Gas winter outlook for the UK in an ever-evolving global market

Jake Tudge

Corporate Affairs Director

2nd November 2023

One organisation. Three businesses.

national gas transmission

National Gas Transmission (NGT) is the backbone of Britain's energy system today and will play a leading role in the transition to a clean energy future that works for every home and business.

national gas metering

National Gas Metering (NGM) is one of the largest meter equipment managers in Britain, enabling homes and industry to access the energy they need safely and reliably.

national gas services

National Gas Services (NGS) is Britain's trusted authority in pipeline repair, maintenance and intervention, providing comprehensive services for strategic gas assets.

7,630km
of pipeline

68
compressors at 23 compressor sites and 500+ above-ground installations

£7.99 per year
National Gas Transmission's impact on the consumer bill*

£7,075m
Regulated Asset Value (RAV)

6.8m
gas meters managed by National Gas Metering

0.03 ↓
Lost Time Injury Frequency Rate, lowered from 0.12 in 2021/22

1,600+
colleagues

4.3% ↓
2022 gender pay gap, further lowered from 5.9% in 2021/22

Customers connected directly to the NTS

12 Industrial consumers
35 Power stations
9 Storage sites
2 Terminals
3 Interconnectors

National Transmission System

* In line with the Ofgem methodology for calculating network costs.

Gas fuels the UK's economy and the UK has played an important role in European gas security by acting as a "bridge to Europe" for supplies.

23m
UK homes use gas

500k
UK businesses use gas

38.4%
UK electricity generated from gas in 2022

Where did the UK's gas come from in 2022

"Heading into winter, about **20.5 trillion cubic metres** of gas had been piped over to Europe, four times typical volumes, accounting for about **a fifth of the continent's gas stocks**."

The small corner of Norfolk that helped defeat Putin's energy war

An unheralded pipeline has transformed Britain into a gas bridge to Europe

By Rachel Millard
23 April 2023 • 1:00pm

Images courtesy of The Daily Telegraph.

Our six key messages from the Winter Outlook.

1. **We have sufficient capability to meet peak (1-in-20) demand**, with a positive supply margin under both intact and N-1 network conditions.

2. **We forecast that GB demand (excluding exports to Europe) for winter to be comparable to last year** with the increase in residential demand being offset by reduced demand for power.

3. **Total NTS demand (including exports to Europe) is forecast to reduce**, as we expect reduced levels of exports to Europe when compared to the previous winter given that EU will enter winter with extremely high storage levels and now have increased LNG import infrastructure in place.

4. **We have illustrated how the NTS could be balanced under a range of credible demand profiles**. In all of our scenarios GB will be dependent on continued substantial imports of LNG and Norwegian gas this Winter. In cold winter scenarios, GB will likely also require imports from the EU.

5. **Disruptions to other markets could impact the GB market**, with a particular focus on the second half of winter dependent on the extent of EU storage usage. Overall, whilst we have more confidence that the market will perform as expected, we shouldn't discount the risk of events occurring, either in isolation or in combination, to put the EU and therefore by extension GB, under stress.

6. **We have the necessary physical, commercial and market-based tools to manage a supply and demand imbalance**, including those related to a Network Gas Supply Emergency (NGSE), should it be necessary.

A focus on Liquefied Natural Gas (LNG) and Northwest Europe Floating Storage Regassification Units (FSRUs).

Figure 6
LNG imports to GB during winter months (bcm).

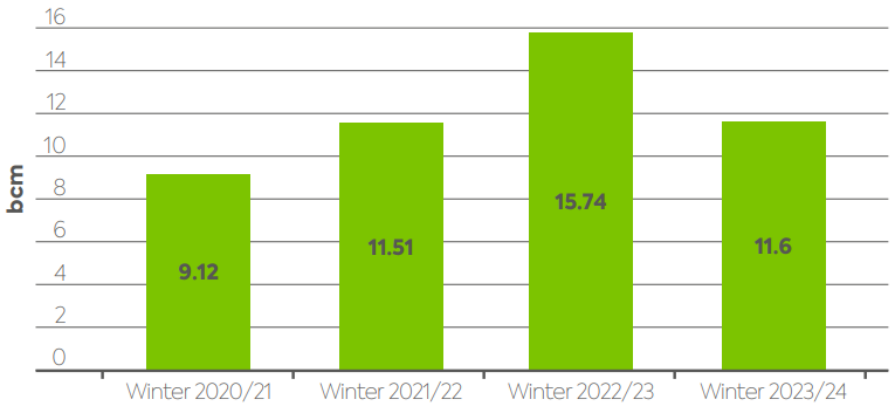
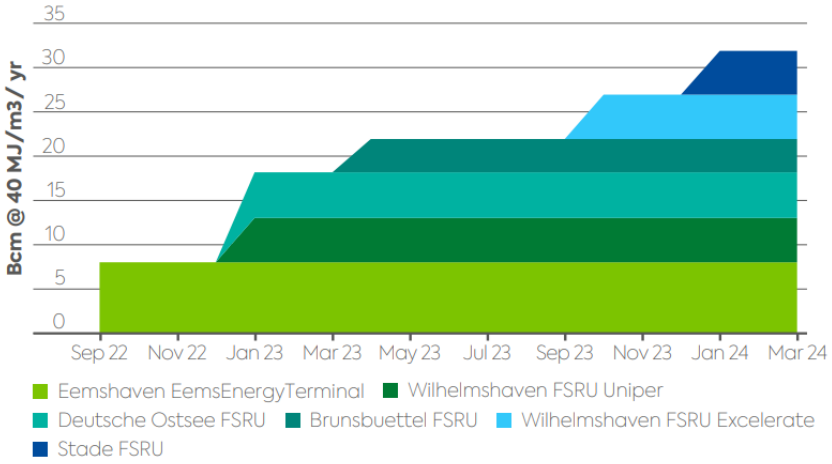


Figure 11
Northwest Europe regassification Floating Storage Regassification Unit (FSRU) and other capacity build (bcm/yr).



Correct data as of publication in October 2023.

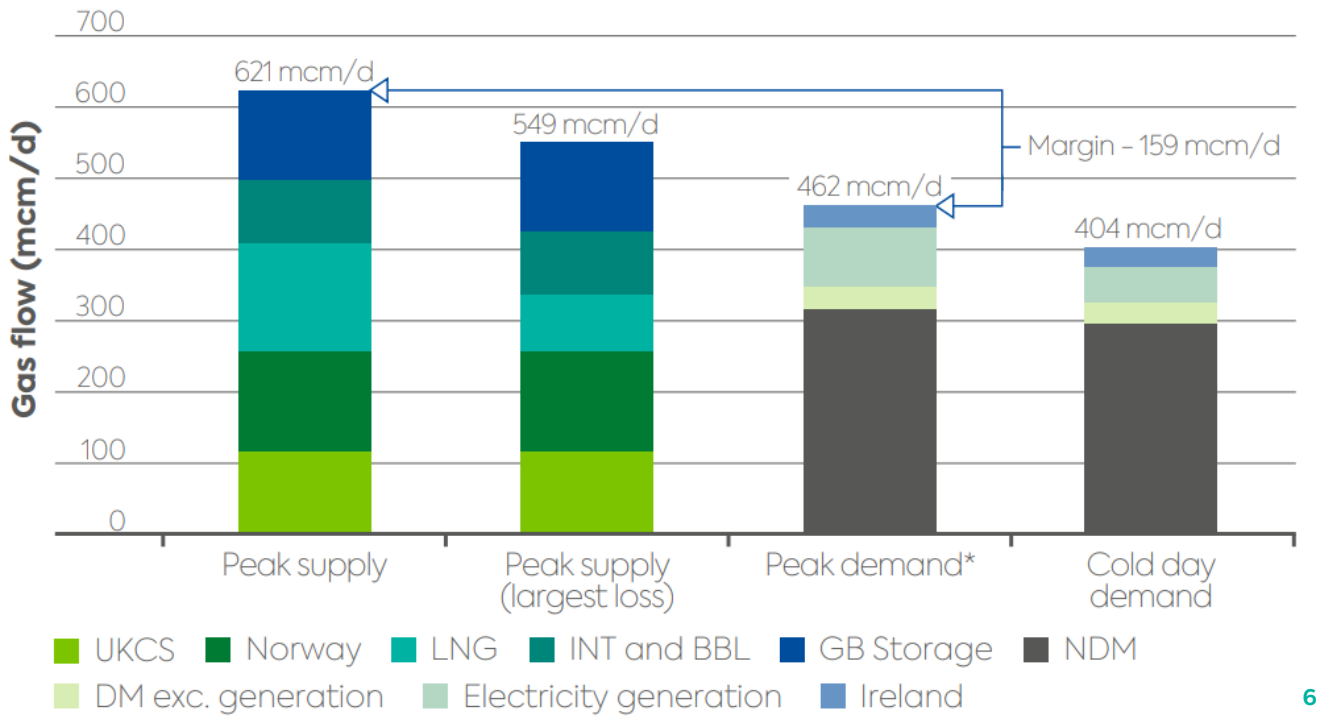
Peak day supply margins.

- **GB benefits from having diverse and flexible supplies**, with steady reliable supplies from UKCS and Norway coupled with flexible supplies from LNG, GB Storage and the Interconnectors.
- **Our network has sufficient physical capability** to accept gas from each of these sources in response to how the market chooses to balance demand and supply.
- **Peak demand is lower than peak supply**, 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.

Peak day supply margin for winters 2022/23 and 2023/24.

Forecast (mcm/d)	2022/23	2023/24	
1-in-20 peak demand	483	462	▽
1-in-20 non-storage supply	488	497	▷
1-in-20 storage supply	117	124	▷
Total 1-in-20 supply	605	621	▷
1-in-20 margin	122	159	△

Peak day supply margin and cold day demand for winter 2023/24.



The Winter Outlook presents three scenarios that illustrate how the NTS could be balanced under a range of credible demand profiles.

Scenario	Rationale
Scenario 1: Typical winter (2019/20)	We simulated demand based on the weather experienced in winter 2019/20 as being representative of the daily demand we would expect in a typical winter.
Scenario 2: Cold winter (2010/11)	We have simulated demands from winter 2010/11 as representative of a cold winter, as this period contains the highest-ever daily gas demand level seen on the NTS, with sustained high demands throughout the majority of the winter.
Scenario 3: Cold snap (2017/18)	We have simulated demands from winter 2017/18 as representative of demand levels during an extreme cold snap as this period contains the 'Beast from the East' which resulted in some of the highest daily demand levels seen in the last five years, and also included the coldest CWV day in the last 20 years.

Our scenarios seek to achieve a network balance in the following manner:

Supply Surplus.

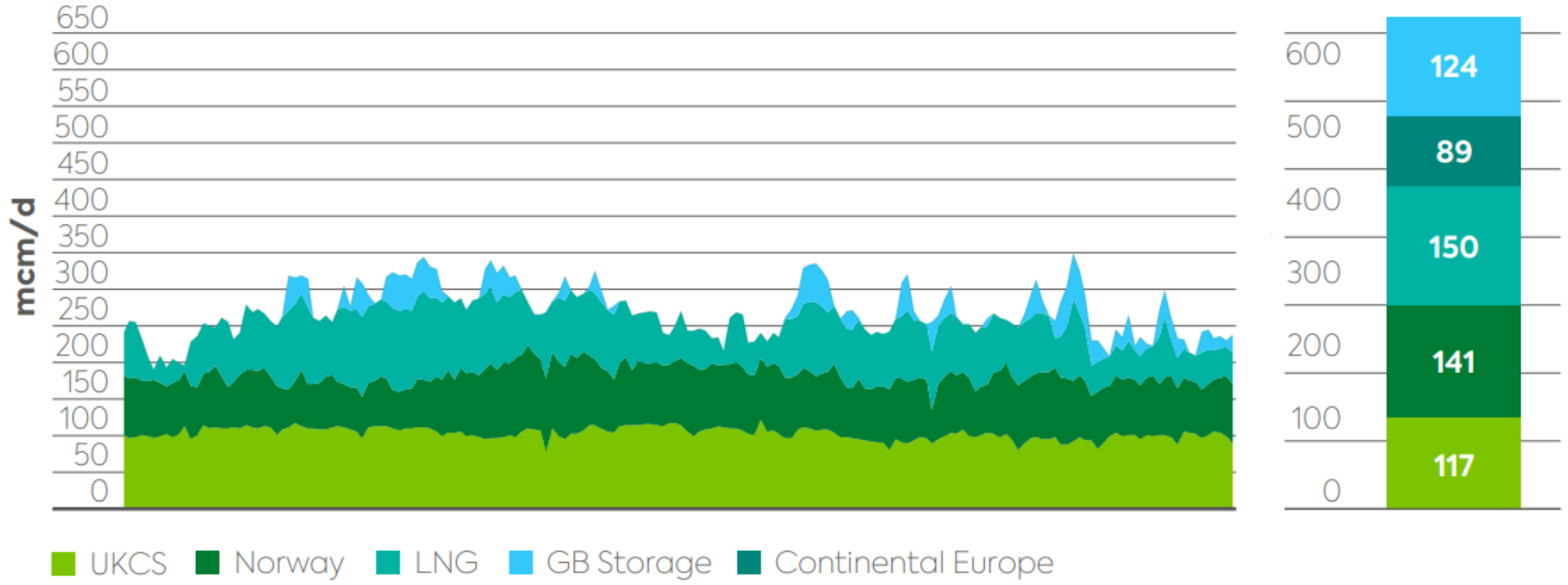
In the event the NTS is over-supplied, gas is presumed to be injected into GB Storage and/or gas exports to continental Europe will increase, before LNG supplies are reduced.

Supply Deficit.

In the event the NTS is undersupplied, it is presumed there will be an increase in storage withdrawal, Norwegian imports and LNG deliveries, whilst reducing any continental Europe exports, prior to requiring continental Europe imports and maximising storage withdrawal.

Scenario 1: Typical winter, European imports minimised (based on 2019/20). October 2023 – March 2024.

Figure 17
Scenario 1 supply.

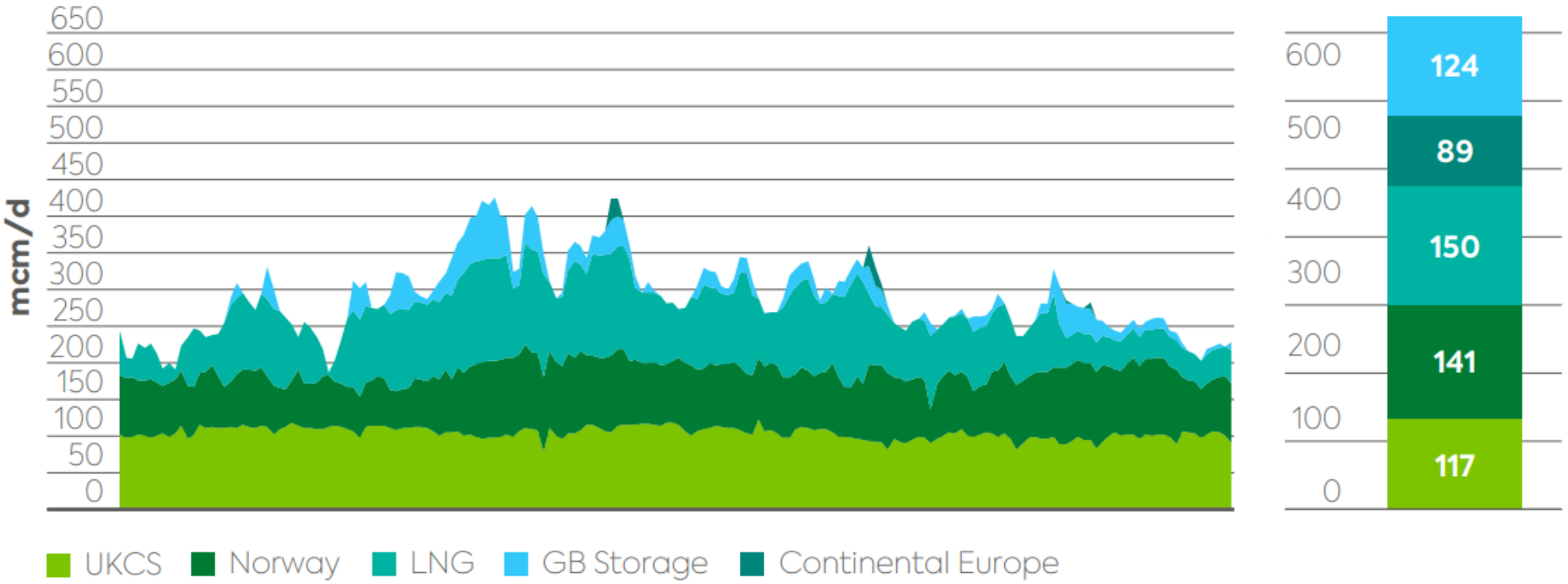


Peak Day capability

This scenario illustrates a level of LNG supply that could be required to achieve a supply-demand balance in winter, without requiring any imports from continental Europe.

Scenario 2: Cold winter, increased gas for power, European imports minimised (based on 2010/11). October 2023 – March 2024.

Figure 18
Scenario 2 supply.



Peak Day capability

This scenario illustrates that in a very high demand winter, imports from continental Europe may be required to achieve a supply-demand balance.

As a prudent system operator we continually monitor supply and demand behaviour throughout the year, identifying potential risks and taking appropriate mitigating actions.

We continue to work closely with the Department for Energy Security and Net Zero (DESNZ) on the proposals set out in the Energy Security Plan, which details focus areas for enhancing energy security. This plan covers items like ‘the role gas storage can play’ along with many others. Focus areas ahead of the coming winter have been:

Data provision

New and improved Gas Data Portal launched in July.

Demand side response

Further improvement to DSR options.

Exercise Everest

Continuation and expansion of our annual assurance exercise.

Maintenance activities

Improved use of data has enabled us to carry out more summer maintenance then ever before.

national gas

Thank you.