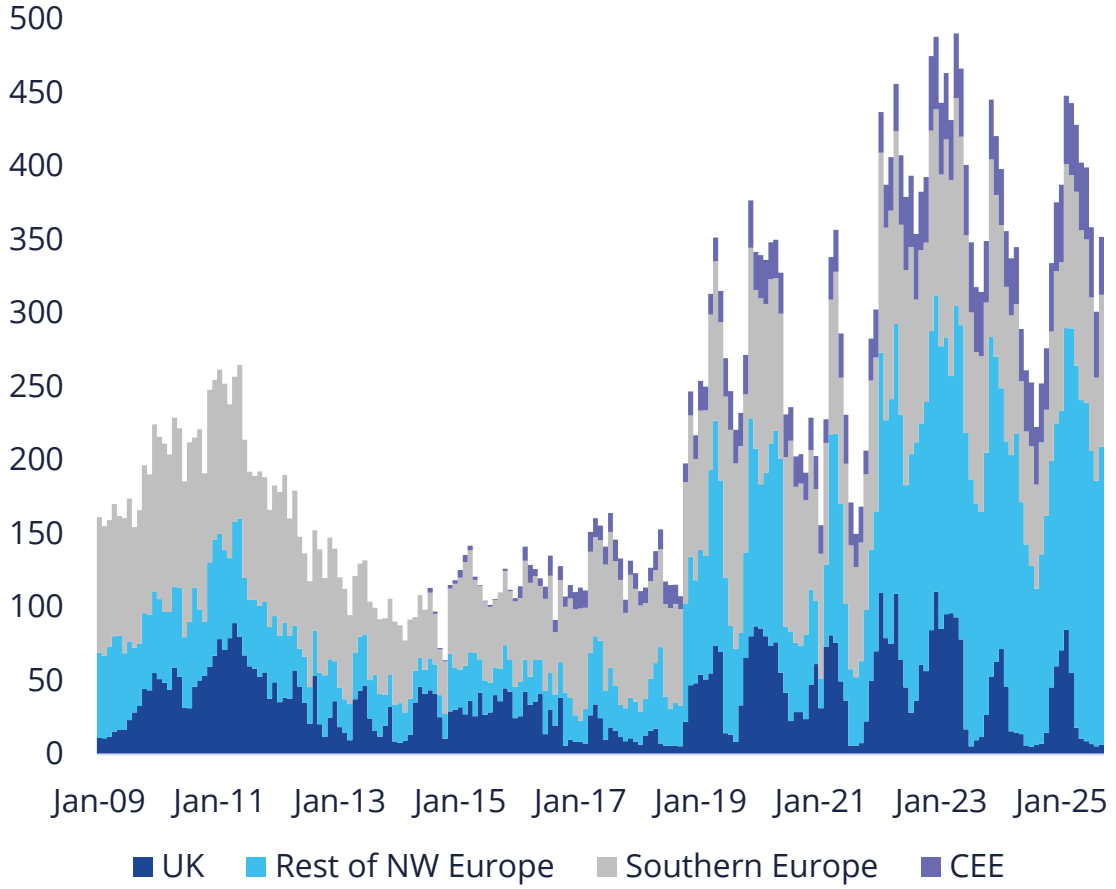
argus

LNG export growth is boosting global supply

US LNG export capacity by project (mn t/yr)



Europe's LNG sendout (mn m³/d)

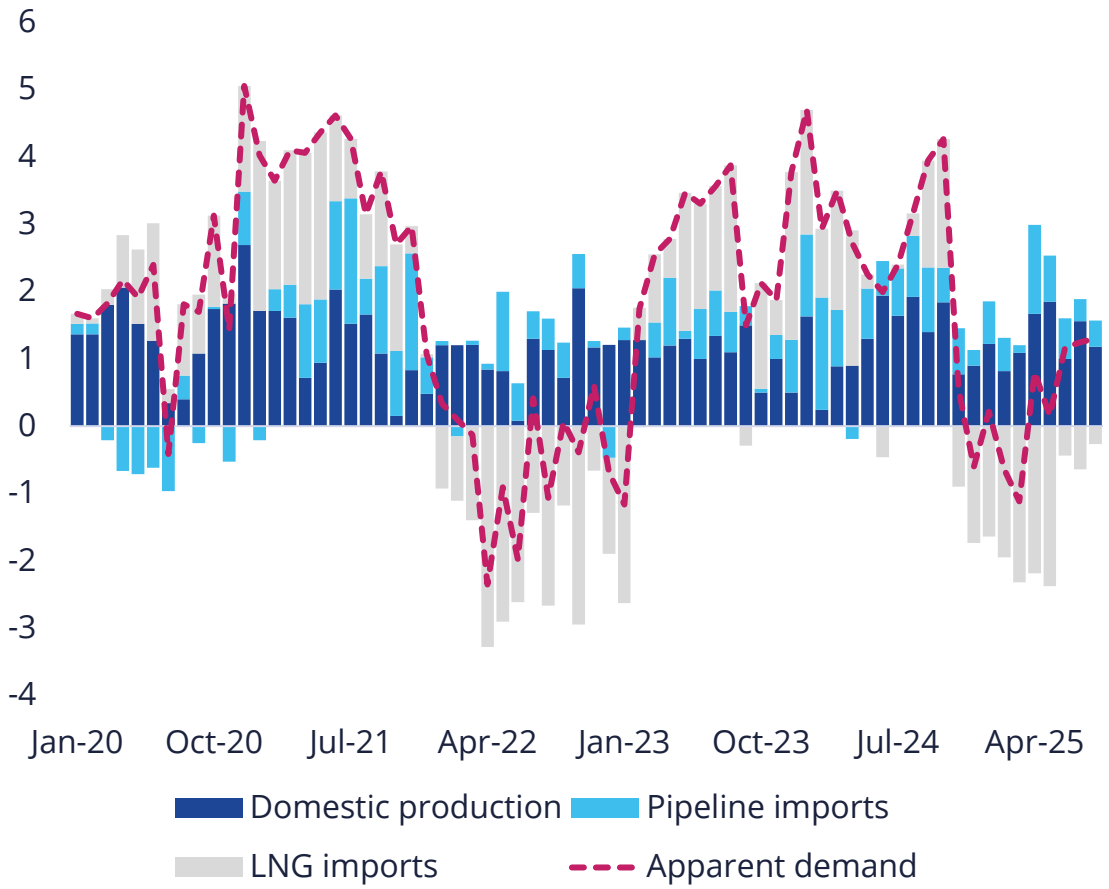


Source: Argus, TSOs

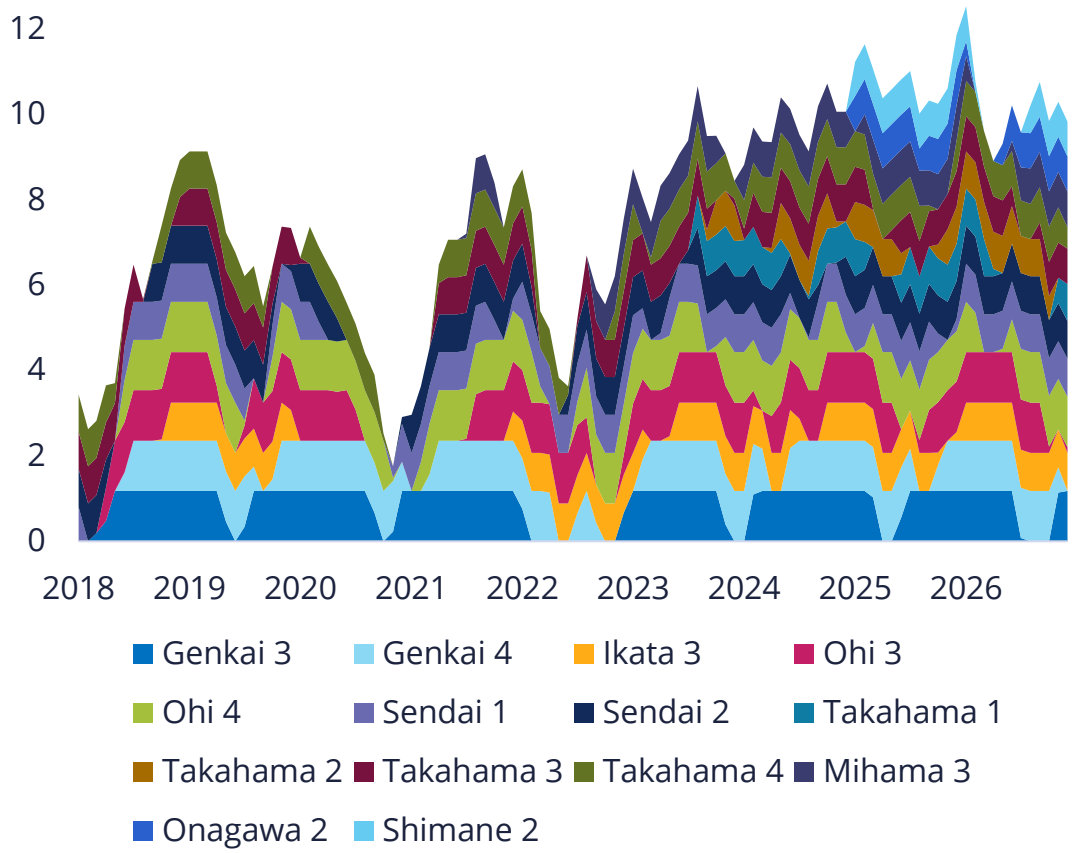
argus

Asian LNG demand has been muted

China's gas supply, yoy change (bn m³)



Japanese nuclear availability (GW)

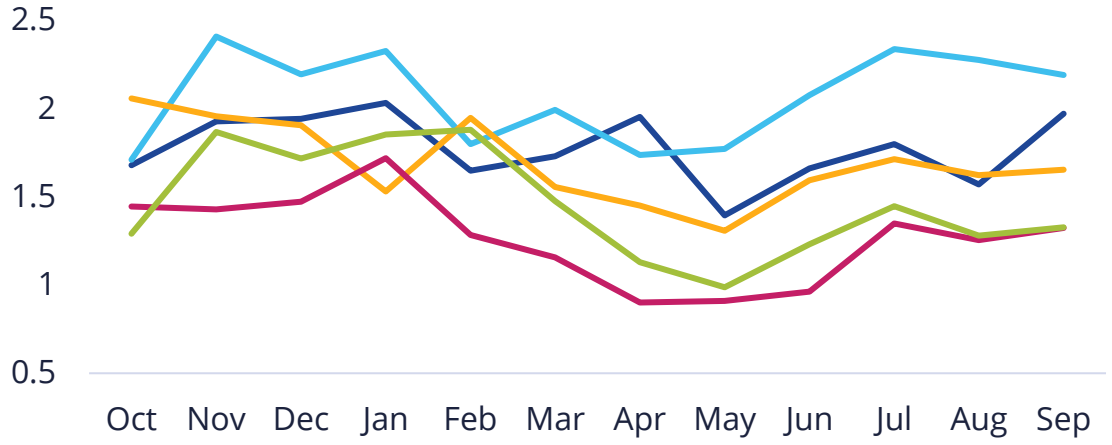


Source: Customs, JEPX

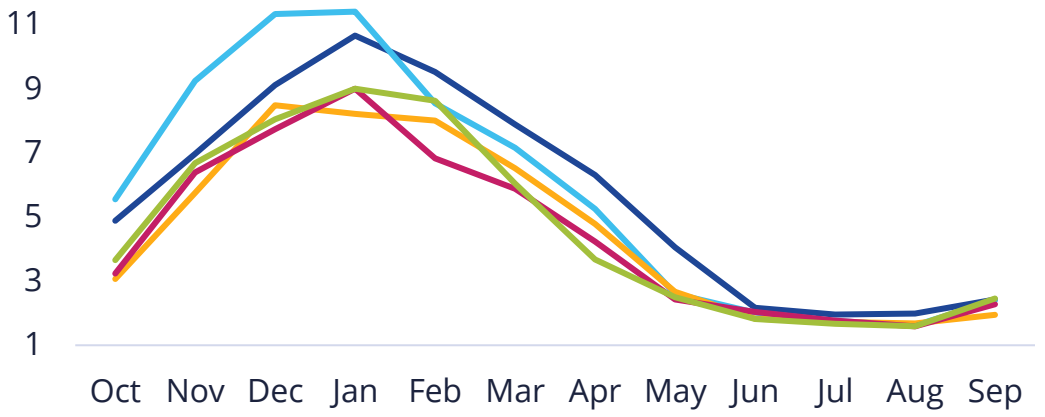
argus

Europe's gas demand to stay below pre-crisis era

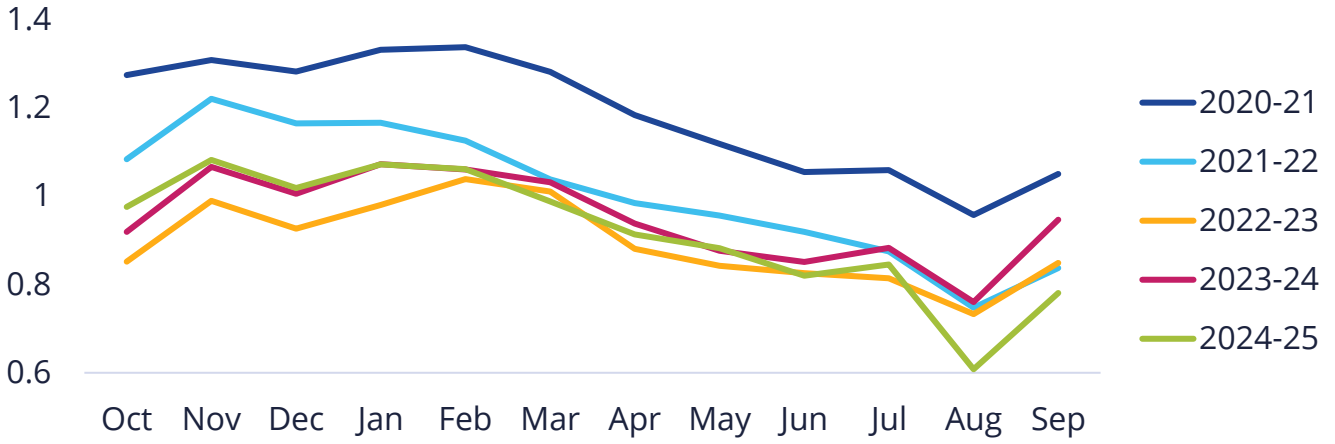
Power sector (TWh/d)



Households and commercial (TWh/d)



Industry (TWh/d)



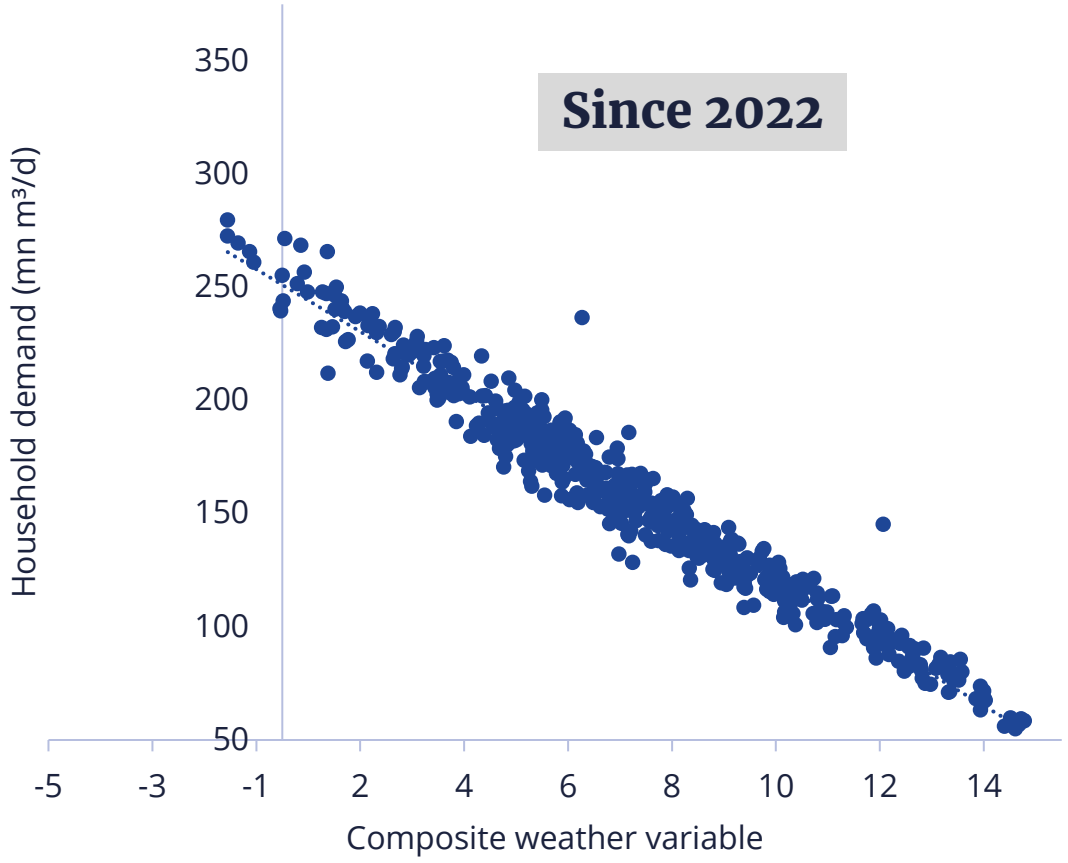
Includes UK, Germany, Netherlands, Belgium, France, Italy, Spain, Portugal, Bulgaria, Croatia, Czechia, Hungary, Poland, Romania.

Source: Argus, TSOs

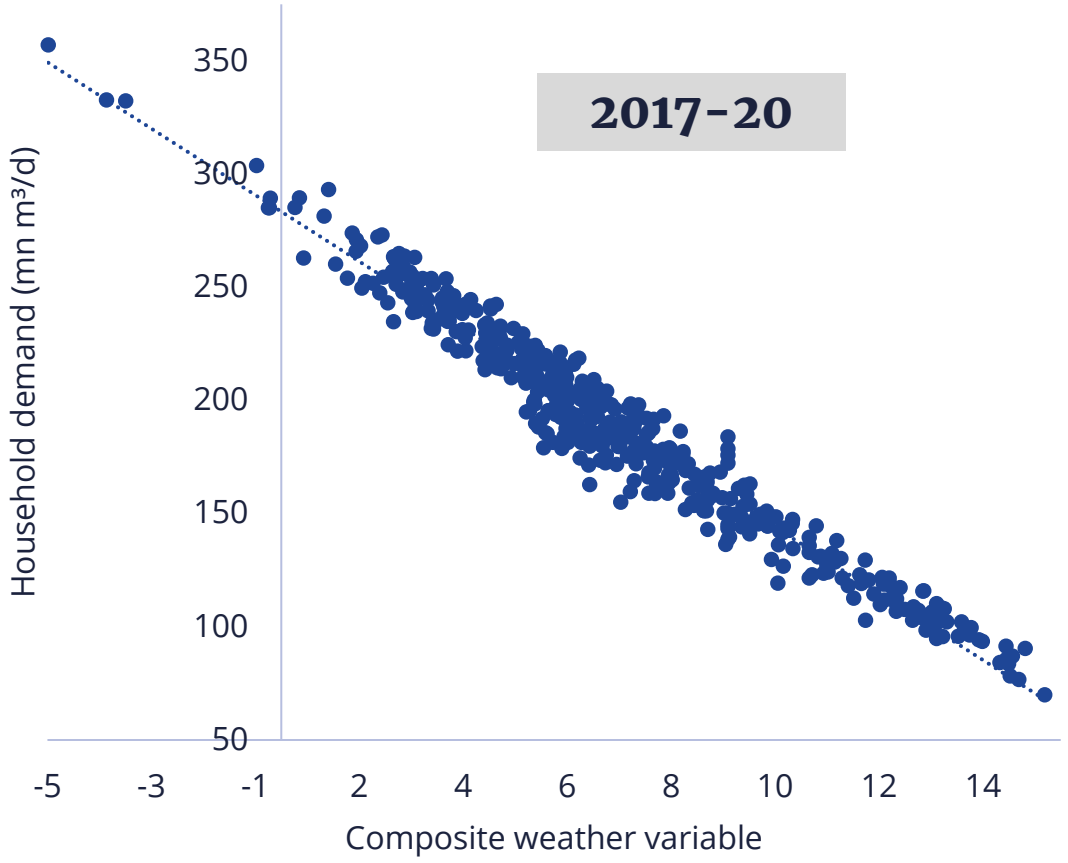
argus

As consumer habit changes since 2022 have stuck

UK winter weather v household gas demand



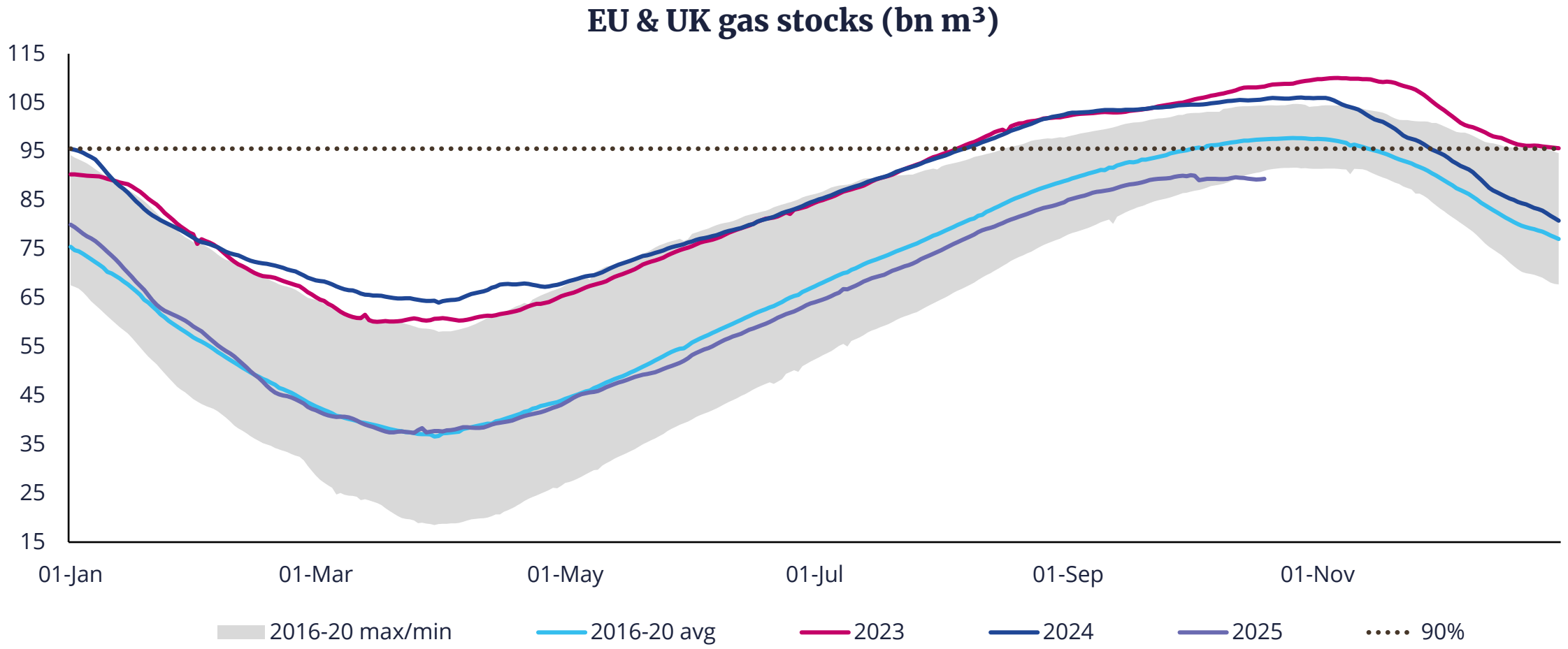
UK winter weather v household gas demand



Source: Argus, National Gas

argus

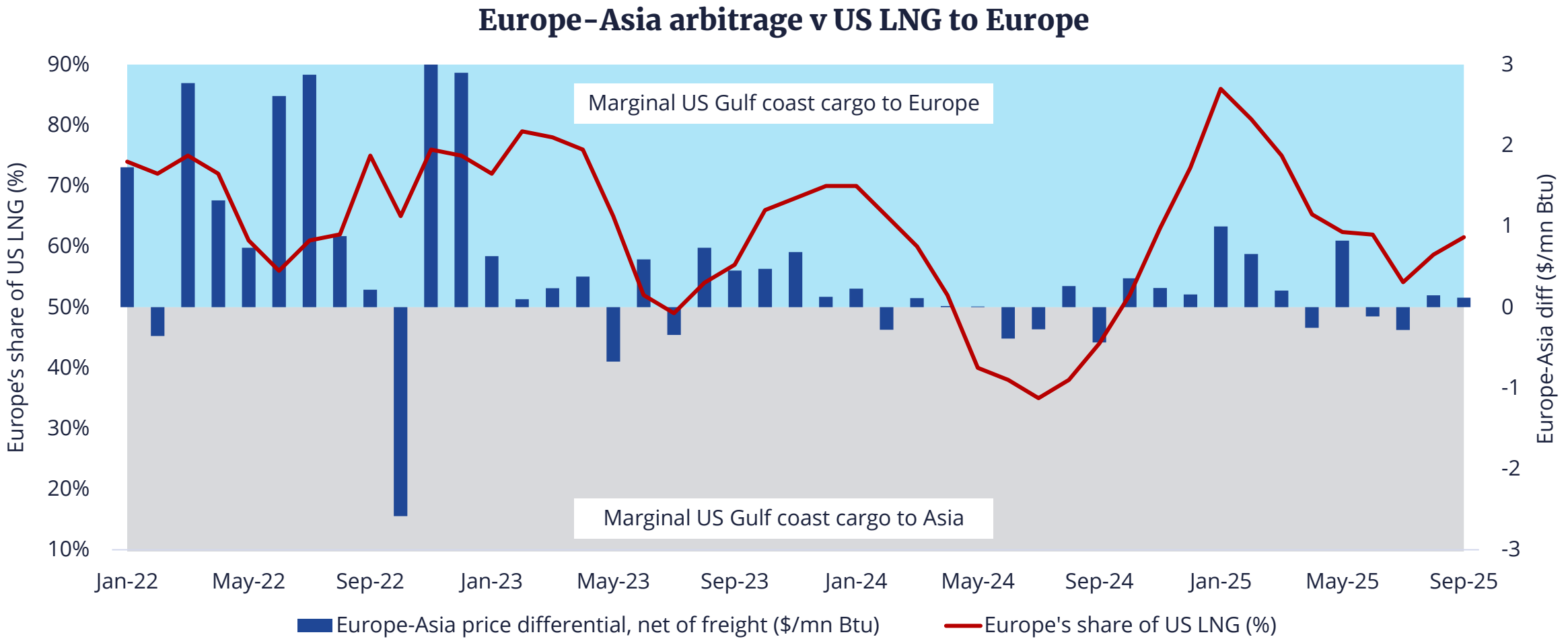
Europe’s stocks have entered winter below average



Source: Argus, TSOs

III. Complicating factors

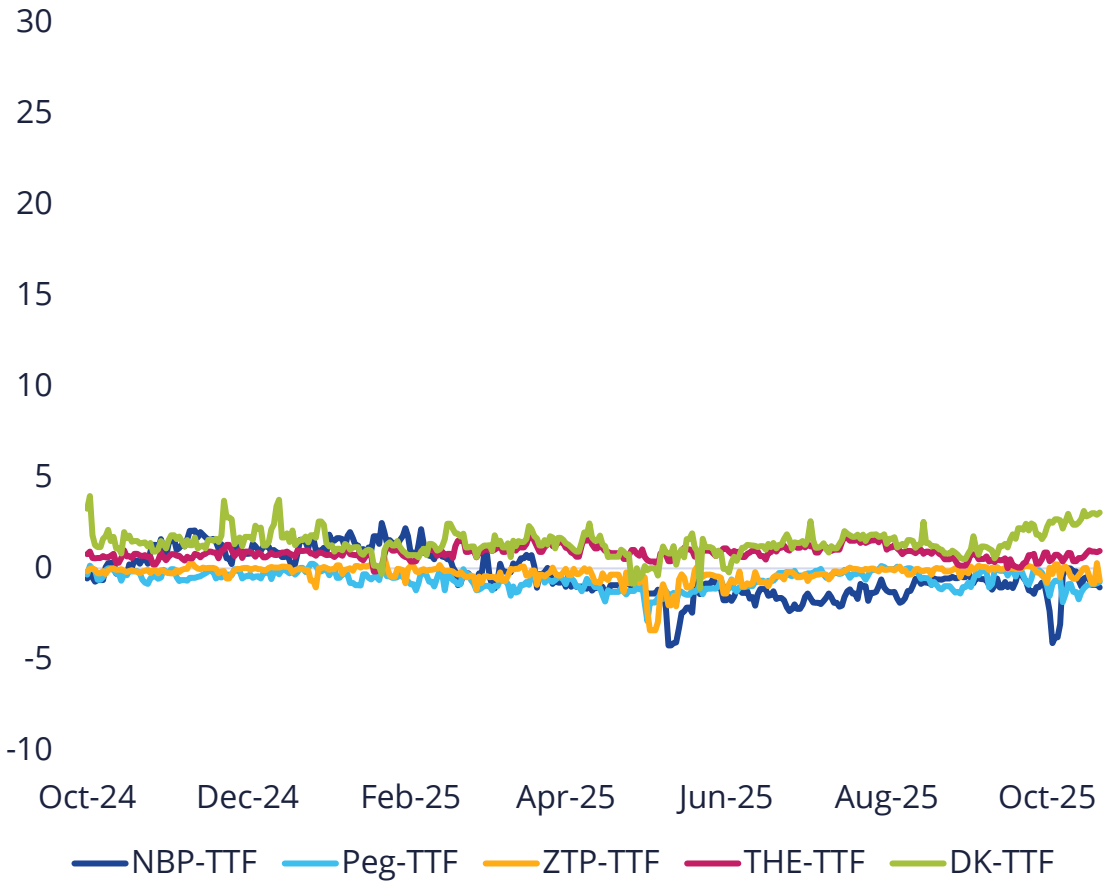
1. Europe is now exposed to the global LNG market



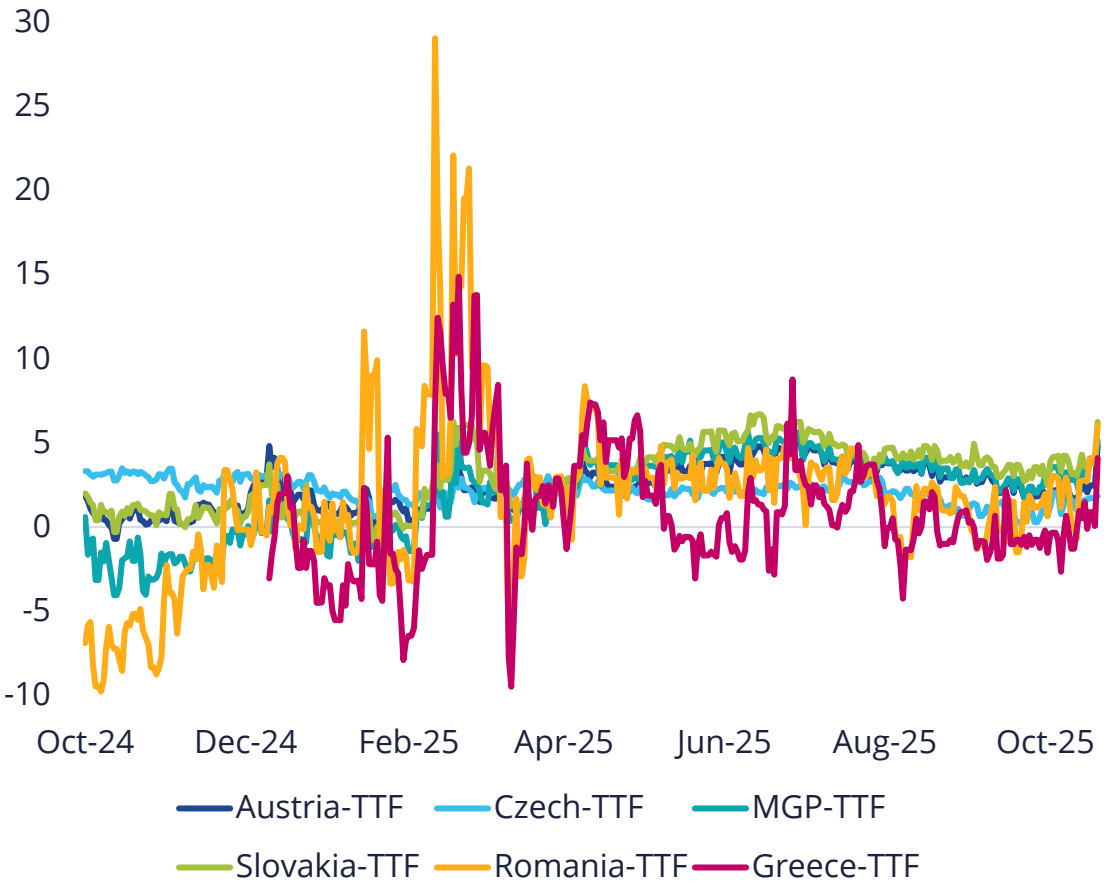
Source: Argus, Kpler

2. Bottlenecks can still drive wide location spreads

NWE everyday spreads to TTF (€/MWh)



CEE everyday spreads to TTF (€/MWh)

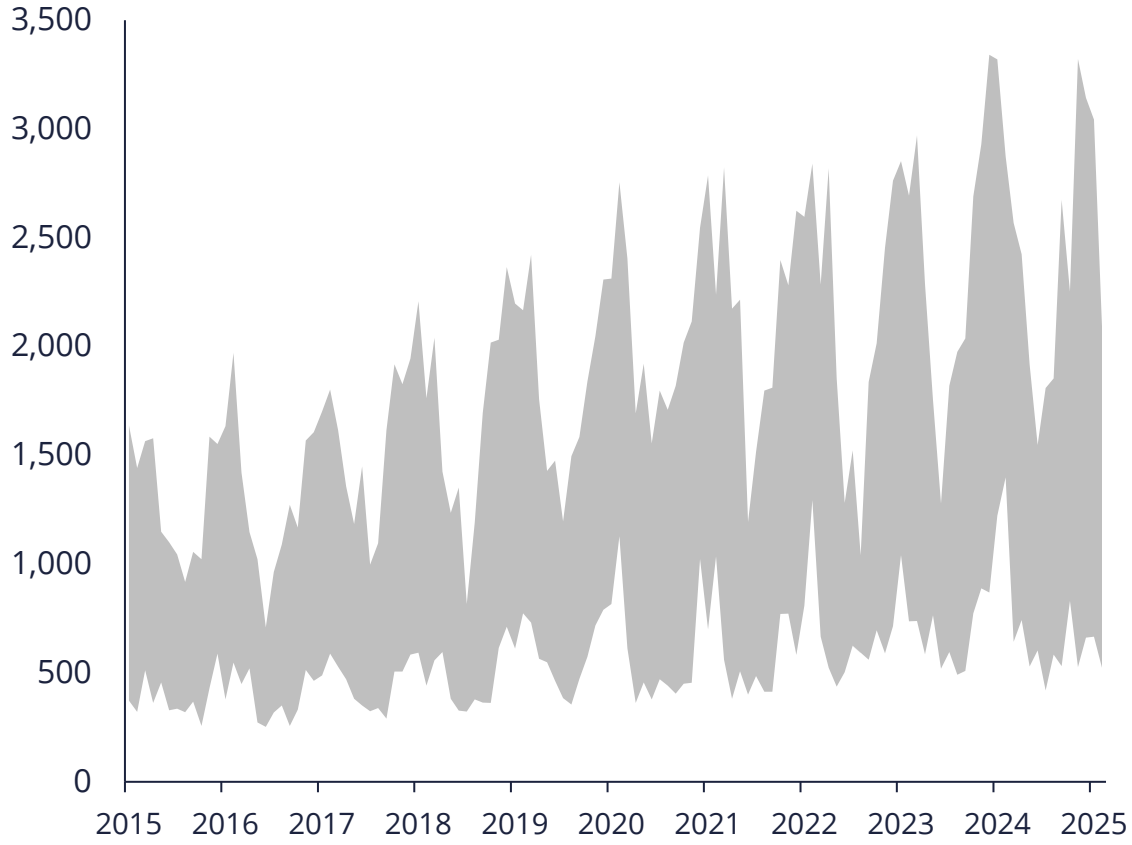


Source: Argus

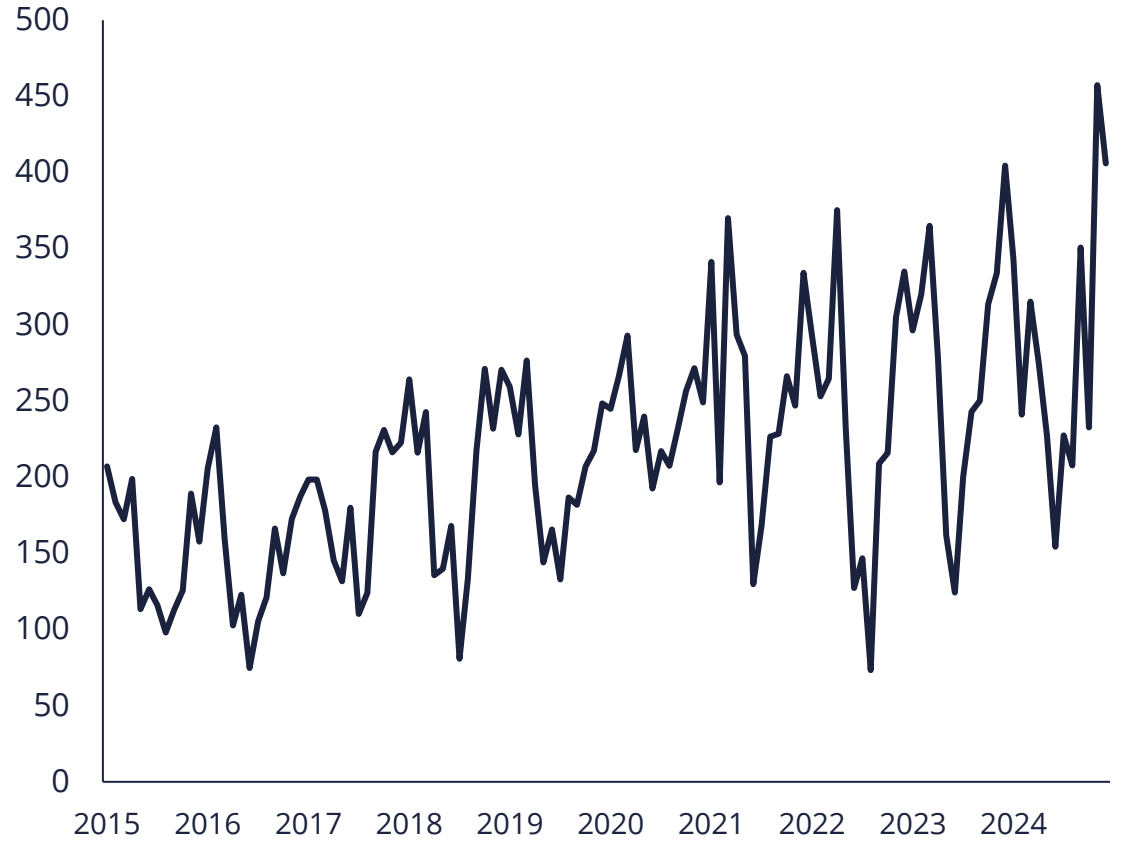
argus

3. Gas must increasingly balance out renewables

European wind generation, monthly variability (GWh/d)



Implied variability in gas burn for power generation (mn m³/d)



Source: Argus, TSOs

Conclusions

- European gas price volatility has been at its lowest in years recently.
- There is potential for gas price volatility to return, given Europe's exposure to the global LNG market and the power sector's shift to renewables.
- The global gas market still has a flexibility challenge, which may be exacerbated if we see storage site closures.

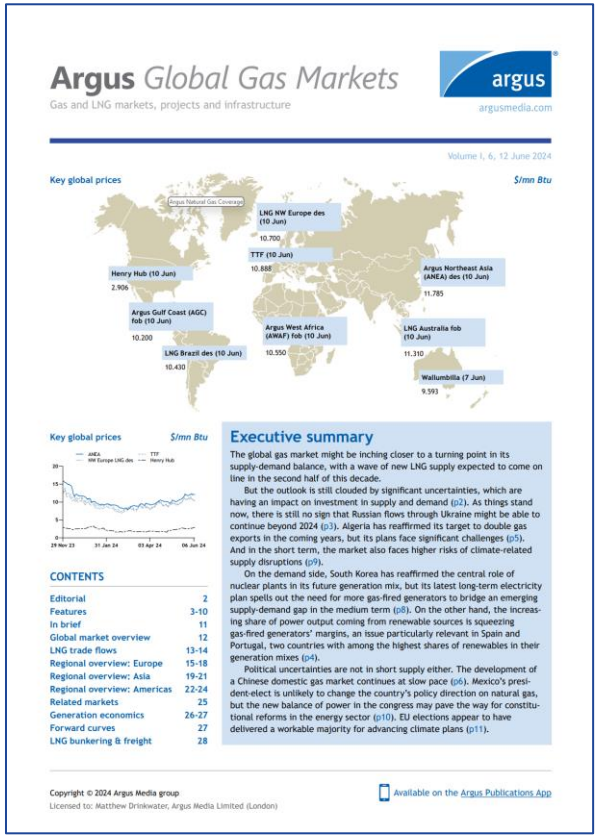
The Argus gas & LNG service a glance

Daily news, analysis and prices

News, timely analysis and price assessments covering the world's key gas and LNG markets

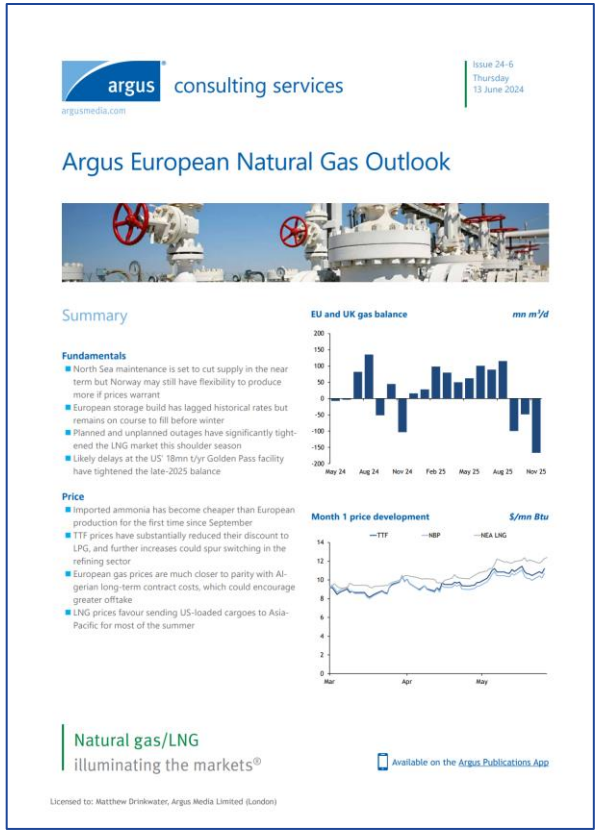
Twice-monthly business intelligence

Deep dives, key trends, fundamental drivers and a global view of the world's interconnected gas markets



Monthly outlook

Fundamentally-driven forecasts of TTF prices, built on analysis of supply-demand balance in Europe and global LNG market



Want to learn more?

Download our market outlook papers for winter 2025-26:

European Natural Gas
https://www.argusmedia.com/en/news-and-insights/market-insight-papers/europe-gas-market-winter-outlook

Global LNG
https://www.argusmedia.com/en/news-and-insights/market-insight-papers/global-lng-market-winter-outlook

Thank you

Natasha Fielding
Editorial Manager, Gas, LNG and Biomass

natasha.fielding@argusmedia.com
London

national gas | energy forum

Carlo Procaccini

Chief Technical Officer
North Sea Transition Authority

North Sea Transition Authority

UK North Sea gas production

National Gas Energy Forum

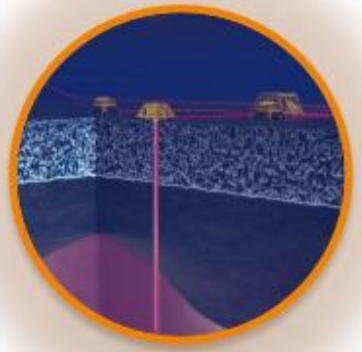
Dr Carlo Procaccini – Chief Technical Officer

23rd October 2025

NSTA – What we do

North Sea Transition Authority

The NSTA regulates and influences the oil, gas, offshore hydrogen and carbon storage industries.
We work with government, industry and other regulators to achieve our three main objectives.



Capital, skills
Infrastructure reuse

Integration, floating wind
Skills, supply chain

Accelerating the energy transition

Integration
Carbon storage and hydrogen
Co-location and spatial
Digital and data
Cost-effective decommissioning

Energy production & security

Economic recovery of O&G
Storage: Natural gas and H_2

Capital

Licence to operate

Emissions reduction

Clean power generation
Flaring and venting
Efficiencies, Technology

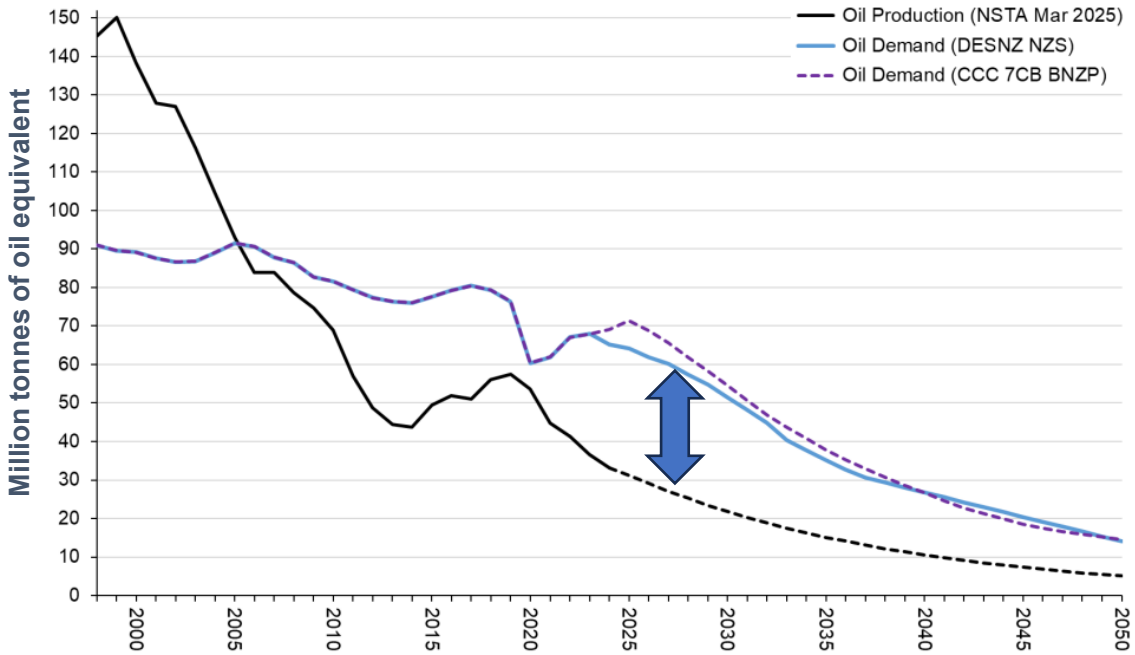
UK hydrocarbon production

North Sea Transition Authority

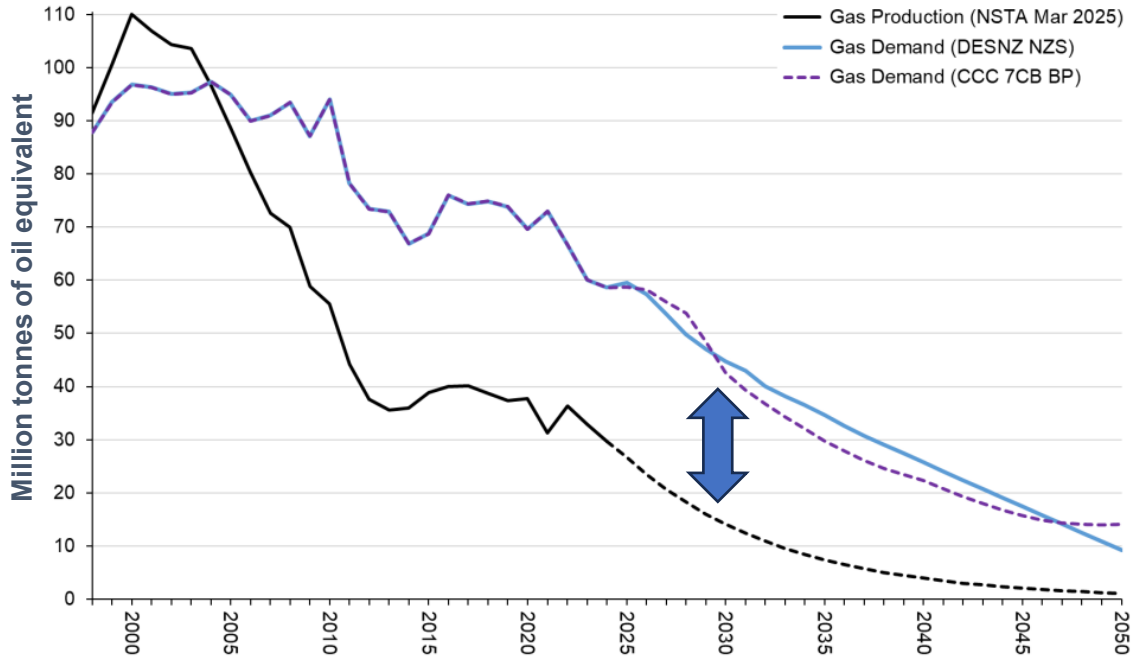
Oil and gas currently meet three quarters of UK energy demand and will play an important role in the energy mix for years to come

Though it is declining, UK domestic production still accounts for half of the demand, reducing reliance on imports

UK oil production and demand



UK gas production and demand

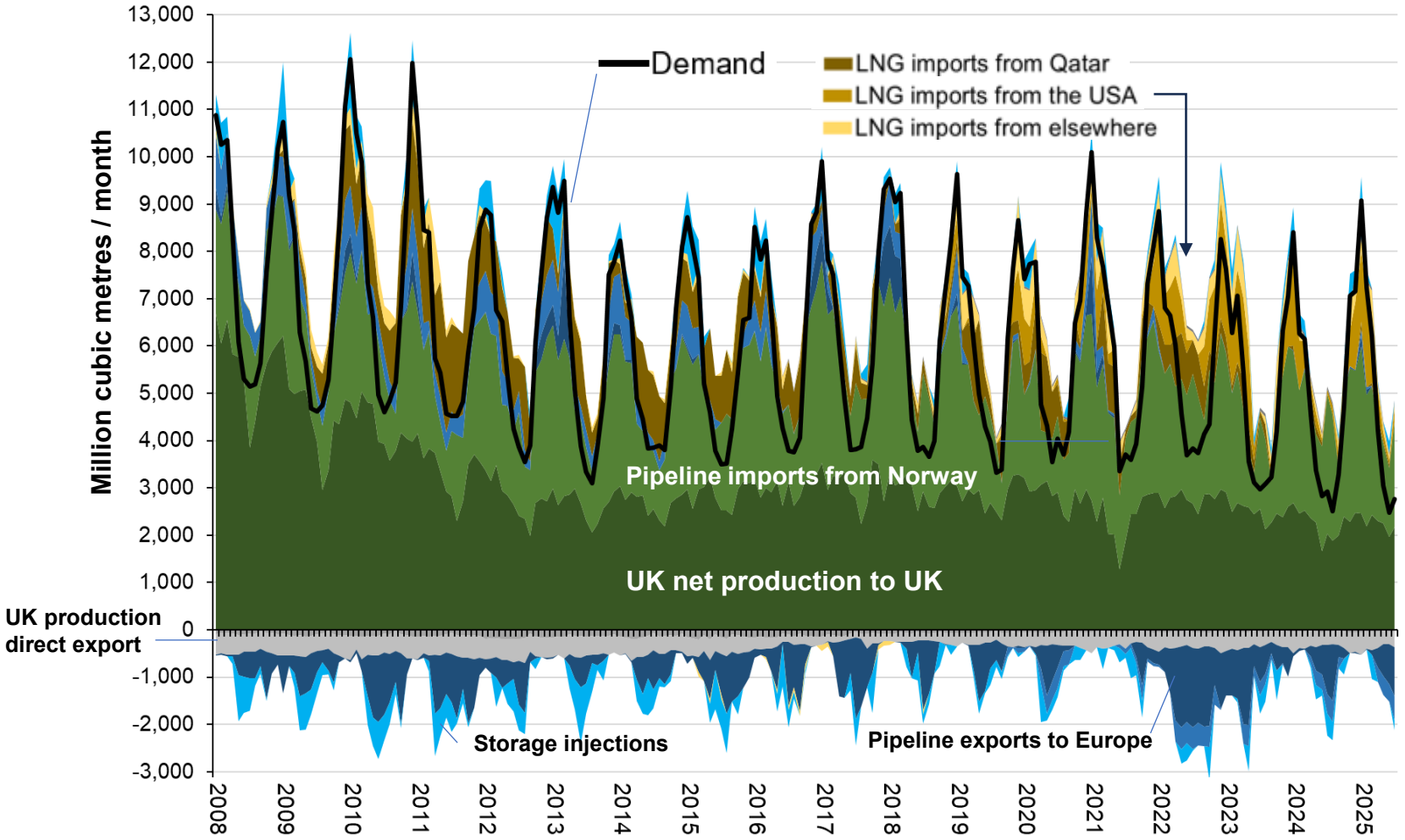


Sources: NSTA hydrocarbon production forecasts (2025), DESNZ Net Zero Strategy delivery pathway, CCC Seventh Carbon Budget balanced pathway (2025)

Natural gas – UK supply and demand

North Sea Transition Authority

Monthly UK gas supply/demand

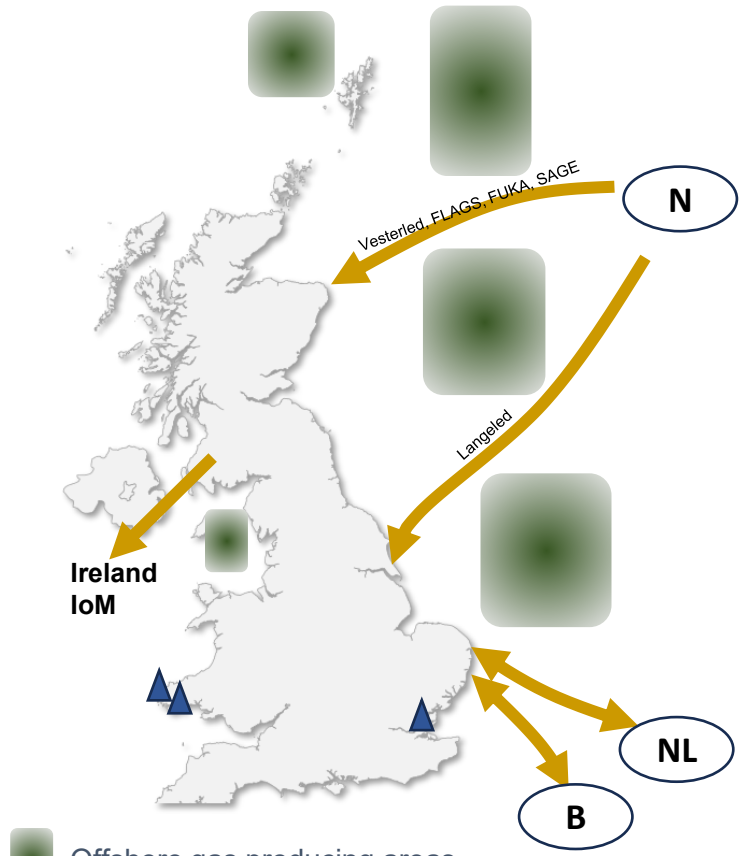


Sources: DESNZ Energy Trends 2025, NSTA analysis

UK net production to UK as share of demand

72% 2008 → 46% 2024

UK gas supply sources

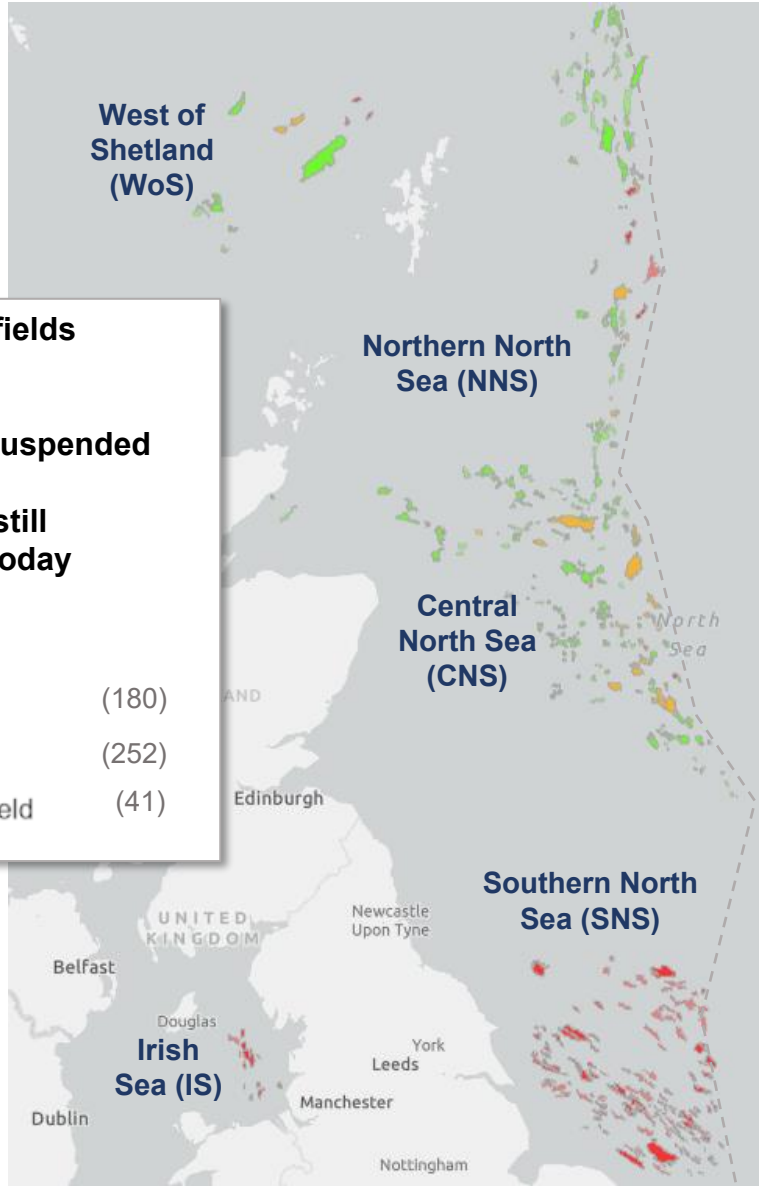


Note: offshore contributes 99% of UK gas production

UK offshore gas production

North Sea Transition Authority

UK Continental Shelf



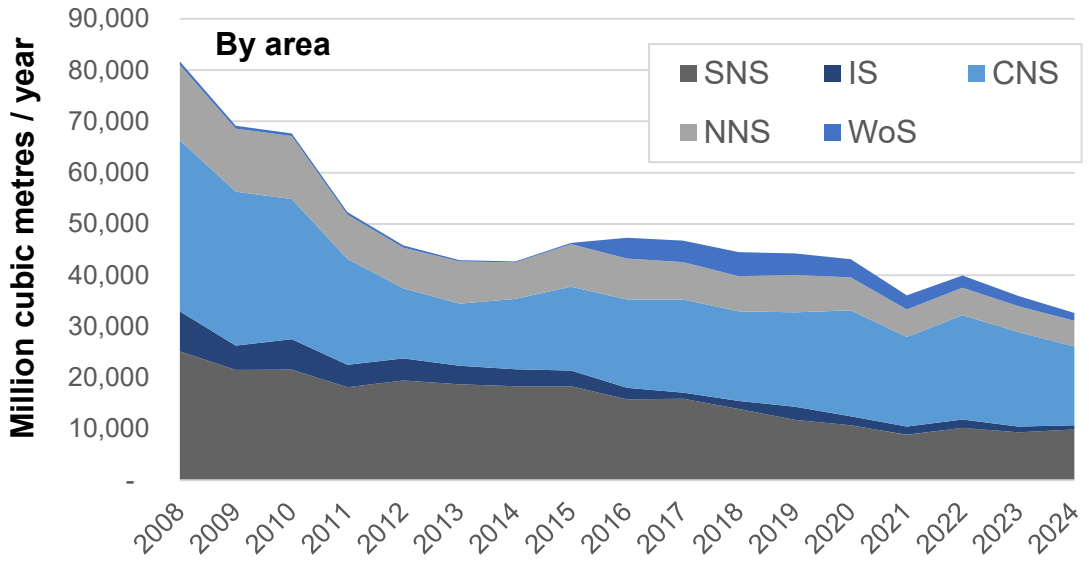
473 hydrocarbon fields

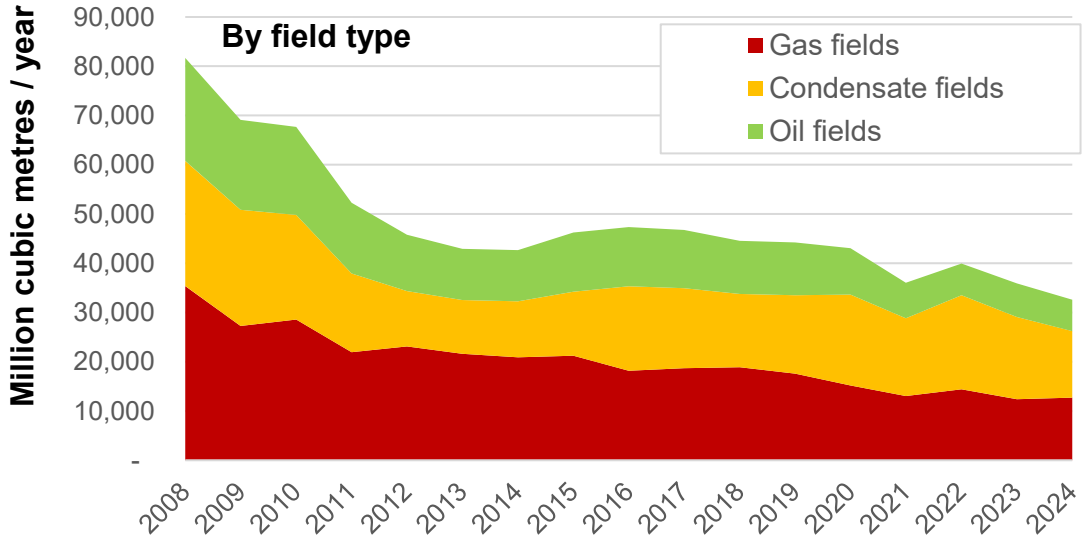
- **236 still active**
- **237 ceased or suspended**
- **<180 fields are still supplying gas today**

Hydrocarbon fields

Gas Field	(180)
Oil Field	(252)
Condensate Field	(41)

UKCS natural gas (gross) production



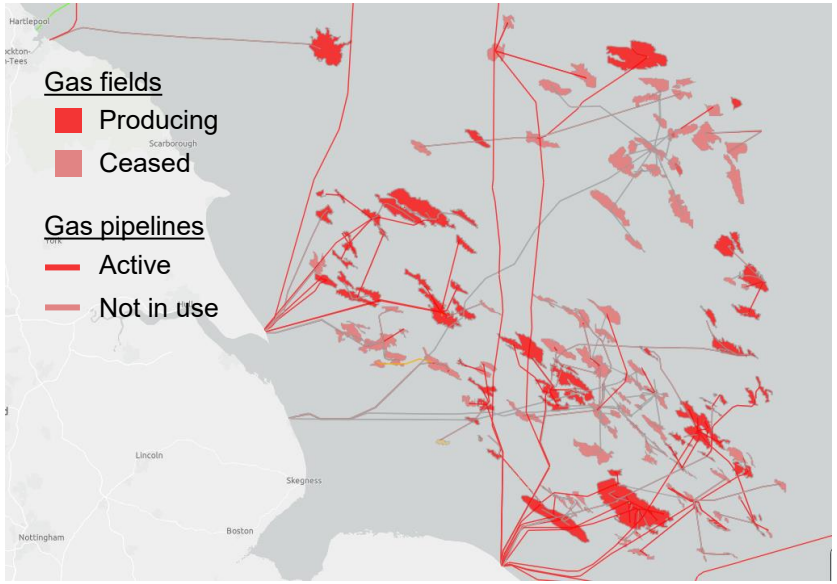


Sources: NSTA GIS and PPRS

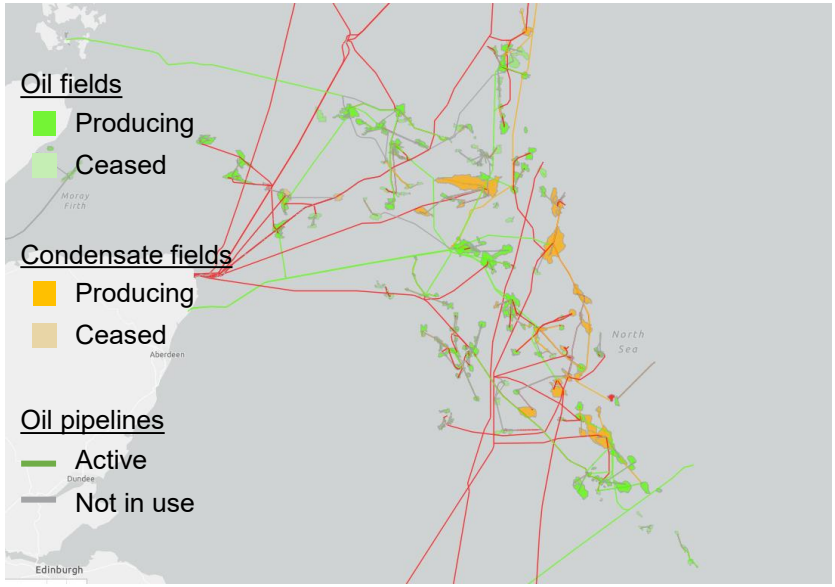
Field production decline & decommissioning

North Sea Transition Authority

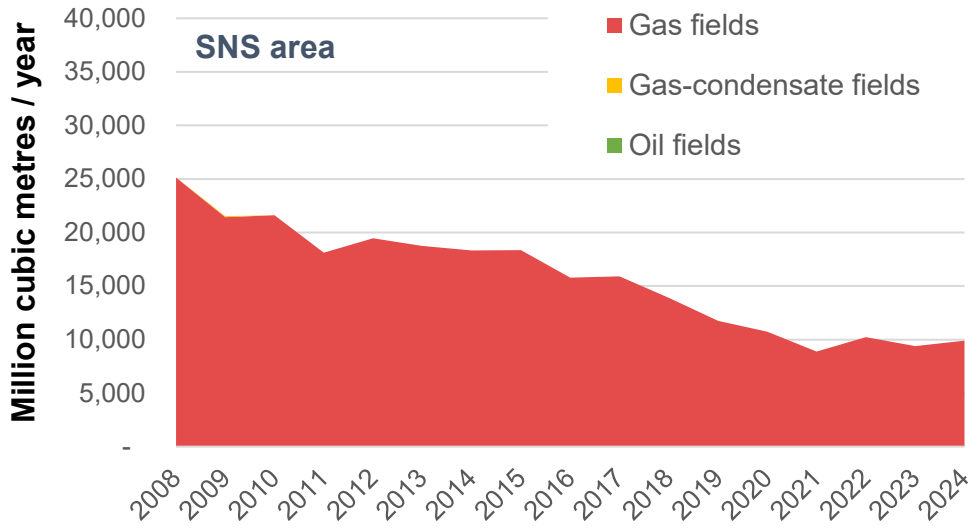
Southern North Sea area

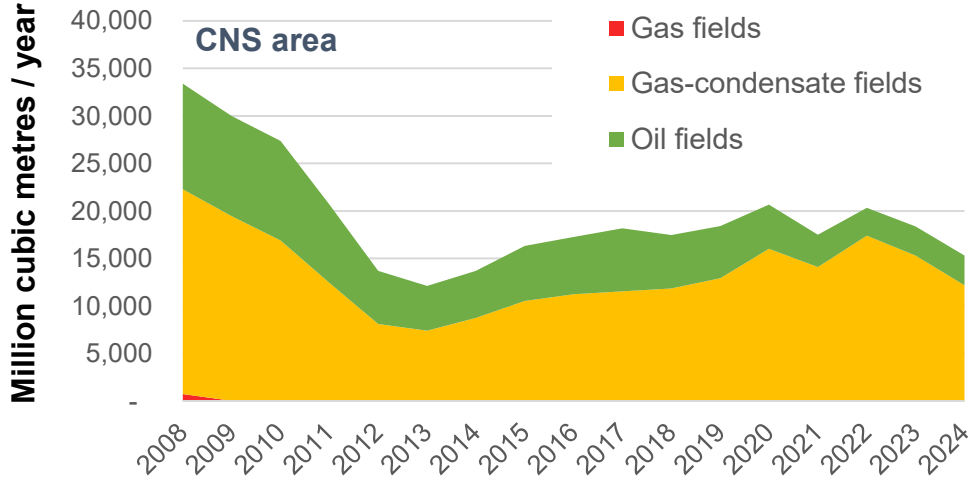


Central North Sea area



Natural gas (gross) production





Sources: NSTA GIS and PPRS

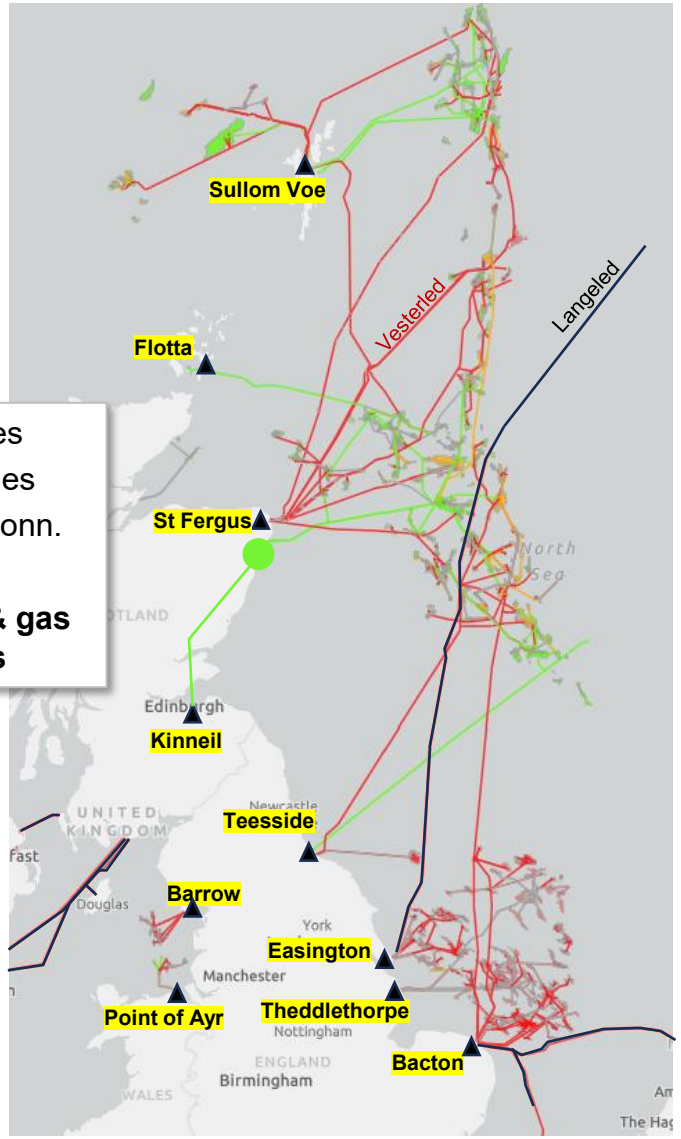
UKCS midstream infrastructure

North Sea Transition Authority

Offshore pipelines & onshore terminals

Red – gas pipelines
Green – oil pipelines
Black – gas interconn.

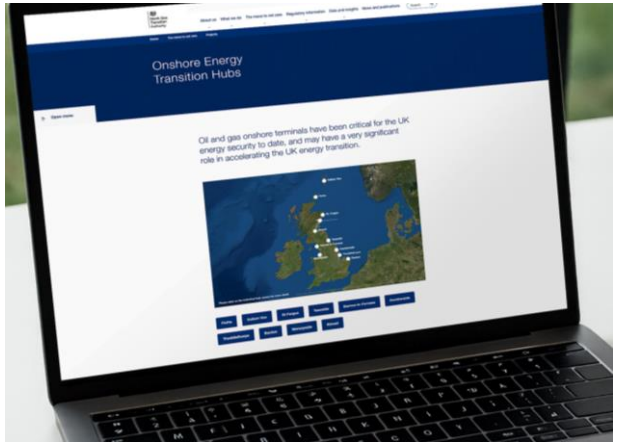
▲ **Onshore oil & gas terminal hubs**



Extensive footprint

- ~120 major pipelines creating gathering networks
- In addition, ~800 intra-field flow lines
- Shared infrastructure serving >> fields in catchment areas

- 21 gas & oil onshore terminals in 10 hubs (see map)
- 3000+ acres consented
- 3000+ skilled workforce



Strong integration

- Majority of fields depend on both oil and gas infrastructure
- UK production co-mingled raw-gas imports

Risks

- Rationalisation / decom of key pipelines and terminals
- HC production at risk in 'catchment areas'

UK O&G terminals:

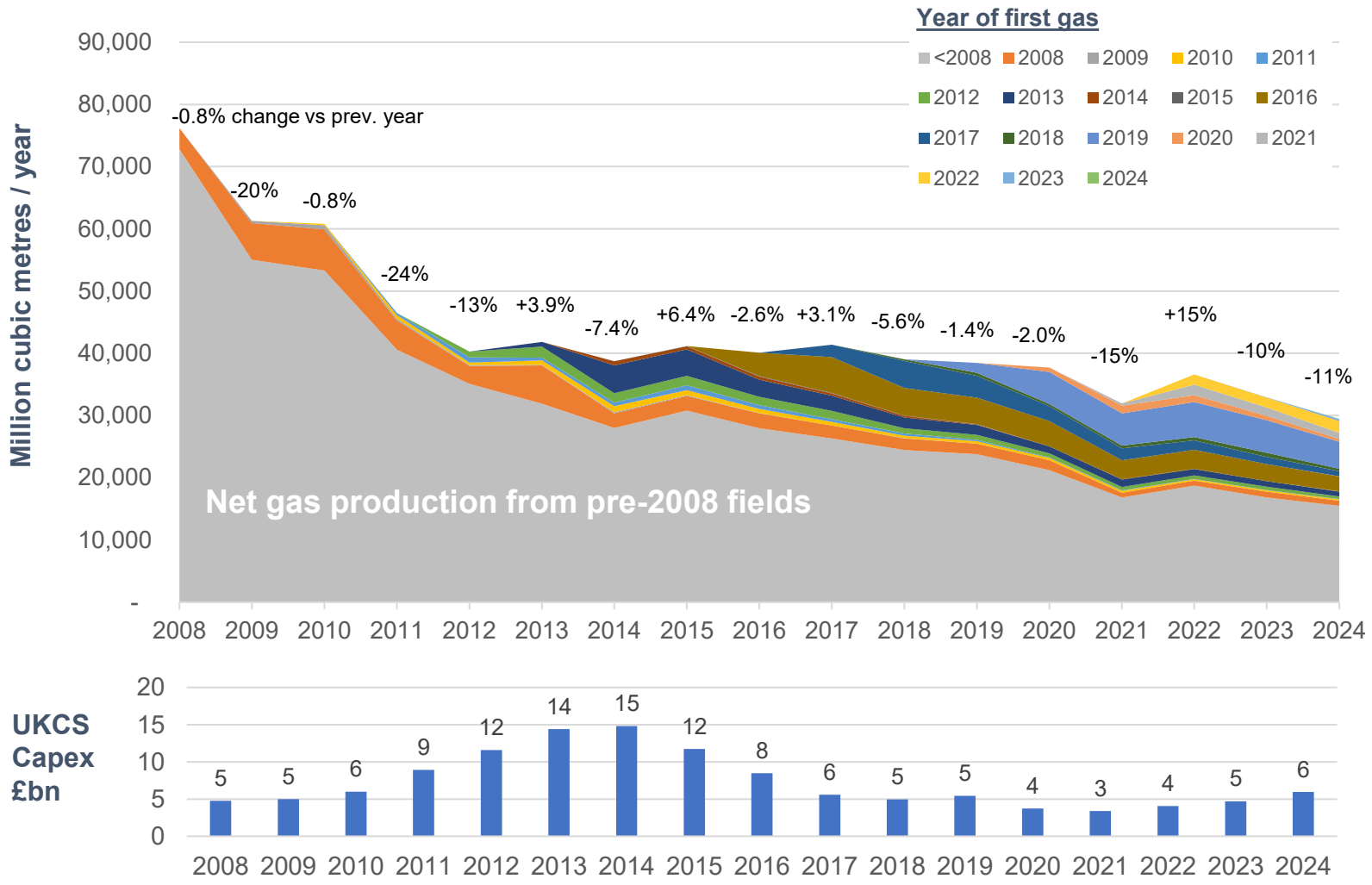
- ***Critical assets for UK's energy security***
- ***Repurposing potential for the energy transition***

More information on terminals' HC operations and their ET transition plans at www.nstauthority.co.uk

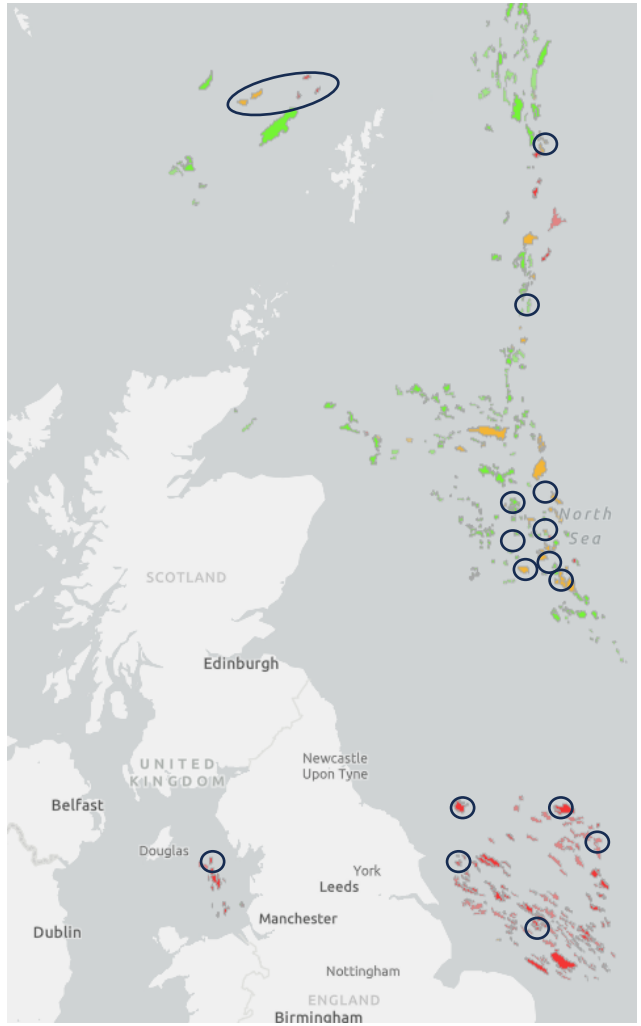
Gas production from field developments

North Sea Transition Authority

Net gas production



2008-2024 new gas production

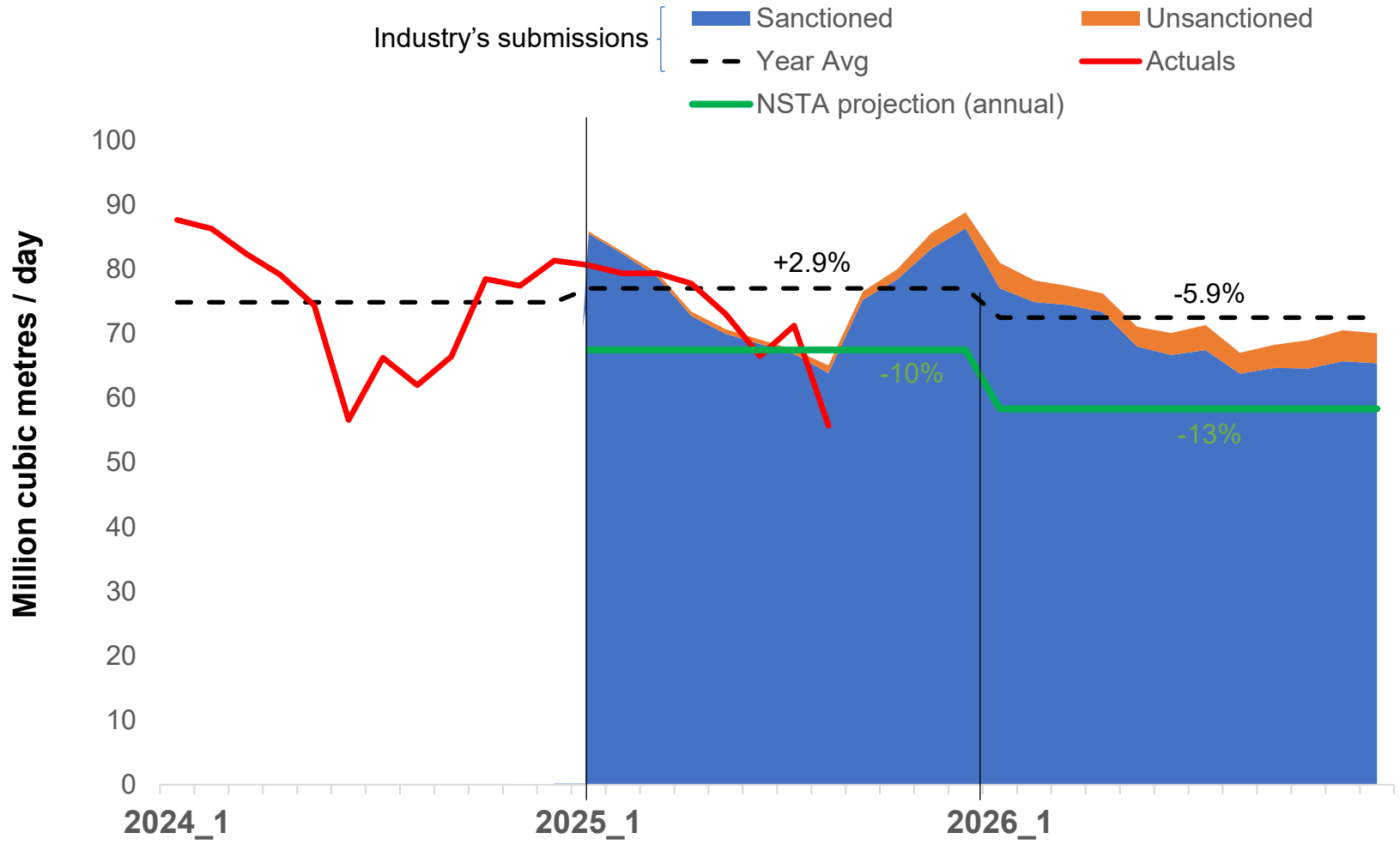


Sources: NSTA GIS, PPRS and UKCS Income and Expenditures

Short-term outlook

North Sea Transition Authority

UK net gas production (probability-weighted forecast)



Key uncertainties

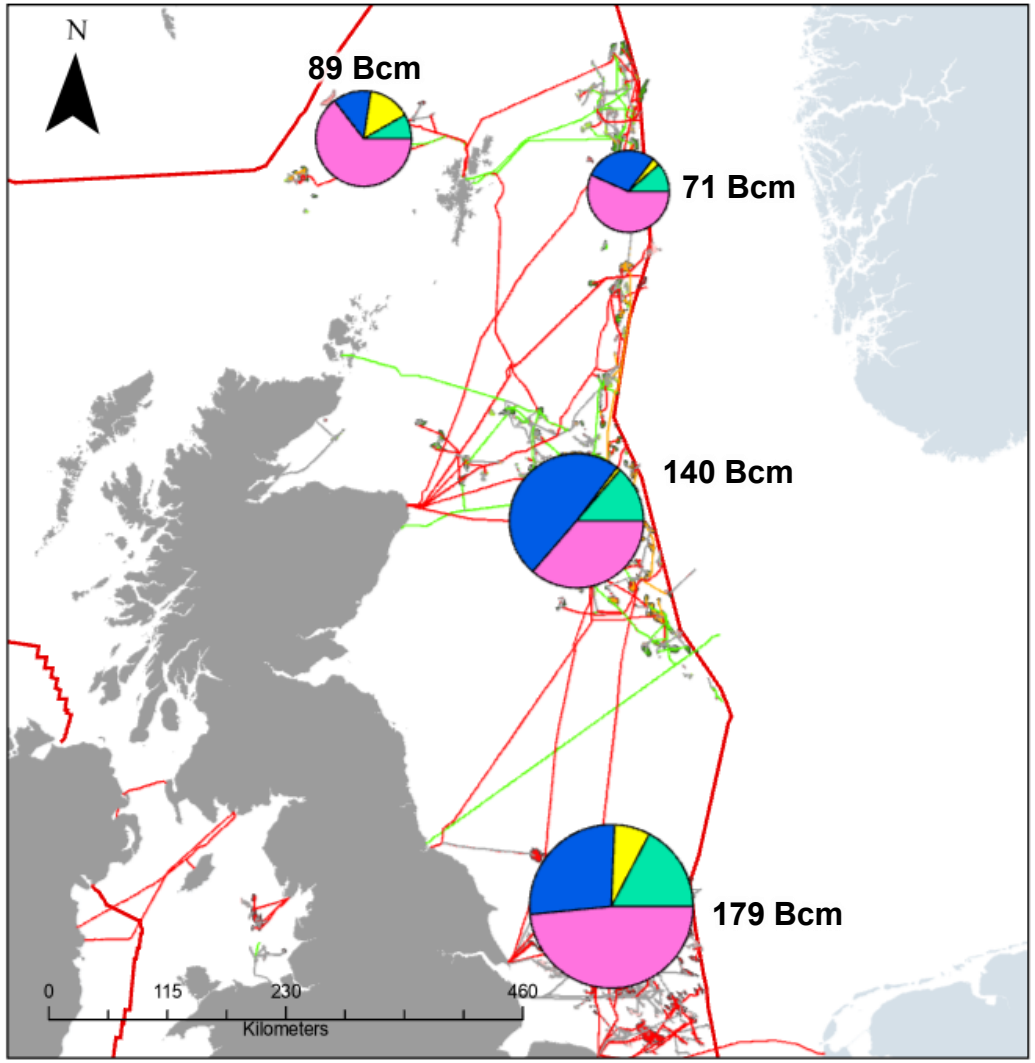
- Reservoir management and well intervention on existing fields
- Asset maintenance on pipelines and facilities
- Delays in commissioning of sanctioned projects
- Sanctioning of new projects and activities

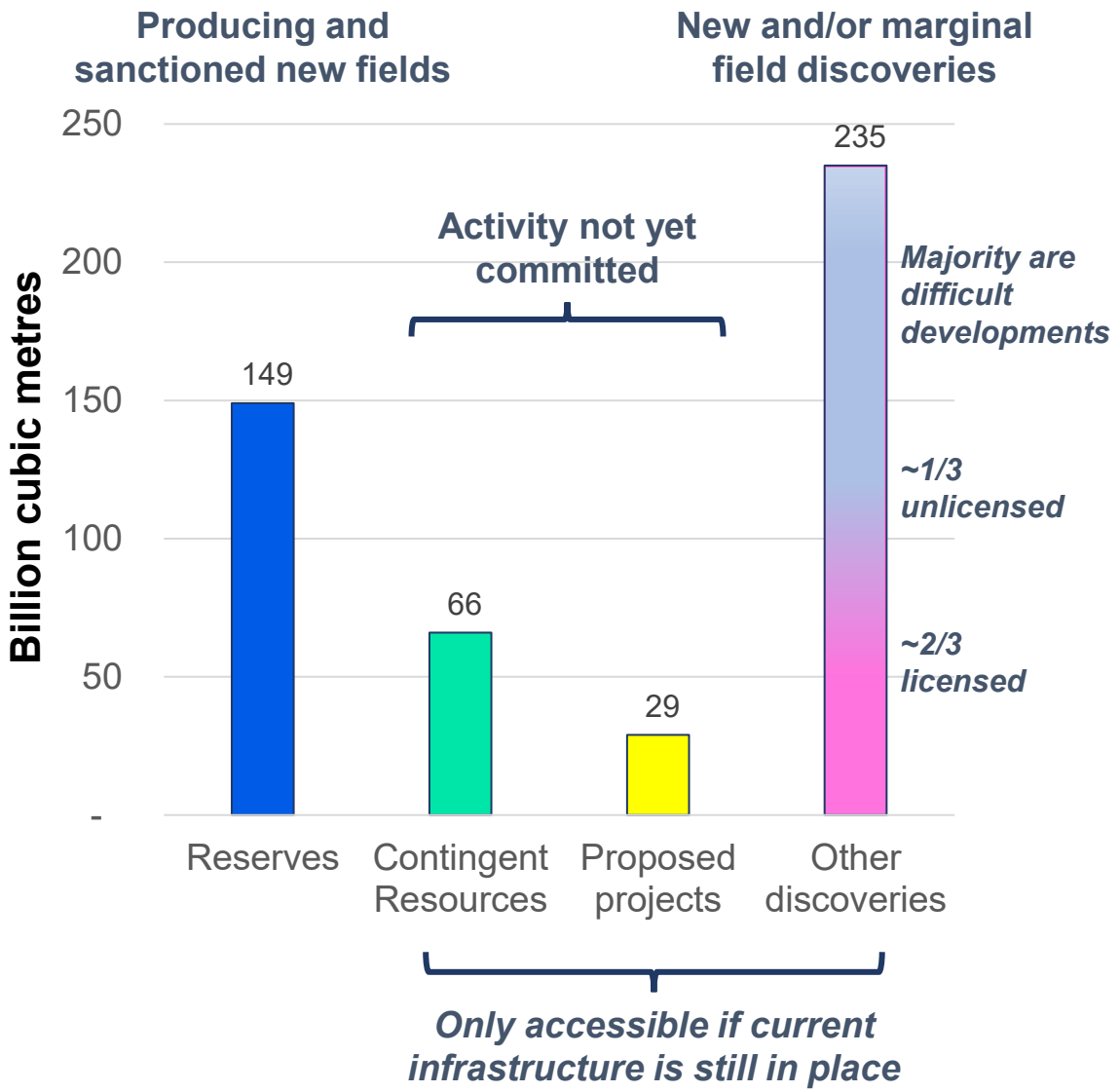
Sources: NSTA production forecast, Actuals from DESNZ Energy Trends

Longer term - UK gas resources

North Sea Transition Authority

Gas reserves and resources by maturity and by area

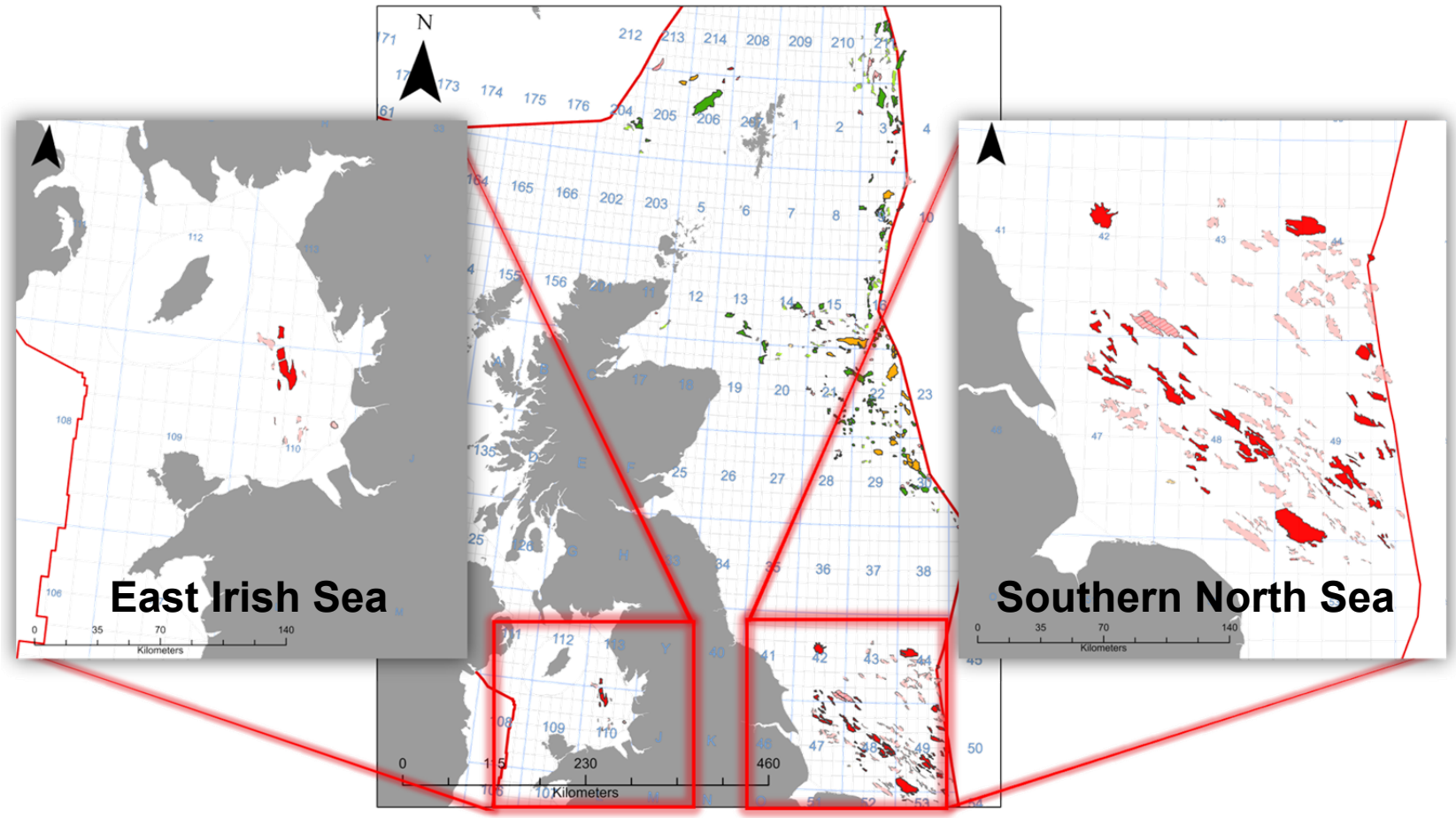




Source: NSTA Reserves and Resources Report (end of 2024 values)

Carbon storage opportunity

North Sea Transition Authority



- Permian-Triassic geological basins (EIS and SNS) have been the most gas prolific areas of UKCS
- Both gas basins are on decline with over 50% of fields ceased
- Industry is looking with great interest at converting depleted gas fields to CO_2 storage
  - Subsurface quality
  - Proximity to onshore emissions
- CCS projects have been consented and sanctioned in these basins
- Further appraisal activity is underway on more potential stores

Source: https://www.nstauthority.co.uk/data-and-insights/data/

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Up Next: Part II – 11:00

National Gas updates,
including our Winter Outlook

Today's speakers for our Part II session

Glenn Bryn-Jacobsen
Director of Energy Systems & Resilience

Edward Mellish
Market Intelligence Manager

Max Chapman
Business Delivery & Operational Liaison Manager

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Glenn Bryn-Jacobsen

Director of Energy Systems & Resilience
National Gas

national gas

Gas Winter Outlook October 2025

Key takeaways

1. Our GB demand forecast (excluding exports) for the 6 month winter period is 3% lower than the previous winter. Total NTS demand (including exports) is forecast to be 4% lower. Our supply forecast shows sufficient supply capability to meet demand across the winter period.
2. Our analysis shows that Great Britain has sufficient supply capability to meet peak day demand, and a positive supply margin under both intact and N-1 network conditions is maintained.
3. We have stress tested high demands, infrastructure loss and a number of other sensitivities and illustrated how the NTS could be balanced under a range of credible demand and supply profiles.
4. We have the necessary physical, commercial and market-based tools to manage a supply and demand imbalance.
5. Disruptions to other markets could impact the GB market. GB is connected physically to Europe via interconnectors and to the wider global market by LNG.
6. All key partners across networks, industry, government and regulators recognise that GB's gas supply landscape is changing.

Winter supply & demand forecast

Demand

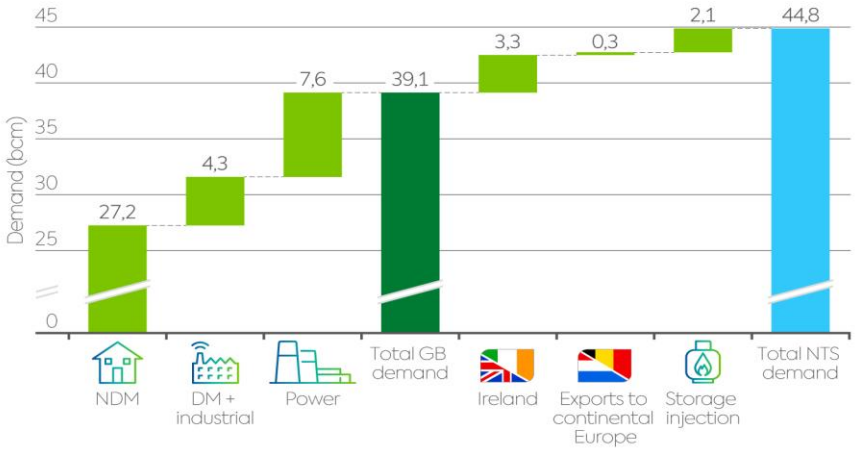
- Our GB demand forecast (excluding exports to continental Europe & Ireland) for the coming winter is slightly lower (3%) than the previous winter.
- Total NTS demand (including exports for the coming winter is also forecast to be slightly lower (4%). This is mostly due to a reduction in total gas demand for power, following the high experienced last winter along with reduced exports to continental Europe

Supply

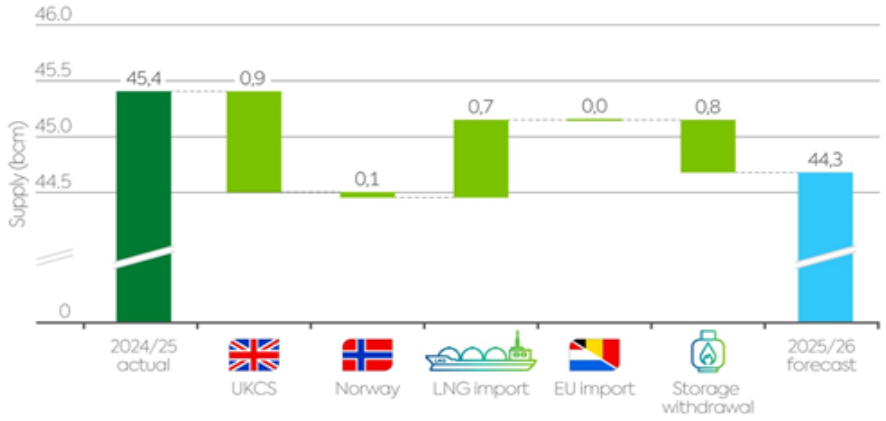
- Great Britain benefits from having diverse supply sources, which include the UKCS and Norway, coupled with flexible supplies from LNG, imports from continental Europe and GB storage.

Overall demand similar to last year. Supplies remain diverse with UKCS and Norway providing the baseload

Forecast demand for winter 2025/26



Actual Supplies for winter 2024/25 and forecast for 2025/26



Peak day supply margins

Peak supply is higher than peak demand, meaning a positive supply margin is expected for the coming winter period.

A positive supply margin offers flexibility in how supply can meet demand, e.g. if storage supply is low, LNG supply could increase to meet demand.

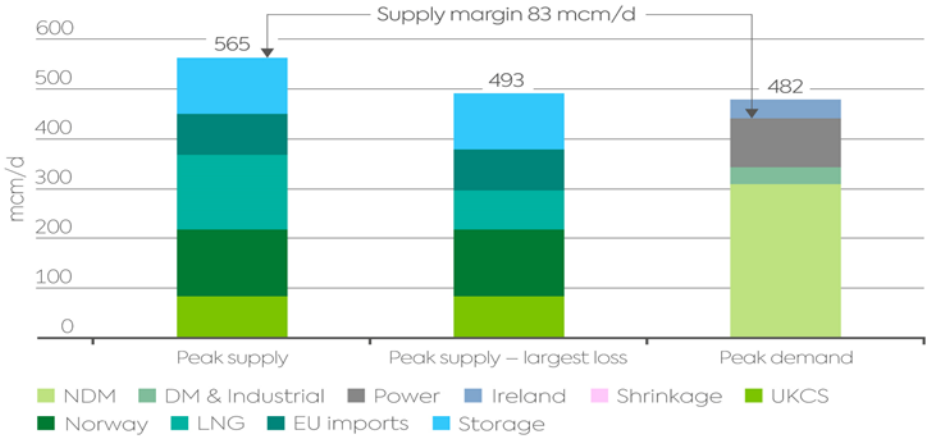
Our network has sufficient physical capability to accept gas from each supply source in response to how the market chooses to balance demand and supply.

We have a positive supply margin for the coming winter

Peak day supply margin for winters 2024/25 & 2025/26

mcm/d	2024/25	2025/26
1-in-20 peak demand	474	482
1-in-20 non storage supply	480	453
1-in-20 storage supply	121	112
1-in-20 total supply	601	565
1-in-20 margin	127	83
N-1 supply loss	72	72
N-1 margin	55	11

Peak day supply margin for winter 2025/26



Gas demand for power

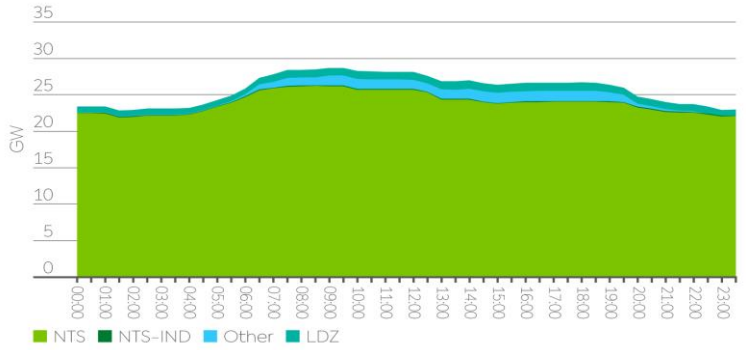
A reduction in total demand for power is forecast for the coming winter (18%) following the high witnessed last winter.

We still expect to see some days with very high gas demand for power. Gas generation is critical in helping to balance the electricity system, especially when demand is high and other generation, such as renewables, is not available.

As shown in the charts this can lead to a high demand for gas generation over a whole day or in response to changes within day.

Total gas demand for power is forecast to reduce this winter. The maximum daily demands are expected to remain high.

Half hourly gas power output (GW) – 12th December 2024



Half hourly gas power output (GW) – 5th February 2025

GB storage

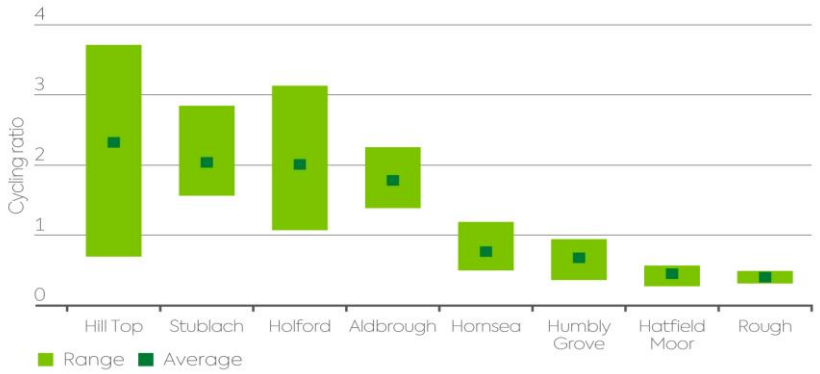
GB has a diverse and highly flexible gas storage market. Most GB storage is Medium Range Storage; these sites can switch between injection and withdrawal in response to short term market signals.

This allows sites to cycle their stock several times over the winter. The chart illustrates the ratio between total withdrawals and overall space over the winter.

This cycling results in the overall deliveries for the winter exceeding the total space. The flexibility also allows sites to respond to weather forecasts and prioritise injections when colder weather is expected to ensure high deliverability is available during periods of high gas demand.

GB storage has significant flexibility with many sites able to switch between injection and withdrawal in response to market signals

GB storage withdrawal to space ratio (winters 2017/18 20 2024/25)



Total GB storage withdrawals (mcm) and ratio (winter 2024/25

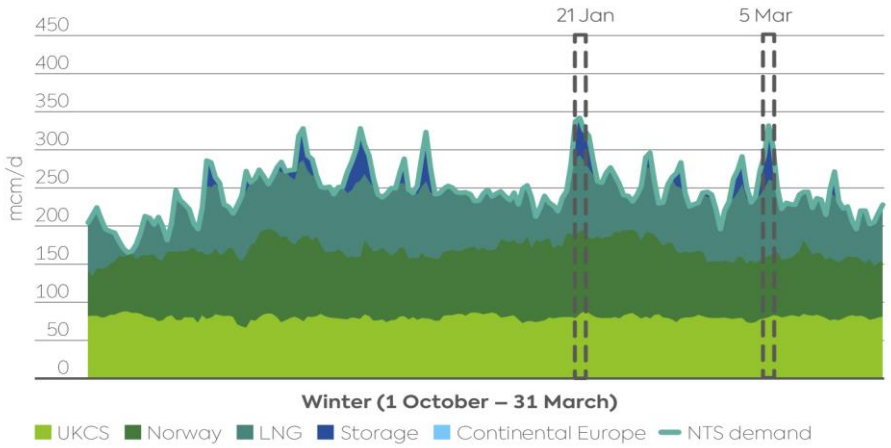
Site name	Total withdrawals (mcm)	Ratio
Stublach	843	2.2
Rough	738	0.5
Aldbrough	635	2.2
Holford	309	1.3
Hornsea	278	0.7
Humbly Grove	237	0.8
Hill Top	205	3.7
Hatfield Moor	55	0.5

Winter Supply & Demand Scenarios: Typical & Cold

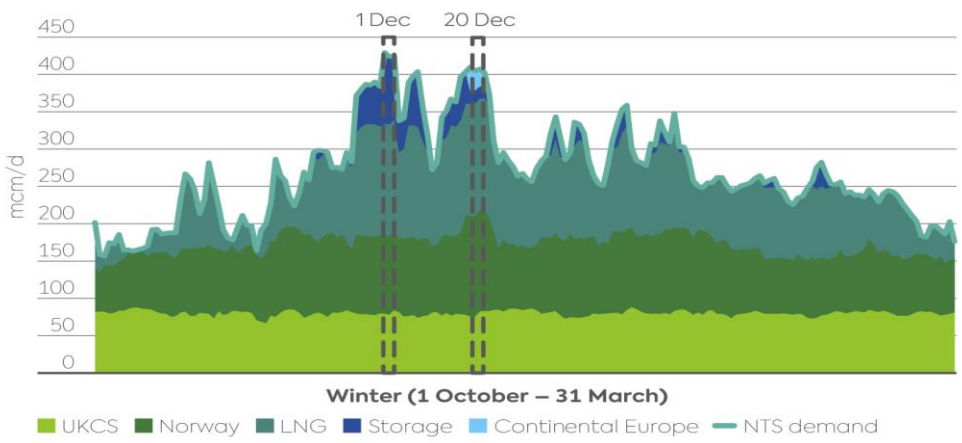
Modelling Approach:
- We modelled average (2019/20) and cold (2010/11) winters
- UKCS & Norway supplies provide most baseload supply
- LNG, Storage & imports from continental Europe provide most of the flexible supply

Key observations:
- In the average winter high storage deliverability is maintained across the winter, no requirement for EU imports
- In the cold winter the significant cold snap during December sees storage stocks depleted with a moderate requirement for EU imports.

Typical Winter Scenario



Cold Winter Scenario



Our modelling shows how our diverse sources of imports and access to global markets provides significant flexibility in how supplies could meet various demand scenarios.

Summary

Overall demand similar to last year. Supplies remain diverse with UKCS and Norway providing the baseload

We have a positive supply margin for the coming winter

Total gas demand for power is forecast to reduce this winter. The maximum daily demands are expected to remain high.

GB storage has significant flexibility with many sites able to switch between injection and withdrawal in response to market signals

Our modelling shows how our diverse sources of imports and access to global markets provides significant flexibility in how supplies could meet various demand scenarios

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Thank you

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Edward Mellish

Market Intelligence Manager

NESO

Winter Outlook 2025/26

Helping to inform the electricity industry and prepare for the winter ahead

October 2025

NESO
National Energy System Operator

Key messages:

Winter Outlook 2025/26 at a Glance

Margins 1

Our analysis indicates that margins will be adequate and within the Reliability Standard.

Our base case margin for winter 2025/26 is 6.1 GW (representing 10.0% of average cold spell peak demand), with an associated loss of load expectation (LOLE) below 0.1 hours. This is an increase from the 5.2 GW forecast in last year's *Winter Outlook* and the highest de-rated margin since 2019/20.

This higher de-rated margin is due to increased battery storage capacity, a net increase in gas-fired power generation, an additional interconnector and ongoing growth in renewable generation.

Alongside our base case, we produce a range of sensitivities to show how adequacy metrics vary under different conditions and assumptions. LOLE remains within the Reliability Standard under each of our sensitivities.

Operations 2

Our planning, preparations and balancing tools will enable the reliable operation of the system under varied supply and demand conditions.

We expect a sufficient operational surplus throughout winter, although there may still be tight days that require us to use our standard operating tools, including system notices. Current market submissions suggest such days are most likely in early December or mid-January.

Markets 3

Our analysis suggests that imports will be available when required, supported by adequate electricity supply across Europe.

Indicators suggest adequate generation availability in key interconnected power markets, but uncertainties remain. We continue to monitor the wide range of factors influencing power prices in neighbouring markets and work closely with our strategic partners to assess potential risks in global energy markets.

Prices suggest Great Britain will typically be a net importer across electricity interconnectors this winter, although interconnector flows may be more sensitive to prevailing conditions.

Preparations for Winter 2025/26

As a prudent system operator, we continue to prepare for a wide range of eventualities, ensuring we have the tools needed to operate the system reliably. We work closely with the government, Ofgem, National Gas and other stakeholders to assess emerging risks and strengthen resilience ahead of this winter.

1

Neighbouring Transmission System Operators (TSOs)

We will continue to engage closely with our neighbouring transmission system operators, identifying developments that could affect interconnector flows.

By working closely with neighbouring countries' transmission system operators, we can optimise and coordinate interconnector flows to ensure reciprocal support between countries.

2

Transmission Owners (TOs) and Distribution Network Operators (DNOs)

We work closely with transmission owners to minimise the impact of network outages across the winter, ensuring electricity flows safely and reliably from where it is generated to where it is needed.

By optimising the network outages, we maximise the amount of energy available to consumers. Constraints will be carefully managed to ensure access to generation when required. We also collaborate with DNOs through transparent data sharing and coordinating NESO and DNO services, such as the Demand Flexibility Service (DFS).

3

Resilience and readiness

Our energy system is complex, with growing interconnections and dependencies. Disruption in one part of the system can have consequences elsewhere. We work to identify, understand and mitigate risks in order to create a more resilient and adaptable energy system.

Alongside resilience assessments, security of supply insights and coordination of emergency response, we engage with industry to ensure preparedness ahead of winter.

4

Strategic partners

We continue to work closely with strategic partners to monitor the range of factors affecting power and gas prices in Great Britain, Europe and globally. While prices are showing signs of stability, disruptions in global energy markets remain possible.

We work closely with DESNZ, Ofgem and National Gas to develop a shared understanding of potential challenges for the season ahead and to enable coordinated action where necessary.

Reliability Standard

Margins are expected to be adequate and within the Reliability Standard. Our base case is 6.1 GW (10.0%) with an associated loss of load expectation (LOLE) below 0.1 hours/year.

Our current assessment shows sufficient available capacity to meet demand, with a de-rated margin of 6.1 GW (10.0% of average cold spell peak demand) for this winter (see Figure 1 for a breakdown of this capacity). This is an increase from the 5.2 GW (8.8% of peak demand) published in last year's *Winter Outlook* and is comparable to the 6.6 GW (10.9 %) detailed in the *Early View of Winter*. The associated LOLE is below 0.1 hours/year, which is within the Reliability Standard of 3 hours/year.

As detailed in the *Early View of Winter*, the year-on-year increase in the de-rated margin is driven by several factors, including greater battery storage capacity at both transmission and distribution levels, an increase in available gas-fired power generation, and the commissioning of the Greenlink interconnector to Ireland. We assume that 6.9 GW (de-rated) of net imports will be available via interconnectors at times of tighter margin, and that all providers with Capacity Market (CM) agreements deliver in line with their obligations unless specific market intelligence suggests otherwise.

This year, we have included several sensitivities (see page 9) to show how the de-rated margin and LOLE vary under different assumptions.

While our margin assessment has improved from last winter, we continue to monitor risks and uncertainties and, if necessary, will take steps to strengthen resilience.

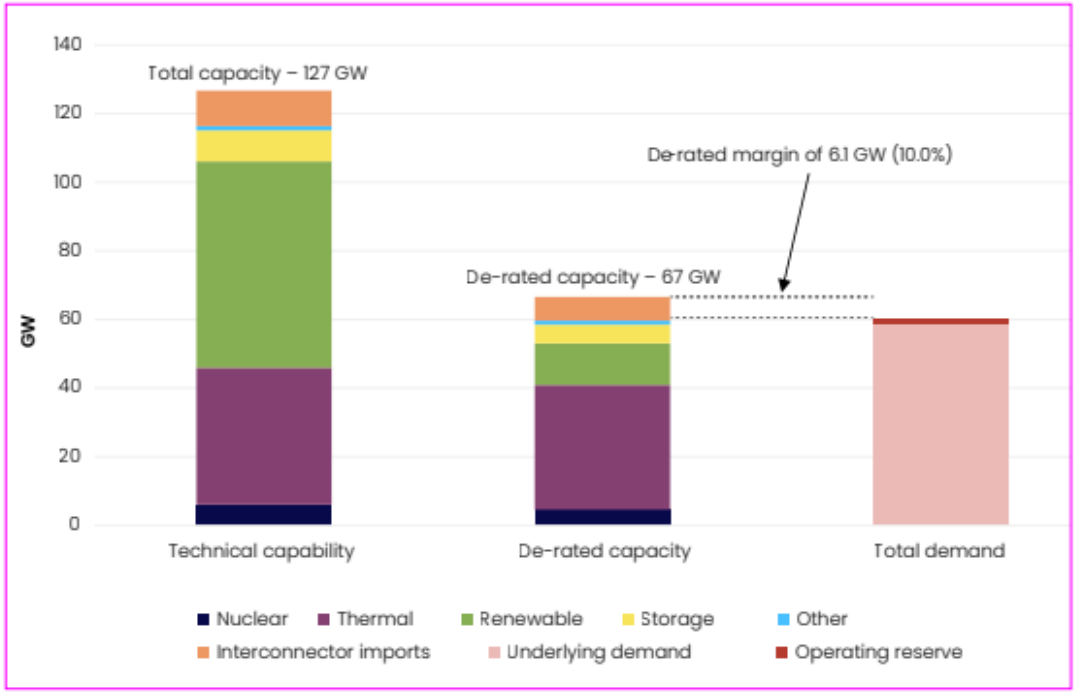

Figure 1: Total technical capacity of transmission and distribution connected supply and the resulting de-rated contribution during a period of system stress, shown against ACS peak demand

Did you know?

To balance the national electricity network, we procure reserve services. We hold several different categories of reserve to meet different requirements. Operating reserve is held to cover the largest infeed loss (that is, the loss of the largest source of supply) and additional reserve to account for uncertainty in forecast demand and supply. Beyond this we hold additional contingency reserve – to account for the risk of further losses of capacity or changes in forecasts. This final category of reserve decreases over time as the risk reduces.

Our balancing services markets provide us with efficient access to sources of extra power when it's needed. The technical features of our reserve services are designed to ensure reliable delivery of power over different timescales, depending on the system need they address.

Sensitivity analysis

We model a range of sensitivities around our base case to understand the impact of changes to key variables, market uncertainties or material supply disruptions. LOLE remains within the Reliability Standard in each of these illustrative sensitivities.

Our base case de-rated margin of 6.1 GW (10.0%) is an assessment of the expected excess supply after ACS peak demand and reserve requirements have been met. The technical capacity of generation is de-rated to reflect each technology's expected contribution during a period of system stress.

Our modelling approach accounts for weather effects (including interactions between demand and wind), plant unavailability and supply risks in interconnected markets. Given the dynamic nature of energy markets, and uncertainties in these variables, we assess adequacy under a range of scenarios.

Table 1 shows how the de-rated margin and LOLE for winter 2025/26 vary under illustrative sensitivities. As there is approximately a 50% chance that peak demand in any given winter will exceed the ACS value, we also assess the de-rated margin at higher demand levels.

Table 1 also includes generation downside sensitivities, in which 2 GW and 4 GW of de-rated conventional generation or interconnector imports are assumed to be unavailable. Both supply scenarios are based on ACS peak demand. The LOLE remains within the Reliability Standard of 3 hours/year in each case. More information on updates to our Capacity Adequacy (CA) modelling is provided in Appendix D.

Table 1: Impact of illustrative sensitivities on de-rated margin and associated LOLE

Scenario	De-rated Margin	Associated LOLE (Hrs/Year)
High demand (peak cold spell demand at the 90th percentile)	4.3 GW (6.8%)	0.1
Supply Scenarios		
2 GW less de-rated generation or interconnector imports	4.7 GW (7.7%)	<0.1
4 GW less de-rated generation or interconnector imports	3.4 GW (5.5%)	<0.5

Base case and credible range

We expect to have a sufficient operational surplus throughout the winter when taking into account natural variations in demand, wind and generator outages. There may be some tight days, most likely in early December or mid-January, excluding the Christmas period.

Our analysis shows that demand – and our reserve requirement – can be met under the full forecast range of operational conditions expected this winter, although there may be times when we need to use our standard operational tools, such as system notices.

Figure 2 shows a central forecast (the pink line) and a forecast range (the shaded pink plume) for the daily operational surplus this winter. To derive this, we simulate 30,000 variations around the central view, using multiple scenarios for weather, demand, conventional generation availability, wind generation and interconnector availability. For each scenario, we calculate a daily surplus time series across the winter. Weather simulations are based on historic data from 1987 to the present, capturing a wide range of possible conditions.

There could still be days when the operational surplus falls below the shaded range in Figure 2 (around 5% of days). More information on the likelihood of these conditions – and the operational tools available in such circumstances – is provided on page 13.

Our operational surplus does not include potential market responses to higher demand or tighter conditions, such as power stations temporarily increasing output levels.

The day-by-day view of forecast operational surplus (showing maximum normalised demand and assumed generation), which appeared in last year's *Winter Outlook*, is included in the accompanying *Winter Outlook* data workbook.

Appendix E provides more details on our operational surplus calculation.

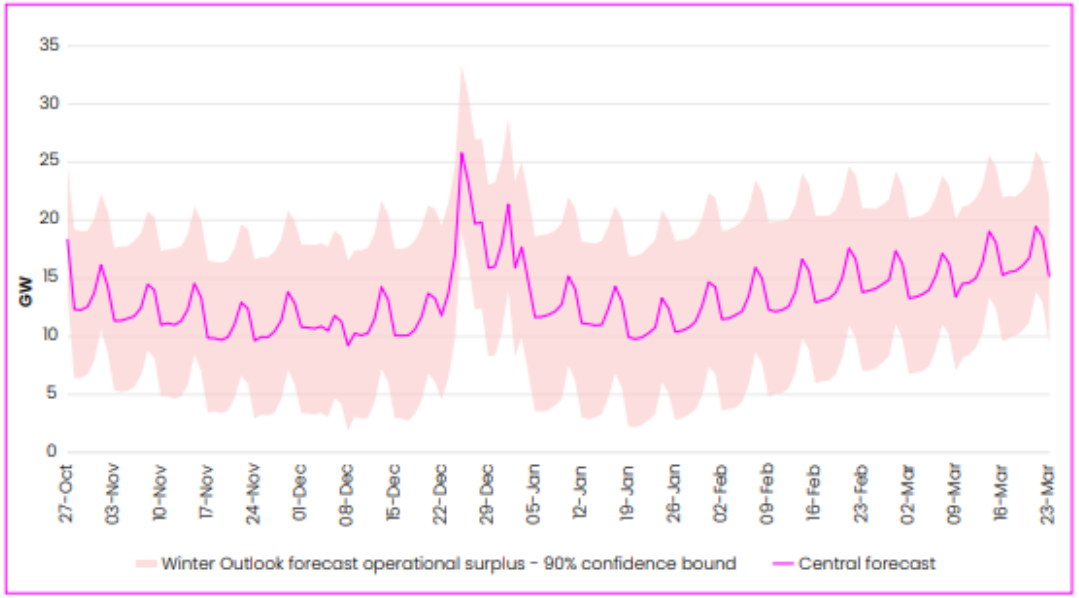

Figure 2: Range of outcomes for the daily operational surplus in our base case under different supply and demand conditions

Comparison to previous winters

The de-rated margin for this winter is the highest forecast since 2019/20 and represents a slight increase on recent winters. The operational surplus remains comparable to winter 2024/25.

Our base case de-rated margin for this winter is 6.1 GW (10.0% of average cold spell peak demand), compared with last year's margin of 5.2 GW (8.8% of average cold spell peak demand). The year-on-year increase is driven by several factors, including more battery storage capacity at both transmission and distribution levels, greater availability of gas-fired power generation, and the commissioning of the Greenlink interconnector to Ireland.

Figure 3 shows the de-rated margins from previous *Winter Outlook* reports. Our forecast for winter 2025/26 is the highest since 2019/20 and above recent winters.

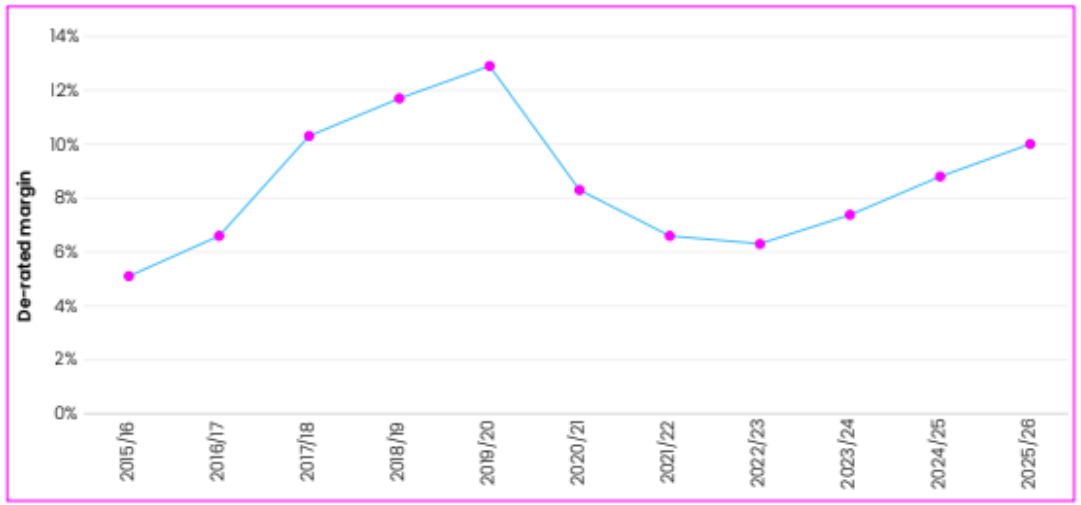

Figure 3: Historic de-rated margin forecasts made ahead of each winter in the Winter Outlook reports

Figure 4 shows our expectation that the daily operational surplus will be comparable to last winter. The red shaded region shows the credible range for this year, while the grey shaded region shows the corresponding range for last year.

As detailed in our *Winter Review and Consultation*, we continually review the performance of our analysis, re-calibrating models and improving methodologies to forecast supply and demand variables more effectively, which in turn affect the operational surplus. As a result of that review, we have widened the range of conventional generator unavailability within our operational surplus modelling for this winter.

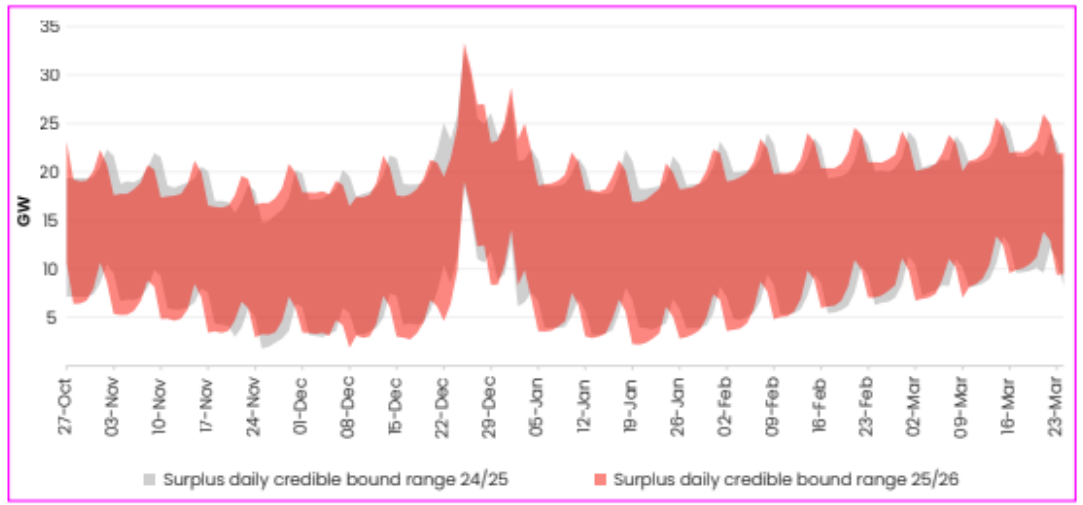

Figure 4: Daily credible range of operational surplus for this winter (red plume) compared with the credible range in last year's Winter Outlook report (grey plume)

Thank you

NESO
National Energy System Operator

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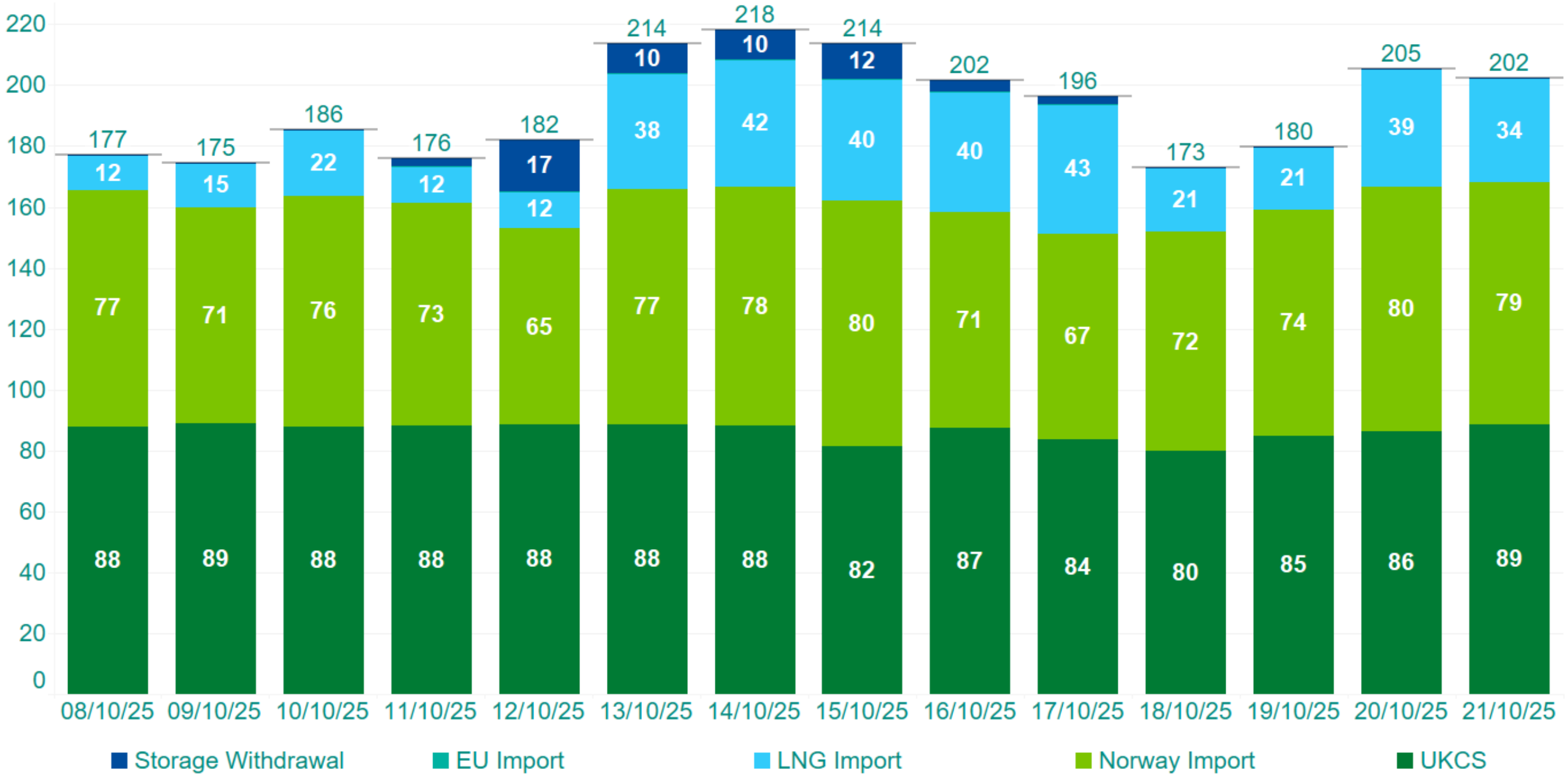
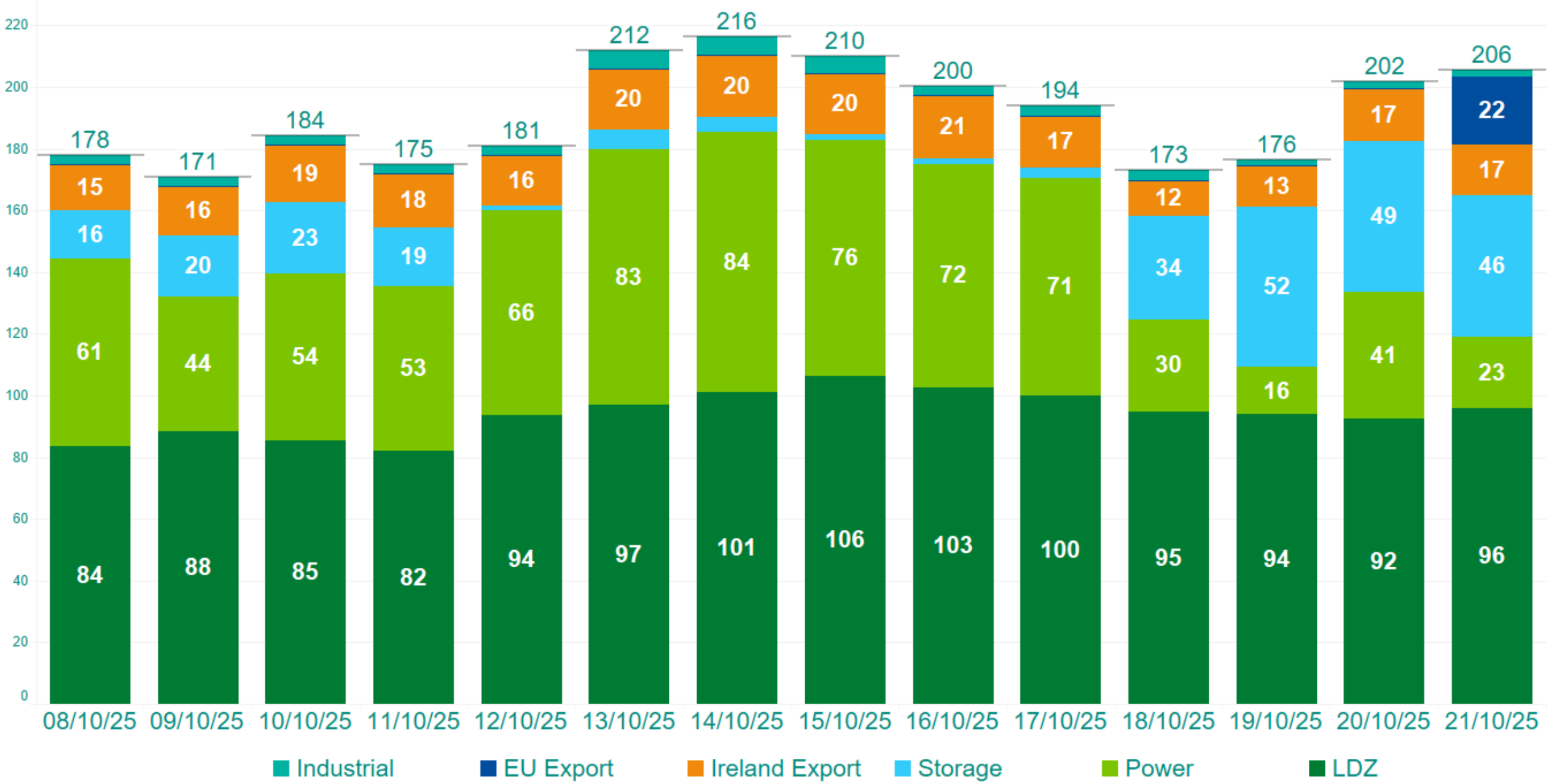
Max Chapman

Business Delivery & Operational Liaison Manager
National Gas

NTS Supply Overview



NTS Demand Overview



Storage Levels

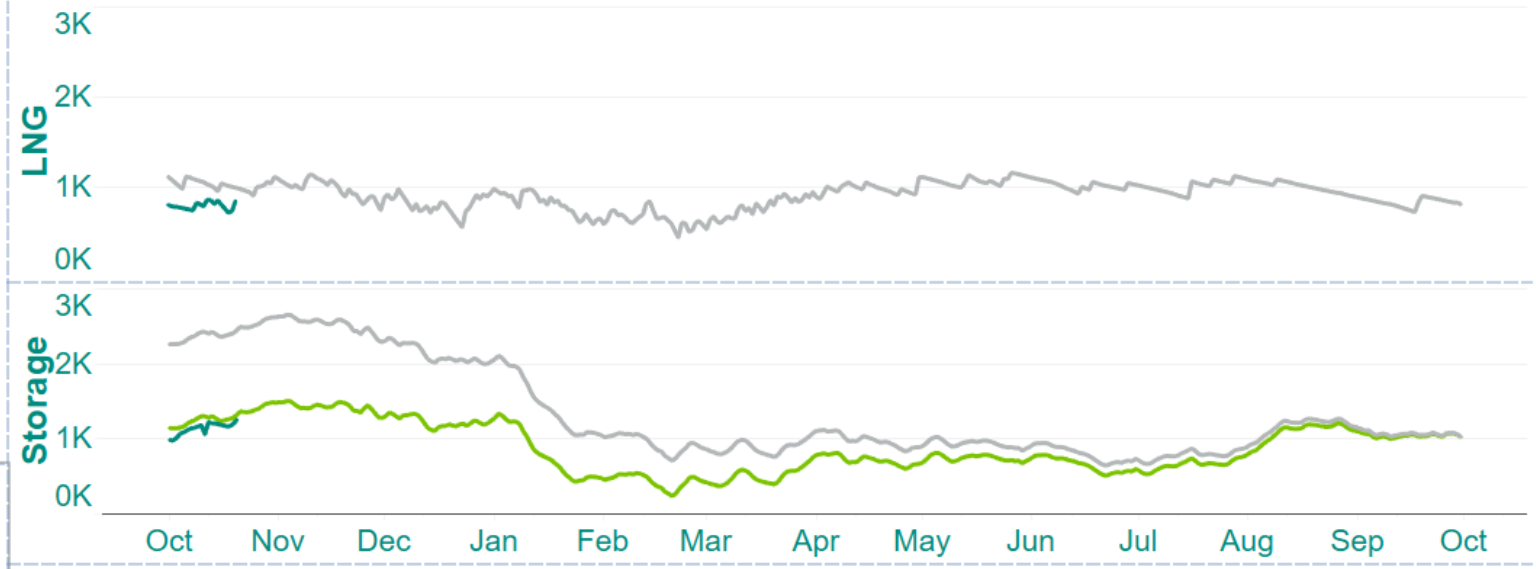
Total LNG Stock

858 mcm
67% full

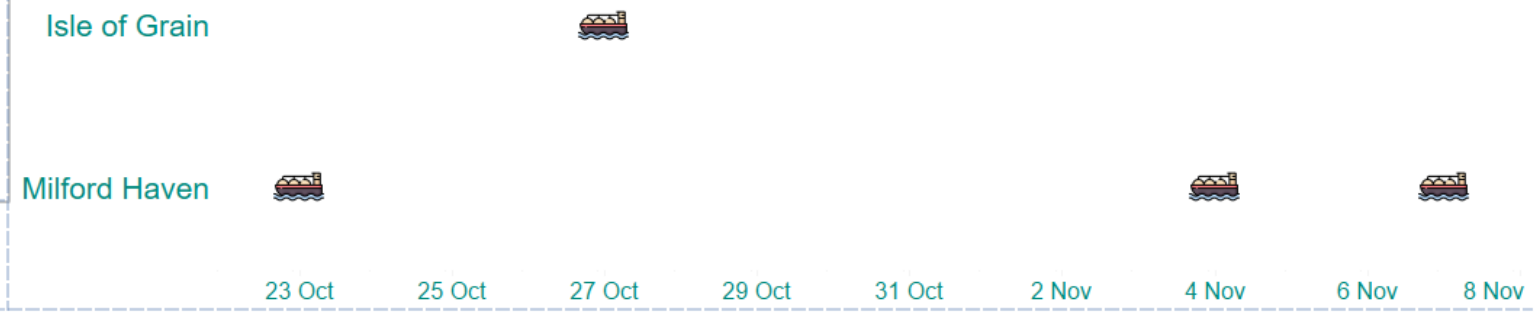
Total GB Storage Stock

1,288 mcm
39% full

(LRS 0%) (MRS 72%)



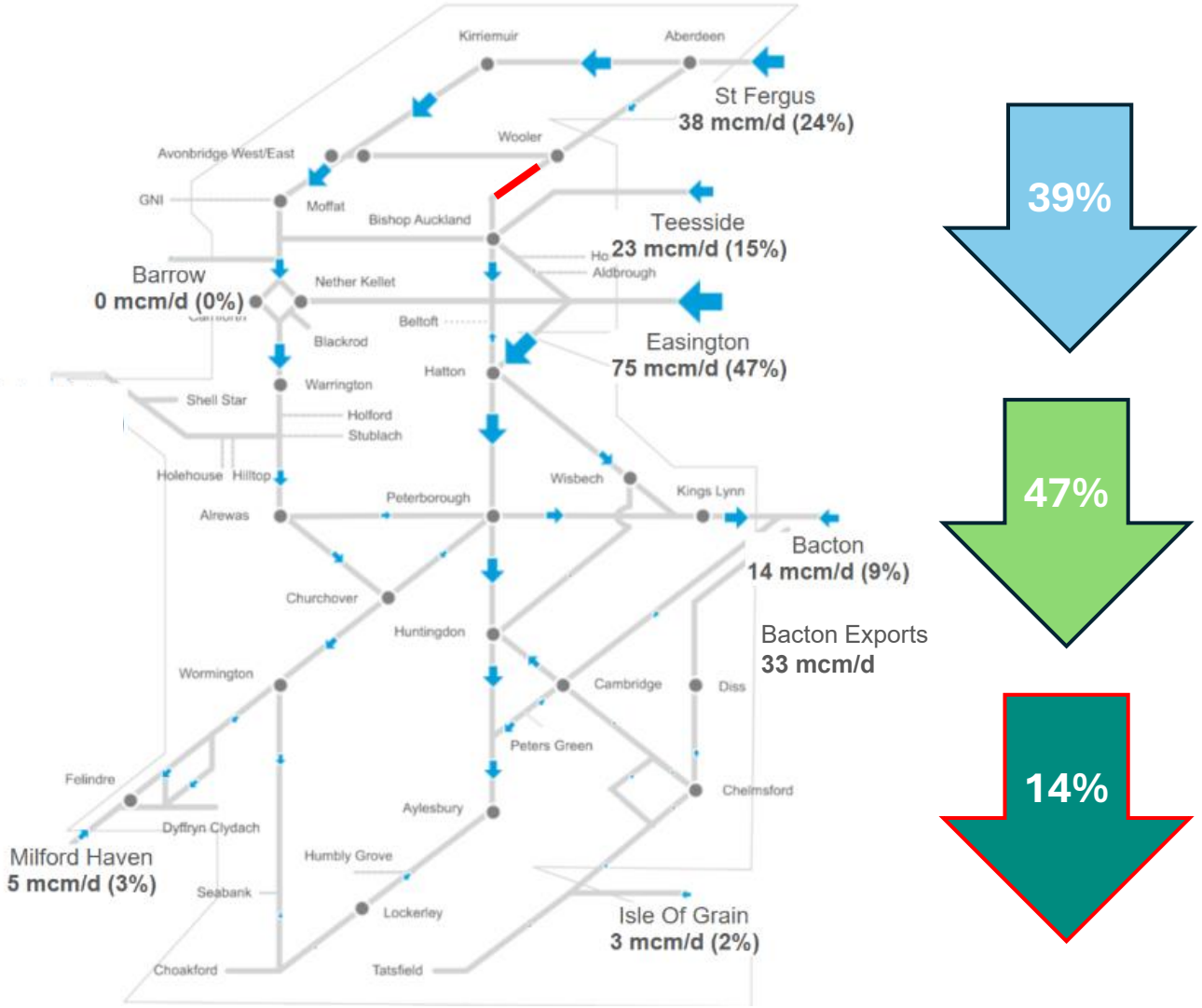
LNG Arrivals



All values shown are volume in millions of cubic metres (mcm)

Data as of beginning of gas day 22/10/2025
All values shown in million cubic metres (mcm)

Deep Dive: Period of Transition



39%

47%

14%

Sunday 21st September (157mcm)

Started the day 'Compression free'

Feeder 13 (South of Wooler) isolation ongoing for asset renovation works

Residual Balancing Trading +2.7mcm

Linepack Change = +2.3mcm

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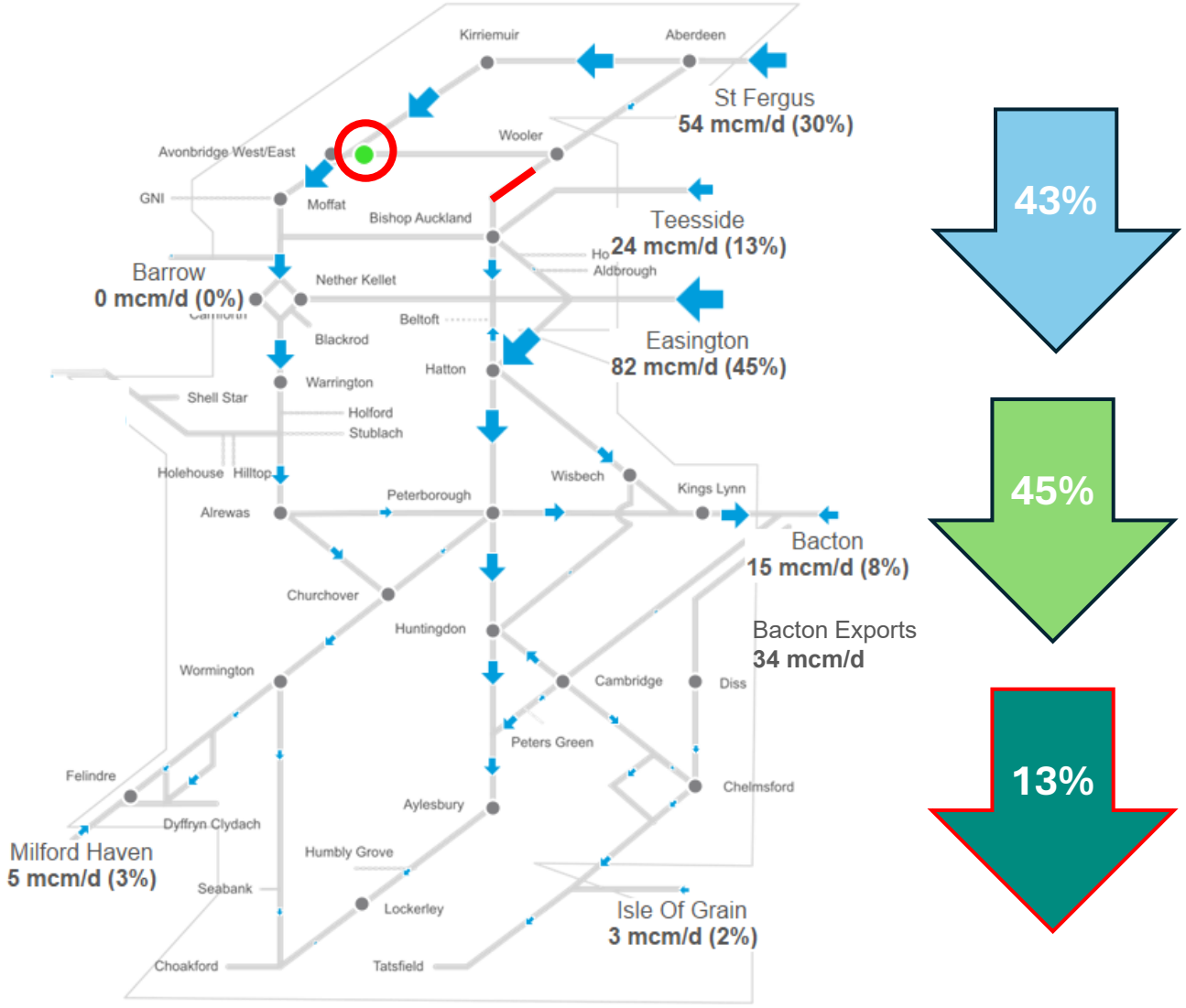
Deep Dive: Period of Transition



Monday 22nd September (174mcm)

Avonbridge compression brought online

- St Fergus supply increase

Residual Balancing Trading +2.2mcm

Linepack Change = +0.1mcm

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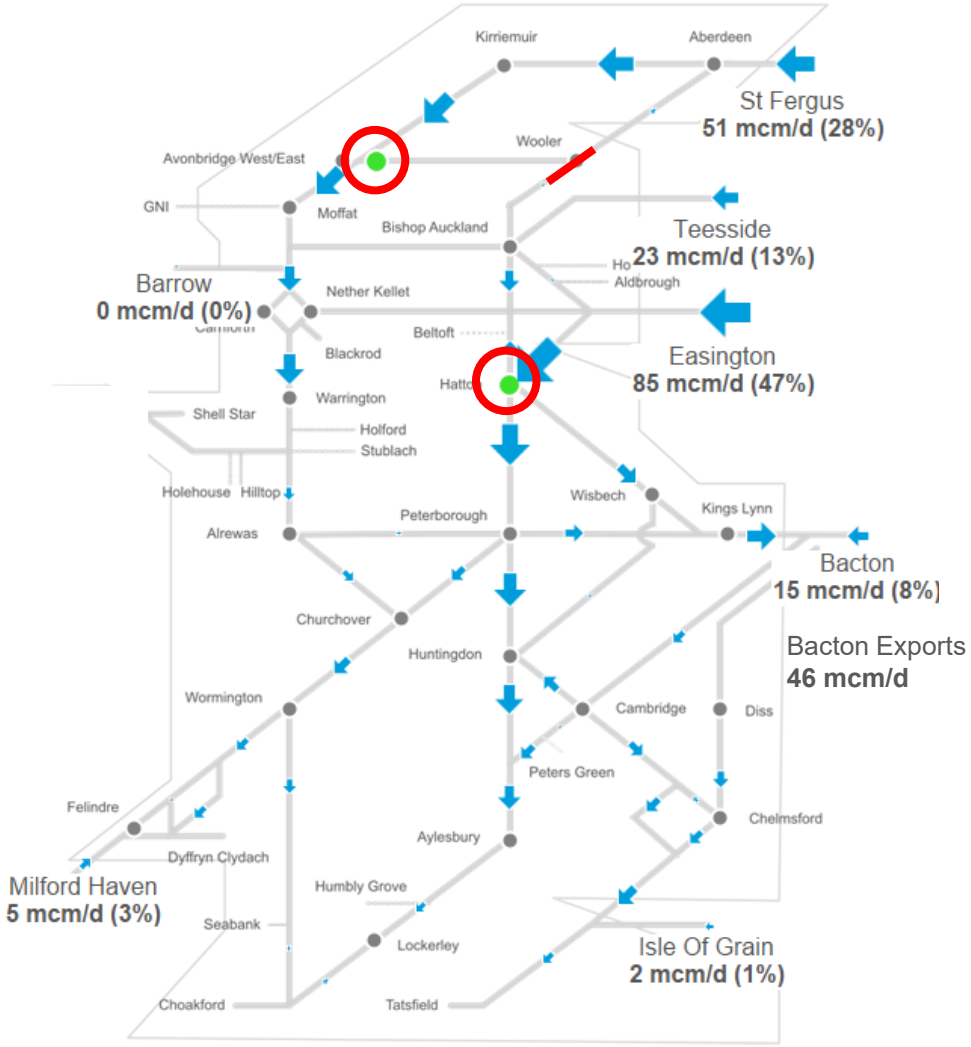
Deep Dive: Period of Transition



41%

47%

12%

Tuesday 23rd September (189mcm)

Hatton brought online

- Increased Easington supply
- Greater Southern demand (inc exports)

Residual Balancing Trading +2.5mcm

Linepack Change = -1mcm

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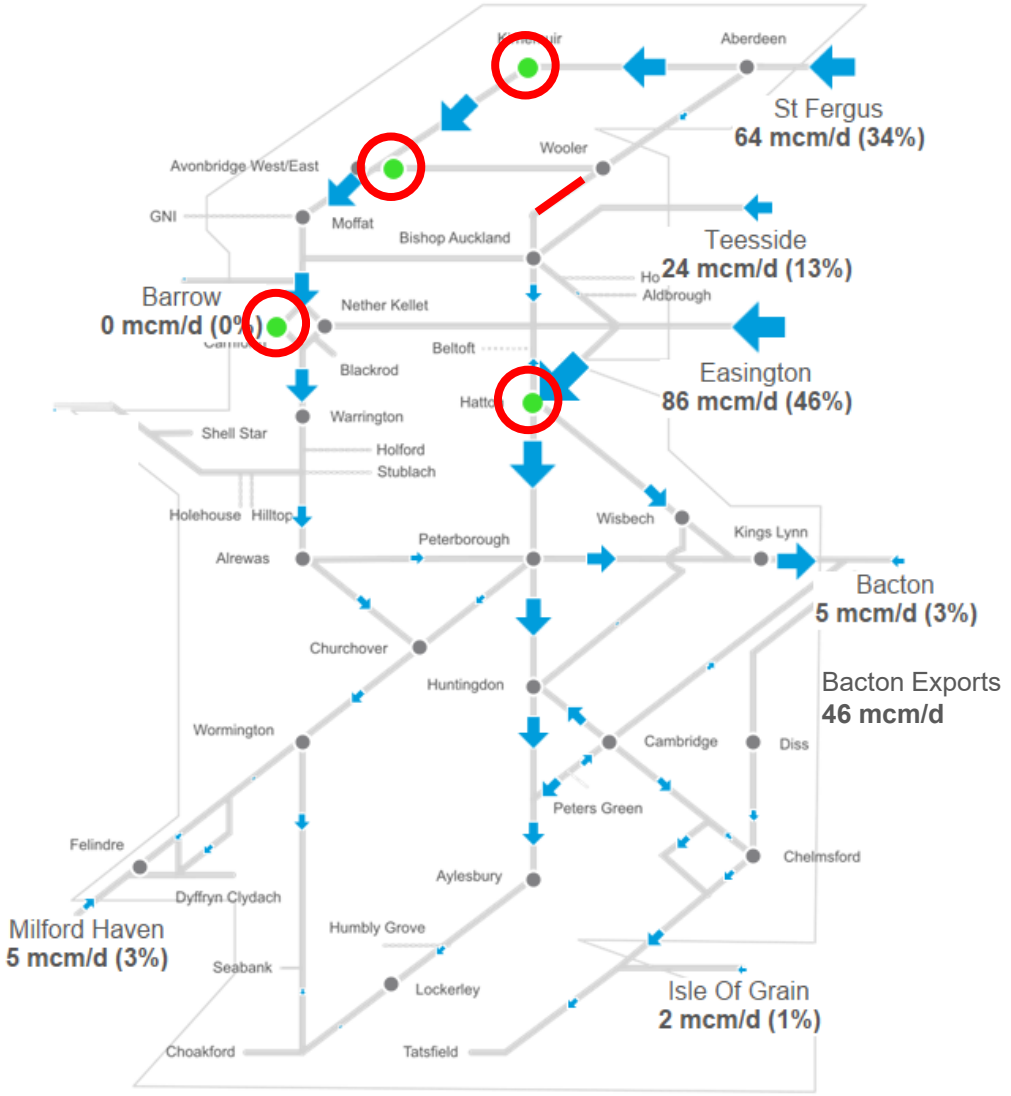
Deep Dive: Period of Transition



47%

46%

7%

Wednesday 24th September (189mcm)

Kirriemuir brought online

- Further increases in St Fergus supplies

Carnforth brought online

- North to South transmission / increased NW demand

Residual Balancing Trading +3.7mcm

Linepack Change = 0.5mcm

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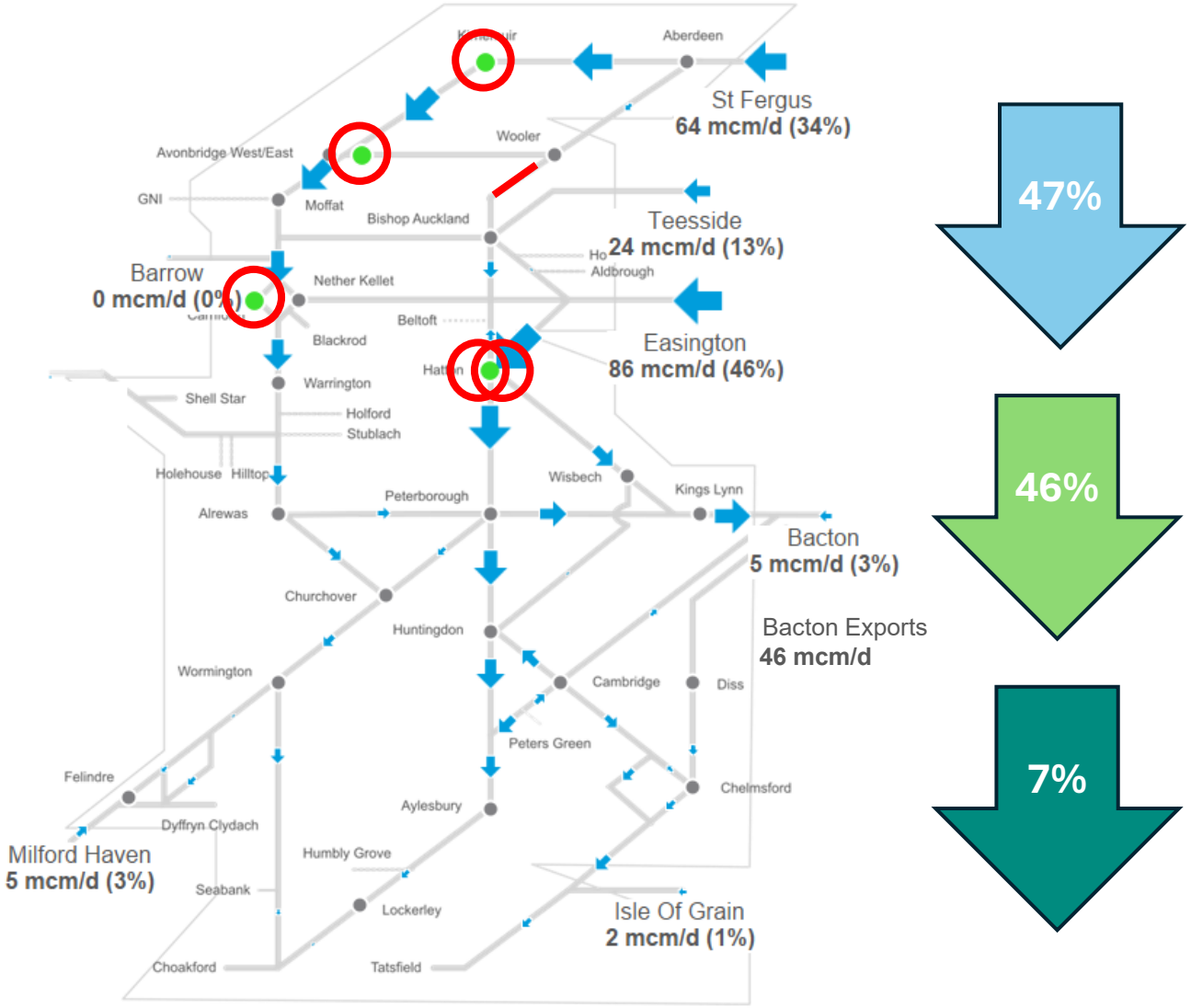
Deep Dive: Period of Transition



Thursday 25th September (183mcm)

Hatton Parallel operation established

Residual Balancing Trading = 0

Linepack Change = 0.5mcm

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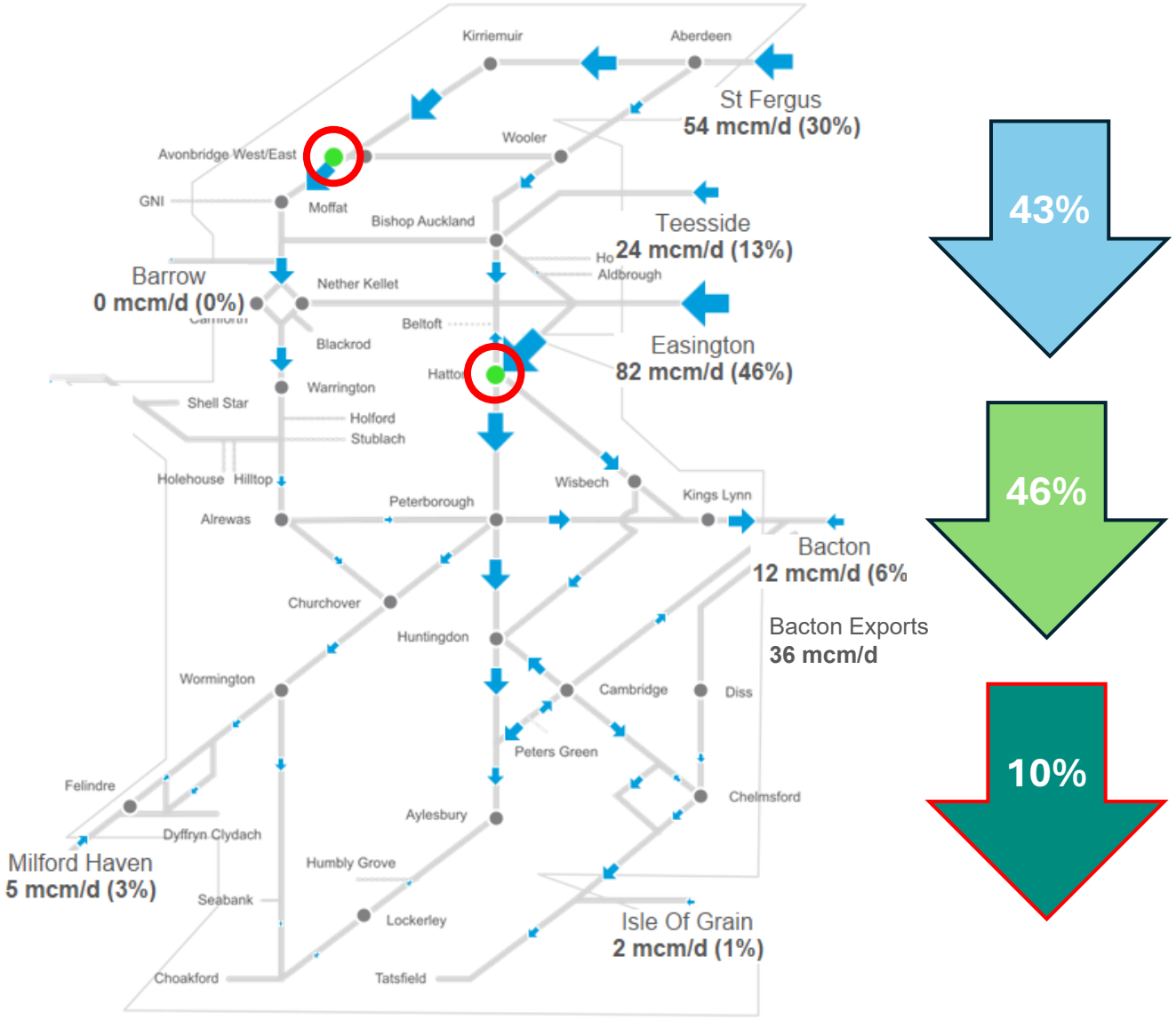
Deep Dive: Period of Transition



Friday 26th September (182mcm)

Feeder 13 re-commissioned

Kirriemuir & Carnforth stopped

- **Step reduction in St Fergus supplies**
- **Natural flow down East Coast**

Hatton reverted to single unit operation

Residual Balancing Trading = +2.7mcm

Linepack Change = -0.8mcm

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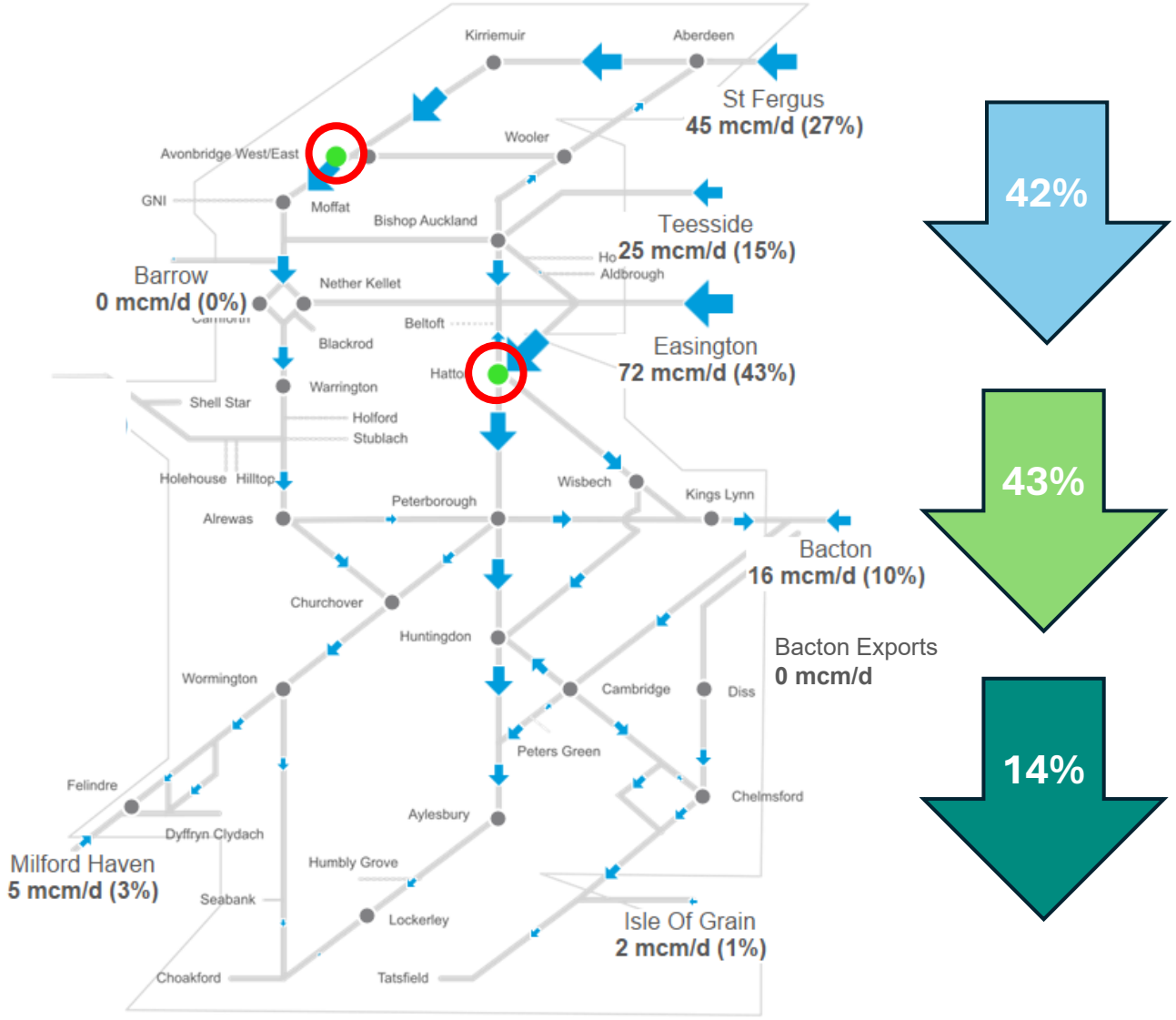
Deep Dive: Period of Transition



Jump to Wednesday 1st October (141mcm)

Compression set-up remained unchanged

Interconnector export reductions

Compressor assurance runs

Residual Balancing Trading = 0

Linepack Change = 0.5mcm

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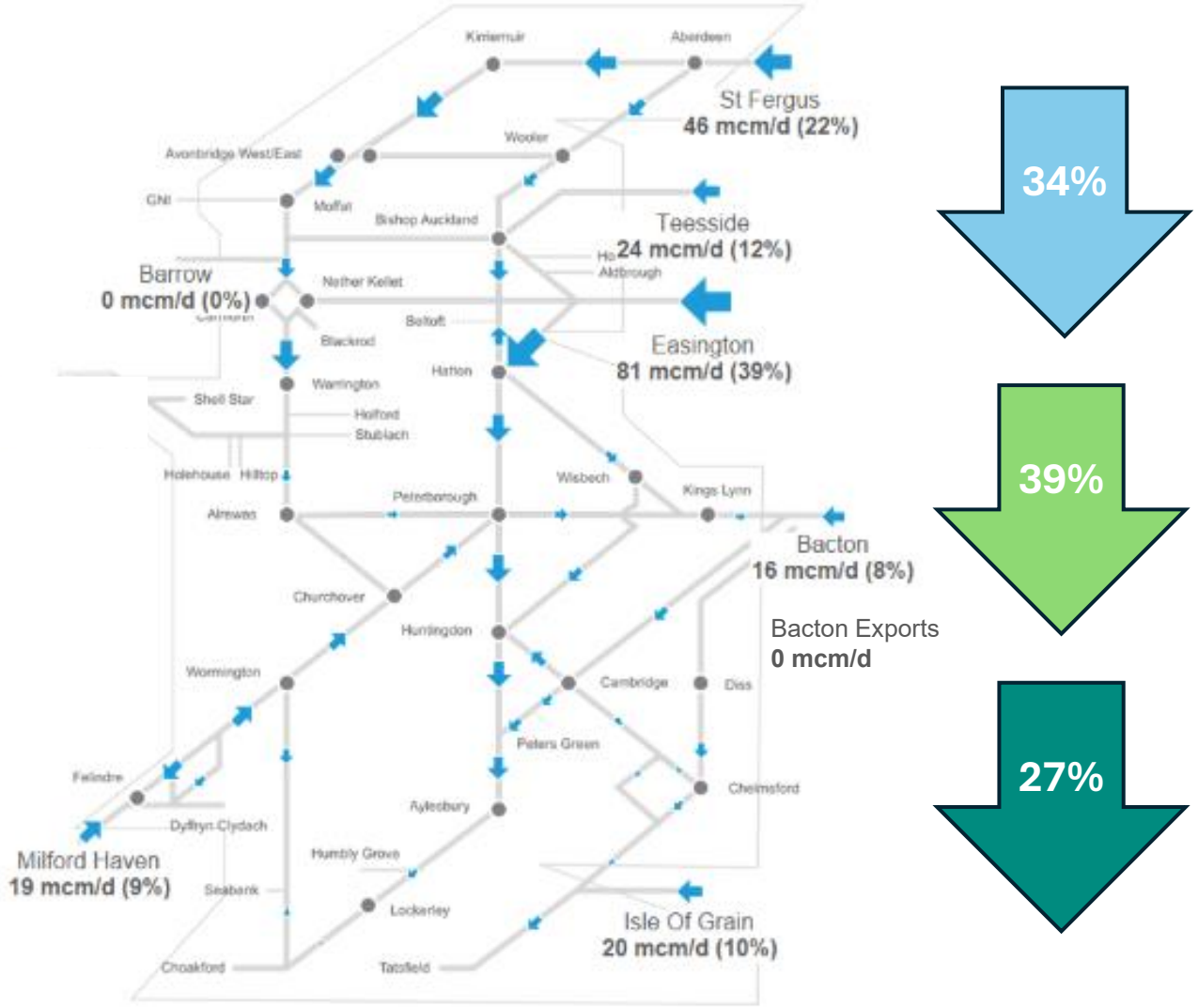
Deep Dive: Period of Transition



Jump to Wednesday 15th October (210mcm)

LNG inputs increase

- Supply closer to demand
- Less traditional North to South transmission
- ‘Higher efficiency’ network

No operational compressors

- Opportunity to utilise assurance runs

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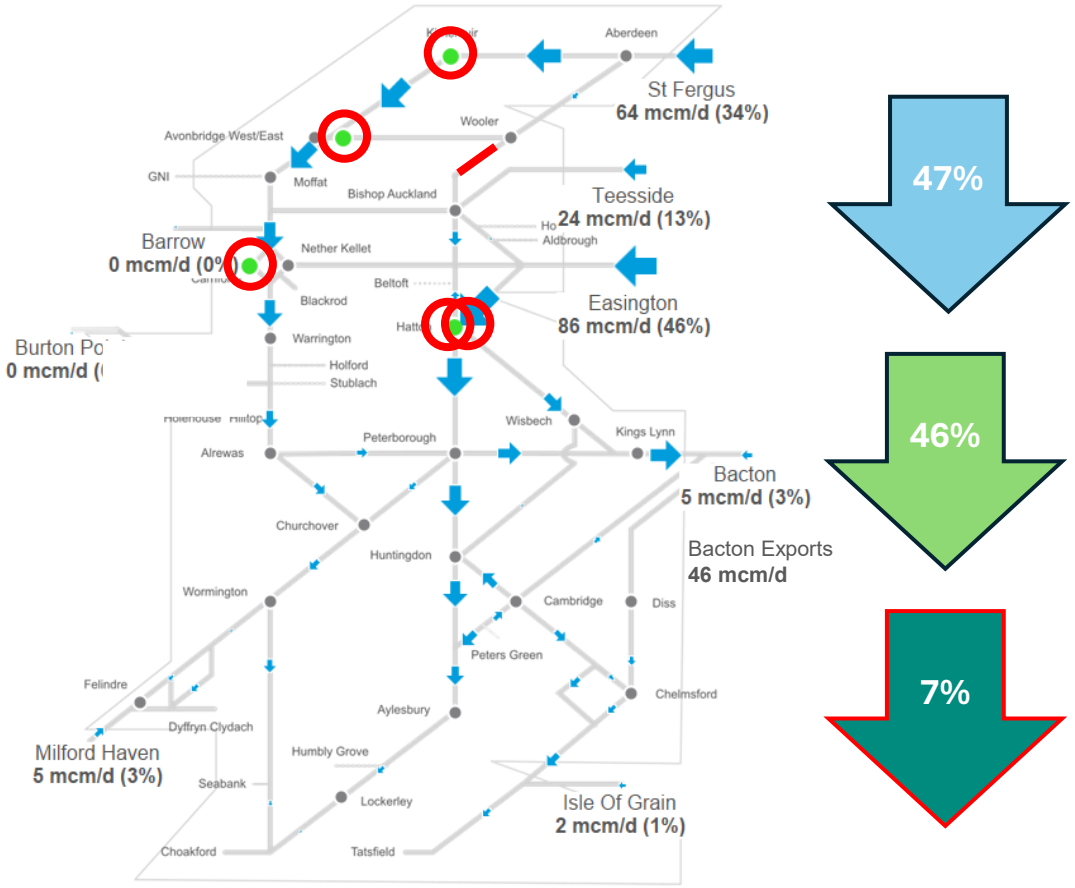
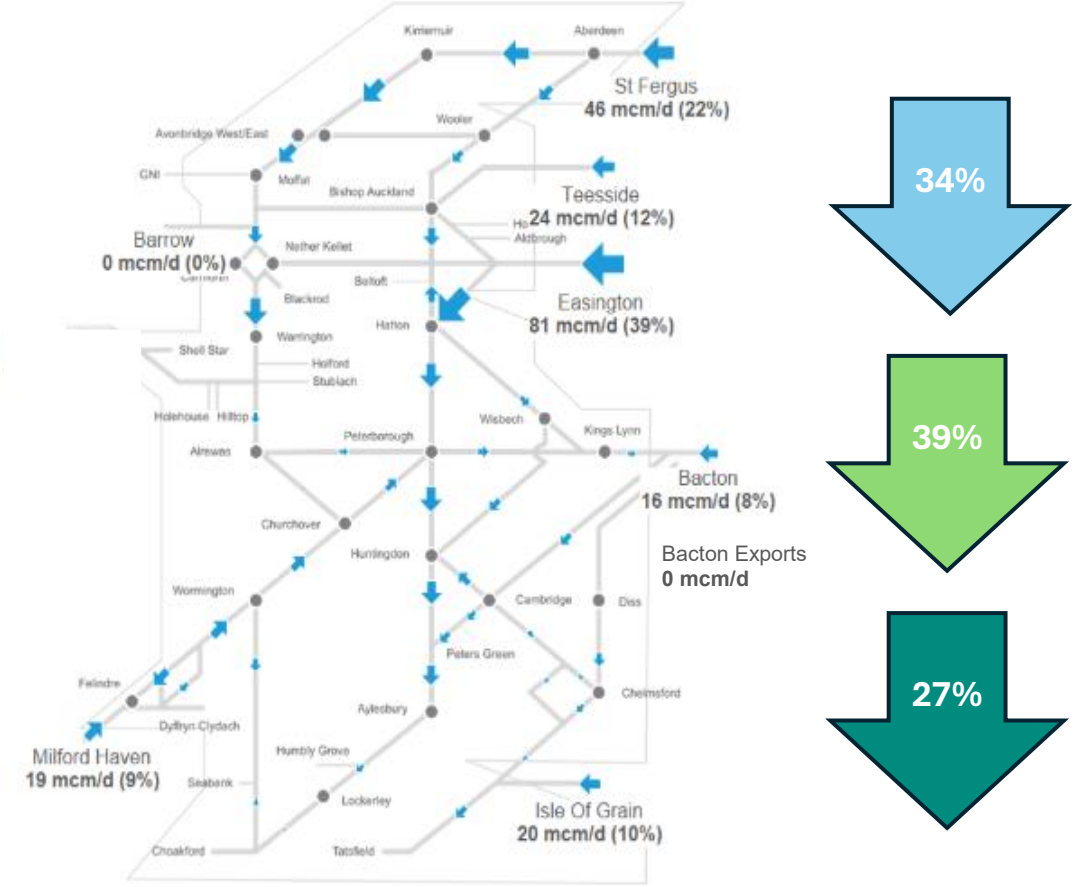
Dynamic Network

Thursday 25th September (183mcm)



Wednesday 15th October (210mcm)



Summary

Physically:

- Transitional Autumn period = varying supply patterns with low demands
- Return to service of key assets / compressor assurance runs
- Seasonal transition to Linepack

Commercially:

- 100% Buy trend over 20 days in September
- Totalling 63.1mcm, however only equating to 2.2mcm gain in Linepack
- 1st September OLP of 330.1mcm, 30th September OLP of 332.5mcm
- 43% increase compared with September 2024
  - Larger Shipper imbalances
  - Lower wind generation compared with forecast (17 days of error ~4mcm)
  - Late changes to storage site flows

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General Updates

Gemini Update

October 2025 Clock Change

On **Sunday, 26th October** the clocks go back one hour at 02:00, marking the end of British Summer Time (BST) and return to Greenwich Mean Time (GMT).

- To minimise the risk to customers from the clock change, some of Gemini processes are being modified during the 01:00 – 02:00 GMT hour bar as follows:
  - Within Day Auctions (Entry & Exit), GB Renominations & EU Nominations and OCM & OTC Trades will be restricted during this hour bar.
  - Please note both APIs and User interface screens will be impacted during this period.
  - After 02:00 GMT, the Gemini system will revert to normal processing.
- Further detailed information about the specific clock change restrictions, including example screenshots and supporting information can be found on the Operational news | National Gas

Energy Balancing Adjustment Process Enhancements – Go Live

- The enhancements to the 'Energy Balancing Adjustment Process' are due to go-live on **Wednesday 5th November 2025**.
- Please note, an External Screen Pack has been shared, there will be one new external screen and there is **no outage and impact to service** during the implementation period.
- Further information can be found in the Change Pack that has been shared on 16th June 2025 with the industry.

Today’s speakers for our Q&A panel

Glenn Bryn-Jacobsen
Director of Energy Systems & Resilience

Edward Mellish
Market Intelligence Manager

Max Chapman
Business Delivery & Operational Liaison Manager

Thank you for attending!

We look forward to seeing you online November 20th and in person January 22nd

If you would like to provide any feedback on the forum, please email Box.OperationalLiaison@nationalgas.com

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