Gas Transmission

Gas Operational Forum

Webex
19th March 2020

nationalgrid

Gas Transmission

Introduction & Agenda

Josh Bates
Operational Liaison & Business Delivery Manager

nationalgrid

Presenters

National Grid

Josh Bates

Martin Cahill

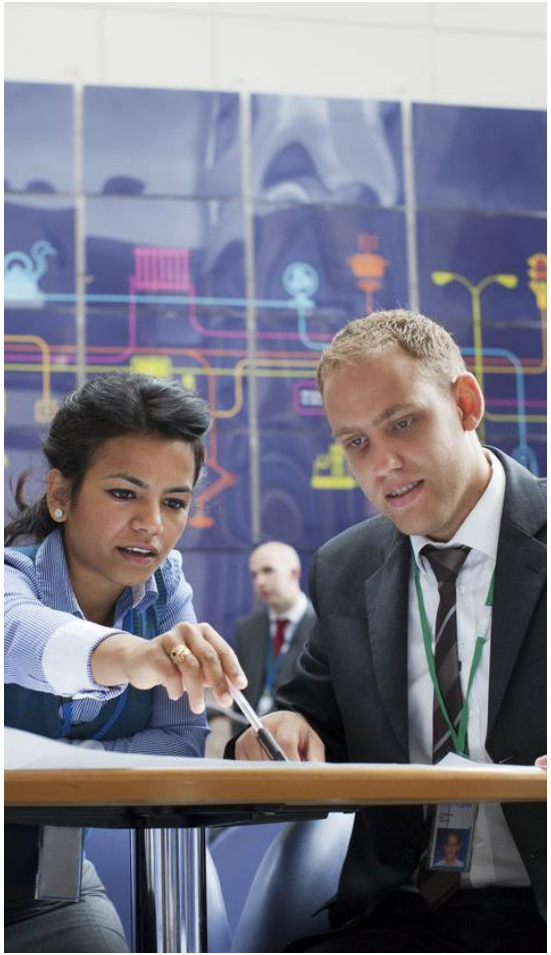
Jen Randall

Anna Stankiewicz

Scott Keogh

BEIS

Justin Goonesinghe



Calendar year 2020 Ops forums

All forums will be held via webex until further notice

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Lon	Lon	Lon	X	War	Lon	X	X	Lon	Lon	War	X
23/01	20/02	19/03		14/05	18/06			17/09	22/10	19/11	

New Location:

Amba Hotel
Strand
Charing Cross
London
WC2N 5HX

Registration is open for all 2020 events at:
https://www.nationalgridgas.com/data-and-operations/operational-forum

Housekeeping for Webex Forums

During our webex events;

- Attendees will be automatically muted on dial in, please ensure your cameras are off too.
- Please ask any questions throughout the session using the chat function as shown below. We will cover any questions at the end of each agenda item.
- If you wish to comment on a question verbally please use the ‘raise a hand’ and unmute yourself.
- For both presenters and any verbal comments, please could you state your name and company before speaking.

Actions & Feedback since Last Forum

Item	Action/Feedback	Detail
Prevailing View	Send out communications when Prevailing View Screen is live	New screen published on 3rd March and available to view now. There are a couple of issues which are being worked through whilst available alongside the existing screen. Please continue to provide any feedback
NIFR	Confirm Go Live Date	This is going live as part of the GEMINI spring release this Sunday (22nd March). To be covered as part of agenda today

Agenda for Today

01	Introduction, Feedback since last Forum and Agenda
02	Operational Overview
03	BEIS – UK/UK Future Trade Agreement
04	Demand Forecasting
05	Capacity Access Review
06	NIFR - Update
07	EU Nominations
08	Maintenance Plan

Please ask any questions using the Q&A or chat functions

These will be covered at the end of each agenda item

Gas Transmission

Operational Overview March 2020

Martin Cahill
Operational Liaison Lead

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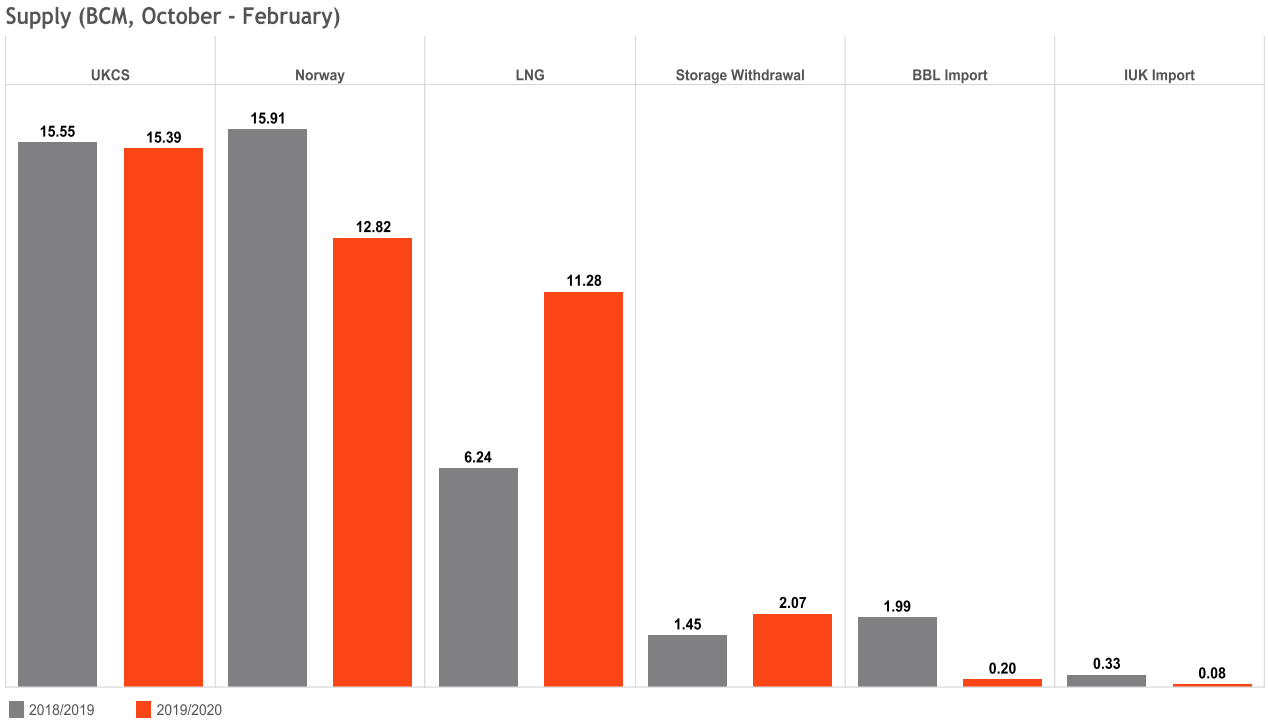
Supply - Components

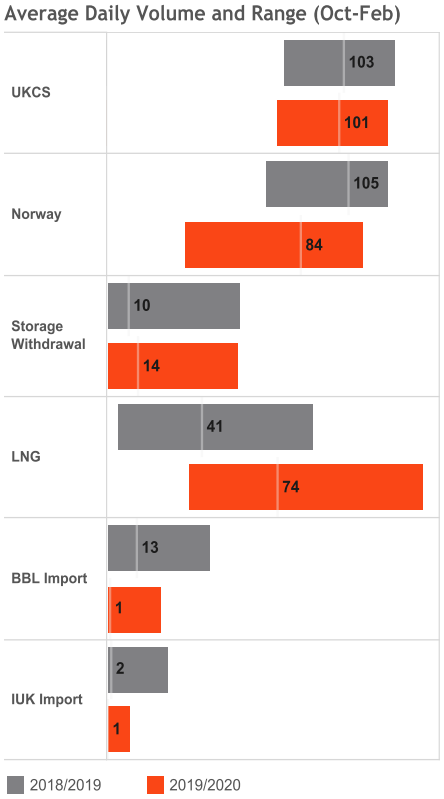


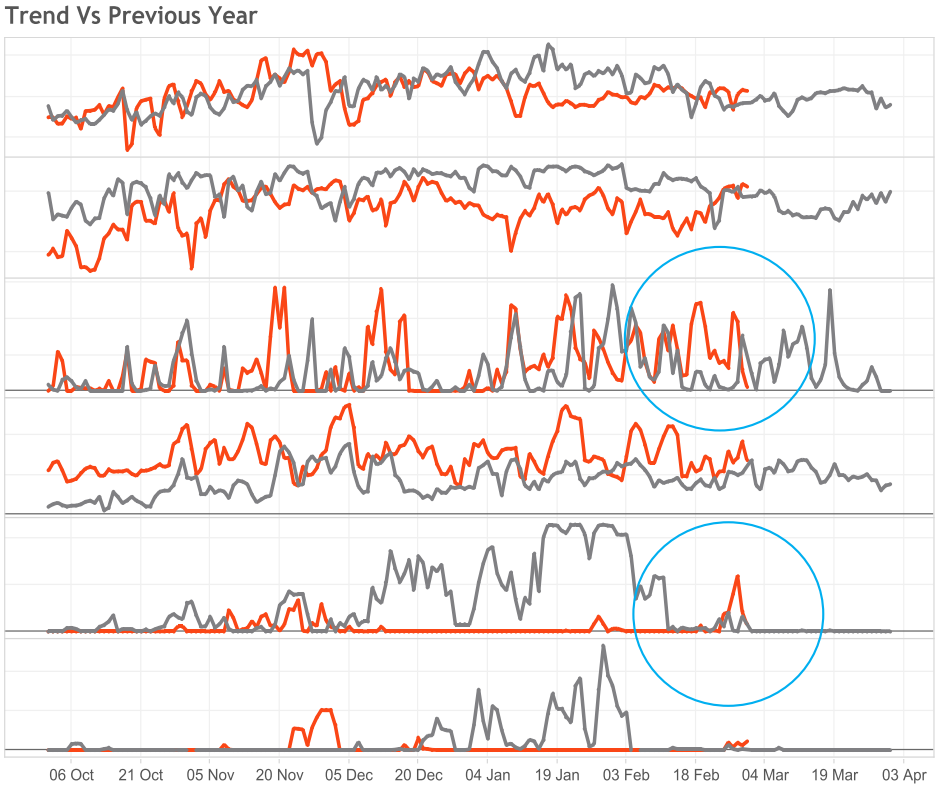
Over the last month, storage withdrawal has further increased in comparison with the same period last year

Some further interconnector imports through BBL

Little change to main supply sources – UKCS closely followed by Norway and LNG

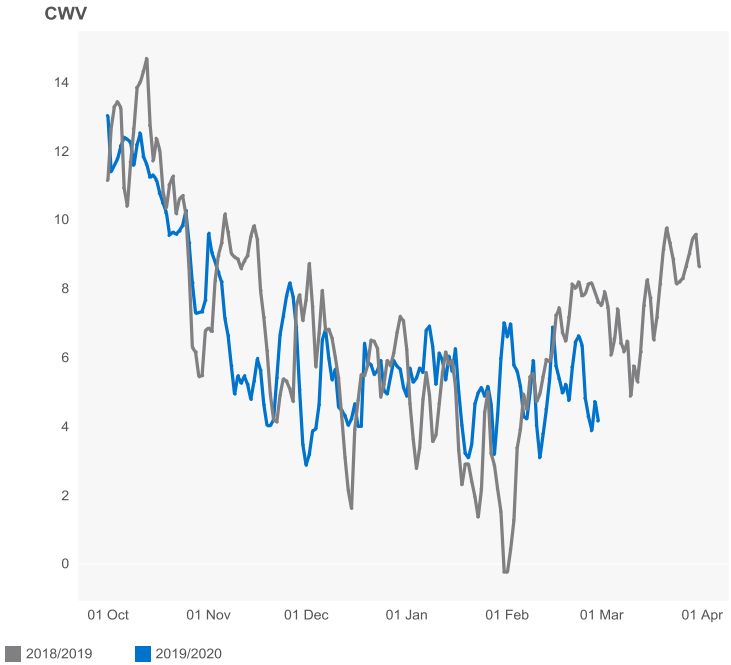
Components of NTS Supply

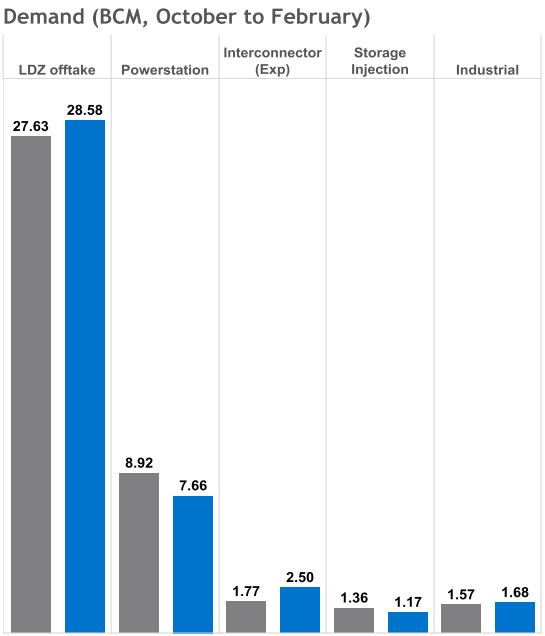




1. Storage Withdrawal Increase
2. BBL Imports

Demand – CWV & Components

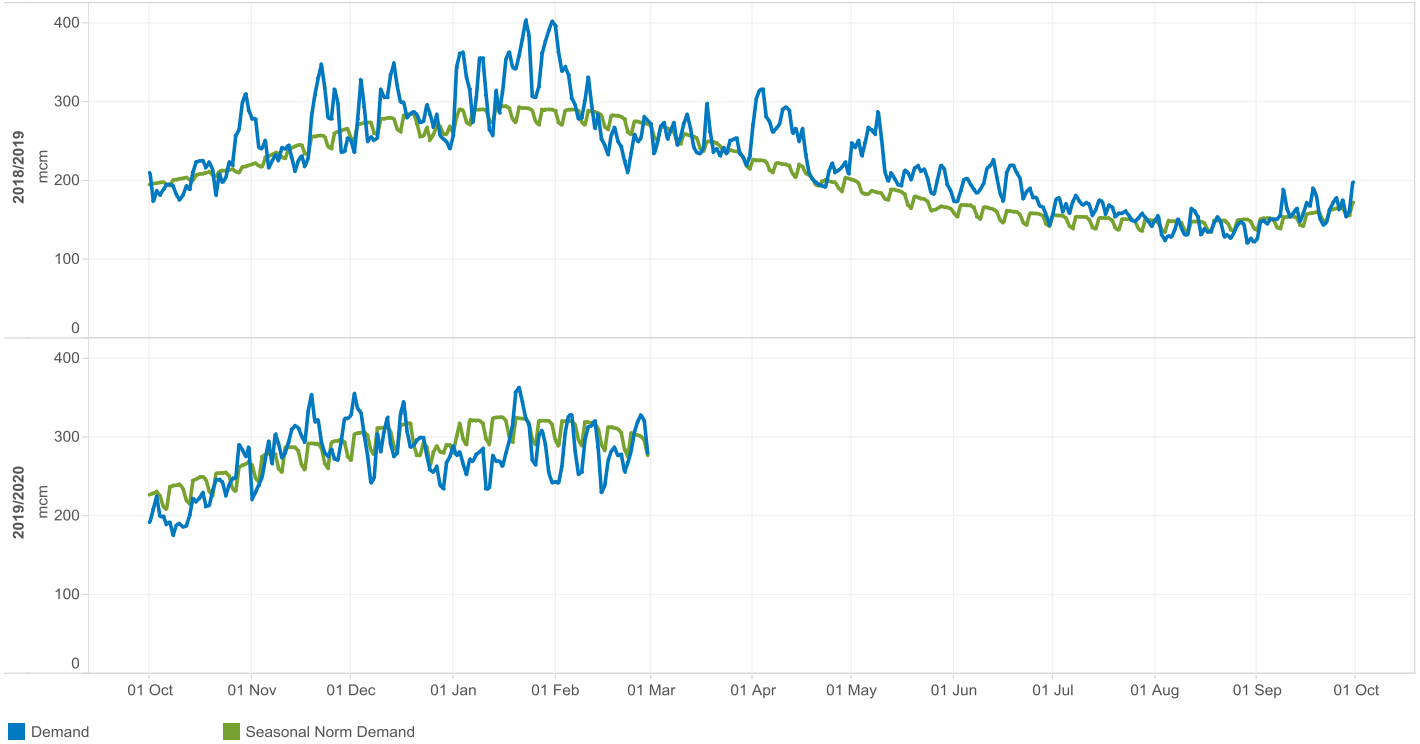




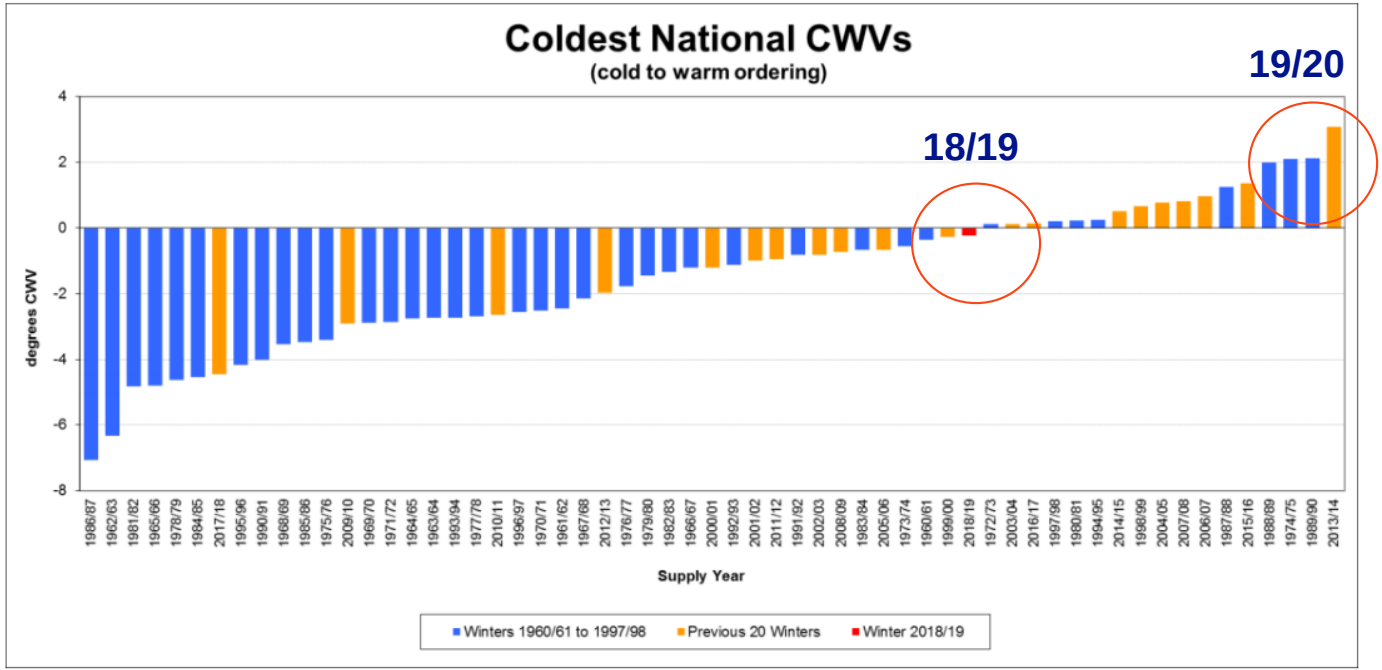
LDZ Demand has been slightly higher than last year, though the coldest days have been milder in comparison

Less storage injection with high stocks at the beginning of the winter

Demand – Comparison to seasonal norm



Composite Weather Variable



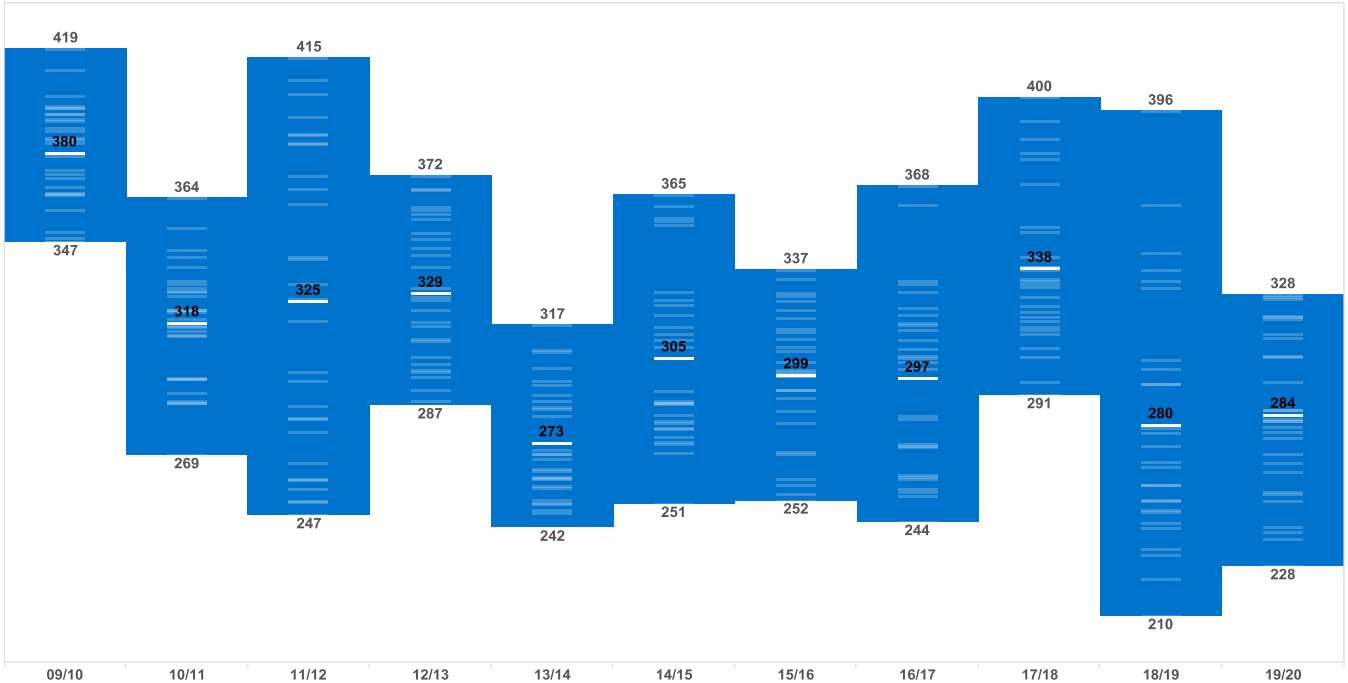
The coldest day this winter so far was 1st December, with a CWV of 2.89

This is on target to be the 2nd warmest peak day

CWV is a function of temp, wind speed, effective temp and seasonal norm

February Demands

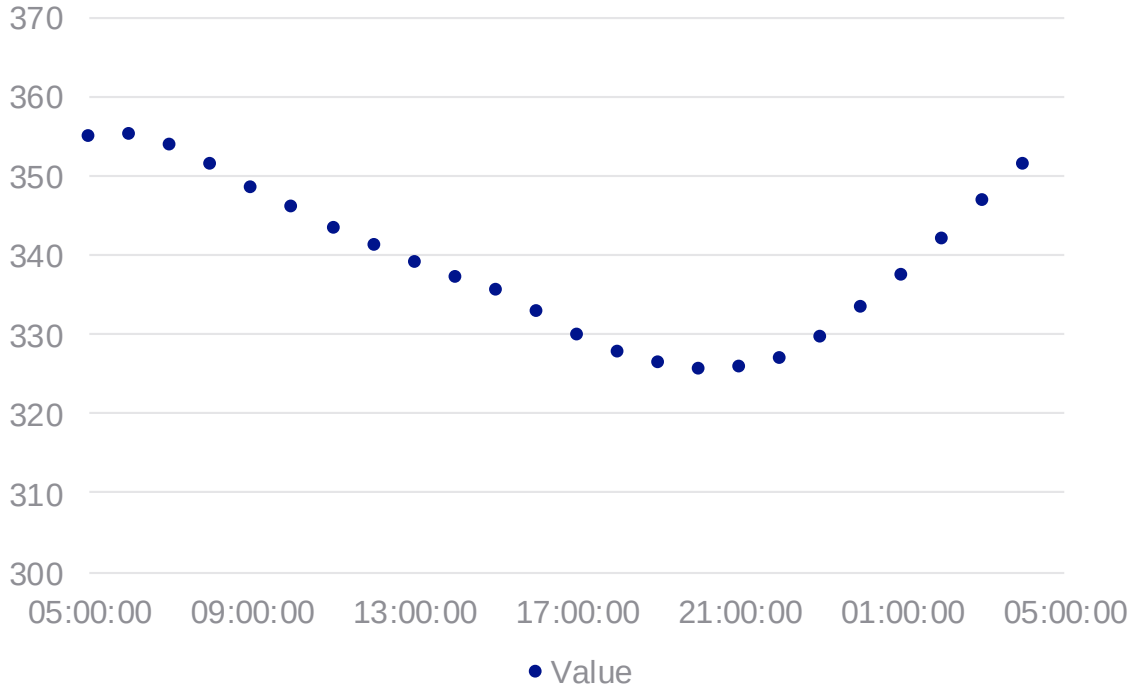
Minimum, Maximum, Avergage and Spread: February



February continued the pattern of relatively mild weather

January saw a wide spread of demand, but February was much narrower

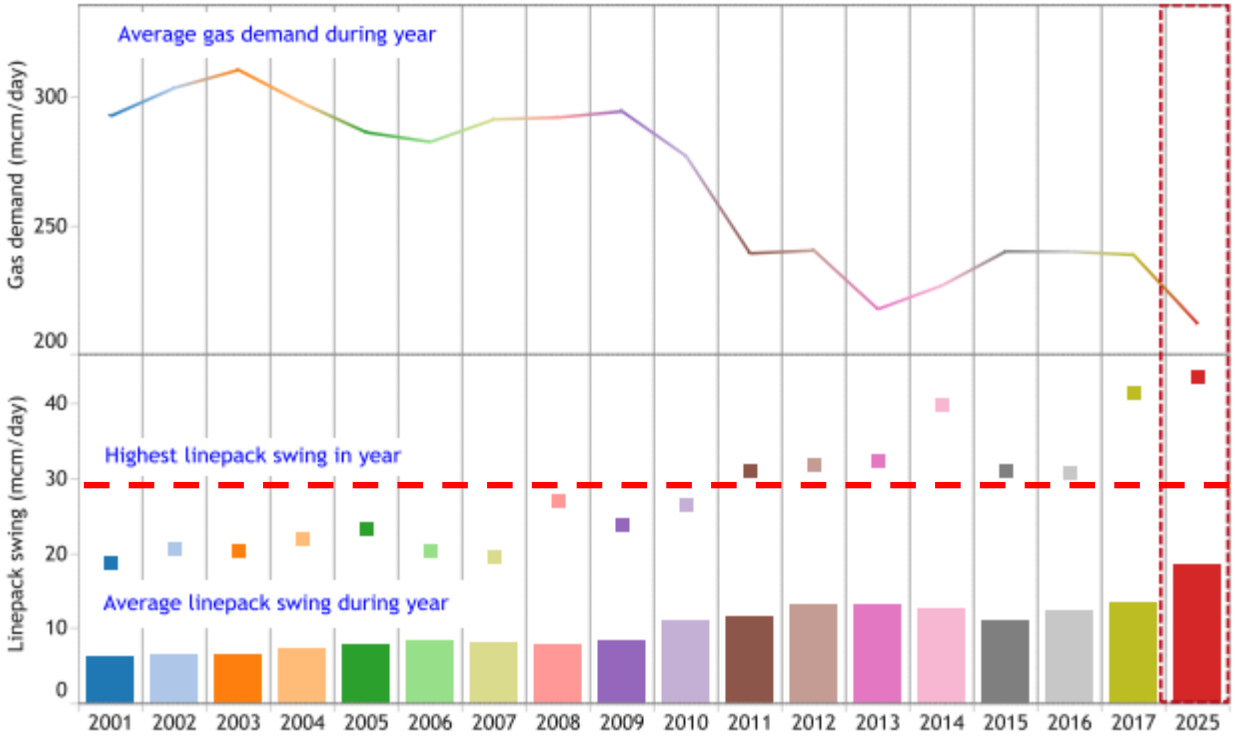
Operational Interesting Day: 19th February



During February we have had some large linepack swings during low demand days

19th Feb had a particularly large swing of around 30 mcm

Linepack Swing

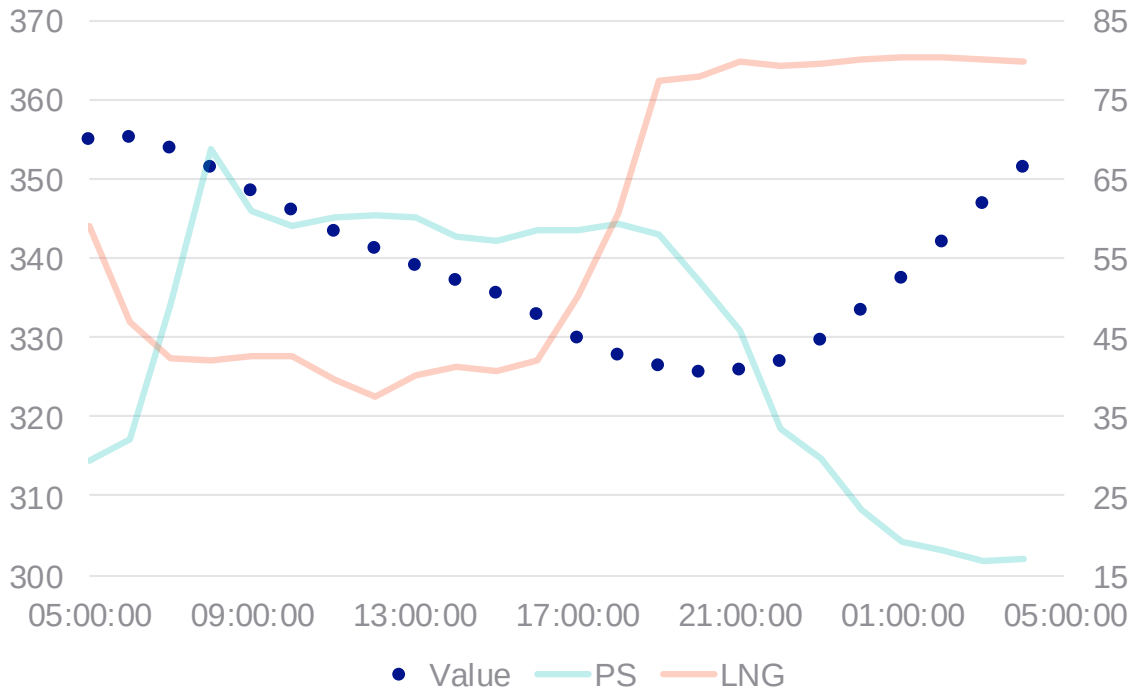


GFOP study investigated increasing linepack swing

Seen up to around 40mcm maxes in recent years (However these tend to be on very high demand days)

19th February swing

Operational Interesting Day: 19th February



During February we have had some large linepack swings during low demand days

19th Feb had a particularly large swing of around 30 mcm

LNG profiled towards EOD, PS Demand during daytime peak

Network change within Day

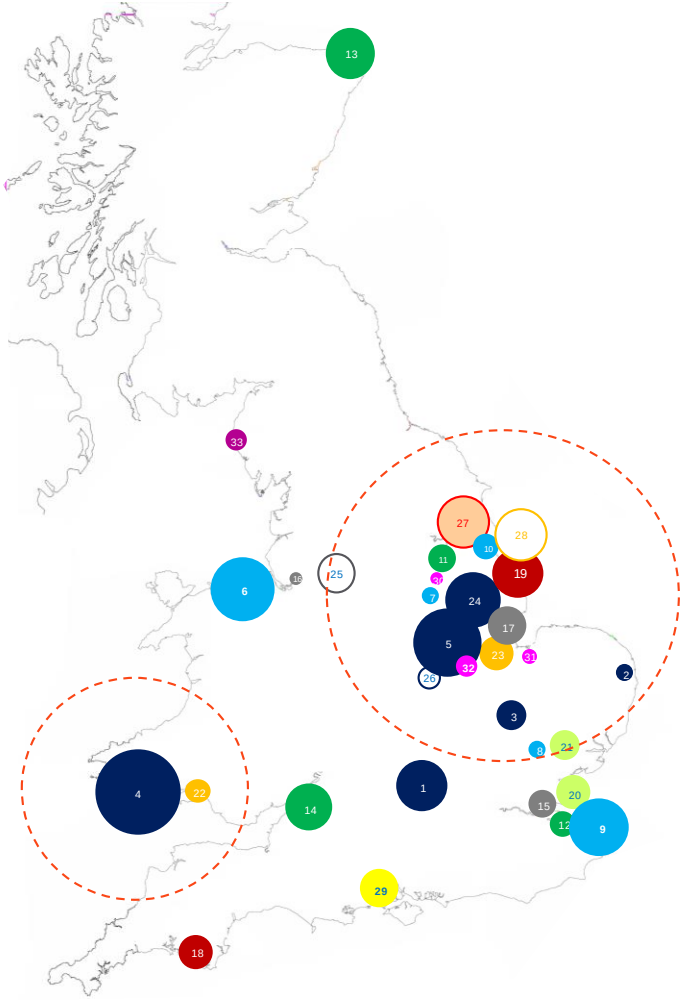
Higher North-South flow earlier in the day, central compression utilised to manage linepack distribution

SE + SW increases later in day, linepack distribution managed to meet 22:00 assured pressures

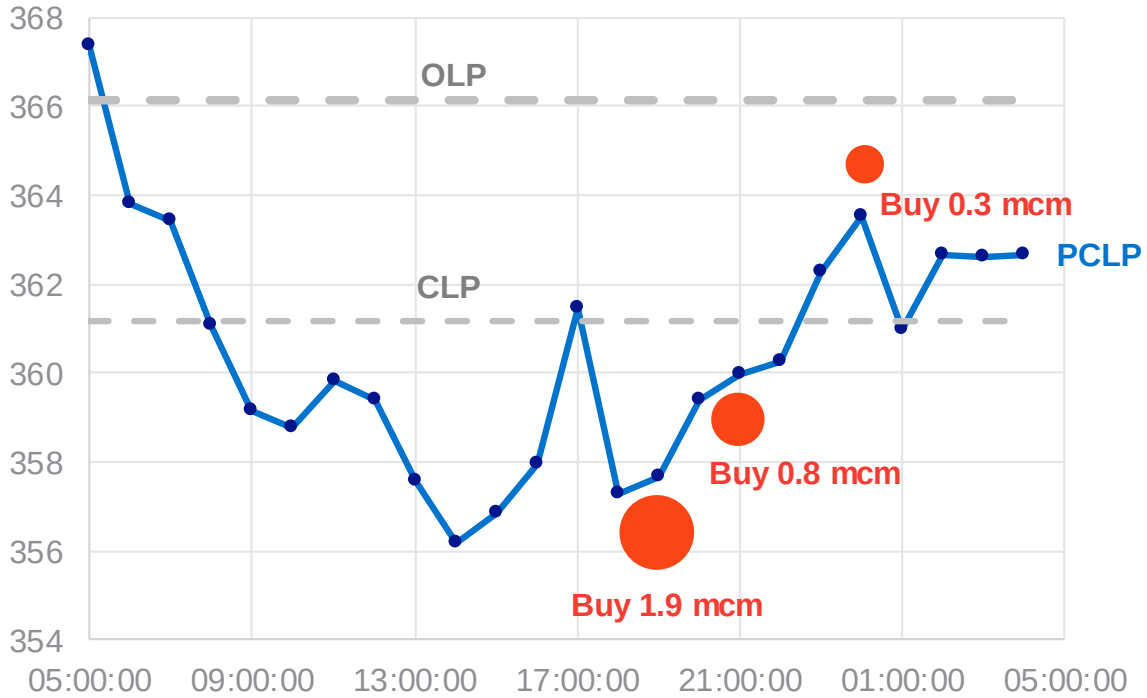
PS Distribution Geographically

High concentration in North east area of the network, so higher PS demand depleted linepack faster here

Pembroke power station in South Wales takes large volumes of gas from Milford area



Commercial Interesting Day – 3rd March



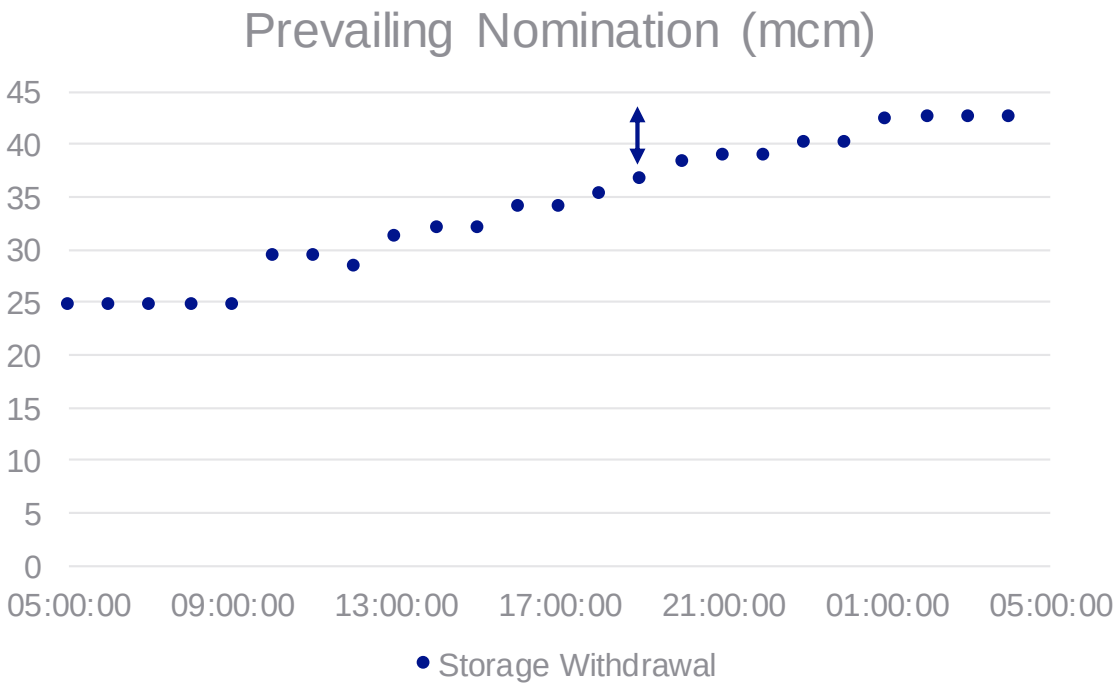
Opening Linepack = 366.1 mcm

Closing Linepack = 361.2

Linepack Lost = 5mcm

Buy actions taken throughout afternoon and evening, with limited market response

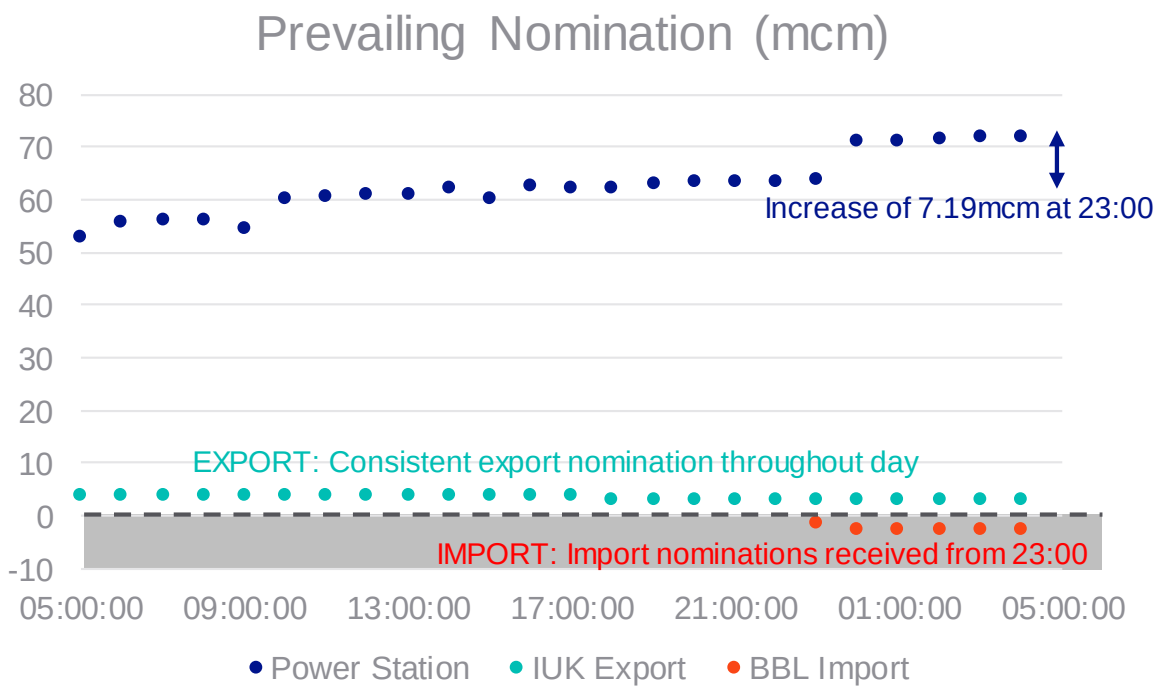
EOD Nominations – Storage



Storage withdrawals increased throughout the day

From 1st trade to EOD increase was 5.8 mcm

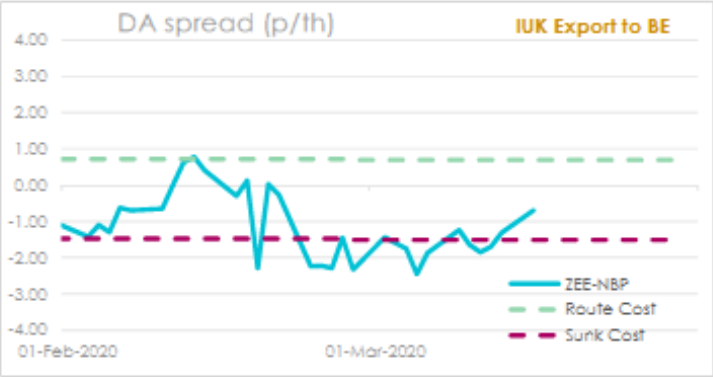
EOD Nominations – Power and Interconnectors

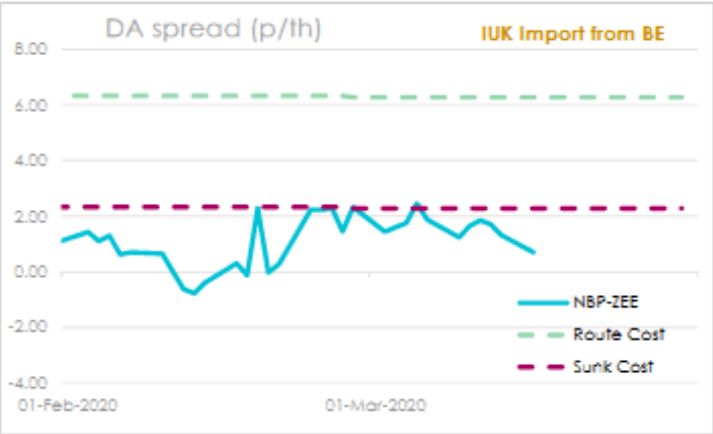


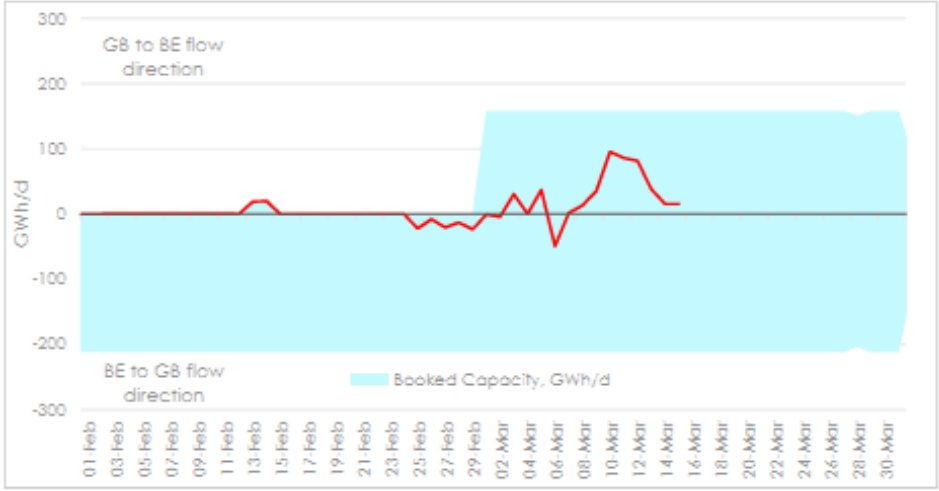
Bacton Interconnectors flowed in different directions on the same day:
- BBL Import
- IUK Export

PS Demand increased throughout the day

Recent volatility in the NBP/Zee spread has triggered IUK flows in both GB to BE and BE to GB flow directions







- Recent volatility in market fundamentals (e.g. high/low LNG supply conditions) has caused market prices (i.e. the Zee/NBP spread) to trigger IUK flows in both the BE to GB and GB to BE flow directions.
- In mid-Feb the Zee-NBP spread rose to ~1p/th resulting in short-term GB to BE IUK capacity bookings. Since then the spread has lowered, although remaining at a level sufficient to cover the variable cost of GB to BE flows through IUK in 1H Mar 2020.
- BE to GB flows were also seen in late Feb as the NBP-Zee spread was at levels sufficient to cover the variable cost of GB import flows through IUK.

Source: IUK

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UK/EU Future Trade Agreement

Justin Goonesinghe
Head of European Gas (BEIS)

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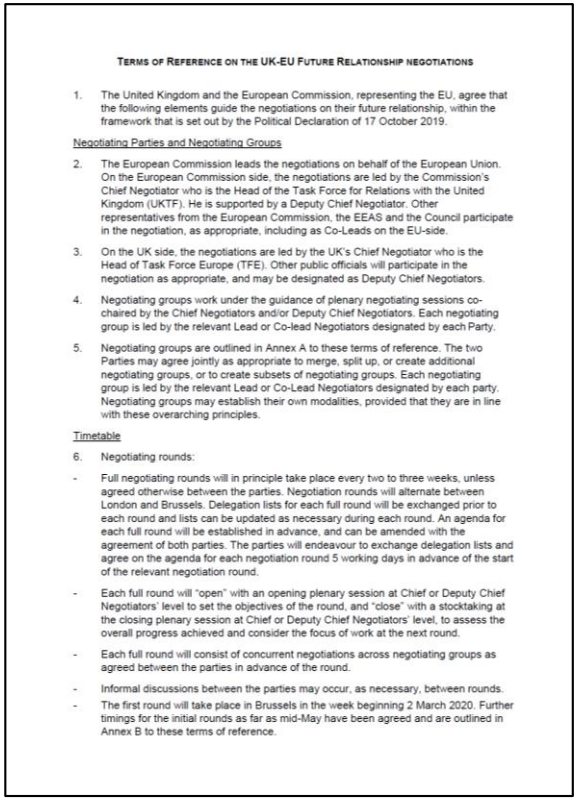

TERMS OF REFERENCE ON THE UK-EU FUTURE RELATIONSHIP NEGOTIATIONS

1. The United Kingdom and the European Commission, representing the EU, agree that the following elements guide the negotiations on their future relationship, within the framework that is set out by the Political Declaration of 17 October 2019.

Negotiating Parties and Negotiating Groups

2. The European Commission leads the negotiations on behalf of the European Union. On the European Commission side, the negotiations are led by the Commission's Chief Negotiator who is the Head of the Task Force for Relations with the United Kingdom (UKTF). He is supported by a Deputy Chief Negotiator. Other representatives from the European Commission, the EEAS and the Council participate in the negotiation, as appropriate, including as Co-Leads on the EU-side.

3. On the UK side, the negotiations are led by the UK's Chief Negotiator who is the Head of Task Force Europe (TFE). Other public officials will participate in the negotiation as appropriate, and may be designated as Deputy Chief Negotiators.

4. Negotiating groups work under the guidance of plenary negotiating sessions co-chaired by the Chief Negotiators and/or Deputy Chief Negotiators. Each negotiating group is led by the relevant Lead or Co-lead Negotiators designated by each Party.

5. Negotiating groups are outlined in Annex A to these terms of reference. The two Parties may agree jointly as appropriate to merge, split up, or create additional negotiating groups, or to create subsets of negotiating groups. Each negotiating group is led by the relevant Lead or Co-Lead Negotiators designated by each party. Negotiating groups may establish their own modalities, provided that they are in line with these overarching principles.

Timetable

6. Negotiating rounds:

- Full negotiating rounds will in principle take place every two to three weeks, unless agreed otherwise between the parties. Negotiation rounds will alternate between London and Brussels. Delegation lists for each full round will be exchanged prior to each round and lists can be updated as necessary during each round. An agenda for each full round will be established in advance, and can be amended with the agreement of both parties. The parties will endeavour to exchange delegation lists and agree on the agenda for each negotiation round 5 working days in advance of the start of the relevant negotiation round.
- Each full round will "open" with an opening plenary session at Chief or Deputy Chief Negotiators' level to set the objectives of the round, and "close" with a stocktaking at the closing plenary session at Chief or Deputy Chief Negotiators' level, to assess the overall progress achieved and consider the focus of work at the next round.
- Each full round will consist of concurrent negotiations across negotiating groups as agreed between the parties in advance of the round.
- Informal discussions between the parties may occur, as necessary, between rounds.
- The first round will take place in Brussels in the week beginning 2 March 2020. Further timings for the initial rounds as far as mid-May have been agreed and are outlined in Annex B to these terms of reference.

https://www.gov.uk/government/publications/our-approach-to-the-future-relationship-with-the-eu

https://www.gov.uk/government/publications/terms-of-reference-on-the-uk-eu-future-relationship-negotiations

Agreement on Energy

9. The UK is open to considering an agreement on energy if it reflects its interests, and as long as it respects the fact that the UK will make independent decisions on its energy policies. An agreement could cover energy trading over the interconnectors between the UK and the EU, carbon pricing, and climate change.

Electricity & Gas Trading

10. Electricity is traded over interconnectors that run under the sea between Great Britain and mainland Europe (France, Netherlands, Belgium), and between Great Britain and Northern Ireland and Ireland. Similarly, the UK trades gas over interconnectors with Belgium, the Netherlands and Ireland.

11. The UK has undertaken domestic preparations to enable trade in electricity and gas over the interconnectors to continue from 1 January 2021 without an energy agreement. Existing arrangements, including work carried out with regulators and Transmissions System Operators, will ensure security of energy supply is unaffected. In Northern Ireland, the Ireland/Northern Ireland Protocol to the Withdrawal Agreement provides the basis for the continued operation of the Single Electricity Market.

12. An energy agreement covering electricity and gas trading could improve these baseline arrangements by:

    a. facilitating efficient cross-border electricity and gas trade;

    b. facilitating technical cooperation between electricity and gas network operators and organisations in the planning and use of energy infrastructure connecting their systems; and

    c. supporting the integration of renewable power and investment in decarbonisation projects in the north seas.

Gas Transmission

Demand Forecasting

Josh Bates

Martin Cahill

nationalgrid

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Long Term Forecasting (>2 Years)

nationalgrid

Long Term Forecasting (>2 Years)

1. **Investment Signals through release of Incremental Capacity**
   Historically release of capacity above baseline, backed by user commitment, would be a signal for investment and a future increase in flows at an entry or exit point. In recent years the network has had little development, and this no longer provides the same signals (UNC0705R is assessing future changes to capacity purchase as the market has changed

2. **Future Energy Scenarios**
   Analysis which provides credible pathways for the future of energy, starting as the point for analysis of potential future supply & demand patterns

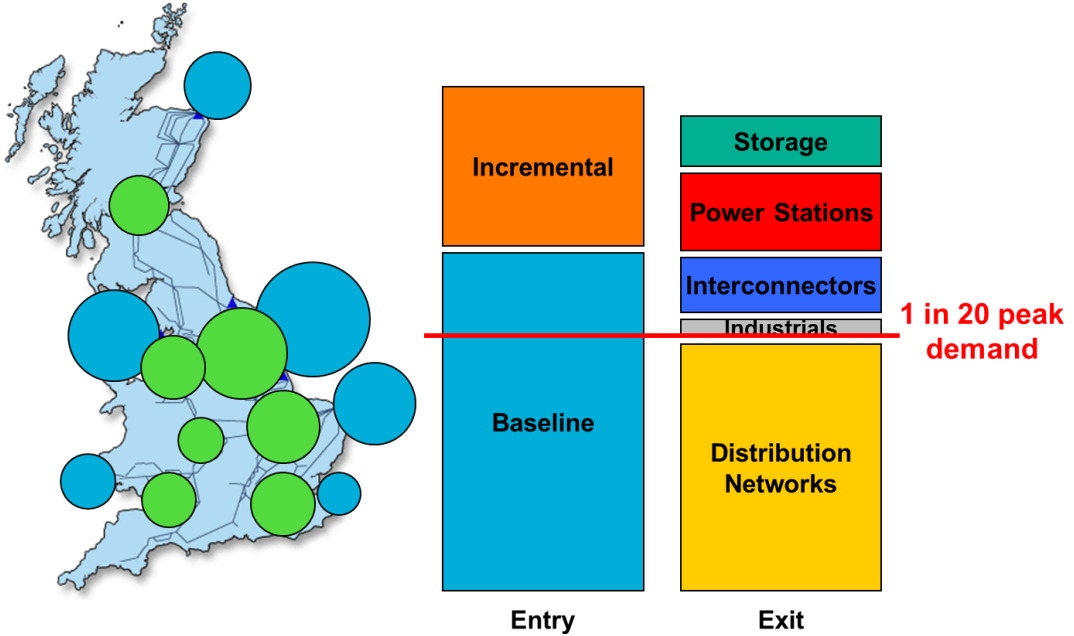
3. **Connections**
   Engagement through Gas Operation's contracts team gives view of potential new connections to the NTS a few years out (although does not give confirmation until a NExA (Exit), NEA (Entry), or SCA (Storage) is signed

Baseline & Incremental Capacity

Baseline entry capacity (obligated) – as defined by our Gas Transporters Licence;

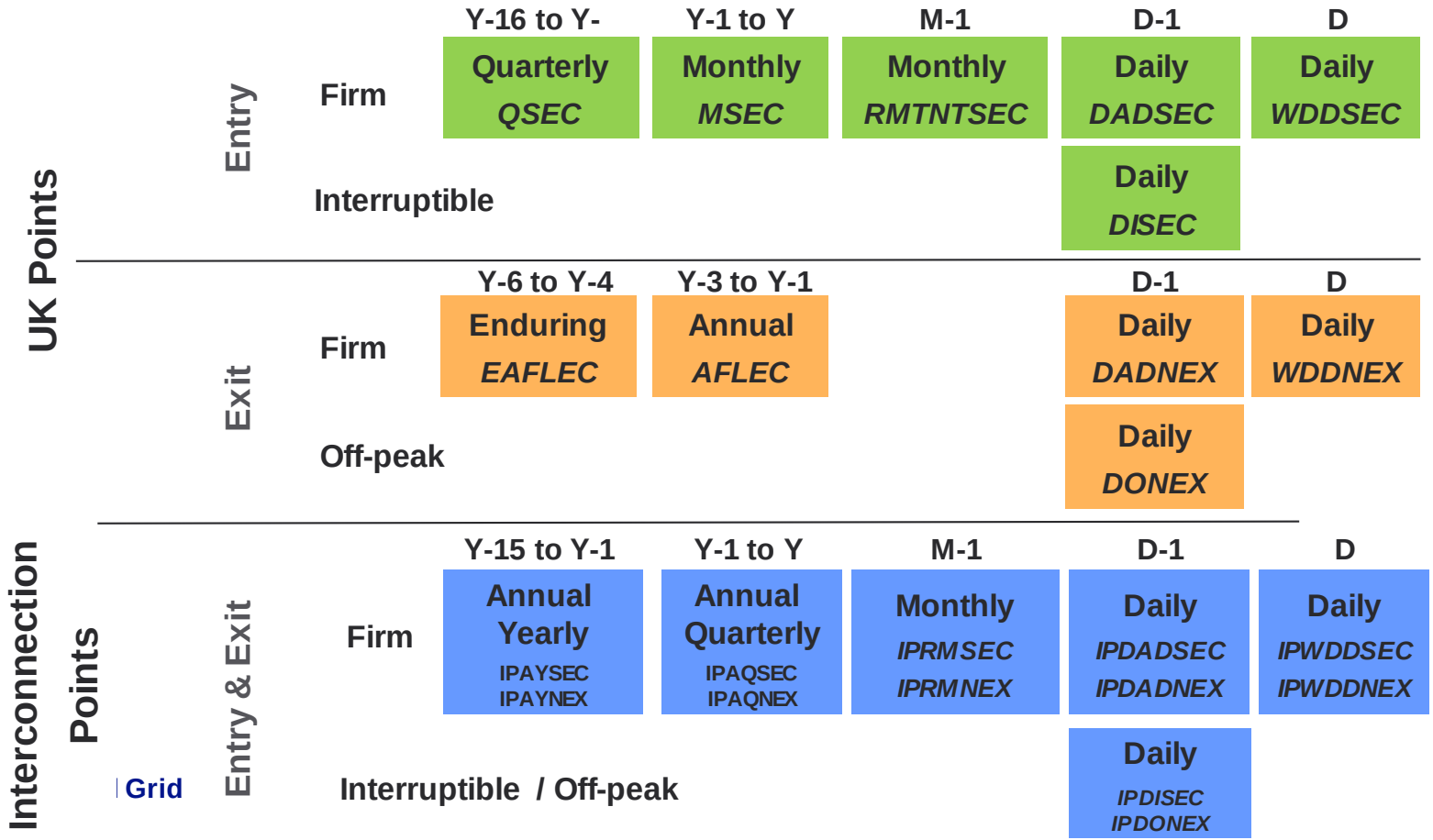
Incremental entry capacity (obligated) – firm capacity made available over and above baseline, in response to market demand and backed by user commitment; and

Incremental entry capacity (non-obligated) – at our discretion, we can release additional firm entry capacity at an ASEP, over and above obligated levels.



The sale of Incremental Capacity over our baseline is a trigger for Network Investment. This type of capacity is usually procured through a PARCA

Capacity Auctions Overview

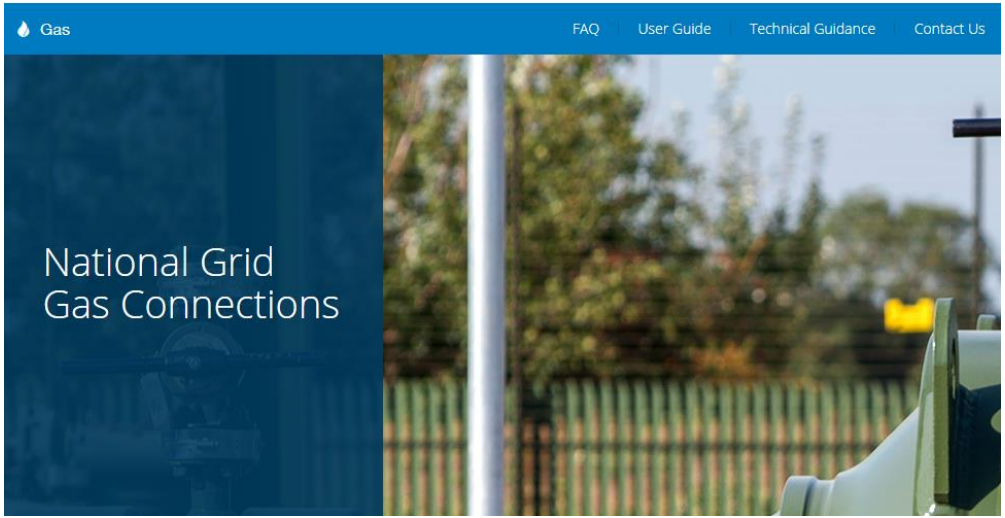


Connections

Initial enquiries and applications made through the National Grid Gas Connections Portal provide some insight into changes to the NTS in years ahead

Initial Connection Offers are made within two months, with a Full Connection 6 months or longer depending on if there is a requirement for a feasibility study

Timelines for completion of connections can be difficult to predict



Traditional Connections

Beach Terminals, Storage, Power Stations, Industrials

Newer Connections

Biomethane production, Compressed Natural Gas stations (CNG)

https://gas-connections.nationalgrid.com/CustomerPortal/#/landing

Faster Connections to the NTS

A project team (previously known as CLoCC) initiated a review of our connection process as our customers have told us that they want to be able to connect to NTS in less time and at a reduced cost.

We have created and initated a standard route to connect for a reduced cost and timeframe.

We have a number of existing block valve sites which have been identified as suitable for standard connections.

Pilot project is an NTS Biomethane connection (usually connected to distribution networks)

Future Energy Scenarios

Future Energy Scenarios are created annually, for internal and external use – credible pathways for energy 30+ years ahead

There are four scenarios which explore the speed of decarbonisation and the level of decentralisation.

In recent years we have also started to explore net zero in 2050 using sensitivity analysis.

Community Renewables (CR) explores how the 80:50 decarbonisation target can be achieved in a more decentralised energy landscape

Two Degrees (TD) explores how the 80:50 decarbonisation target can be achieved in a more centralised energy landscape

Steady Progression (SP) – considers a more centralised pathway that makes progress toward, but does not achieve the 80:50 decarbonisation target

Consumer Evolution (CE) considers a decentralised pathway that makes progress toward, but does not achieve the 80:50 decarbonisation target

Summary of FES 2019 key messages

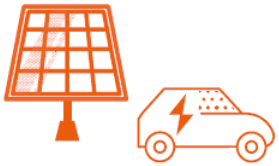
Net zero is achievable

37 million tonnes of CO_2 removed from atmosphere. Residual emissions will be offset by negative emissions from biomass power generation paired with carbon capture and storage.

Decarbonising heat

By 2050[2], up to 85% of homes need to be very thermally efficient (at EPC class C or higher).

EVs enabling renewables



Smart charging vehicles could enable the storage of roughly one fifth of GB's solar generation for when this energy is needed.

Whole system digitalisation

Well over 2.8 trillion data points will be collected in 2050 to understand where EVs are charging on the electricity system.

FES 2020 will be published around July

http://fes.nationalgrid.com/

Gas Transmission

Medium Term Forecasting (<1 Year)

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Medium Term Forecasting (<1 Year)

1. **Outages & REMIT**
   All Market participants have an obligation to release inside information which has a potential to have a material impact on the market- e.g. Field outages. This is monitored by NG so that we can plan for changes supply patterns

2. **Our Market Intelligence**
   Market Intelligence gained from regular meetings with connected points and contracts negotiated with customers for potential constraints and Operating Margins

3. **Maintenance Planning**
   Yearly cycle planning impacting maintenance – compressor outages, feeder isolations etc from April to October

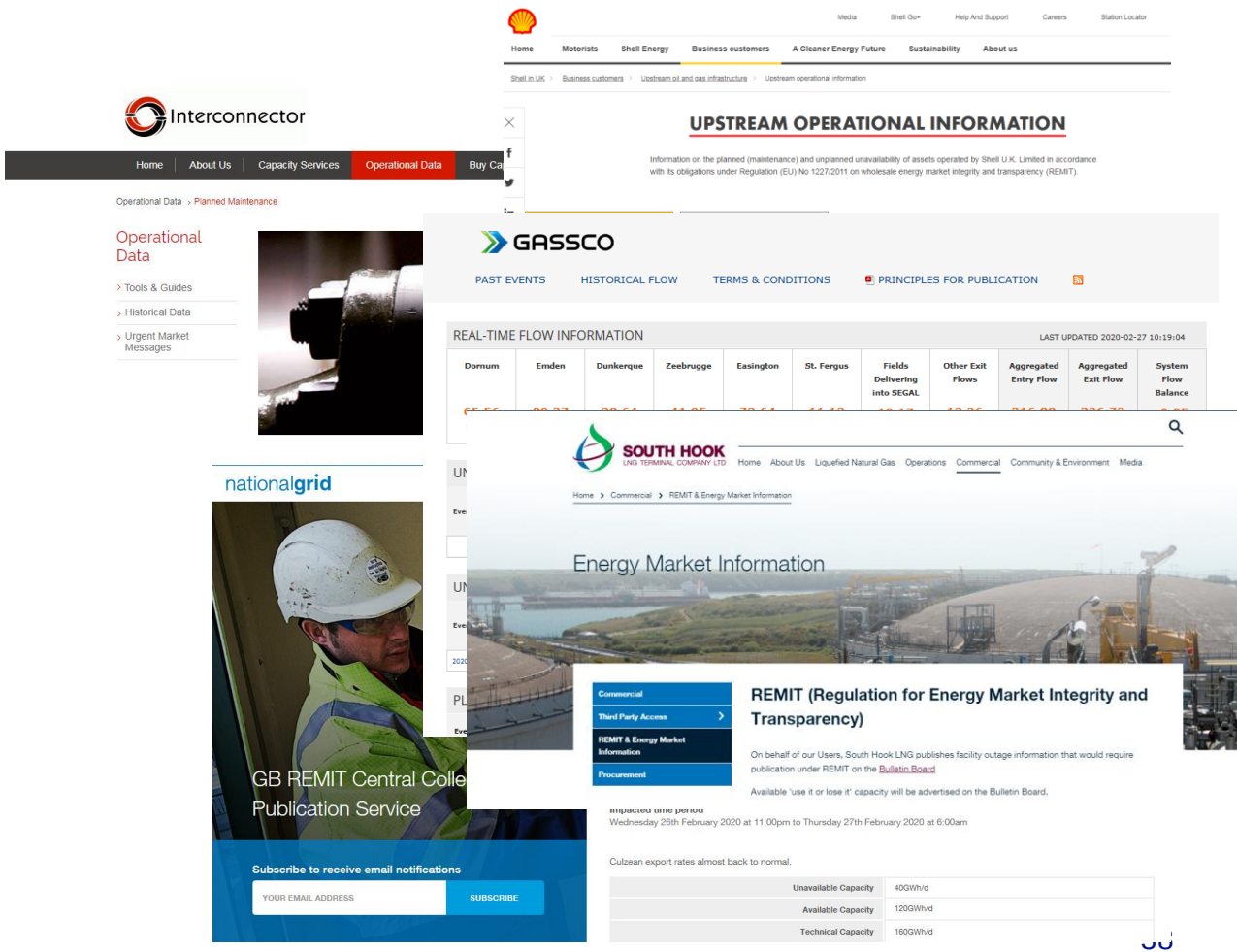
4. **Winter/Summer Outlook**
   On a yearly basis National Grid produce summer and winter outlooks, assessing the season ahead. This feeds into planning such as 1-in-20 (Highest Demand day expected in 20 years, and capability after significant supply losses

REMIT Pages

National Grid hosts a REMIT Platform which allows companies to meet EU Transparency requirements

Most Industry use their own pages

A variety of sources need to be checked consistently to monitor offshore and onshore availability

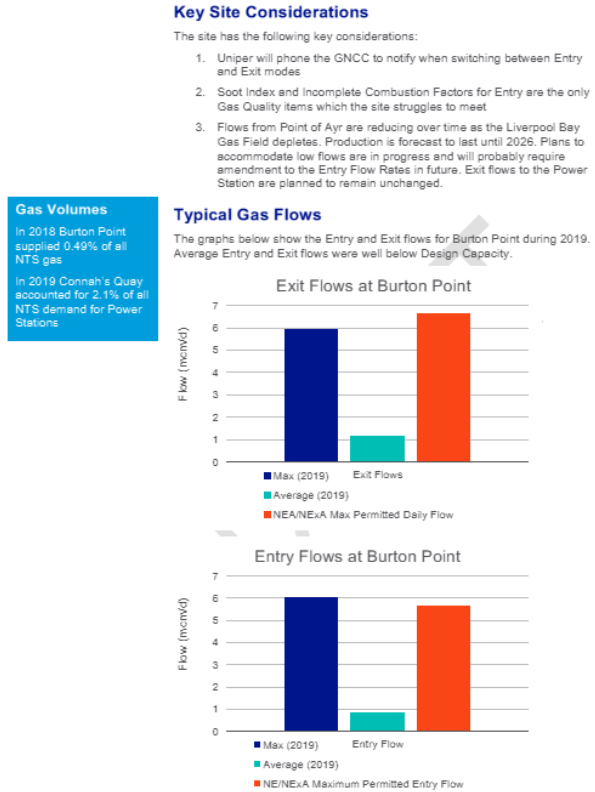


Market Intelligence- Liaison Meetings

Operational Liaison Team meet with Supply Points to the NTS on a yearly basis

As well as resolving issues for customers, these act as a point to receive intel:

- Customer Maintenance Plans
- Future Developments e.g. new fields coming online
- Site opportunities/risks
- Operating Strategy



Key Site Considerations

The site has the following key considerations:

1. Uniper will phone the GNCC to notify when switching between Entry and Exit modes
2. Soot Index and Incomplete Combustion Factors for Entry are the only Gas Quality items which the site struggles to meet
3. Flows from Point of Ayr are reducing over time as the Liverpool Bay Gas Field depletes. Production is forecast to last until 2026. Plans to accommodate low flows are in progress and will probably require amendment to the Entry Flow Rates in future. Exit flows to the Power Station are planned to remain unchanged.

Gas Volumes

In 2018 Burton Point supplied 0.49% of all NTS gas

In 2019 Connah's Quay accounted for 2.1% of all NTS demand for Power Stations

Typical Gas Flows

The graphs below show the Entry and Exit flows for Burton Point during 2019. Average Entry and Exit flows were well below Design Capacity.

Burton Point- extract of site intel

Maintenance Plans + Further Information

A maintenance plan is published online with a high level view of all work planned. This also includes forecast capabilities of each ASEP accounting for the impact of planned maintenance being carried out, based on analysis

https://www.nationalgrid.com/uk/gas/market-operations-and-data/maintenance

	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
St Fergus	No Impact	84 (924)	89 (979)	91 (1001)	83 (913)	No impact	90 (990)	No impact
Teesside	No Impact	No Impact	No Impact	No Impact	No Impact	No Impact	No Impact	No impact
Barrow	No Impact	No Impact	No Impact	No Impact	No Impact	No Impact	No Impact	No impact
Easington	No Impact	No Impact	No Impact	No Impact	No Impact	No Impact	No Impact	No impact
Theddlethorpe	No Impact	No Impact	No Impact	No Impact	No Impact	No Impact	No Impact	No impact
Bacton (including IUK)	121 (1331)	109 (1199)	96 (1056)	No Impact	No Impact	No Impact	No Impact	No impact
Isle of Grain	No Impact	No impact	No impact	49 (539)	51 (561)	40 (440)	51 (561)	No impact
Milford Haven	No Impact	54 (594)	53 (583)	55 (605)	55 (605)	57 (627)	52 (572)	No impact

Operating Margins

Operating Margins is an amount of gas purchased by National Grid each year

This can be used in the immediate period following operational stresses to maintain system pressures before other balancing actions are required

OM is mostly likely to be used in the following scenarios:

- Supply Loss (Terminal, LNG, Interconnector)
- Feeder Loss
- Compressor Failure
- Demand Forecast Error

https://www.nationalgridgas.com/balancing/operating-margins-om

Winter and Summer Outlooks

Winter and Summer Outlooks are produced ahead of each season

These are published externally for use by industry, but also feed into a variety of NG supply & demand models

1
The margin on the electricity system is greater than last winter and well within the Reliability Standard set by the Government.

2
The gas supply margin is expected to be sufficient in all of our security of supply scenarios.

3
We anticipate no additional adequacy or operability challenges for the coming winter as a result of the UK's planned exit from the EU. We have tested our planning assumptions in a broad range of scenarios and via engagement with industry.

4
We have the tools and services we need to enable us to manage anticipated gas and electricity operability challenges across the winter period.

Winter Outlook – Key messages 19/20

https://www.nationalgrideso.com/publications/winter-outlook

1-in-20 Peak Demand

The 1-in-20 peak aggregate daily demand is the level of daily demand that, in a long series of winters, with connected load held at the levels appropriate to the winter in question, would be exceeded in one out of twenty winters, with each winter counted only once. (UNC TPD Section Y)

1-in-20 Peak day maximises DN Load assuming extremely cold weather, and also fuel prices favouring Gas-Fired Electricity generation

For 19/20 this was 499mcm – highest demand so far this winter has been just 363mcm

As part of winter outlook each year, the 1 in 20 peak day is compared to the highest possible supply available, and the highest supply available with the supply loss associated with the biggest single loss of infrastructure (currently loss of Feeder supply from Milford Haven in Wales). This is the N-1 Test

Gas Transmission

Short Term Forecasting

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Key Considerations for short term forecasting Demand

1. Level of Supply Available (Offshore Outages)
2. Storage
3. Weather – including non-temperature factors
4. Irish Market
5. Electricity Generation
6. Interconnectors

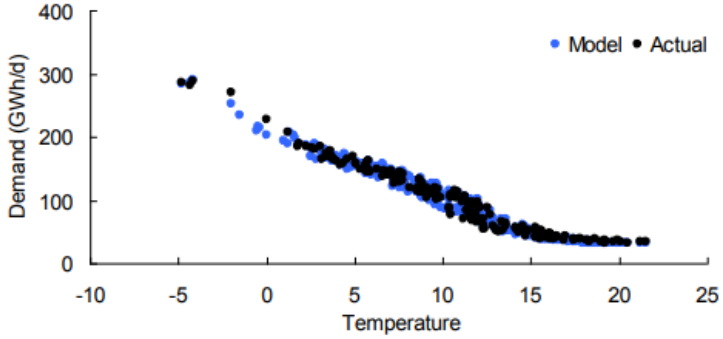
LDZ Demand

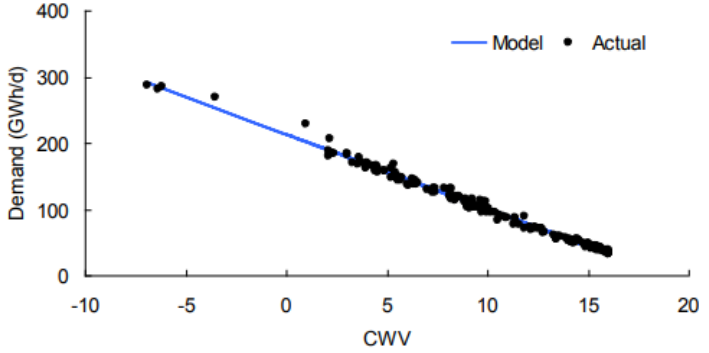
Domestic Demand accounts for by far the biggest Demand swings

CWV is used to predict this, taking into account:

- **Temperature**
- **Wind Speed**
- **Effective temperature**
- **Seasonal Normal Temperature**

CWV has a much more consistent match with demand than temperature – though can still get outliers e.g. a sunny day at the same temperature as an overcast day could have lower demand

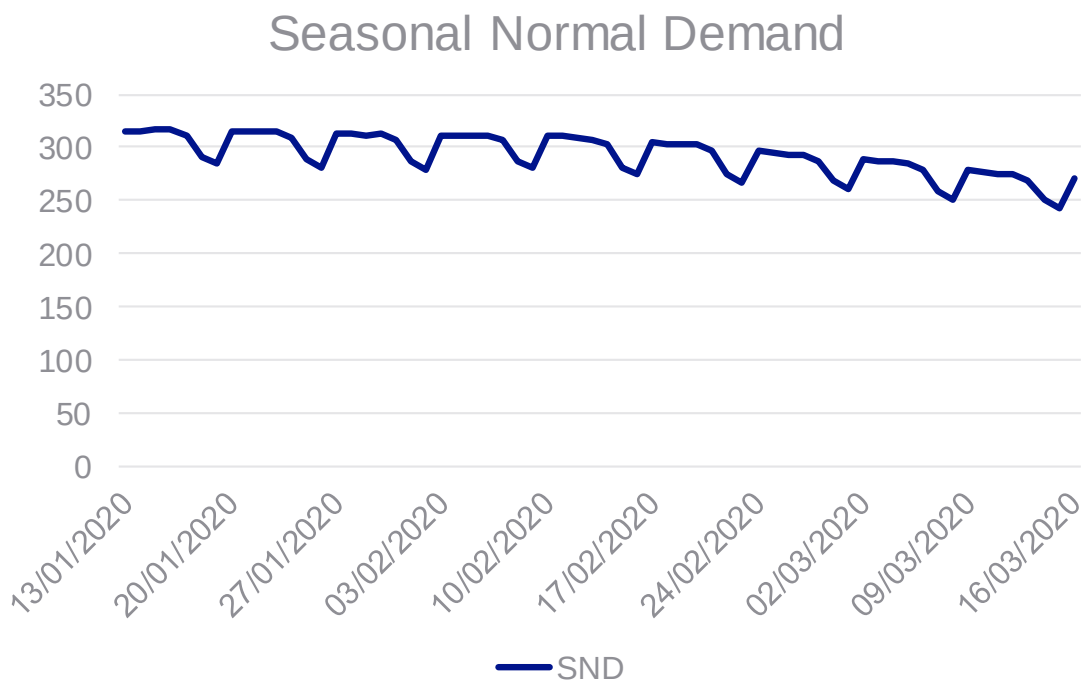




Weekend Fluctuations

Weather corrected demand is lower at the weekends – this needs to be built into models

Bank Holidays, Christmas period etc. can have a similar effect

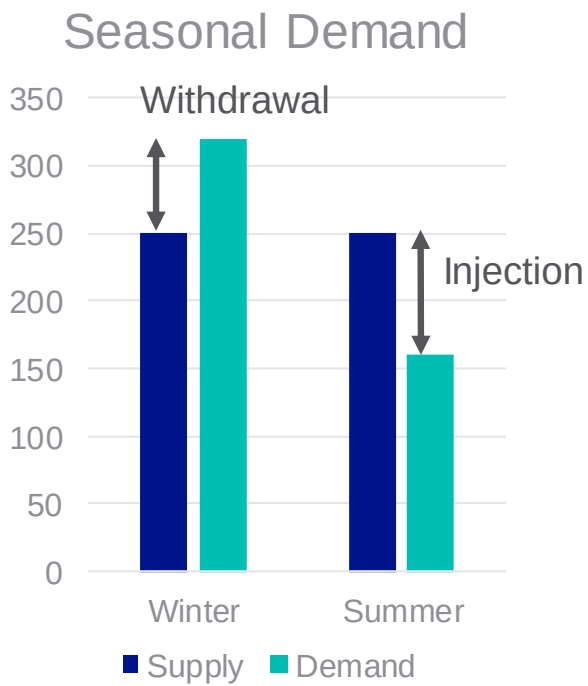


Predicting Storage

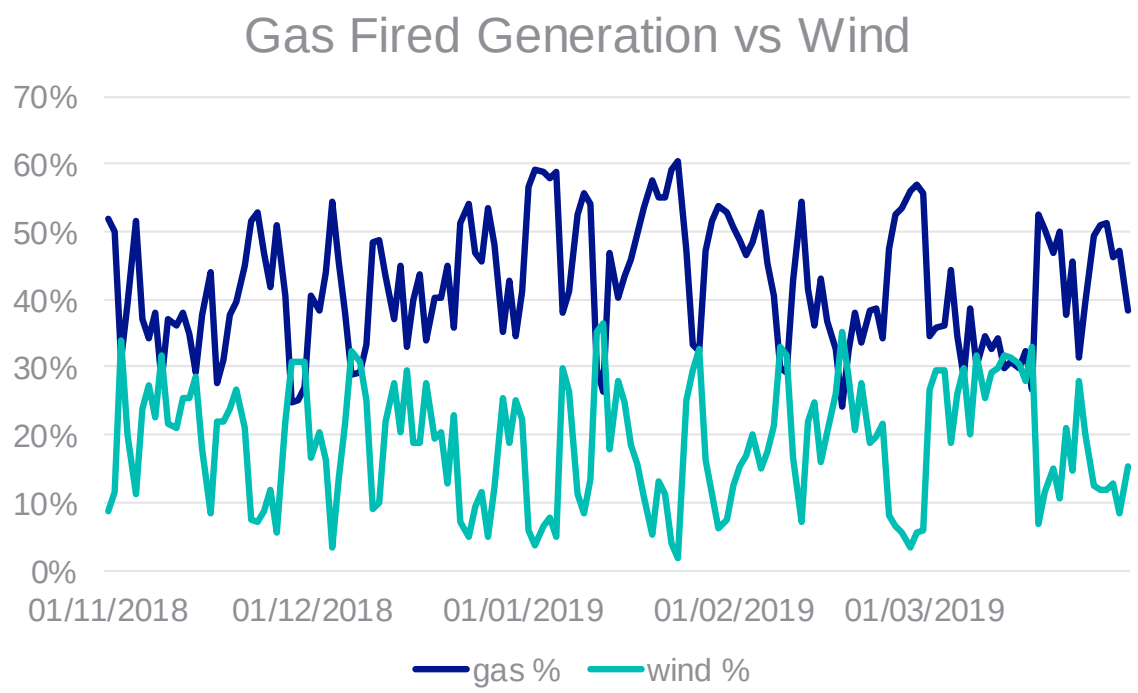
Forecasting supply helps to predict what storage is likely to do

Historically supply is much more consistent than demand throughout the year
- Injection during the summer to balance excess supply
- Withdrawal during the winter to deliver additional supply for winter peaks

In recent years, the increase in Norwegian supplies and LNG which more price driven (can deliver to different markets as opposed to UKCS which is domestic only)



Gas Power Station Demand

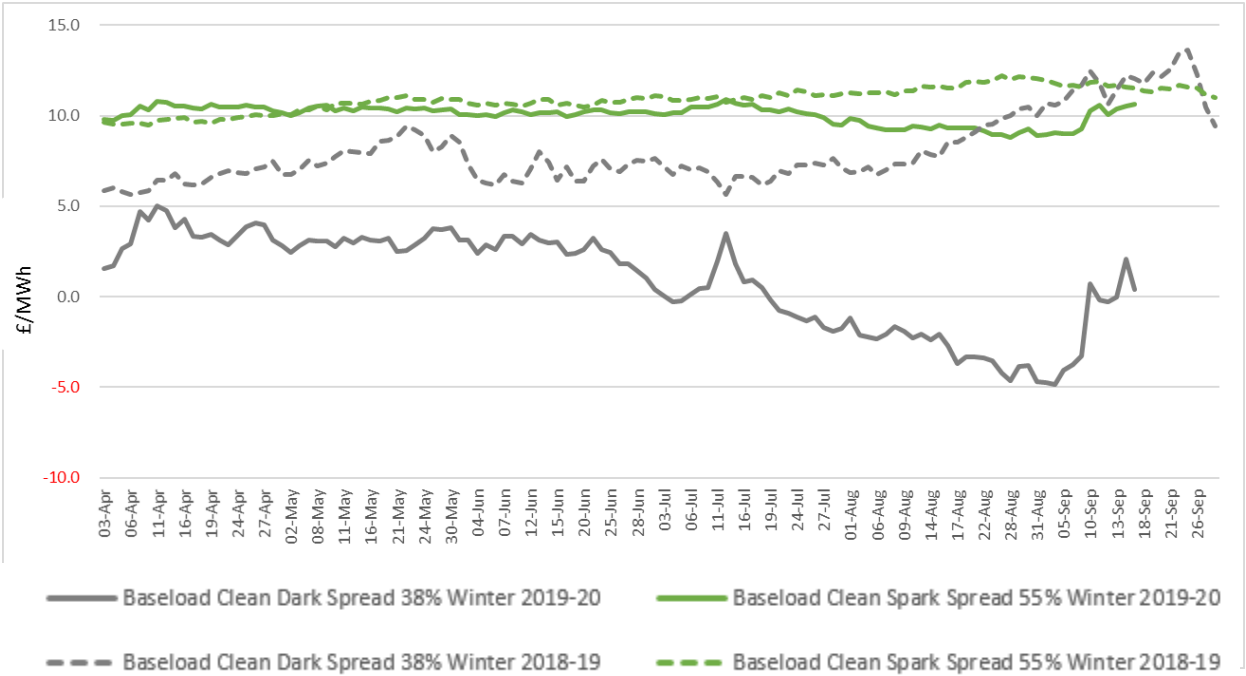


Gas Demand for electricity generation responds to peaks and troughs of wind and solar generation

This is another use for weather forecasts – predicting the availability of renewables as this will impact on PS demand

Day on day changes can be up to 28mcm

Spark Spreads

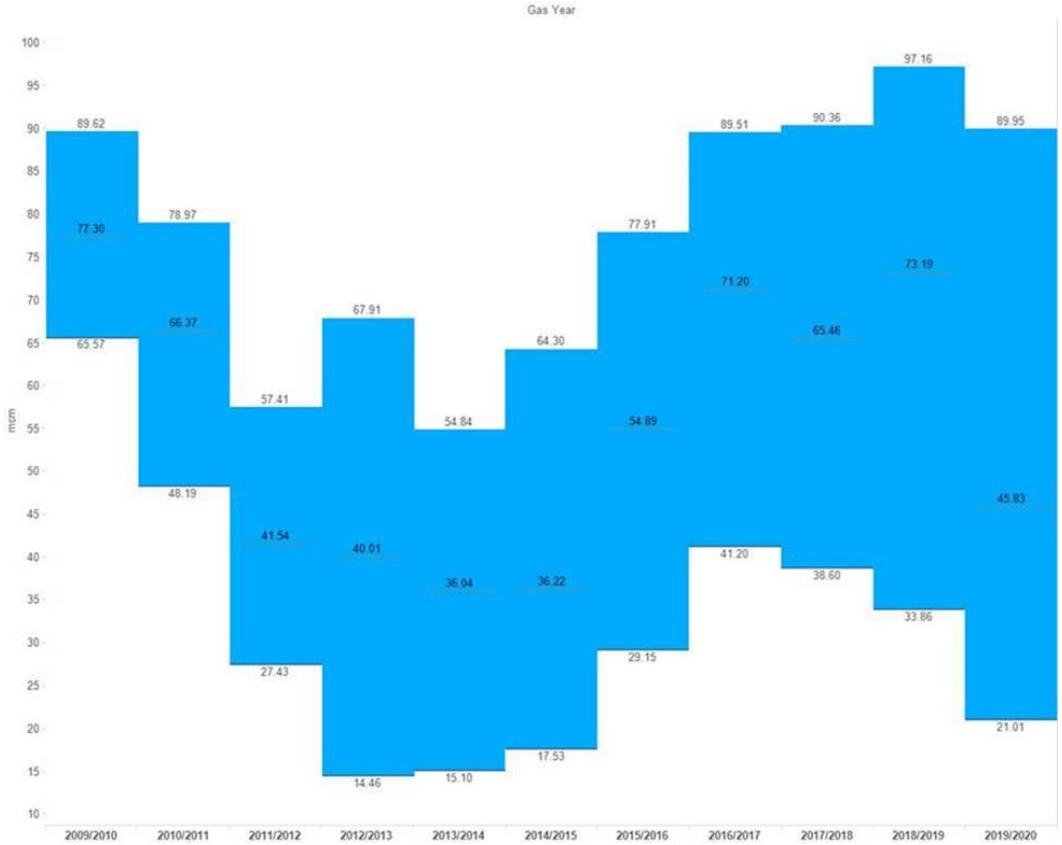


Spark Spread is the theoretical gross margin for a gas-fired power plant from selling electricity, accounting for fuel and carbon costs

This will vary throughout the year as gas and electricity prices move

Plant efficiency needs to be accounted for

Gas Demand for Electricity Generation is becoming more volatile



Gas Power stations are quick response and utilised to support renewables

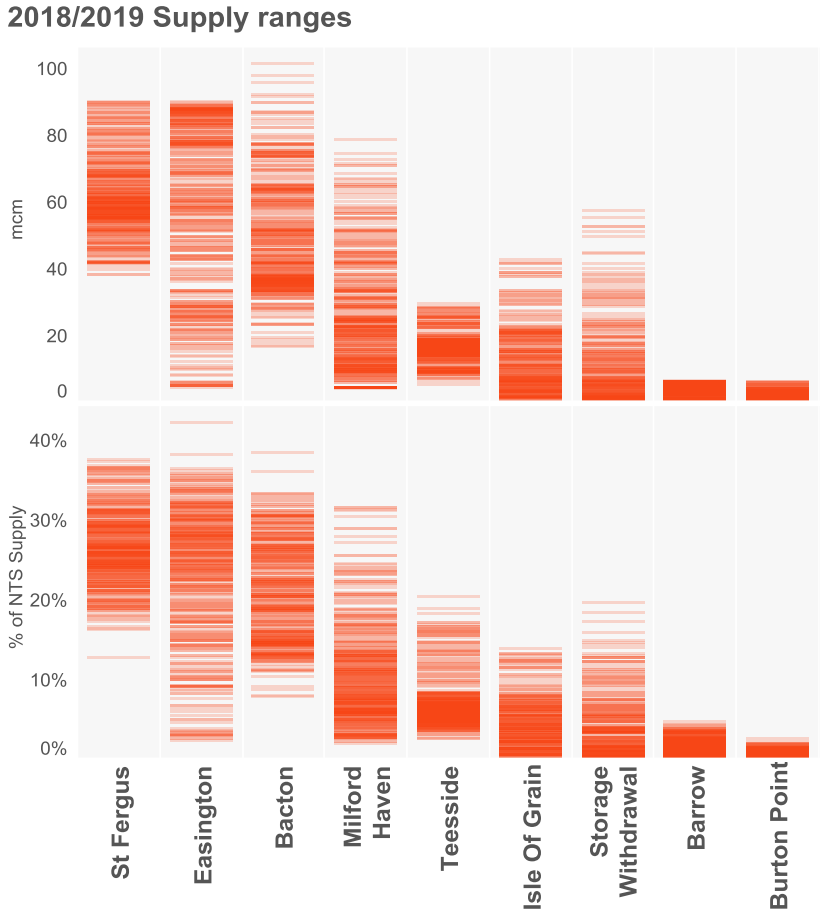
With the increase in utilisation of renewables, demand for Gas-fired power stations is increasing

Supply Ranges

UKCS provides the most consistent supply source – see Fergus, Teesside, Barrow and Burton Point

Bacton includes Interconnectors, so more variability driven by Price differentials between NBP and Zeebrugge / TTF Markets

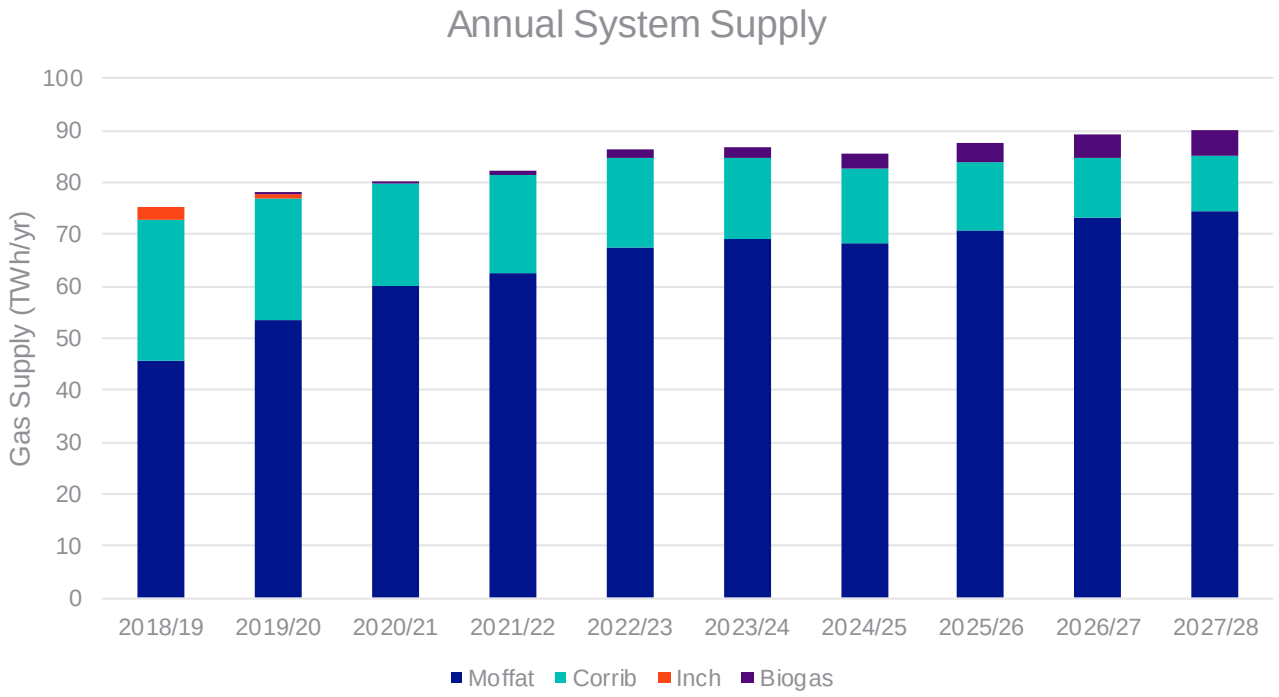
Easington has a particularly wide range, with a more flexible Norwegian Network with options for where gas is routed



Prices

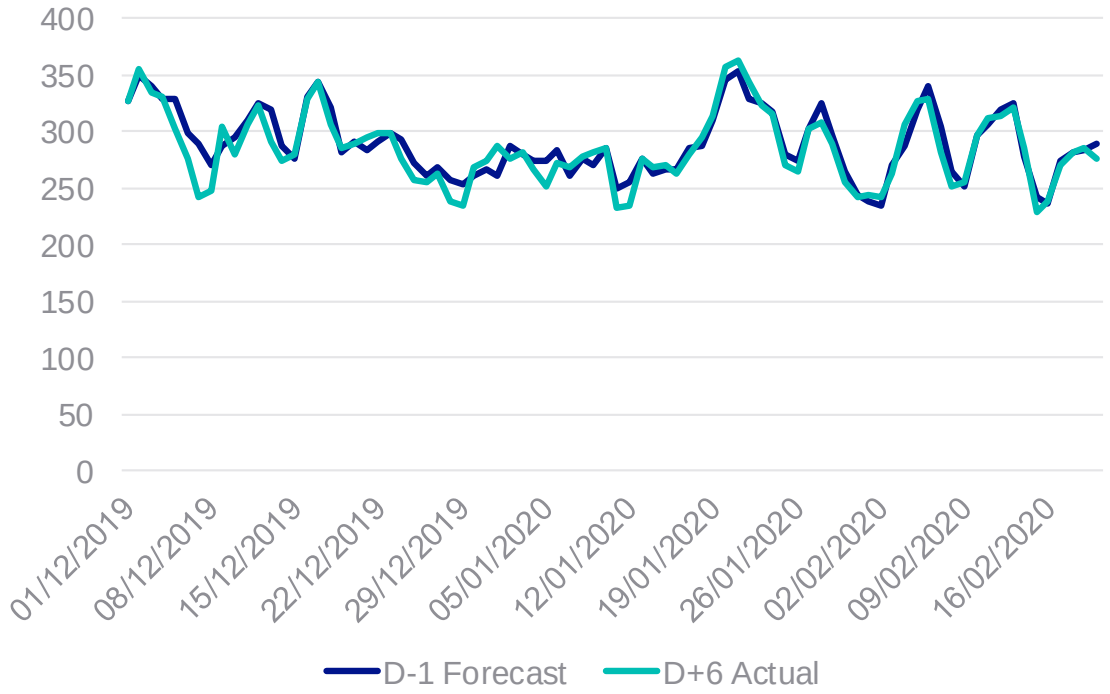
NBP, Zeebrugge and TTF prices can be used as an indication of Interconnector flows between markets

Moffat Demand



- **Moffat Demand is increasing gradually year on year**
- **Need to account for any Corrib Field outages, as this will increase demand at Moffat**

Forecast vs Actual at D-1



At D-1 Forecast is usually fairly accurate, though on occasion there can be a difference in excess of 20mcm

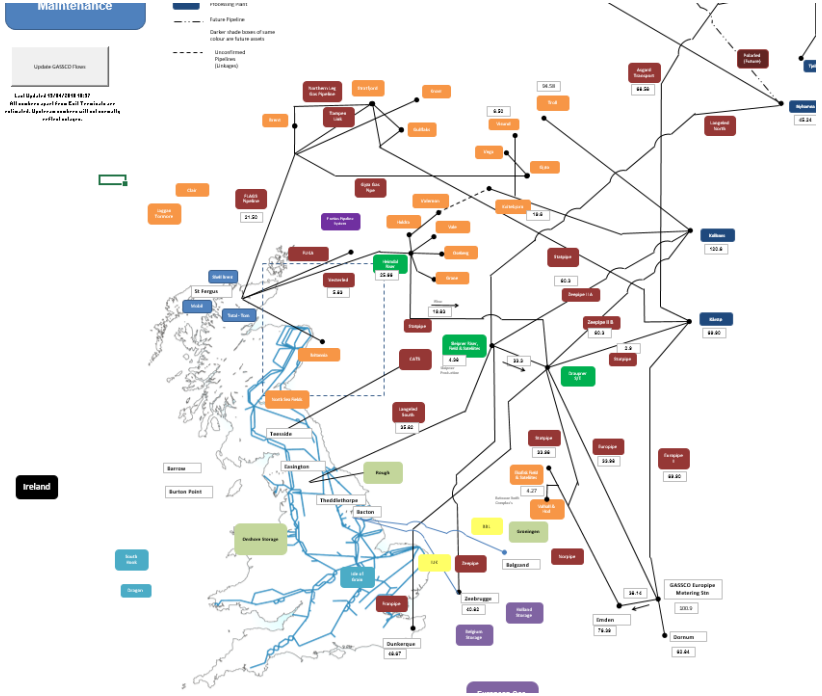
Demand Forecast Data Science Project

We are looking at ways to improve our Demand Forecasting processes

We recognise that with a wide variety of data sources feeding into our forecasts, there are potential process efficiencies

Data Science project will assess automation in these processes

Priority will be the data which feeds into LDZ and Gas Power station predictions



Demand Forecasting Incentive

Scheme	T1 Cap and Collar	T2 Cap and Collar – current position	RIIO2 current position
Demand Forecasting	+£20.0m -£2.5m	+£16.0m -£2.5m	Retain schemes. Make incentive tougher to achieve against by reducing the performance gradient, recognising that demand forecasting is becoming increasingly challenging. We have ruled out the possibility of using a volatility adjuster as we believe it is right for us to be incentivised on forecasting this volatility.

Constraint management

Residual balancing

NTS shrinkage

Information provision

Demand forecasting

Maintenance

Greenhouse gas (GHG) emissions

Unaccounted for Gas (UAG)

(Reputational only)

D-1 Demand Forecast Incentive

We forecast demand at 13:00hrs on a day-ahead basis and have been subject to an incentive based upon the accuracy of this forecast since 2006. The current version of this scheme is in place from 01 April 2013 until 31 March 2021. The maximum amount we can earn from the scheme is £10m, which requires 100% accuracy of our forecasts.

The scheme has a target forecast error of 8.5mcm per day adjusted up to a further 1mcm dependent upon the extent of additional short cycle storage injection capability connected to the NTS. The maximum amount we can lose is £1.5m. You can view our performance on this incentive by downloading our Supporting Information document.

D-2 to D-5 Demand Forecast Incentive

We publish demand forecasts each day from two to five days ahead of the day. The two-to-five-day-ahead incentive scheme was introduced on 01 April 2013 and put in place for two years. The scheme was renegotiated during 2014/15 with scheme parameters amended to reflect the initial incentive period.

The scheme has a target of 13.7mcm for the average forecast error over the four forecasts (D-2, D-3, D-4 and D-5). The maximum we can earn from the incentive is £10m (which requires 100% accuracy). The maximum we can lose is £1m if forecast error is 15.07mcm and above.

Capacity Access Review

Gas Ops Forum

19th March 2020

nationalgrid

Capacity Access Review

- Expect this section to last approximately 30min
- We will pause for questions at the end of each section

Jennifer Randall

Commercial Codes Change Manager

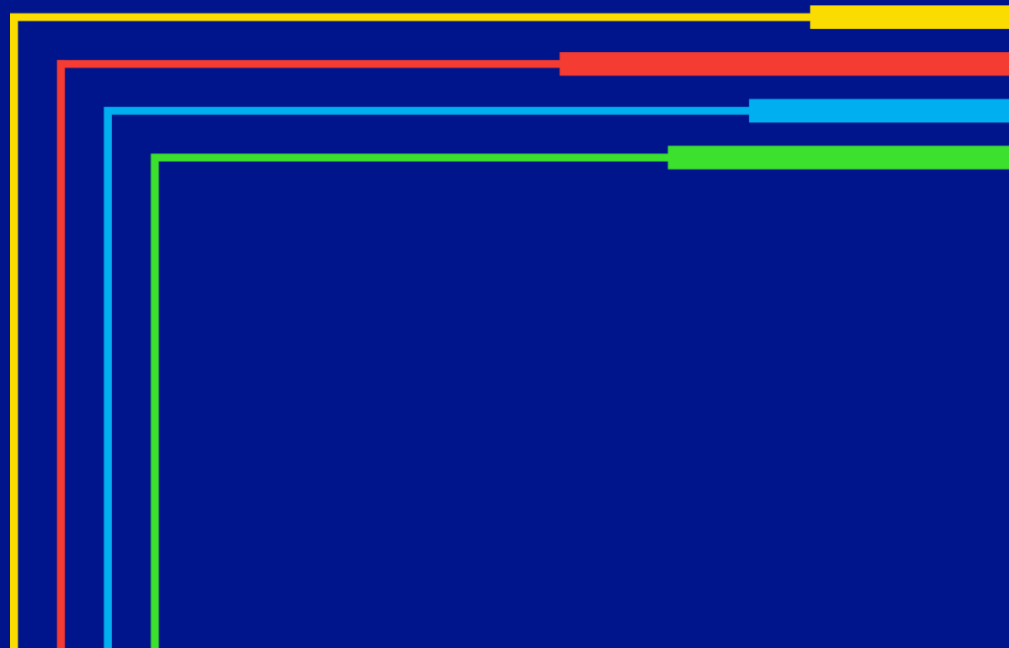
Anna Stankiewicz

Code Change Lead

Agenda

01

Introduction



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Introduction

- The Capacity Access Review (CAR) will review the principles of the capacity regime to ensure they are aligned to the future needs of our customers and will address issues being experienced in the short-term.

  - The current entry and exit capacity arrangement were built of the foundations of an expanding gas network where historically incremental capacity signals from long-term auctions would trigger investment on the NTS.

  - Today, the environment has changes and we are not experiencing the capacity signals requiring expansion we were 10 years ago.

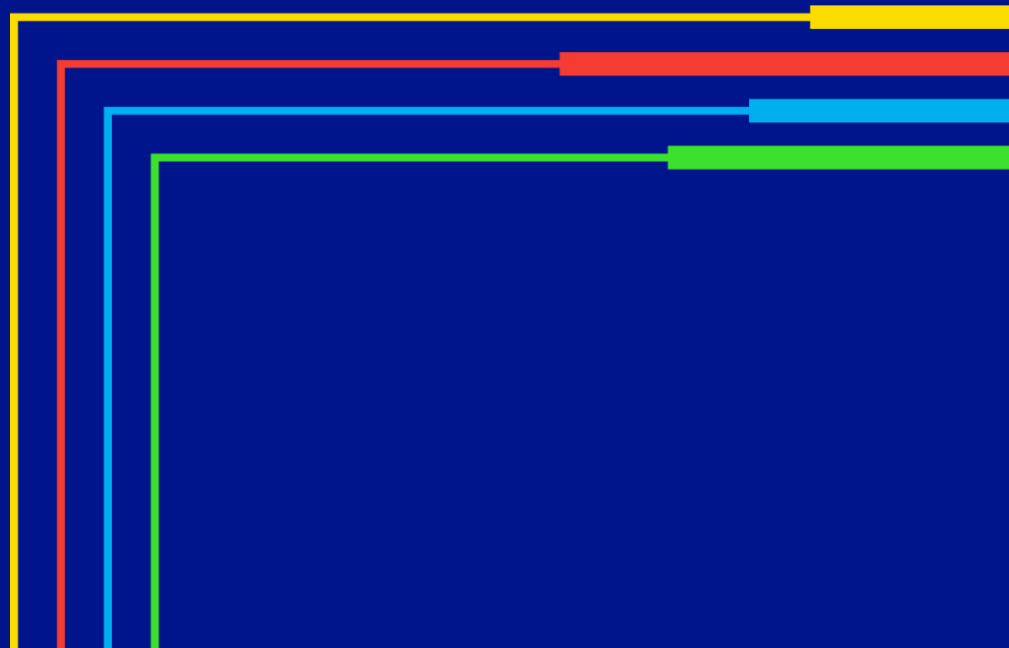
  NG raised UNC Request 0705R in October and have been working with the industry on development of the scope, long-term strategy, functions and principles of the future regime as well specific short term issues which the industry would like to see addressed as a part of the review. Details of the developments can be found on the Joint Office website: https://www.gasgovernance.co.uk/0705

  Today we would like to update you on:

  - Results of the consultation
  - Overruns – proposed UNC Modification 0716
  - Signalling and Allocation of Capacity – progress on the new workstream

02

Long-term Strategy Consultation: Response Playback



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Long-Term Strategy Consultation Responses

National Grid recently consulted the GB gas industry about a number of aspects relating to the Long-Term Strategy of the Capacity Access. We would like to thank those parties who took the time to respond.

Today we will give a summary of responses received and set out proposed next steps

In total 14 Responses were received.

2 of the respondents wished to remain anonymous, 1 respondent did not comment on whether they wished to remain confidential or not.

Responses were received from a range of Shippers, Trade Associations, Power Station Operators, Large Consumers, Storage Operators and Distribution Networks.

Ambition statement

*"The future capacity access regime will be **compliant** with any relevant obligations. It will be **flexible** to changing market conditions, regimes, requirements and physical network developments. It will be **simple** and will **enable** new entrants to access the market **easily and efficiently**. It will not unfairly discriminate. It will provide **cost effective** products which drive **consumer value**. It will be **dynamic** and **adaptable** to accommodate new technologies and sources of gas to the NTS as progression is made to meet decarbonisation targets."*

Ambition Statement

- The average agreement score was 7.1/10
- No strong objections but could be condensed
- Important to ensure there is no suggestion of different arrangements for new and existing entrants, although one respondent felt that sometimes we need different rules for different customers
- Some respondents wished for clarification of what was meant by “dynamic” and “flexible”
- Correlation of functions to specific attributes highlighted in the ambition statement.

Response

We will adjust the ambition statement;

- Concise
- Clear up any ambiguities
- Make the statement more accurately reflect the 5 functions

Functions: A. Signal a need for capacity requirements

- The average agreement score was 8.0/10
- Investments in the NTS should be underpinned by some form of financial commitment
- Currently significant issues with user commitment, divergent views on the PARCA process and Substitution arrangements.
- Links with the new charging regime and how the minded to on 678A would have impacts on the function.

Response

- Signal a need for capacity requirements will remain as a function.
- All the issues raised with the current regime will be considered as part of the Signaling and Allocation of Capacity workstream which has recently started.

Functions: B. Manage network access where there is a short-term constraint

- The average agreement score was 8.9/10
- A necessary function of any efficient capacity regime but infrequent occurrence of constraints results in difficultly in assessing the effectiveness of current arrangements.
- More transparency was needed about the constraint management tools used and the cost associated with their use.
- One respondent said they would welcome a review of the commercial arrangements for dealing with short term constraints specifically to reflect the cost associated with the LNG supply chain.
- One respondent felt that those who have committed in advance for capacity should take priority over short term bookings.

Response

- Some of these issues may not be best resolved through the Capacity Access Review
- Other issues mentioned by respondents will expand and add detail to the short-term issues and will be considered as part of the relevant workstream.

Functions: C. Provide users with commercial certainty on network access

- The average agreement score was 8.7/10
- Most respondents agreed that gas customers require commercial certainty on network access.
- Several respondents highlighted the uncertainty around capacity costs as a result of the ongoing charging review.
- One respondent said they would welcome more flexibility within the capacity regime to better manage this uncertainty.

Response:

- We appreciate that there may be a financial uncertainty created by developments in the charging regime however, we feel that discussion around this topic may better fit within the scope of the charging review.
- Additional points raised such as more flexible products will be added to the short-term issues for discussion as part of the relevant workstream.

Functions: D. Collect transporter allowed revenue

- The average agreement score was 6.4/10
- Most respondents appreciated that the transporter needs to collect allowed revenues.
- One respondent would not expect revenue recovery to be a primary objective of a capacity regime.
- Some respondents identified the link with anticipated changes to the charging regime and highlighted that it is not the sole responsibility of the capacity regime to ensure charges are collected.
- One respondent mentioned that access to capacity products and their relative pricing should be carefully balanced to facilitate desirable booking behaviours

Response:

- It is a function of the charging regime to determine how allowed revenue is collected. Ofgem's minded to decision on mod 678A suggests that a high proportion of charges will be collected through capacity charges. With this mind we feel that collect transporter allowed revenue should remain as a function.

Functions: E. Enable new entrants, including new sources of gas and technologies, to easily and efficiently access the NTS

- The average agreement score was 7.5/10
- Most respondents agreed that new entrants should be able to easily access the NTS
- Most respondents felt that this function should apply to all parties not just new entrants

Response:

- We propose to change the wording of this function in order to ensure that there is no suggestion that new and existing market participants should be treated differently.
- The proposed function will be:

Enable existing users and new entrants, including new sources of gas and technologies, to easily and efficiently access the NTS.

Functions: Additional Comments

- The resolution of some identified short-term issues may contribute to the longer-term regime.
- None of the functions address the facilitation of how capacity products should be acquired or how processes surrounding capacity can be upgraded on characteristics such as platform/IT quality, usability and automation.
- Incorporating FCC into UNC would help improve stability of charges.
- The regime should facilitate the most efficient use of total system capacity, not just efficient network access to markets.
- Timescales for review and how it fits with GMaP.
- Highlight potential interactions with "Ofgem Review of System Operation" in response to challenges of the net zero target.

Short-term Issues

We would like thank respondents for the detailed feedback received on short-term issues that they have been experiencing. These include but are not limited to:

- Different capacity choices available to large DN connects and NTS connects leave large DN connects at a competitive disadvantage.
- Review into residence of obligations when trading capacity.
- PARCA process partial termination.
- Issues with Gemini, increased automation.

Response

- We will add two new areas to the short-term issues table: Trading and System Capabilities.
- We will use the information provided in consultation responses to add detail to the current table of short-term issues and produce a summaries of the key issues to be discussed.

Short-term Issues

				Governance	System Capabilities
A	Overruns	Are **Over-run** charges appropriate?	- Is the incentive appropriate particularly with the introduction of the Charging Review. - Anomaly that zero over-run charge maybe possible - Longer-term: review basis of overrun charges in light of change of behaviours following Charging Review		
B	Signalling & Allocation of Capacity	Are the **PARCA** processes (including User Commitment) appropriate?	- Can the timescales for the substitution process be reduced? - Can rules be made clearer, simpler? More clarity on process methodology. - Affected Users able to respond to potential Substitution considered during the Annual Application Window - Exchanges of NTS exit capacity between NTS exit points within same exit zone where capacity does not go above baseline - Should User Commitment be applied to every enduring capacity release? - Could a zonal capacity regime be an alternative?	UNC / Methodology	Enhancements to system capabilities required
		Are the **substitution** processes (including User Commitment) appropriate?			
		Could a **zonal** capacity regime be introduced?			
		Are there any issues with **Trade and Transfer**? Are **Retainers** still required?		Are the rules contained in the right place?	Greater automation of the Gemini system
C	Capacity Products & Auctions	Are new products required or redundant products?	- Development of a "mothballed" capacity product following baseline review at Theddlethorpe - Within day, shorter term capacity product development Incentive for advance, long-term capacity bookings? - Disaggregating NTS Exit capacity purchases for embedded "large" offtakes from DN capacity bookings. - Temperature / seasonal based product - Flexibility product		
D	Trading	Are additional mechanisms required to aid trading of capacity	- Development of a "tradeable" capacity product - Liability of Traded Capacity		

03

UNC Modification 0716: Revision of Overrun Charge Multiplier

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Overruns – UNC Modification 0716

- Ofgem's minded to position is to implement UNC Modification 0678A. An outcome of the Charging Review is that a higher proportion of revenue will be recovered through capacity charges.
- An unintended consequence of this could result in a significant increase in the average Overrun Charge for both Entry and Exit. This is due to the methodology for calculation of Overrun Charges being set at a multiple (x 8) of the bid or application prices already accepted for parties / users acquiring capacity.
- Feedback from the industry in the 0705R WG suggests that the Overrun charges will become too penal and therefore a change to the multiplier used to align with the implementation of the 0678A is favourable.

Overruns – UNC Modification 0716

- Reduce the Multiplier at Entry to x4 and at Exit to x6. Analysis to date shows that these multipliers would maintain the status quo in terms of the incentive on Users to book required capacity.
- Analysis assumption is that historic revenue from Overruns is used as a measure of shipper's performance of booking capacity.
- Initially analysis has taken into account the actual revenue from Overruns (with TO Entry and Exit Commodity added to reflect potential impact of 0678A) and compared it with charges updated with reserve Prices in Postage Stamp methodology. Following the industry feedback National Grid decided to amend the modification and use direct comparison of actual revenue to the revenue in Postage Stamp methodology only. On that basis National Grid will amend the Modification and propose a reduction of the multiplier to x3 on Entry and x6 on Exit
- Mod 0716 is to be reviewed by the Workgroup for another 2 months and submitted back to June panel.
- In depth analysis of historic Overruns can be found on the Joint Office website: https://www.gasgovernance.co.uk/index.php/0716/050320

04

Signalling and Allocation of Capacity

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Current issues – Exit Capacity Release

User Commitment

The User will remain the registered User for any additional and existing enduring capacity for 4 years from the date the increased capacity allocation becomes effective

- Difficulties to accurately forecast demand 4 years ahead
- User Commitment means that Users cannot release exit capacity when no longer needed
- Overbooking capacity that subsequently is not required, for risk of substitution and 1 in 20 obligations
- Over-booking capacity would mean capacity bookings are not reflective of flows and does not enable efficient access to the NTS

Substitution

The substitution process for identifying the Donor NTS Exit Point as defined in the ExCS methodology is complicated and has many variables meaning it is difficult to understand where a donor point is likely to be located

Zonal Capacity Arrangements

National Grid has put forward potential Zonal Options for consideration in the March Transmission Workgroup.

Option #	Name	Description
1	Full zonal	Single baselines and auction(s) per zone, zonal price and flows, no need for transfer/substitution within a zone, no User commitment within a zone
2	"Competing Auctions" model	Bid in individual auctions and results from individual auctions are pooled into 1 combined bid stack for allocation
3	"Zoning nodes"	Nodal baseline and individual auctions, exchange rates set prior to auction
4	Zonal at a point in time	Enduring and annual auction on nodal basis. Daily auctions would sell unsold capacity on a zonal basis
5	Zonal product	Zonal 'premium' capacity product = sell capacity at a point but with flexibility to use anywhere in the zone
6	Current enhanced	Can current processes / mechanisms be enhanced / amended to solve problems

Current Issues - Entry Capacity Release

In their UNC 0667 Decision Letter, Ofgem noted that the Capacity Access Review includes reviewing the rules around User Commitment.

As a principle, NG believes User Commitment should be:

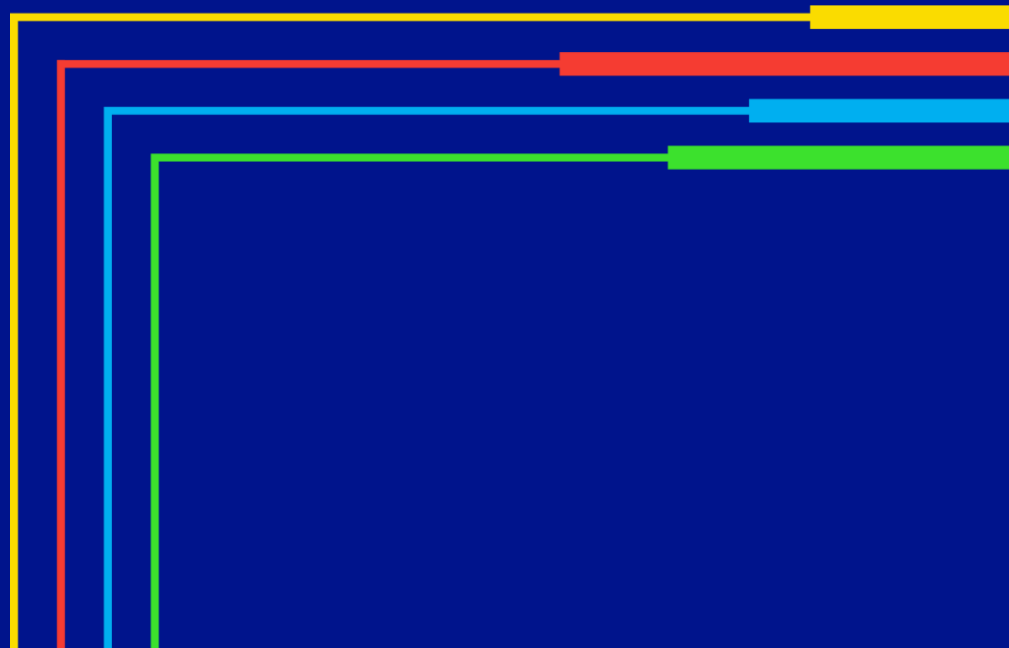
Obligated incremental > Substitution > Existing Capacity

Current User Commitment levels:

Requirement	Capacity Commitment			Financial Commitment
Existing Capacity	16 quarters x application amount			
Substitution	16 quarters x application amount	+	4 quarters / year incremental amount	
Obligated incremental	16 quarters x application amount	+	4 quarters / year incremental amount	Min 50% project cost

05

Next Steps



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Future engagement

- CAR will continually be discussed at Transmission Workgroup
- Regular webinars (every 6-8 weeks) where updates can be provided and feedback received
- Bilateral discussions at Industry Forums

Next Steps

- Capacity Access Review: Long-term Strategy
  - Ongoing development through GMaP
- UNC Modification 0716: Revision of Overrun Charge Multiplier
- Development of User Commitment and Substitution options for both Entry and Exit
- Key contact details:
  - Jennifer.Randall@nationalgrid.com
  - Anna.Stankiewicz@nationalgrid.com

Gas Transmission

Changes to Negative Implied Flow Rate Process

Martin Cahill
Operational Liaison Lead

nationalgrid

GEMINI Spring Release - Delay

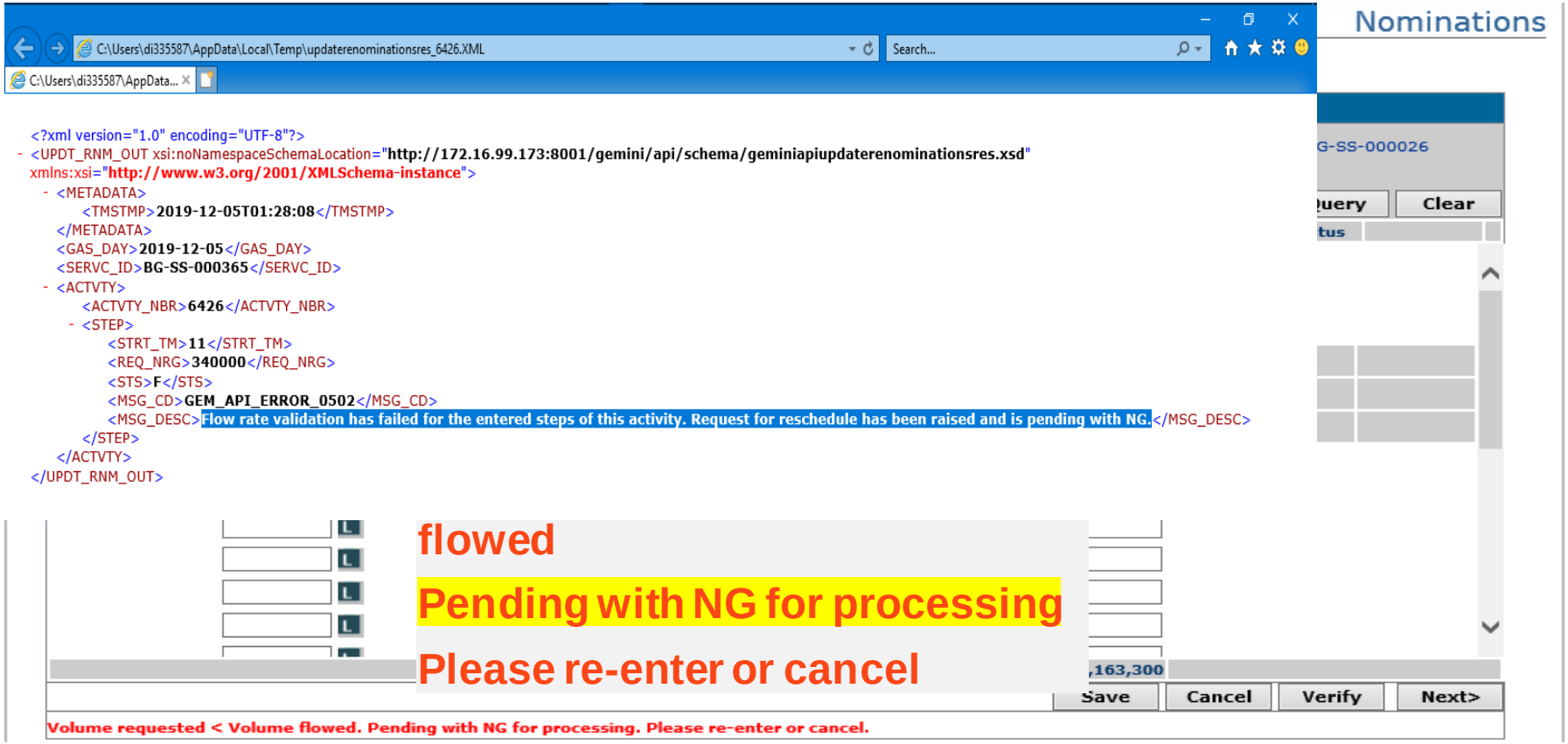
22nd March was previously communicated as the date for the GEMINI spring release

National Grid are currently assessing the risk associated with large scale IT changes being delivered in the current environment and will complete a thorough review prior to enacting IT changes that have the potential to impact on the UK gas community

New NIFR Process –

- **Summer 2018 Gemini Enhancements Workshop**
  - Your primary area for improvement was the NIFR re-nomination process.
  - Opportunity now available to implement a solution
- **A new Gemini process for managing NIFR re-nominations**
  - IP NIFR re-nomination requests are out of scope
  - Fax based process will cease
  - New Gemini Screen available for Shippers and GNCC
  - Compatible with Gemini Front end or API re-nominations
  - NIFR reschedule Process window extended from 02:00 to 03:00
  - NIFR Reschedule confirmation can be viewed via new screen in GEMINI and via API
  - Efficiency savings for GNCC and Shippers
  - Reporting on utilisation for NG

Re-Nominations



New Reschedule Screen (read only for shippers)

Home> Nominations> Approve> Reschedule

NIFR: Questions from last forum

Q: Why is the reschedule process window open until 4am when nominations on GEMINI have to be made by 3am?

A: NIFR reschedule requests are available up to Gemini housekeeping window. However, to avoid requests not being processed in time the advice to industry is to ensure NIFR requests are completed by 3am.

Q: Will nominations created using the renominations API automatically create a NIFR request if necessary, or will a manual process be required in the Gemini front end?

A: Yes the API will generate the NIFR request without any frontend activity required

Q: Are any changes to the API request needed to facilitate this?

A: Only the number of text characters in the message section of the API has been extended, However this has no impact to the structure of the API (within original specifications)

NIFR: Questions from last forum

Q: Can an API be setup to notify for approval of the request?

A: New API's are out of scope. However a new Gemini screen has been created which allows shippers to view the status of NIFR requests. For API, trigger the View Re-nominations API.

Q: Will the status on the original re-nomination screen update when approved

Once National Grid has processed the NIFR re-nomination, the shipper will be able to see any approvals in the Re-nomination screen as normal. For API, via triggering the View Re-nominations API.

API support will be available via the Xoserve support desk.

Gas Transmission

EU Nominations Update

Scott Keogh
Tom Lane

nationalgrid

Gas Transmission

01

Functionality Changes

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EU Nominations Functionality Updates

- In response to customer feedback, we are making some improvements to the EU nominations functionality on GEMINI
- **GEMINI functionality does not currently allow a user to have both a SSN and a DSN live with the same details (date-location-external TSO EIC combination). This can cause issues if a SSN is entered incorrectly as it cannot be confirmed and prevents a DSN being raised. This has the result of locking the user out of nominating at the desired location.**
- Should an error occur with a SSN, the new functionality will allow the user to modify the nomination type from SSN to DSN for an unconfirmed nomination. In effect, unlocking the nomination and allowing a new, correct nomination to be raised instead.

Nomination Lock

- Currently if a Shipper does not exit the Gemini Entry and Exit Nomination screens correctly, the screen will be locked, and the Shipper has to raise a call to have there buffer tables cleared.
- There is a Gemini system change to release the nomination lock automatically after 60 Minutes.

Example

- The lock created at 10:06 BST/GMT will be released after 60 minutes, i.e. at 11:06 BST/GMT or little later based on the automatic nomination lock release script scheduled frequency. If the user tries to access the screen before the lock is released, the system will display the updated business message and prevent access to the screen.

Gas Transmission

02

EU Nominations Monitoring

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EU Nominations Monitoring

Due to the high level of queries received relating to EU nominations failing, National Grid have worked with Xoserve to develop routine monitoring.

The new monitoring means that connectivity between the TSO systems and the successful transfer of data between them is monitored on an hourly basis.

Benefits:

1) Proactive issue management should an alert be generated
2) Identification of failed nominations within the close out period
3) Fewer invoice adjustments required
4) Gemini data more accurate as changes made before close out

Note: Functionality of the monitoring is based on issue cases observed to date, this is not exclusive to all potential scenarios. Each time a new scenario is experienced, the monitoring will be updated.

Types of Monitoring

- Monitoring alerts are configured for both the outgoing and incoming files.
- Monitoring of the Files is run 10 minutes past the Hour.
- Three categories of alerts
    1) File transfer failure / connectivity issues
    2) Incoming files received but data flagged as potentially incomplete
    3) Incoming files not received / EU Nomination stands unconfirmed

Monitoring Alerts

- Should an alert be triggered an email is automatically generated and sent to the affected TSO plus National Grid GNCC and Energy Balancing teams.
- Opportunity for each TSO to check their systems and address any technical issues if observed.
- If an alert is triggered twice – i.e. two successive hour bars, an ANS message will be published by National Grid
- Request Shippers to review their positions and resubmit a nomination if required.
- If issues are protracted the monitoring alert processes have been linked to the EU Nominations contingency processes.

EU Nomination Key contacts

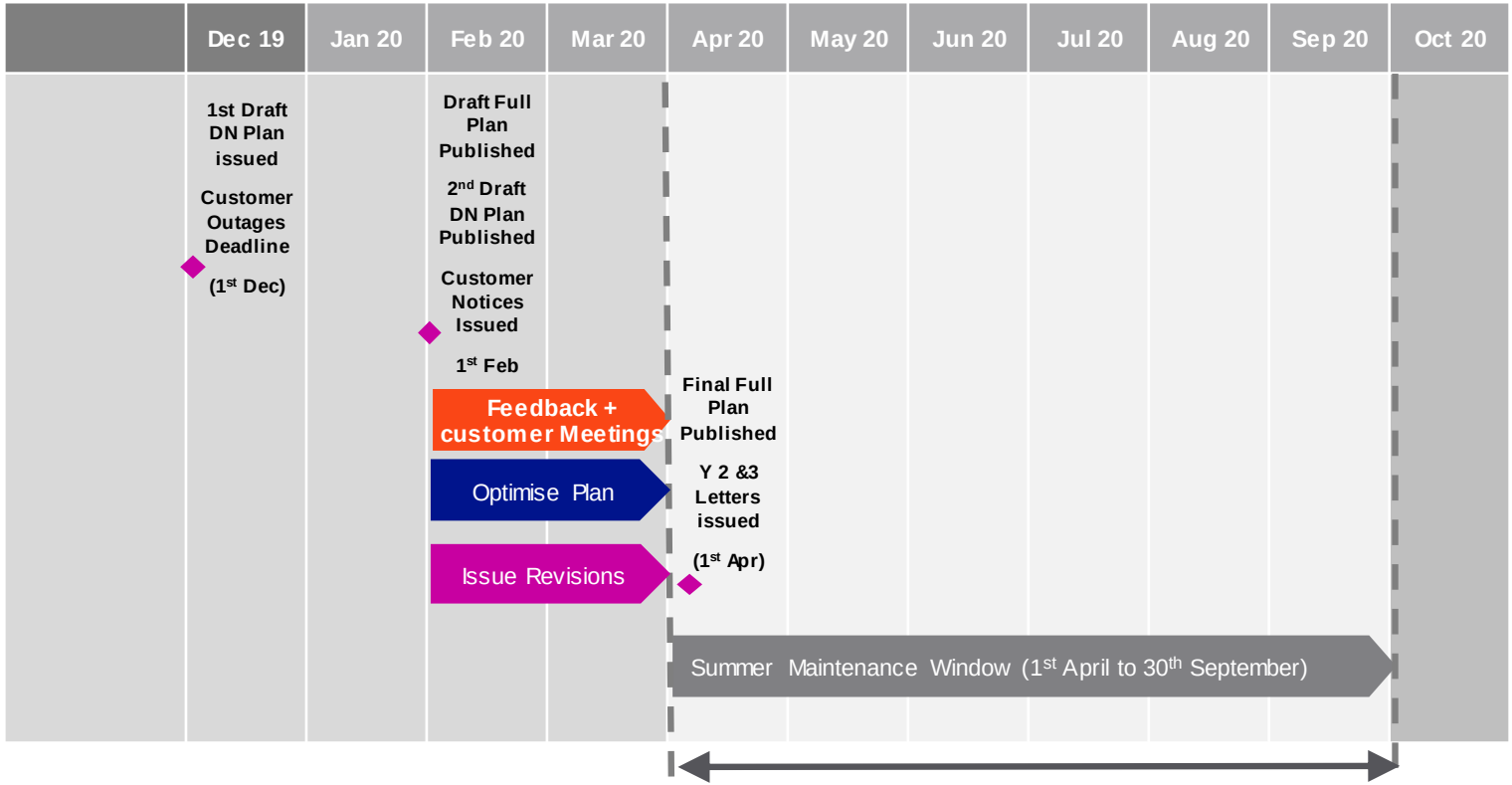
Scott Keogh	**Email address** • Scott.Keogh@nationalgrid.com
Tom Lane	**Email address** • Tom.Lane@nationalgrid.com
NTS Energy Balancing	**Email address** • box.NTS.EnergyBalance@nationalgrid.com

Gas Transmission

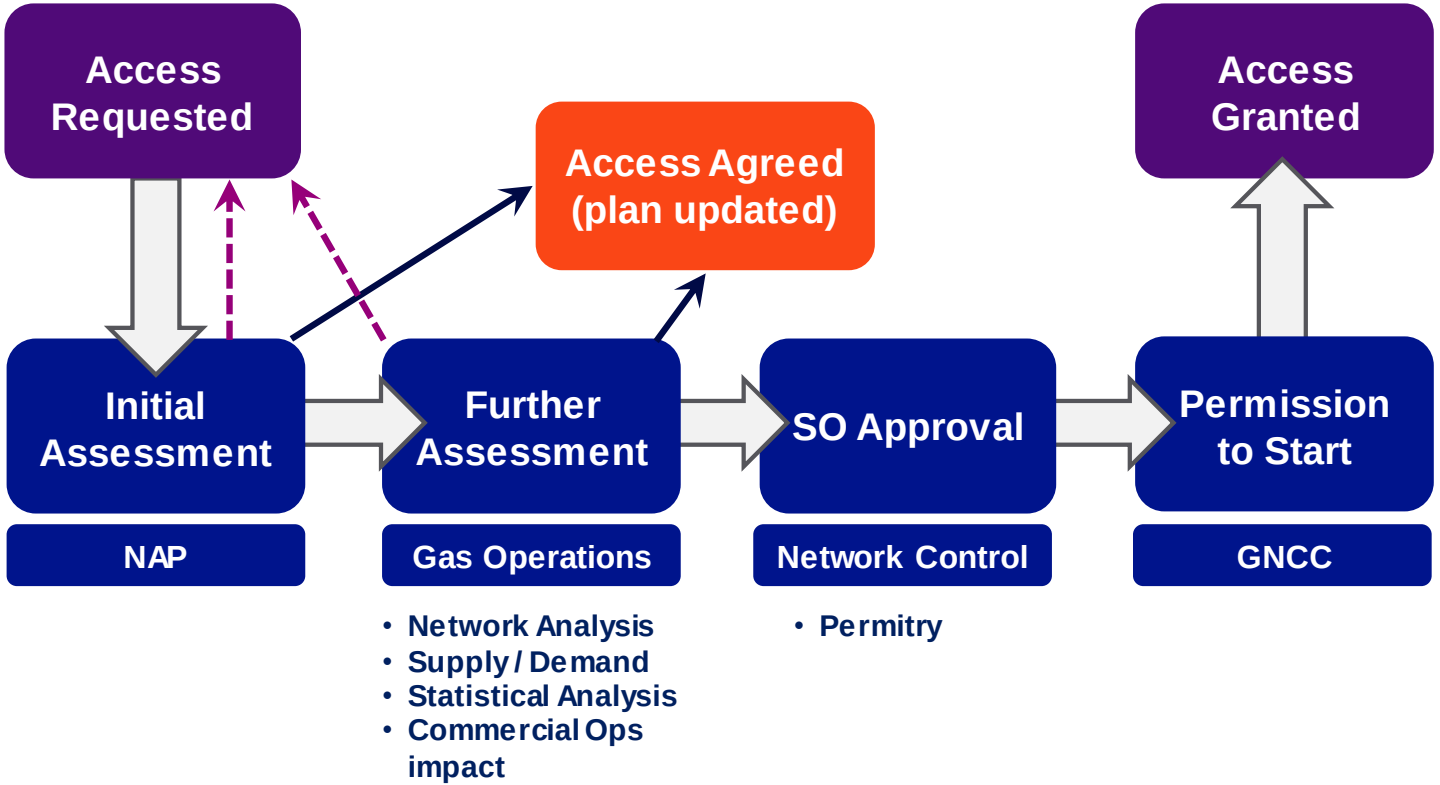
Maintenance Plan

nationalgrid

Yearly Maintenance Planning Programme

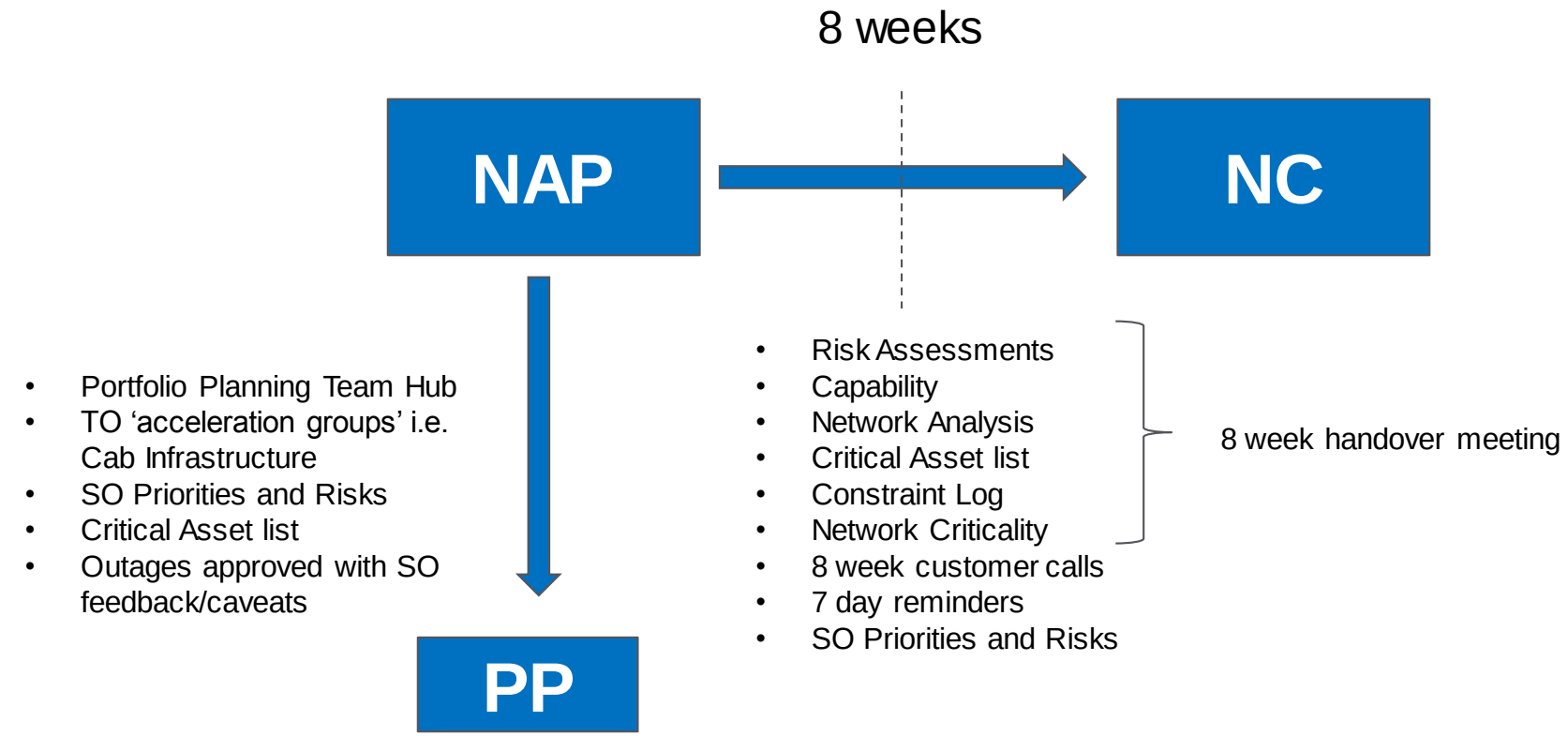


Process - Overview



This process can happen days, weeks, months or years ahead of the access

Governance


8 weeks
NAP
NC
PP
Portfolio Planning Team Hub
TO 'acceleration groups' i.e. Cab Infrastructure
SO Priorities and Risks
Critical Asset list
Outages approved with SO feedback/caveats
Risk Assessments
Capability
Network Analysis
Critical Asset list
Constraint Log
Network Criticality
8 week customer calls
7 day reminders
SO Priorities and Risks
8 week handover meeting

Formal Maintenance Notices

Maintenance Days – including in contracts for exit, but not entry

Advice Notices – non impacting work, either on the condition of alignment to a site outage, or raised for awareness e.g. contingency requirements, agreed flow profiling

2020 Priority works

Peterborough & Huntingdon station outage

A1(M) Diversion – Feeder 13 Isolation

NARC Projects

- Kings Lynn Bi-directional (Impact on Compression)
- Feeder 3 Bacton isolation
- Bacton Terminal

ILI Digs (following inspections previous year)

Numerous customer impacting ILI runs in 2020 – (18 customers impacted)

Maintenance Plans + Further Information

Maintenance Plan will be published by 1st April:

https://www.nationalgrid.com/uk/gas/market-operations-and-data/maintenance

This includes the indicative capability at each Terminal with maintenance taken into account

Please note there is scope to move work around when higher flows are likely – capabilities not set in stone

Developing the roadmap to net zero

nationalgrid

Decarbonising the energy system is one of the greatest challenges of our time

The use of natural gas accounts for 50% of the UK's carbon emissions today

Industry & Power	Heat	Transport
• Conversion is required to alternative, low-carbon solutions in line with Net Zero ambitions	• 15,000 homes will have to transfer to a low-carbon heating system every week until 2050, compared to 220 today	• 20,000 internal combustion engine vehicles will have to be exchanged for alternative-fuelled ones each week from now to 2050, compared to 1,200 in today

To transition to net zero, we believe we will need a **mix of hydrogen, renewable electricity generation, biogas and natural gas** supported by **CCUS**

Industry alignment is key

We will need to work and **innovate collaboratively** to ensure our networks adapt to deliver the low-carbon and alternative fuels that you require

- **Develop a coordinated/collaborative programme**
- **Avoid conflicting objectives**
- **Funding programmes that support a coordinated approach**
- **More flexible legislation that supports development**
- **Develop consumer engagement and acceptance**

Our commitments

We have developed a roadmap that details our journey to net zero

We will:

- be ready to start conversion to hydrogen by 2026
- provide resilience to renewable generation
- reduce our business carbon footprint
- deliver the transition as a responsible business

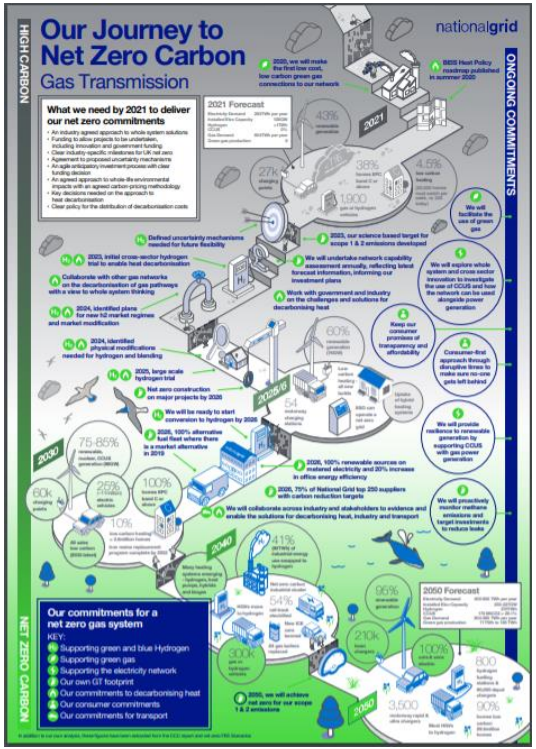
In delivering our commitments we will work closely with our stakeholders to ensure we deliver what is required now and in the future.

Understanding your needs

We're keen to talk to you to understand:

- Your aspirations
- Your timescales
- Your concerns
- Explore opportunities for collaboration

Initial conversations will be undertaken via video conference
Please contact Jennifer.Pemberton@nationalgrid.com



Gas Transmission

Close

Josh Bates
Operational Liaison & Business Delivery Manager

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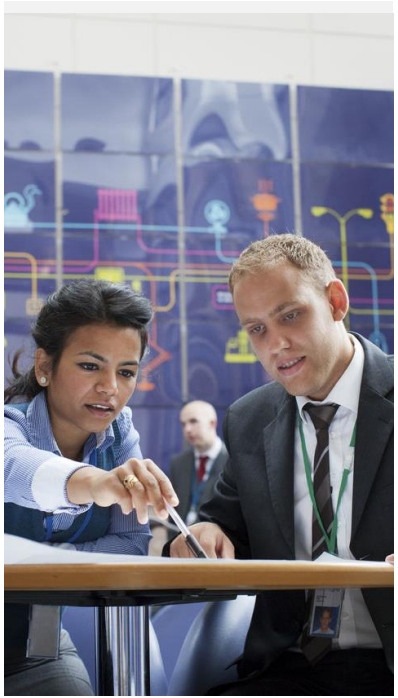
Updates & Contact us

- Gas Operating Margins (OM) Reprofiling - National Grid carries out OM reprofiling activities annually to ensure the correct distribution of OM gas between NTS storage sites. **We plan to hold a reprofiling auction on 7 April** via the ARIBA platform. Further communications will be issued shortly.



How to contact us

Joshua Bates: 07790 941 158 & Joshua.Bates@nationalgrid.com

Martin Cahill: 07976 864 438 & Martin.Cahill@nationalgrid.com

Operational Liaison Email:
Box.OperationalLiaison@nationalgrid.com

Please respond to our survey to feedback on our webex forum

https://datacommunity.nationalgridgas.com/

Registration is open for all 2020 events at:
https://www.nationalgridgas.com/data-and-operations/operational-forum

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