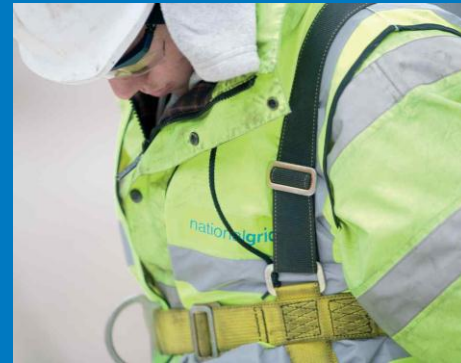


Constraint Management on the NTS



22nd September 2015

Constraint Management on the NTS

1. Constraint Management Objectives
2. What Constitutes a Constraint?
3. Monitoring the Network
4. System Operator Actions:
 - Enforcing Contractual Offtake Rules (STFRN)
 - Capacity Scaleback & Restoration
 - Restrict Daily Capacity
 - Locational Energy Actions
 - Capacity Surrender
 - Offtake Flow Reductions
5. EU Changes at Interconnection Points (Nominations / OBA)
6. Further Information

Constraint Management Objectives

Managing **Financial Risk & Reward**

- To manage the constraint with minimum costs to the community
- To use market based mechanisms to manage constraint situations whenever possible

Maintaining **Transporter Reputation**

- Ensuring UNC and Licence compliance
- Where actions are taken they are consistent and auditable and any Forecasting / Capability Assessments are repeatable

Optimising **Customer Service**

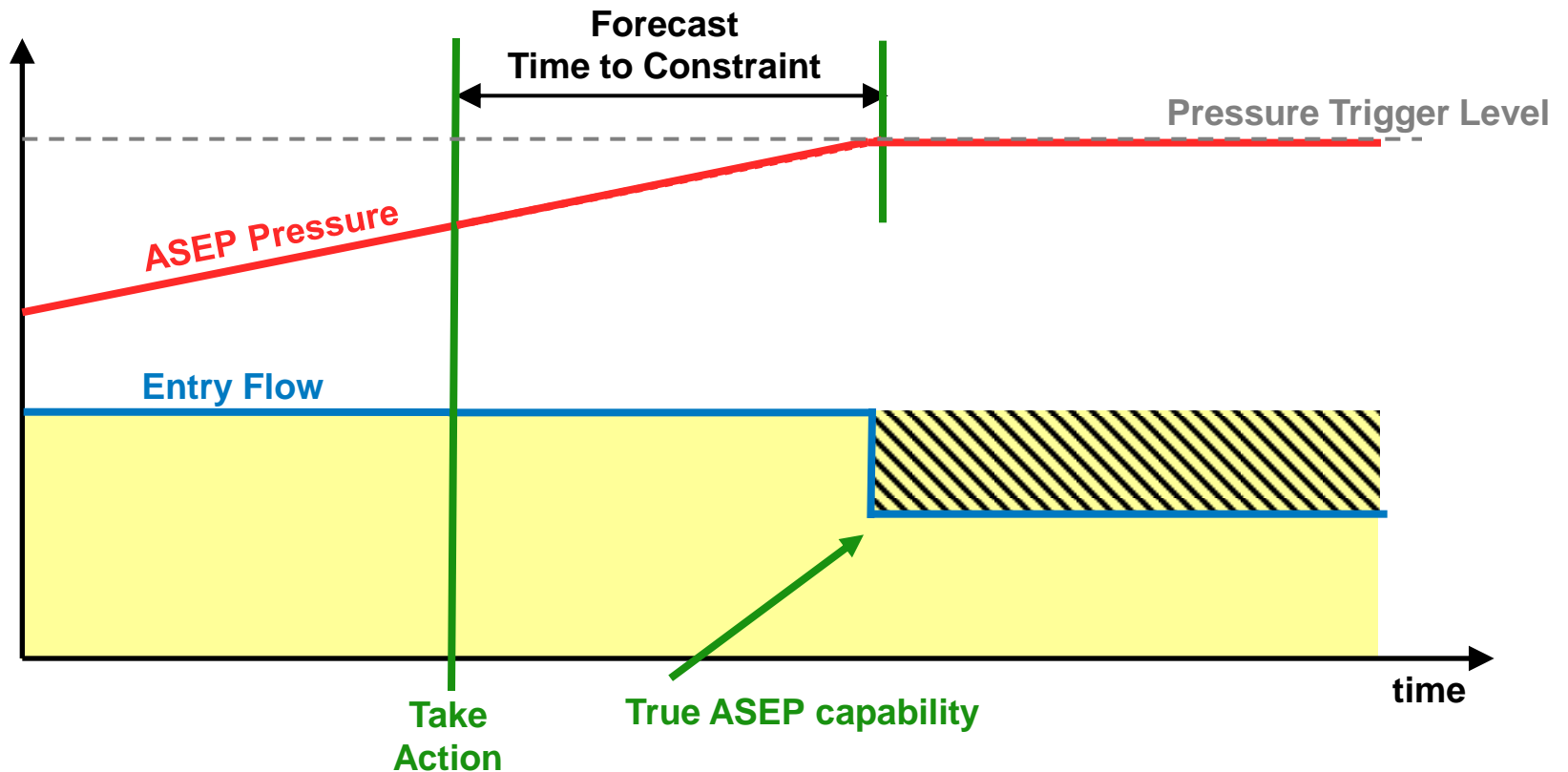
- Ensuring Users can offtake gas as per ALL contractual and capacity obligations
- Minimising the impact on Users when taking actions

Driving **Continual Improvement** in Processes

- Understanding lessons learned to improve operating efficiency
- Feedback to NTS Users to drive OPN/Nom forecasting improvements

What Constitutes a Constraint?

Entry Example:



Before the Day

Day Ahead

Gas Day

After the Day

Network Analysis & Risk Envelope

Long Term Capacity Sales

Day-Ahead Off-peak Capacity

Day-Ahead Firm Capacity

Within-day Firm Capacity

Incentive Performance

Capacity Revenue

Rolling Capability Assessment

Initiates

Constraint Management Strategy

Post Event Analysis & Lessons Learnt

Demand Forecasts

Supply Forecasts

D-1 Initial OPN

D-1 Initial DFN

OPN Revisions

DFN Revisions

Supply & Demand After-the-day Analysis

Planned Maintenance

Unplanned Maintenance

Plant trips/failures

Post Event Analysis

Reliability Data

OCS Assured Pressures

Contractual Obligations

Agreed Pressures

Linepack & Pressure Monitoring

Pressure KPI

System Operator Actions

Overview

Operational tools (internal)	Operational tools (external)	Commercial tools	Network Integrity
<p>Reconfigure Network</p> <p>Optimise Compressor Fleet</p> <p>Manage Outages</p>	<p>Agree Pressures (DNO Only)</p> <p>Flow Swaps (DNO Only)</p> <p>Enforce Contractual Offtake Rules</p> <p>Scaleback Capacity (Entry Interruptible & Exit Off peak)</p> <p>Restrict Daily Capacity</p>	<p>National Energy Actions</p> <p>Locational Energy Actions</p> <p>Capacity Surrender</p> <p>Offtake Flow Reductions</p> <p>Initiate Constraint Management Agreements</p>	<p>Operating Margins</p> <p>Terminal Flow Advice (Entry)</p> <p>Critical Transportation Constraint</p> <p>Gas Deficit Emergency</p>
<p>Information Provision (MIPI / Website / Gemini)</p>			

System Operator Actions

ANS Notifications & Requests

Operational tools (internal)	Operational tools (external)	Commercial tools	Network Integrity
<p>Reconfigure Network</p> <p>Optimise Compressor Fleet</p> <p>Manage Outages</p>	<p>Agree Pressures (DNO Only)</p> <p>Flow Swaps (DNO Only)</p> <p>Enforce Contractual Offtake Rules</p> <p>Scaleback Capacity (Entry Interruptible & Exit Off peak)</p> <p>Restrict Daily Capacity</p>	<p>National Energy Actions</p> <p>Locational Energy Actions</p> <p>Capacity Surrender</p> <p>Offtake Flow Reductions</p> <p>Initiate Constraint Management Agreements</p>	<p>Operating Margins</p> <p>Terminal Flow Advice (Entry)</p> <p>Critical Transportation Constraint</p> <p>Gas Deficit Emergency</p>
<p>Information Provision (MIPI / Website / Gemini)</p>			

Enforce Contractual Offtake Rules - STFRN

What is a Short Term Flexibility Restriction Notice (STFRN)?

- A notice issued via ANS to inform NTS users within an NTS Exit Zone(s) of the increased likelihood of OPN rejection.
- Issuing a Flex Restriction Notice will not, in most constraint scenarios, resolve a forecast or actual constraint by itself.
- It is designed to limit the release of NTS flexibility in excess of contractual obligations, where this would otherwise exacerbate a potential constraint.

Applicable to?

A Flexibility Restriction Notice is applicable to all NTS offtakes. However, it is only used if the release of flexibility would drive an Operation Balancing requirement. NTS Flexibility requests are monitored via the rules below.

1. Flex Capacity Check (DN Offtakes Only)

Requests in excess of OCS or prevailing flex entitlements, whichever is greater at the time of the Flexibility Restriction Notice.

2. Revised OPN Notice Periods (applicable to all NTS Offtakes)

Offtake flow rate changes with lesser periods of notice than contractually specified.

Communications issued via ANS

Issue Notice: Please be aware that based on information submitted to National Grid NTS, there is an increased likelihood that OPN requests for additional short term flexibility may not be accommodated in NTS Exit Zones (xxx)

Lift Notice: Further to the message issued on DD/MM/YYYY [including the time if it is issued and lifted on the same day], please be aware that the previously identified risk associated with the release of additional short term flexibility is no longer present in the NTS Exit Zones (xxx).

Capacity Scaleback & Restoration

When

- National Grid may scaleback up to 100% of Interruptible NTS Entry Capacity / Off-peak NTS Exit (Flat) Capacity in areas of the NTS impacted by a potential constraint. This is capacity users have brought in the DISEC or DONEX auctions.
- Scaleback can occur as soon as a constraint has been forecast.
- Scaleback is available at any time following allocation at 15:00 D-1.

Scaleback Notice Periods	Entry (non-IPs)	Exit (non-IPs)	Entry and Exit at IPs
Notice Period	HB + 60 Mins	HB + 4 hours	HB-15 + 75mins
Example: NG Scaleback at 12:30	12:30	12:30	12:30
Scaleback takes effect	14:00	17:00	14:00

Communications

- The following ANS message will be issued:

National Grid is scaling back Interruptible Entry Capacity/ Off-peak Exit Capacity at the following ASEP(s)/within NTS Exit Zone(s) XX for Gas Day DDMMYY, effective time HH:MM with an ICF / OCF of X.

- The ICF (Entry Interruptible Curtailment Factor) OCF (Exit Off-peak Curtailment Factor) can take one of the following values:

ICF / OCF = 1 → No Scaleback (i.e. 100% Interruptible / Off-peak capacity available)

ICF / OCF = 0 → Total Scaleback (i.e. 0% Interruptible / Off-peak capacity available)

Capacity Scaleback & Restoration

How will you know?

Details of specific scalebacks can be viewed in the following Gemini and Gemini Exit screens:

[Home](#) > [Constraints](#) > [Constraint/Restoration History](#)

User next steps

- Any Users affected by the scaleback action are expected to manage their nominations in line with their (reduced) capacity entitlements in order to avoid overrun charges. (note change to nomination process at IPs from 1/10/15)
- Users can view their original and net scaled capacity rights in the following screens:

Entry: [Gemini](#) > [Product](#) > [Entitlements – Net](#)

Exit: [Gemini Exit](#) > [Publish](#) > [Reports](#) > [User Reports](#) > [Entitlement Report](#)

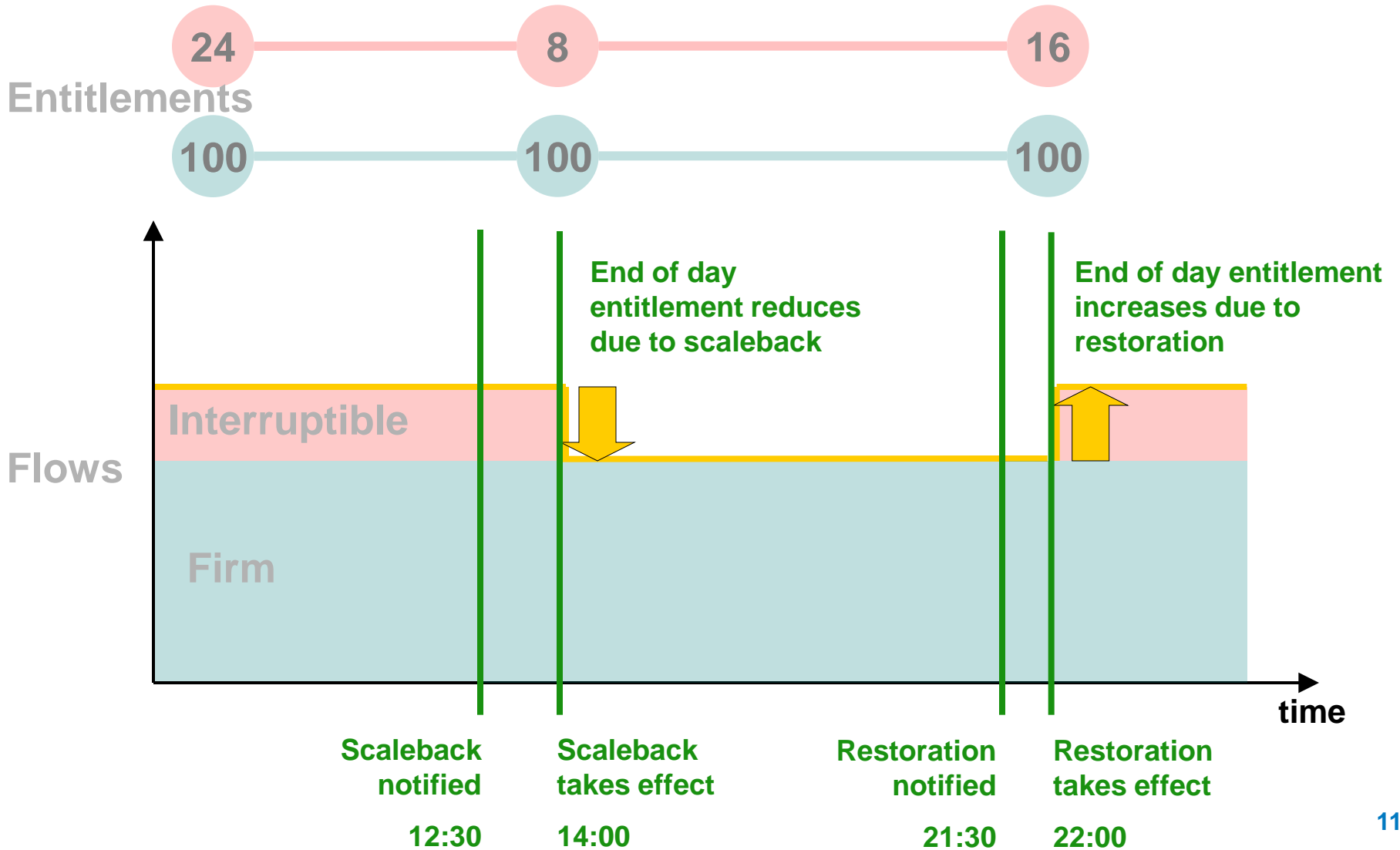
Restoration

- If NTS conditions change so that the forecast constraint has been resolved then any scaled Interruptible/Off-peak Capacity may be partially or fully restored. All restorations are applicable from the start of the next hour bar.
- The following ANS message will be issued:
National Grid is restoring Interruptible Entry Capacity / Off-peak Exit Capacity at the following ASEP (s) / within NTS Exit Zone(s) XX for Gas Day DDMMYY, effective time HHMM with an ICF / OCF of X
- Interruptible / Off-peak Capacity can be scaled back and restored multiple times as required throughout a gas day.

Further Information

At Interconnection Points, if an Adjacent TSO scales back interruptible capacity they will inform National Grid and National Grid will then inform users of the NTS

Capacity Scaleback & Restoration



Restrict Daily Capacity

When

National Grid may restrict the release of daily capacity, in the WDDSEC and WDDNEX auctions, where a constraint has been forecast and it is assessed that releasing further firm capacity will exacerbate the constraint.

In very limited circumstances National Grid may also restrict the release of day-ahead capacity in the DADSEC and DADNEX auctions if there is an existing constraint occurring and a high expectation that the constraint will continue into the following day.

Communications

In the event of an auction being restricted, NG will issue an ANS notice a maximum of 30 minutes before the auction is due to run:

Due to conditions on the network, the quantity of capacity being made available in the [day ahead/within day] auction at location [XX] will be restricted until further notice

When the constraint is resolved, NG will issue the following ANS notice:

Due to improving conditions on the network, the quantity of capacity being made available in the [day ahead/within day] auction at location [XX] will [no longer be restricted / be increased]

Further Information

- Users may need to adjust their nominations if daily auctions are restricted. (Note change to nominations procedure at IPs from 1/10/15)

Locational Energy Actions

When

National Grid may trade gas at specific NTS Entry and Exit locations in the management of NTS constraints. Locational Energy Actions will increase or reduce the actual flow rate of Users without affecting their capacity entitlements.

Communications

Users will be notified of any requests by National Grid for locational offers via ANS:

*National Grid is seeking to **sell** locational gas. NTS Users are requested to post offers on the OCM locational market at the following locations (**List ASEP(s)/NTS Exit Zone(s))*

*National Grid is seeking to **buy** locational gas. NTS Users are requested to post offers on the OCM locational market at the following locations (**List ASEP(s)/NTS Exit Zone(s))*

How to post offers

Users to post offers to the Locational Energy Market within the WebICE Platform. Please contact ICE Endex for specific details if unsure of this process.

How do you know if they have been accepted?

WebICE to be checked to view accepted offers. National Grid accepts offers based on factors including cost, location and lead-time in line with the System Management Principles Statement.

Locational Energy Actions

User next steps

Users must confirm the Locational trade in Gemini within 60 minutes on the following screen, otherwise a Physical Renomination Incentive (PRI) charge will be incurred:

[Home > OCM > Maintain OCM Renominations](#)

- a. For successful trades, the message 'Renomination committed successfully' will be displayed at the bottom of the screen
- b. For unsuccessful trades, the message 'Renomination committed partially' will be displayed

Flow nominations are automatically created on Confirmation of the trade.

Acceptance of a locational offer by National Grid will not automatically adjust your capacity entitlements. Users may have to adjust their entitlements in line with their physical gas flow in order to avoid an overrun charge.

Trade Status Codes

The confirmation status of the Locational trade can be found in the Gemini screen:

[Home > OCM > Trade Details > Physical / Locational Trade Status](#)

Trade Status Codes

UN = Unconfirmed

CN = Confirmed

UF = Unconfirmed/ Failed

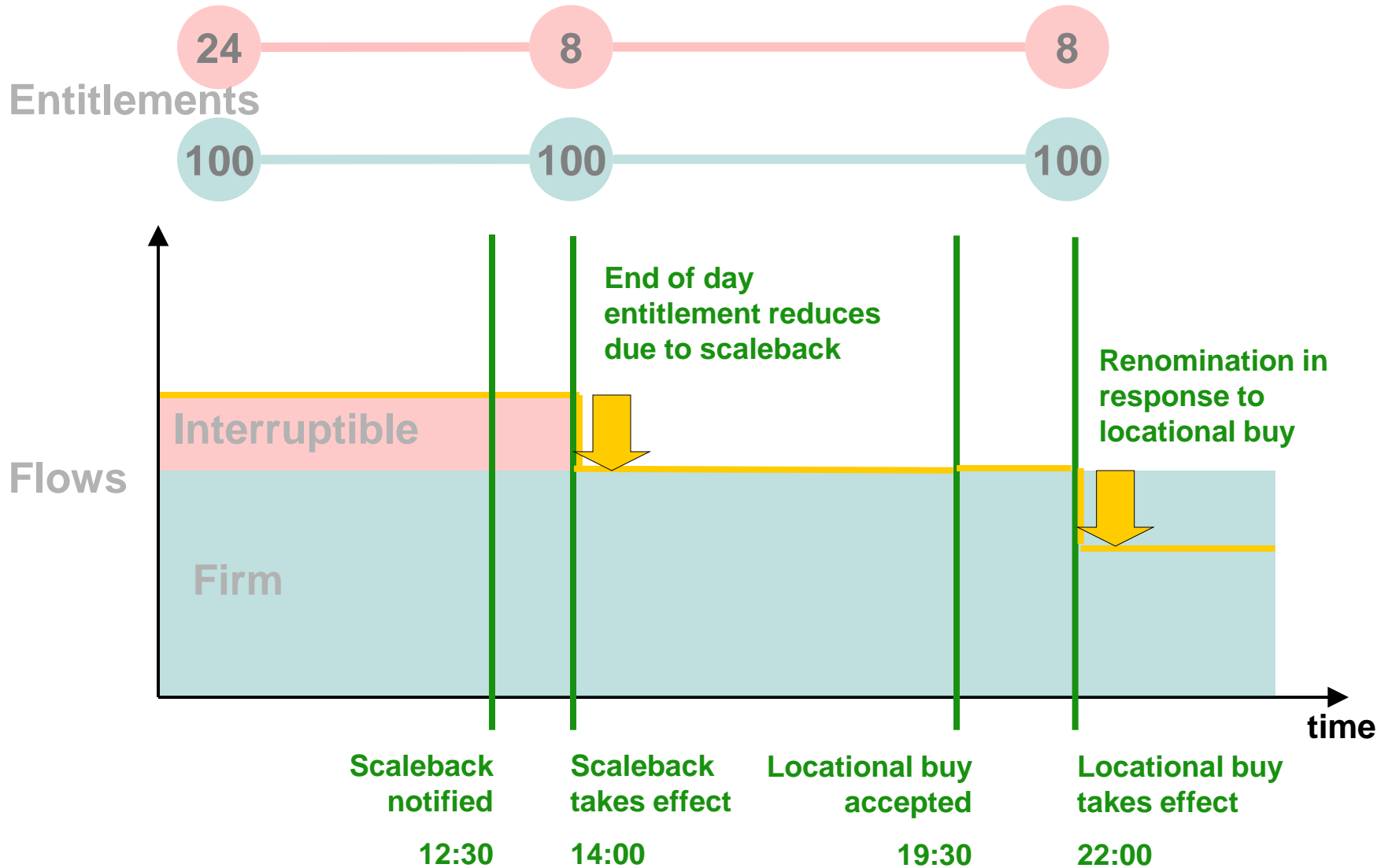
CP = Confirmed with PRI charges

Trade details can be viewed in the Gemini screen : [Home > OCM > Trade Details > OCM / OTC Trade](#)

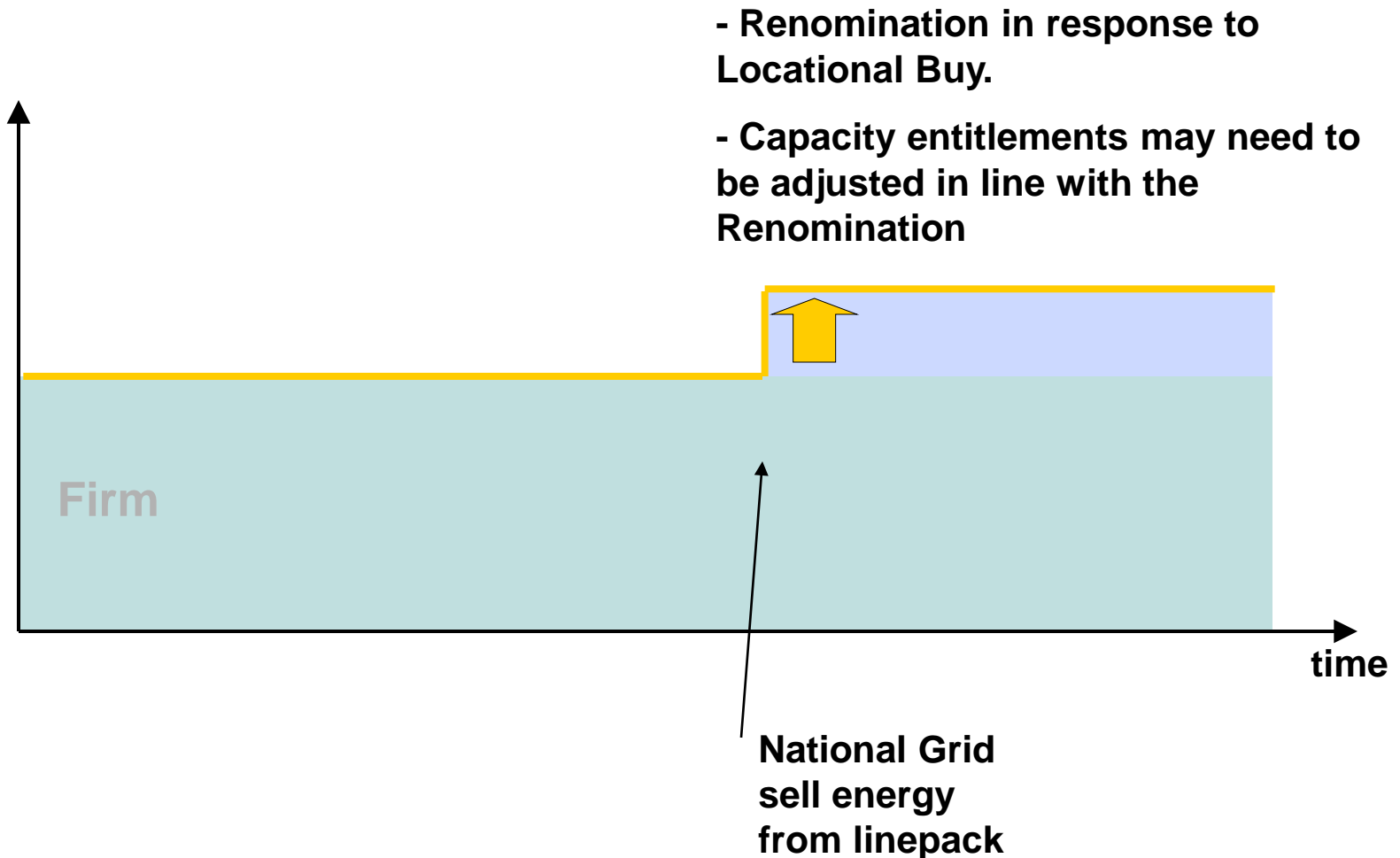
Further Information

- If large or multiple buy or sell actions are undertaken the system may become out of balance. Under this scenario, further locational actions may be required following resolution of a constraint in order to achieve system balance. Referred to as Secondary Balancing Actions, any offers will be sought in areas of the NTS that are distant from the area of the constraint.

Locational Energy Actions - Buy on Entry



Locational Energy Actions – Buy on Exit



Capacity Surrender

When

- National Grid may request to buyback Firm capacity rights in relation to a constraint, only after any Interruptible/Off-peak capacity has been scaled back.
- Carried out through Constraint Management Agreements (Forwards and Options Contract) or Surrender Auction.
- The daily Surrender Auctions in which Users can offer to surrender their capacity are referred to as 'DBSEC' (Daily Buyback System Entry Capacity) and 'DBNEX' (Daily Buyback NTS Exit Capacity).

Communications

National Grid may request NTS Users to make Firm NTS Capacity Surrender Offers via ANS. The following ANS will be issued:

National Grid is requesting entry / exit capacity surrender offers at ASEP / NTS Exit Zone(s) (xx). This is for Gas Day DDMMYY

User next steps

Users can place surrender offers by entering offer details in the following Gemini screens:

DBSEC – Gemini > Deal > Capture > Create Bids (Select Product 'Entry Capacity Firm Derived')

DBNEX – Gemini Home > Deal > Capture > Capture Requests (Select Product 'NTS Exit Flat Capacity Firm Derived')

Capacity Surrender

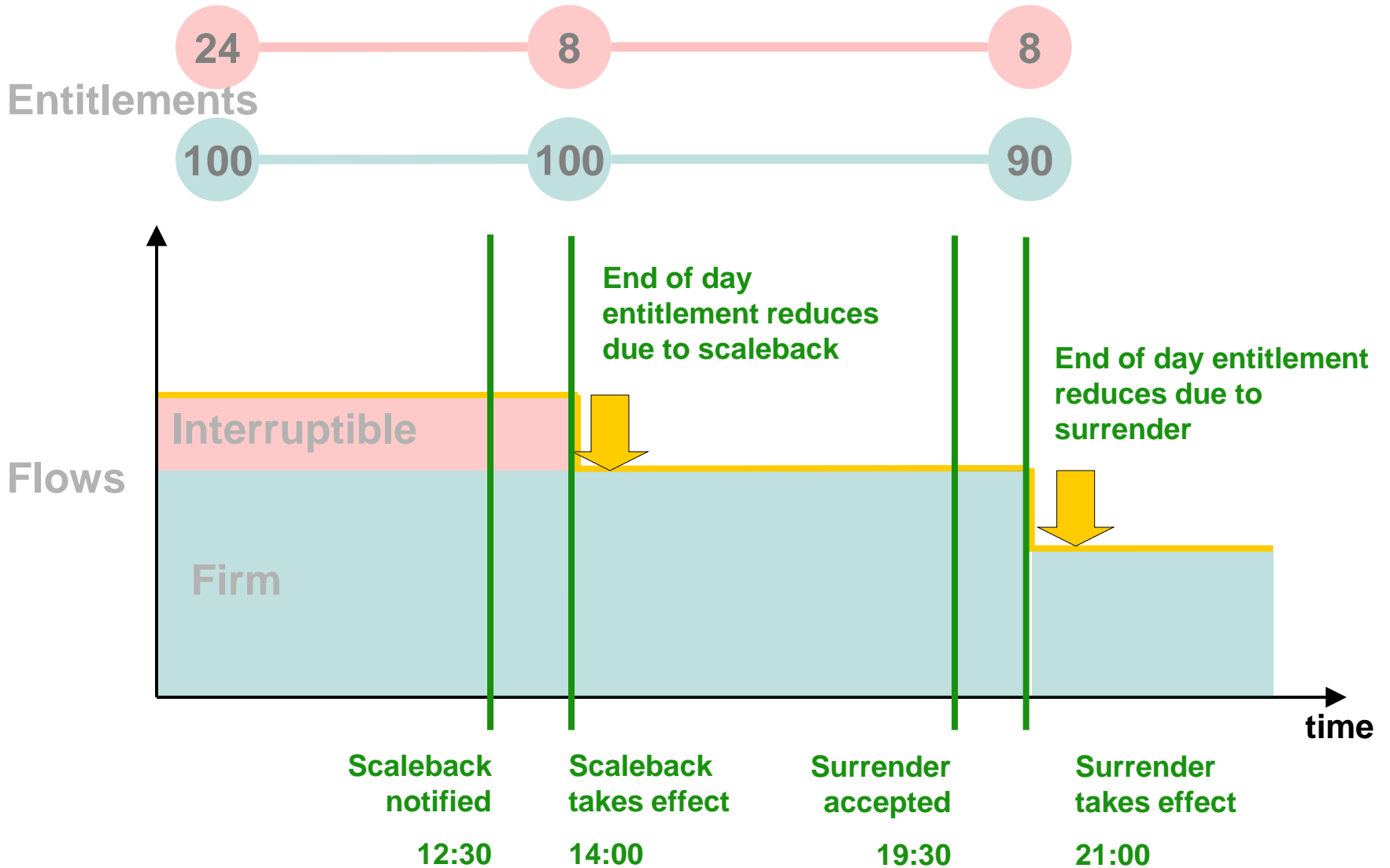
How do you know if an offer has been accepted?

- Once National Grid have reviewed the surrender offers and an allocation is made, the following ANS will be issued:
*For Gas Day (xx/xx/xx), National Grid has taken an Entry / Exit Capacity surrender action at (*****). Please see Gemini System for details.*
- Details relating to all accepted and rejected offers can be found in the following Gemini screens:
DBSEC - [Gemini > Publish Reports > MoS Results](#)
DBNEX - [Gemini Exit > Publish > Reports > MoS Reports > Post Allocation Information Reports](#)
- Individual User details can be viewed in the following Gemini screens:
DBSEC - [Gemini > Deal > Bid Capture Reports > Bid Information](#)
DBNEX - [Gemini Exit > Publish > Reports > MoS Reports > Post Allocation Information Reports](#)

Further Information

- Following the allocation of a User's surrender offer, the User's Firm capacity entitlements will be adjusted in line with the accepted offer and the revised entitlements can be viewed in the following screens:
Entry – [Gemini > Product > Entitlements – Net](#)
Exit – [Gemini Exit > Publish > Reports > User Reports > Entitlement Report](#)
- Users are expected to manage their nominations in line with their (reduced) capacity entitlements in order to avoid overrun charges. (note change in nomination process at IPs from 1/10/15)
- Capacity surrender at IPs will be processed in the same way. If a User has both bundled and unbundled capacity for surrender, unbundled will be selected first

Capacity Surrender



Offtake Flow Reductions

When

In relation to a forecast NTS Exit Constraint, National Grid NTS may require offtake Users to reduce demand for a set period of time by requesting offers for Offtake Flow Reduction at NTS Exit Points in NTS Exit Zones impacted by the forecast constraint.

Communications

When National Grid NTS initiate an Offtake Flow Reduction invitation, an ANS message will be issued notifying all NTS Users of the applicable NTS Exit Zone(s) where offers are requested and also the “Invitation Reference Number” (e.g. “OFR0001”) which will be available in the Gemini Exit system:

National Grid is seeking Offtake Flow Reduction offers at any locations within the following Exit Zone(s) XX. Please see the Gemini Exit system OFR Invitation Reference No. (XXXX) for details

How to Post Offers

NTS Exit Users that wish to make an offer of flow reduction in relation to the invitation sent by National Grid NTS can do so by entering the offer details into Gemini Exit here:

[Home](#) → [Deal](#) → [Offtake Flow Reduction](#) → [Offtake Flow Reduction Offer Capture](#)

Offers will need to include details of the location, price and potential flow reduction being offered by the User

User Next Steps

Where National Grid accepts an offer, the relevant NTS Exit User must ensure that a revised OPN which reflects the accepted OFR offer is received no later than 30 minutes prior to the reduction period. Accepted offers can be viewed in Gemini Exit here:

[Home](#) → [Publish](#) → [Reports](#) → [Offtake Flow Reduction](#) → [Offtake Flow Reduction Offer Information Report](#)

(Note change in nomination process at IPs from 1/10/15)

Nominations at Interconnection Points (IPs)

- New nomination process at IPs from 1/10/15
- Renominations at IPs will go through a 'matching process' with the adjacent TSO - resulting in a 'confirmed quantity' for the shipper
- The minimum notice period for renominations at IPs will be 120 minutes
- In a constraint situation, when constraint management actions have been taken, National Grid may amend a User's nomination at an IP
- Mod0493 contains more details of nomination processes, including single-sided and double-sided nominations

Operational Balancing Accounts at IPs

- Operational Balancing Accounts will be introduced at IPs from 1/10/15
- OBAs will use an 'allocate as nominate' system instead of 'allocate as metered'
- Steering differences will go into an Operational Balancing Account (OBA)
- If OBA volume exceeds 0.3mcm tolerance, a 'Non-OBA' day may be declared
- Allocations on a Non-OBA day will be based on Measured Quantity multiplied by proportion of nominations

Further Information - Publications

Information Provision	Intent/Message to NTS Users	Information published externally	Means of communication	Web Link
Margins Notice	To provide NTS users with early notice of a potential Supply/Demand imbalance for the next gas day	ANS Message	ANS	N/A
		ANS Web Message	Web	http://marketinformation.natgrid.co.uk/gas/frmPrevalingView.aspx
		MN Trigger Level	Web	http://marketinformation.natgrid.co.uk/gas/frmPrevalingView.aspx
		Daily Margins Report	Web	http://www.nationalgrid.com/uk/Gas/Data/MNReport/
Gas Deficit Warning	To warn NTS users of a forecast or actual significant risk to the physical end of day NTS balance. Issued ahead of or during the gas day it is applicable for.	ANS Message	ANS	N/A
		ANS Web Message	Web	http://marketinformation.natgrid.co.uk/gas/frmPrevalingView.aspx
		Web Status	Web	http://marketinformation.natgrid.co.uk/gas/frmPrevalingView.aspx
		Email - Subscription service available	Web	http://nationalgrid.us6.list-manage.com/subscribe?u=4674811e1f&id=05fb0ffd09
		Text Message - Subscription service available	SMS	http://nationalgrid.us6.list-manage.com/subscribe?u=4674811e1f&id=05fb0ffd09
Locational Energy Actions	To notify users of locational requirements to aid the management of localised NTS constraints	ANS Message	ANS	N/A
		ANS Web Message	Web	http://marketinformation.natgrid.co.uk/gas/frmPrevalingView.aspx
		Supporting Process Information	Web	http://www2.nationalgrid.com/uk/Industry-information/Gas-transmission-system-operations/Capacity/Constraint-management/

Further Information - Publications

Information Provision	Intent/Message to NTS Users	Information published externally	Means of communication	Web Link
Scale Back Interruptible NTS Entry Capacity	Notification to NTS users that interruptible entry capacity has been scaled back due to a forecast or actual NTS constraint	ANS Message	ANS	N/A
		ANS Web Message	Web	http://marketinformation.natgrid.co.uk/gas/firmPrevalingView.aspx
		Supporting Process Information	Web	http://www2.nationalgrid.com/uk/Industry-information/Gas-transmission-system-operations/Capacity/Constraint-management/
Scaleback Off peak NTS Exit Capacity	Notification to NTS users that Off peak Flat Exit capacity has been scaled back due to a forecast or actual NTS constraint	ANS Message	ANS	N/A
		ANS Web Message	Web	http://marketinformation.natgrid.co.uk/gas/firmPrevalingView.aspx
		Supporting Process Information	Web	http://www2.nationalgrid.com/uk/Industry-information/Gas-transmission-system-operations/Capacity/Constraint-management/
Firm Capacity Surrender (Buy Back) NTS Entry and/or Exit Capacity	Notification to NTS Users requesting offers to surrender their Firm NTS Exit Capacity due to a forecast or actual NTS constraint	ANS Message	ANS	N/A
		ANS Web Message	Web	http://marketinformation.natgrid.co.uk/gas/firmPrevalingView.aspx
		Supporting Process Information	Web	http://www2.nationalgrid.com/uk/Industry-information/Gas-transmission-system-operations/Capacity/Constraint-management/

Further Information - Publications

Information Provision	Intent/Message to NTS Users	Information published externally	Means of communication	Web Link
Offtake Flow Reductions	Notification to NTS Users requesting offers for Offtake Flow Reductions due to a forecast or actual NTS constraint	ANS Message	ANS	N/A
		ANS Web Message	Web	http://marketinformation.natgrid.co.uk/gas/frmPr evalingView.aspx
		Supporting Process Information	Web	http://www2.nationalgrid.com/uk/Industry-information/Gas-transmission-system-operations/Capacity/Constraint-management/
Short Term System Flexibility Restriction	Notification to NTS users that requests for NTS flexibility within an NTS Exit Zone may not be accommodated	Flex Allocation Methodology	Web	http://www2.nationalgrid.com/WorkArea/DownloadAsset.aspx?id=28304
		ANS Message	ANS	N/A
GB Remit*	Notification to industry of events ("insider Information") that may lead to a change in wholesale Gas prices	Web	Web	https://www.remit.gb.net/

*GB Remit is a platform hosted & maintained by NG NTS. Any industry physical asset operator within the UK can post messages on this platform. However, GB Remit is not the only platform within the EU for this type of communication but would be the primary choice for qualifying National Grid NTS publications

Contact Details

- Please provide any feedback or questions to the Capacity team:
Email: Capacityauctions@nationalgrid.com
Phone: 01926 65 4057
- Further capacity information is available on the website:
<http://www2.nationalgrid.com/uk/industry-information/gas-transmission-system-operations/capacity/>
- Further information on EU Changes is available on the website:
<http://www2.nationalgrid.com/uk/industry-information/europe/eu-project---implementation-information/>