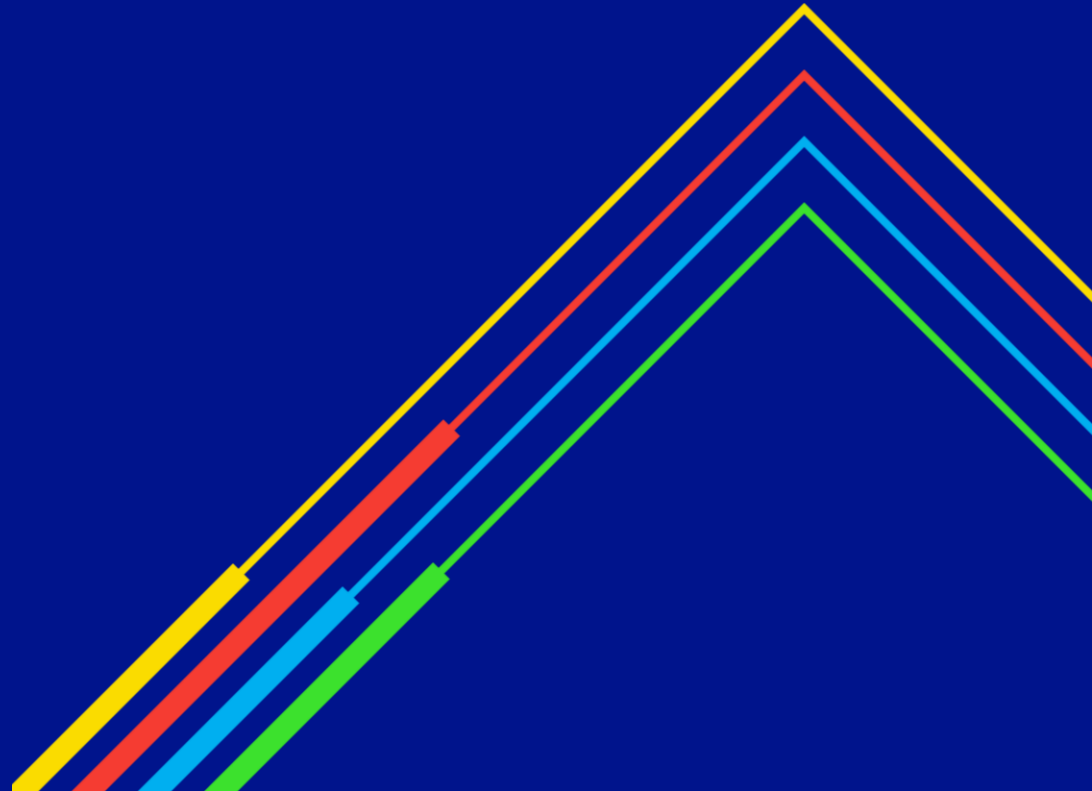


Capacity Access Review

UNC 0705R Workgroup

13th January 2021

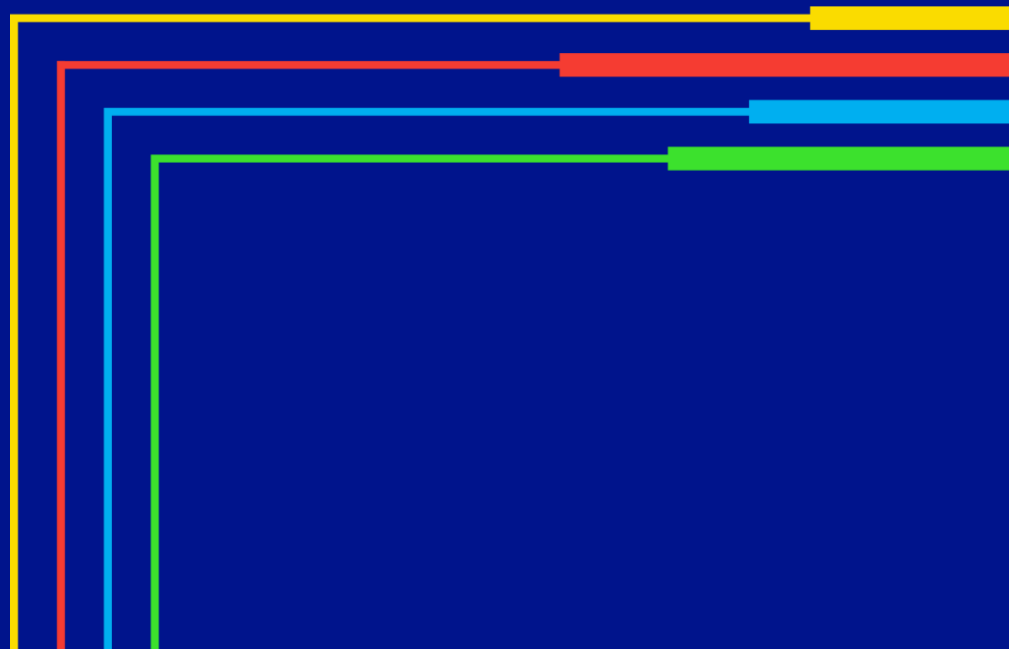
national**grid**



01

Introduction and Status Review

nationalgrid



CAR Project Management

	Benefit	Impact	Effort	Priority	Jan '21	Feb '21	Mar '21	Apr '21	May '21	Jun '21	Jul '21	Aug '21	Sep '21	Oct '21	Nov '21	Dec '21	Q1 '22
Governance	N/A	N/A	N/A	N/A				◆						◆			
Capacity Assignments	2	2	2	3.0	◆	◆				◆							
Exit Regime Review																	
<i>User Commitment</i>	3	3	3	4.0				◆									
<i>Substitution</i>	4	3	3	5.0				◆									
<i>PARCA process</i>	2	4	1	6.0					◆								
<i>Increased access to unsold capacity</i>	3	2	5	3.4				◆									
<i>Flexibility to move capacity between exit points</i>	3	3	3	4.0				◆									
<i>Flexibility in capacity bookings for embedded generation</i>	3	4	3	4.3				◆									
<i>Greater flexibility to book capacity across the year</i>	4	5	3	5.7				◆									
<i>Exit Capacity Planning Framework</i>	3	3	4	3.8			◆										
Within-day Firm Product	4	4	3	5.3	◆		◆		◆								
Substitution - prioritisation of disconnected sites	4	4	2	6.0			◆										
2030 Access Review	5	3	5	5.6					◆								

By inclusion on this list it is recognised that an issue in this area has been raised, it does not presuppose NG's position

On the Radar:

Overruns

Quantity of Interruptible capacity released

Key:

◆ Deadline

◆ Completion Data (not implementation)

◆ Milestone

◆ Start

Prioritisation:

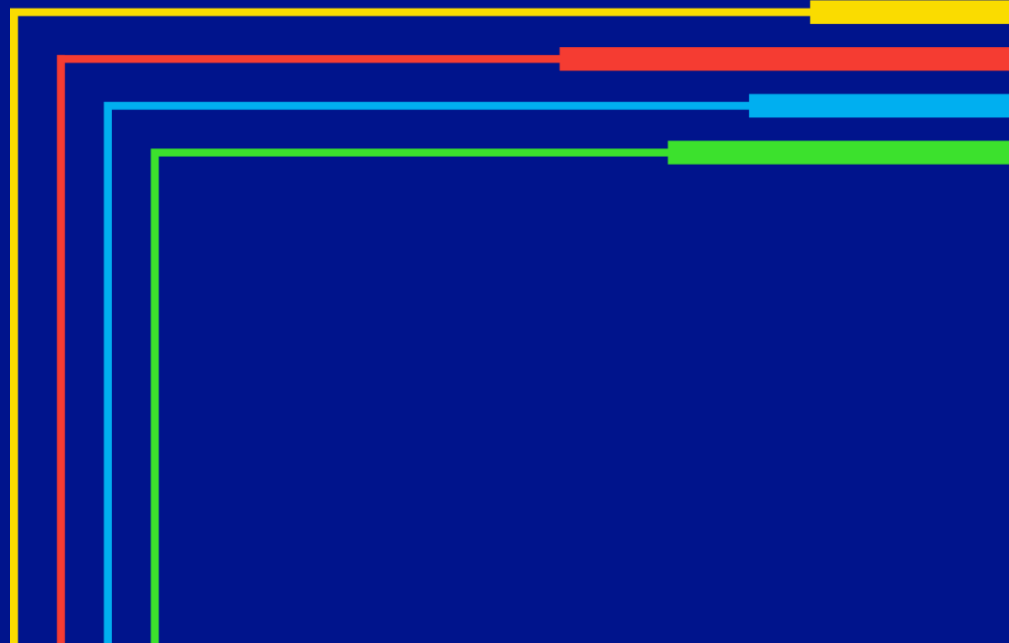
	Benefit	Net Impact	Effort
1	1 Party	Cost	Low
2	> 1 Party		
3	1 Group	Neutral	Medium
4	> 1 Group		
5	All Parties	Saving	High

Reach x Impact / Effort

02

Review of Exit Regime

nationalgrid



Exit Capacity Planning Framework

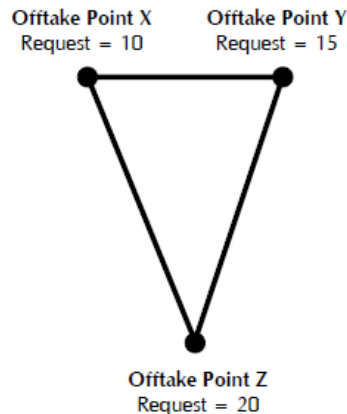
Ofgem Overview

Problems and Possible Solution(s) Development

Problem	Priority Score	Possible Solutions
User Commitment (including existing capacity, substitution and incremental)	4	Reduction of User Commitment Product amendment(s) Zonal based option Long-term flow swap Alternative method of commitment
Substitution; ability to identify donor point and act	5	Zonal based option Long-term flow swap
PARCA process	6	Process change
Increased access to unsold capacity	3.4	Zonal based option
Flexibility to move capacity between points	4	Zonal based option Long-term flow swap
Flexibility in capacity bookings for DN embedded generators	4.3	Flexibility in DN products Flexibility in NTS products
Greater flexibility to book capacity across the year	5.7	Product amendment(s)
Exit Capacity Planning framework	3.8	TBD

Offtake options: worked examples

- In this simple stylised example of the long-term allocation process, assume a network contains 3 offtake points, with 1 connectee at each offtake point
- Nodes X and Y are relatively close (assume perfectly substitutable)
- Node Z is relatively distant (assume no opportunity to substitute with either X or Y)
- At the 3-year ahead stage, assume that the three connectees submit requests for offtake capacity as illustrated
- Baseline allocations, and investment triggers differ according to the offtake option selected...



As part of the Enduring Offtake Work Group, Ofgem developed a series of options for the NTS offtake regime

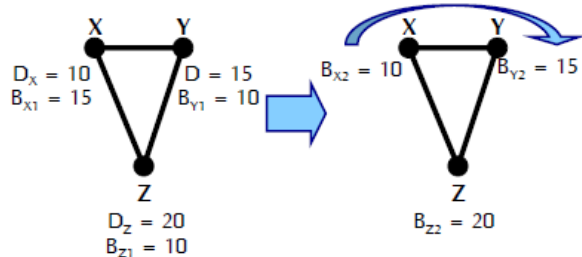
<https://www.ofgem.gov.uk/sites/default/files/docs/2006/02/12859-eowg-1-slides-ofgem-overview-of-tpcr-0.pdf>

Offtake options: worked examples

Option EX2

(Nodal baseline / nodal product)

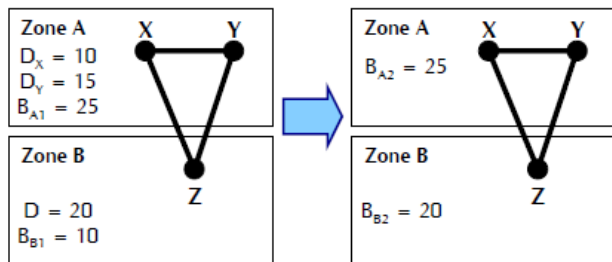
- Nodal baselines set prior to initial allocation
- Substitution incentive on NTS, to allocate nodal baselines across the network consistent with demand
- Baseline allocated from Node X to Node Y (at an implied exchange rate of 1:1)
- Baseline at Node Z increased by incremental investment



Option EX3

(Zonal baseline / nodal product)

- Zonal baselines set for Zone A and Zone B prior to initial allocation
- NTS allocates existing zonal capability to meet demand for nodal products
- Total demand in Zone A equals existing baseline
- Incremental investment triggered in Zone B



In March 2020 we presented various zonal options to Workgroup

Option EX3 is akin to “Zoning Nodes” and “Zonal at point in time” (in the short term)

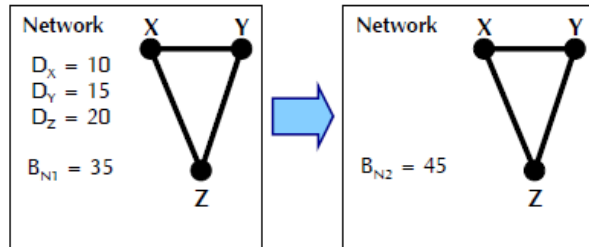
4 January 2006

Offtake options: worked examples

Option EX3A

(Network baseline / nodal product)

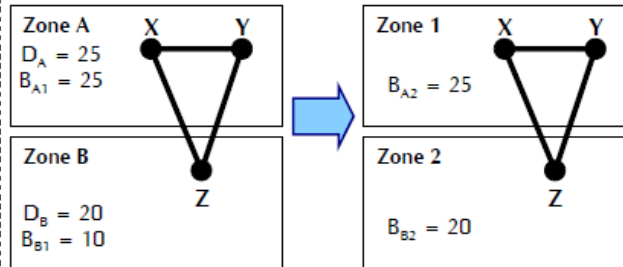
- Single baseline figure set for the entire network
- NTS allocates existing network capability to meet demand for nodal products
- In this example, demand across the network exceeds baseline
- Investment is triggered at offtake point Z, raising network baseline to 45



Option EX4

(Zonal baseline / zonal product)

- NTS allocates existing zonal capability to meet demand for zonal product
- Total demand in Zone A equals zonal baseline
- Investment is triggered in Zone B, raising baseline at this zone to 20



Option EX4 is akin to “Full zonal”, “Competing auctions” and “Zonal at point in time” (in the long-term)

There was also a no baseline option muted by Ofgem where there would be no formal requirement to make available a specified volume of capacity, NGG would simply be obliged to make available all physical capacity at any point in time. However, some reference point would be needed for revenue purposes.

4 January 2006

Options considered in 2006

	Status Quo	Long term user commitment models			
	Option Ex1	Option Ex2	Option Ex3	Option Ex3A	Option Ex4
Baseline	(LDZ)	Nodal	Zonal	Global/ network wide	Zonal
Product definition	Nodal	Nodal	Nodal	Nodal	Zonal
Substitution	x	✓	x	x	x

Option Ex1: Status Quo at the time (transitional arrangements)

Option Ex2: Nodal model with substitution incentive

Option Ex3: Nodal product with zonal baselines

Option Ex3A: Nodal product with network wide baseline

Ex4: Zonal product with zonal baseline

Ofgem decision

“NTS exit capacity products offered to network users should be defined on a nodal basis...[as this] would enable NGG NTS to receive long term user signals specific to each offtake point. This should provide precise investment signals and facilitate efficient investment with a resulting positive impact on security of supply”.

“The definition of zonal baselines allows the substitution of capacity across nodes without the need for the ex ante specification of nodal exchange rates or incentive payments to NGG NTS. However, it is our view that such arrangements could lead to significant complexity in the capacity allocation mechanisms and / or increased NGG NTS discretion”.

There was also consideration of introducing an incentive on NGG NTS to substitute capacity across nodes in response to demand signalled by users. Ofgem identified concerns with this including the potential need to specify nodal exchange rates ex ante and hence the potential for significant Ofgem involvement (or significant NGG NTS discretion). Therefore, the current substitution obligation was deemed more appropriate.

Ofgem Transmission Price Control Review 2007 – 2012: Third Consultation (March 2006)

Amendments to products

Replication of Entry

Removal of enduring product, replacing with applications/auctions for a shorter duration

One daily product

Daily capacity purchased in longer timescales

- Users would hold capacity for as long as they have booked it for
- User commitment for capacity within baseline would be inherent in the capacity booking
 - Mechanism to ensure capacity bookings are accurate
- Any unsold capacity could fulfil a substitution request (incentivised to book long-term)
- Capacity above baseline would be required to be signalled for a specified duration to trigger substitution / incremental (plus a financial commitment to incremental capacity)

Long Term Flow Swaps

UNC OAD I 2.4 and 2.5 provides the ability for NTS and DNO's (respectively) to request a Long Term Flow Swap.

“National Grid NTS may at any time request a DNO to submit revised Offtake Profile Notices for two or more Offtakes” (OAD I 2.4.1)

“A DNO may request, where it believes it necessary for the purposes of ensuring the safe and efficient operation of the System” (OAD I 2.5.1)

- Historically this has been interpreted to mean that a LTFS can only be requested in the case of an emergency.
- An option could be to extend the applicability of LTFS to include the DNO's ability to request a flow swap where there is a change in DNO demand forecast.
- Currently this is a very manually intensive process

User Commitment Options

Reduction of User Commitment

- User Commitment as capacity commitment maintained
- Reduce the duration of the capacity commitment

Alternative Method of User Commitment

- User Commitment provided as financial commitment
 - Fixed sum
 - Used against any capacity product

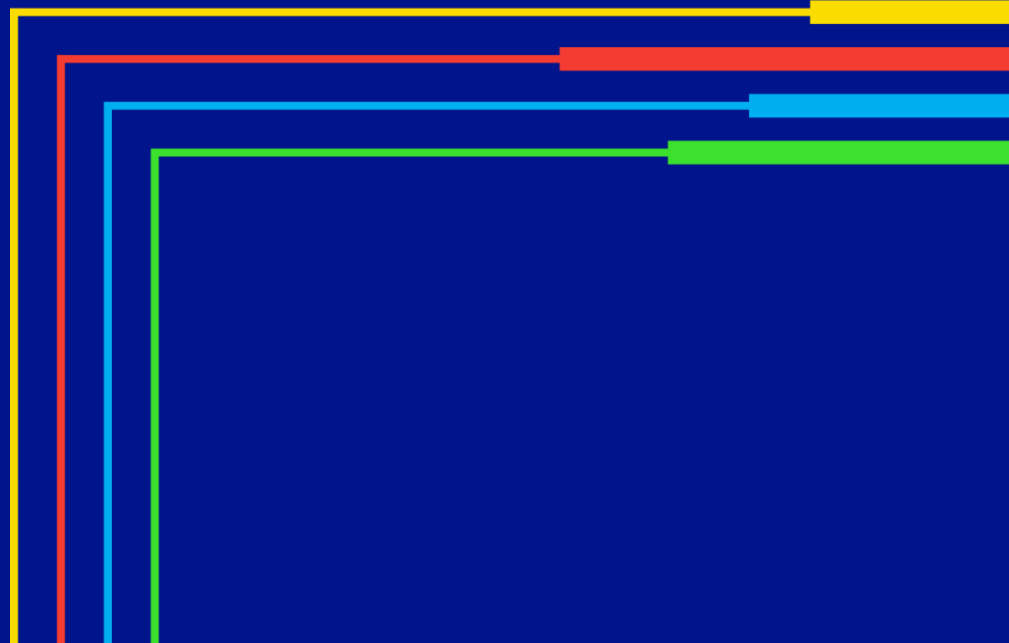
Effectiveness of solution vs effort

Options	Outcome achieved (effectiveness)	Effort
Zonal solution	<ul style="list-style-type: none"> - Reduce the applicability of User Commitment - Reduce the occurrence of substitution taking place as would only be required between zones - Would provide greater flexibility to move capacity between points within a zone. Effectiveness dependent on zone definition - Would allow for greater access to unsold capacity (if baseline set at zonal level) - PARCA only required to increase the zonal baseline capacity, process used less frequently 	
Product amendment(s)	<ul style="list-style-type: none"> - User Commitment reflective of need, increasing flexibility - Greater ability to profile capacity booking across the year 	
Long-term flow swaps	<ul style="list-style-type: none"> - Would provide greater flexibility to move capacity between points, potentially not limited to zones - Reduce the applicability of User Commitment - Reduce the requirement for PARCA's 	
User commitment reduction	<ul style="list-style-type: none"> - Increased flexibility to amend capacity bookings 	
Alternative methods of User commitment	<ul style="list-style-type: none"> - Maintain level of User Commitment but provided as financial commitment could increase flexibility 	

03

Substitution

national**grid**



Substitution from disconnected sites

New Action 1203: National Grid (ASt) to provide work group with the proposed wording in relation to prioritising substitution from disconnected sites within the methodology statement.

Para 33 Substitution from notional exit points created as a result of Exit Capacity Revision (see Chapter 3) shall be considered before substitution from NTS Exit Points. Substitution from a disconnected NTS Exit Point, **which would provide reasonable sufficient benefit (i.e. there is a reasonably sufficient exchange rate) to a recipient NTS Exit Point (to be determined at National Grid's sole discretion)** if it has an exchange rate of 1:1 or lower, shall be considered **next** before substitution from other NTS Exit Points, **as set out in paragraph 42.**

Para 42 Subject to the above criteria and the objective to reduce necessary investment, donor NTS Exit Points shall be selected in the **following** sequence:

- Notional exit points;
- **Disconnected sites;**
- Downstream NTS Exit Points on the same feeder;
- Downstream NTS Exit Points on adjacent connected feeders;
- Upstream NTS Exit Points on the same feeder;
- Upstream NTS Exit Points on adjacent connected feeders.

Zones – definitions

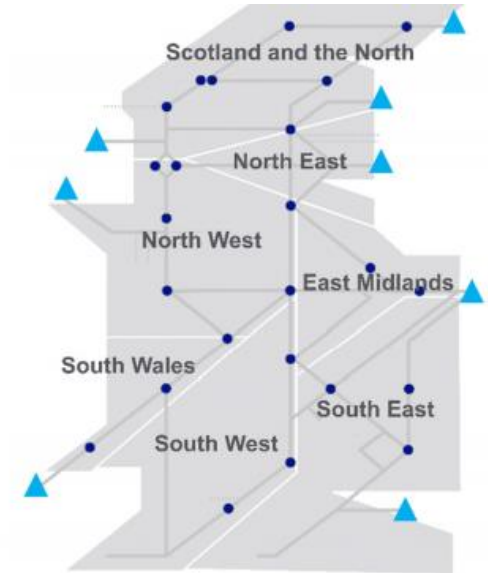
New Action 1202: National Grid (ASt) to produce definition of a zone in relation to Network Capability.

Network Capability Zones (7 zones)

‘Used in internal network modelling as a tool to demonstrate physical capability of the network. Our network analysis tool models the capabilities of our compressors, our pipework and all our other supporting assets. This allows us to establish the level of physical capability across different zones of the network. Through this, we identify where there is potentially too much or too little network capability to meet stakeholder requirements/customer flows.’

Gas Ten Year Statement Zones (10 zones)

‘The NTS exit capacity map divides the NTS into zones based on key compressor stations, and multi-junctions. Within these zones, any new connection and/or capacity request is likely to be met through capacity substitution within (or downstream of) the zone. It is likely that substitution within a zone will be close to a 1 to 1 basis. All of our substitution analysis is carried out to the substitution methodology statement rules and (exchange rates calculated on case by case basis) while it is very likely that capacity will be substituted from within a zone, it is not guaranteed.’



Zonal capacity

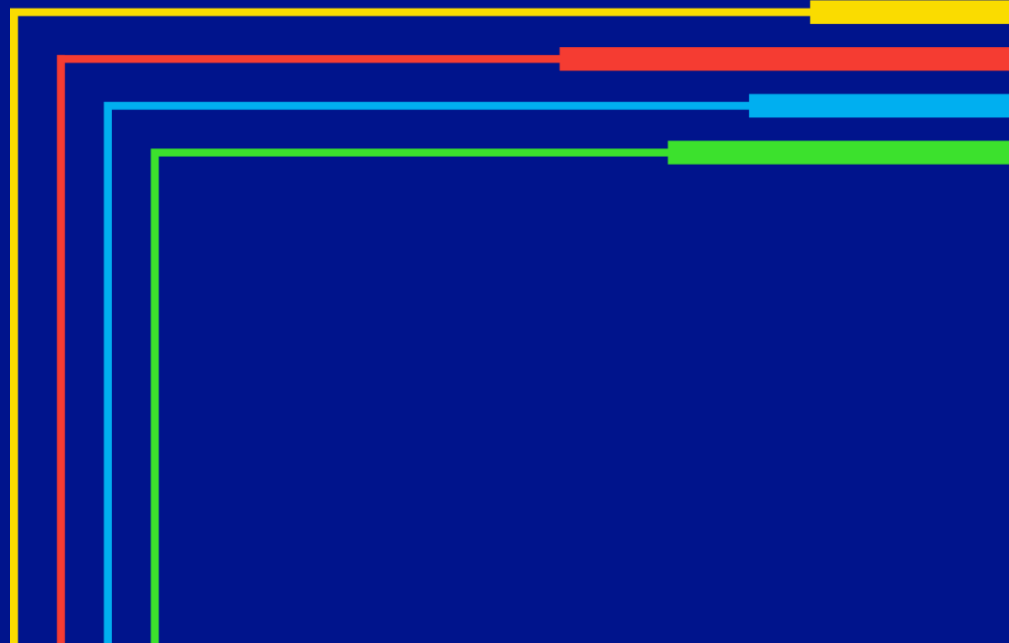
New Action 1201: National Grid (ASt) to provide view on the approach to be taken when zonal capacity arrangements are to be considered.

Principles of the zonal capacity arrangements will depend on industry agreed approach to be taken. These might include, not inclusively:

- The arrangements should not create additional risk on NTS (this might be related to fulfilment of obligations, safety and security of supply, costs etc)
- Analysis likely to be started from the beginning as current zones have been created with different purposes in mind (these will act as guidelines only)
- Complexity will depend on scope/option agreed to pursue with the industry (e.g. how much capacity can be moved within zone and on what basis e.g. does the exchange rate needs to stay the same)
- It is likely all scenarios/combinations of capacity being moved will need to be tested (this might be very time consuming and labour intensive process)

04

Daily Firm Product Development



Daily Firm Capacity product

New Action 1204: National Grid (ASt) to provide commentary from Xoserve about the potential compression of the maintenance window and other practices for improved allocations.

The potential implications related to shortening of the maintenance window include:

- Lack of buffer for processes overrunning which might result in an unplanned outage or system issues
- Outage would need to be requested in instances when additional maintenance needs to take place (e.g. security patches), datafixes/fixes need to be performed

The possibility of a 3am allocation is being considered. Potential impact is being assessed and would include

- Necessity of changes being made to UNC Allocation Effective Time (currently +2h on exit)

Annex B-1 NTS Exit Capacity Invitation, Application and Allocation 3.7 (d) in relation to a capacity allocation or selection period: (i) the "allocation effective time" is the time with effect from which Daily NTS Exit (Flat) Capacity is to be allocated pursuant to the acceptance of bids or offers during such capacity allocation or selection period, being the first hour bar which falls more than sixty (60) minutes after the start of the capacity allocation or selection period;

- Over 1800 jobs will need to be assessed in order to be moved and downstream/upstream impacts will need to be considered

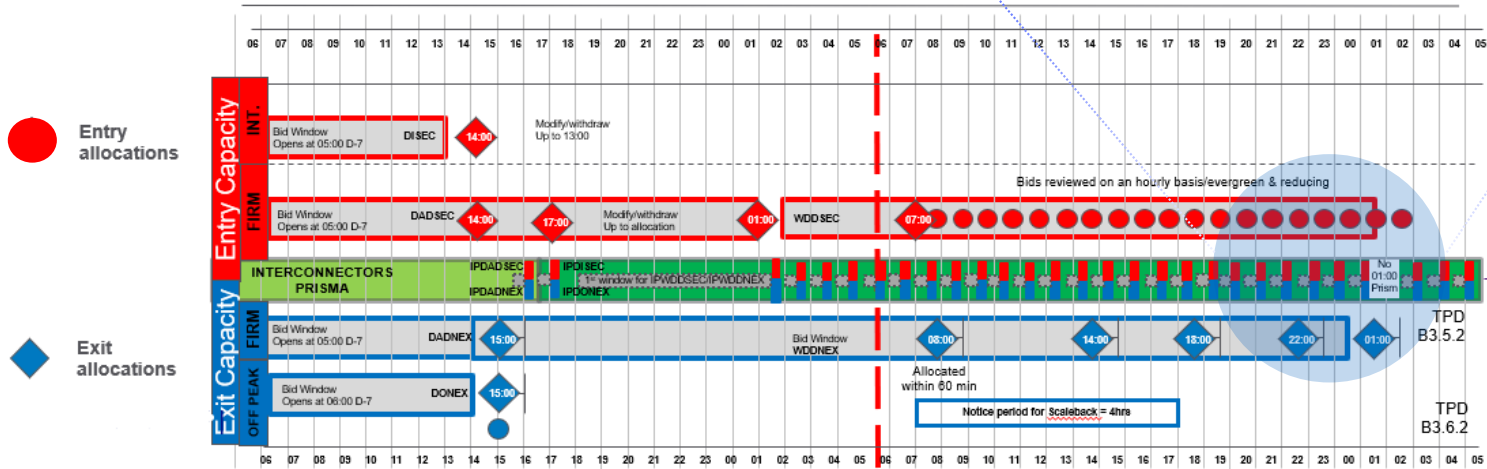
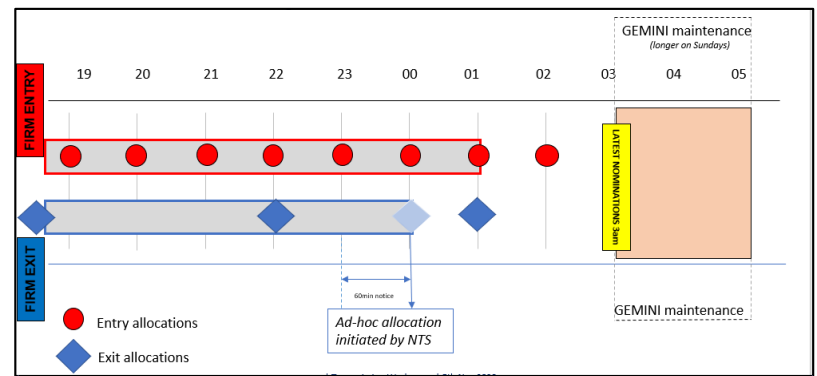
We are awaiting Xoserve's input with regards to

- Frequency of potential outages/further impact assessment resulting from shortening the maintenance window and
- Assessment of batch jobs being affected by adding 3am allocation (and therefore moving maintenance to 3.30am start)

Daily Firm Capacity product

Maintenance window activity:

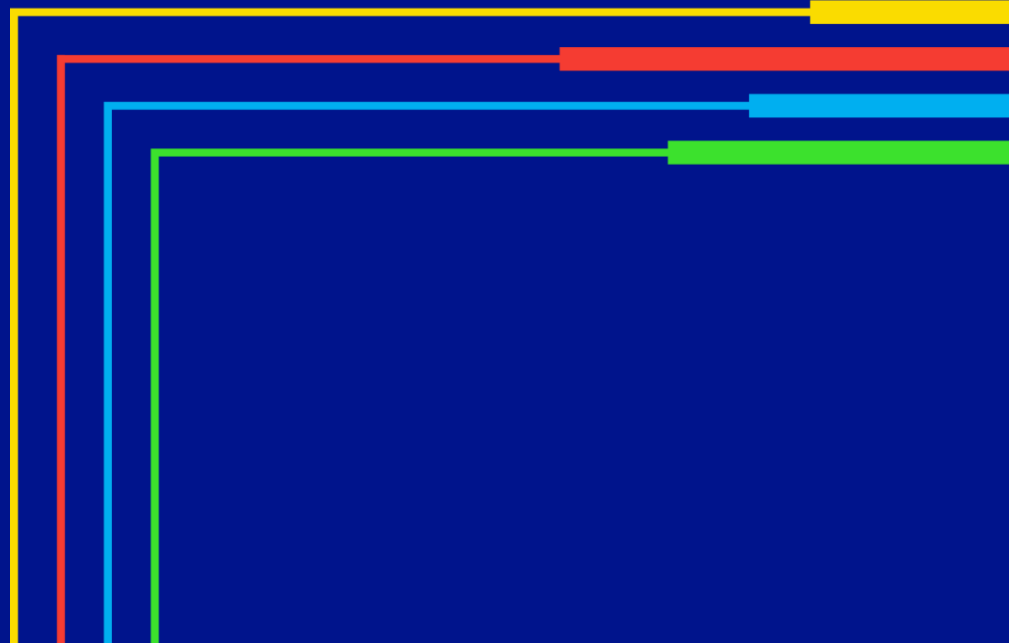
- End of Day batch jobs run in preparation for D+1 allocation processes
- Fixes, updates and deployments occur during this period



05

Entry Products

national**grid**



06

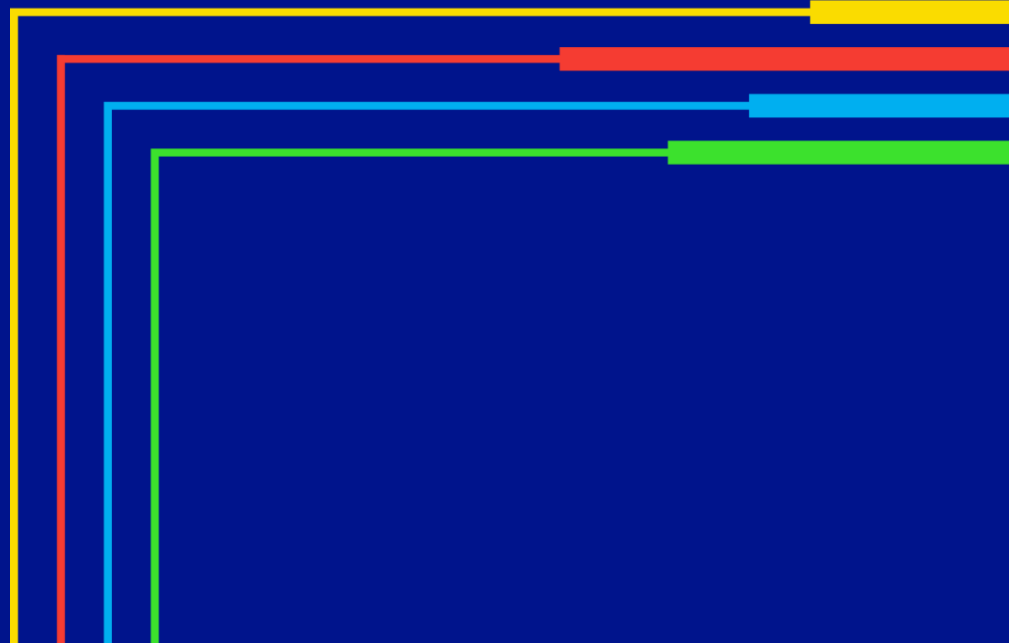
AOB:

Methodology

Statements

Review (update)

national**grid**



Methodology statements – review

There hasn't been any Modification driven changes to be made in this review cycle. Other changes identified so far include:

Entry Capacity Release (ECR)

- Amend to the baseline User Commitment to capacity requests which signal substitution funded incremental from 16 quarters to 4
- Changes related to implementation of UNC Mod 678A i.e. wording change rather than content (e.g. removal of reference to zero reserve prices)
- Project costing –*TBC*

Exit Capacity Release (ExCR)

- Reduction of the User Commitment within baseline from 4 years to 2

Methodology statements – review

Entry Capacity Substitution (ECS)

- Disconnected sites to be prioritised as donor sites for entry substitution when there is reasonable sufficient benefit to the donor site). Previously these sites were only prioritised if the exchange rate was less than 1:1.

Exit Capacity Substitution and revision(ExCS)

- Disconnected sites to be prioritised as donor sites for exit substitution when there is reasonable sufficient benefit to the donor site). Previously these sites were only prioritised if the exchange rate was less than 1:1.
- Change to substitution increment size from 0.01 GWh/d (0.000923 mcm\|d) to 0.1 GWh/d. (0.00923 mcm\|d). The minimum Gemini capacity amount is 0.1 GWh/d and only state Exchange rate to 4 decimal places.

Entry Capacity Transfer and Trade (ECTT)

- Housekeeping and changes to licence driven updates only

Next steps: Informal consultation to be launched by the end of January

national**grid**