Pressures and Strategic Challenges facing GB and International Markets

Presentation to Westminster Energy Forum

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24 Feb 2022

Interconnector – the largest import and export gas pipeline connected to the GB market

System Capacity

GB to BE: 20bcm/yr
(651GWh/d or c.60mcm/d)
BE to GB: 25.5bcm/yr
(803GWh/d or c. 73mcm/d)

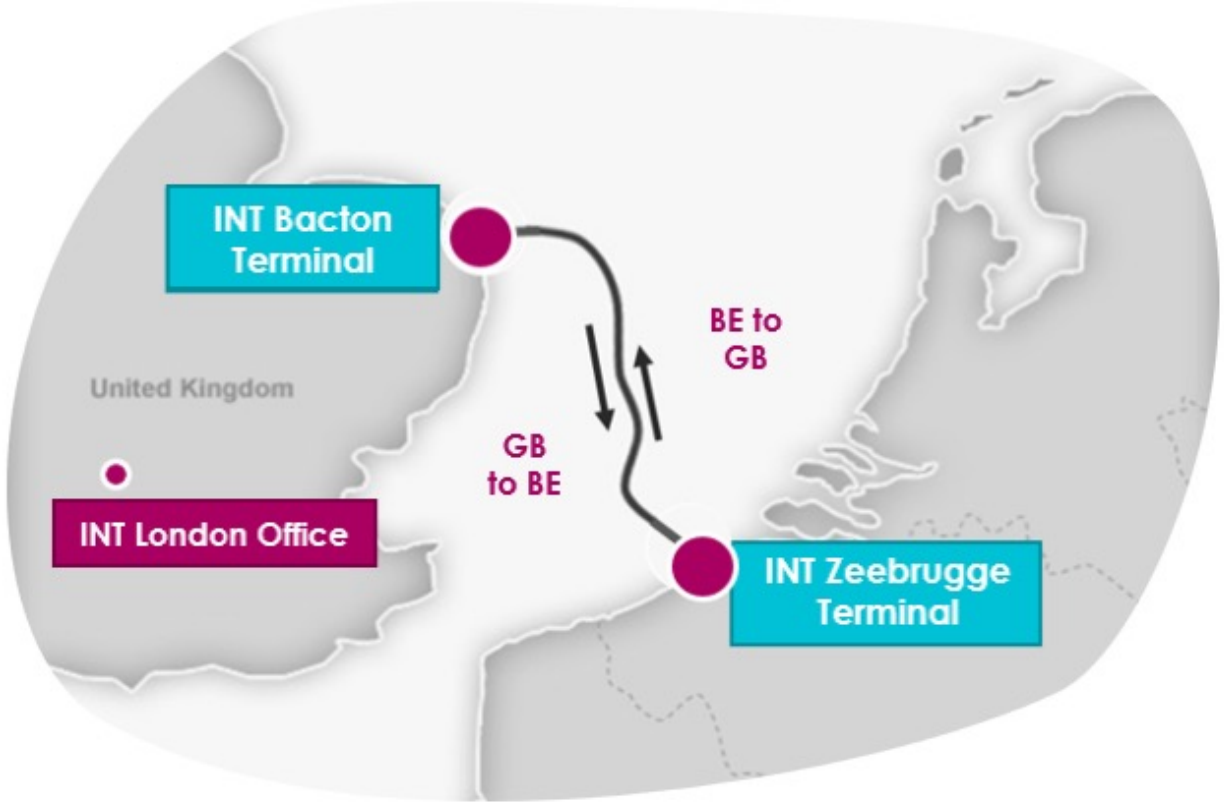
Pipeline Dimensions

Length: 235km (145 miles)
Diameter: 40 inch (1016mm)
Compressor terminals in Bacton & Zeebrugge

First Gas

1st October 1998

Originally set up to export UKCS gas to the continent, Interconnector quickly started importing into GB.



Role in the GB & EU Markets

INT can meet **over 25% (+800GWh/d)** of the GB gas demand

Energy transport capacity of **33 x a 1 GW electricity cable**

Available 24/7, 365 days/year

INT can **switch** between GB import and export mode **within 2 hours**

INT is a **strategic infrastructure asset**, providing **commercial opportunities to the markets**, delivering **approx. GBP1.5-2.5bn/y of trade value between GB and EU**, increasing **consumer welfare** and **security of supply**

Interconnector is part of the larger Fluxys Group

Belgium headquartered Transmission System Operator, active across Europe

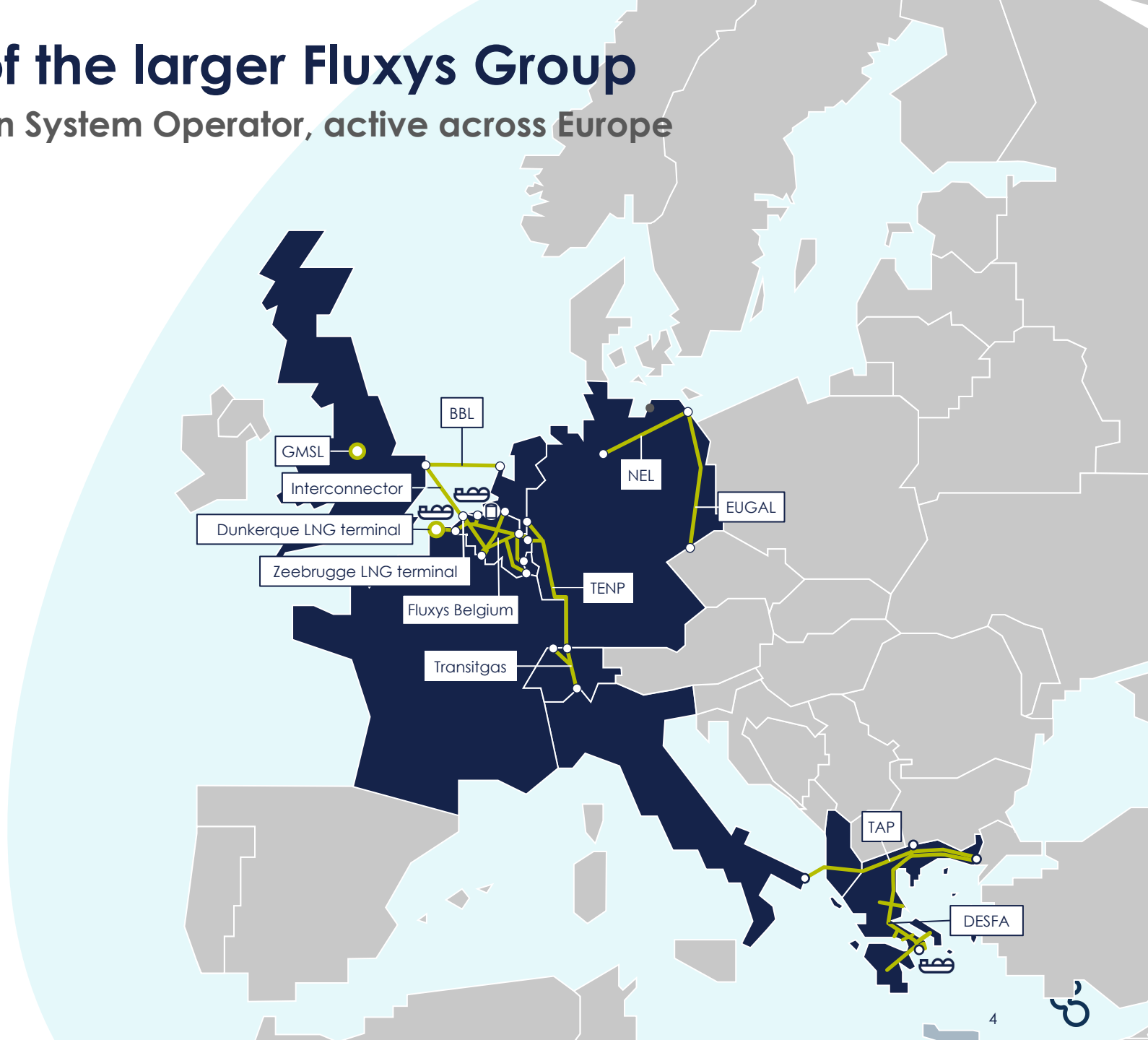
Shareholding

Fluxys: 76%

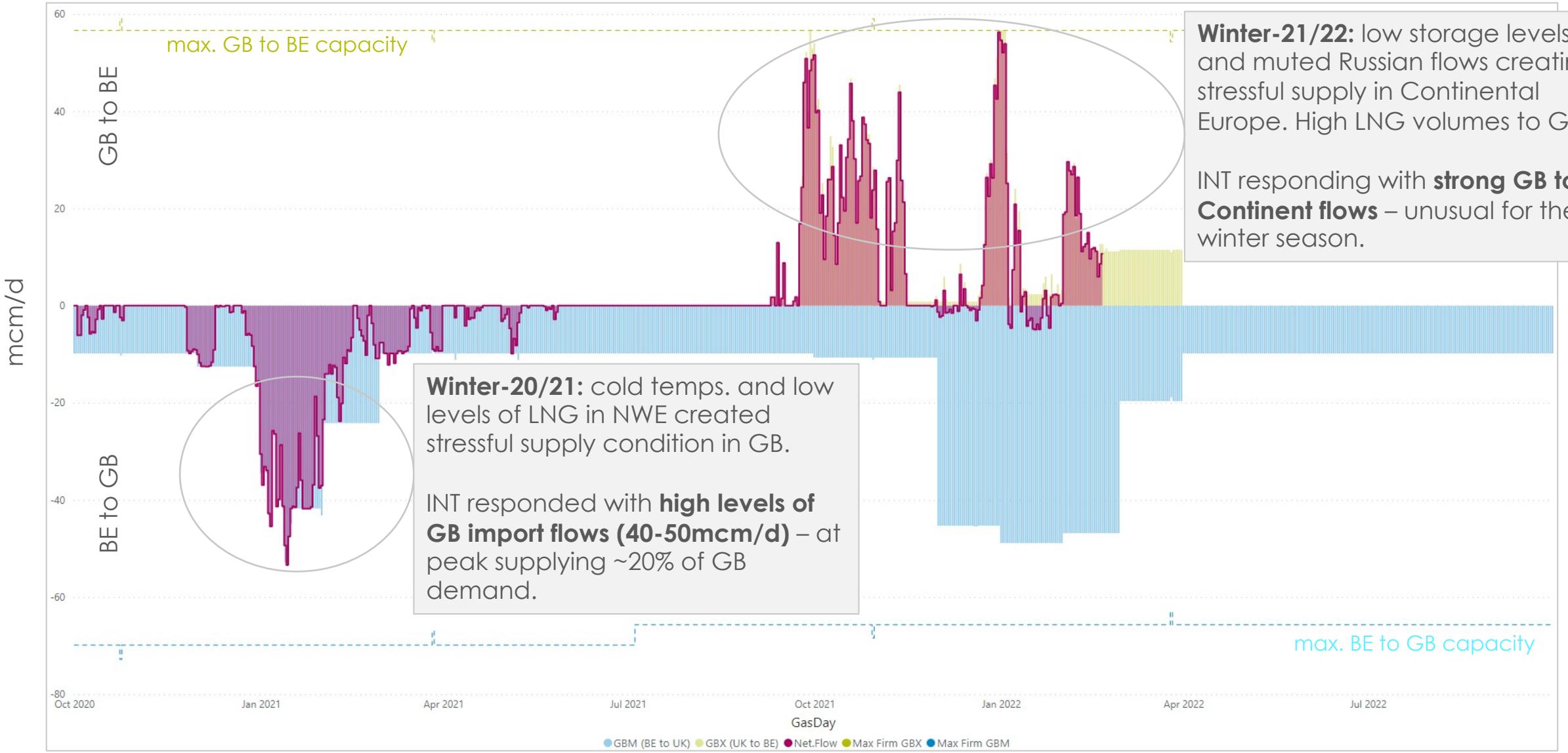
Snam: 24%

Fluxys

- transmission
- storage
- LNG terminalling



A tale of two winters – Interconnector is a critical flexibility asset providing security of supply for both GB and Continental markets



Winter-21/22: low storage levels and muted Russian flows creating stressful supply in Continental Europe. High LNG volumes to GB.

INT responding with **strong GB to Continent flows** – unusual for the winter season.

Winter-20/21: cold temps. and low levels of LNG in NWE created stressful supply condition in GB.

INT responded with **high levels of GB import flows (40-50mcm/d)** – at peak supplying ~20% of GB demand.

Security of Supply as strategic challenge on the way to Net Zero

Importance of Infrastructure during the transition

How can GB provide an attractive environment for energy imports?

Flexibility, cooperation and trade – the answers to volatility

GB is a mature market with a diverse source of supply

UKCS Production

~40% of total GB supply

Baseload production with marginal scope for flexibility

Norwegian Production

~35% of total GB supply

Stable production with significant flex capability

LNG

~18% of total GB supply

Supply to GB dependent upon global market conditions

Storage

~4% of total GB supply

Important source of flexibility, but limited overall volume

Pipeline Import/Export

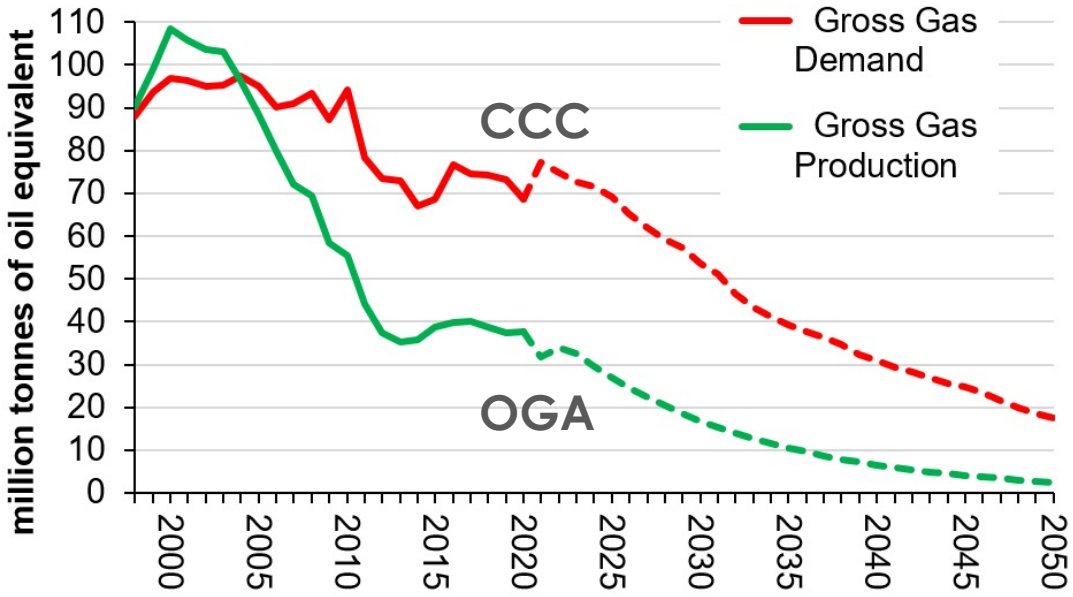
~3% of total GB supply (annualized)

Minimal baseload supply but **critical source of flexibility**

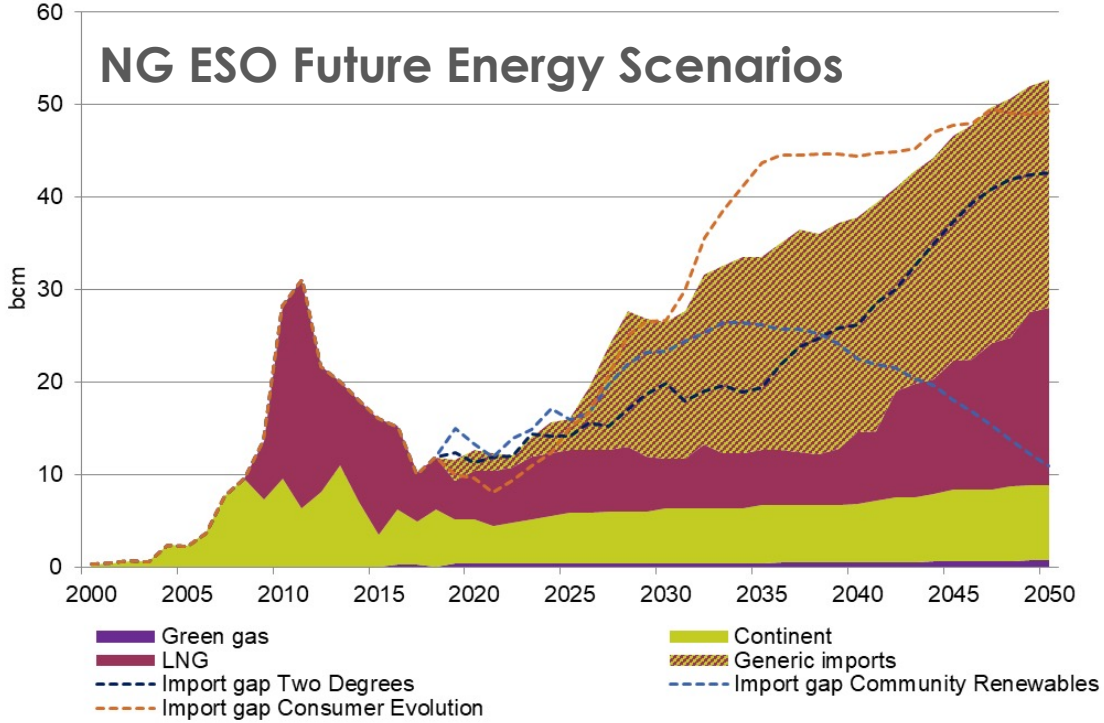
However, not all supply is equal
Flexibility assets play a critical role, particularly in times of market stress

How can GB provide an attractive environment for energy imports?

GB's import dependency has grown in last decade, and is forecast to grow further



Source: Climate Change Committee (Balanced NetZero Pathway Demand), Oil&Gas Authority (Production projection)



Source: FES2019, Steady Progression, INT analysis *(excl. shale gas production)*

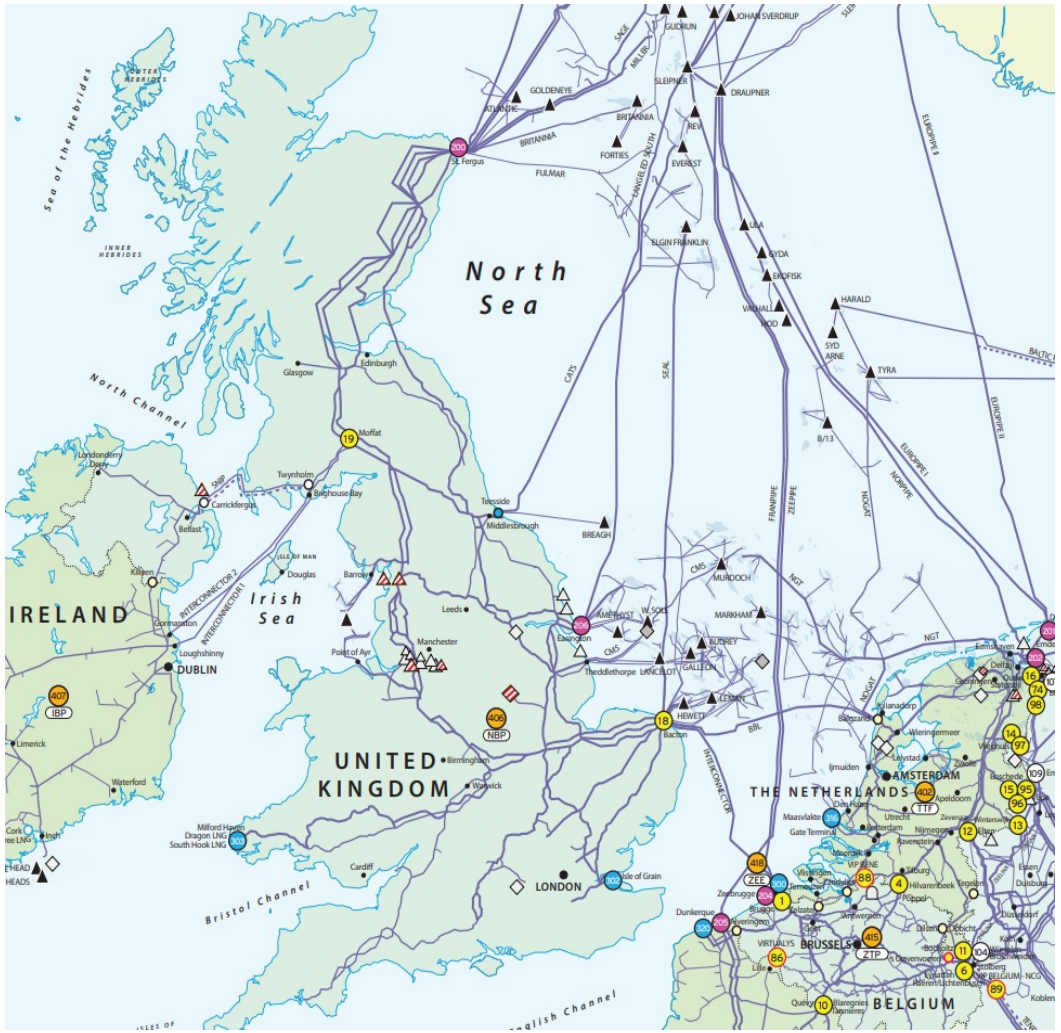
Infrastructure – essential for energy supplies to GB

GB has a robust, reliable and resilient system enabling market to respond to shocks

examples: Beast from the East (Mar-18), Forties pipeline outage (Dec-17), low LNG supply to GB (Jan-21), low Russian Supply to NW Europe (Winter 21/22))

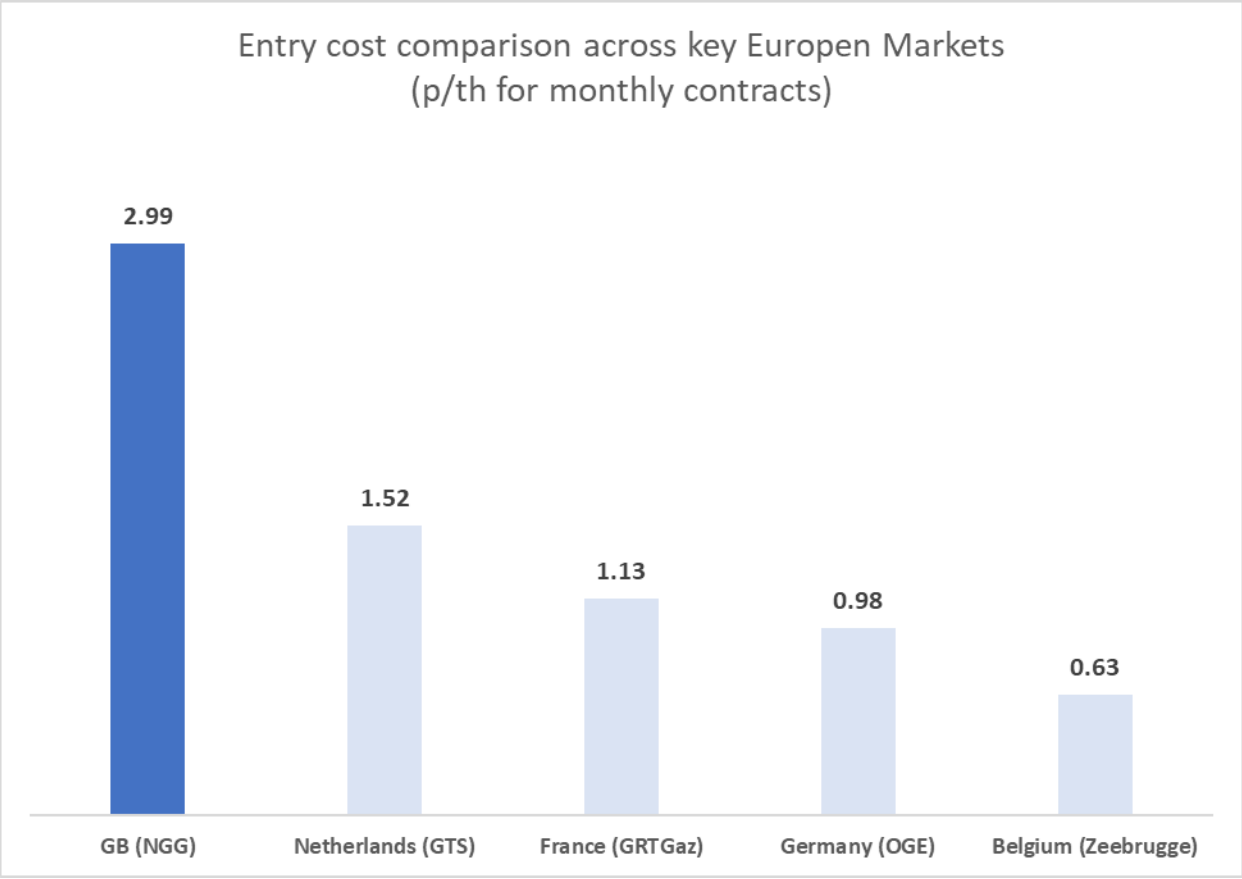
Continued investment is needed, also during the Energy Transition

- Large part of the asset base is 30-50 years old and requires repair & upgrades
- Cost of interruption vs. cost of maintenance ?
- Assessment to include Risk, Resilience, Redundancy, Flexibility
- Use SofS scenarios and peak flows, less focus on annualised numbers or historical contracts
- Energy transition requires reliable infrastructure and optionality



How can GB provide an attractive environment for energy imports?

Address market distortions by lowering the tariff hurdle for entering the GB gas market



Source: Tariffs for Feb-22 sourced from individual TSO websites and converted to p/th
Fx: €1 = 0.83298GBP – ECB rate for 21/02/22

- **GB Entry tariffs are the highest amongst neighbouring north-west European markets** (factor 2.5 vs Germany, NL; 6x BE entry)
- **GB Entry tariffs for new bookings are c. 8 times higher than the marginal cost to flow for existing bookings** – recognized by ACER and Ofgem as a dual regime.
- 90% of NTS Entry revenues are collected from just 30% of the capacity bookings
- **Opportunity to review Entry charges**, as many other countries have done, shifting the NTS revenue collection to exit. Total cost to consumer remains the same, but **lower entry costs lower the wholesale prices and creates a level-playing field for imports**

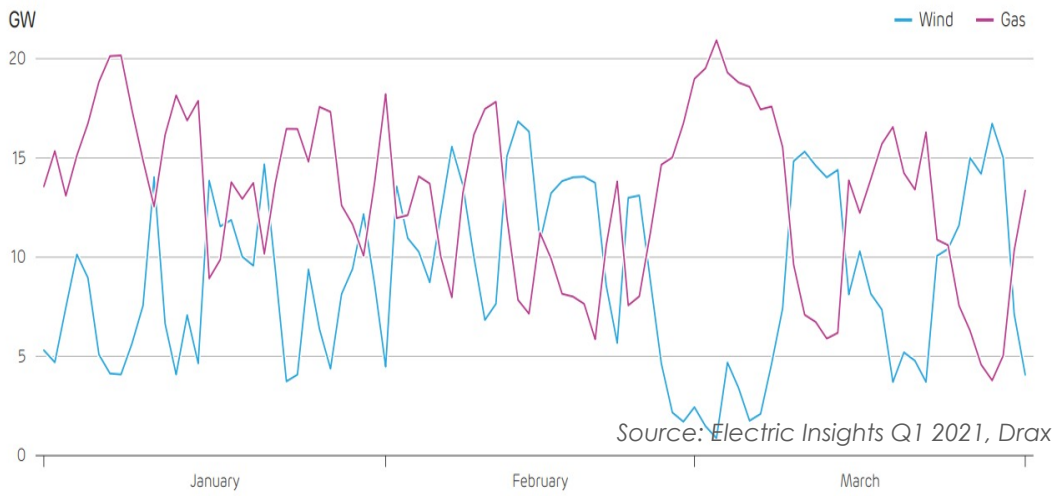
Our energy system is becoming more, not less, exposed to volatility and uncertainty

Central planning	→	Decentralized
Integrated value chain	→	Liberalised markets, more participants
Baseload (fossil or nuclear) + Flex	→	Intermittent (wind, solar) + Flex
Analogue & manual control	→	Digital and automated
Supply in function of demand	→	Demand in function of supply?
Indigenous gas supply	→	Imports
Long term contracts	→	Short term
Limited interconnection	→	Pan-European market
Regional energy balances & markets	→	Global dependencies (e.g. LNG)

Fragile or Antifragile ?

Flexibility, cooperation and trade – the answer to volatility

Complementarity of energy sources



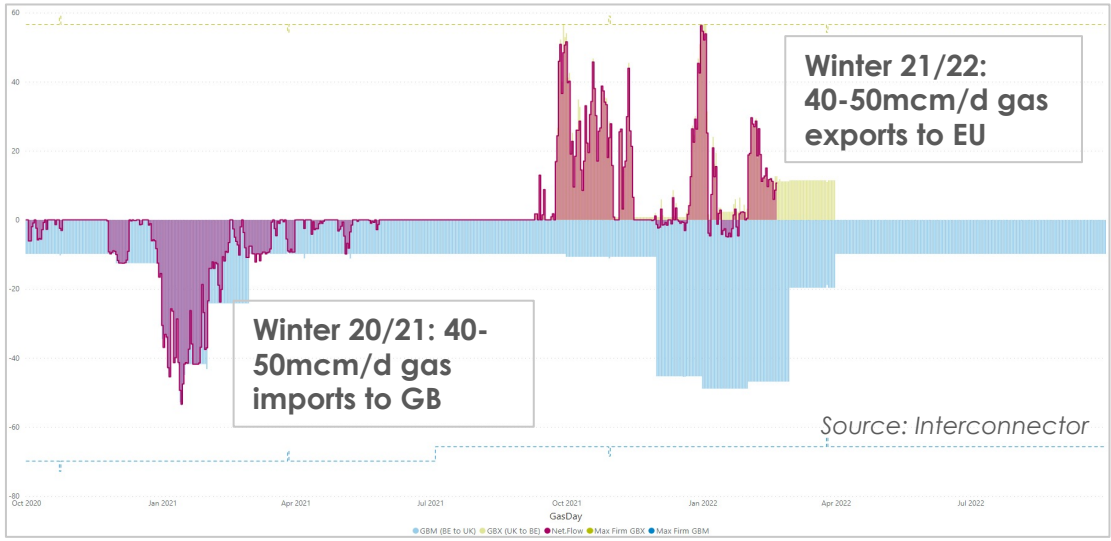
Source: Electric Insights Q1 2021, Drax

10-20 GW swings in electricity supply (wind)

Practically 1:1 compensated by **flexible supply** from **Gas-to-Power** + Gas or Electricity storage + Demand Side Response

Regulatory framework to enable service innovation + to ensure level playing field across all flexibility assets

Cross border trade between EU and GB



International trade provides Security of Supply and commercial opportunity

Interconnector (among others) providing flexibility to GB and EU markets

Requires alignment & compatibility of trading arrangements between EU and UK

Summary: Supporting Security of Supply throughout the Transition

Importance of Infrastructure: backbone for energy supply, resilient and flexible

Regulation to ensure level playing field, support market attractiveness, facilitate trade

Flexibility, cooperation, trade – the answers to volatility and uncertainty during the Transition

Make the system antifragile

Contact

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shaping together
a bright energy
future