Delivering changes to the UK energy system, its networks and infrastructure

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Westminster Energy Forum

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national gas

Securing Britain's Energy.

We are Great Britain's gas National Transmission System (NTS) connecting:

- **30+** power stations
- **15** major industries
- **9** storage sites
- **4** local networks
- **3** interconnectors
- **3** LNG terminals

The NTS transports 99% of gas used in Great Britain:

- **~1/3** of total energy consumed
- **~2/5** of industrial energy demand
- **85%** of British homes connected to the gas grid for heating
- **1/4** of the UK's annual electricity generated by gas in 2024

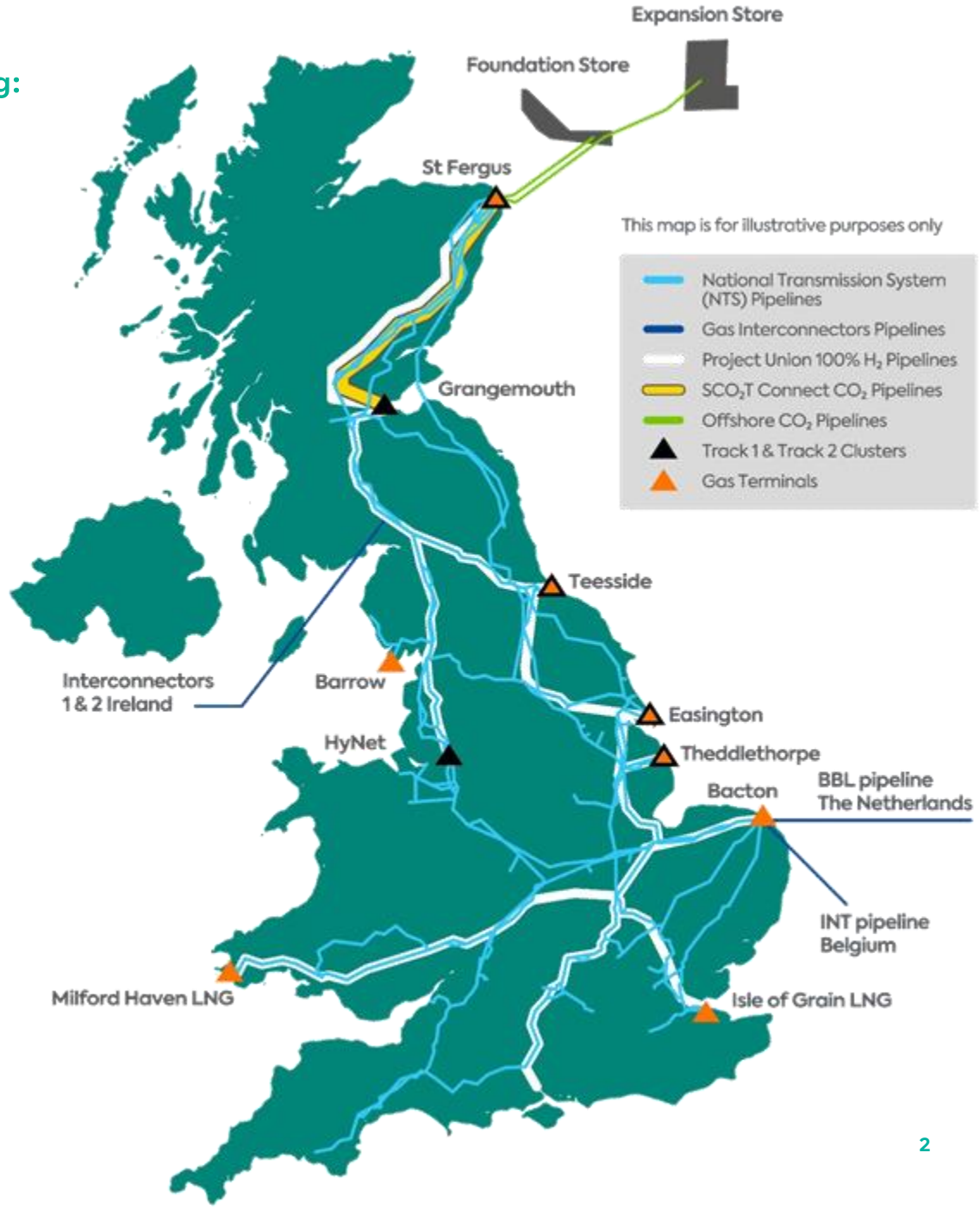
We are supporting the UK to become a global leader in hydrogen innovation, unlock Clean Power and deliver Net Zero

ProjectUnion

Our vision for Great Britain's Core Hydrogen Network

FutureGrid

Our world-leading hydrogen test facility in Cumbria

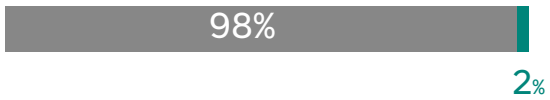


The gas system and the role of gas is changing

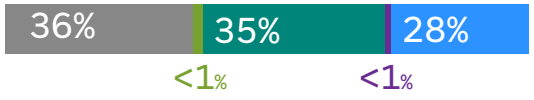
20 Years Ago: predominantly north to south flows

Today: diverse sources of gas

Gas source: 2000



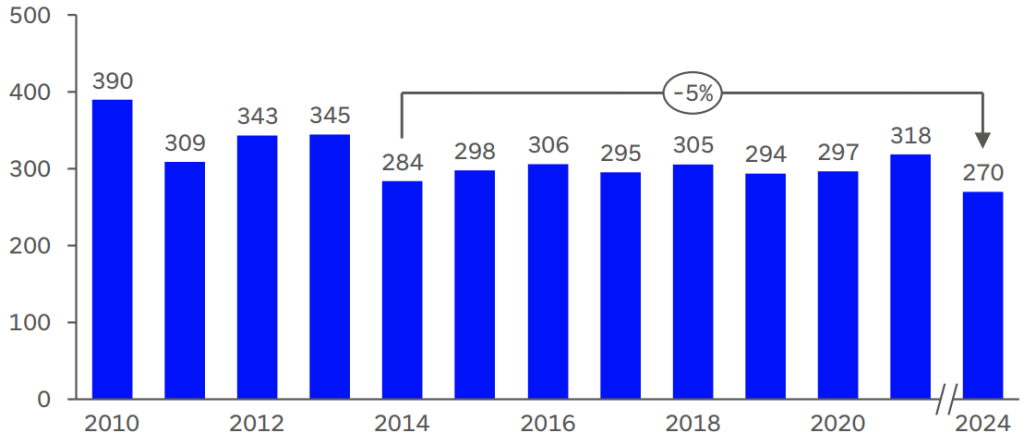
Gas source: 2022



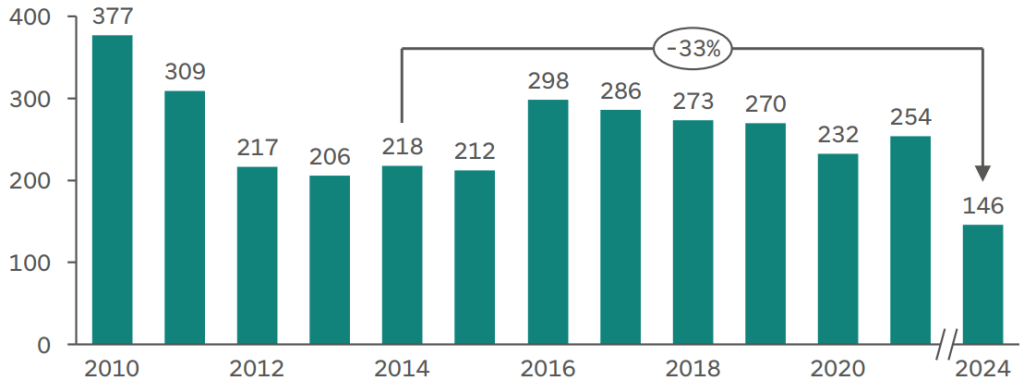
UKCS Green Gas Norway Interconnectors LNG

Source: National Gas.

Residential Gas Demand (TWh)



Power Sector Gas Demand (TWh)



National Gas |

Sources: BEIS DUKES 2022

Gas capacity (and infrastructure) will still be required for security of supply up to and beyond 2030

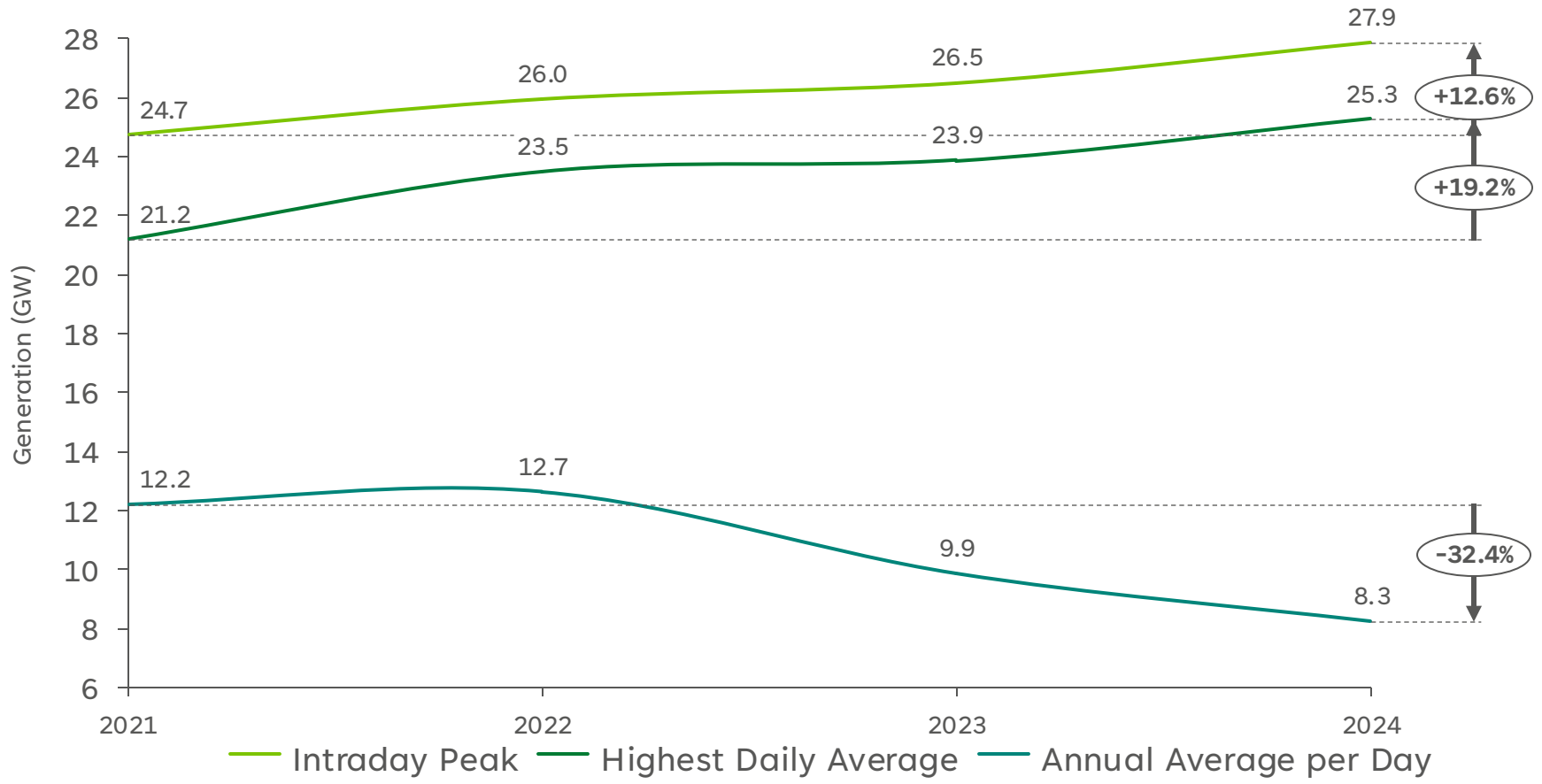
Installed GB-level capacity in 2030 in the NESO Scenarios, and the DESNZ 'Clean Power Capacity Range', compared to installed capacity in 2024 (GW)

Technology	Current installed capacity	NESO 'Further Flex & Renewables' Scenario	NESO 'New Dispatch Scenario'	DESNZ 2030 'Clean Power Capacity Range'
Offshore wind	14.8	51	43	43-50
Onshore wind	14.2	27	27	27-29
Solar	16.6	47	47	45-47
Nuclear	5.9	4	4	3-4
Low carbon dispatchable power	4.3	4	7	2-7
Unabated gas	35.6	35	35	35
LDES	2.9	8	5	4-6
Batteries	4.55	27	23	23-27
Interconnectors	9.8	12	12	12-14
Total	**109**	**215**	**203**	**194-219**
Consumer-led flexibility	2.55	12	10	10-12

'While delivering its Clean Power ambition for 2030, the government's aim is to ensure there will be sufficient flexible capacity on the system to meet security of supply. This includes retaining existing unabated gas capacity.'

DESNZ Clean Power 2030 Action Plan, April 2025

The peak electricity supply from gas on any given day has increased in recent years whilst the volume of gas power generation has decreased



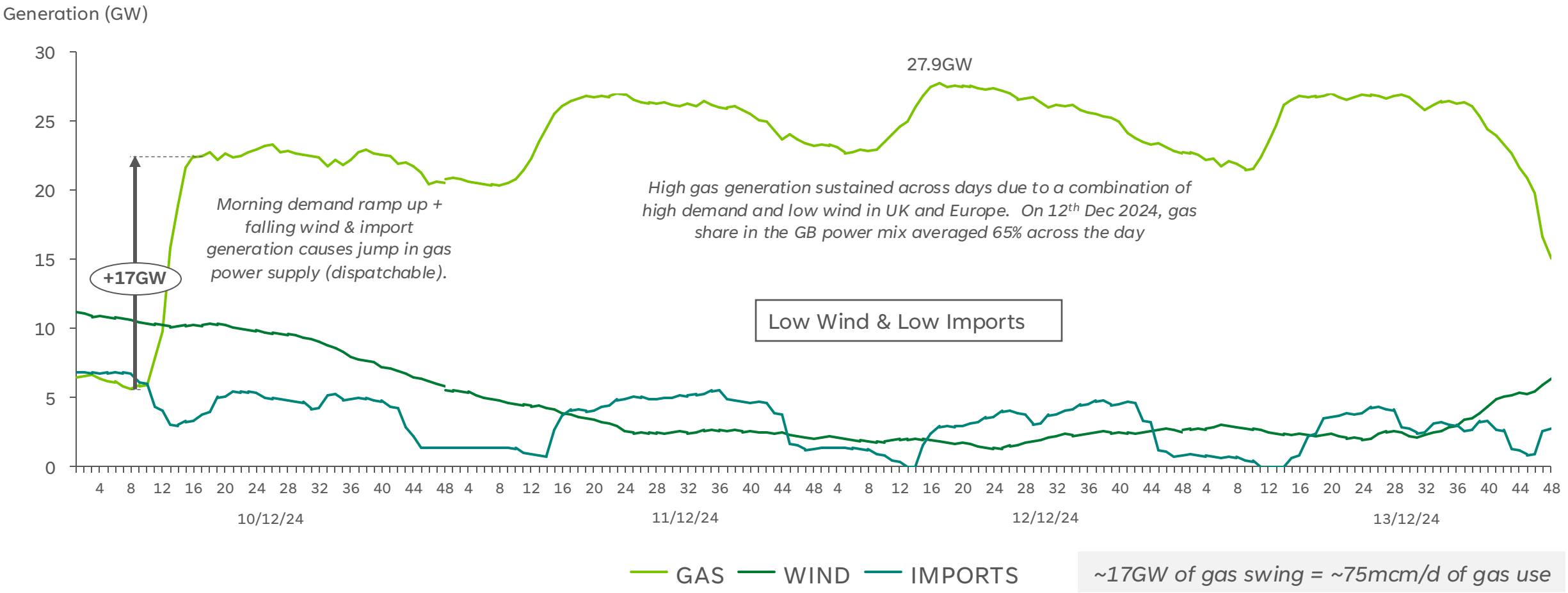
The highest recorded daily average and intraday peaks have risen in recent years.

The average gas power generation on an average day in a year has decreased.

Gas' growing role for peaking is only set to increase, highlighting the need to maintain an adequately sized gas fleet and national gas network.

Source: NESO – GW gas capacity operating for the period. RES = Renewable Energy Supply (wind, solar, hydro).

Last December, we saw significant swings when gas was required at short notice, in large volumes, for several days

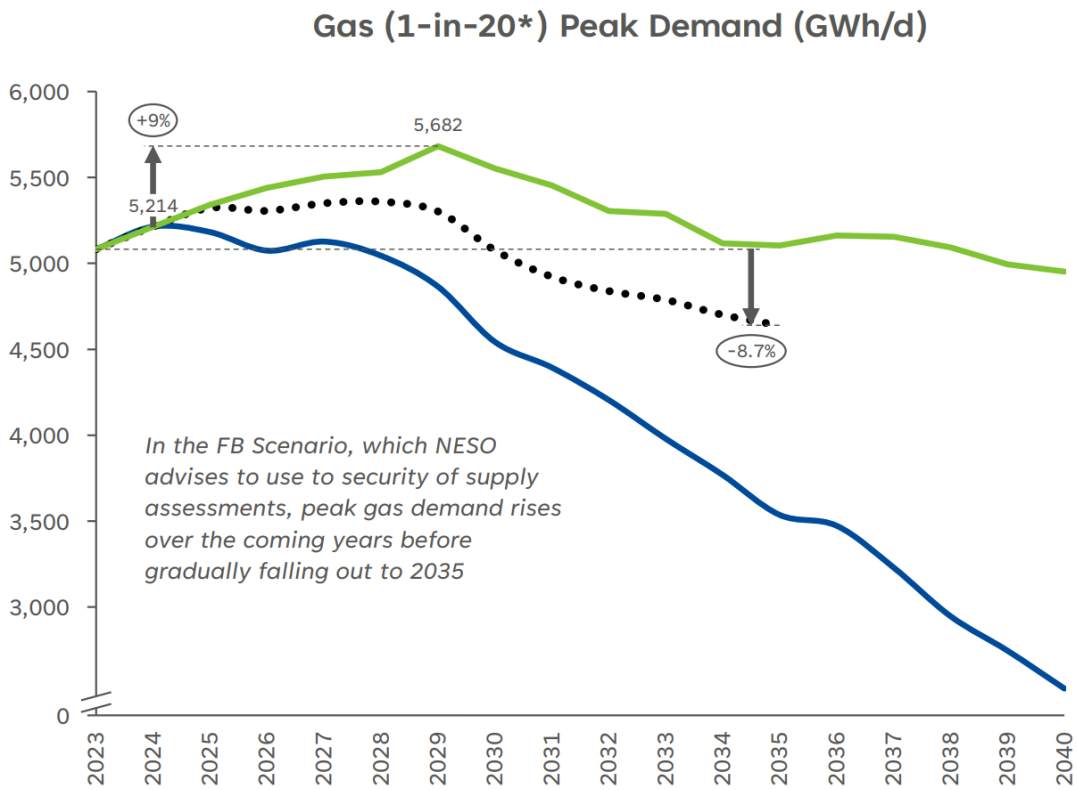


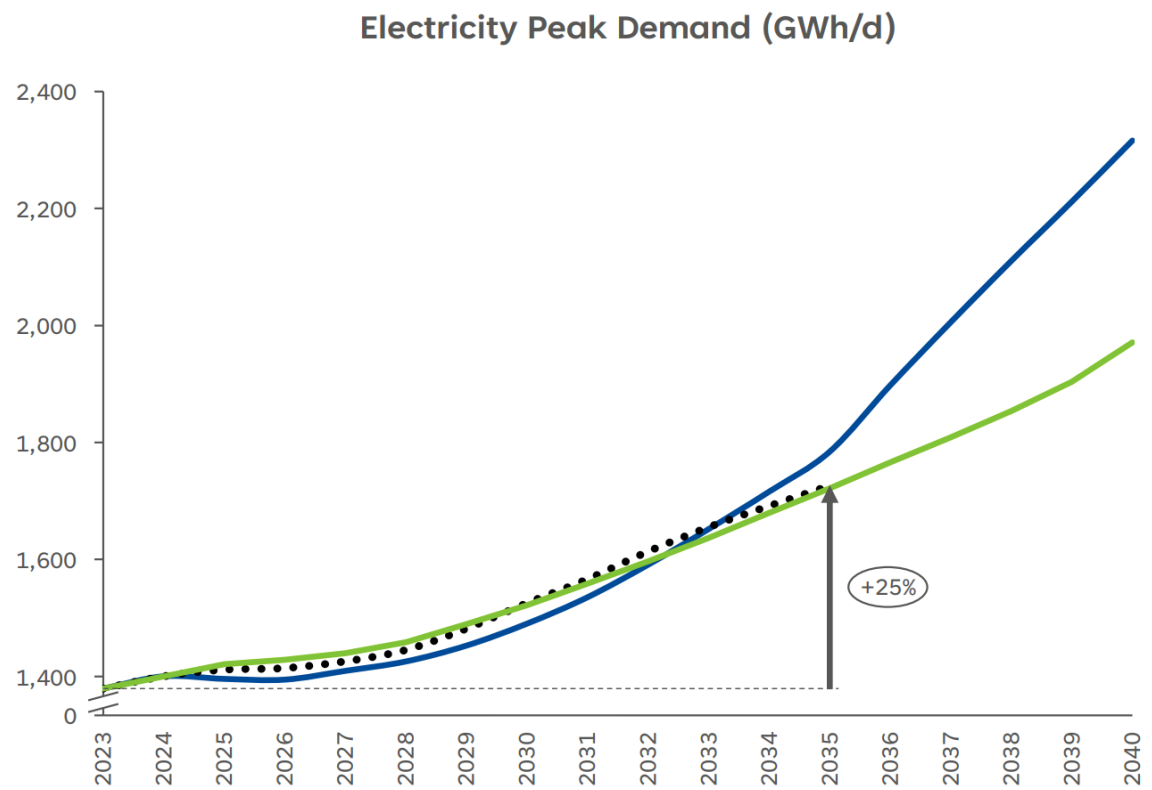
~17GW of gas swing = ~75mcm/d of gas use

Gas plant operations are hitting new intra-day highs as more intermittent renewables are added to the grid, requiring larger gas back up.

Source: NESO, NGT analysis. [1] Dunkelflaute is characterised as a period of low energy generation from renewable energy systems, due to low wind activity and enhanced cloud cover/darkness.

Peak gas demand declines through the 2030s in NESO's high electrification scenario but much less so in NESO's ten-year forecast

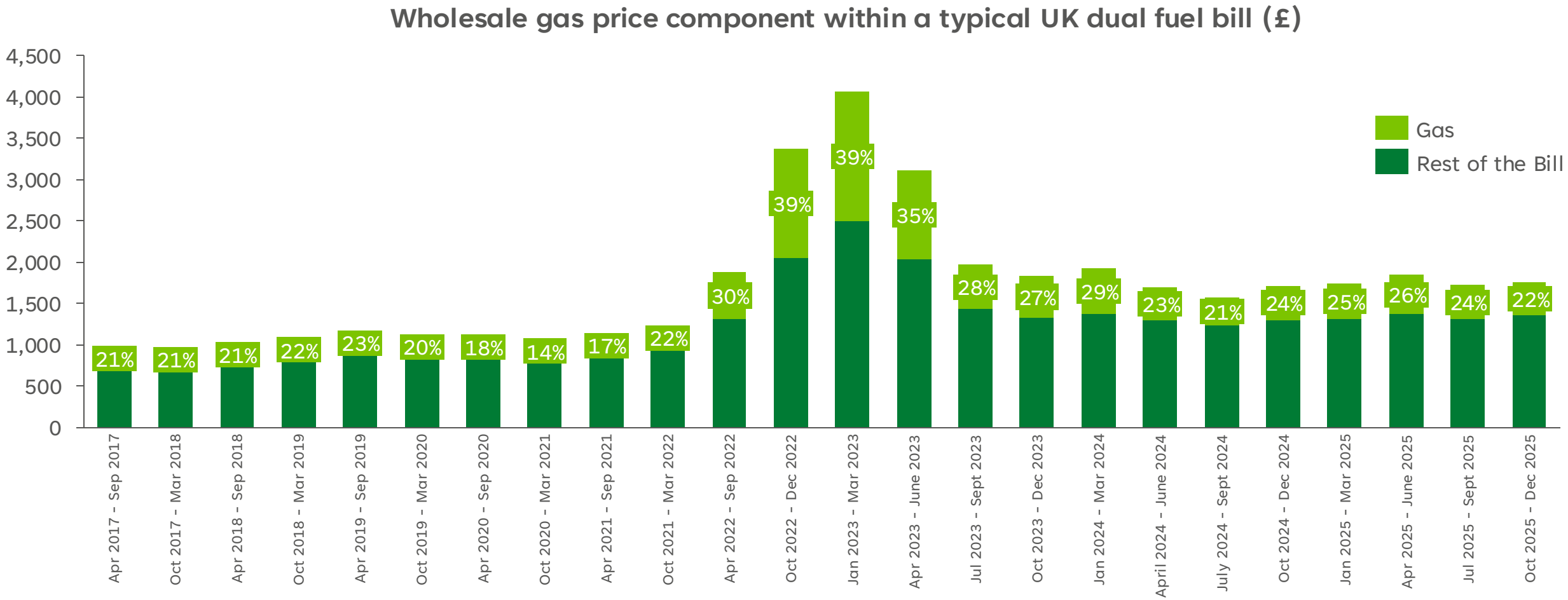




Holistic Transition • Ten Year Forecast Falling Behind

Source: NESO – future Energy Scenarios 2025. [*] 1-in-20 Gas Peak is based on NESO modelling coldest weather year from last 20 years

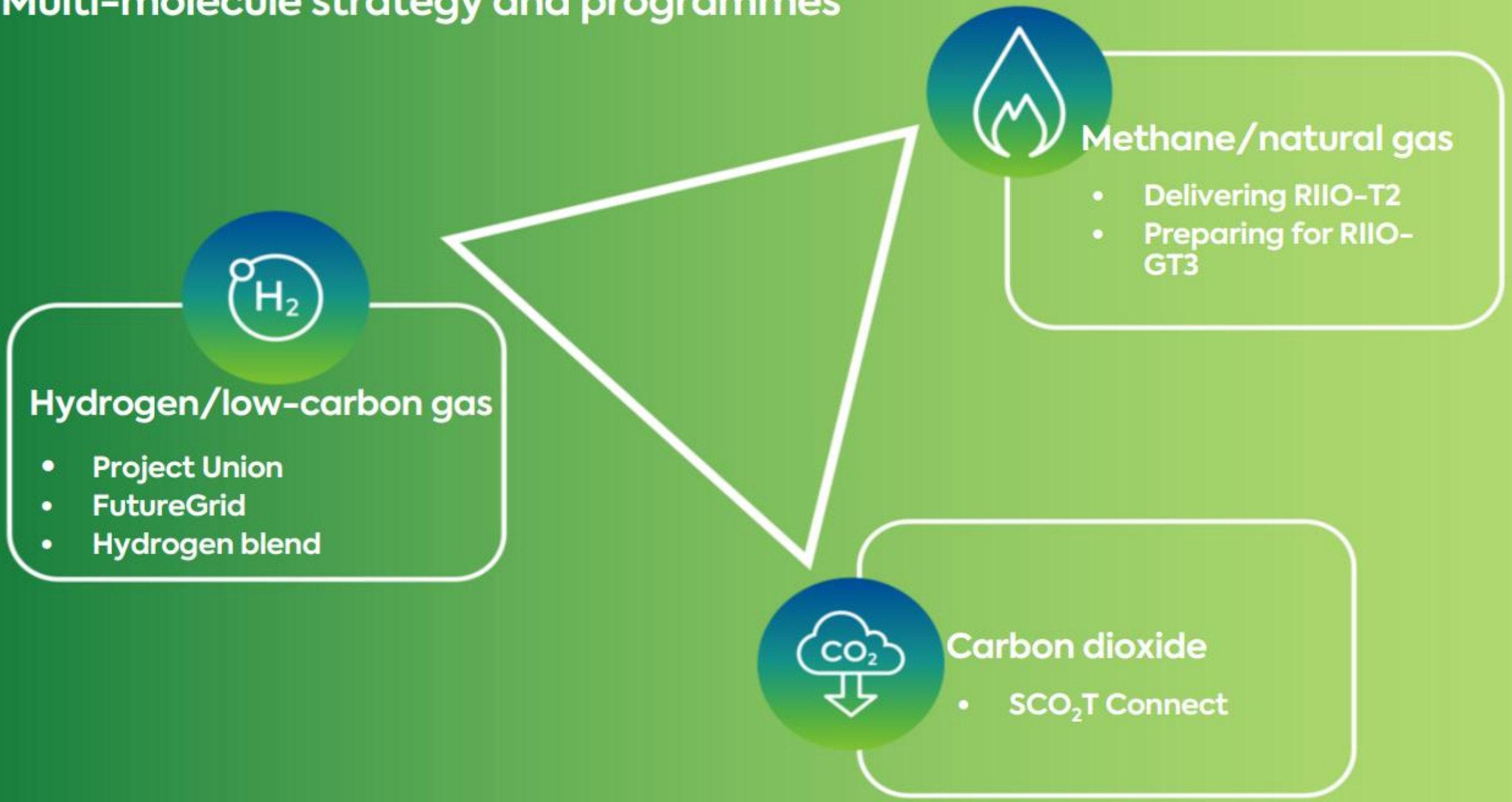
The wholesale gas price proportion within a typical dual fuel energy bill has returned to pre-Ukraine levels



The wholesale gas price proportion of the energy bill peaked in 2022/23 during the energy crisis but has since fallen back to more normal levels.

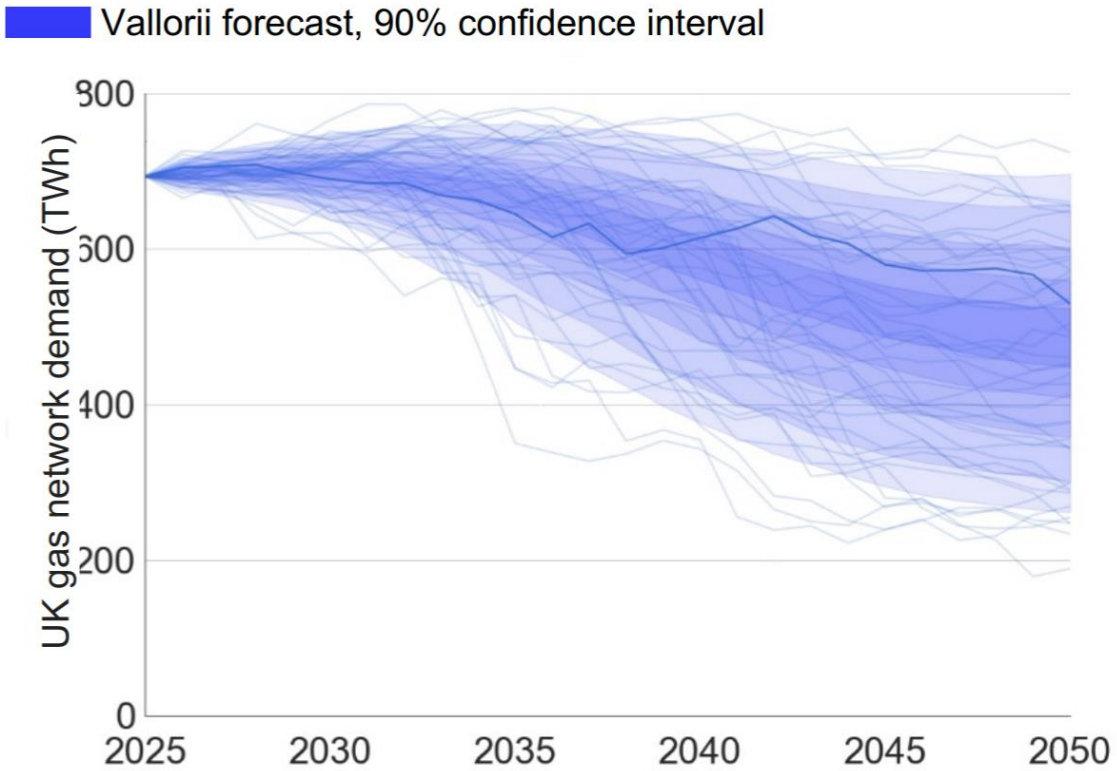
Source: Ofgem.

Multi-molecule strategy and programmes



Option value and regulatory framework

Range of outcomes



Managing uncertainty

- ❑ Asset stranding risk
- ❑ Credible longer-term options to support cost recovery
- ❑ Requires coordination and long-term signals (asset transfer / new charging approaches)
- ❑ Possible role for option value

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Source: Vallori, published in Utility Week.

Whilst the role of gas is changing, it's value in the UK's energy system remains critical.

Gas in power generation is changing from "volume to value", with reduced utilisation over a year, but an increase in peak gas demand for both days and weeks.

The NTS will remain crucial over the coming decades as we continue to supply natural gas, but also as we repurpose our pipes for hydrogen and carbon dioxide.

Decarbonisation pathways must deliver energy security, economic resilience and be affordable.

National Gas is the owner and operator of the gas National Transmission System (NTS) in Great Britain.

Our licence is established under the Gas Act 1986. This requires us to develop, maintain and operate economic and efficient networks and to facilitate competition in the supply of gas in Great Britain.

We are responsible for transporting gas to power stations, major industries, storage facilities, more than 500,000 businesses, and 24 million homes through nearly 5,000 miles of pipes across Britain.

Gas is an essential part of a secure energy supply in Great Britain, and will continue to play a vital role for decades to come. More than ever, we need the security that gas brings to keep the lights on, businesses running, and to protect jobs.

National Gas provides that security.

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