

Gas Operational Forum



28 June 2018
National Grid HQ, Warwick

Health, Safety & Security Today

Fire Alarms & Evacuation process

- There are no tests planned for today in the event of a continuous alarm, you will need to leave via the fire exit next to E3 (Turn left out of this room end walk to the end)
- Fire exit Maps are on the back of the doors
- During an alarm you will need to gather at the main car park (across the bridge)

Food Allergies/intolerances

- We have no been advised of any allergies but if you do have one please make an NG rep aware such that we can provide appropriate refreshments for you.

General Rules:

- Keep your visitors pass with you at all times whilst onsite, and ensure it is visible by wearing around your neck.
- Please hold the handrails when using the stairs.
- All bags will need to be removed from the room during lunchtime, whilst the layout is re-arranged for the afternoon

Control Room Overview:

- You must be escorted by National Grid Staff at all times (Including to and from the toilets).
- Large bags should not be left unattended or taken into the incident room.
- Photography of the control room and detailed NTS maps is strictly prohibited for security reasons and protection of sensitive data.
- NTS simplification maps are available to take away today.
- If an NTS incident occurs, visitors will be asked to leave the incident room immediately.

National Grid Forum Attendees

<p>NTS Optimisation Jon Davies – <i>NTS Optimisation manager</i> Karen Thompson – <i>Operational Liaison Manager</i> Martin Cahill – <i>Operational Liaison Lead</i></p>	<p>Commercial Operations Mike Wassel – <i>NTS Capacity Manager</i> George Charalampous – <i>Gas Shrinkage and Emissions Manager</i></p>	<p>Subject Matter experts (Available on rotation at drop in Sessions)</p> <p>NTS Capacity Denise Banks, Helen Bennett, Bradley Charles, Samuel Dunn, Abby Hayles, Hanna Jarvis, Richard Jones, Sarah Wheeler</p> <p>Operational Performance Harj Kandola</p> <p>Energy Balancing Andy Bailey, Cara Finn, Allison Hyde</p> <p>Project CLoCC Anne-Marie Liszczyk, Nicola Lond</p>
<p>Emergency Planning Rob Gibson – <i>Emergency Planning Manager</i></p>	<p>Operational Performance Harj Kandola – <i>Operational Performance manager</i></p>	
<p>GNCC Support Rachael Robinson – <i>GNCC Services + contract lead</i></p>	<p>Market Change Phil Hobbins – <i>Technical Code Development Manager</i></p>	
<p>Business Change Elliot Dunn – <i>Customer Portfolio Manager</i> Sarah Carrington – <i>Comms & Engagement Lead</i></p>	<p>Xoserve Fiona Cottam – <i>Business Process Manager</i> Chris Fears – <i>IS Manager</i> Helen Field – <i>Customer Issue Manager</i></p>	

Feedback and Questions



For questions during the forum you can:

- (1) Ask during the presentations**
- (2) Use post it notes and place on 'question car park'.**
- (3) Speak to an NG rep during break**
- (4) Utilise the Query Surgery time at the End of the forum.**

Agenda

- 09:30** **Previous Ops Forum actions and feedback since last forum**
- 09:45** **Operational overview**
➤ Supply & demand overview (1 April – 31 May).
- 10:15** **Morning Break / Group 1 – Control Room Overview / MIPI/Project CLoCC/Capacity/Energy Balancing Drop-ins**
- 10:40** **Customer Requested topics**
Gas Network Ireland (GNI) Presentation
- 11:00** **Overview of Shrinkage**
- 11:20** **Xoserve updates**
➤ UIG Update
➤ Gemini incidents and lessons learnt (Incidents since April)
➤ GEMINI Contingency Exercise: Starburst
- 11:40** **Signposting Topics of Interest**
➤ MIPI update
➤ UNC Modifications Overview & Charging Review
➤ Regulatory Change Programme Update
➤ NEC Exercise
➤ Winter Webinars
- 12.00** **Lunch Break / Group 2 - Control Room Overview / MIPI/Project CLoCC/Capacity/Energy Balancing Drop-ins**
- Close & summary of any questions received**
- Optional Query surgery for our Gas Customers & Stakeholders**
➤ Opportunity for 121's with subject matter experts from National Grid & Xoserve

Query Surgery available during morning break and lunch with subject matter experts

Previous Actions

Action Ref	Discussion Item	Action	Who is Responsible?	Due Date	Closed/Open/Detail
1	MIPI Outages	KT suggested she would hold a webex call with customers to discuss and agree upon the best way of communicating future outages that would affect MIPI data over an extended period	NG	June 2018	Open Webinar scheduled
2	MIPI	National Grid to clarify "hits terminology" for MIPI	NG	June 2018	Open To clarify the average of 2million hits a day to MIPI Operational Data includes accessing data through website API hits and data scraping.

Feedback since the last Forum

Feedback Topic	Feedback	Action
Rules on applied during GDW	ANS was used to communicate that rules on was applied but the full ANS distribution was not used this was an error.	Incorporate into future comms plan
Questions regarding MIPI data	Engie have had discussions around a subset of our operational data, and together we will design a webinar to be released in October which should help the industry.	NG to produce as part of webinar programme this October.
Query Contact List & general feedback received on management of queries	Positive feedback received to date on contact list .	NG currently looking to include more query types to try and ensure all key Gas Queries can be identified and appropriate contacts highlighted. Feedback needed from customers on first draft. Escalate if you are having an issue in resolving queries to the named contact or to Karen Thompson.
ICE Index	That Ops Forum attendees would appreciate an ICE INDEX update as provided historically.	ICE are in attendance today and would like to speak to the audience during breaks such that they can provide suitable quarterly updates to meet industry needs.

Feedback since the last Forum

Feedback Topic	Feedback	Action
Need for more guidance material.	Benefit in tailored guidance facilitated through a webinar for pre emergency tools (physical and commercial).	NG: To include in Winter Webinar Programme. Industry: To advise if you have any specific areas where you would like further detail/focus.

Operational Summary

Data is based on Summer to date (01/04/18 to 31/05/18)

NTS Demand

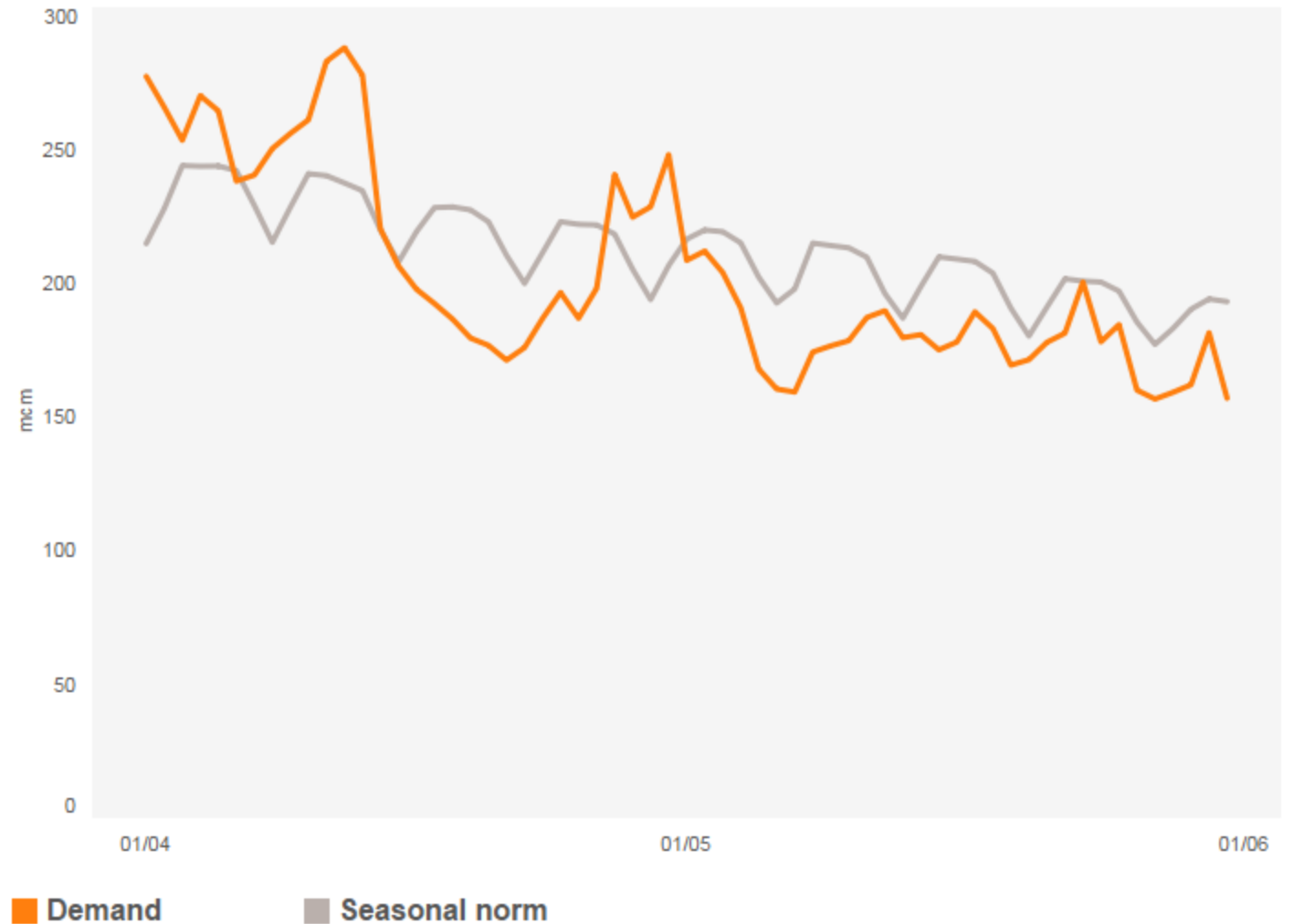
There has been

Higher than normal demand at the beginning of Summer

which has subsequently reduced and is

Now at similar levels to the normal Summer demand

NTS Demand versus seasonal norm



Components of NTS Demand

Compared to last Summer,

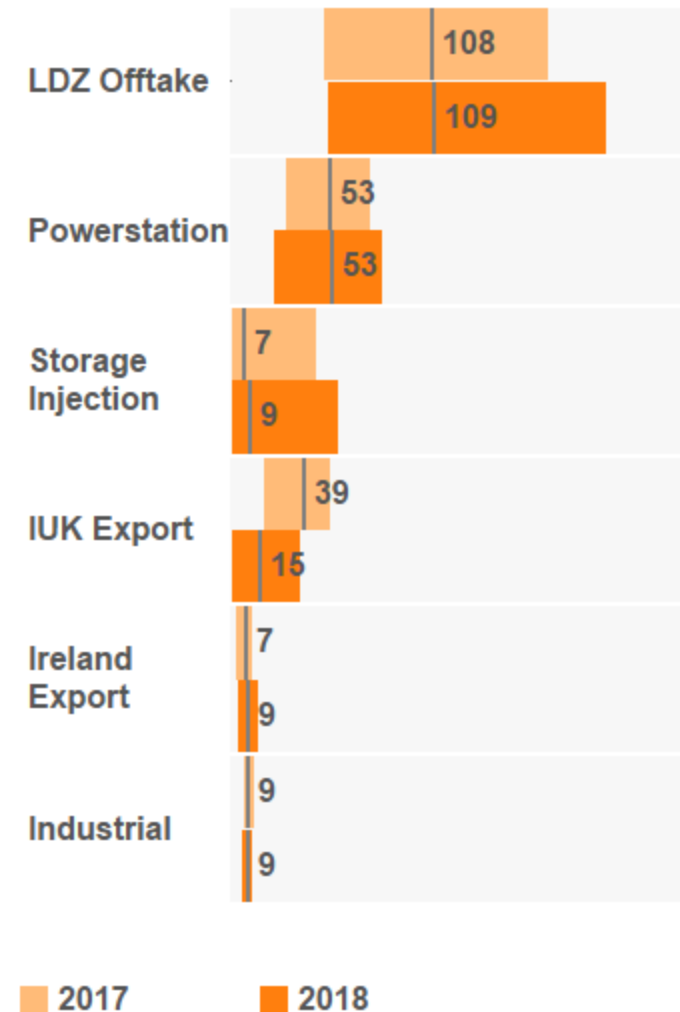
LDZ demand started high

but has now

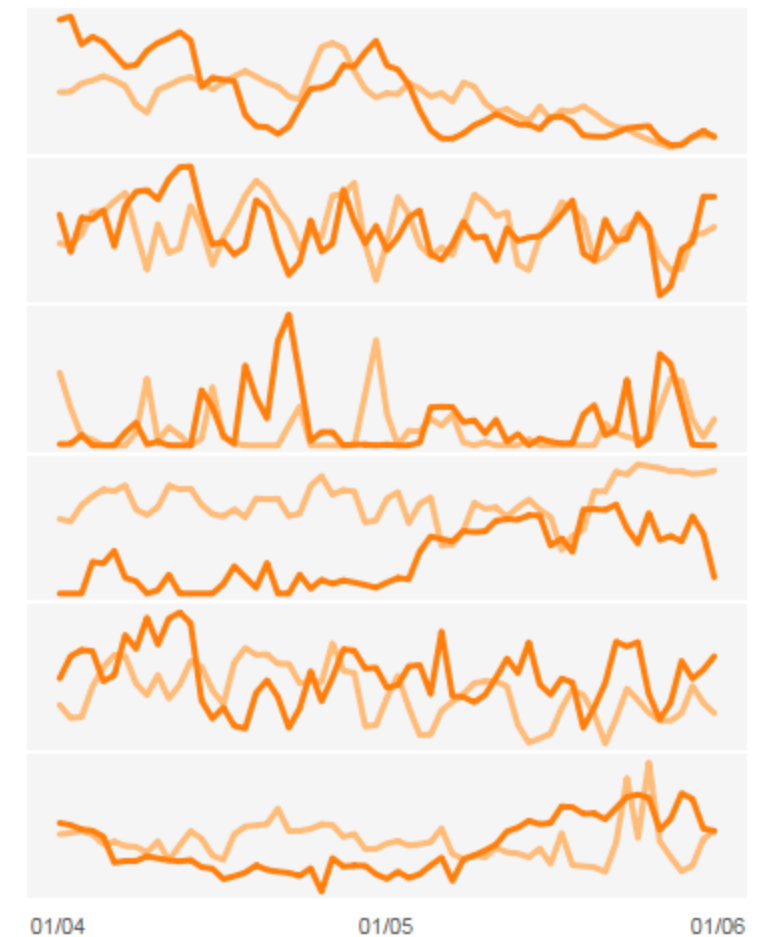
Returned to similar levels

IUK exports have been relatively low

Average daily volume and range (mcm)



Trend versus previous year



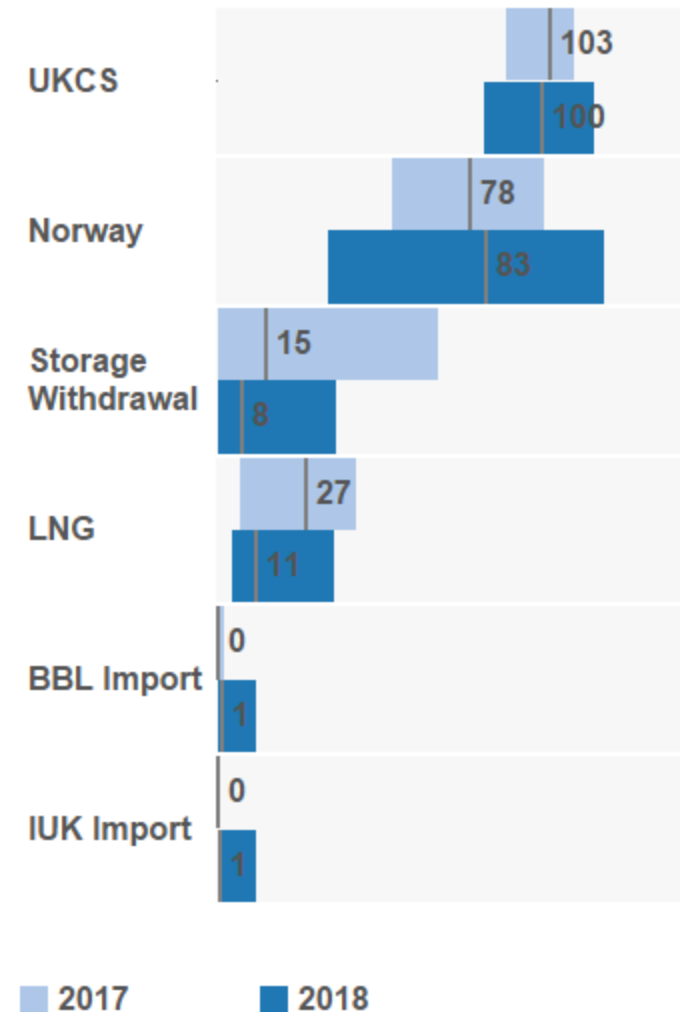
Components of NTS Supply

Compared to last Summer
**Supply from UKCS
 and Norway has
 been more variable**

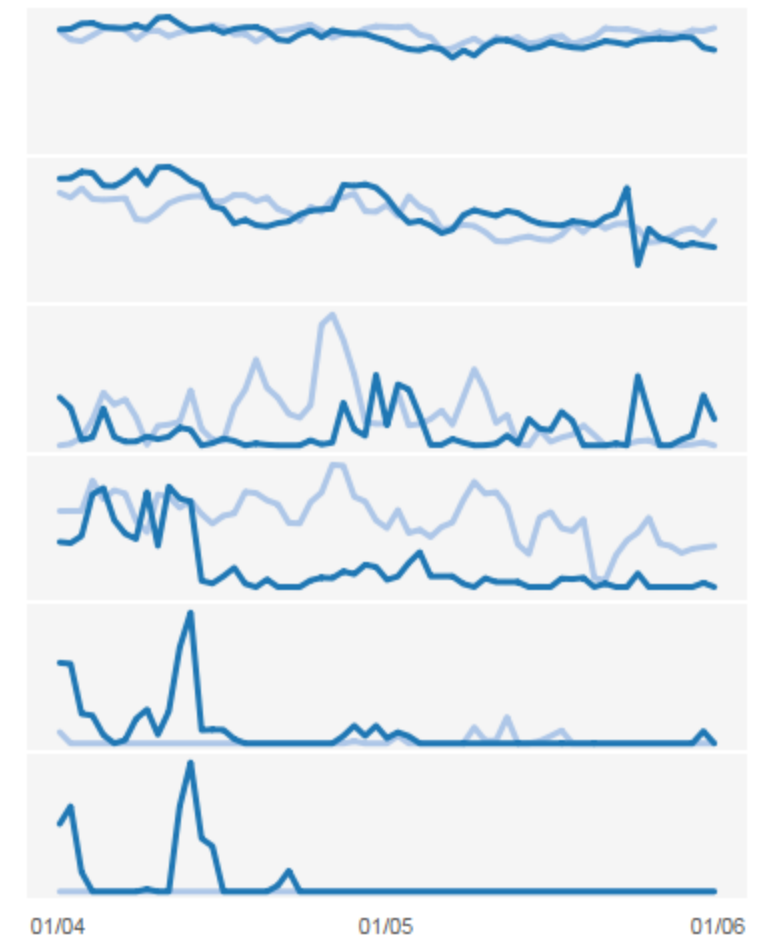
**Supply from LNG
 has reduced quite
 significantly**

Probably due to the relatively
 high prices in Asian markets

Average daily volume and range (mcm)



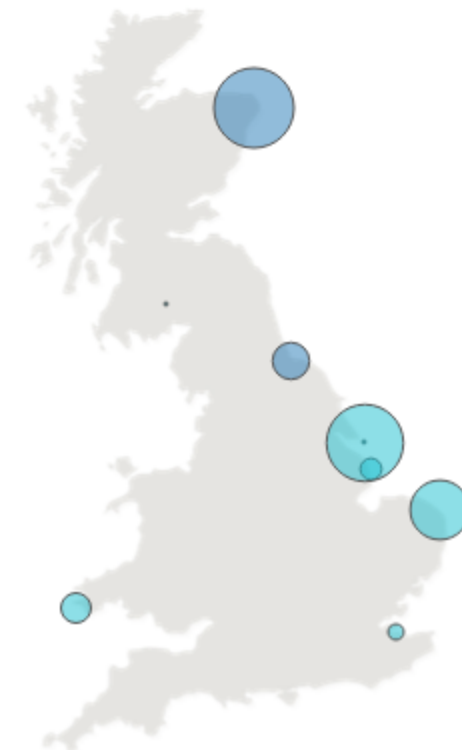
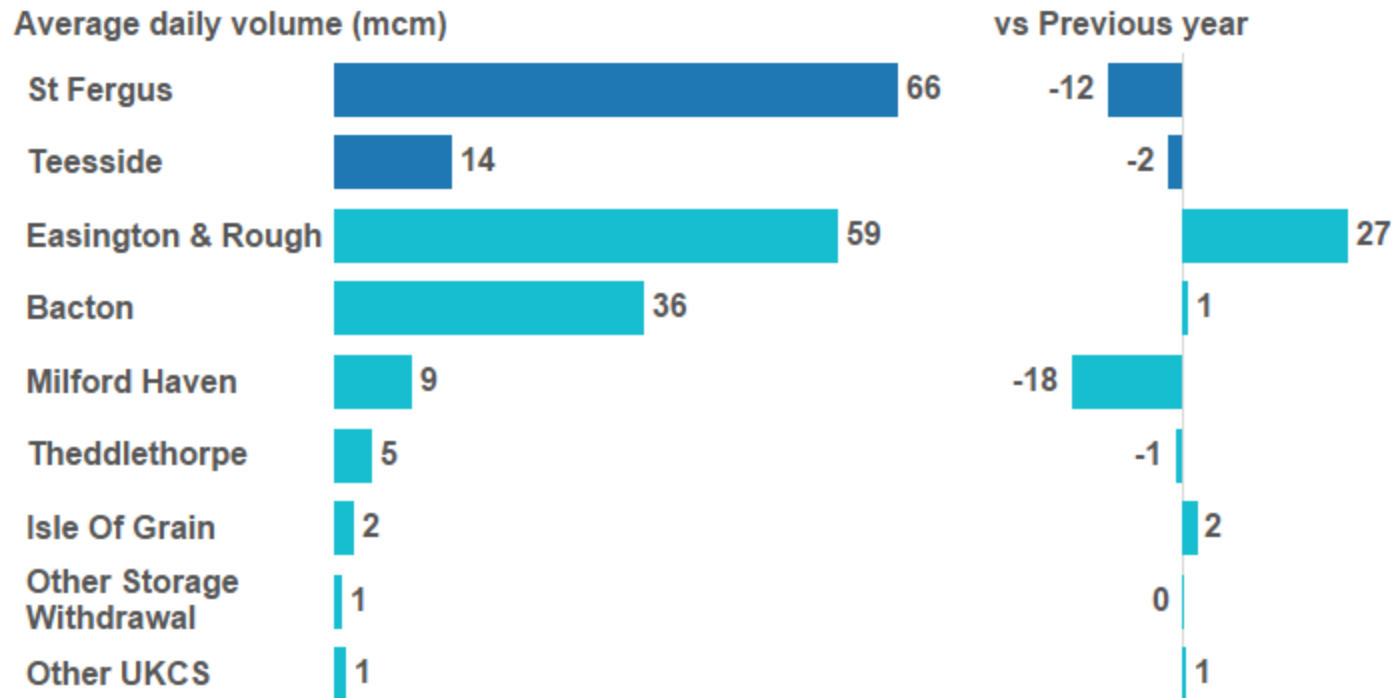
Trend versus previous year



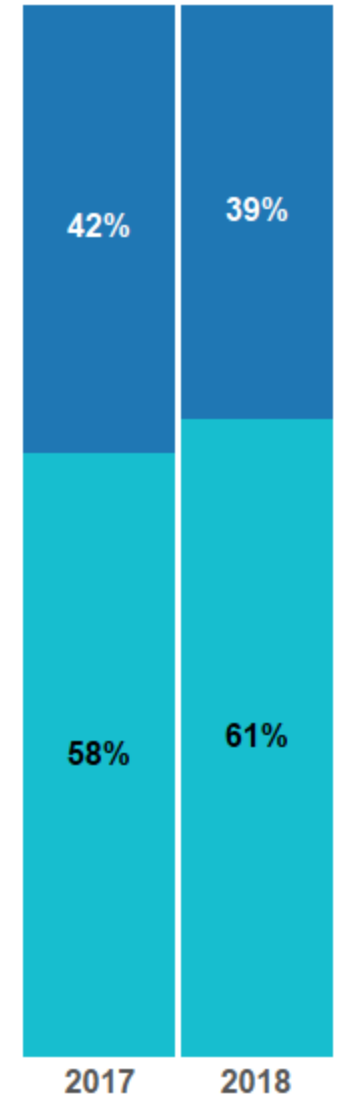
Location of NTS Supply

The location of gas coming onto the NTS has moved South

in line with the trend seen over Winter



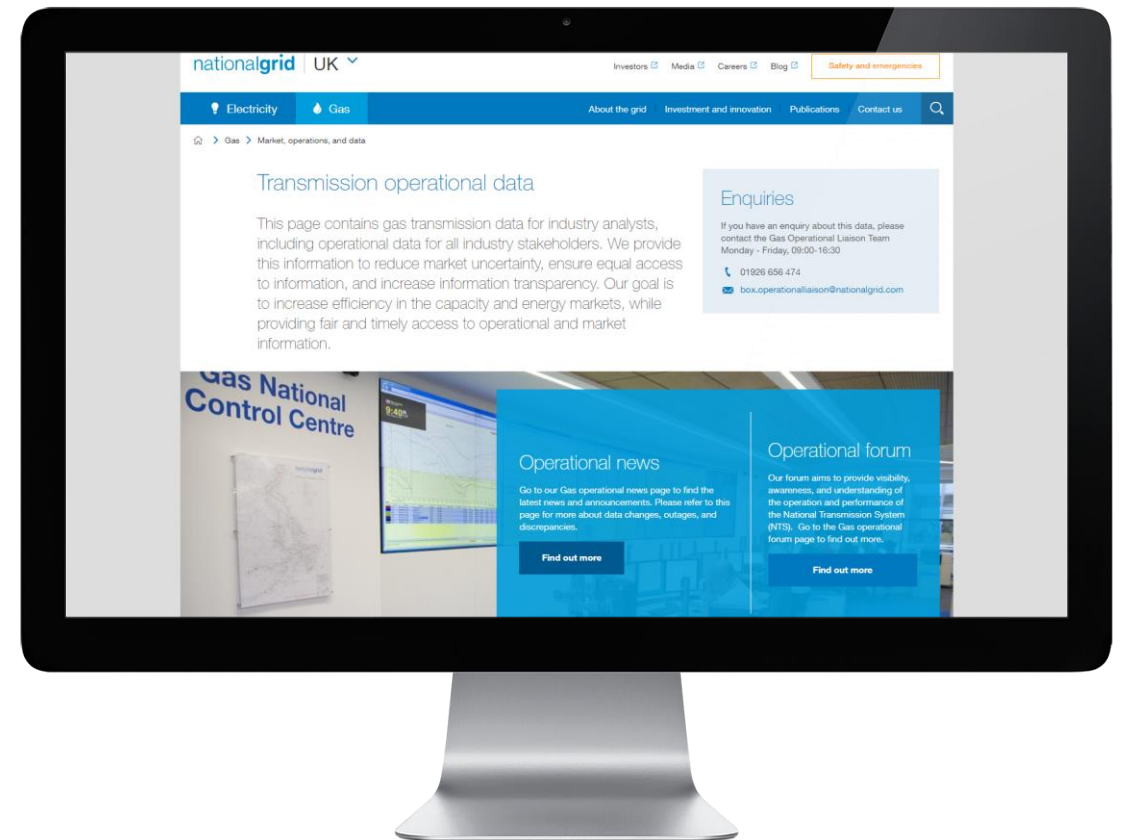
■ North of Easington
 ■ Easington and South of Easington



For more information...

A slide pack containing more detail on the following areas is available on the Ops Forum section of nationalgrid.com

- Supply and Demand data
- Neutrality costs
- Capacity
- NG residual balancing actions



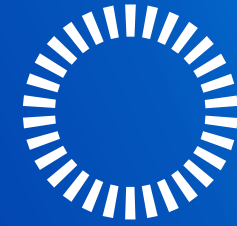
Morning Break

Group 1 Control Room Overview

Drop in sessions: Operational Data/Energy Balancing/Capacity
Team/Project CLoCC

Teas + Coffees





Gas
Networks
Ireland

Gas Networks Ireland

National Grid UK - Gas Operational Forum

28th June 2018

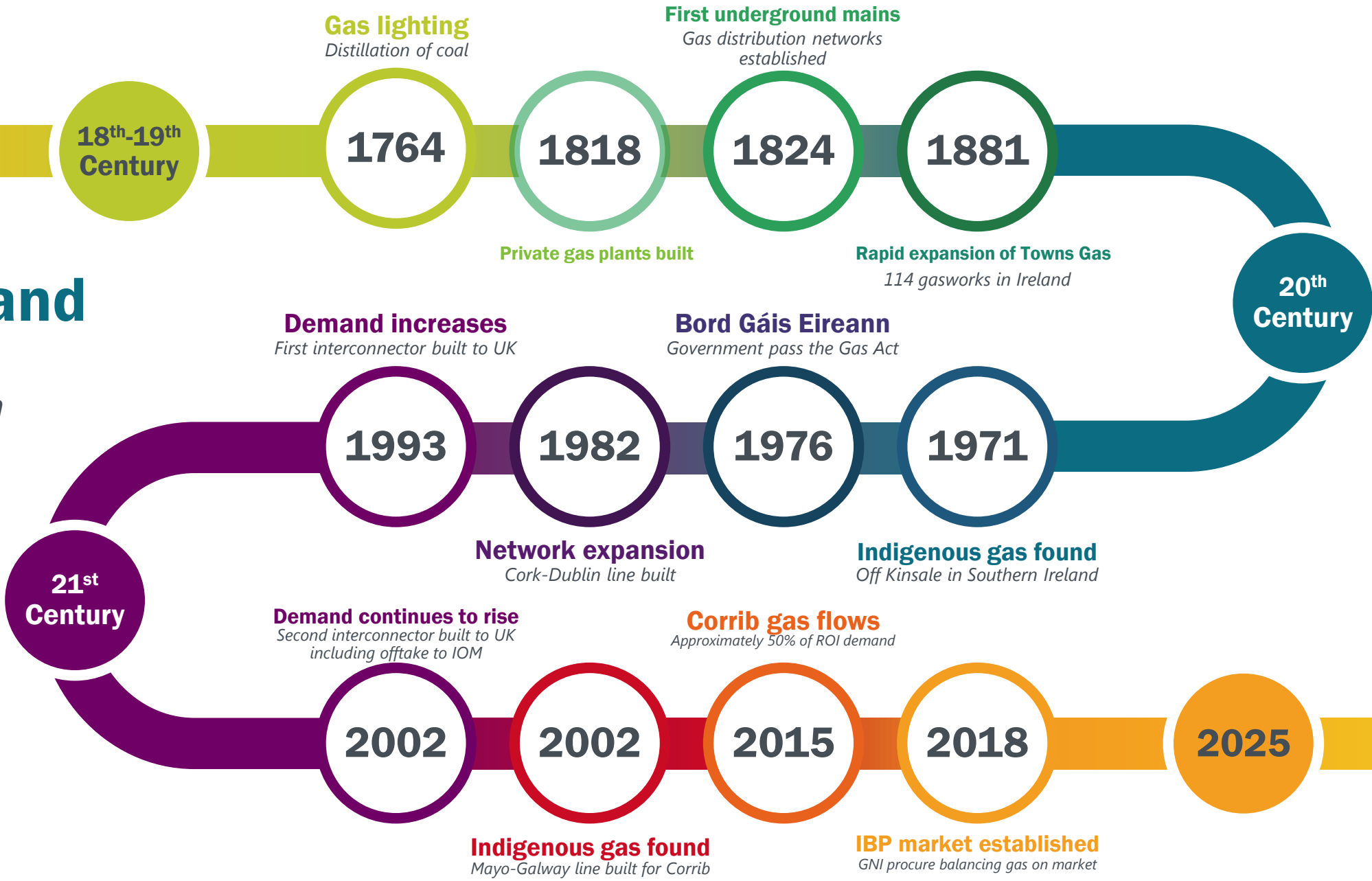
Wayne Mullins

Part of **ervia** group

Gas in Ireland

1700 - 2018

Where we came from



Gas Networks Ireland

How we came about



Corporate structure









Gas Networks Ireland overview

- Gas Networks Ireland owns, operates, develops and maintains the natural gas network in Ireland
- Ensuring public safety is our single most important objective
- Making sure that over 680,000 natural gas customers receive a safe, efficient and secure supply of natural gas, 24 hours a day, 365 days a year
- Connects all new gas customers to the network, regardless of gas supplier, and is responsible for work on service pipes and meters at customer premises
- Manages a 24-hour gas emergency response service and attends over 17,000 reported gas escapes annually with an average response time of 28 minutes
- Expanding into new gas industry areas including natural gas vehicles, renewable gas and smart metering



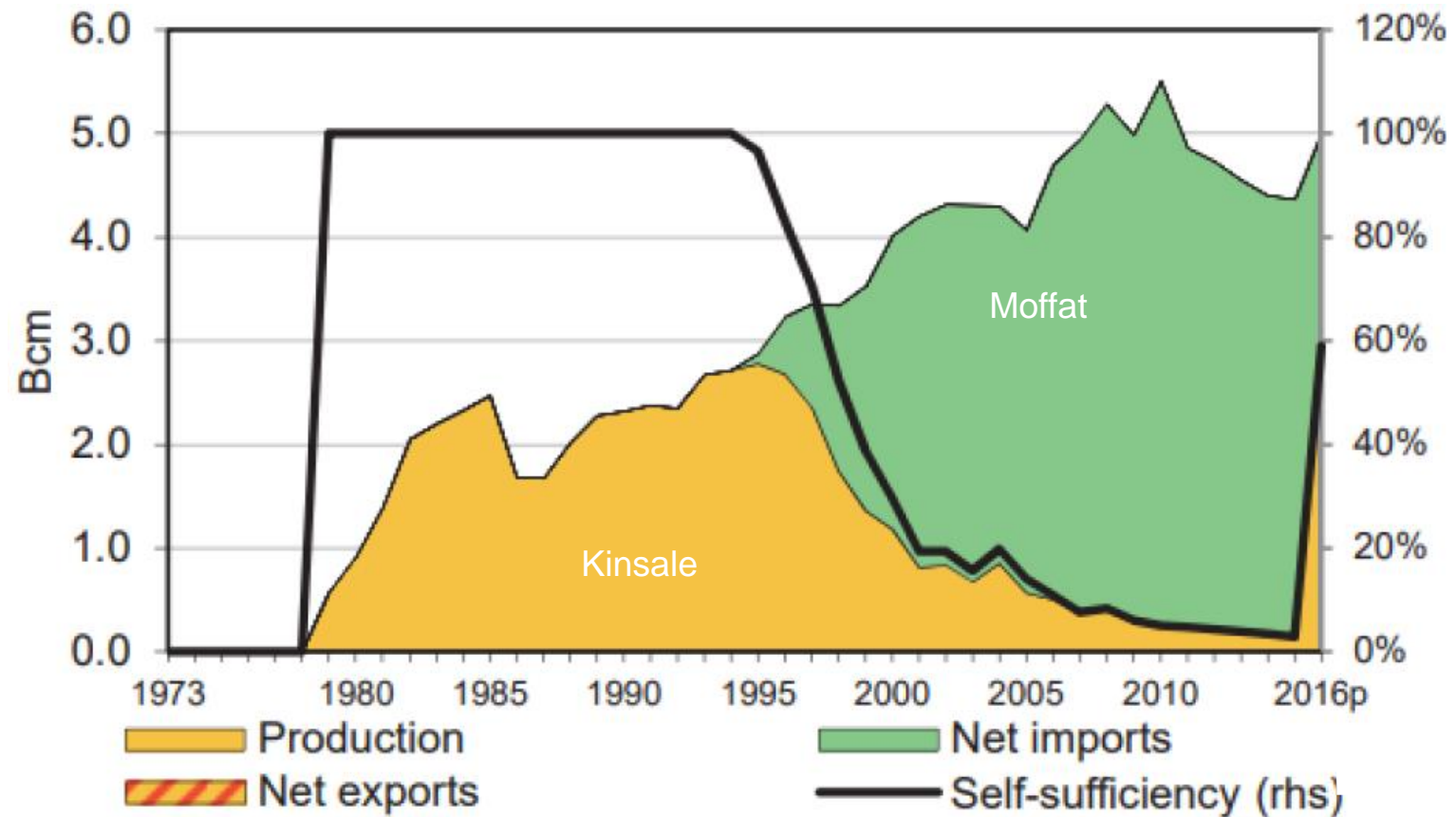
GNI network overview

-  **680,000 Customers**
-  **2,427 km Transmission pipeline** Fully odourised network
-  **11,527 km Distribution pipeline** ≤ 4 Bar
-  **PRE: 17,000 @ 28 min avg. response**
-  **27% of TPER**
-  **52% of Electricity demand**

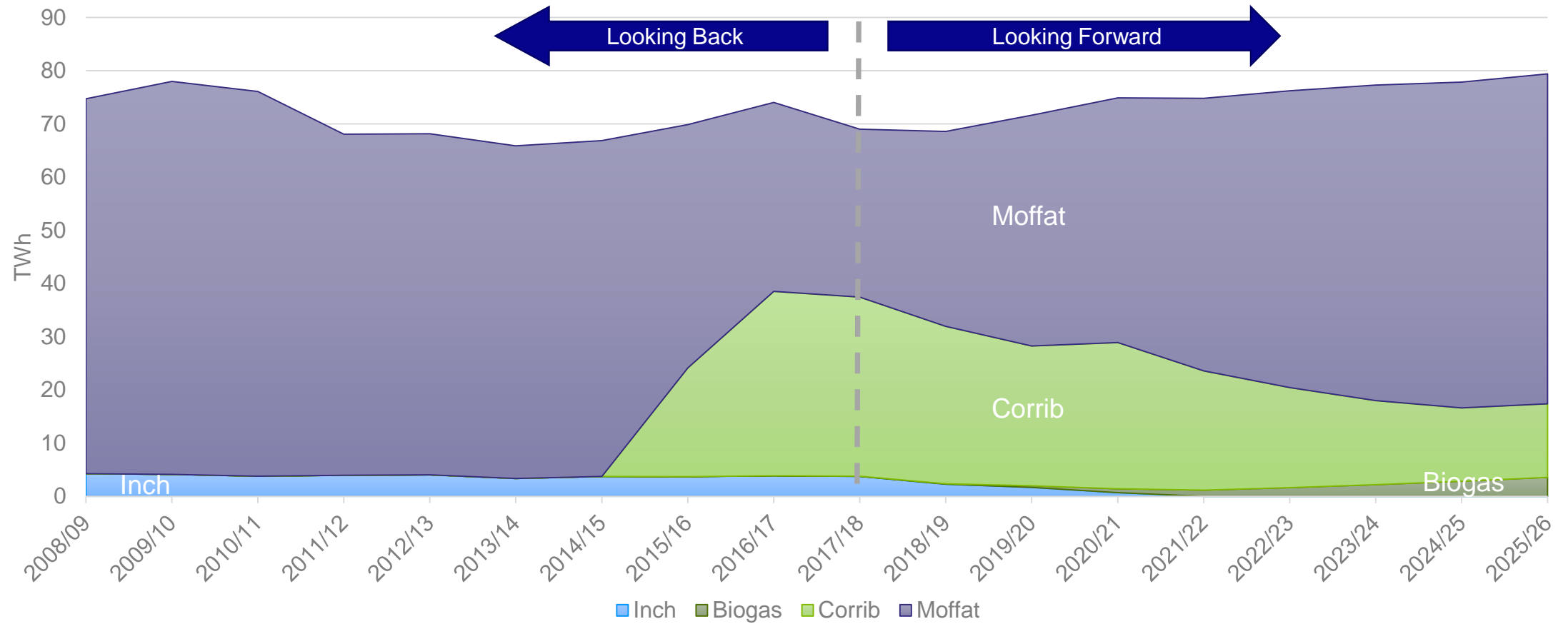
Entry Points	Exit points	Compressors
Moffat	Twynholm	Beattock
Corrib	Isle of Man	Brighthouse Bay
Inch	Gormanston	Midleton



GNI historic gas supplies



GNI future gas supplies



The future of Ireland's energy

Natural gas is an essential part of Ireland's energy mix as we transition to a low carbon future.

cleanest
fossil
fuel

Natural gas produces 57% less emissions than electricity, 40% less than coal and 24% less than oil

The future supply of natural gas for Ireland is extremely secure with indigenous sources of natural gas, interconnectors to a competitive and highly liquid UK gas market and gas storage opportunities.

security
of supply 

With the right investment it is possible to inject renewable gas into the natural gas grid to provide an indigenous, sustainable and renewable fuel that could provide 20% of Ireland's gas needs by 2030.


green
gas

an alternative
transport fuel

The use of Compressed Natural Gas (CNG) in the transport sector would significantly reduce Ireland's transport emissions, reduce dependency on oil and introduce greater competition. CNG produces 22% less CO₂ than diesel and is up to 35% cheaper.

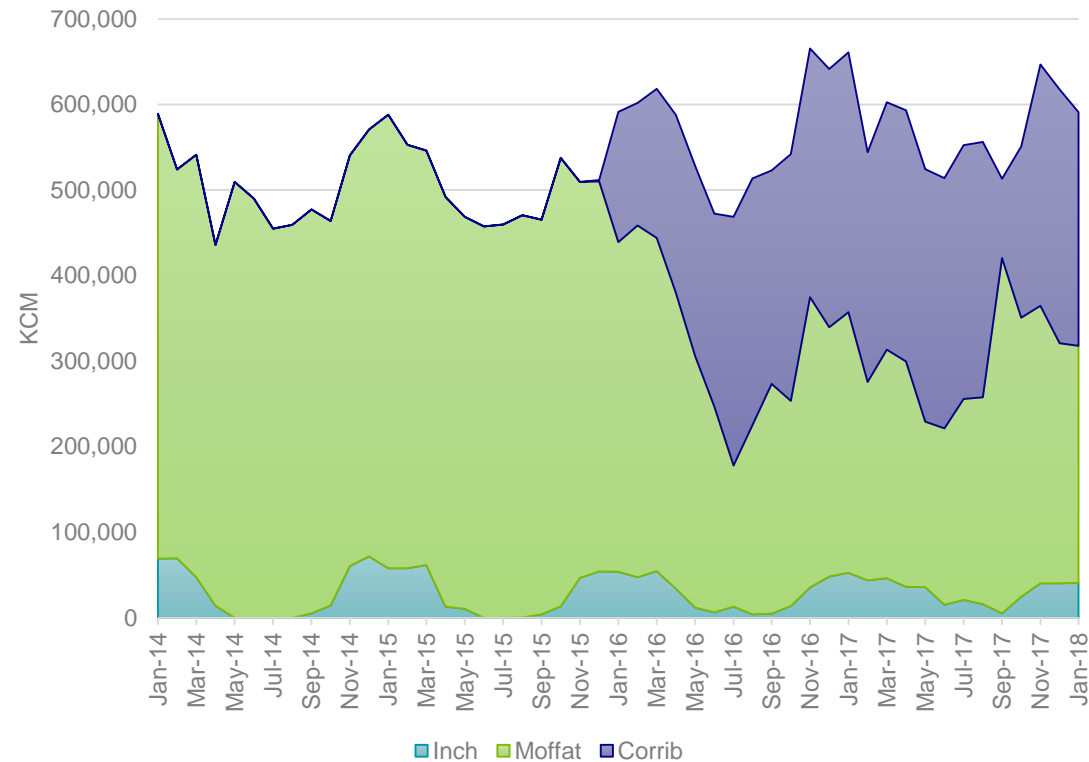
Renewable energy, by its very nature, is intermittent – sometimes the wind doesn't blow and the sun doesn't shine. So it needs the reliability of natural gas.

an ideal
partner for
renewables 

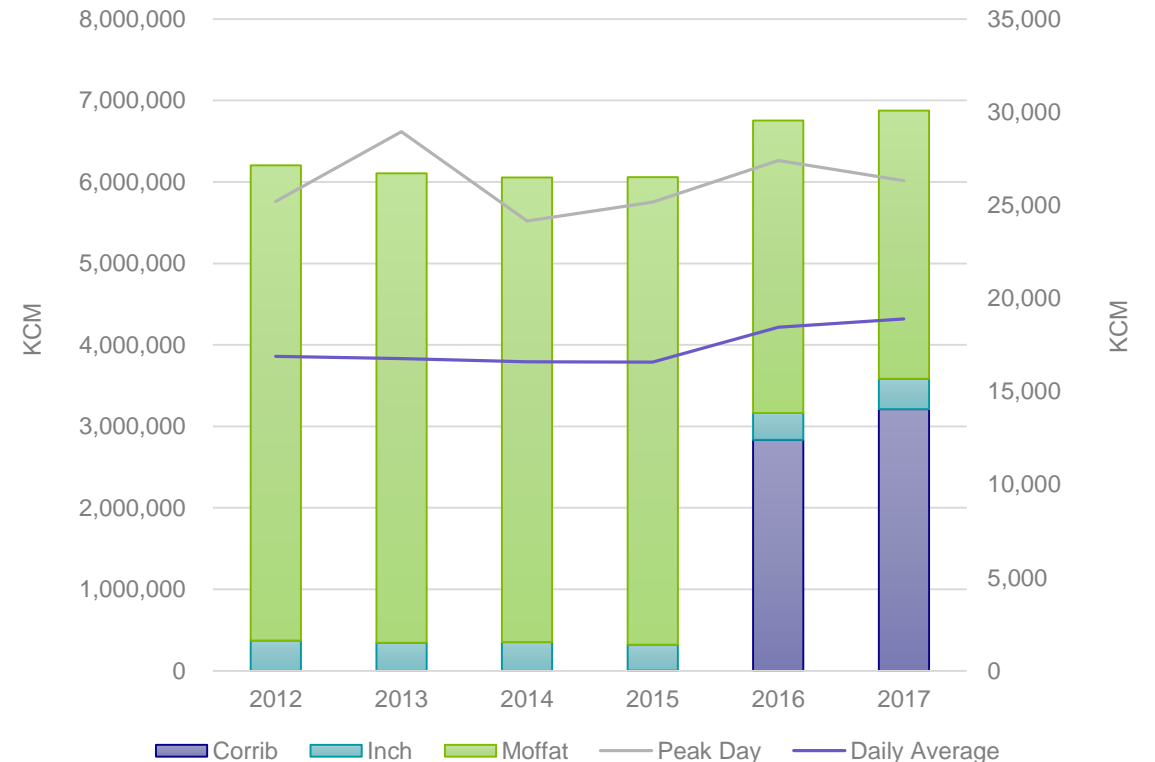
 Gas
Networks
Ireland

System overview - Throughput

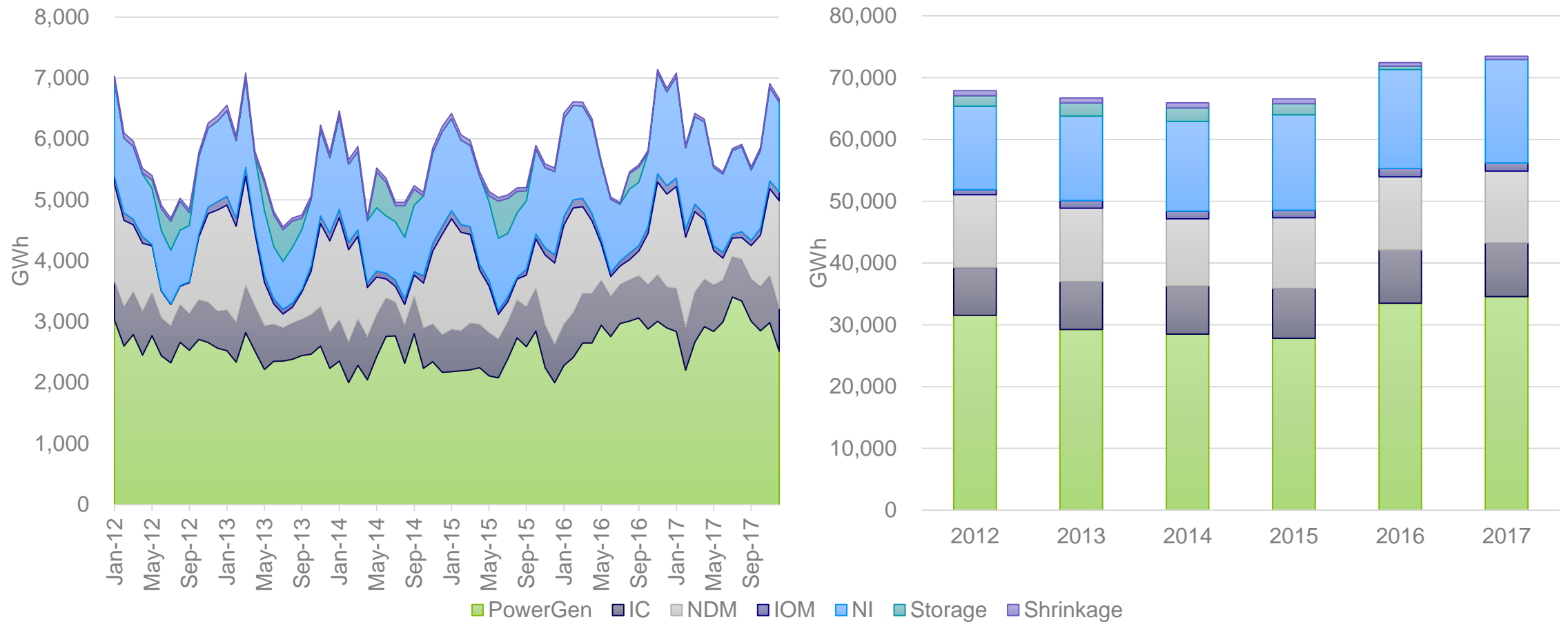
GNI Gas Supplies



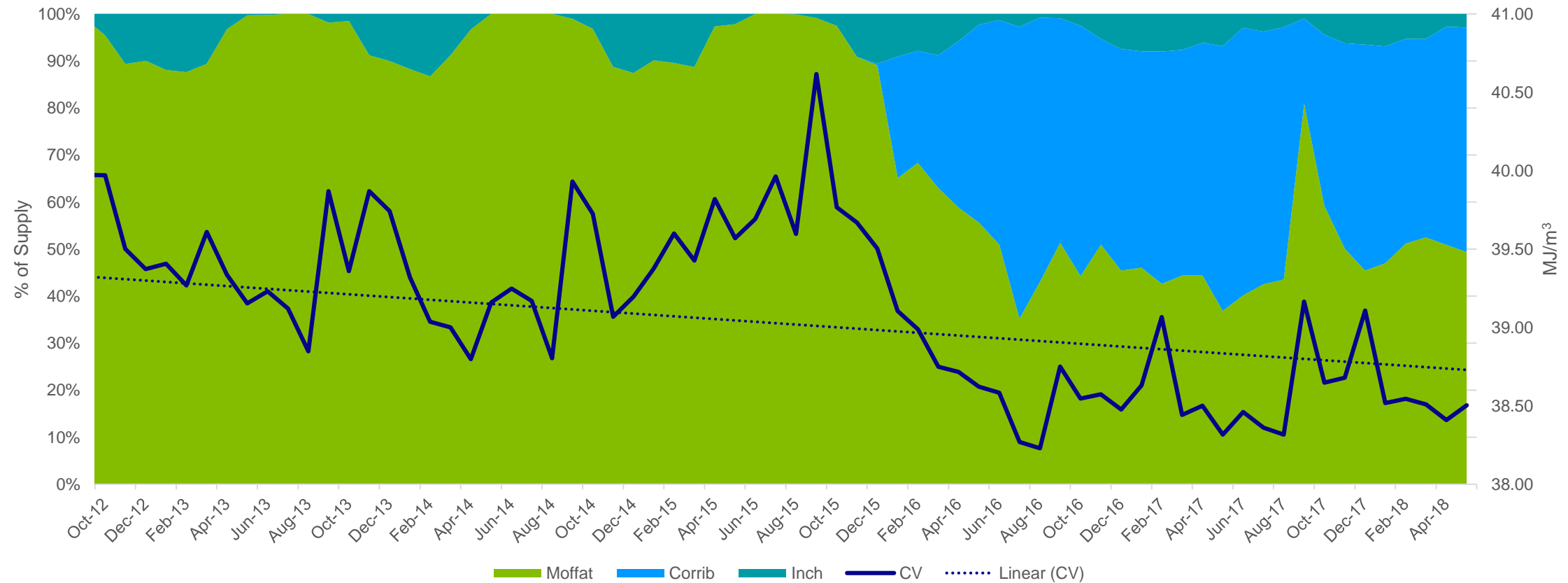
GNI System Throughput



System overview - Demand



System overview – Network calorific value



GNI commercial overview

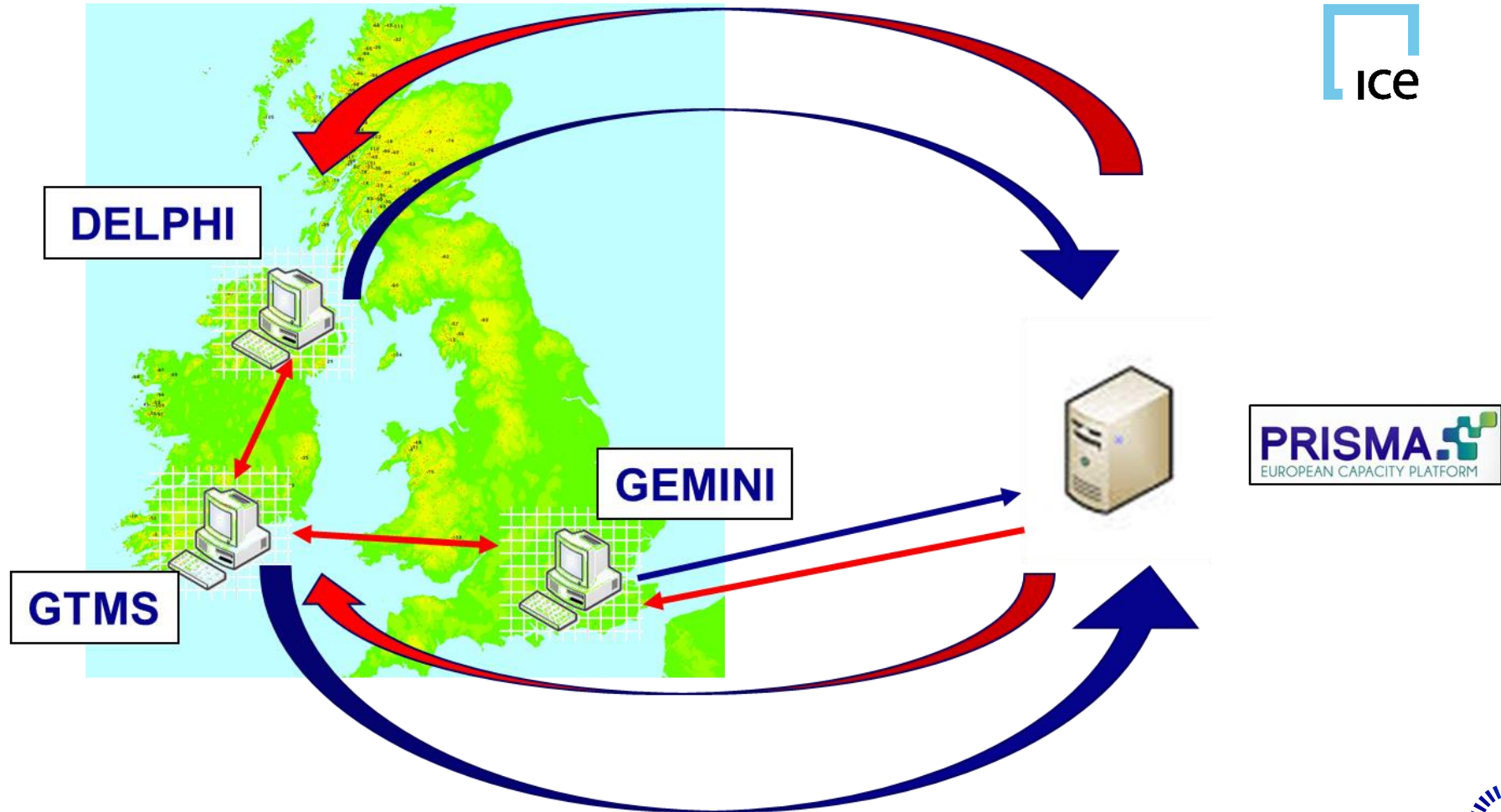
Commercial arrangements

- Code of Operations governing transportation rules for Tx & Dx
 - v5.02 released May 2018
 - Shipper code modification forums
- Entry exit system - 3 entry points
 - Moffat IP CQ/OPN/OBA – Matching
 - Corrib Non-IP Nom/DFN/OBA – Allocation Agent
 - Inch Non-IP Nom/IPN – Allocation Agent
- Daily balancing
 - No ZIP across shippers portfolios
 - Shippers only required to be balanced at end of gas day
 - INFR rules apply on entry and exit

Gas market

- 2 interconnection points
 - Moffat [UK→IRL]
 - Gormanston Phase 2 [IRL→NI]
- 4 active upstream customers
- 270 large IC end users
- 3 regulators
 - CRU_{IRL}, UR_{NI} & Ofgem_{UK}
- 28 gas shippers
- Virtual reverse flow product [IRL→UK]
- Multiple commercial platforms
 - GTMS, Delphi, Gemini, Prisma, Trayport, ICE

Scale of IT Interaction



Gas Networks & National Grid comparison



nationalgrid

	Gas Networks Ireland	National Grid
End users	680,000	c. 23 million
High pressure pipelines	2,400 km	7,666 km
Compressor stations	3	24
Above ground installations	192	c. 600
Annual throughput	74 TWh	c. 995 TWh
Balancing point	IBP Trading with prompt market – liquidity?	NBP Trading with liquid prompt and forwards market
Shipper balancing	Daily with imbalance charges	Not required at daily level but incentivised through cash-out regime
Network balancing as TSO	Maintain physical balance Cash neutral	Maintain physical balance Cash neutral
Interconnection points	Allocate as Nominate	Allocate as Nominate
Energy allocations	D+5	M+15 at Entry & D+5 at Exit

Irish gas market in statistics - Retail



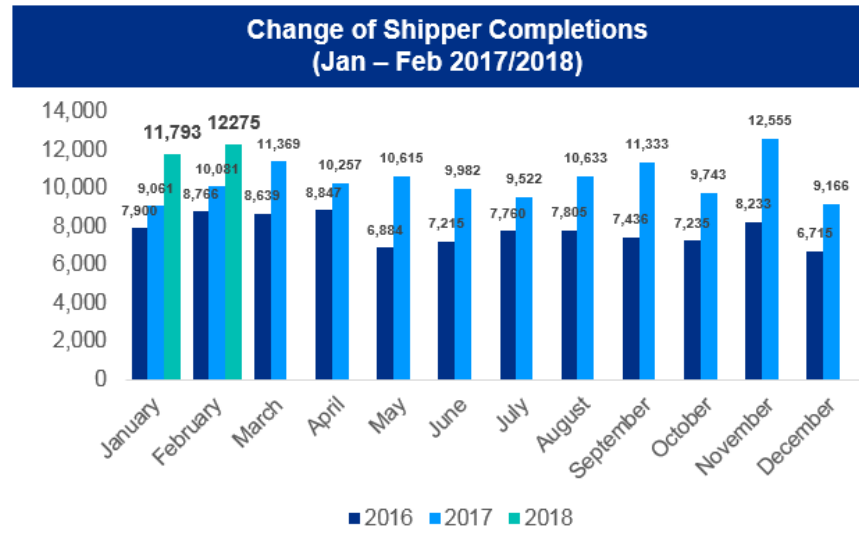
Usage per annum:

Standard House:
10,500 kWh/annum



Baseload Power Plant:
5,913,000,000 kWh/annum
* @ 90% load factor

9 Active Domestic Gas Suppliers:



Over 8,000 customers change supplier each month on average

c. 50% of customers have changed supplier

Over 106,000 Pay as you go Customers
c. 5,000 active retail PAYG outlets

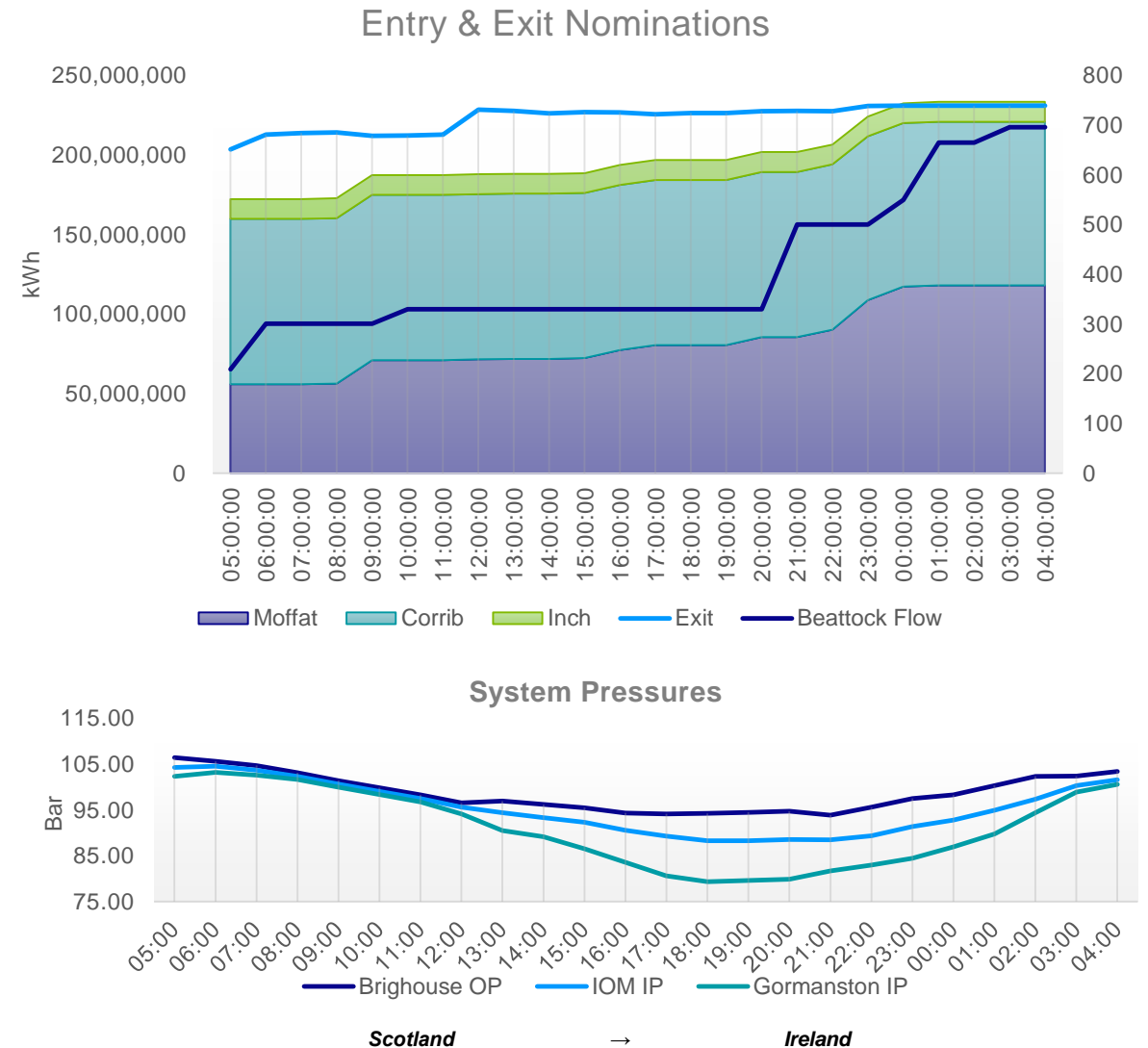
c. 10,000 vulnerable customers registered

Commercial difficulties - Overview

- Introduction of Balancing & Interoperability EU Network Code in Oct 2015
 - Removal of ZIP
 - Daily balancing
 - No incentive for shippers to balance portfolio within-day
- Daily imbalance charges increased to be more penal
 - Further worsened situation
 - INFR forcing shippers to wait until very late in gas day to nominate entry gas
 - Particularly with PowerGen as a result of dispatch uncertainty and risk of tripping
- Added flexibility for shippers resulted in reduced flexibility in network operation
 - Exasperated by previous illiquid market but too early to see if IBP market will alleviate
- New PowerGen market regime (iSEM) has potential to worsen situation
 - Reduced dispatch notification times
 - Potential to lower gas demand due to changes to capacity payments for generating units

Commercial difficulties – Network effects

- Outside of depleting linepack within-day, a number of other issues can occur
- Sharp upward Re-nominations late in the day:
 - The Transporter being unable to deliver the requested End of Day Quantity (EODQ) in the most efficient manner
 - Increased stop/start of compressors, increased maintenance, labour and shrinkage costs as well as the likelihood of a compressor trip
- Sharp downward Re-nominations late in the day:
 - A quantity of gas in excess of the requested EODQ being delivered at Moffat
 - Transporter reducing flow rate in the remaining hours of the day such that the low flow limits of the Beattock Compressor Station are breached resulting in poor efficiency and increased shrinkage costs
 - Interruptions to the Moffat Virtual Reverse Flow product

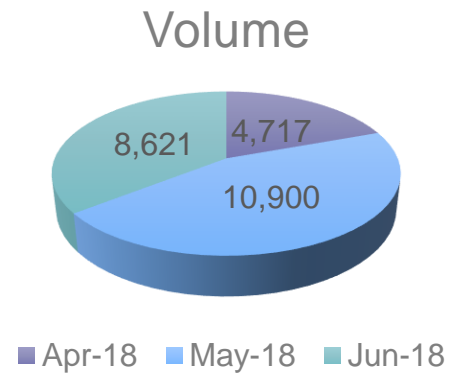
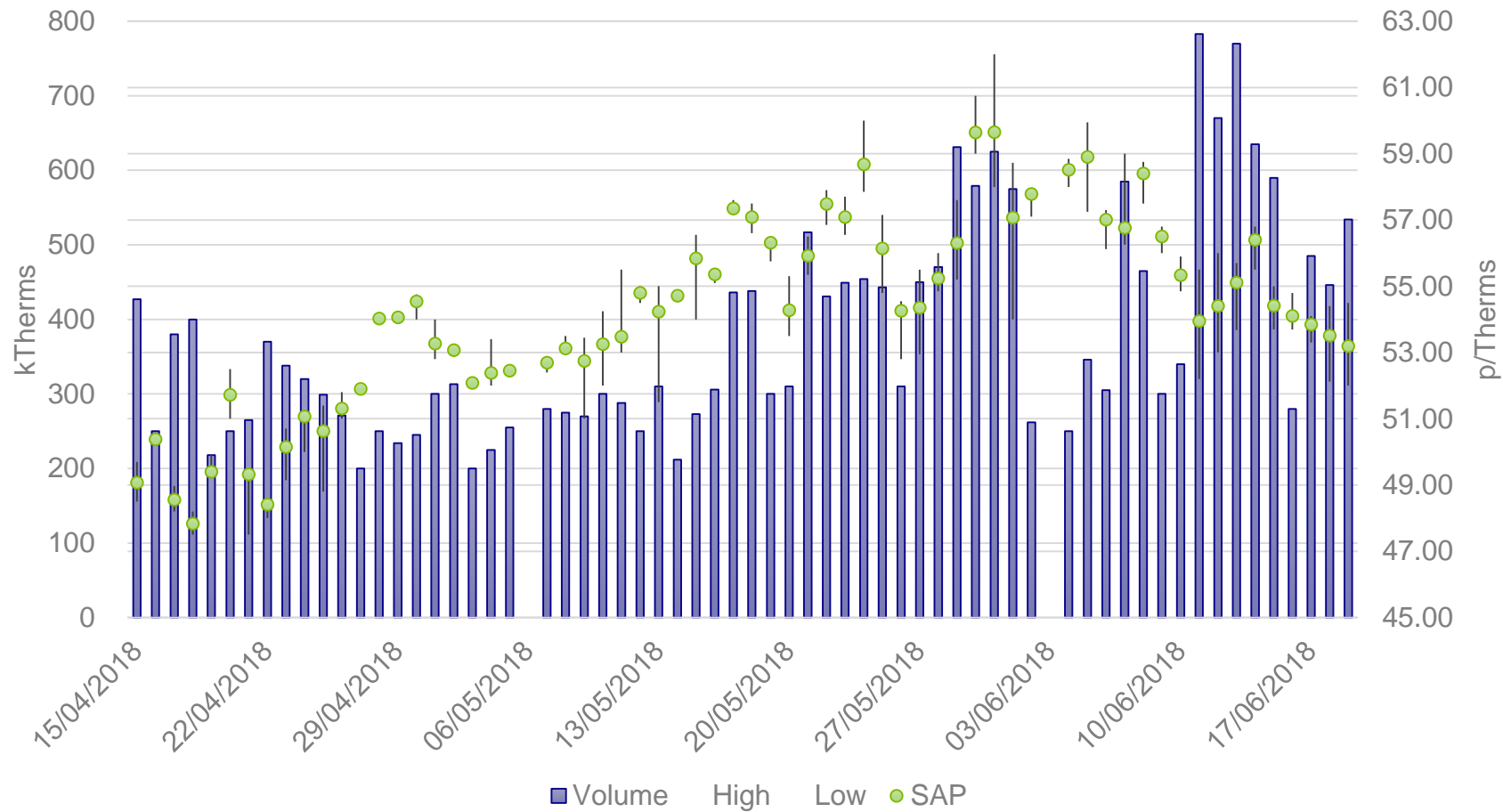


Gas trading

- The Irish Balancing Point (IBP) is a notional point on GNI's network for the facilitation of bi-lateral trades.
- Previously GNI procured balancing gas via rigid bi-lateral contracts with limited volumetric and timing constraints
- As part of EU Balancing Network Code 312/2014, GNI have to procure balancing gas from a traded market to ensure compliance
- GNI utilise Trayport Vision provided by Energy Brokers Ireland to facilitate the IBP market
- 11 shippers currently registered since platform launch

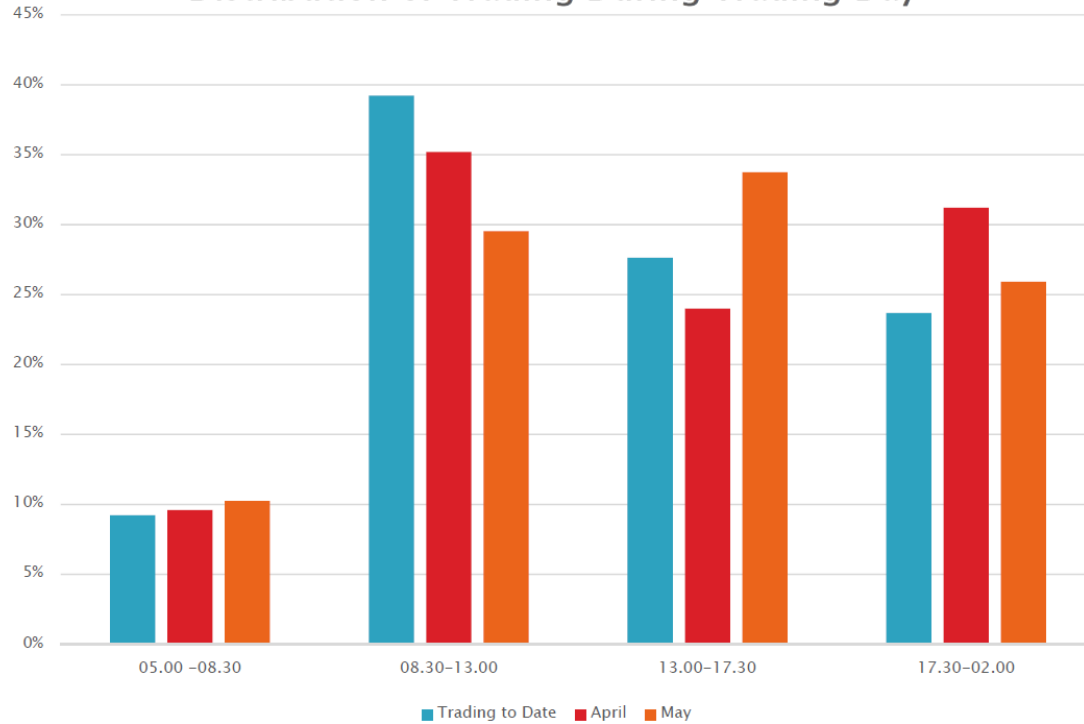
The screenshot displays the Trayport Vision trading platform interface. At the top, there is an 'Activity' window showing recent transactions with columns for time, quantity, and price. Below this, the main interface is divided into several sections for different gas products: 'IBP p/therm', 'IBPINBP p/therm', 'Moffat Capacity Bundled €/MWh/day', and 'Bellanaboy Capacity €/MWh/day'. Each section contains a table with columns for 'exec code', 'qty', 'bid', 'ask', and 'code'. The 'IBP p/therm' table shows a bid of 65.00 and an ask of 62.00. The 'IBPINBP p/therm' table shows a bid of 65.00 and an ask of 62.00. The 'Moffat Capacity Bundled €/MWh/day' table shows a bid of 65.00 and an ask of 62.00. The 'Bellanaboy Capacity €/MWh/day' table shows a bid of 65.00 and an ask of 62.00. The interface also includes a sidebar on the left with a tree view of market hours and a status bar at the bottom.

IBP activity overview



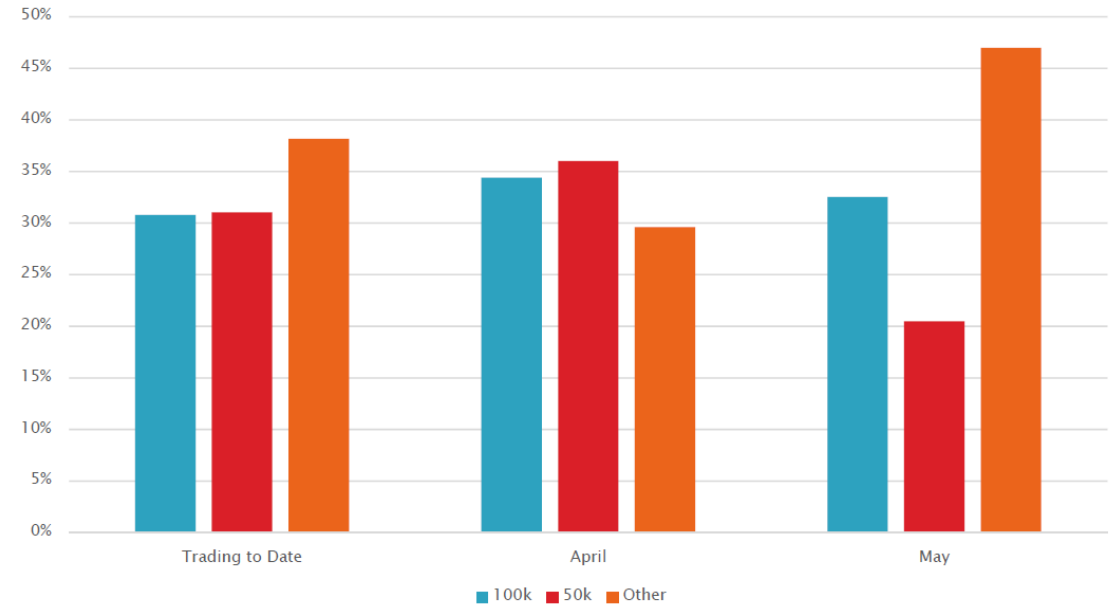
IBP activity overview

Distribution of Trading During Trading Day



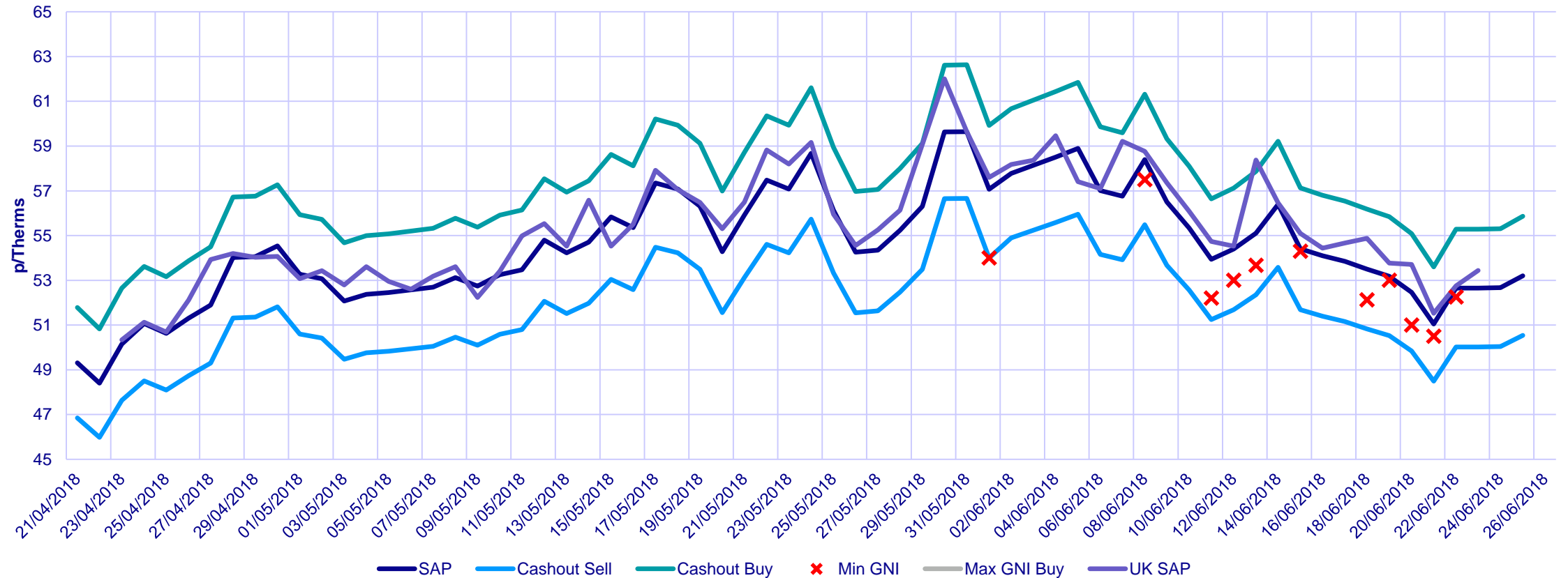
Average number of trades per day: 5.5

Transaction Size Distribution – therms



Average daily volume: 340,000 Therms

IBP activity overview



Horizon scanning - Innovation on our network

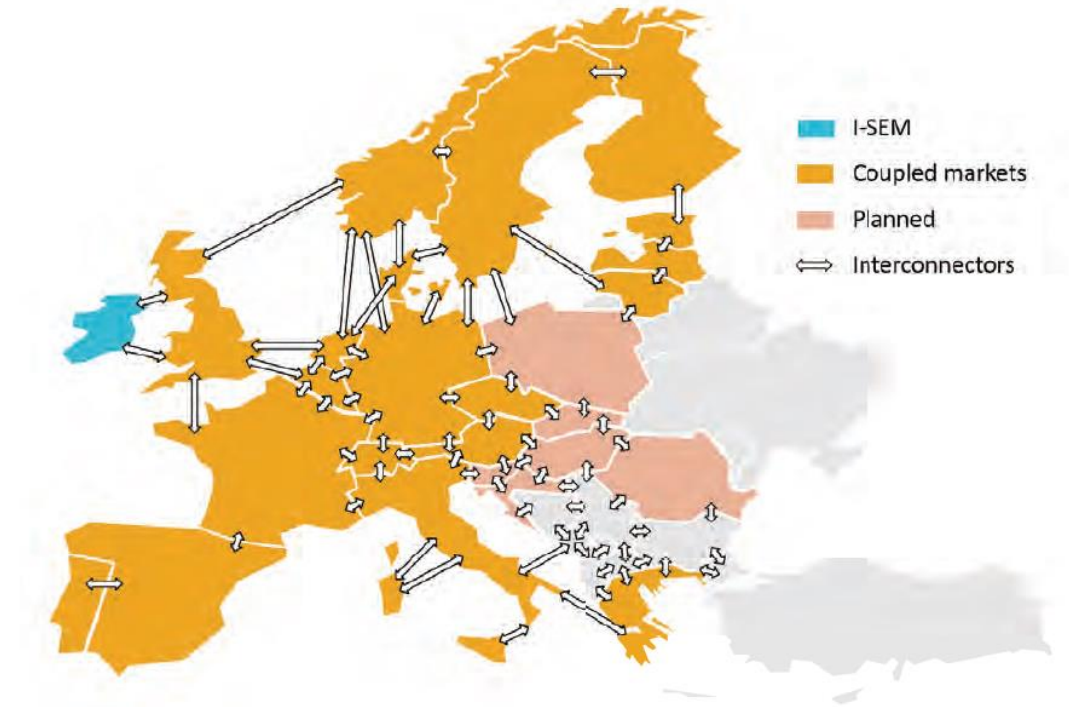
- Twinning project in Scotland
 - 50km of steel mains
 - Security of supply
- Biomethane/Renewable gas
 - First injection site under design
- Compressed natural gas
 - 3 units now operational
 - GNI, private and public usable units
- Carbon capture and storage (CCS)
 - Project planning and feasibility currently underway
 - Hydrogen usage



Horizon scanning - iSEM

iSEM – Integrate Single Electric Market

- Comply with EU target model
- Market coupling involves system operators working together to allocate cross-border capacity and optimise cross-border flows
- Capacity auctions over payments
- Optimise cross border flows day ahead and achieve market coupling through Euphemia
- Potential impacts:
 - New opportunities for hedging and risk management
 - Increased requirements for generators and retailers to forecast and trade output/demand up to hour-ahead



iSEM - Results of 1st capacity auction

- 100 generator units participated
 - 93 cleared
 - 7 failed to get a contract
- Total capacity offered: 9,014MW
- Total contracted capacity: 7,774MW
- Key casualties in the auction round:
 - One Huntstown plant failed to secure a capacity contract
 - Others who failed to secure a contract included:
 - Kilroot coal units
 - ESB Marina
 - ESB old Aghada unit

Moody's issue warning over threat to close Viridian power plants

Closing power plants 'won't hit supply' – EirGrid

Power plant talks on future to begin

Implications for GNI:

Our power generator customers no longer have a fixed revenue stream from capacity payments and are vulnerable to deterioration in revenue stream and/or in the extreme a risk of mothballing plant and therefore discontinue using gas



Thank you for your attention

Shrinkage Incentive

George Charalampous
Gas Shrinkage and Emissions Trading Manager



Components of Gas Shrinkage

Compressor Fuel Use

CFU

- Fuel we buy to run the compressors. This can either be gas or power.
- Publish baseline for every quarter
- Baseline methodology is approved by the industry and regulator

Unaccounted for Gas

UAG

- Remaining quantity of gas which is unallocated
- Un-accounted gas is caused by meter and data errors
- Vented gas is included

Calorific Value Shrinkage

CVS

- Gas which cannot be billed due to application of the Gas Regulations 1996
- The calorific value shrinkage is calculated based on average flow

- Outturn cost (70 – 80 £m/yr) recharged through commodity charges
- The NTS Shrinkage Incentive Methodology Statement describes the calculation of specific components within the shrinkage incentive scheme
- Consult industry on proposed modifications

Scope of Shrinkage Incentive

- ***Price risk management***

- Achieved through forward purchases (quarters) of baseline volumes of gas and electricity.

- ***Volume efficiency***

- Maintain an operational management of the volumes efficiency

- ***Triad avoidance***

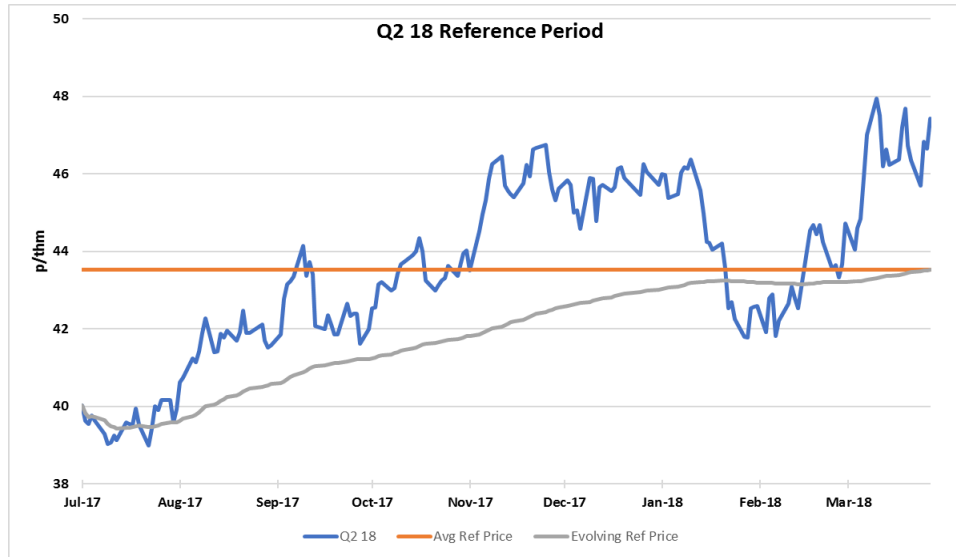
- Look for opportunities to make cost savings by shifting electric compressors use away from peak hours

- **Methodology statement**

- Deliver the above based on a fixed methodology agreed with the industry. The methodology is to be reviewed each year and amend accordingly subject to consultation.

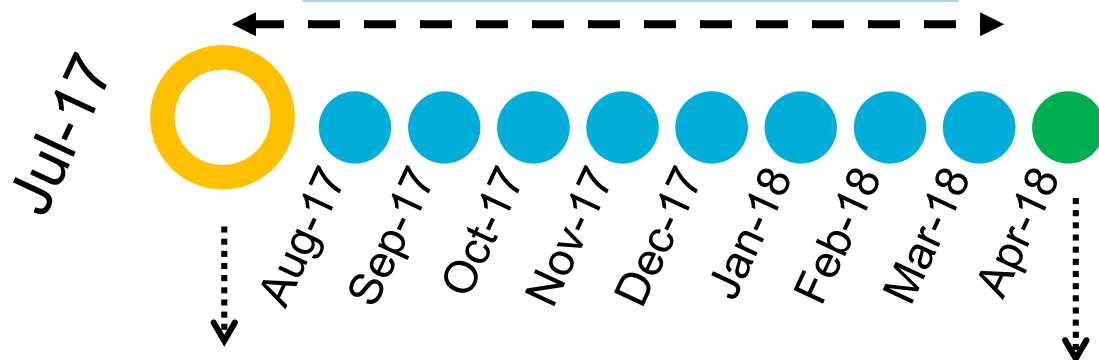
Forward Energy Procurement Methodology

Reference period of Q2-18



- The reference price is known at the end of the reference period
- Key challenge is to buy below the reference price
- Our performance is linked to that

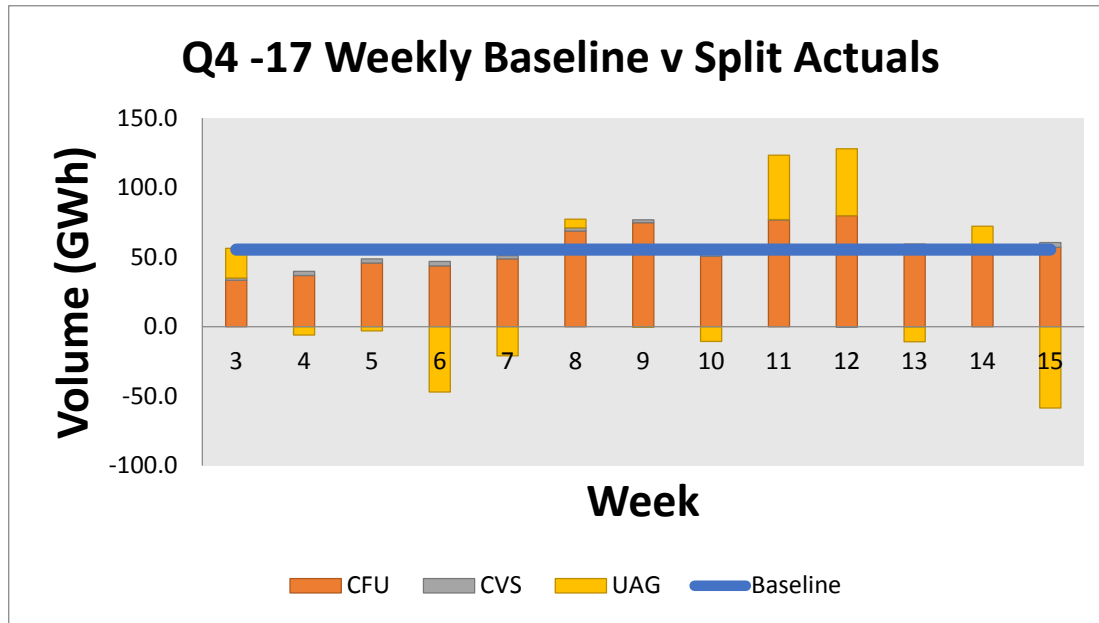
9 months reference period



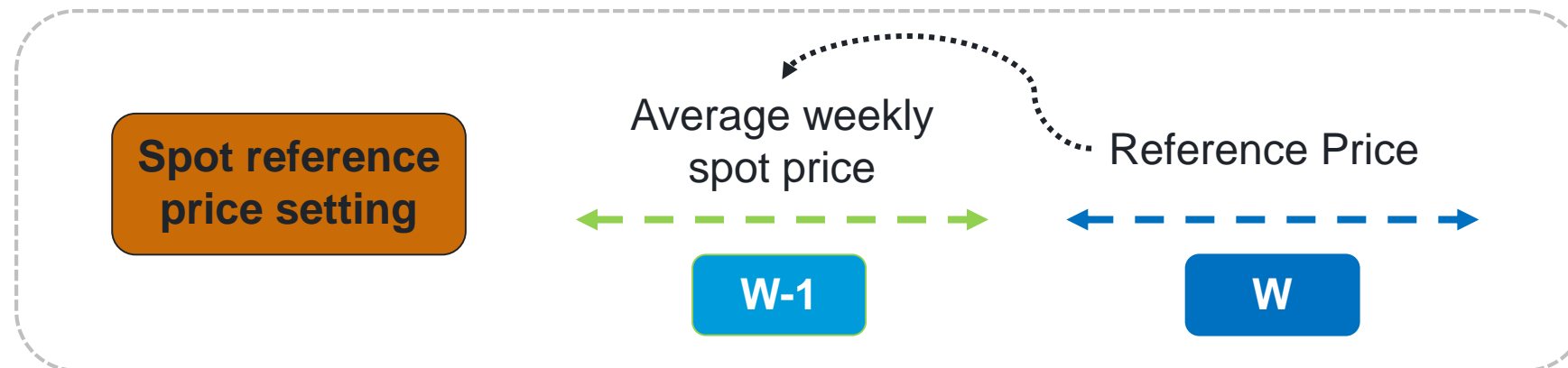
Start to trade Q2-18. Baseline has been published in June 2017

Delivery of Q2-18 contract

Spot Energy Procurement Methodology

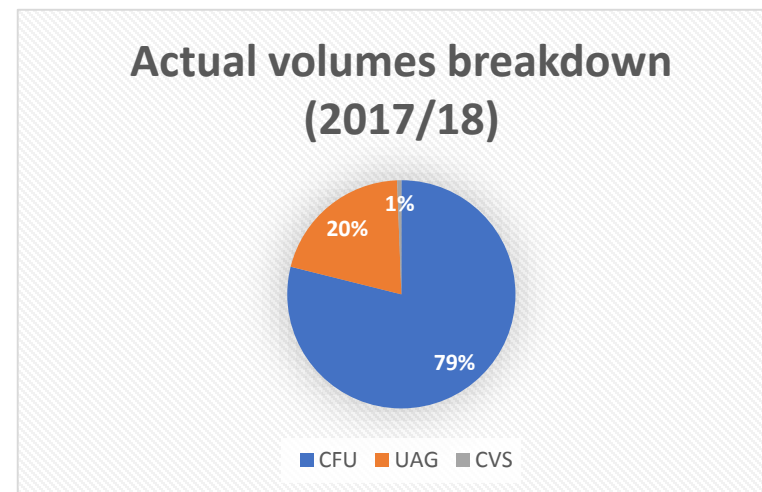


- Any deviation from the Baseline is traded on the spot market
- We trade UAG as well to cover on the day imbalances
- CVS volume is very low



NTS Shrinkage Overview

- *2017/18 Total volume: 3818GWh**
- 0.4% of annual system demand
 - 78.9% Compressor Fuel Usage
 - 20.5% Unaccounted for Gas
 - 0.6% was Calorific Value Shrinkage
- Cost of £70m - £80m per year
 - recharged to shippers though NTS commodity invoice.
- National Grid Gas is incentivised to minimise the costs incurred in its role as NTS Shrinkage Provider, in particular through
 - Price risk management, measured against a market benchmark
 - Volume efficiency, assessed post-year based on outturn conditions



* Gas equivalent in 2017/18 formula year



UIG Resolution

Weekly Progress Update 22 June 2018

DM read rejection update

Pot 1 Key messages

Outstanding last week = **1**

Closed this week = **1**

0 meter points still impacting UIG
(estimated consumption not accurate)

Row Labels	DMSP	N/A	SHIPPER	MAM	XOS	Grand Total
Assigned	0	0	0	0	0	0
Closed	0	176	0	0	0	176
Fix in Progress	0	0	1	0	0	1
New	0	0	0	0	0	0
Monitor	0	0	0	0	0	0
Failed	0	0	0	0	0	0
Total	0	176	1	0	0	177
Total number of meter point queries open						1

Pot 2 Key messages

Outstanding last week = **34**

New Rejections identified = **3**

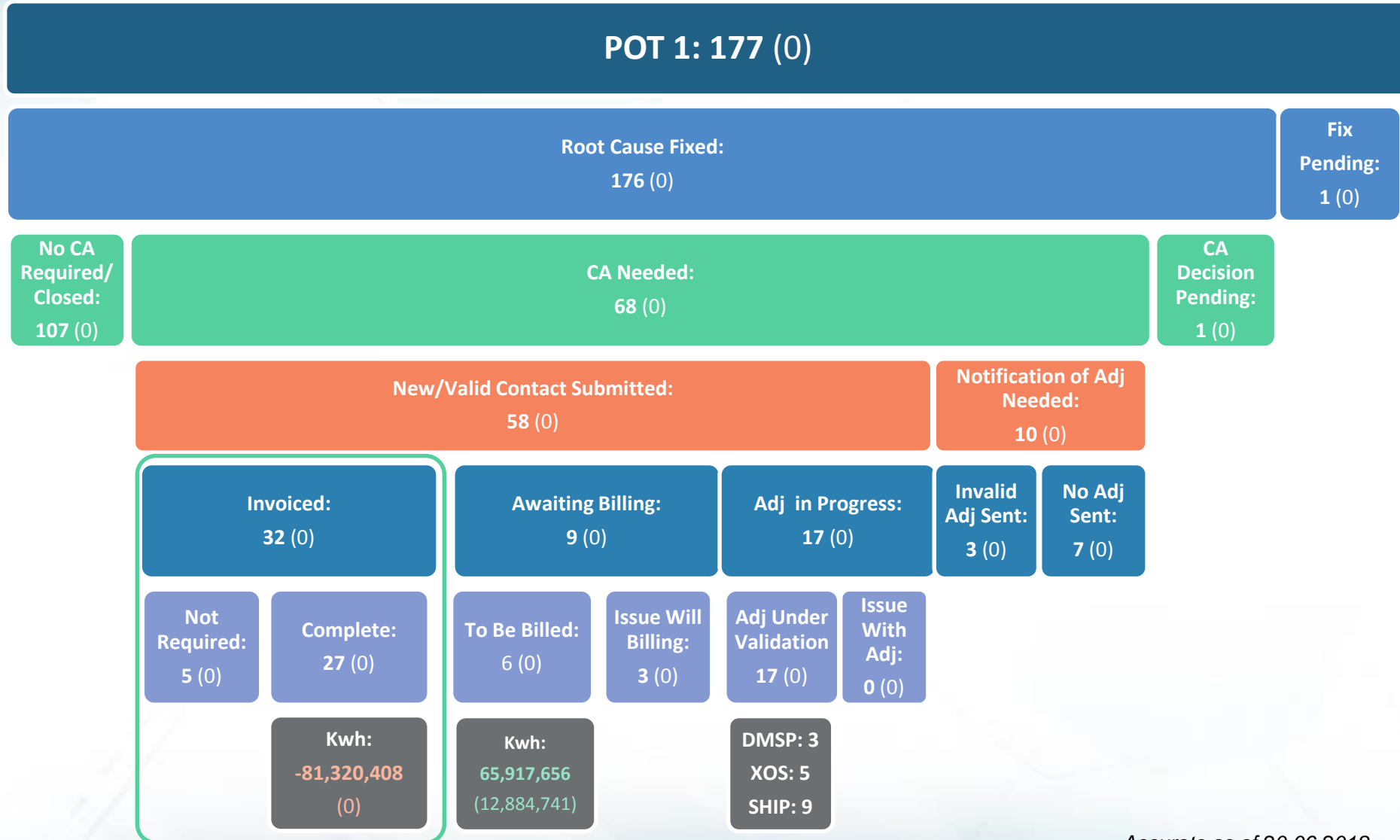
Closed this week = **8**

14 meter points still impacting UIG
(estimated consumption not confirmed as accurate)

Row Labels	DMSP	N/A	SHIPPER	MAM	XOS	Grand Total
Assigned	14	0	1	6	0	21
Closed	0	198	0	0	0	198
Fix in Progress	3	0	0	0	2	5
Fixed	0	0	0	0	0	0
New	3	0	0	0	0	3
Monitor	0	0	0	0	0	0
Total	20	198	1	6	2	227
Total number of meter point queries open						26

Accurate as of 22.06.2018

DM Financial Adjustments Progress

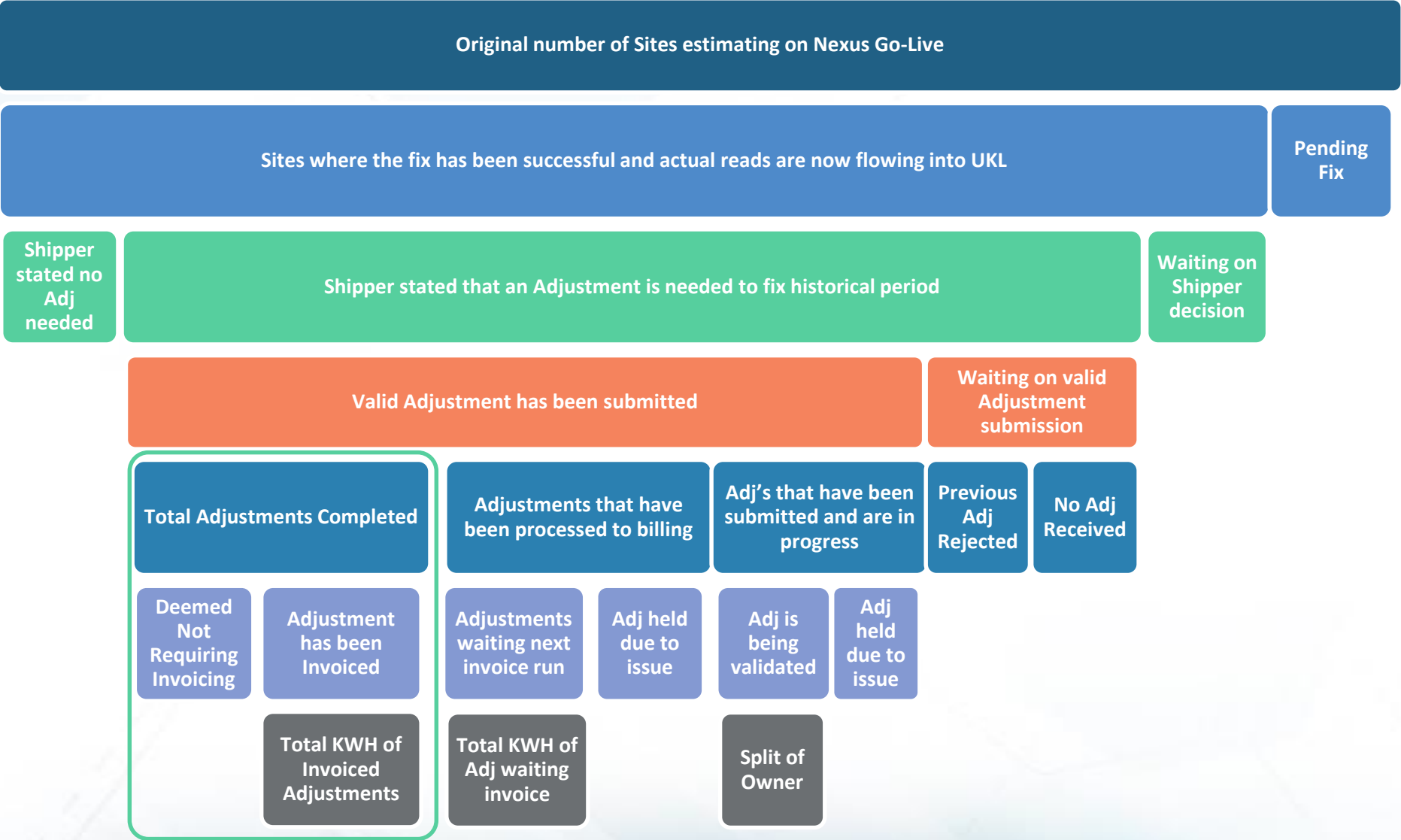


Exposure: Retrospective CA not yet invoiced = **38 (0)**
 [Fix Pending] + [CA Decision Pending] + [CA Needed] – [Invoiced]

Accurate as of 20.06.2018



DM Financial Adjustments Guide



Exposure MPRNs - AQ & Class

Exposure: Retrospective CA not yet invoiced = **67** (0)
[Root Cause Pending] + [CA Decision Pending] + [CA Needed] – [Invoiced]

HISTORIC		
CLASS	AQ ROLL (Kwh)	MPRN
1	14,534,819,022	67
2	0	0
3	0	0
4	0	0
	14,534,819,022	67

Details of outstanding MPRNs when the issue was originally reported to investigate and attempt resolution

CURRENT		
CLASS	AQ ROLL (Kwh)	MPRN
1	9,790,576,406	40
2	333,423,941	21
3	0	0
4	177,418,161	6
	10,301,418,508	67

Details of exposure MPRNs as of today

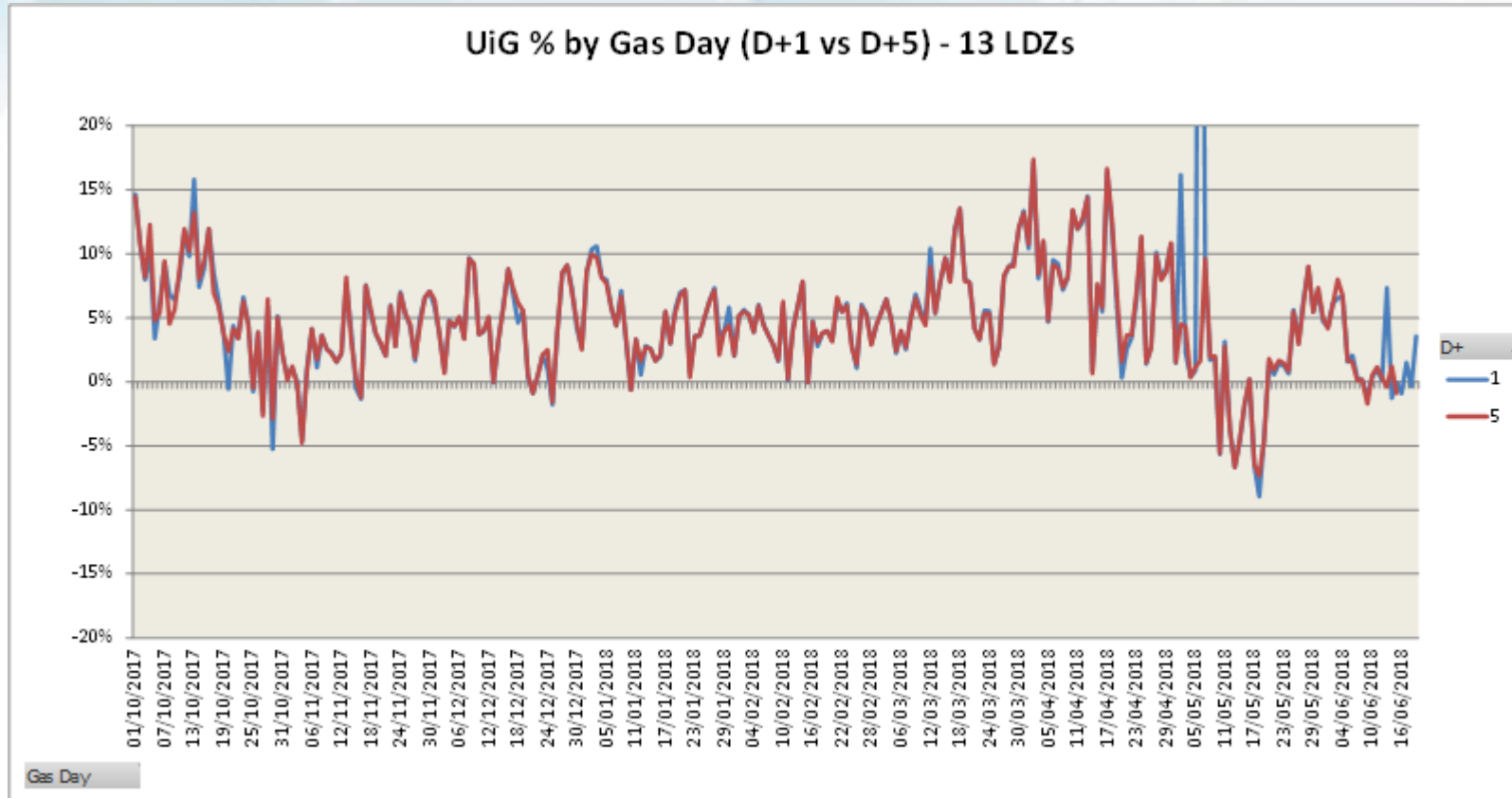
Site AQs provided at the request of industry parties.

Please note that site AQ is not an indicator of the amount of any likely consumption adjustment: this is dependent on the duration of the issue and the magnitude of the difference (if any) between original estimates and actual usage, and to what extent the business-as-usual processes have not corrected the billed position.

Accurate as of 25.04.2018



Latest UIG Volatility



Key Comments:

- Gas Day 2nd May 2018 - The majority of DM Measurements for this gas day were not present in the Gemini system, in time for the first run of Allocation. This resulted in erroneously high Unidentified Gas values across all LDZs. This issue was investigated and resolved in time for the second run of Allocation.
- Gas Day 6th May 2018 – NDM Allocation failed to calculate for this gas day on the first run of Allocation, affecting all LDZs. This resulted in erroneously high Unidentified Gas values (c70%) across all LDZs. This issue was investigated and resolved in time for the second run of Allocation.

Accurate as of 19.06.2018

Additional UIG Update

Mod 0658 and associated Change Proposal

Mod0658 (Urgent) – CDSP to identify and develop improvements to LDZ settlement processes

- Modification currently with Ofgem following Mod Panel on 21st June 2018
- In parallel a Change Proposal (XRN4695) has been raised by Xoserve.
- Both routes request additional work to further investigate causes and contributors to UIG levels and volatility
- Aim to:
 - report measures that could reduce overall levels to <4% of LDZ throughput by 31/12/2018, and
 - report on absolute levels of UIG and measures which might reduce variation of UIG to +/- 0.5% of absolute levels by 31/10/2018, and
 - Make recommendations as required to the industry on actions to be taken to reduce levels and volatility of UIG

QSEC Auction – 18th May 2018

Summary

- Business users ran the Deal Process for all the locations under QSEC auction and received an error message 'Database Error'
- This was due to data being locked within the database

Resolution Plan

- Root Cause Analysis is underway
- Multiple data fixes had to be carried out due to various data issues after the initial problem
- To resolve all issues and publish the auction successfully, all locations had to be rolled back to the first stage (Process Deal) and the auction had to be processed again

B2B Layer Connectivity 31st May 2018 -1

Summary

- On Thursday 31st May 2018 at 09:05 UK BST, Gemini was unable to send files to external parties including adjacent TSOs, PRISMA and REMIT
- Service was restored at 13:07 UK BST.
- Gemini was unable to send DELORD files to TSOs resulting in EU Nominations into Gemini not being confirmed;
- Gemini was unable to send EU Auctions into PRISMA;
- The daily REMIT files were delayed for a short period but were sent the same day (all files transferred successfully with no missed data);

B2B Layer Connectivity 31st May 2018 - 2

Resolution Plan

- As an immediate workaround, changes were made to Gemini routing which restored the connectivity to the B2B service.
- The root cause analysis is still being undertaken.

Gemini IE11 Browser Compatibility Issue -1

Summary

- A Gemini application change was implemented on the 13th May 2018 to resolve various compatibility issues when accessing Gemini on the Microsoft Internet Explorer v11 browser.
- Following implementation, Xoserve began to receive calls stating they were unable to login into Gemini via the IX connection and an error message was being observed.

Gemini IE11 Browser Compatibility Issue -2

Resolution Plan

- A workaround was provided to external parties which was successful in a number of cases
- For a number of parties this did not work, as a result Xoserve made a global configuration setting within the Gemini infrastructure to resolve the compatibility issue.

Gemini Disaster Recovery 16th June 2018 -1

Summary

- During the annual Gemini disaster recovery exercise on the 16th June 2018, Xoserve encountered an unexpected technical issue with Control-M (batch scheduler) resulting in Gemini being unavailable until 18:30 UK BST.
- The timing of the system restoration meant that the Gemini failback was deferred on Sunday morning and Gemini is currently operating at our DR site.

Gemini DR 16th June 2018 - 2

Impacts

- 4 IP auctions failed to publish in Prisma as a result of the outage, specifically IPDONEX, IPDISEC, IPDADNEX, IPDADSEC
- Any missed bids for the day-ahead auctions were placed on the 17th June as part of the within-day auctions.
- Failed to allocate bids for DISEC auction for gas day 17th June. Corrective actions are being reviewed by National Grid.
- EU nominations could not be processed until 18:30 UK BST
- UIG allocation was published next day
- On-line and API access not possible

Gemini DR 16th June 2018 - 3

Resolution Plan

- Rebuild of the corrupted Control-M server database index (Oracle have since confirmed the issue is a known bug)
- Activities to mitigate this issue will be built into subsequent DR plans
- Gemini failback to primary site being considered for 15th July

Gemini Slowness 19th June 2018 - 1

Summary

- Old users were not being released from Gemini causing new users to queue
- This caused slowness in accessing Gemini
- This was not as a direct consequence of the Gemini DR

Resolution Plan

- Restarts of affected hardware have resolved the issue
- Enhanced monitoring now in place to count the queues
- Root cause still under investigation

UIG Issues Summary 1 – 03/05/18 & 17/05/18

Summary

- Issue encountered with the first run of Energy Allocation for Gas Day 2nd & 6th May 2018. NDM Allocation failed to calculate for this gas day, for all LDZs, This was corrected within the day.
- The cause of this issue is due to a code fault since introduction of Gemini Consequential Change.

Resolution Plan

- Daily monitoring by Gemini IS Operations team
- Permanent code fix to be deployed into Gemini on 8th July 2018.

UIG Issues Summary 2 – 05/06/18

Summary

- Issued experienced on 5th & 6th June due to an incorrect file loaded for 5th June, causing a delay to processing impacting the allocation run on the 6th June. This was corrected within the day.
- This was due to a system issue by Networks Aggregator systems experiencing a technical issue when transferring the file between systems.

Resolution Plan

- Ongoing discussion between Xoserve and National Grid on root cause, service improvement and scenario planning.

UIG Issues Summary 3 – 08/06/18

Summary

- All shippers with active Unidentified Gas meters in Gemini would have experienced a blank value within the Gemini demand screen for the next gas day nominations.
- Incorrect demand forecast had been sent to Gemini from National Grid's Aggregator service, due to a Distribution Networks submitting incorrect values to NG.

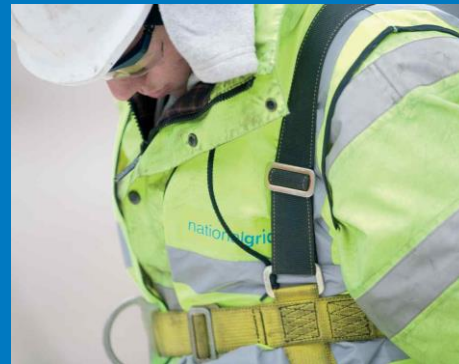
Resolution Plan

- A Service Improvement is currently in progress from Gemini Application Support to help support the business process.
- Feedback to Distribution Networks on issue and subsequent impacts.

Gemini Contingency Exercise - Starburst

- 15 customers agreed to participate
- 10 took part on the day
- 9 Energy Balancing pro-formas received
- 8 NTS Capacity pro-formas received
- 7 customers took part in both Energy and Capacity
- Some feedback received following the exercise to improve communication
- Lessons Learned exercise will be taking place shortly and the output published on xoserve.com. We are happy to provide the link to this list once it has been published

UNC Modifications



Overview

Live UNC Modifications

- **Modification 0653 – Updating the parameters for the NTS Optional Commodity Charge**
 - Aims to replace the NTS Optional Commodity Charge with an Optional Capacity charge, thereby providing an enduring solution at all entry and exit points and compliance with the EU Tariff Network Code

- **Modification 0662 – Revenue Recovery at Combined ASEP's**
 - Aims to create equal treatment for storage capacity booked at Combined ASEP's with that of a 'Storage Site' in terms of any revenue recovery charge based on Capacity bookings.
 - The requirement for this modification is dependant on which (if any) of the 0621 suite of modifications is implemented.

UNC Modifications issued for consultation

- **Modification 0628S and 0629S are enabling modifications for Project CLoCC (www.projectCLoCC.com)**
 - 0628S – Standard Design Connections – PARCA process – introduces a Capacity indicator within the new Connections Portal to allow an accelerated process for standard design connections with a green indicator.
 - 0629S – Standard Design Connections – A20 process: will introduce the concept of a Standard Design Connection into the Application to Offer (A20) process to provide a more economic and quicker process for Standard Design connections
 - The consultation on Modifications 0628S and 0629S closes on 13th July

UNC Modifications awaiting an Ofgem Decision

- Ofgem have given a minded to position on the Unidentified Gas Modifications 0642, 0642A and 0643, this position was to reject the mods. However Ofgem are currently running a Impact Assessment consultation on the Modifications which closes on 5th July.
 - www.gasgovernance.co.uk/0642
- Modification 0636, 0636A, 0636B, 0636C and 0636D propose to update the parameters for the NTS optional commodity charge

Implementation of a new NTS Charging Methodology



UNC and other Change Process

UNC Modification Proposal 0621

- Seeks to implement a new Charging Methodology for use of the NTS
 - More stable, more predictable, less volatile charges
 - Replacement of the Long Run Marginal Cost (LRMC) principal used for charge setting with a Capacity Weighted Distance (CWD) model
 - Changes required to comply with EU Regulation 2017/460 ('EU Tariff Code')
- Raised June 2017, Workgroup concluded May 2018, currently subject to formal UNC consultation process
- Ten alternative solutions (0621A, 0621B, 0621C, 0621D, 0621E, 0621F, 0621H, 0621J, 0621K and 0621L)
- Compliance required with EU Codes by 31 May 2019 with new arrangements proposed to be in place for gas year Oct 2019 onwards

UNC Modification Proposal 0621

- Some of the main changes proposed are:
 - No discounts for short term firm capacity (currently up to 100%)
 - Fixed discount of 10% for interruptible/off peak capacity (currently up to 100%)
 - Reduction of the discounts available for 'short-haul' arrangements (a new distance cap is proposed)
 - Reduction of the geographical disparity in charges levied on distribution networks

Modification Proposal 0621 Alternatives

- Eight are broadly based on 0621 and only have relatively small differences eg: different discount levels
- Two are materially different
 - 0621J proposes a 'Postage Stamp' pricing methodology (as opposed to CWD)
 - 0621B continues use of commodity to manage under recovery from low levels of capacity revenue (as opposed to capacity to manage under recovery)

Further Actions to Facilitate Implementation

- Preliminary ACER consultation (National Grid) May – July 2018
- Ofgem Impact Assessment
- Final ACER consultation
- ACER views on GB proposals (e.g. compliance with EU Tariff Code)
- Modification Proposal 0621 decision (~March 2019)
- National Grid and industry stakeholders changes to processes / systems

Gas Regulatory Change Programme Update



GB Charging Review

EU Tariff Code

Gemini Sustain Project

Gemini Change Summary

Current

Service Desk improvement project

- High priority P3 calls
- Enhanced scripts
- Additional training

Continuous improvement

Short Term System Provision

EU/GB Charging

Re-platforming of existing system

Potential application enhancements based on customer feedback

Reliability and Continuity of service

Long Term System Provision

Provision of a system fit for the future

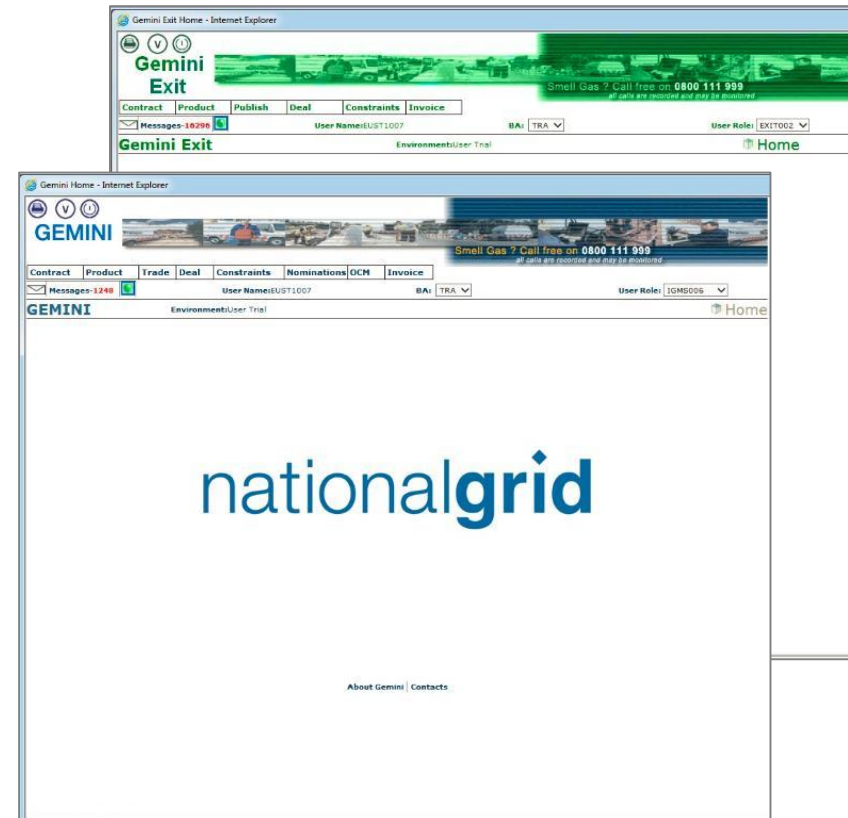
Future Capacity and Balancing Services

Ensuring services remain fit for purpose and deliver value

Fit for the future

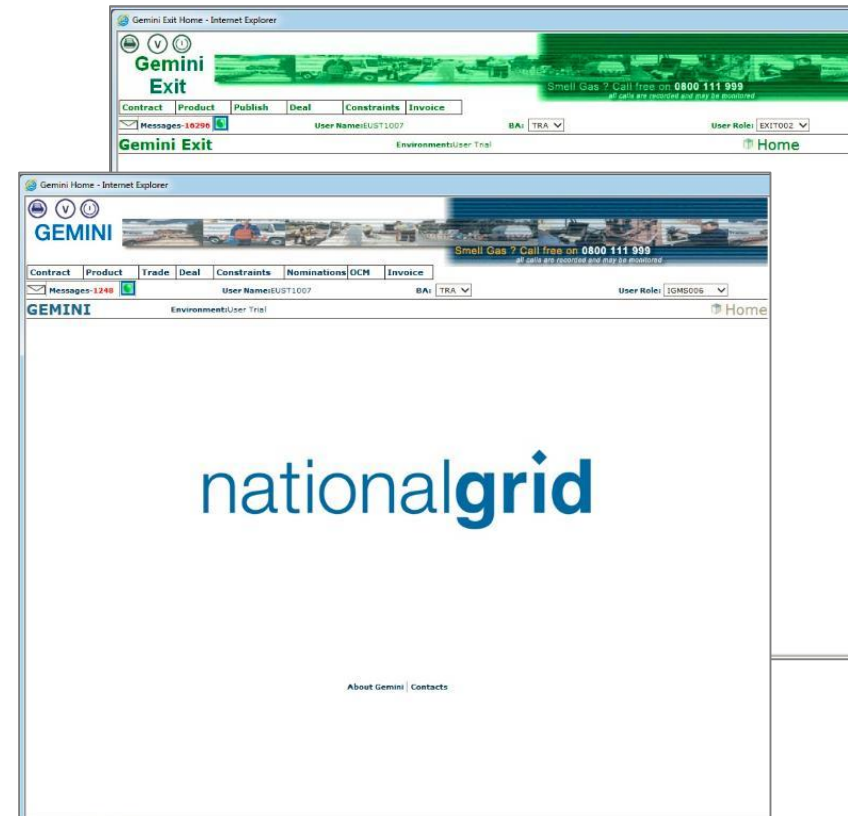
Regulatory Change Projects

- EU/GB Charging Project 2019 Parts A and B
- Gemini Replatforming
- Gemini System Enhancements



Regulatory Change Projects

- EU/GB Charging Project 2019 Parts A and B
- Gemini Replatforming
- Gemini System Enhancements



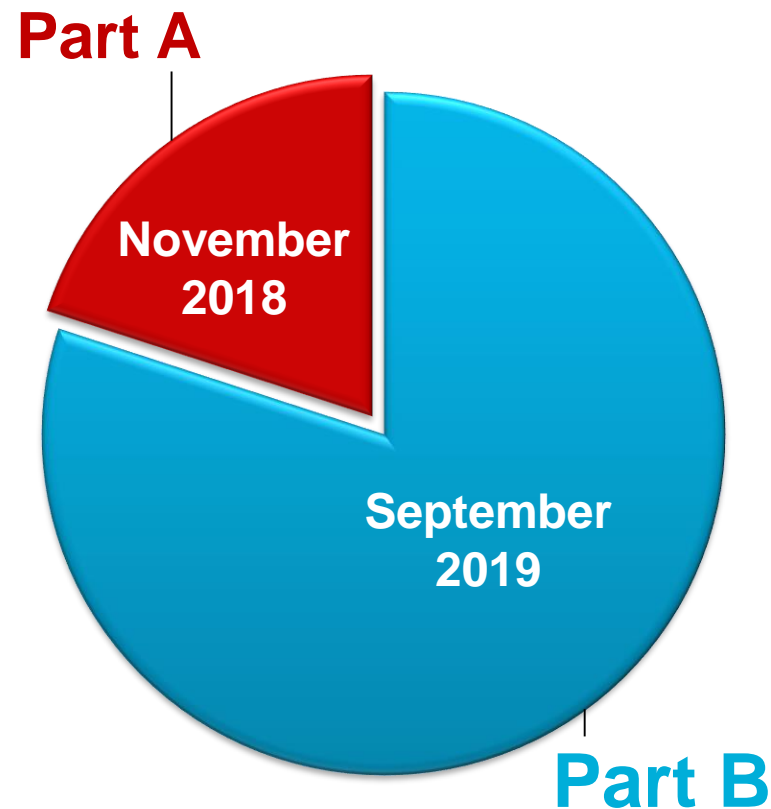
EU/GB Charging Programme Update

- In January 2018 National Grid commenced a change delivery project to deliver the system changes related to the obligations set out in the EU Tariff Code and the GB Charging Review – UNC Mod 621
- Due to the size and complexity of the obligations to be delivered a dual implementation approach has been adopted
- **Part A** is on track and has moved into the testing phase of the project
- **Part B** is going through the Analysis and Design phase; a number of workshops to identify requirements have taken place and solution workshops are running until early July

EU/GB Charging 2019 – Scope Parts A & B

Mod 621 and EU Tariff Code resulting in changes to:

- System changes related to transparency data publications
- Entry Capacity Availability (NORD07) Report



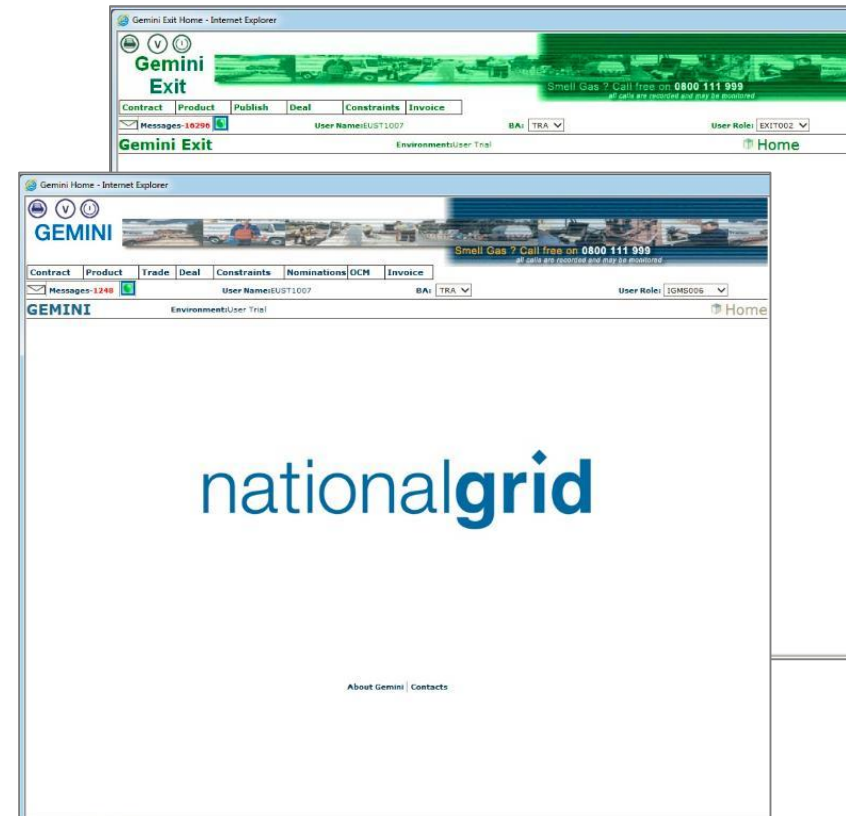
- charging methodology
- Floating prices
- Capacity revenue recovery
- TO Commodity charge
- New invoicing charge types

Status: ●

Status: ●

Regulatory Change Projects

- EU/GB Charging Project 2019 Parts A and B
- Gemini Replatforming
- Gemini System Enhancements



Gemini Sustain Background



- Ageing hardware
- Potential for replacement in RIIO T2
- Need to improve performance and availability
- Usability issues
- Shipper feedback

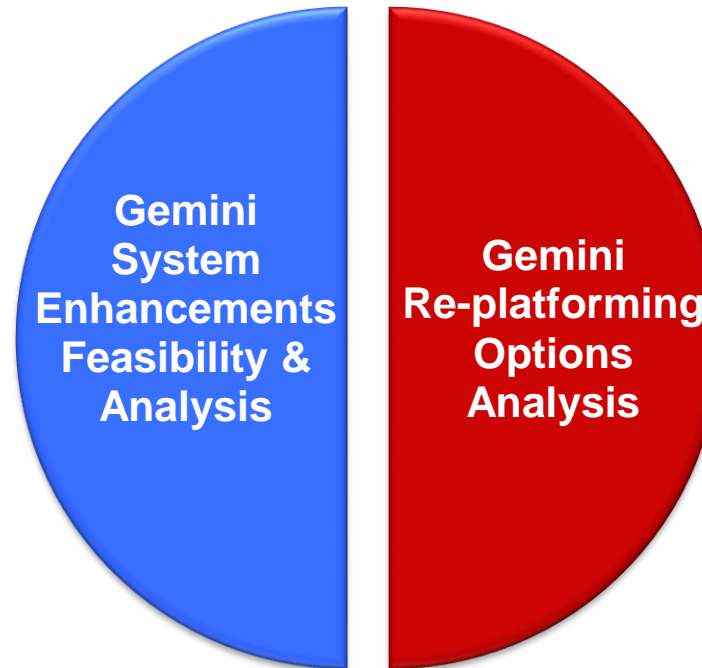
- **Gemini Re-platforming** project to replace hardware
- **Gemini System Enhancements** to address performance, usability and functional issues

Gemini Sustain Programme Scope

Gemini System Enhancements and Gemini Re-platforming

- Scope being developed with Gemini users
- Liaised with Shipper community at Gemini Workshop in London on 12th June

Status



- No impact to Gemini user interface
- Non Functional Requirements
- Potential performance improvements

Status

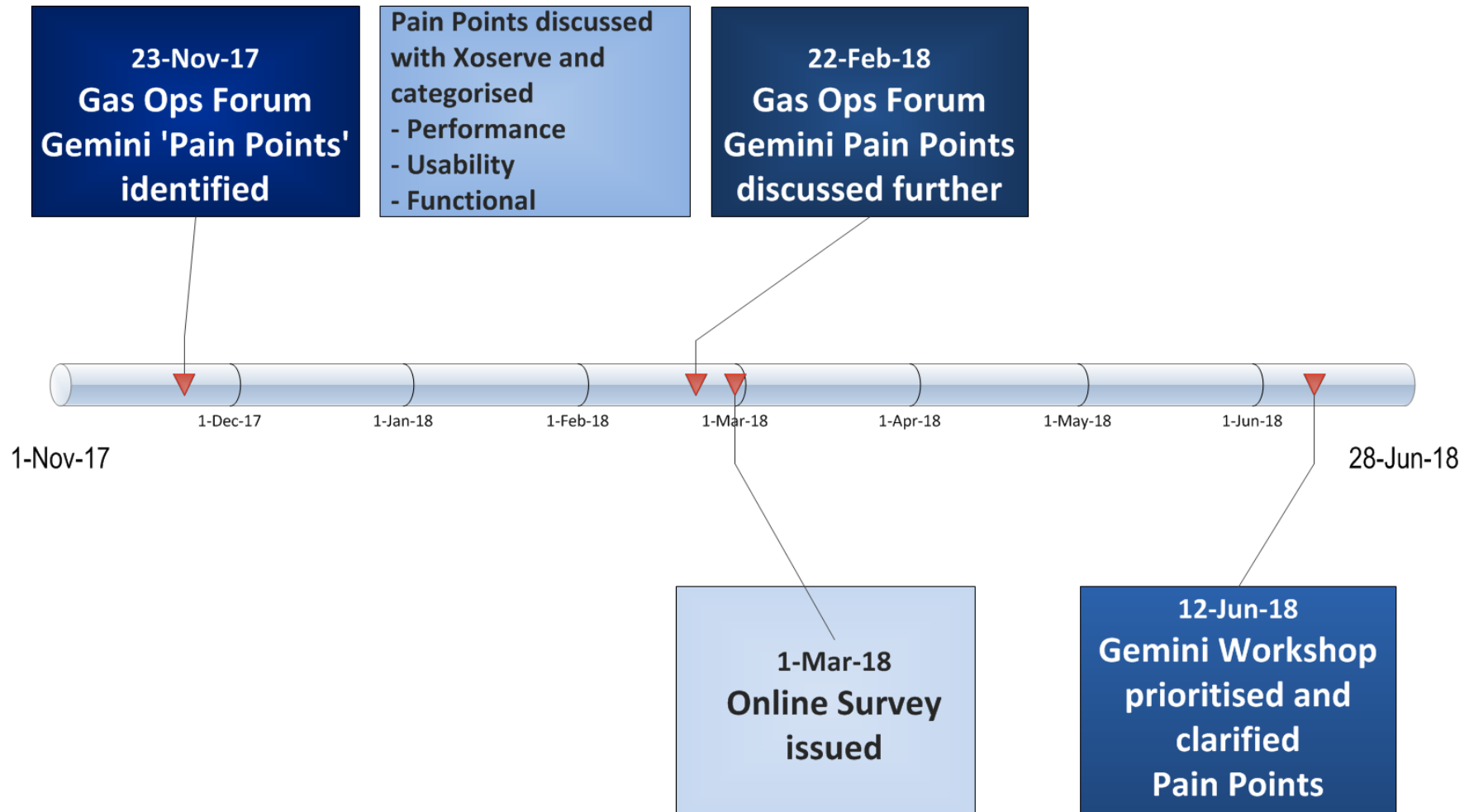


Gemini Sustain Background

- Gemini is currently operating on ageing hardware and infrastructure software. National Grid's short term strategy is to sustain Gemini in its current form for the remainder of RIIO-T1, with a view to replacing in RIIO-T2. This is being progressed under the **Gemini Re-platforming Project**.
- National Grid has sought feedback from customers on the difficulties experienced with Gemini, which has generated a number of potential system enhancements. These have been prioritised and potential system solutions are being identified under the **Gemini System Enhancements Project**.

Gemini System Enhancements

Timeline of events to date



Enhancements – Workshop Output

- Delegates were given the opportunity to prioritise and comment on each pain point
- Top 3 pain points are shown on the next slide



Pain Point Priorities – Top 3

Priority Points	Description
21	'Easier way to do Negative Implied Flow Rates'.
17	'Review security settings. Password resets could be requested by users, not just LSOs'
14	'Better/more flexible support with setting up and testing APIs'

Pain Point Priorities - Performance

Priority Points	Description
17	Review security settings. Password resets could be requested by users, not just LSOs
11	Overall speed
8	Views require multiple pages rather than one long table

Pain Point Priorities - Usability

Priority Points	Description
14	Better/more flexible support with setting up and testing APIs
10	Entry and Exit systems should be combined allowing shippers to view entitlements, capacity bids and checking for constraints all in one system.
9	Ability to export data is restrictive – output to Excel? Option to easily download allocation data in an Excel friendly format
7	Accessing via Citrix is not ideal, it takes a really long time to log into Gemini. Users have to remember 2 passwords which don't have the same expiry date and we spend frequent amounts of time on the phone resetting them

Pain Point Priorities - Functional

Priority Points	Description
21	Easier way to do Negative Implied Flow Rates – when we looked at the NIFR for the IPs, NG said they were going to look into making the NIFR process easier, not just for shippers but for the Control Room too. Currently we send faxes, so not only do we have to manually type in values, but so do the Control Room, so the margin for error is large.
14	Quicker way to schedule and make trades. Currently have to set up activity numbers, then have to wait for NG to run a scheduling batch. Also if we haven't posted for the same hour as the counterparty (but even if we agree numbers) the trades get rejected. There doesn't seem a good reason for this and it has cost us a lot of money in the past.
8	More functionality in the allocations screens. Reports and analysis, what may be most useful is a scheduling report/screen identifying allocations which exceed the 3% and 5% tolerances. This could help solve the discrepancies sooner, avoiding reconciliations.

Next Steps

Gemini System Enhancements:

1. We will continue to discuss the pain points with Xoserve, taking into account the priorities and will identify:
 - any 'quick wins'
 - which pain points can be addressed through the Gemini Replatforming project
 - which pain points may require an application change
2. Produce a set of business requirements for further analysis
3. How would you like to be engaged as we progress?

Capacity and Balancing Service Provision:

- The afternoon session of the Gemini Workshop focused on the longer term Capacity and Balancing Service Provision
- There will be a follow up session via Webex at the beginning of August

Exercise 'Zeus'



Wednesday 3rd & Thursday 4th October 2018

Exercise Aim and Objectives

NEC

Aim

The overriding aim of this exercise is to provide a vehicle to test NEC communications to the UK gas industry in order to demonstrate the industry's ability to effectively respond to a Network Gas Supply Emergency.

Briefing note

<https://www.nationalgrid.com/uk/gas/network-gas-supply-emergencies-ngse>

Exercise Aim and Objectives

- Embed, for testing, recommendations from previous industry emergency exercises, including Exercise Yield (2017), and lessons learnt from live events on the 1st & 2nd March
- Validate emergency procedures, specifically E1, National Grid's E3, the E3 documents of the Distribution Networks and the NEC safety case
- Build on our understanding of electricity industry interaction during a major gas event through expanded electricity sector engagement
- Assure the effectiveness of communications between Gas Distribution Networks and HMG, with a focus on the local impact of national emergencies with regard to sites impacted and welfare arrangements arising
- Create a basis to deliver a restoration stage exercise at a later date.
- Ensure effective communication between gas transporters with regulatory and government departments
- Test the upstream management procedure, web portal and emergency response communications
- Practice the response link between localised transmission and national supply emergencies
- Test the escalation to and interaction between crisis management teams



Exercise participants

Government and Regulators	National Grid	Terminal Operators and LNG Importation Terminals		Storage Facilities	Gas Distribution Network Operators
Department for Business Environment and Industrial Strategy (BEIS)	Crisis Management Team (CMT)	TERMINALS:		Aldbrough – Statoil/ SSE Gas Storage	Cadent [plus top 200 sites per LDZ]
Oil and Gas Authority	Network Emergency Management Team (NEMT)	Easington – Gassco, Langed	St. Fergus - Ancala (Wood), SAGE	Hatfield Moor – Scottish Power	Northern Gas Networks (NGN) [plus top 200 sites per LDZ]
Health and Safety Executive (HSE) [Observing]	Corporate Affairs Response Team (CART)	Easington – Centrica Storage, Rough	St. Fergus - NSMP (PX)	Hilltop – EDF Energy	SGN [plus top 200 sites per LDZ]
Office of Gas and Electricity Markets (Ofgem) [Observing]	Gas Transmission Operator (GSO) Silver Command	Easington – Perenco, Dimlington	St. Fergus - Shell	Hole House – EDF Energy	Wales and West Utilities (WWU) [plus top 200 sites per LDZ]
Network Emergency Coordinator (NEC)	Electricity National Control Centre (ENCC)	Burton Point - ENI	Teesside - Antin (Wood), CATS	Holford – UniPer	Interconnectors
Network Emergency Coordinator (NEC)	National Transmission System – Directly Connected Sites	Bacton – Shell, BBL	Teesside - PX	Hornsea – SSE Gas Storage	BBL – BBL Company
		Bacton – IUK	Theddlethorpe – Conoco Phillips	Humbly Grove – Humbly Grove Energy	Irish interconnector – Gas Networks Ireland (GNI)
		Bacton – SEAL	Barrow - Spirit Energy	Stublach - Storengy	I(UK) – Interconnector (UK)
		LNG TERMINALS:		Shippers	
		Milford Haven – South Hook			
		Milford Haven – Dragon			
		Isle of Grain – National Grid			

Winter Webinars



Please get in touch with any other suggestions:

Box.operationalliaison@nationalgrid.com

Upcoming Agenda Items 2018

27 September 2018

- Xoserve – Service Desk improvement project

Should you wish to raise a topic for discussion please email:
Karen.thompson@nationalgrid.com

[or](#)

Box.OperationalLiaison@nationalgrid.com

Lunch Break

Group 2 Control Room Overview

Drop in sessions: Operational Data/Energy Balancing/Capacity
Team/Project CLoCC

Lunch



Thank You

nationalgrid

The image features the word "nationalgrid" in a bold, lowercase, sans-serif font. The letters are white with a thick, glowing blue outline that creates a 3D effect. The text is set against a dark blue background. Several small, white, 3D cubes are floating around the text, some appearing to be in motion or falling. The overall aesthetic is modern and technological.

National Grid Afternoon Attendees

Overview

Jenny Phillips
Fionajayne Nicholls

Subject Matter Experts

Jon Davies
Harj Kandola
Viv Emery
Jen Randall
Neil Smith
Craig James

Facilitators

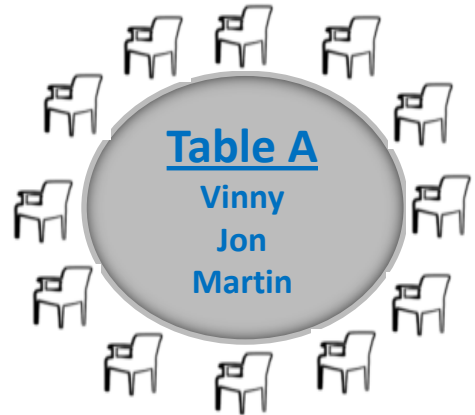
Vinny Thiara
Sakhi Choudry
Elliot Dunn
Shiv Jarwal

Technical secretary

Richard Jones
Sean Byrne
Martin Cahill
Michael Adedoja

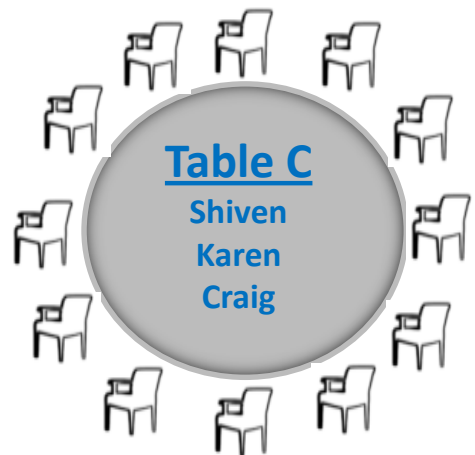
Customer Listening Room Plan – Part 1

Topic 1 – Insights



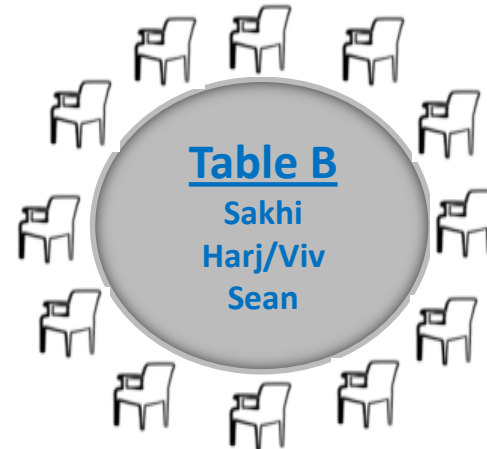
Customer & Stakeholders	
David Mitchell	●
Andy Kelly	●
James Accord	●
David Driver	●
Sallyanne Blackett	●
James Fogerty	●
Catherine Mchale	●
Ian Ross	●

Topic 1 – Insights



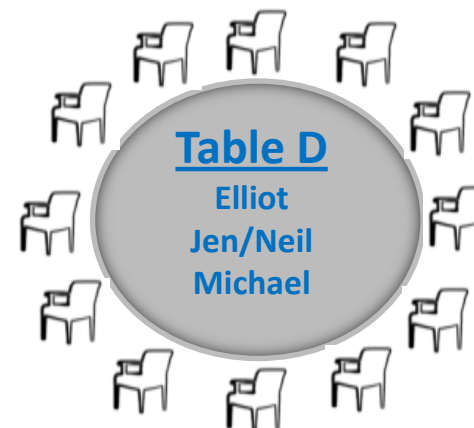
Customer & Stakeholders	
Kamila Evans	●
Toby Hockin	●
Mads Nielsen	●
Catherine Nelson	●
Angelo	●
Lucy Savage	●
Nick Wye	●
Wayne Mullins	●
Alex Nield	●

Topic 2 – What data/ you Access it



Customer & Stakeholders	
Mark Rixon	●
Graham North	●
Andrew Hegarty	●
Laura Claringbold	●
Jake Bahrall	●
Sabrina Choudary	●
Mark Carter	●
Peter Marshall	●
Matt Owen	●

Topic 2 – What data/ you Access it



Customer & Stakeholders	
Craig Taylor	●
Peter Day	●
Martin Needham	●
Danny Murphy	●
Jens Summerauer	●
Andrew Gibson	●
Helen Field	●
Katie Osbourne	●